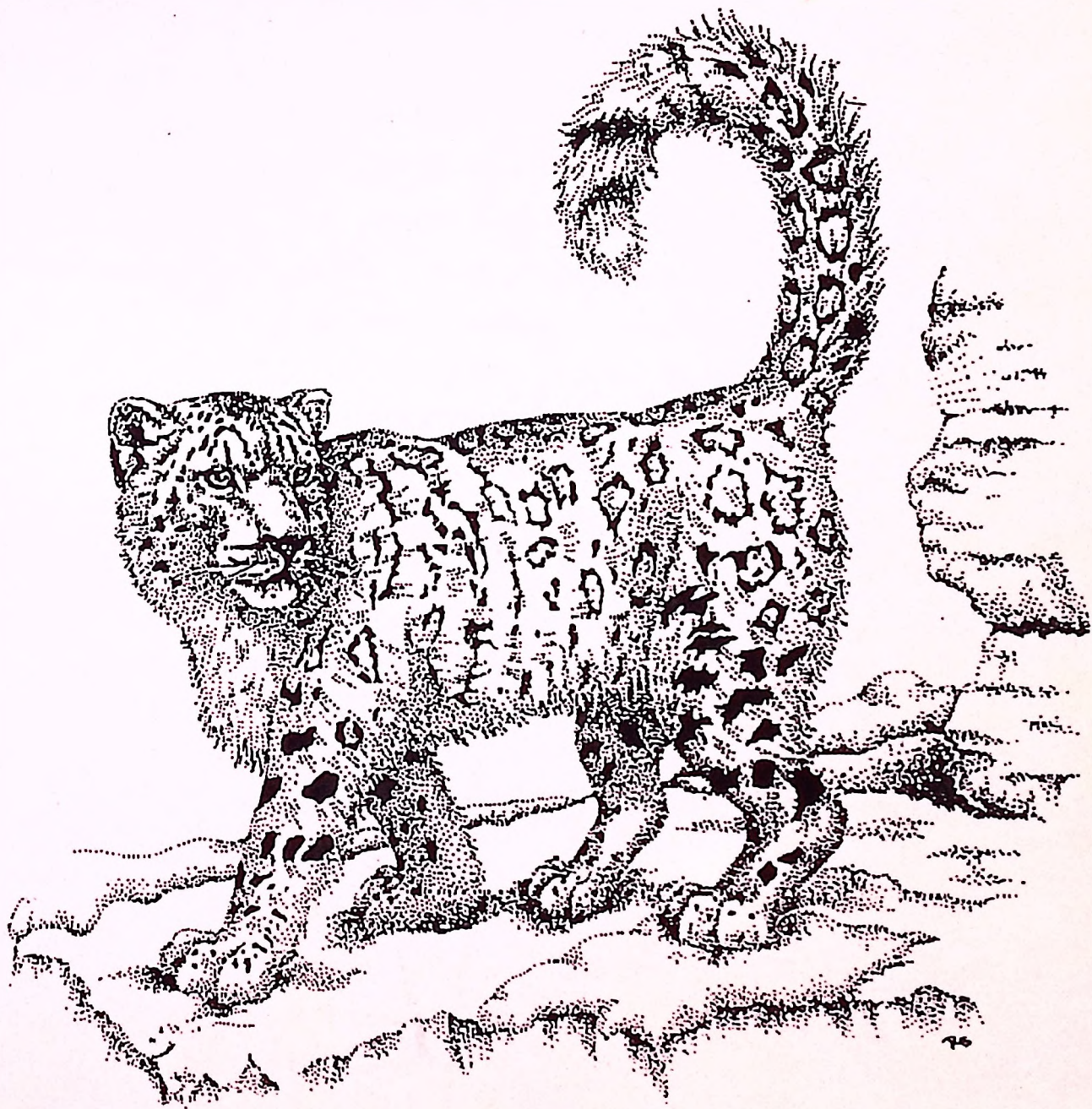

WII NEWSLETTER

Volume 3 Number 3

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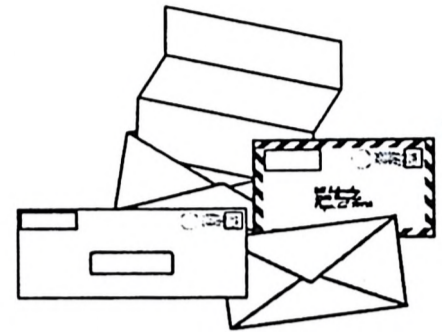
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From The Editor's Desk

In spite of the incessant rains in the Doon Valley, WII was beaming with its ever increasing, multifarious activities. There was so much to do that it seems every one was running against time. Rains in no way could dampen our spirits.



On a request from the Government of Madhya Pradesh a ten days workshop on G.I.S. for field researchers and wildlife managers was organised by us in mid-August '96. It was well received and applauded by all the participants. Month of September started with the new batch of XVIII P.G. Diploma Course, comprising of 19 participants, including foreign trainees from Bangladesh, Malaysia and Nepal.

Apart from organising the one-week capsule course on wildlife management, the month of September also witnessed the hub of activity during the Annual Research Seminar. In addition to ARS, this year an Internal Research Seminar was also organised for inhouse presentations pertaining to the research projects, initiated only recently for which regular presentations in the ARS were not feasible.

Consequent to the approval in the Annual General Meeting of the WII Society on 05.09.95, the Research Advisory Committee (RAC) was made much broad based and changed to Training, Research & Academic Council (TRAC). The first meeting of TRAC, with the newly constituted committee, was held on 18.09.96.

This current issue is the endeavour of all those nature lovers and wildlife enthusiasts who have contributed their articles to the cause. A call for conservation of biodiversity placed in the frontline is in fact the call of the day. Apart from write-ups which call for immediate attention on subjects like conservation of elephant bulls of Rajaji-Corbett, there are very sweet reminiscences of sighting snow leopard in the wilderness of cold desert.

On the other end are the tragic tales of a tigress and threatened existence of wolves, with the ever shrinking habitat for them.

Apart from all these serious talks, thanks to our contributors who have added some tinge of the lighter side of life placed in the sparkles section of this issue.

Wishing for more interactions with the Readers.

A pleasant reading.


Editor

CULTURAL ETHOS AND OPPORTUNITIES FOR PLANT CONSERVATION IN THE HIMALAYAN REGION

G.S. Rawat

Several policy documents, scientific articles, and action plans have stressed the need for *in-situ* conservation in and around the protected areas (PAs) in the country. Biodiversity conservation and ecodevelopment measures are the main issues being discussed in most of the forums these days. However, judging from the actions being taken at the field level, we see this concern being largely restricted to some animal species being saved in some PAs. Hardly any initiative has been taken towards the conservation of rare, endemic and threatened plant species in the field. This may be due to low priority accorded to floral conservation, paucity of information on the subject and lack of trained manpower in the field. As a result, populations of such plant species continue to dwindle unnoticed in many biogeographic zones. Although the existing PA network and the Wildlife Protection Act (1972) do cover the legal protection of endangered plants, but there are several problems related to plant conservation e.g., (i) specialized micro-habitats of rare and endangered species don't necessarily occur inside the PAs, (ii) lack of information on the distribution and habitat requirements of rare species, (iii) inadequate protection in and around PAs, (iv) lack of trained staff and low priority given to plant conservation by the wildlife departments, and (v) commercial exploitation of valuable medicinal herbs.

The challenges of plant conservation in Himalayan region are not different from those in other parts of the country. Nevertheless, there are ample opportunities for promoting conservation at local level. The region is inhabited by a large number of ethnic groups with distinct culture and traditions related to use of natural resources. Most of the communities pay reverence to large trees, forested

groves, water-bodies, hilltops, large rocks, etc. Numerous plant species are used by the native people in various religious ceremonies and auspicious occasions. Thus the rich ethnobotanical heritage accumulated by the local inhabitants over several generations and their religious sentiments, if harnessed properly, may prove to be a big boon to our conservation programmes. A few examples and issues from the Himalayan region are given below:

The cold deserts

The cold arid regions in Lahaul & Spiti district of Himachal Pradesh and Ladakh in Jammu & Kashmir are largely inhabited by the Buddhist populations who are averse to any kind of killing or hunting. They subsist primarily on agriculture and pastoralism. The valley bottoms with limited irrigation facilities have settlements and agricultural fields, while the slopes are used as pastures for the cattle. Large areas are also set aside as Gompa land for the use of Lamas and closed to agriculture, hunting or any gathering activity. The area is a low productive zone, but through a mix of social customs and a judicious use of the meagre resource, the people have been able to conserve their traditional crop varieties e.g., barley (*Hordeum vulgare* var), wheat (*Triticum* sp.), buckwheat (*Fagopyrum tataricum*), rapeseed (*Brassica nigra* var.), pea (*Pisum sativum*), a few wild edible food plants e.g., mushrooms, wild lilies, rhubarbs, wild cumins, and medicinal herbs. Several plant species are used in religious rituals and decoration of houses such as Chabu (*Achillea millefolium*), Nurcha (*Artemisia maritima*), Bazerbangh (*Hyoscyamus niger*), Shurr (*Juniperus recurva*), Piliktsa (*Ribes alpestre*), Paranbala (*Taraxacum officinale*) and Kolomatsa (*Verbascum thapsus*). However, continuous removal

of woody species such as *Artemisia*, *Potentilla*, *Salix*, and *Rosa* for fuelwood, and overgrazing by migratory livestock has resulted into habitat degradation and loss of vegetation cover in many areas. The riverine vegetation and a few relict patches of *Juniperus macropoda* are very important from conservation points of view in this region. The former vegetation is known to support some of the highly threatened animals e.g., Nubra pika, Tibetan woolly hare and lynx.

Western Himalaya

This region is dappled with ancient temples and historical places, most of which are located on hilltops or in the forested groves. The earlier generations have preserved such sites well but unfortunately now, due to the rapid socio-economic changes taking place in the society, these places are being neglected.

Among the numerous tree species in the western Himalaya, deodar or cedar (*Cedrus deodara*), Himalayan cypress (*Cupressus torulosa*), juniper (*Juniperus macropoda*), birch or Bhojpatra (*Betula utilis*), wild cherry (*Prunus cerasoides*), ash (*Fraxinus macrantha*), *Osmanthus fragrans*, *Putranjiva roxburghii*, *Olea glandulifera*, etc. are of high economic as well as religious significance. These species are often protected and planted around temples. Similarly, various species of oak (*Quercus* spp) are intimate part of the Himalayan culture and folklore since time immemorial. The local people, in many parts, value the oak forests for the fuel, fodder and fresh air and water. Ecologists have recognised oak as a climax species of the temperate region of western Himalaya. The forests also provide many associated herbs which the locals use for medicinal purposes.

The alpine areas harbour a large number of sacred herbs used in various ceremonies by the local people, e.g., Brahma kamal (*Saussurea obvallata*), Guggal (*Pleurospermum densiflorum*), and Phen Kamal (*Saussurea gossypiphora*). Local people are generally aware about the status and distribution of several plants which could be either unique in terms of morphology or use e.g, wild lilies, ladies slipper orchid (*Cypripedium* spp.), Ruki (*Megacarpaea*

polyandra), *Onosma* spp., etc. Many alpine and temperate species have great potential to become ornamental (garden) plants which the local people can take up for generating income if proper extension and interpretation programmes can be conducted in various areas.

Eastern Himalaya:

Ethnobotany of eastern Himalaya has not been documented in detail due to the presence of very diverse ethnic groups and the area being inaccessible. From the information available, we know that a large number of plants are used in various ceremonies, and day-to-day activities. Some examples of plants commonly considered sacred and valuable in the eastern Himalayas (Eastern Nepal, Sikkim, Bhutan, West Bengal and parts of Arunachal Pradesh) are: *Rheum nobile*, *Magnolia campbellii*, *Cupressus corneyana*, *Ficus benghalensis*, *Ficus religiosa*, *Elaeocarpus ganitrus*, *Anthocephalus chinensis*, *Pandanus nepalensis*, *Euphorbia royleana*, *Mesua ferrea*, *Jasminum humile*, *Aquilaria malaccensis*, etc. As there are not many examples of sacred groves in this region (though Khasi and Garo hills in Meghalaya are well known for their sacred groves), reverence for individual hillocks and forests by various communities needs to be strengthened. Arunachal Pradesh, with 26 major tribes and about 72 sub-tribes, particularly, need special mention here because the tribes lead a life mostly dependent on the forest resources for food, fodder, medicine, cordage and several other needs. Several crop varieties and wild relatives of cultivars such as wild bananas, wild rice, yams, etc., could be easily conserved through agricultural extension programmes.

In conclusion it can be stated that the Himalayan region, with a live cultural heritage and with an empathy for a plant species, has great potential for successful conservation programmes with the help of local people. This is extremely important considering that any addition to the current PAs does not seem feasible in the region, and the societies and their cultural lifestyles are changing very fast. Active role of NGOs and other institutions to harness the religious sentiments of locals in conservation will go a long way in India's conservation efforts.

Wildlife Digest

ARAKAN YOMA, WHERE TIME STANDS STILL

A.J.T. Johnsingh and R. Sukumar

The sun, like an orange ball of fire, descended from a patch of dark cloud towards the horizon. Before us lay the vast tract of the southern Arakan hills largely dominated by bamboo. Clumps of large trees on hills tops and valleys, however, indicated that the area had primary semi-evergreen and evergreen vegetation in the past. There was silence everywhere, except for the calls of hill myna, Indian pied hornbill and red jungle fowl. As the sun sank behind the horizon, darkness descended first in the valleys and then on the hill slopes. We resumed our journey driving past a group of dusky leaf monkeys which was busy feeding.

We were on a brief survey of the Arakan *Yoma* (mountain range) in Myanmar in mid March 1996. We had started our journey in a car in the morning from Yongon. The travel took us across the fertile Irrawaddy delta, and we crossed the Irrawaddy river in a ferry. Late in the afternoon we entered the southern portion of Arakan along Gwa pass. Here, we saw only a few camps of bamboo cutters leading a spartan life.

Arakan *Yoma* is part of the mountain arc in western Myanmar, lying between the Arakan coast and the Irrawaddy valley. The arc extends northward for about 950 km from Cape Negrais (in Myanmar) to Manipur (in India) and includes the Naga, Chin, Lushai and Patkai hills. The Arakan *Yoma* in itself is 400 km long. Its highest point is Mount Victoria (3094 m). Dividing the Arakan coast from the rest of Myanmar, the range functions as a climatic barrier, cutting off the south-western monsoon rains from Central Myanmar. As a result, the vegetation on the eastern slopes is much drier than on the west. Three roads cross the Arakan *Yoma*: the An route to Ngape and Minbu in the north, an all-weather road in the centre of the range from Taungup to Pye on the Irrawaddy, and the Gwa pass.

The young Myanmar wildlife officers, U Ye Htut and U Myint Mang, who accompanied us, said that in the past the Arakan *Yoma* had a high density of elephant, gaur, banteng, sambar and tiger. Over the decades the habitat suffered as a result of shifting cultivation, and the large mammal populations declined due to hunting by the Chin tribals who have come from the north. Disturbances, including poaching, associated with selection felling which is in practice in Myanmar for several decades and rattan collection, have also contributed to the decline of large mammal abundance.

The Chin tribals practise shifting cultivation and prefer to live in the hilly regions with higher rainfall. Such habitats are available much more in the northern portion of the *Yoma*. After cutting and burning a patch of forest, they grow rice, corn, chilly, ground nut and water melon for 2-3 years and then move to another place. Chin tribals are immune to malaria which is widely prevalent in the *Yoma*. These tribals are excellent hunters. They set snares, traps, and hunt with dogs. Immense damage to the tiger population was done about 10 years ago when the demand for tiger bones by the Chinese and Taiwanese soared sky-high. The large amount of money involved in the tiger bone trade allured the Chin tribals into persistent tiger poaching which involved poisoning. It is reported that when the tracks of a tiger were seen, it was adeptly followed by the hunters, sometimes for several days, until its kill was located and poisoned. This often led to the death of a family of tigers and other carnivores. As a result, over the last 10 years, tigers have become exceedingly rare all over the Arakan *Yoma*.

Our halt for the first night was in Gwa, a small coastal town of pagodas, wooden houses, coconut and casuarina trees. Sky blue waters of the Bay of Bengal rolled into snow-white waves and pounded

the cream-coloured sandy-beach when we strolled along the beach next day morning. There was no oil scum on the beach. Neither polythene bags nor abandoned chappals were seen. The beach was littered only with parts of coconut trees. Our walk disturbed hundreds of small brown crabs which scurried into their holes.

Soon after breakfast we drove to Sandowy, about 140 km north of Gwa. The road in most places goes between the hills and the shore where, possibly as late as the last century, tigers and elephants roamed. There were fishing hamlets every 5 miles or so. Paddy had been harvested recently from the fields and some fields had a crop of groundnut. We crossed several back-waters, all with dense mangrove vegetation including *nepa* palms which is a valuable resource for the villagers as most houses had been roofed with *nepa* fronds. We got down near some of the back-waters and all had abundant fingerlings.

There was an atmosphere of serenity in the villages and it appeared there was sufficient food - rice, coconut, dry fish, banana- to feed the population. Women were beautiful and had protected their face with the paste of the bark of the tree (*Limonia pubescens*). Men were well built and handsome. All the villagers we interviewed echoed the same message that large mammals were once abundant but have been decimated in the recent years. The rough road made our going incredibly slow, and after 10 hours we reached the Linn Thar oo lodge in Sandowy. The sea was hardly 50 m from the lodge and we went to sleep listening to the roar of the waves.

Our plan for the next two days was to see the surrounding areas and those on the way to Yeanetku, where Myanmar Timber Enterprise elephants are camped. The camp is about 32 km from Sandowy. We covered the first half in a rickety truck and the second half on foot, although a bullock cart had been kindly arranged by the forest department, to help us with the arduous journey under the hot sun. We climbed hills, crossed valleys and walked along the river bed looking for large mammals and their signs. Amidst abundant human and domestic animal signs, we saw only one track of a barking deer.

Yeanetku means 'deep stream which one has to swim across'. The sun had set by the time we had reached the camp, and a bath in the river, in the rapidly fading light, dissipated the heat and refreshed us. The only wild mammal we saw on this trip to Yeanetku was a group of dusky leaf-monkey which was about to roost while we were in the river. The bath was followed by a discussion with the Veterinary Inspector about the domestic elephant management, which was followed by a delicious dinner which included several servings of fish that had been caught in the river. The folks in the small camp were kind enough to vacate a hut and provide beds and mosquito nets for us. The bamboo floor on which we slept swayed and creaked whenever we moved. The only wildlife sound we could hear was the metallic cowbell-like double whistle of the Eastern spotted scoops owl which ceased just before dawn. This diminutive owl ranges from Viet Nam to north-eastern India and it can be decoyed by an imitation of its call by blowing into a reed whistle.

One of the pleasing sounds we heard in the morning was the vocalization of gibbons which were not far from the camp. Fortunately the locals, including the Chin tribals do not eat gibbon meat, and as a result gibbons are reported to be fairly common in the Arakan *Yoma*. This was confirmed by a call from another group as we completed a short elephant ride along the river.

While on our exhausting return walk in the hot mid day sun the next day, we spent some time in the Ywashae village exploring the possibility of seeking the help of the villagers in protecting wildlife. The village had bare facilities of olden days. The oil mill was operated by a bullock which went around in circles. On the wooden beam that connected the bullock with the crusher many children sat and played happily. Women dehusked paddy using long wooden thrashers which were operated manually. The agricultural products like groundnut and paddy were stored in bamboo baskets. Time appeared to have come to a stand still in this remote village.

When we explained to the villagers on how they could protect wildlife, they were amenable to our ideas but expressed their concern that more sambar

are being killed by dholes than by the villagers, and that they might not be able to prevent outsiders from hunting. We explained that dhole populations are susceptible to fluctuations due to diseases, and that if poaching is brought under control, in prime habitats like the Arakan *Yoma*, it will be possible for prey species like sambar and predators like dholes and tiger to co-exist. On the aspect of outsiders hunting in the area, we suggested the formulation of a village protection committee which could look for and ward off intruders destroying the resources which belong to the village. We argued that if they protect sambar, wild pig and barking deer, which are rapidly disappearing now, one day they may be able to hunt these animals on a sustained yield basis. Otherwise this valuable resource will be lost for ever. The villagers seemed to accept our explanations and suggestions.

As we took off from Sandoway airport in the evening of 20th March, the golden sun hung low over Bay of Bengal veiled by a thin cloud. The sea directly below the sun glittered like molten gold. The plane took a U-turn over the sea and flew over the hills towards Yongon. Initially, a thick cover of clouds blocked our view of the forest, but then for the next 10 minutes or so, we flew over an unbroken dense forest cover. We remembered a forest official telling us that the Arakan *Yoma* has at least 17,000 sq.km

of such continuous forest cover, most parts of which remain unexplored. When we were over the eastern periphery of the forest, trails along ridge tops were faintly visible. U Ye Htut said these could be the trails of rattan cutters. We realized that poaching by the shifting cultivators, rattan collectors and loggers is the major reason for the decline of large mammals in the Arakan *Yoma*. This is also true in many other Asian countries.

Next to India, which has about 25,000 wild Asian elephants, Myanmar has the second highest number of wild Asian elephants (6,000). While India has half the tiger population (3,500) in the world, this large cat population in Myanmar, which still has vast wildlife habitat, could be anywhere between 200 and 1000 and the potential to support a large tiger population is enormous. Therefore, it becomes imperative that greater conservation effort should be directed at Myanmar, which fortunately still has nearly 50% of its land under forest. Elephant and tiger reserves need to be established, wildlife personnel have to be trained and the public be educated. The international conservation community should support the laudable efforts already initiated by the Myanmar forest department. We hope the time is not far, when the singing of gibbons, trumpeting of elephants and call of tigers reverberates in unison in the Arakan *Yoma*.

EX-DIPLOMA TRAINEE GETS AWARD

Shri Jagdish Chandra, an alumnus of the Wildlife Institute of India has been awarded Silver Medal by Madhya Pradesh State Government for his meritorious efforts for protection and management of wildlife. Shri Chandra, while being posted in 1994-95 in Kanha National Park, arrested 38 wildlife smugglers and confiscated four guns, snares and skins of tigers, leopards, spotted deer and black-buck. Undertaking risky operations, he successfully captured one tiger, one leopard and one sloth bear which were creating havoc in different villages. He subsequently released the above animals after providing necessary veterinary care to them.

Shri Chandra was a Diploma trainee of this Institute during 1981-82.

THREATENING TRADE IN BUTTERFLIES

Md. Khalid S. Pasha

Butterflies have always attracted attention, like birds and mammals, among the people. It is their dazzling colours, varying shapes and size which make them such popular subjects of interest. About 13,000 butterfly species are known to occur throughout the globe, making them one of the largest representatives of insects. India is home to about 1,500 species (almost 12% of the world butterfly fauna) representing 9 families belonging to the order Lepidoptera to which moths (their near relatives) also belong. The Southern Birdwing is the largest among Indian species with a wingspan of 190mm, the Grass Jewel being the smallest has a wingspan of 15mm. Among the butterflies of the world Queen Alexandria's Birdwing is the largest with a wingspan of 250mm. It forms emblem of Papua New Guinea's Oro Province.

In our country many species are rare and unique to our forests, like the Southern Birdwing, the Apollo, the Tree Nymph etc. The rapid decline of such species would necessitate protection of the entire habitat. Apart from the degeneration and loss of the habitat, commercialization is another threat to which they have been exposed to. Out of the total species present in our country 50 percent of them are protected by the Wildlife Protection Act (1972). However efficient enforcement of the law is lacking.

The crass commercialization has resulted in rampant and highly profitable trade in butterflies in India, which poses a threat to them. The main centres of this trade are in states like, Arunachal Pradesh, Sikkim, Assam, Jammu and Kashmir, Himachal Pradesh and in other parts of Western Himalayas which are an abode to almost 80% of the total species present in the country. Urbanisation, growing road network and flourishing tourism industry in these area has paved easy way for trade of these insects. The butterflies are killed, mounted on frames and sold as craft to the tourists. The annual turnover worldwide is estimated to be more than \$20 million. This has made the trade more lucrative. Nearly, 50,000 specimens of butterflies are smuggled out of

the country every month. Of the species traded in India the Kaiser-i-hind and the Bhutan glory are top on the list.

This requires firm decision and proper implementation of wildlife conservation and protection policies. Community participation by encouraging locals to establish butterfly rearing centres and sustainable use through farming can ease the pressure on the wild population of butterflies. Establishment of such centres especially in the high trading zones would be of great value. Well trained staff should be recruited. The following things should be kept in mind:

- (a) For rearing, species threatened due to trade should be given top priority.
- (b) Careful selection of the food plant species.
- (c) Release of some individuals from the reared population every year in suitable habitats.
- (d) Every traded species should carry some basic detail like the name of the species, code of the centre, complete information of the customer etc.

In 1983, M.G. Morris, the then Deputy-Chairman of the IUCN'S Lepidoptera Specialist Group had struck on the idea of butterfly farming in India. Still this concept has not fully emerged. Careful and diligent planning by scientists, field officers and higher officials is required to put the idea into action. The best-known example being of Papua New Guinea, where commercial farming and conservation of butterflies is going hand-in-hand and has proved beneficial to the locals and the invaluable species. There is an urgent need for a study to augment impacts of the trade on the butterflies and review their status and assemblage of existing information and coordination among the ongoing research programmes on the butterflies. The NGO's and other nodal agencies involved in field of wildlife should come forward and jointly take an initiative in promotion of education awareness and conservation programmes paving way for better future of these forest jewels.

ELEPHANT BULLS OF RAJAJI-CORBETT ELEPHANT RANGE

A.J.T. Johnsingh and A. Christy Williams

He towered over the tallest female in the group by almost one and half a foot. He stood on the edge of the Ramganga reservoir escorting a young adult female. He looked every inch a behemoth. His grace, sheer size and embodiment of power deserved the attention he was getting from us. He was one of the members of a group of elephants we were watching on Dhikala *chaur* in Corbett Tiger Reserve one late May evening.

The sun had just set behind a chain of hills on the far side of the Ramganga reservoir, leaving the sky painted with a hue of reddish gold. The lighting on the bull made it very picturesque. His *musth* flow was coming to an end as indicated by the two small wet patches along with traces of dried flow down the sides of his massive head. His interest in the young adult female was conspicuous as he always kept to her side. When she waded into the reservoir he plunged in after her. It was then that we realised the fear his immense size can generate on a smaller and younger bull. The young bull, who was already in the water, hastily moved away when it became apparent to him that he was between the female and the mammoth. The young bull moved around the pair in a wide circle and eventually got out of the water.

The mammoth was fully aware of the presence of the young bull and the other members of the group but was totally unconcerned about them. He submerged himself in the water alongside the female and gently nudged her. After a few minutes he waded towards the shore churning and splashing the water all along and then came on to the dry land. The young bull, although 30 m away, hurriedly moved away when the mammoth turned in his direction although totally indifferent to the young bull's presence. The twilight was soft but bright enough for us to clearly see the long massive tusks of the mammoth. The wear on the right tusk indicated that he had used it

much more than the left one. As the night fell the mammoth strolled away from the group towards the forest. He walked with great dignity and poise and we painfully realised that, due to extensive poaching of tuskers, such magnificent bulls have become rare in many of the elephant ranges in India. We were fortunate that it was not the last encounter we had with him when we studied elephants for the next few days in Dhikala.

Although many articles and books, both popular and scientific, have been written on Asian elephants, the life of bulls in their natural environment has not been documented for many elephant ranges. This is largely due to the paucity of research on bulls and to some extent to the scarcity of adult bulls in most ranges due to poaching. We present here some fascinating information on the elephant bulls of Corbett Tiger Reserve and the adjoining elephant habitat. Only the bulls make Rajaji and Corbett a continuous elephant habitat entity, by moving across the flimsy corridors, which are disintegrating and shrinking day by day.

Not long ago the elephant habitat in the state of Uttar Pradesh was continuous from Katarniaghat in Bahraich Forest Division in the east to river Yamuna in the Shivalik Forest Division in the west. Over the decades, as a result of the growing demand for more land for the increasing human population, this contiguity was broken. Now there are six isolated elephant populations. The major population of elephants in this tract, about 800, occurs in the Rajaji-Corbett Elephant Range. This range, about 3000 km², spans from Kosi river, which forms the eastern boundary of Corbett Tiger Reserve to river Yamuna on the West. This forest tract includes the present Shivalik Forest Division, the proposed Rajaji National Park (which includes the three former Wildlife Sanctuaries: Chilla, Motichur and Rajaji), Corbett Tiger Reserve, and parts of Lansdowne, Bijnor and Kalagarh Forest Divisions.

We have urged time and again that elephant conservation in Uttar Pradesh should focus on the large Rajaji-Corbett population and its habitat which has already been broken into three isolated areas due to two major developmental projects. This includes the 14 km long Kunaun-Chilla power channel which was constructed on the eastern bank of Ganges in the early 1970s. Around the period when the channel was built, there were developmental projects on the west bank of Ganges, such as the establishment of Hindustan Antibiotics factory, Raiwala army camp, and the settlement of evacuees from the submersion area of Tehri dam village. These have made the Chilla-Motichur corridor totally unfit for elephant herds to move between Chilla and Motichur across the Ganges.

The second important development that has restricted the movement of elephants between Rajaji and Corbett is the Kotdwar-Lansdowne road which runs across the narrow Rajaji-Corbett corridor parallel to the Khoh river. This road construction has resulted in steep edges and building of walls which impede crossing by elephants. This hilly corridor is used only by bulls. Fortunately the elephant bulls still migrate across the power channel and the road thereby bringing about genetic exchange between the otherwise isolated populations. We have predicted that this genetic exchange would not continue for long if the fragile habitat continuity between these areas is not immediately strengthened by consolidating the corridors.

Six years ago, one summer evening, as the dusk was gathering, Mr. Wesley Sunderraj, a researcher from the Wildlife Institute of India, was returning to Kotdwar walking along the Khoh river. He spotted an elephant bull, a tusker, coming along a valley from the direction of the Rajaji National Park towards the Khoh river. Wesley photographed the bull and stayed near the river to find out whether the bull would cross the river. By the time the bull came close to the river it became so dark that Wesley had to abandon his observation. He, however, went back to the same area early the next morning and picked up the trail of the tusker. The elephant had crossed the river, Kotdwar-Lansdowne road and

walked in the direction of the Corbett Tiger Reserve.

This was the only bull that Wesley had seen using the corridor during the two year period that he studied the elephant corridor between Rajaji National Park and Corbett Tiger Reserve. The corridor is to the west of Khoh river. He discovered that the movement of cow groups across the corridor was absent due to the steep terrain, which the calves cannot negotiate, and the disturbances caused by people. The cow groups, just to ensure the safety of the calves, avoid areas of disturbances even if they are rich in fodder resources. Bulls, as they do not care either for the safety of the calves or for the group, could negotiate even areas of high disturbance in the cover of darkness. Wesley, however, concluded that the growing disturbances in the corridor area - grass, bamboo, fodder and wood collection - may one day stop even the bulls moving across Rajaji-Corbett corridor. If that happens, the genetic exchange between the populations on the east and west of Khoh river would come to an end forever.

The number of socially and sexually mature elephant bulls in a population is an important factor in deciding the genetic virility of the population. Sadly in many elephant ranges in India, a good example being Periyar Tiger Reserve, uncontrolled poaching of tuskers has drastically depleted the bulls leading to a disproportionate sex ratio. The sex ratio reported in Periyar Tiger Reserve is 1 male to 120 females. Although there are some tuskless bulls (makhnas) in the population this disproportionate sex ratio definitely can have two disastrous consequences. One is that a proportion of females may not be able to mate, inspite of the fact that the elephant bulls are polygynous. The other is, the cows, which can make a decision in selecting the bull, in the absence of mature bulls, may allow even younger bulls to mate. Such matings in a large scale and for several generations, which is bound to happen in a place like Periyar, can eventually drastically affect the quality - size and vigour - of the elephants.

Corbett Tiger Reserve, fortunately, is one of the few places in Asia where the tuskers have not come under the shadow of the poachers gun. As a result there is about 1 bull for every 3 cows and in April 1996 when

we watched elephants, 80% of the cows had either calves or young juveniles. In Periyar in 1990 only about 30 percent of the cows were reported to be accompanied by young. When a cow is oestrous, several bulls compete for her and only the best bull - sexually and socially mature, fully grown, virile and aggressive - in that locality is able to mate with the female and thereby pass on the best genes to the population. This biological phenomenon warrants continued protection to the elephant bulls.

When the bulls are around 20 years old, they begin to experience a condition known as *musth*. The phenomenon of *musth* was first described in captive Asian elephants and though physiologically well explained, its role in the ecology of elephants was not understood for a long time. The period of *musth* may last from a few days to more than three months, depending on the age of the animal and its body condition. The body condition of bulls coming into *musth* is usually very good. Studies have shown that during *musth*, level of the male hormone, testosterone, go up and bulls usually range far and wide in search of females which are oestrous. Some researchers have compared *musth* with rutting. *Musth* bulls are usually very aggressive towards other bulls and guard oestrous females very vigorously. Bulls not in *musth* are also known to mate successfully but the urge to search for females that are oestrous is very strong in *musth* males.

One morning in Dhikala, while driving to the *chaur*, we saw a 25-year-old bull standing nervously at the edge of a forest. We stopped the vehicle and watched him. After a minute or so he started running into the *chaur*. The reason became apparent when we saw another bull about 30 to 35 years old, in *musth* with thick short tusks. He was walking threateningly from the forest edge towards the younger bull which beat a hasty retreat from the area into the *chaur*. When we followed the *musth* bull, we found him courting a female. The other members of the group were mostly hidden by the vegetation. A little later, loud vocalizations in the form of rumblings and squeals and trumpets were heard. We grabbed our binoculars and started to scan the group. The *musth* male had mounted the female and was mating with her. After about 40 seconds, he dismounted and we again could

hear excited vocalizations. We quickly hurried over to the group and took a good look at the *musth* male. He was in very good physical condition. He kept very close to the female and guarded her throughout the three days we watched him. During our observations we saw the *musth* bull chasing at least eight different adult bulls of varying ages from his vicinity.

Four years ago, one winter evening, we were on the trail of a large radio-collared bull elephant in the Chilla part of Rajaji National Park. He was a massive animal over 10 feet high and little over five tons in weight. We fondly called that 46-year-old bull, 'Big Boss'. Finally, when we located him, he was with a cow group vigorously courting a female. *Musth* profusely flowed down both his cheeks. A cow elephant comes into oestrous only for two or three days in a year and if conceives it may not cycle again for two or three years. This means that very few cows may be in oestrous at a given time. For a long time researchers were wondering how adult bulls, especially ones in *musth*, find females in oestrous. Catherine Payne and her colleagues, while working on infrasound communication by elephants in Etosha National Park in Namibia, discovered that females in oestrous give a peculiar call, inaudible to humans. They have speculated that elephant bulls 'hear' this, and are able to home in on females in oestrous. During the 3-4 month period when Big Boss was in *musth* he wandered over an area of about 200 km² and during this period we located him with eight different female groups. What he was doing was obvious - roaming in his home range looking for receptive females. By the time the winter coolness had given way to summer heat, his body condition declined, he lost his great urge for sex and became solitary.

Dr. Justus Joshua, a researcher from the Wildlife Institute of India, then studying elephants in Rajaji National Park, observed a great contraction in the home range of Big Boss- from 200 km² in winter to about 20 km² in summer. There was a total change in the behaviour of the elephant too. In summer Big Boss spent the whole day resting in a cool valley far away from any form of human disturbance. He stirred out of his hide only after darkness had

descended. Thereafter, he went to a small water hole in the dry river bed, dug out by gujjars, and drank his fill. This took almost an hour. He also threw water on his body several times to cool himself. Thereafter he disappeared into the forest to feed, largely on the bark and branches of the trees which he pushed down effortlessly.

Early one morning, when Justus tracked down Big Boss, the bull was still feeding and there was a cow group with him. Interestingly when Big Boss debarked and pushed down a tree the entire group gathered around and started feeding on the tree, leaving very little space for Big Boss. This made him move away and find another tree to debark and push down. Possibly to the consternation of Big Boss even this tree was taken over by the group. Then it occurred to Justus that one of the reasons for Big Boss leading a solitary life in summer (the major reason was lack of sexual desire) could be to avoid competition with cow groups over food trees which are hard to come by in a degraded and heavily disturbed habitat like Chilla.

We have quantified debarking by elephants in Rajaji National Park and in Corbett Tiger Reserve. Debarking begins in winter and reaches its maximum in summer. Summer in most elephant ranges is characterised by a lack of forage and water. This is also the time when the elephants suffer from a lack of calcium in their diet. This makes them debark and feed on cambium, the internal tissue of the bark, along with which plant sap rich in calcium flows from the root system to the canopy. Interestingly, debarking is much more common in Rajaji National Park than in Corbett Tiger Reserve. We attribute this to the immense biotic pressures, like wood cutting, lopping and cattle grazing, which have led to severe degradation of the habitat in most places. The reason for the area around Dhikala not having many incidents of debarking is due to the rich forage that the Ramganga valley offers even in summer. The streams, rivers and the soil around Dhikala may be richer in calcium than in Rajaji National Park. This, however, needs to be studied.

The tragic end of Big Boss reminds us that all good

and bad things in life should come to an end. In November 1995, the 50 year old Big Boss came into *musth* and he followed a young female who was in oestrous and in the company of a large herd. According to the wildlife guards the herd had about 60 elephants and there were 3-4 bulls with the herd. On the eventful day, when Big Boss courted the female, the other bulls joined together and attacked him. The fight raged over the river beds and hills, through forests and open areas. The guards tried to disperse the bulls by firing in the air but their efforts were in vain. Big Boss fought valiantly but the fight was uneven. In one place, Big Boss, who should have been extremely tired by this time, slipped and fell into a narrow *nallah* from where he could not get up. This made him totally vulnerable to his attackers, and exploiting his hapless situation, one bull, which was in its prime and had dagger-like tusks, gored him to death. Thus ended the life of a magnificent and noble bull (he had allowed us to approach him very closely on several occasions) who strolled through the Chilla forests in all his majesty for more than two decades.

The elephant bulls of Corbett Tiger Reserve and the adjoining areas are a peerless asset, which need to be assiduously protected for ecological and aesthetic reasons. The sight of magnificent bulls, strolling across the Dhikala *chaur* giving the impression that they are lords of the Reserve and afraid of none, can thrill any visitor. Their trumpets and fights, both mock and real, can bring a vision of a primordial world to an observer when woolly mammoths roamed over the land and man was a hunter and as well as prey.

Much needs to be done to ensure the future of these bulls. Effective protection should be continued. Corridors across the Ganges and Khoh rivers should be strengthened so that the bulls can continue to pass on genes from one population to the other. Corbett Tiger Reserve should be expanded to stretch between the Kotdwar-Lansdowne road in the west to the Nainital-Kaladhungi road in the east. This vast stretch of prime tiger and elephant habitat should be freed of human disturbances, as much as possible, which will benefit all forms of wildlife.

Prior to 1993, *gujjar* buffaloes roamed over the banks of Palain river in Halduparao range and their presence made large wild mammals shy away from the area. But the immense wildlife potential of the area was realised by Shri. A.S. Negi, IFS, former Director of Corbett Tiger Reserve. In February 1993, by persuading the *gujjars* to move to another area, he freed Halduparao from *gujjars*. The results were remarkable. When we visited Halduparao in May 1995, a herd of elephants trailed by a massive bull, was feeding peacefully. Numerous sambar were seen in the nearby Mandolti *sot* which was once an abode

of buffaloes. Tiger signs were numerous in the *sot*. Such far-sighted conservation measures need to be taken all over the Rajaji-Corbett elephant range, where human disturbances destroy critical wildlife habitats. Fortunately several conservation agencies like the newly formed "Operation Eye of the Tiger" and "Corbett Foundation" are willing to help solve the problems of the Reserve. If suitable conservation measures are implemented in the field, the future of the awe-inspiring bulls and other wildlife of the area can be safe-guarded for several more decades.

EXEMPLARY SACRIFICE FOR PROTECTION OF WILDLIFE
(As informed by Shri R. G. Soni IFS,
CCF & Chief Wildlife Warden, Rajasthan)

Bishnois from Rajasthan, Haryana and Punjab are well known for their outstanding contribution to protection of wildlife. It is due to their staunch belief in their religious commandments that we have thousands of blackbucks, chinkara, blue bulls etc besides khejari (*Prosopis sps.*) trees in thousands of square kilometres in western Rajasthan without any significant and extra efforts made by the Government to this end. Once in a while, examples of extreme sacrifice for wildlife protection are heard from the land of Bishnoi. A recent sacrifice was made by **Shri Nihal Chand Bishnoi** of Bikaner district.

On 3rd October, 1996, 5-6 Bawarais (a hunting tribe) came on camel back and shot more than 6 chinkaras (*Indian gazelle*) near Sanwatsar village (District-Bikaner). Hearing the gun shots, a few Bishnois from the village gathered and chased the poachers in a tractor. In the effort to catch the poachers, Shri Nihal Chand Bishnoi lost his life when he succumbed to his injuries due to bullets fired at him by the poachers. Late Shri Nihal Chand was only 32 years old and the only earning member in his family comprising of his wife, two minor sons and four younger brothers who were all dependent on him.

Our readers who are moved by this exemplary case of sacrifice for the protection of wildlife, and feel concerned for the dependent family members of Late Shri Nihal Chand Bishnoi, may contact Shri R. G. Soni, Chief Wildlife Warden, Rajasthan, Jaipur for sending of any contribution/donation to the aggrieved family.

EDITOR

RELATIONSHIP OF SOME INSECT PESTS WITH WILDLIFE

V. P. Uniyal

Combining some contradictory qualities as adaptability and specialization, insects hold a key position in economy of most living things. There is scarcely a plant that does not contribute to needs of one or more kinds of bugs and a considerable segment of the insect world has become adapted to making a living off the large form of animal life. Wildlife supports these pests in great variety.

Insects and their close relatives differ markedly in their relationship to wildlife. Some depend on the host during their entire span of life while others, including many ticks, experience intervals away from the host, and in the course of development a given individual may infect many species. In case of many lice and mites, some have reached a level of specialization that restricts them to a single species of animal. Still other, such as adults of many of the biting flies and mosquitoes, are even less discriminating in the selection of hosts and are essentially free-living except for periodic visits for the purpose of obtaining a blood meal.

Additional differences are to be found in the way in which these pests attack wildlife and in the importance of such attacks to the welfare of the individual. These relationship between insects and wildlife define logical classification. A few considerations of the characteristics and habits of the more important parasite groups will provide an insight into the nature of the problem. A number of insect-borne diseases of wildlife are capable of transmission by species of widely different parasite groups.

Ticks, which are closely related to insects, are distributed widely, and practically all mammals are attacked by one or more kinds. The habits of most wild birds are such that opportunities for infestation with ticks are not great. However, even among this group, many that nest or feed on the ground become

parasitized by the soft-bodied ticks (*Argasidae*). Ticks hold a special significance for wildlife in their capacity for disease transmission. The effect of their feeding can be an important factor in predisposing animals to other pests and diseases. Through sheer numbers they frequently reduce the vitality of the host even to the point of occasionally being the direct cause of death. Various degrees of blindness in birds are known to result from attachment and feeding by this pest in the region of the eyes, and occasional mortalities are reported wherein unusual infestations appeared to be the direct cause. Many adult flies, such as black flies, horseflies, and deer flies are vicious biter and are more than a moderate annoyance practically to large forms of wildlife.

The Hippoboscidae flies are full-time residents on many species of wildlife. They occur on numerous song birds and are frequently found on predatory birds as well as on a number of game species. Members of this family also infest mammals, and at times are found on deer and other ruminants in considerable numbers. Species on mammals, which are commonly called ked flies, emerge from the quiescent pupal stage with wings, but these are shed a few days later.

Myiasis is the term used for the disease condition in animals or man caused by the attack of the larvae of flies on the flesh. The screw-worm is one of the most important species causing myiasis. The screw worm fly lays its eggs on any wound or broken skin of warm-blooded animals. The eggs hatch in a matter of hours, and the tiny larvae burrow into the flesh, creating holes or pockets. As the larvae grow, the suppurating wound enlarges and become more attractive to flies. Usually more and more eggs are deposited in the wound, and the large number of larvae soon cause the death of animal unless the wound is treated.

Flesh flies belonging to the family Sarcophagidae are known to attack wildlife. Adult flies apparently deposit their living larvae on nestling rabbits at the time of birth or shortly thereafter. Bot flies of genus *Cephenomyia* are large, gray-brown, bee like creatures with the most rapid flight among the insects. Several species of these flies are parasitic on rodents. The larvae of these flies are called simply bots and cause a skin myiasis. These bots have been collected from rabbits, squirrels, mice and other rodents. They are probably of minor importance as far as wildlife is concerned.

The biting lice (**Mallophaga**) are among the commonest parasite of birds. The effects of the lice on wild birds are not considered to be of real consequence. Heavy infestation cause damage to the plumage. Superficial feeding may cause some reduction in vigor. They are not known to be important from the standpoint of disease transmission. Although both the biting and sucking lice infest mammals, it has been found that a wild host species seldom supports representatives of both

groups regularly. Infestations of biting lice occur rather commonly on deer and other species, but their effects, as in the case of birds, is not of real consequence. The sucking lice, in addition to being potentially important in the transmission of disease also constitute a more serious parasitic load than do the Mallophaga. Although biting lice hold significance for their transmission of disease in humans, this relationship in wildlife seems mainly to involve their role in the transmission of endemic typhus.

Mites, which are relatives of ticks, make up to a large group of diverse habits. Some like as the mange mites and feather mites, are full time parasites of wildlife and spend all stages of their life history on the host.

The transmission of disease by insects has a significance towards management of wildlife. Over and above, most of these insect-borne ailments are also infectious to humans & domestic animals.



I advocate welfare of the Insects

Country Profile

SARNADIH

S.E.H.Kazmi

I am sitting in a temporary hideout near cave number two just behind the Sarnadih forest rest house. The hideout has been constructed by tying together young Sal saplings with some climbers. Francis Khakha, the wildlife watcher has brought a goat for "Him". This goat is old and scraggy. Her left hind leg has been tied by an iron-chain. she is bleating loudly and watching in the direction of the cave. Her eyes are alert and searching. Still she has not seen her enemy but she knows that he is there. She could feel his frightening presence in the air - her old enemy whom she had dodged many times in her youth. Today her death is certain if he comes out for his evening stroll. She struggled again to free herself from the chain but could not do so. Francis has done a perfect job by nailing the chain into the ground. She was confused and looked to those legs with which she had outran the wolf many times. There is not much activity in the forest. The temperature is more than 40°C. I can feel the hot blows of "Loo" on my face. The dry Sal leaves are making a lot of noise supported by wind. They are jumping, colliding, pushing, caressing and trying to throw each other into oblivion. Perhaps they know that no human being is around to disturb them in their play or the other way around? The goat is crying her heart out, probably, cursing her master, who has put her in this predicament or she knows by her instinct that her day of reckoning has come.

4.15.

Now the goat has become silent. May be she has started thinking about the happy bygone days of her childhood and youth. Who knows? May be she has. she was born in a lush green paddy field of Aksi village in Chechari valley of Mahuadanr. It was a bright winter afternoon. The first human-being whom she met, was Taramani, a dark half clad Oraon girl of about ten years. She had touched her lovingly and helped her in getting up on her weak unsteady legs. Tara had guided her to her mother's teats and

later that day she had carried her in her lap back to her home in Aksi. The old man who came out of the dark mud house, had smiled on hearing of the new arrival. "She is yours", that was the only comment he had made. Next year Tara got married and she had followed her to Sarnadih, as a part of her dowry. Since then, much water had flowed in the Burha river. She had survived the frequent flash floods and occasional droughts. In fact, the droughts occurred as a matter of routine in this part of Chhotanagpur plateau. They said that this area was a part of larger rain shadow area of Palamau, but she didn't understand all this. She only knew that the rains would not come. The crops would wither away and there would be shortage of food in the village. All the village wells, small streams and even the mighty Burha would dry up. Then the wild animals, cattle and villagers would share the little water wherever it was available in the forest. The men and women would look to the sky and cry. They would beg for forgiveness for their known and unknown sins. Then the village Baiga would order all of them to assemble at Sarna-the sacred grove of Sal trees on the western side of the village. He would sacrifice a black chicken or a goat-depending upon the severity of the drought, and seek blessings of the spirits of his forefathers and other jungle gods. All of them would drink Mahua and dance on rhythm of Mandar-the universal music of tribal life. Next day when the revelry was over all of them would go to the forest in search of food and life. At that time the forest embraced all its hungry childrenlike a mother and provided all it had in the form of seasonal fruits' flowers and tuberous roots. But, that was many many seasons before.

4.40 p.m.

Again that brute Francis came and twisted her ears. She cried with pain. Oh, why these human-beings have to be that cruel to achieve objective. She started bleating loudly, perhaps trying to call her old friends.

But who are her old friends in the forests of Samadih and Urumbi? If one is allowed to make a guess may be she is saying good-bye to the giant Sal trees of Sarna, whose green leaves and flowers she had eaten with great relish since her child-hood or to mahua trees whose sweet smelling flowers tasted so good and for which she had to compete with Tara.

She remembered how Tara would get up early in the morning and rush to the forest to collect mahua flowers. She would also accompany her and run towards the old tree. she had always beaten Tara in this race. There, often she met her cousins-Spotted deer and Sambhar. They came in large numbers when she was young. But, gradually they had stopped visiting the old mahua tree. May be they had migrated to some distant area or have all of them died - she just wondered. she along with her cousins would try to eat all the flowers falling that night. Then Tara would arrive and the deer and sambhars would run away to the forest. She would also be chased by Tara for some distance but she would come back quickly. This sequence of short chase and her return would be repeated many times till Tara's bamboo basket was full and she could not carry more. Tara would leave for the village and then there would be a left over party for wild animals and birds. She would also stay back under the tree and try to gobble as much mahua flowers as she could. He presence was not resented by the wild denizens of the forest. At times she had wondered as to why did her cousins avoided human-beings. Today, she knew the answer. She had suspected that human race was selfish, but today her suspicions were confirmed. She thought bitterly about the treachery of Tara and her family. She had given them the best of her life. How many times her young ones had been taken away by the bearded men in Lungi and Kurta in exchange of a few coloured papers that they seem to like so much. How many times she had saved their children from hunger? She thought about the half a kilogram of milk taken from her daily. Often the villagers had said that she was better than their numerous cows in respect of providing milk. At that time her heart would swell with pride. The same feeling returned momentarily, but the severe pain in the hind leg brought her back to the hard realities of present - that Tara has sold

her to Francis Khakha - the watcher of the Mahuadanr Wolf Sanctuary, who has tied her with a chain - as a bait for her old enemy. Her fate seemed sealed.

6:00 p.m.

I look through the binocular to the object of my interest. The goat is lying on the ground but her eyes are still in the direction of the cave. She is panting badly and white froth is oozing out of her mouth. She has become silent and dull. Has she reconciled to her fate? The red vented bulbuls and seven sisters are singing their evening prayers. The drongos have also joined the chorus. The Loo has stopped. The cacophony of dry Sal leaves can not be heard any more. The Sal trees are almost standing still. Have they become tired after a whole day of hard labour of converting sun light into organic energy?

The wolf has not turned up so-far. Disappointed, I prepare to leave, but then some disturbance holds me back to my position.

6.05 p.m.

She could hear some human voices, the familiar voices of cattle grazers returning with their herd of emaciated cows and buffaloes. The voices are coming nearer and nearer. Her confidence returned. She got up to welcome the safety of human-beings. she thought that today "He" cannot take her. She will go back to the village with her new master. She seemed relaxed and started looking expectantly in the direction of the approaching voices.

6:07 p.m.

She was still looking in the direction of approaching safety when he emerged from the Lantana bushes from her rear. He moved silently like a thief - he was a thief because he had come to steal the life from her. He rushed to her and caught hold of her throat. He almost lifted her off the ground and shook her violently. She struggled against the grip but she was of no match to the powerful jaws of the wolf. Her body shivered for some time before becoming limp. Her story was over in two-three minutes. He released her body on the ground and tried to pull the body back into the lantana bushes.

6:10 p.m.

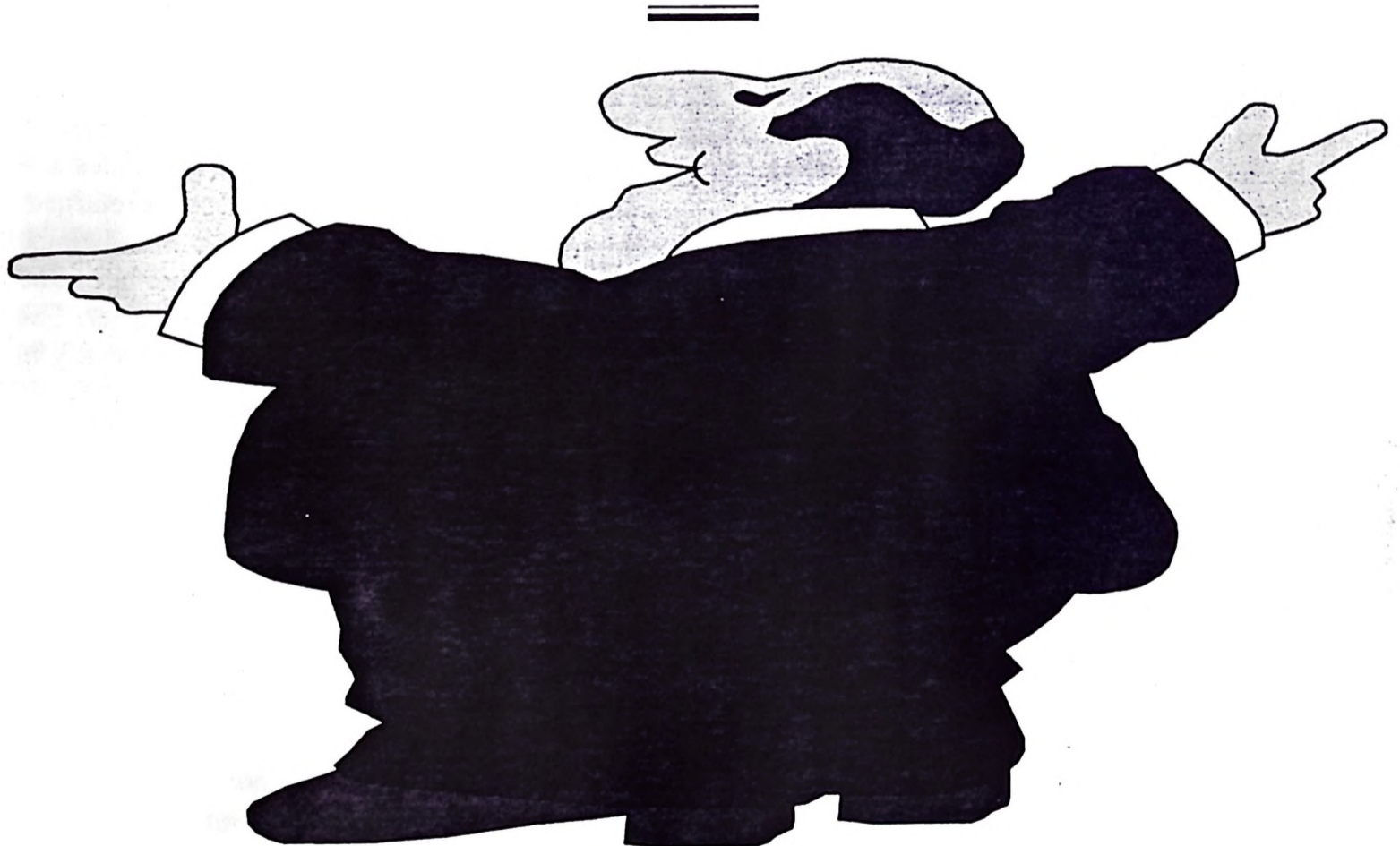
Then "He" heard the approaching voices of his "enemies". His old enemies who had deprived him of his share of deer's and wild boars by excessive hunting. Then their goats and cattle had destroyed the forest around his favourite dens of Sarnadih and Urumbi. Even ground birds and hares were difficult to find. Most of the time his family was hungry and to fulfil his parental obligation of providing food to his mate and cubs, he had started lifting their goats and pigs. They had come to his den in a large group and had put fire in his den. His mate and cubs could not run away because the marauders had blocked all the possible escape routes of the den by putting heavy stones on them. His entire family was choked to death. Then they had tried to extricate the bodies of his family members, but could not succeed. Later when the killers had left, he had tried to enter the

den to reach his family but he failed. His family had rotted in the den. He had cried for several nights and his howls could be heard as far as up to Mahuadanr, about ten kilometres away. More than twelve full moons have passed, when it happened but still, he could not forget his family. Since then, he had not met any body of his kind. He was the last member of his pack. He felt very lonely and sad. Reluctantly he moved away from his kill.

6:12 p.m.

The shepherds arrived on the scene and started commenting. It was a leopard. No, No, it was a tiger. Oh no, it was hyena. No, it was wolf. Oh somebody had tied the goat deliberately. Why should anybody tie his goat like that? It has been killed just now. Let us take the goat to the village and have a party. And many more.

PS. It was then that I decided to show myself. I was very excited to watch the wolf at his kill. At the same time I was sad when he departed without having his meals. Will he come back to his kill again in the night? I instructed the staff to guard the kill against the greatest predator of all - The Man.



Leave some space for others to survive

AGONY OF A TIGER

G. Areendran

Tigers are considered the most majestic animals in our forests. Tigers in natural circumstances die of diseases, territorial fights, natural calamities etc. but the major causes of their decline are habitat loss and poaching. They are poached upon ruthlessly for their skin, bones, claws, and other body parts. The launching of "Project Tiger" provided a measure of protection for the tiger and has been successful to an extent in preventing further deterioration of its habitat. Although the government has tried its best to prevent incidents of poaching, lack of manpower and firearms make this job extremely difficult for the forest department.

One incident of tiger snaring took place during my research work at Mehao Wildlife Sanctuary in Arunachal Pradesh. It was in the first week of March 1995. The Divisional Forest Officer (WildLife), Roing received a message that a tigress had been caught in a snare on the banks of a tributary of river Digaru near Tezu town. The DFO and the range officer immediately rushed to the spot to assess the condition of the tigress. Next day I visited the spot along with the range officer.

We discussed the possibility of capturing the tigress so that its wound could be attended to. By the time we reached the spot, it had already become dark and since there was no proper road to the site we decided to wait until morning.

At around 0900 hrs the next day morning, we arrived at the spot with a wooden cage (approximately 10 x 8 feet). Transporting the cage was a major task since the path was difficult. The news had spread to the nearby villages by then, and the local people started gathering at the spot. The Tezu circle Conservator of Forests, the DFO and the Namdapha Project Tiger officials were present at the spot.

The tigress was found on a sandy bank at a spot where the river was narrow and steep, and therefore it was difficult to approach from the bank. We arranged a boat in which the cage was placed, and moved across

the river. Our first move was to free the tigress from the snare. Since there was no 'dart gun' and tranquillizer available with the forest department, we were left with no other option other than capturing the tigress physically. We first looped the tigress's forelegs with the help of a rope and tightened it, and then we noosed the head. We then got down to the river bank and had a closer look at the animal. The wound was about 3 inches wide around the hip and it was very deep. The chances of the tigress surviving appeared to be dim. With the help of sticks and poles we pushed her closer to the boat where the cage was kept. The tigress did not show any aggression at all as she was considerably physically weak. The DFO, Namdapha tried to cut the steel wire around the animal's hip with a pair of pliers, and after great difficulty he managed to take it off. Finally we shifted the tigress from the spot where she had been lying for the past 12 days, to Namdapha and arranged medical treatment for the wound.

The main credit for the success of this operation goes to the local forest department labourers who achieved this task without even tranquillizing the tiger. The Conservator of Forest (Tezu circle), DFO, Namdapha, DFO, Tezu, and the Range Officers (Mehao WLS & Tezu) should also be highly appreciated for taking the initiative to save this tiger. The officials of "Project tiger", Namdapha who were present during the operation also did their best. However, even after so much effort the tiger survived only for 15 more days, because the wound was severe and had got infected.

I strongly feel that at least all Project Tiger Headquarters should be provided with tranquilizing equipment and drugs. Trained manpower is also absolutely essential to handle such cases. Time is running out and we must act fast in order to prevent losing yet another of these magnificent creatures.

REPATRIATED

H.S.Pabla

Five years ago, I joined WII, still wondering whether it was a good decision. I do not think I had any scientific credentials to back my selection for the Institute, other than 14 years in the field and whatever impression I might have created on the powers that selected me. My reasons for joining the Institute were many, the principal one being the desire to get an opportunity to update myself. In the field, I neither had any access to any literature, nor time beyond piles of files, meetings and inspections. At WII, I spent five wonderful years, although objectives, as usual, have in a way, only partially getting met. Except the last year of my stay, in which I worked to complete a Ph.D. thesis on the work I had done 10 years earlier, there was little time to read or write. However, I think I have learnt a lot just by being in an intellectual environment and picking up crumbs of knowledge and wisdom as time passed.

At the end, I was happy to go back. Not because I was unhappy here but simply excited that I would now be able to implement all the great ideas in the field, and would, somehow, change the World of forestry. Kids were sad to leave behind their home, friends and neighbours but excited at the prospect of travelling by air, only the second time in their lives. I was sure that every thing would be fine as Bhopal, where I was likely to be, is a great place to live.

I took over as Additional Director (HRD) in the World Bank funded M.P. Forestry Project. A lot of exciting things are happening in the department. JFM, peoples participation, ecodevelopment, Assisted Natural Regeneration (ANR), Village Resource Development Programme (VRDP), Biodiversity Conservation, Total Quality Management (TQM), Competency Based Training (CBT), fellowships, study tours, consultancies, Geographic Information System (GIS), Management

Information Systems (MIS) are the words bandied around as a routine. These jargons were not there when I left the department five years ago. I am looking forward to be a part of this revolution and do hope that my stint with WII will help me contribute something to this mammoth change that is in the offing. But

I am worried. Implementing modern ideas would need modern methods -- decentralisation, fast communications and fast paper work. I do not know how and who in the government would take decisions on the files on which mine would be just one of the many signatures. My phone bill can not be more than Rs.500/- at home and Rs.1000/- per month in office (No STD). We can not contact our international associates on phone or fax from our office. A DFO can purchase stores worth Rs.3.00 lakhs at a time but only Rs.100/- worth of stationery. While my work requires working in English, all our clerks, stenographers and typists do not understand English. We have one working computer and there are 8 officers and 8 stenographers, always in queue !

Once, I ordered a cattle proof trench (CPT) to be dug on the boundary of a national park, to stop grazing. When the trench did not stop the cattle from entering the forest, I went round inspecting the trench. It was properly dug up even wider and deeper than the prescribed size, all over. At last I came to a point, where it was a right of way over the trench. On questioning, the staff said that the adjoining village needed a way for their morning nistar (toilet), and to retrieve cattle that may enter the forest by jumping the trench !

And objectives, naturally, have an uncanny way of getting only partially achieved ! I would be delighted to be proved wrong.

E-MAIL AND ITS UTILITY IN INFORMATION RETRIEVAL

A.K. Sardar

Introduction :

E-mail stand for Electronic mail. It is a substitute of paper based mail system and may compliment communication via telephone or data network, and other new technologies communication. Through the E-mail an individual may send messages to one or more user over a computer network. E-mail is the generic name of non-interactive communication of text, data, images or voice messages between a sender and designated recipient by systems utilizing telecommunication links. Thus telegraph, telex, facsimile, voice mail and computer based message systems fall within the E-mail.

E-mail is one of the most popular uses of Internet. Different types of computers use different software for sending and receiving E-mail.

Types of E-Mail :

Depending upon the method of sending, E-mail can be categorized into four types.

1. One-to-One : This is the most commonly and widely used E-mail system. For example A is sending a message to B who is staying in another city or place.

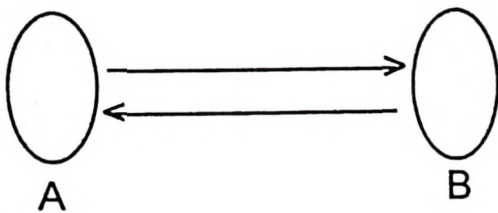


Fig.1

2. One-to-Many : In this case, one person sends a message to many people at a time. For example, sending information or notice about meeting, conferences, seminar etc. to many users at a time. It allows mailing list system.

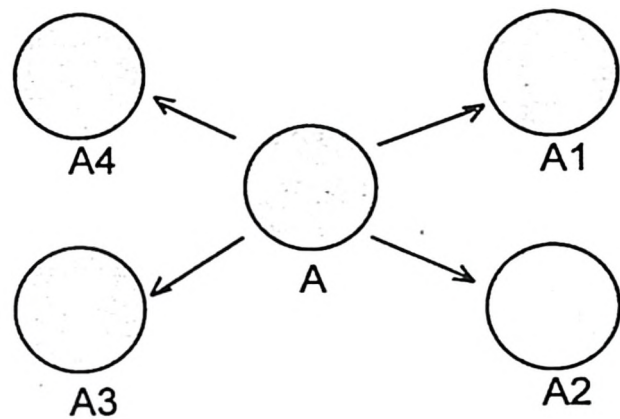


Fig.2

3. Many-to-One : It is just reverse to the One-to-Many type. Here several users send information to the system operator. Another example of this could be News reporters sending messages to the news editor. This is used for Electronic Publishing.

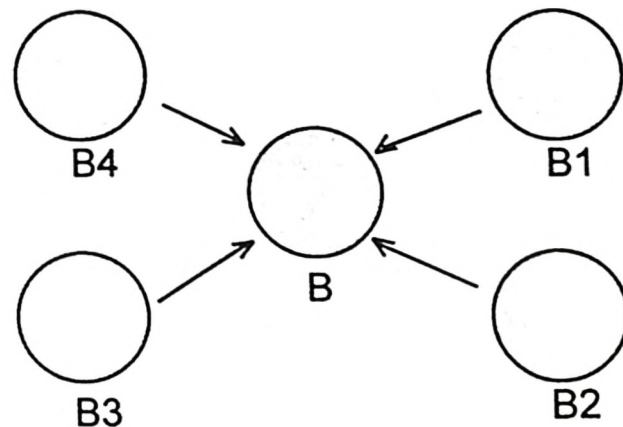


Fig.3

4. **Many-to-Many** : It allows to send message in between various user of a network. It is like the Bulletin Board System.

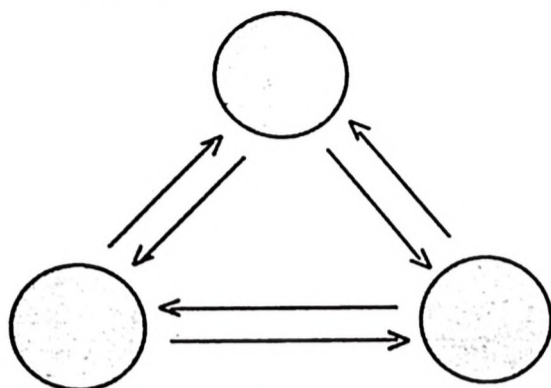


Fig. 4

Uses of E-mail

E-mail is useful to us in many ways in our day to day activities. Some of the important uses of E-mail may be sending and receiving messages, Sending manuscript, Electronic Publishing, Electronic Journals and Reprints Delivery, Bulletin boards, Electronic conferences, SIG (Special Interest Group) Conferences, Finding address, Conducting survey, Voice and Video mail, Access to network, Inter Library Loan, Reference service, Document ordering Document delivery, Access to database in remote ares etc.

1. Sending messages and manuscript : E-mail is one of method to send a manuscript to the editor of a concern journals for publishing. But many publishers still ask for hard copy along with the electronic version . It can save a lot of time both for publisher and authors. However, a few ask for a copy of the same in the floppy because there is a possibility of errors while transferring the matter electronically from one network to another network. It may be due to incompatibility of Protocol or word processors or network error.

2. E-mail Bulletin Board Services is similar to the Library Bulletin Board Services where information in tacked up for every one to read and is taken out when it is no longer relevant.

3. Electronic conferencing : E-mail will help the users in electronic conferencing on a particular topic/

subject. In this case user is required to write his fact finding, problems, experiences etc. and other end group will able to get the information and will give their ideas and solution to the problem etc.

4. Special Interest Group (SGI) or News Groups Conferencing : People working on a particular area/ subject may form a special interest group on a computer network and interact with each other through E-mail. These include sending information about meetings, conferences, experiences, ideas, etc. Messages are distributed to people who share an interest but may not know each other.

5. Library uses : E-mail is useful in libraries in several ways such as

a. Inter Library Loan (ILL) : E-mail is one of the effective ways to send requests about an article or other information to another library and obtain the same. Now a days, it is quite simple since most of the libraries use ERNET, NICNET, DELNET, INFLIBNET etc. to send ILL request to other libraries. However it is not popular in India. ALANET users and JAMET users in USA and UK respectively operate ILL through E-mail.

b. Reference Service : E-mail can be used in two ways for providing reference services and ready references; eg. headquarter of IUCN, address of ICIMOD, etc.

c. Document Delivery and Ordering : Online Document Ordering facility through E-mail is available with vendors and publishers also some of the document delivery centres, are using this technology for the purpose in India as well as abroad. In India INSDOC provides the machine readable document through E-mail on request. Dialmail an E-mail of Dialog database (now known as Knight Ridder Information) allows downloaded information through E-mail.

d. Access to other Network : E-mail also allows to login into the different type of network with some utility interfaces. It is only possible when there is compatibility of protocols.

e. Access to Databases in Remote Area :

Using E-mail facility of SIRNET of INSDOC one is able to access indigenous databases of INSDOC. Right now around ten databases are there which are being updated frequently. The databases are MAPA - Database of Medicinal and Aromatic plants, ISA - Database of Indian Scientific Journal articles with abstract, NUCSSI - Union catalogue of Scientific Serial in India, INPAT - Database of Indian Patent, BIS - Database of Indian standards etc. Using INFLIB mail one is able to access the database of a series of Indian University and Indian Subject Experts.

Basic requirement for E-mail

- Sender (Human beings, Some applications, Group of people)
- Receiver (Human beings, Some applications, Group of People)
- Message (Text, Data... etc.)

Hardware and software requirement to set up an E-mail facility

1. PC/AT with 286/386/486 process with at least 4MB RAM, 40MB Hard disk drive.
2. A modem that will operate at 9600 band rate.
3. Communication software (Such as Procomm, Procomm plus X modem etc.)
4. Local telephone line - (INET)

E-mail Address

Basically E-mail address has two parts

- User name
- User's machine address

Example : Username@machine.domain
mcs@sirnetd.ernet.in
mcs - Username
sirnetd - Machine name (host)
ernet.in - Domain
in - India

wii.isnet@axcess.net.in
WII.isnet - Username
axcess.net.in - Domain
in - India

Internat address

Example : Username@machine.domain
Username%Local domain.domain

ftzgibb@indiana.edu
ftzibb - Username
indiana - machine name (host)
edu - domain (for educational network)

E-mail in India

Though E-mail Technology is emerging fast in India and accepted by the people, still its use in India is limited. Now a days it is popular in the corporate sector.

Some of the E-mail providers in India are SIRNET, ERNET, NICNET, DOE ISNET, VSNL and most of the network provides E-mail facility with their Network. The library network like DELNET (Delhi Library Network), CALIBNET (Calcutta Library Network), BONET (Bombay Library Network), MALIBNET (Madras Library Network), ADINET (Ahmedabad Library Network), INFLIBNET (Information and Library Network) and many others provides E-mail facility with their network. Beside all these a no. of commercial vendors are also available in India.

Regular Features

A REPORT ON THE ONE-WEEK CAPSULE COURSE IN WILDLIFE MANAGEMENT FOR IFS OFFICERS

B. K. Mishra

The one-week Capsule Course in "Wildlife Management" for IFS officers which was scheduled in May, got postponed because of the Lok Sabha elections and finally held during 2-6 Sept., 1996. This course was sponsored by the Ministry of Environment & Forests, GOI under its compulsory training programme. In all, 15 participants from eight States attended the course. The course was held in the Institute at Chandrabani, Dehradun. The participants could avail of the Institute's well equipped classroom, computer and library facilities besides the newly constructed residential accommodation in the Institute's new hostel.

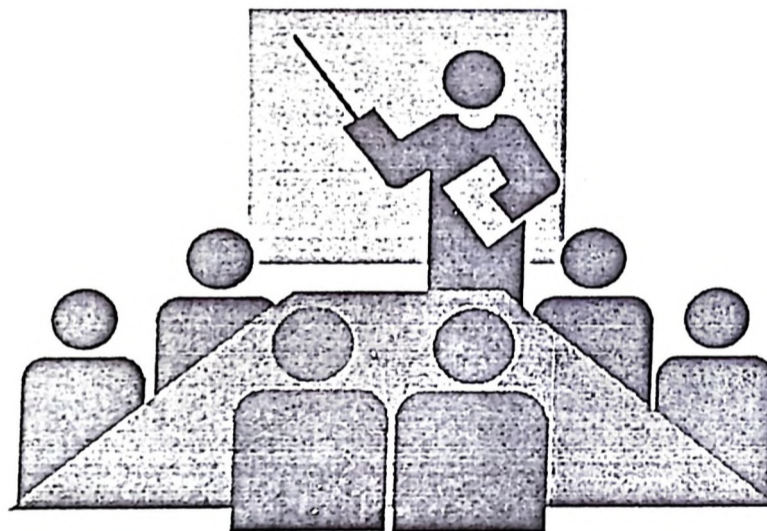
The overall objective of this short orientation course was to acquaint the participants with the critical issues in protected area management and the plausible strategies which can be adopted to mitigate these problems. Altogether, 15 sessions covering different issues in protected area management were planned. This time, one complete session on "wetland management" was a new addition to the course curriculum beside one lecture on "externally aided project". Relevant reading material related to

the subjects covered were supplied to the participants in the form of compendium and handouts. Recent articles on the application of GIS and remote sensing techniques, and issues on wetland management were also provided to the participants. Beside the senior and inhouse faculty of the Institute, four outside resource persons were invited to give their inputs.

The training methods used were interactive and participatory discussion sessions, audio-visual programmes and field visit to the Chilla part of the Rajaji National Park, beside a few classroom lectures.

Participant's involvement in different programmes of this course was complete.

Interaction between the faculty and participants, and also among the participants during the class-room sessions and field visit was remarkable and quite encouraging. The overall impression of the participants about the course was "Very Good"; while 33% of the participants rated this course as "Excellent", 67% of them rated as "Very Good". Most of them felt that this short training would be quite useful in their current as well as future job assignments.



WORKSHOP ON APPLICATION OF GIS AND REMOTE SENSING IN WILDLIFE MANAGEMENT

V. B. Mathur

The Institute organised a workshop on the Application of GIS and Remote Sensing in Wildlife Management from August 12-20, 1996. This workshop was organised specially at the request of Madhya Pradesh Forest Department in which 7 officers from Madhya Pradesh State participated. Professor S.K. Bhan, Dean, Indian Institute of Remote Sensing, Dehradun inaugurated the workshop and delivered the key note address. The participants

were provided hands on training in visual interpretation and Digitization. They were also exposed to Desk Top GIS, habitat characterisation using remote sensing and GIS, HTML procedures and introduction to the internet. All the participants expressed their satisfaction at the end of the workshop and requested for initiation of collaborative projects on application of GIS and Remote Sensing in Wildlife Management.

BRIEF REPORT ON X ANNUAL RESEARCH SEMINAR

The X Annual Research Seminar (ARS) was held at WII's Chandrabani campus from 17-19th September, 1996. Twenty eight presentations were made by Research Associates, Senior & Junior Research Fellows, Technical Assistants, five faculty members of WII and two presentations were given by WII alumnus based on their work on WII projects. These presentations were based on **16 ongoing projects and 9 completed projects**. The seminar was organised in ten sessions which were all chaired by conservationists who were attending the ARS. About fifty guests including Chief Wildlife Wardens, Members of WII's Society, Governing Body, TRAC and SAP and wildlife scientists attended the ARS. Scientists from other organisations in Dehra Dun also attended the sessions. A few NGOs and the media personnel also represented in the audience.

All presentations were judged by a panel of five judges viz: Dr. S.M. Pandya, Dr. V. Gnanaprakasam, Shri S. Debroy, Shri S.C. Sharma and Shri Valmik Thapar. The following presentations of the researchers were adjudged among the top five in the seminar.

S.NO.	NAME	TOPIC OF PRESENTATION
1.	Mr. Bivash Pandav, JRF	Hatching and emergence of <i>Lepidochelys Olivacea</i> and the impact of coastal development on their seaward orientation
2.	Mr. Karthikeyan Vasudevan, JRF	Methods for studying rain forest amphibian fauna of the Western Ghats of South India
3.	Mr. Yashveer Bhatnagar, SRF	Habitat utilization by ibex in Pin Valley National Park
4.	Ms. Prachi Mehta, SRF	Selective logging and bird species composition in Melghat Tiger Reserve, Maharashtra
5.	Ms. Aparajita Datta, JRF	Responses of arboreal mammals to selective logging in western Arunachal Pradesh, North-east India

All five researchers were awarded book grants amounting to Rs. 750/- each.

From the Wilderness

ONE IN A MILLION CHANCE IN THE LAND OF PASTEL SHADES

S. Sathyakumar

On 6th July 1996 as we started our trek from Rhumchung to Rhumchung Phu in Hemis National Park, Ladakh, I asked Joe (Dr. Joseph L. Fox) 'How are the chances for a Snow leopard sighting? He replied, 'One in a million!'

Since 1989, I had nurtured the desire of sighting a snow leopard as I started my research project in Kedarnath WS where one confirmed sighting was reported. I had to be satisfied with only suspected indirect evidences during the three year study and in Govind WS during the surveys in 1992. In 1993, when I had the unique opportunity to conduct wildlife status survey in Nanda Devi, I hoped my wish to come through. Here again, though I had spent 52 days in the snow leopard country, the elusive cat did not give me a peek-a-boo. Undoubtedly, I must have imagined atleast over a million times how my first snow leopard encounter is going to be! It is the one I wished the most but also the one that eluded me the most!

Now, in this first venture in the Trans-Himalaya when I was hoping to see a snow leopard, Joe's reply really shattered me. As we continued our trek, I realised that perhaps what Joe told me may be true because my friend Raghu Chundawat who had conducted his three year study on snow leopard and its prey species in this area could sight the elusive cat only on a very few occasions. Once again, I had a feeling that my wish would be fulfilled later.

The pastel shades of steep barren slopes, rock and scree, the radiant blue sky, scanty vegetation,

the birds, blue sheep, the clear rivers and streams, the snow leopard scrapes and scats, green cultivated fields, the scare crows, the houses and people, horses and mules, the thin air, the serene scenes all filled my eyes and heart. I enjoyed each and every moment in Hemis NP all being a new experience. Our mission to conduct status surveys for mountain ungulates, other wildlife and snow leopard was progressing well.

On 7th July late afternoon, while observing two blue sheep on slopes above Rhumchung Phu through a spotting scope, our assistant Rhinchin drew my attention towards some animal movement in a scrub near by. On seeing this animal in the scrub, the blue sheep ran down hill. That one glimpse looked like a silver grey animal with a long tail. With out a thought, I exclaimed Snow leopard! A great feeling running all over and I could feel it in every nerve. For the next two hours, all our eyes were set on the scrub and the blue sheep. As this slope was west facing and the sun was about to set, we waited and got a glance of the animal once again when it shifted its position a little. Our observations on the blue sheep continued. The blue sheep remained cautious and moved slowly feeding and looking up towards the scrub. The dusk light was getting poor and finally this animal came out, stretched and started moving. Oh No! It is a Wolf! What an anti-climax! Later, one of my friends said 'That's wishful thinking'. I regretted for exclaiming in haste but this only showed how one snow leopard sighting would matter to me.

The next day's trek to a higher camp at 5000m was simply great blue sheep sightings, snow leopard scats, scrapes and spectacular view of the area. The camping site was a very large meadow and we called it the marmot meadow as the entire meadow had large number of marmot holes and high abundance of marmots. On the 9th morning we conducted counts for marmot holes and after some rest in the afternoon I fixed up the spotting scope to scan for some wildlife sightings around 1600 hrs. As usual, the horsemen, porters and cooks showed so much interest to see animals through spotting scope that every one of them took turns in the other spotting scope while I was scanning with one. Our target was those steep rugged slopes about a km away from us on the edge of the large meadow. Around 1700 hrs., when Rhinchin was watching through the other spotting scope, he asked me to watch a particular spot where there was a movement. And, both of us could see it - two cats chasing each other and running down. My heart started beating faster and once again I wanted to exclaim but waited and took time to confirm it. Things were very clear - a pair of snow leopards now on the rock resting and basking in the evening sunlight. I called out to Joe and others. While Joe came running to me, a few relaxed and told me to stop kidding. Only after Joe confirmed, there was a rush to have a glimpse. Thank you God for bestowing me with this unique opportunity. Now all of us and only two spotting scopes! Now, everyone was looking through their binoculars.

For the next three hours, the snow leopards were in the field of my scope. Every split of a second was a great moment. I am for sure that I would have been the one among the few most happiest persons on earth at that moment. Joe and myself behind two scopes were making a running commentary for every movement the snow leopard made and everyone was even more eager to look at it. Joe told us that it could be an adult female and her full grown cub.

The idea of mine to get a closer look of the snow leopards by making it to the ridge above them

by taking a route which would not at all be visible to them was eagerly approved by many but Joe felt otherwise. He said 'Let's not disturb them'. He was perhaps right. We continued observing, the sun was setting, snow leopards were resting and the cook was serving (soup). What an evening and as the last stroke of light disappeared, the snow leopards were still there. Getting in my tent and later into my sleeping bag, I tried to sleep but could not. The feeling that I am in an area where just a km away the elusive cats are also resting made me feel very special and emotional as it was moment I had waited for. I felt like crying it aloud and telling everybody "Yes I have seen it".

The next morning the first thing I did was to check the area where the snow leopards were sighted the previous evening and have a recap of all the excitement. The rest of the days spent in Hemis NP were all memorable be it counting and observing blue sheep and marmots or watching chukor partridges and snowcocks; talking to local people or reading the book 'Ancient futures'; trying for an argali group or a wild dog sighting; enjoying young blue sheep acrobats or watching the donkeys and mules rolling on the sand on their return home; reading Raghu's thesis or discussing subject and many more.

I wondered how Rumbak valley supports such high blue sheep and wildlife abundance when it appears that there is not much for an animal to eat. Even in such an exciting place, there were a few moments when I felt lonely. Imagining winter conditions and isolation sent a slight shiver down my spine. Hats off to my friend Raghu who had spent three years studying snow leopard and its prey species in this area.

Ladakh - the land of pastel shades has much to offer to everybody and I was fortunate to have some of the most important ones. The beauty of river Indus, urials, hares, the view of Leh, drive upto Dha and Hanu, the Drokpas, the monastries, Buddhism, smiling ladakhis, the *ghur ghur chai*, the trek through the desert and many many more.

IT HAPPENED ONE NIGHT....

Prachi Mehta

There is nothing extraordinary about the following narration. I am certain many of you would have had more eventful and much more exciting experiences to write about. Here I have penned my feelings - for keep's sake.

As the cloud lifted slowly over his right shoulder, a part of the club also became visible. Within a few seconds, both the hunter and his dog were out in the open. Legs firmly rooted to the sky, red Betelgeuse to his right and Rigel to his left, Orion (Saptarshi) looked every inch the Greek hunter complete with the dagger and his famous belt. Sirius, the dog was sparkling its head off but this night was surely not his. At its fullest best it was the proverbial moonlit night.

And no amount of teasing by the cool breeze could disrobe the silver veil spread all over the forest which appeared crystalline and vulnerable at this time of the night. The narcissist sky kept seeking its reflection in cool layers of water between the rocks and the rocks in turn radiated the moon rays back to the sky maintaining the cool convectional current. Nightjar's whips and owl's hoots kept the sky vibrant and alive.

Down on to the earth, a family of gaur filling up for the night amidst occasional alarmed snorts and hurried movements. The probable cause of the disturbance was this white top green bottom 4 wheeler. The forest life much habituated to operate under the murky cover of darkness for its clandestine life stood exposed under the brilliance of the moon light and the only mute testimony to this inspiring night lay in the back seat of the 4 wheeler clutching on to the binocular, cameras and lenses.

This was the second night in solitude at the tourism zone in Melghat Tiger Reserve. Alone but not lonely, one could get intoxicated just by sniffing at the air

and sipping on to the cool moonlight. This heady feeling soaks the mind above the comprehensible level of exhilaration and saturation.

Suddenly, the stillness of the night was broken by the sudden flash of headlights and the sound of an approaching vehicle set the pulse rate racing. No reasoning could subside the elevated levels of adrenalin, as these intruders could be either poachers (esp. in this season) or dacoits (recently active in this area) entering the unguarded core area at this time of the night.

Knowing that truth alone never triumphs, let alone a single hapless soul in a situation like this, made exhaling also difficult. Fleeing from there was not the best available option given the recently acquired puncture in one of the rear wheels. WAIT AND WATCH had an unnerving effect which did not normalise for a few more hours even though the vehicle never neared.

As if to set the priorities right, a tiger snarled from very close. This generated the thrill and excitement leaving the earlier felt apprehensions far behind. Peafowl were alarmed at a distance, but the nearby profound gaur family quite disdainfully, continued foraging. Two more vicious snarls and that was the end of it. Disappointed yet satisfied, as contentment comes naturally from varied sources at times like this.

Hours ticked away as Orion and his dog followed the moon dutifully in its brilliant journey westwards. Scorpio raised its head in the east and the lapwings were going hysterical over nothing as a matter of routine for some more time.

The moon had gradually defected to the northwestern sky and the air had chilled up. A wobbly woolly shadow emerged on the road in front

of the vehicle. Nothing less than a subadult sloth bear could appear so playful in the middle of the night digging away on the ground. It reeled past without taking any cognizance of the green bottom standee. Whew ! that was close .

A class II Sambar stag staggered towards the vehicle and after a fairly long musing took a distaste and turned away - good for him and bad for the possibly lurking poachers deprived very rightly of his prized Holi possession ! Gaurs, the friendly neighbours were still present, occasionally stirring up the air with their feet and mouth.

The night is still young with dark long tresses of fragrant breeze and bright starry apparel. Three consecutive nights in the forest left me feeling "affected" - more emotionally than physically. On the third of March 1996, I sat atop a tree on a hammock watching a tiger kill while the deputy director and his driver sat in the vehicle below with a singular mission in mind - watching the tiger on a kill. The tiger never showed up but we were rewarded with a visibly inquisitive leopard after some ten hours. The way the bright moon bestowed, with all its might, its soft light, that night on the leopard made my greedy self yearn for more such nights. Thus the next two days were spent in the forest all by myself. And this was the last night.

The Sun wants to take over now and the sky reddens at the acceptance. Black storks and grey jungle fowl strike a chorus drowning the voices of other occupants. The sublime night vanishing, the forest begining to appear very stark and confident presently. The great bear has dropped its momento with termite heads and Bridelia fruits near the lifeless rear wheel.

Staying in seclusion in the forest taught me a lot but not enough to stop my solo ventures in future. For instance my aborted attempts at cooking Maggie-the instant noddles due to failure in striking a decent fire made me contemplative:

1. An amateur in jungle craft should carry more match boxes.
2. Combustion requires sensible arrangement of dry twigs; and finally,
3. Fires are mostly MAN MADE (As it is not so easily lit).

I also prescribe Parle-G as a decent substitute for minimum three meals (when those maggie noodles lay idle).

Fixing up the stepney on my own does not seems to be a tough job now. Only more practice will teach me dexterity and time efficiency.

And how misplaced my earlier fears felt when I learnt that the vehicle was that of a very concerned ex deputy director's who upon learning that I was alone came looking for me And now that I know, I am more scared of his wrath !

Now I am back to Dehradun reminiscing on those wonderful field days.

"Those were the days my friend /
I wish they would never end..."

Sometime, I resolve, I would be imperceptible to the animal senses and would sit right amidst them, get covered by the silver veil and teased by the gentle breeze.....

It will happen one night.....



EKLU DYAR*

Shekhar Joshi

There was a dyar (cedar) tree. Huge and handsome. Straight and tall. With hundreds of long arms bearing brownish wooden flowers. Thin needle like fingers. Such was our dyar tree. *Ekludyar* (lone deodar)!

Many other trees were also there. Pine, oaks, horse-chestnut, rhododendron and several other kind. Dyar trees were no less than others - whole jungle was of dyar. Thousands of them. Often standing alert like armed soldiers. Sometimes still like idols of Gods and Goddesses. When strong winds blew they would whistle and sway like Lord Shiva performing *Tandav*. But our Ekludyar was different. It was our companion, our guide. Standing alone, like a giant amidst boulders nearly a furlong from where the deodar jungle ended, at the turning of our school path; as if a Sadhu standing on one foot in deep meditation. Early mornings when the Sun God rose on the eastern horizon, its first rays would reach all the beautiful peaks and places. The golden rays of early mornings falling atop Ekludyar would look as if some one had sported saffron 'Tika' on its forehead.

After cleaning and polishing our wooden slates early in the mornings, keeping ready our bags and 'white-clay', ink pots, partaking of previous night's *rotis* with ghee and jaggery for breakfast, fearful of our primary school teacher we would start for school. All the children are not alike. Among our school mates too, a few were really troublesome. They would take a long time to get ready, their parents alternately cajoling and rebuking them. When all assembled we would march, huffing and puffing. Scared in our hearts of being delayed and getting the resultant beating from the teacher. Unlike these days there were neither alarm clocks in every home nor wrist watches with every one. We would confirm the day break with the help of sun on the mountain tops.

On the path to school, we would meet our Ekludyar. It would only tell us - it is already time for school

prayer, now our teacher Pundit Gopalsinghji would have finished smoking *hookah* at the nearby tea shop, and entered the classroom. Spotting a dot of pale sun on the top of Ekludyar would give us a great relief for we knew then that we would reach the school in time for the prayer. If we found that the sunlight had spread more than a hand's length from the top we would get panicky and rush downhill like mad men. And the day we saw more than two hands length of sunlight on the Ekludyar, our hearts would sink and feet would neither proceed further nor turn back towards home. That's why before reaching Ekludyar we would always pray, "O Ekludyar, bear the sunlight just at your tip!"

While returning home in the afternoon, kicking away pine cones, eating raspberries and barberry fruits, chasing after the birds and butterflies, and after completing the climb through *dyar van* (deodar jungle) we would be tempted to rest under the shade of Ekludyar. Some of us would swing from its lower branches. Such was, Ekludyar, our companion of mornings and evenings!

After many years I went home that way. The forest path has now been converted into a motor road. Laden with nostalgia, I was so keen to see our Ekludyar. When I crossed dyar van and reached near that turning I couldn't meet our Ekludyar... PWD workers, while broadening the path, had cut the Dyar and dug out its roots. God, why didn't anyone request them to shift their road a few feet away and build a low rubble wall around Ekludyar? Why didn't some one tell, "It is the companion of our school kids. Don't cut it, don't uproot it"?. Perhaps, the Sahib who constructed the motor road had never looked at trees for time and never swung from their branches during his childhood.

Now nothing is left there except a desolate bend on the road...

(*Original article in Kumaoni, translated by G.S. Rawat)

FIRST IMPRESSIONS OF CORBETT TIGER RESERVE

Nima Manjrekar

It was unbelievable that I had not seen Corbett Tiger Reserve after having spent eight years at the Wildlife Institute of India, which is only a six-hour drive from the Reserve! April and May were supposed to be the best months to visit the Reserve, and when a trip was planned in May 1996, I decided not to let go off the opportunity.

Our plan was to stay in Dhikala and look around for a day, and then join Mr. A.S. Negi, the former Director of the Reserve, and Dr. A.J.T. Johnsingh of the Wildlife Institute the next day. They were coming to the Reserve to discuss with Mr. R.C. Gautam, the Park Director, and Mr. Joseph Keegan of Florida, with the new conservation initiative 'Operation Eye of the Tiger', which was being launched. We were three researchers from the Institute, out of which two had visited Koluchar in the buffer of the Reserve on the western side. We felt hot and sticky by the time we reached Ramnagar early in the afternoon, after the six-and-a-half hour bus journey from Dehra Dun. Mr. Rajiv Bhartari, the Deputy Director of the Park and an alumnus of the Wildlife Institute, welcomed us warmly and informed us that the bus from Ramnagar to Dhikala would leave at 3:30 pm. The Project Tiger office is in Ramnagar, not far from the boundary of the Reserve. This is where reservations for accommodation in the Reserve are made.

From Ramnagar, we travelled upstream along the Kosi river, up to the gate at Dhangarhi. Golden wheat fields and dark evergreen mango orchards sprawled on the right side of the road, and dense forests on the left. At Dhangarhi, we paid an entrance fee before beginning the drive through the lovely forests. I had seen sal (*Shorea robusta*) forest before, but never had I seen such majestic and stately trees. These forests have been protected for almost 75 years, and make one imagine what most areas in the Himalayan foothills would have looked like, had there been less exploitation of the forests

by humans. The coolness of the forests was quite a contrast to the heat that we had just come from. The lush vegetation, including the banana plants (*Musa* sp.) gave an indication of the moistness of the area. These dense, dark forests encompass a large portion of the catchment of the Ramganga river, which runs from east to west. The Ramganga river is one of the last resorts of the mighty golden mahaseer (*Tor putitora*).

On the way, we stopped for a cool drink of crystal-clear water from a stream, natural mineral water from the land of the tiger and elephant. A little further ahead, we saw a dark, hairy figure, which moved quickly across the road, and disappeared into the thick undergrowth - it could only have been a sloth bear! Soon afterwards, the bus stopped a little while to let people watch a cow elephant near the river; the rest of the group was a little further away. After this, we did not see any animals, but continued to admire the splendid forests all the way to the tourist complex at Dhikala.

Dhikala overlooks part of the Ramganga river, with the foothills of the Himalaya beginning just across the river. The mountains looked blue at a distance. The tourist complex is well-equipped, with a variety of accommodation to choose from - ranging from bunkers to posh suites, to suit the variety of visitors. There is a nice restaurant, as well as a library. Tourists are taken out on elephant rides every morning and evening, and most come back with a lot to tell, usually including a tiger sighting. The enthusiasm to ride on elephant back brings people out of their rooms by 5:30 in the morning, as it did us, too.

On our first ride in the morning, we went along the *chaur* or valley grassland, and then across the Ramganga just upstream of the reservoir, which was built in the early '70s to store and supply water for cultivation of the vast expanse of arable land beyond the forests. We saw herds of chital (*Axis axis*)

and hog deer (*Axis porcinus*), and some barking deer (*Muntiacus muntjak*) and sambar (*Cervus unicolor*). The elephant that we were on, almost trampled a large Gangetic soft-shelled turtle (*Chitra indica*) in the river. Soon after we had crossed the river, the *mahout* signalled to us that a tiger was moving through the grass, and that we should remain absolutely silent (the excitement, however, was too great for some of our companions to remain silent!). It was a tigress, and she moved slowly through the tall grass, seemingly undisturbed by us following her. She moved to the forest edge, and then settled down on an escarpment, from where she watched us indifferently, while we photographed her. In the evening, we went on another elephant ride, and this time we saw another tigress, with a cub, in the middle of the *chaur*. The nervous cub ran away, but the indignant mother stayed and snarled at all the tourists on the elephants. On the way back, we came across a herd of elephants with many playful young ones. They also, did not seem especially affected by our presence, although the *mahouts* did not want to take the elephants closer to the group, for fear that the domestic elephants would become nervous and stampede. We came back to Dhikala, pleased at having seen three tigers in a single day. The wild pigs (*Sus scrofa*) that we hadn't seen while on elephant back, were seen crossing the road in the tourist complex, and being chased by children. They apparently come into habitation to forage on the garbage dump that the Dhikala complex has.

Some places close to the reservoir look tempting to swim in, but big signs warn "Beware of crocodiles, swimming prohibited. Survivors will be prosecuted"! For reasons of safety from elephants and tigers, moving around on foot is restricted. The limit on one side is the watch tower, overlooking a water hole, and giving a panoramic view of the *chaur*. We sat in this tower for about two hours one morning, and saw some barking deer, chital, peafowl (*Pavo cristatus*), and kalij (*Lophura leucomelana*). Corbett is also very rich in bird life, with over 500 species recorded from the Reserve. The snow-white adult male Paradise Flycatcher (*Terpsiphone paradisi*) was flitting around the water hole, managing adeptly to catch insects in the air, without getting its long tail feathers entangled in the vegetation.

We met Mr. Gautam, Mr. Negi and others at the Khinanauli Rest House the next day, and listened to their plans for Operation Eye of the Tiger, which has initiated some conservation work in the Reserve. We went for an evening drive, again passing through majestic sal forest. First, we drove to High Bank, overlooking the Ramganga river, where we saw several large mahseer in the emerald green large pool. Then we drove across the *chaur*, and located a herd of elephants feeding on the lush green grass. We watched and photographed the elephants, which came closer and closer, apparently without having noticed us. As soon as we started the vehicle, they seemed startled, trumpeted, and retreated.

The next morning we left for Lohachaur. Initially we drove up the Kanda ridge. As we drove up along the mountain, we noticed a distinct change in vegetation, owing to an increase in dryness as one goes upwards. Thereafter we drove largely along the Mandal river, where we saw numerous Himalayan pied kingfishers (*Ceryle lugubris*). On the way, we met Mr. Bhartari, who was on a field visit, observing a collared scops owl (*Otus bakkamoena*), and the nest of a collared broadbill (*Serilophus lunatus*) [or the longtailed broadbill (*Psarisomus dalhousiae*)]. While returning from Lohachaur, we briefly stopped at Rathuadhab, where a medical camp by the Operation Eye of the Tiger was in progress. The last halt on the way out of the Reserve was at the Halduparao Rest House, overlooking the Palain river with abundant fish. Serenity pervaded in this area.

After this, the journey back to Dehra Dun began, after coming out of the Reserve from the north-western side. The drive along the first 50 km from Halduparao was very pleasant, as we passed through excellent buffer zone forest. As soon as we left the protected area, the increasing influence of human habitation was evident. The degree of forest degradation increased as we drove towards Kotdwar, after which hardly any forests exist. Nevertheless, it was a pleasant drive back. Later, when we discussed our stay in the premier Tiger Reserve of the country, we appreciated the efficiency and commitment of the Forest Department in protecting and managing the area and its wildlife, despite the enormous potential human pressure from around the Reserve.

INTERPRETIVE SKILLS

ABOUT BIG WORDS AND SMALL TALK

Suhas Kumar

Verbal skills are major components of effective communications. Articulation and voice modulations are rated high in the list of verbal skills. To articulate means simply to pronounce distinctly and clearly, without slurring the words into incomprehensible speech. Pronunciation too, should be correct, mispronounced words tend to destroy the credibility of the speaker/interpreter. Besides these, a tendency on the part of speakers to load their presentation with technical jargons and big words has an adverse effect on the audience. Just look at the following example quoted by Grant W Sharpe in his book "Interpreting the Environment" he says: "where it is necessary to use technical words, explain it but do not make the listener feel like an idiot." Take the following as an example:

"The mountains around us are composed entirely of metamorphic rock' for those of you who do not understand the word, it means x x x x x x x."

*It would have been far more subtle to say,
"The mountains around us are composed almost*



entirely of rocks which have been changed from their original form and composition by great heat and pressure, called metamorphosis, which in fact means changed".

The above example illustrates the magic of simple, distinctly spoken words and their value in carrying across the true message. The following poem by Major General Bruce.E. Kendal (of Indian College of the Armed Forces, USA) and quoted by Sharpe in his book, may work as a light-house for speakers and interpreters sailing through a turbulence of communication.

*Never fear to use little words
Big words name little things,
Big things have little names, such
as life,
death, peace, dawn, day, night,
hope, home*

*use little words in a big way,
It is hard to do but they say what you mean,
when you don't know what you mean,
use big words*

They sometimes fool little people.

STRICT NATURE RESERVE'S AGONY

BMS Rathore

*When Shama sang
and barbet talked;
I heard you,
along as ye walked.*

*The trail took you
through woods,
where Melinchara stood
aging with grace
caring and sheltering
no melancholy,
lessons of human race.*

*Then you heard me calling
through pages of history,
the foundation held intact
saluting the gone-by pomp & peasantry.
Witness for centuries-
of kings & courtiers
of joy and sadness
and enarmoured warriors.*

*The treasure that I had kept for so long
hoping to share with my people
as they go along;
till I was told-
that no one can come to my fold,
they will preserve,
call it a strict nature reserve.*

*I know that they want to conserve me
from greed and unsavoury deed
but who will be there
to share my past & future's creed.*

*Lord Buddha sought nirvana
on a middle path-
seek me a middle path;
that Buddha had preached,
there lies my nirvana-
pain and agony be ceased.*

COMMON FUTURE

Suneet Naithani

Man is intoxicated of development,
He lost sensitivity.
Time 'N' again nature warns creature,
Not to move towards disasters.

Come 'N' treat it like a mother,
Be in cluster to fight against
Environs disaster.

Come and take an oath,
Let them grow and grow,
Or let them leave so.
Don't cut but sow
The seeds of harmony.

In this endless cycle of struggle
Partners of survival
March towards a bright future.

Kashmira

REJOINDER:

Kashmira Kakati: Ah ! So much to write in so little space. She was popularly known by her childhood friends as "The duck" not so much for her medal winning swimming abilities as much as for her walk. She was immortalised after "Kashmirawalli rau" in Rajaji NP was named after her. Dr Johnsingh spied her face down, spread eagled, after she miscalculated the width of the said "rau" in an attempt to break the long jump world record. If you ever feel bored in life and are willing to risk having your ears talked off, contact her. Her day goes badly only when she doesn't get eggs and bread for breakfast. Here are some of her oft quoted lines - I don't know anything. I don't feel like working ! I just want to sleep.

Abi Tamim

क्षणिका

हे मानव कितने कृतघ्न हो
सभ्यता का जामा पहिने फिर भी नग्न हो ॥

जिस हरियाली ने पाला-पोषा
उसी को मिटाने में संलग्न हो ॥

करके परतंत्र खग-मृगों को
अपनी स्वच्छन्दता पे मग्न हो ॥

गोपाल सिंह रावत

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— Compiled by Sunita Agarwal

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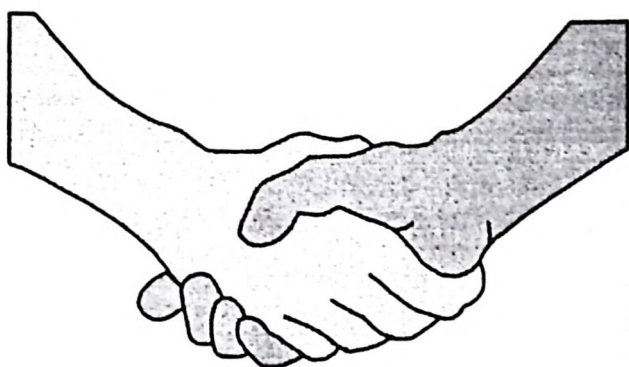
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AWARD

Congratulations to **Sh. Manoj Kumar Agarwal** for the award of Doctoral Degree for his thesis entitled "Numerical Solution of Some Natural and Physical Phenomena Governed by Partial Differential Equations".

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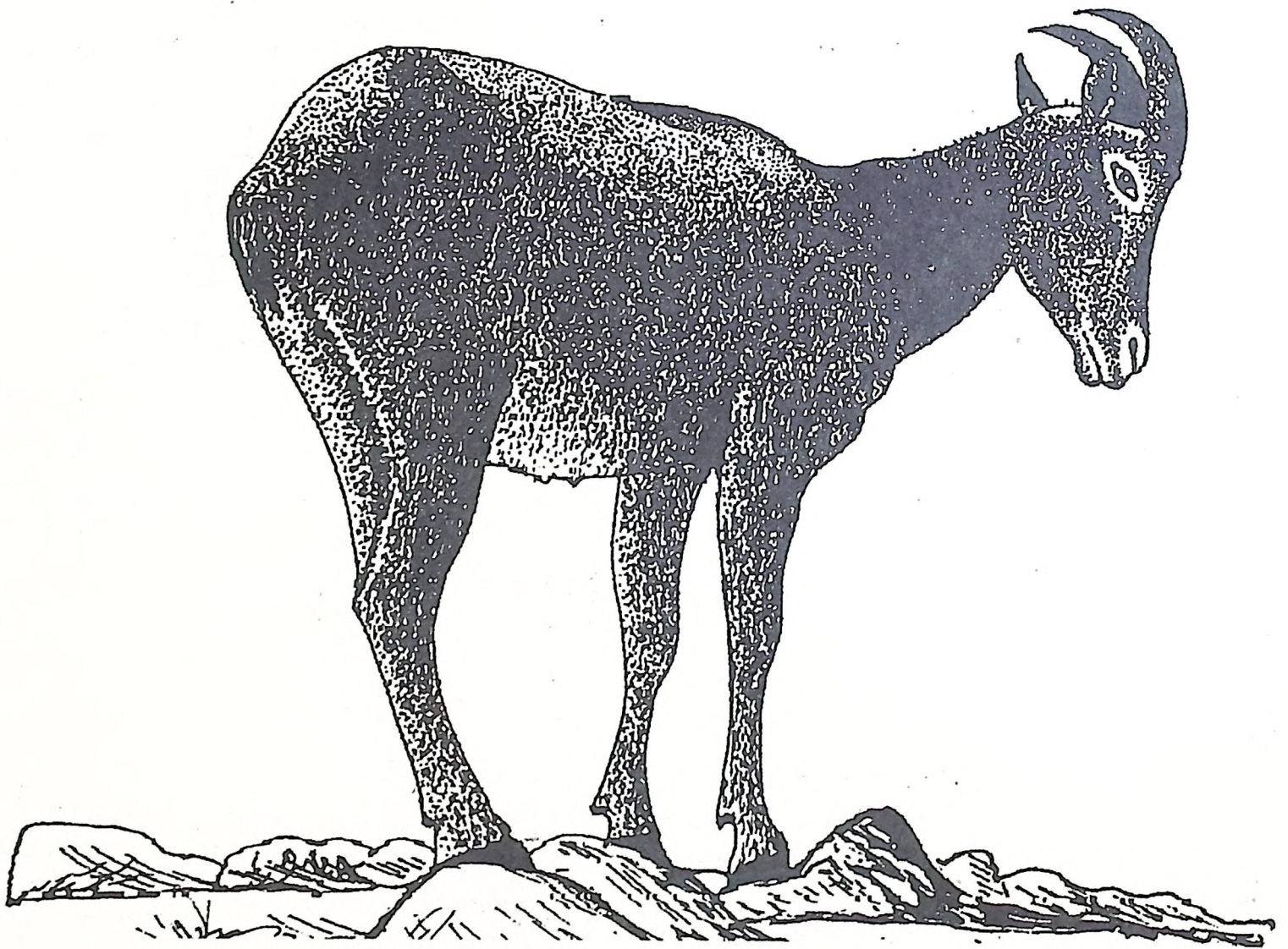
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Wildlife Institute of India

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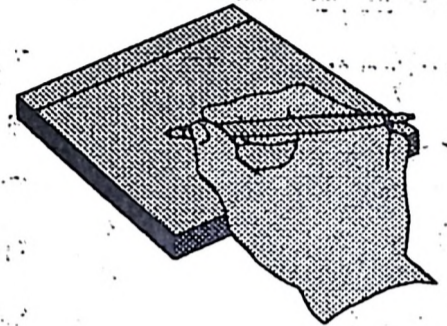
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From The Editor's Desk

Greetings for a bright, prosperous and Conservation friendly 1997. The frost bitten winter witnessed a hub of activities in WII. Activities ranged from celebration of wildlife week with the village children of Chandrabani, organizing workshops on 'Control of Illegal Trade in India' & 'Current Trends and Practices in Environmental Impact Assessment'. Both the workshops were well attended by personnel from Govt. Deptt., public sector undertakings, private sector and NGOs. All these activities generated a lot heat and excitement to brave the chilling cold in Dehra Dun.



The dedication towards the cause of conservation by the brave Vietnamese soldier placed in the frontline section of this issue is heart-warming and gives a reason of soul searching for all the conservationists of this country. Similarly, unawareness towards conservation amounts to working against it in the present day scenario.

This novel issue also features writings of children, our young nature lover friends. It is high time that we should inculcate in the younger generation an ethos towards conservation.


Editor

BATTLE FIELD, INFERNO, CONSERVATION

A.J.T. Johnsingh

'Suida flows beautifully and is happier today. Her enchanting sand-banks were not recognised by people in the past. Now hundreds of people come and see her beauty. They are delighted and Suida is happy.'

Tho, a veteran Vietnamese soldier with a heart of a poet, was one of the 20 wildlife managers who attended the month long training programme organised by the Vietnam Government and WWF-Indochina, at Cuc Phuong National Park in November-December 1994. The course was conducted with assistance from United Nations Development Programme and Global Environment Facility. I was one of the faculty who taught in the course. Tho and his wife wanted to have six children equivalent to the words 'Viet Nam is in our hearts' but they have three sons since the Government restricted the number of children to three.

Twentieth April, 1970 was a hot and humid day in Central Vietnam. After participating in a successful mission of destroying an enemy camp at night, the well-built, twenty-five year old Vietnam soldier Nguyen Phu Tho was resting in an underground hideout with three other soldiers in a small town 12km from Danang City. The human race has seen, is seeing, and will continue to see betrayers. When this information of soldiers hiding in the tunnel was leaked out to the enemies, a large contingent of American

and South Vietnamese soldiers soon came on the scene, surrounded the hideout and ordered the inmates to surrender. One of Tho's comrades came out of the tunnel firing at the enemies desperately but was shot dead instantaneously. Tho, ready to get killed, rushed out of the tunnel throwing a grenade over his head which killed and injured several of the enemies. Tho heard the blast, felt several splinters from the grenade hitting his head, smoke and his own warm blood blinding him, and then he had a blackout. When he regained consciousness, he realized that his hands had been tied behind him, he had been blindfolded and was lying on a hard floor. The wounds on his head had been bandaged but he could not lift his swollen head. A few days later the grievously injured and blindfolded Tho was flown to 'Inferno on Earth', an infamous prison built by the French nearly 130 years ago on the Con Dao island, south of Vietnam. During the three years of his confinement on the island, which is a National Park now, Tho did not realize that fate had in store for him another period of agony.

In the first year of imprisonment, Tho, his right leg chained to the ground, was in solitary confinement in a 2m x 80 cm cell which also had a toilet with some dry leaves to be used as toilet paper. He only got a pair of shirts to wear, and the hard floor was his bed. He had the luxury of a bath once a week and the food and water

were barely sufficient to keep his soul and body together. There were flies to give company during the day. At night the floor was crawling with rats and cockroaches which often nibbled at his finger tips, and the air hummed with the music of mosquitoes. In the second year, Tho, who once had a superb physique and was now an almost wasted human corpse, was shifted to a 20'x20' room where he was chained to the floor with 89 other inmates. Meanwhile the American Government was desperately trying to get back some of its soldiers in the custody of the Vietnamese and in the eventual exchange of prisoners, Tho was released after two years of confinement in the communal prison.

By this time, the war had reached a climax and almost every physically fit Vietnamese, both male and female, over 16 years of age was in the battlefield and children between 13 and 16 were working as informants. Strong willed Tho took a year to recoup his strength and went into action again.

On 12th December 1974 around 2000 hrs Tho was in the company of about 200 Vietnamese soldiers who were stalking out of their jungle hideout in order to launch an attack on an American camp on the way to Danang. They were informed about the newly established camp late in the evening. Their progress through the jungle was slow and silent and around 2200 hrs when they were fully out of the jungle and when guns blazed all around, they realized that they had been cheated. Several land-mines also sprung into action. Every one alive and capable of running, ran helter-skelter. It was more a mowing-down operation, as numerous Vietnamese soldiers were butchered and Tho

was one of the many who were grievously wounded. His stomach was almost ripped open by one of the metal pieces flying from one of the mines. Clutching his agonizingly painful stomach, Tho fell down and, summoning his rapidly-fading strength and will-power started crawling on his belly and knees away from the place of massacre. He must have moved for a kilometre, into the safety of the jungle, (where he has even seen tigers), then he fainted for the second time in his life.

Fortunately for him, the next morning his comrades on a patrol found him unconscious but still alive. He was immediately taken to a nearby jungle camp where his torn stomach was stitched and the wounds were cleaned up and dressed and then he was carried six kilometres deep into the jungle to one of their hideout hospitals. The hospital had huts roofed by palm leaves and polythene sheets and was in a dense evergreen jungle. The hospital had 30 beds and all were full. There were tunnels amidst dense vegetation where the hospital beds disappeared in times of a raid.

In the jungle hospital, Tho met Miss Huong (her name meant rose), a nurse. She bestowed special care on Tho. The war had forced her to discontinue her education when she was in the sixth grade, and now she was 22 years old. His wounds were lovingly cared for and he was given the best food around. The wounds healed gradually. Tho and Huong realized that they were made for each other.

The indomitable soldiers eventually emerged victorious and the war-torn Vietnam finally attained its freedom on 30th April 1974. The

cessation of war made most of the youths jobless and every one had to carve out a future. Soon after the war, in August 1975, Tho and Huong got married, and then began to look for a career. Huong went to school again, meritoriously passed out, went to college and finally emerged as a medical doctor. Tho worked in the Communist Party for five years and then joined the Forestry College, Hanoi. As a handicapped Veteran he had the privilege to do a special two and a half year course in Forestry, which would otherwise take four years. After finishing the course, Tho worked in various capacities as a Forest Officer in his native Danang Province, and finally got posted as Director of Son Tra Nature Reserve, (pronounced as Son Cha, Son meaning mountain and Cha monkey), in Danang Province, Central Vietnam.

Son Tra is one of the 87 Protected Areas in Vietnam and was established in 1986. It is a peninsula surrounded by sea on three sides, 44 km² in area and its longest axis, east to west, is 13 km. The Reserve is one kilometre, as the crow flies, from Danang City, where the Americans had a naval and an army base during the war. The city now has a population of 1,200,000 people. The 33 Army Unit of Vietnam is now based in this peninsula. The Reserve has a coastline of 60 km and its land connection to the mainland is one kilometre broad.

The Reserve has Tropical Evergreen Forest dominated by *Dipterocarpus* spp and has 20 streams, of which 12 flow towards the mainland and rest towards the sea. Since the Americans had their base in Danang city, which gets its water supply from Son Tra, its vegetation was never sprayed by Agent Orange, a hazardous

chemical defoliant, used during the war to expose the Vietnamese soldiers by removing the jungle cover. Even now, the Vietnamese Army Unit and numerous ships get their water supply from the peninsula. The wildlife of Son Tra is interesting, with about 700 long-tailed macaque (*Macaca fascicularis*), 350-400 Douc langur (*Pygathrix nemaeus*), slow loris (*Nycticebus cougang*), wild pig (*Sus scrofa*), Germain's peacock pheasant (*Polyplectron germaini*) and python (*Python reticulatus*).

The small Reserve, with a dense tree cover and a large human population nearby, attracted wood-cutters every day, and 1985-1990 was the worst period for the Reserve when 300-1000 wood-cutters came every day to carry away wood illegally on bicycles. About 300 firewood stalls were dependent on the wood cutters for the supply. Even the army was taking out wood and shooting the monkeys and birds as and when they pleased. Liquor, in which monkey bones are soaked, is one the favourite drinks in Vietnam. When the dutiful guards protested, there were shoot-outs between the Army and guards, and conflicts between wood-cutters and guards. These struggles claimed the life of one guard, one was imprisoned and several wood-cutters were also killed. While the graves of the wood-cutters were visited by many people, no one bothered to visit either the guard in the jail or the grave of the other guard. Gradually the morale of the guards petered out, several protested and resigned from their service. In 1991 the number of guards reached an all time low of 12.

The conservation minded Provincial Government did not keep idle during this period.

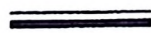
Between 1982 and 1989, it called for three conferences to discuss the growing problems of Son Tra. Seeing the ravage done to Son Tra, a Vietnamese poet composed a heart-rending poem: 'Each afternoon clouds form over Son Tra. A sadness overtakes me as the magnificent trees and the beautiful animals are removed from Son Tra little by little'.

As soon as Tho joined as Director of the Reserve in 1990, with the assistance of informants, he monitored 800 wood-cutters. He found out that 50 of them were hard-core. Tho realized that only an alternate employment of the poor wood-cutters can wean them from destroying Son Tra. Tho badly wanted money to gainfully employ these people. He started his campaign of 'Save Son Tra', ceaselessly spoke to the local people and some companies in Danang about the need for saving Son Tra, and within a year raised US \$ 7,500. With this money he started a nursery and a reforestation programme. He employed 27 of the 50 to care for the nursery and 300 people were initially employed to plant saplings. Soon Government support was forthcoming and now the Government Reforestation Programme, with an annual budget of US \$ 25,000, supports this conservation work in Son Tra. The hard-core wood-cutters continue to be employed in

the nursery, nearly 100 people plant saplings every day, and 50 villagers work as protection staff and they are paid each 80 cents to US \$ 5, depending upon the type of work they do. Animal sightings are improving and the problems of Son Tra seem to be over, and there are plans now to declare the Reserve a National Park.

Presently Tho is taking steps to attract tourists. Son Tra has a lovely beach and is adjacent to Bachma National Park which is also scenically beautiful. Central Vietnam has many enchanting places. All these can gradually attract a large number of tourists and bring substantial revenue. Tho is also aware of the dangers of excessive tourism and every one who knows him says that he can handle it carefully. In 1992 he earned US \$ 1,200 just from entry fees of which 40% was given to the former hard-core wood-cutters who work in the plantation, and 30% to the Reserve. The Police and the Army also get a small share of this money, and in turn happily follow the Reserve rules. In Vietnam the Reserves have the privilege to retain the bulk of the money raised by tourism.

The world needs thousands of officers like Tho to enable conservation to succeed.



Wildlife Digest

UNAWARENESS : AN UNSEEN THREAT

Prachi Mehta

In the discussion forum at Wildlife Institute Of India (WII) on the 1st November 1996 tea was not served. I guess no one asked for it - the debate was stimulating and hot enough to keep us going. It would be so anywhere if you discuss the problems of conservation, especially of tigers, with concerned people. The subject matter would be identical too; problems of poaching, ill equipped forest departments, poorly enforced law and habitat loss. And if I say all these are basically administrative snags, I am not passing the buck to the concerned department, but merely stating the fact.

The faults of the system are much too well known and do not need to be reiterated here.

Here I want to discuss what I feel is a bigger social snag, i.e a lack of awareness at all the levels, from layman to the people who wield power .

I would say that the level of awareness in our country regarding conservation is limited in its extent. Can you imagine R.K.Laxman's "Common Man" pondering over the state of conservation? I can not. Far too trivial, as most people would say. But then, was not Michael Jackson's visit, furore over Ms. World contest, or Hussain's subjects for painting and many such issues trivial too? Here also the stakeholders were in minority but we heard their views loud and clear and day in and day out.

Then where is the snag ?

Learning begins at home. We start with children at home and outside. If a nine year old mind can grasp up to 14 languages, then where is the hitch about wildlife and conservation? We need to sensitise their minds at the earliest. I believe, no one can appreciate the wonderful world of sticky spiders, colourful butterflies, birds, flowers and adventure that goes in exploring all these better than the children. And these feelings always remains, no matter which profession one takes to, later in life. Once initiated in this field, one feels a sense of allegiance towards nature and this is what we are hoping for.

Many in-service officers perceive wildlife posting as their punishment. The thinking and orientation towards wildlife has to change. There are many instances where a single committed officer has won against all odds and worked for the cause relentlessly in inspiring the field staff and creating a dedicated team. Such officers are known to be setting a culture of conservation in their field areas. If this committed manpower becomes more common then we do have some hope. I guess, this too comes with awareness.

And what would you say if next time a Sansar Chand is caught in any poaching case and is jailed (and not bailed) by the neo 'conservation conscious' judiciary ?

Yes, till today no poacher or dealer has been convicted.

It certainly is demoralising.

In a country where elephant killers were given most severe punishments during the Mauryan dynasty, poaching should be considered as preplanned cold blooded crime. We do have a very strong case, but sadly very few advocates for conservation.

We must write, speak and meet more often and work for the cause of conservation together in our capacity sincerely. This could be done by teaching in schools, conducting workshops for the staff and senior officers and in the process

building up an effective administrative force for the future.

Remember, some have predicted only four more years for tigers.

True, in this case we have sensed the problem and are aware of our loss - if we fail. But in future, we may not be as fortunate with regards to other species and it could be just too late to even predict .



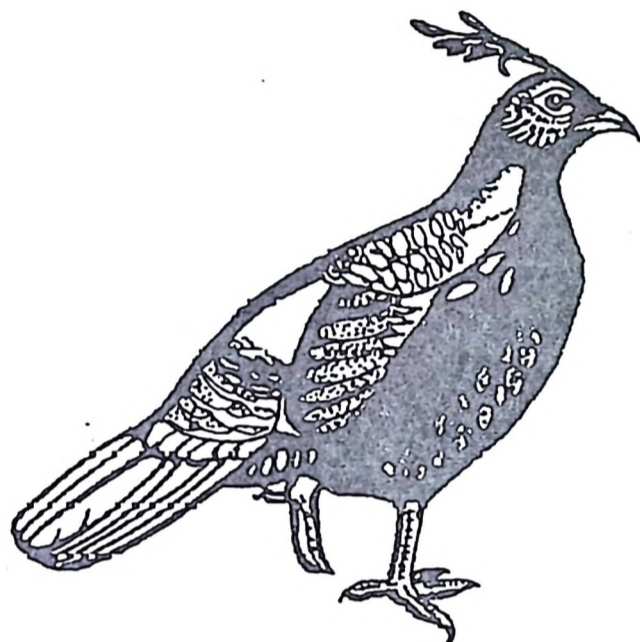
WII IN ANTARCTICA

S. Sathyakumar

WII is continuing its research activities in Antarctica by participating in the Indian Antarctic Programme for the third consecutive year. Shri. Ajai Saxena and Dr. S.A.Hussain, faculty members of WII, were nominated and selected for participation in the XVI Indian Scientific Expedition to Antarctica. WII's members will continue the work on our ongoing research project "Developing a long term monitoring programme for birds and mammals in the Indian Ocean and Antarctica". The major focus during this expedition is towards standardisation of monitoring techniques particularly the aerial surveys and enroute monitoring. The expedition sailed off from Goa on 12th December 1996 and is expected to reach Antarctica during the first week of January 1997. After two months stay and work in Antarctica, the expedition is expected to return to India during the last week of March 1997.

MONAL STUDY IN KEDARNATH WILDLIFE SANCTUARY

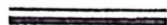
G.S.Rawat and S.Sathyakumar



The Himalayan Monal or Impeyan Pheasant (*Lophophorus impejanus*) is one of the most beautiful and conspicuous of all pheasants in the Himalayas. This large bird of nine colours appropriately referred to as “the nature’s poem” inhabits the high altitudes ranging from 2,500 to 5,000m. It was exploited for the head feathers of the male which was worn on the cap by men in Himachal Pradesh.

Monal is receiving serious threats in many parts of its range due to poaching for meat and habitat destruction. Mr. Suresh Kumar (M.Sc., student) decided to conduct his six month M.Sc.,

dissertation project on the “Winter habitat use by Monal in Kedarnath Wildlife Sanctuary” and is now in the high altitudes braving the cold winter and collecting data on monal habitat use and food and feeding habits. The field work was initiated in mid November when SSK accompanied Mr. Suresh Kumar to help him set up his base camp, define study area limits and finalise methodology. GSR visited the study area in mid December and found the study is progressing well. The recent news is that Mr. Suresh Kumar is having great experiences of winter and monal in one of the best wilderness areas in Western Himalaya.



Country Profile

CONSERVATION EFFORT BY AUROVILLIANS

Ujjwal Bhattacharya

The international community living in the small township of unmetalled roads and full of greenery was agog with the plight of a white stork and a flamingo. This was in a small township - Auroville in Tamil Nadu lying next door to the Union Territory of Pondicherry. While living in the Aurobindo Ashram, Pondicherry, the idea of setting up this village was conceived by "Shree Ma" the Mother. This was designed to be a place where people, irrespective of their nationality, race, caste, creed, and religion would live harmoniously and attempt transformation of the world to an ideal situation.

Since assessment of achievements vis-a-vis objectives made in the Auroville is beyond its scope here, let me restrict myself to conservation efforts made by the Aurovillians. What was once an area comprising of almost totally barren lateritic soil, prone to flood and consequent ravines has a different picture today. A bunch of like minded people from all over the world without any professional background or expertise in the science of conservation assembled together in Auroville and have made it green all over. It was an initial start with simple soil conservation measures and hit and trial with different species that were planted up. Gradually the exotics gave way to the indigenous species which have successfully established. Though management has been very intensive

with ruthless protection measures and that too in a relatively smaller area to manage, the results have been quite rewarding.

A small fenced area called Pichandiculum in Auroville is worth a visit. The area consist of a small lake with green cover all around. The place was named after a "Fakir" who was a regular visitor to the lake. Apart from conservation of the biodiversity here is an attempt to propagate medicinal plants that were naturally existing in the area. This is being done in collaboration with an NGO: Foundation for Revitalization of Local Health Traditions (FRLHT), Bangalore, dealing with status survey and propagation of medicinal plants.

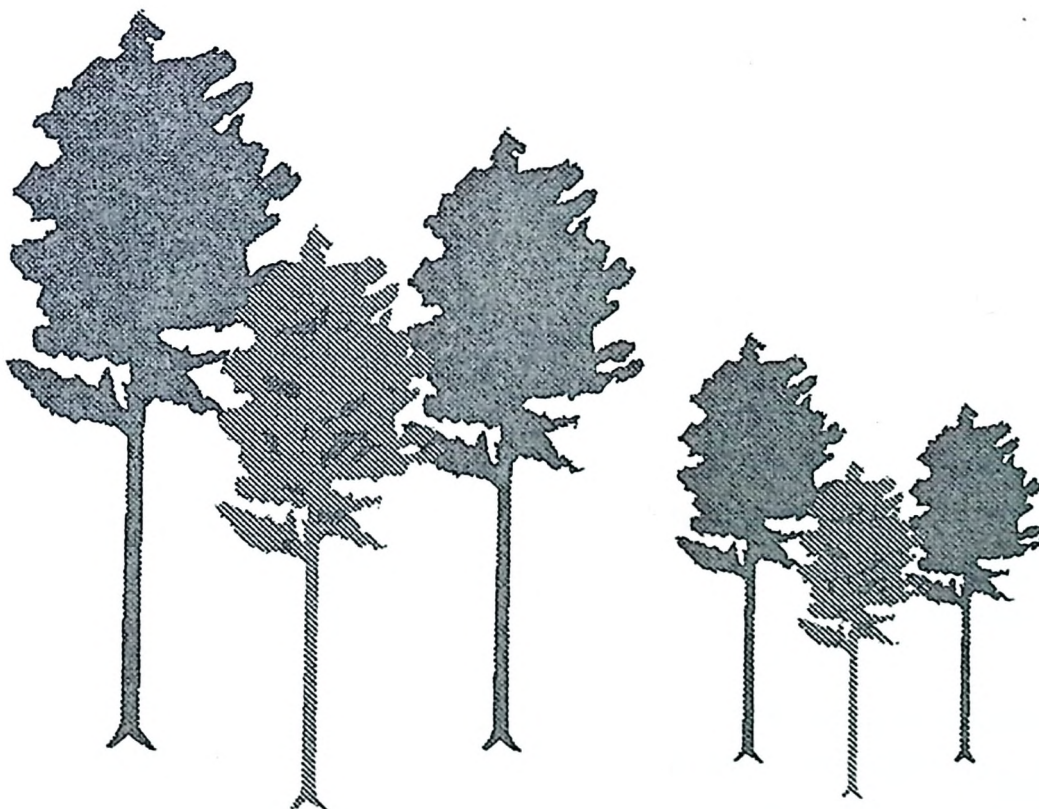
In a research project undertaken by School of Ecology, Pondicherry University, an inventory of the Avifauna was made in different areas of Auroville. As many as 95 birds belonging to 34 families have been identified to be present in the areas surveyed.

Getting back to the observations made in the beginning of this write up it was my professional as well as personal pleasure to see the concern and dedication of the Aurovillians in saving the wildlife. A wandering tribe in Tamil Nadu locally called Gypsies are well known in catching wild animals and birds and trading in them. In this instance the Gypsies had caught a

white stork and a flamingo from a nearby area and sold them to a villager in Auroville. Here it must be understood that there are three traditional villages within the Auroville, which are essentially not part of the Auroville. One evening, while I along with some Aurovillians was sitting in a beach side restaurant in Auroville, this message of the birds reached us. Dr Rauf Ali, a wildlife biologist got very active immediately. All pertinent information regarding the birds, their condition, the name and address of the possessor etc were collected. The local DFO of Villupuram Mr Mahapatra was contacted and informed of the incident. The very next day Dr Ali took all initiative in taking the local DFO to the village where these birds had

been kept. Initially when the villager was approached to hand over the birds, he was all against the idea since he had paid to get them from the Gypsies. After a lot of persuasion, and by taking the help of a local school master named Shankar, he was apprised of the legalities involved and convinced that it was illegal for him to keep wild animals under his personal custody. Finally the birds were recovered, which would otherwise have been slaughtered for meat. Mr Ramnathan, Director, Chennai Zoo was contacted and on his agreeing to take the birds, they were sent to the Zoo.

I cannot but have all praise and regards for the Aurovillians in their endeavour in conservation.



THE LAND CALLED 'HIGH RANGES'

P.V. Karunakaran

The High Ranges or Kanan Devan Hills of Kerala, once magnificent piece of wilderness in the widest area of the South Western Ghats in Kerala are no longer in its pristine condition. The elephant trails, tiger pug marks, gaur's hoof prints have all become a rarity. The picturesque environment rapidly changed into a playground for developmental activities, plantation operations, resorts and tourism, and other minor and major operations by commercial groups as well as government. The rapid decline of the much worshipped natural beauty has thus commenced.

Legend goes that Lord Parsurama hurled his sword into the sea, when the waters parted, and the eastern half moved towards the land to form a fertile plain and a protective mountain range. This mountain range, the Western Ghats, stretch from River Tapti in the north to Kanyakumari in the extreme south of peninsular region. The only break in this 1500 km stretch of ups and downs, is the Palghat Gap of about 20 miles.

The awe-inspiring beauty of the crags and cliffs and the mysteries hidden behind the natural barriers, occasionally showing through the clouds, must have acted as strong deterrents to make inroads into this wilderness area to all.

In the late 19th Century, planters from European countries invaded Nilgiris, Palnis and Annamalais. It had much to do with the formation and hectic activities of North Travancore Land Planters and Agricultural Societies (NTLPAS) that

were formed in 1870. It was J.D. Munro, the then Superintendent of Cardamom Hills, who evaluated the possibilities of raising plantations and got land at a concession from Poonjat Raja, the chief of Anjanad. The expansion of agricultural fields into estates of cardamom, coffee, cinchona, rubber, and finally tea, soon followed. The hunting of big game such as tiger, elephant, sambar, Nilgiri tahr, gaur, and leopard was part of the invasion. Elephant tracks and rain forests with the dreadful leeches were recorded early in the 20th century. Although the area was sparsely populated, the import of labourers from neighbouring Tamil Nadu, resulted in an increase of human population, as a result of which the fate of High Ranges was doomed.

Borrowing the words from The State Manual of Travancore (1940), "fifty years ago these lands were practically unexplored regions, covered by thick, fever-haunted forests, the abode of elephants, tigers, bisons and leopards, having no means of communication".

It is mind-boggling to go through the pages of early plantation history. The area was described as a land where the swirling mists made dawn dull grey and evenings short, a land where jungle trails and wild footpaths through cultivated areas outnumbered roads. The few roads were mostly winding and twisting climbing to nowhere. It is a land of few aborigines, the *Muthuvans*, who were named

so because they carried their belongings on their back (Muthuku=back). These Muthuvans hardly 2000 in number, lived in the jungle, harmoniously with wild animals. The rolling grasslands and intermingled patches of forests locally called *shola* make an "island and sea form" of vegetation which is unique and represents the repository of natural wealth.

The elephant tracks have now been replaced by winding roads everywhere, the beautiful pug marks of big cats have been replaced by tracks of cattle and humans, no more darkening mists, the days are long, no more chilly weather, it is soaking humid, with the burning sun.

Yeah!! the jungle has been replaced by 'concrete jungle'. The mushrooming of resorts dominates the whole landscape. The little flat-topped tea gardens and monocultures of exotic species like silver oak, wattle, and gum trees has taken over the wilderness.

The smooth undulating terrain has become more and more rugged. The 'soothing softness' of the carpet like grasslands and the patches of stunted green woods, have been grabbed by agricultural and commercial activities. The inaccessible hills, dense jungles and malaria-infested marshes that were opened up by the early planters for cultivation, have grown into giant estates. Horses and bullocks have been replaced by modern two wheelers. The elephant tracks

are used by Tractors and Marutis. The early planters hunted big and small game to live on. They planted in utmost fear of natural calamity like landslides, a rarity in the past but is more frequent in the recent years.

The scraping of the land for plantation and construction, not only vulgarised the natural landscape, but later made inroads for the over exploitation of natural resources. The dumping of non-degradable wastes by the tourists, is a menace for any balanced natural system.

The High Range is probably the only place in the world where one can see so many hydroelectric reservoirs. These dams were built with little foresight concerning their impact on the balance of nature. Many of these dams have become reservoirs for silt, thanks to clear cutting of the forests on nearby slopes.

A person who had been to Eravikulam or Hamilton Plateau may feel that I am a pessimist on High Ranges. But I am not, apparently in the whole High Ranges, only this small piece of land is in more or less its pristine form. Thanks to the Planters and Department of Forests, Kerala.

Finally, the comment "surpassingly grand and incomparably beautiful" by Douglas Hamilton, describing these areas will hold true only for the photo albums of yesteryears.

Regular Features

WILDLIFE WEEK CELEBRATION IN WII

As a part of the Wildlife Week celebration, the Wildlife Institute of India organised a drawing competition for the children of Chandrabani village on 4th October, 1996. Theme of this drawing competition was "Wildlife/Nature Conservation". Altogether 36 children in the age group 4-14 years participated in this competition. The winners were awarded with prizes. It is often seen that, before appearing in such competition the children usually consult

parents and others at home and also in the neighbourhood. This is how the conservation message spreads from one person to many in the society. Thus, organisation of the drawing competition provided us an occasion to educate and motivate the children of our campus, their parents and neighbours towards the cause of conservation. After the drawing competition the children were shown a few wildlife films.

TRAINING PROGRAMMES

Post - Graduate Diploma Course in Wildlife Management

The 9-months Post-Graduate Diploma Course in Wildlife Management (XVIII batch) commenced from 1st September, 1996 with 19 officer trainees - 14 forest officers from different states within the country and one veterinarian from C.C.U. Haryana Agriculture University, Hissar; 3 Bangladeshi personnel under United States of America Agency for International Development (USAID) sponsored WII-FWS

Project, one from Nepal under SAARC fellowship and a Malaysian from Sabah Wildlife Department, Malaysia. The course curriculum is divided into XVI modules. The officer trainees undertook their Orientation Tour to Sariska Tiger Reserve during October 5-12, 1996 and their Techniques Tour commenced from 22nd December, 1996 at Rajaji National Park. Following is the list of the officer trainees:

Sl.No.	Officer Trainee	State/UT/Country
1	Begum Rafiq Sultana	Bangladesh
2	Mr.Mokhlesur Rahman	Bangladesh
3	Mr.Kamrul Hassan	Bangladesh
4	Mr.Rashid Saburi	Malaysia
5	Mr.Nilamber Mishra	Nepal
6	Mr.T.B.Chatterjee	Andaman & Nicobar Islands
7	Mr.A.Gupta Choudhury	Arunachal Pradesh
8	Mr.Sunil Kumar	Bihar
9	Mr.Tarak Nath	Bihar
10	Mr.S.K.Mishra	CCS,HAU,Hissar[Haryana]
11	Mr.Saleem-ul-Haq	Jammu & Kashmir
12	Mr.Ganga Singh	Kerala
13	Mr.K.Vishwanathan	Kerala
14	Mr.R.P.Singh	Madhya Pradesh
15	Mr.R.K.Mishra	Madhya Pradesh
16	Mr.Asit Gopal	Madhya Pradesh
17	Mr.Kaushelendra Kumar	Madhya Pradesh
18	Mr.Devashis Banerjee	Madhya Pradesh
19	Mr.Arindam Tomar	Rajasthan

REPORT ON THE 3-WEEK CAPSULE COURSE IN WILDLIFE MANAGEMENT FOR IFS OFFICERS

Digvijay Singh Khati

A three week capsule course in Wildlife Management for IFS officers was organised at Wildlife Institute of India campus, Chandrabani, Dehradun. The course was sponsored by the Ministry of Environment and Forests Govt. of India. It was targeted for officers working as managers of protected areas or prospective managers in near future who have not received any formal training in Wildlife Management.

The course was inaugurated on December 02, 1996. Participants were initiated to different aspects of Wildlife Management. They were also exposed to different problems in Wildlife Management and strategies for the mitigation. Inputs were given by different faculty members from Wildlife Management, Wildlife Biology, Wildlife Extension and Ecodevelopment Planning Wing of the Institute. A number of guest faculty were also invited from the Indira Gandhi National Forest Academy, Indian Institute of Remote Sensing, Forest Survey of India and U.P. Watershed Project Department. A guest lecture was also delivered by the noted environmentalist Dr Vandana Shiva, on the closing day of the course.

In total five states viz., Bihar, Karnataka, Kerala, Maharashtra and Tripura were represented in the course.

Participants were also taken to Rajaji National Park and Corbett Tiger Reserve to have an interactive session with the park management. They also had hands on experience of different problems faced by the park management. The participants visited other institutions like Forest Survey of India and FRI, to know the latest update in the management of Biodiversity.

Participants had wonderful experience in Corbett National Park. They interacted with Shri R. C. Guatam and Shri Rajiv Bhartari, Director and Dy. Director respectively of Corbett Tiger Reserve. They also had a fruitful session with the members of Biodiversity group of Bird Watchers at Gairal in Corbett National Park.

The course concluded on 20th of December, 1996 with a feedback session with Shri S. K. Mukherjee, Director, Wildlife Institute of India.

Participant's involvement in different programmes of this course was complete. Interaction between the faculty and participants during the class-room sessions and field visit was remarkable and quite encouraging. The overall impression of the participants about the course was "Very Good". Most of them felt that this course would be quite useful in their current as well as future job assignments.



SECOND WORKSHOP ON "CONTROL OF ILLEGAL WILDLIFE TRADE IN INDIA" AT THE WILDLIFE INSTITUTE OF INDIA

S. P. Goyal

In the present changing scenario in this country, there is a felt need for the conservation of our invaluable wealth of natural resources and we all feel proud that India is one of the 12 mega biodiversity countries in the world. One of the major threats to ensure long term conservation is rampant poaching of "System Support Species" such as Tiger, Rhino, Elephant and others in addition to large scale collection of plant species for illegal trade. In terms of economic returns the illegal wildlife trade has been placed next to the narcotics. Wildlife Institute of India being a nodal agency in training of manpower for management of natural resources felt the requirement of organising a workshop with various enforcement agencies in order to curb illegal wildlife trade in India.

At WII, a first workshop on the subject was held during November 1995, and based on the responses of the participants and need, it was decided to make it an annual feature of WII's programme. The second workshop was held at WII from 26-28 November 1996 which was attended by 28 officers as participants/resource persons from govt. and non-governmental organisations such as Directorate of Revenue

Intelligence, National Institute of Criminology and Forensic Science; Delhi Police; Central Forensic Science Lab., National Academy of Custom Excise and Narcotics; ITBP; Central Bureau of Investigation; Botanical Survey of India; Zoological Survey of India; WWF-Traffic India; Project Tiger Directorate; Wildlife Protection Society of India; Ministry of Environment & Forests, Govt. of India; Legal Action for Wildlife and Environment; Indira Gandhi National Forest Academy; Central Zoo Authority; Salim Ali Centre for Ornithology and Natural History and State Forest Departments.

During this workshop, relevant issues to curb illegal wildlife trade viz. Indian Wildlife (Protection) Act, 1972; Anti-poaching measures in India, Role of CITES in International Wildlife Trade; Contribution of different enforcement agencies in curbing wildlife trade and forensic techniques were discussed. In addition, participants got a chance to discuss and see exhibits prepared by WII to identify wildlife products and parts with special reference to tiger claw and bone. Participants felt the need to involve officers from judiciary in such a forum.



NATIONAL WORKSHOP ON "STRENGTHENING OF WILDLIFE MANAGEMENT AND ECODEVELOPMENT CAPABILITIES" 29-30 NOVEMBER, 1996

UNDP project on "Strengthening of Wildlife Management and Ecodevelopment Capabilities" within Union and State Wildlife agencies was started by the Ministry of Environment & Forests, Govt. of India through Wildlife Institute of India, Dehra Dun. The Project is a joint venture of FAO, UNDP and Govt. of India. As the project was ending on 31.12.96, a workshop was organised as a part of the final evaluation of the project outputs. In this workshop, in addition to evaluation mission members, representatives from Govt. of India, UNDP, field

planning officers from various project sites and other officials from the various State Forest Departments and NGOs participated. Of the twenty original sites proposed in the project, the work in fourteen sites is operational. In the workshop it emerged that the project is anticipated to complete 85% of the delivery outputs in achieving its objectives till 31.12.96. As in some of the sites the works are yet to be completed, it was resolved that another 6 months' time may be needed for achieving 100% delivery of the project.

WII-FAO/UNDP PROJECT

NATIONAL WORKSHOP ON CURRENT TRENDS AND PRACTICES IN ENVIRONMENTAL IMPACT ASSESSMENT

Environmental Impact Assessment is increasingly being recognised as a valuable tool in environmental management. Yet, its effectiveness is significantly constrained on account of manifold flexible approaches.

A National Workshop on 'Current trends and practices in environmental impact assessment' was organised to bring together, share and collate experience, insight and opinion on the subject. The above workshop organised by WII during Dec. 26th - 28th 1996, was co-sponsored by the Ministry of Environment &

Forests, Govt. of India; South Eastern Coalfield Ltd.; Bharat Petroleum Corporation Ltd.; Cement Ambuja and Environmental Division of Steel Authority of India Ltd.

The three day workshop has been a successful venture in bringing together planners, consultants, environmental engineers, scientists, foresters, resource managers, EIA professionals and government representatives for promoting a common understanding of the role and scope of EIA within the framework of sustainable development.

From the Wilderness ==

BHUTANESE AFTERNOON

Sugato Dutt

With balding pate, silver hair, twinkling eyes and kindly smile he was surely any eight-year old's ideal. E.P. Gee, or Gee Sahab, as he had come to be known, was all that and more. Widely acclaimed for his discovery of the Golden Langur in the jungles of Assam, this quiet English tea-planter, was one of that rare tribe of celebrated Wildlifers in India.

This story is of our family's winter holiday to Bhutan. That Sunday afternoon I was let off on a special treat of going fishing on the banks of the river "Ai", that too with Gee Sahab. The "Ai" of course was a tumultuous mountain stream, just starting to mellow down on the riverine plains before its meandering incarnation as the monstrous "Bramhaputra" on the other side of the border.

For the gay little goo that was me, it was like a page from a story book come alive. Uncle Gee and me with a small puppy in tow must have made a cheerful spectacle, as we tumbled over the smooth white boulders that made up the river bank.

There was not much conversation that afternoon. For one thing of course, I wonder if middle-aged gentlemen, kindly or otherwise, take very readily to pesky eight year olds. Surely this old man was an exception. I wasn't sure. Much as I was bursting within to speak, there was something that kept me silent. Dumbstruck with awe, I followed the leader, and swallowed in the captivating riverine scenery.

Suddenly, the trio had to halt. The sharp wildlifer's eye had caught a glimmer of colour in the rippling waters. The young puppy stood rooted, ears cocked in attention. Our eyes followed Uncle Gee's finger's to his lips and then watched his eyebrows dance as he motioned

wordlessly. I tingled with alarm and the puppy's head tilted a wee bit, very cautiously, before he let off a stiff nervous bark. There was a beautiful snake in the water, just one foot away. I watched with open mouthed fascination as it glided away slowly in the distance.

The trio now moved ahead smug with the satisfaction of this secret sighting. I tossed pebbles into the river and the puppy, suddenly bolder now, let out a series of sharp yaps that rang out loudly in the country-side. After some while, Gee Sahab needed to sit quietly. We chose a small pool under a jamun tree. Fishing equipment came tumbling out of the bag while we watched with curiosity. The angling began in right earnest and continued with simply no signs of stopping. The silence of the old man was disconcerting yet it still remained awesome. With growing boredom I looked away. There were whining flies and chirping birds, but the sweltering humidity was beginning to tell on my patience.

I was almost standing up to leave when he clucked with his tongue. Simultaneously, our puppy friend cocked his ears again. On the nether bank, a large herd of elephants had descended, for a drink of water. The giant animals quenched themselves and a ear-splitting trumpeting rent the air. They must have been at least five hundred metres downstream but the sound was still deafening. One by one they ambled off into the jungles, the setting sun creating a grand finale to this gorgeous sight. That evening, I talked nineteen to the dozen when I returned home. All the pent up excitement came bursting out in torrents as everyone watched with amusement. Small wonder indeed, because everything that afternoon is simply emblazoned in my mind's eye. Even to this day, which is thirty years later!

WILDLIFE IN PALANI RANGE

A. Udhayan

It was definitely a little disappointing when I was not posted in a Wildlife Division on the completion of the Diploma Course in Wildlife Management. But my three camps (in July and August 1996) in the Palani Forests in the Dindigul Forest Division helped me not only get over the disappointment, but also made me feel lucky to have been posted in a wildlife rich area.

The Palani Range Forest lies adjacent to the Amaravathi R.F. of the Indira Gandhi Wildlife Sanctuary and the Kodaikanal Forest Division. It exhibits a variety of forest types ranging from the dry deciduous to the evergreen sholas. The riparian areas connect all these forest types right from an altitude of 300m to over 2000m above Mean Sea Level.

I managed to sight elephants in all my 3 visits to the Palani Range Forests. Based on the local information, the presence of 4 different herds in these forests were established. The total elephant population in this forest (including Dindigul Forest Division) is expected to be around 80. The one herd which was observed closely by Thiru K. S. Neelakantan, IFS (Conservator of Forests, Trichy Circle) and myself in the water spread area of the Palar-Porandalar Dam consisted of about 30 elephants with 8 Calves and 4 Sub-adults. Sadly not even a single tusker was sighted by us.

These elephants migrate freely into the Amaravathi Forests of the Indira Gandhi Wildlife Sanctuary by moving along the riparian areas and the Bamboo Forests. The Amaravathi Forest which receives primarily the North-East

Monsoon and the Palani Forests which possess streams fed by the South West Monsoon (Striking the Kodaikanal Plateau) could be the reason for this annual migration. The elephants which come to the Palani Forests during July-August generally move back to the Amaravathi Forests by February.

It was thrilling to come across some pugmarks of a tiger and about a week old remains of a huge gaur killed by a tiger. The forests especially in the lower areas support a healthy gaur population since many gaurs were encountered and a good number of calves were spotted.

Six Nilgiri Tahr were spotted in the steep slopes in the steep ridges close to the Dindigul - Indira Gandhi Wildlife Sanctuary boundary. The Tahr habitat is excellent with minimum disturbance. Scats of a leopard were noticed in this habitat.

Scats of sloth bear were found frequently especially along the riparian areas (Kudariyar River). Though Sambar pellets were commonly observed Sambars were not sighted. The grizzled giant squirrel is reported, from this area but none were spotted during the 3 visits. Sholas, grasslands and savannah vegetation (with primarily *Terminalia chebula* and *Emblica officinalis*, lemon grass and *Phoenix humilis*), moist deciduous, dry deciduous, riparian and the scrub forest are all present, providing a variety of habitat types. The area is extremely rich in biodiversity and it may be heartening to learn that this area is part of the proposed Kodaikanal Wildlife Sanctuary.

ALL IN A DAY'S (DAZED?) HUNT..

Prachi Mehta, Krishna Bhatnagar and K.Ramesh

It had all the essential ingredients of a successful expedition. The weather was perfect, our whole team was very enthusiastic and the exercise was both exciting and educative.

I am narrating the first half of elephant collaring operation at Rajaji National Park from 20th-22nd December, 1996.

Krishna, Ramesh and myself hauled ourselves up to Dholkhand where the team members consisting of Dr. Johnsingh, Dr. Malik, Dr. Goyal, Yashveer and others were camping for the past 3 days. After initial disappointment over Advait's absence, the team was hopeful about our bringing good luck in locating and collaring the elephants next day. Warm fire, Rajasthani namkeen and various jungle lores had us all in right 'spirits'.

Next day, we are off to the forests, **in search of an elephant.** Dr. Malik has handed us all the required accessories. We are armed with darting gun, darts with 4 ml of M-99 (Etorphine hydrochloride, darting drug), 4 ml of Revivon (antidote), radio collars, Yashveer and his videocamera, Vinod (Our very able lab. technician), Govind (Driver), Moti (Forest guard) and a few other helping staff and Premkali, the bold and young elephant of Rajaji. Krishna, Ramesh and me trotting along with others in hope of getting to see - atleast the operation. Premkali is to follow us later in the field.

It is 10.00 am and we have located a herd on the hill in Dholkhand block. We are watching, silently. She is a matriarch with three calves.

We have to flush them from the hills to the plains where the darting operation could be carried out smoothly. Aha, they decided to oblige and are moving down on their own accord towards the valley. We could catch a glimpse of the moving herd and we, novices are happy. " Move Fast" and we obey, silently in single file.

We are moving at a steady pace nearing the valley, just then " HALT " comes the command from behind. We all stop. A hurried message from above: " STOP. Don't go ahead, elephant is here, right behind us " ! Dr. Johnsingh looks perplexed and we are all confused.

" But We saw the herd going down ...then how come? "

After a second, a rather sheepish reply from above :

" Move ahead, this is our camp Elephant - Premkali "

True, elephants look all the same everywhere, but at that time it could have created a major goofup. Premkali is spared, thankfully. Uninterrupted, we accelerate.

The Sun is getting stronger, and the elephants might retreat into the shade and then it would be difficult to dart them. This is the third day of the unsuccessful hunt and everyone is fidgety. Our singular mission is to collar the matriarch today.

Three of us are hoping for the best, otherwise we would be blacklisted, we have been warned.

At around 10.50 am, we are closer to the herd. Premkali, our wise friend would cart us to them. Dr. Johnsingh, Yashveer, and Moti have taken their place on Premkali and as an afterthought, I am also asked to jump on. Willingly I do, while Dr. Johnsingh promises a ride to Krishna and Ramesh for the next operation.

Premkali, as Dr. Johnsingh says, is either a very bold or a very stupid elephant. She fears none. She is progressing through the dense forest towards the resting family very casually. The twigs, branches, thorns are everyday ally for her, so why should she bother? We are getting hit, slapped, finely bruised and scratched in the process. We halt as we see them.

Presently, they are showering dust onto themselves with great abandon. They have not sensed us as yet. A Sambar flushed at Premkali's arrival but elephants do not move. They are at about 70 m distance. As Premkali ingresses through the foliage, Small Minivets, Barbets, Greycrowned Woodpecker and Blackheaded Oriole glide out through the trees, calling.

Dr. Johnsingh has his gun directed at the unsuspecting Matriarch. She is facing us with two young calves at her feet and a sub adult female by her side. Dr. Johnsingh does not wish to dart then as the dart might hit the branch and deflect. Our position is conveyed to Dr. Goyal and Dr. Malik over the wireless.

We are very much in open and very close. They have begun to feed now and are oblivious of us. I wonder if this is in mutual respect or mere ignorance? It is 11.10am. Anxiety is written on everyone's face except, of course, Premkali, who finds this game of following her cousins rather amusing. But now the elephants have sensed us and have adjourned their activity.

The distance is about 50m and the Matriarch is flapping her ears and slowly turning her back

towards us. The calves are standing still and Dr. Johnsingh raises the gun and one shot is fired.

BANG ! It is 11.15 am, the dart has hit her and they flee. The dart has fallen but we are uncertain whether the drug has been injected.

Dr. Johnsingh has seen some liquid glistening from her shoulder. Premkali has to follow the elephants. She does quickly and we locate the fallen dart. "Ever active" Moti is already on the ground picking up the fallen dart." No "reprimands all others " **Don't touch it.** If there is a drop of drug in the dart, it may prove fatal ". Dr. Malik is contacted and he assures us that the drug must have been injected.

We follow the elephants and locate them.

11.25 am. The matriarch is standing, shocked and absolutely still. The calves appear equally dazed. Other Elephants are totally inactive but the birds keep calling.

" *She is going down* " whispers Dr. Johnsingh. Yashveer is shooting the happening. There is this distinct guttural sound (rumbling) and loud trumpeting. It is a cry of deep distress and we were told later that in Africa during elephant culling operation, when one member is gunned down other members communicate their distress through such agonizing trumpeting to other herds in the forest. Witnessing the loss of a family member, the surviving members of the herd go totally disarrayed and in such a situation their social order breaks. To prevent further harm, the entire herd is gunned down.

The Matriarch is swaying dizzily. Such a behaviour must have been unseen by the calves and they quickly surround her to support their unsteady mother so that she should not fall... Very poignant scene indeed.. But, if she would not fall then we would fail.. We have to drive away her pillars of support...

“ **Moti, FIRE** “ orders Dr. Johnsingh and there were 4 shots fired in the air accompanied by hooting and loud yelling and we got the calves driven away. She is left all by herself...and she sits down, drowsily. In a few seconds, our team arrives with Dr. Goyal at the helm. Luckily, She is not in a sternal position but is half leaning on the teak tree. The tree will have to be hacked. In a few seconds, she is in a deep slumber. Time is 11.35 am now.

For an hour we had a spur of various activities : sitting on her is Vinod fixing the collar efficiently, Dr. Goyal assisting Vinod, Yasin, Moti and others taking the measurements, Dr. Johnsingh giving various directives and tips, Yashveer videographing.

Three of us watching and beaming at each other occasionally for we shared a little happy secret: We carried our good (lady) luck, so we may stand another chance next time .

And once she moved a little, unseating and unnerving all. She was about three decades old and 8 feet tall. In an hour's time we are ready to revive her. She is administered 4 ml of Revivon at 12.30 pm. We all scurry to a safe, distant place to see her awake. She wakes up at 12.35 pm and slowly walks inside the forest looking for her lost family. I stop here with a note of appreciation and thanks to the collaring team ,,,,,,in anticipation of future opportunities. I hand over the page to Krishna and Ramesh for further account of theirs

Prachi Mehta

Two summers back, I watched Ibex being radio collared in the Pin valley National Park of the trans-himalayas. I shall not compare to tell you which exercise seemed more difficult, the Ibex or the Elephant collaring as both seemed equally difficult at that point of time. Nevertheless, I must admit, much to the chagrin of Yashveer

who has worked on ibex, that the Rajaji episode was much more exciting! After the splendid success close to Christy's base camp, the jubilant team drove back to the rest house for more darts and a much wanted 'chai-break'. Ready with the gear in about 30 minutes, we were off to Ganjarban in an upbeat mood to try and make another success story. Earlier in the day during their daily elephant explores, Ram Charan and Meherbaan, Christy's field assistants, spotted a lone one-tusker roaming about the woods of Ganjarban. Moving amidst Gujjar *deras* we reached the Dhaukand *rau*, straight south. Squatting on the rounded stones there were whispers of surmises about the tuskers whereabouts and as we waited zealously and impatiently for Premkali to arrive we heard faint but definite sounds of branches ripping, from inside Ganjarban. We were thankful, we were in the right direction.

My personal insights into the jungle are very less so this was going to be a delightful new experience after the cold desert affair and doubly rewarding from an elephant's back. I had replaced Prachi on this venture, while the rest of the team were the same. The time was 2:30 pm, when Premkali steered us into Ganjarban. Hardly a few metres from the *rau*, still in the open forest, we heard the rustle again from near proximity. As we inched forward, we glanced upon our next catch, half hidden in the dense undergrowth, with his back facing us. Probably sensing some alien presence close by, he soon turned around to face us. He was a tall, dark, handsome mammoth, stockily built, swinging his trunk to and fro while chewing a branch. The situation was ideal, taking careful aim Dr. Johnsingh pressed the trigger. But the charge misfired. Meanwhile, perturbed by our presence, the tusker held his head high in defiance and snouted forward, inquiringly, with a slight aggressive intent. However, when Premkali retreated in defence, he disappeared

into the thick of the jungle. Had the dart struck this elephant now, the mission would have been complete in an hour. But then, it was not ordained to be so.

So we moved from the periphery into the interiors. The northern parts of this strip has plantations and a dense undergrowth of *Ehretia* and *Mallotus*, and is believed to be a favourite haunt of lone tuskers according to Justus and Dr. Johnsingh who studied elephants in Rajaji some years ago. Under this profuse canopy manoeuvred by her Mahout, Premkali trudged nonchalantly along the patchwork of light and shadow through the dry mass of *Ailanthus* and *Acacia* plantations. Moti was sure the tusker could not have gone too far. And precisely, a little ahead we saw a black shape move through the bushes. Despite our irksome presence, initially he looked quite resolved and unperturbed and resumed his meal. And determined that we were, not to lose sight of him, we followed him stealthily and steadily from corner to corner and tree to tree intersecting and diverging his course for the apt moment. While he eluded us, at times with agility and at times very impetuously, disappearing into his familiar domain.

Forty five minutes went by trying to pursue this mammoth and with only two hours of daylight left, he was once again out of sight. Dr Johnsingh had earlier mentioned that lone bulls are prone to running long distances after being darted and considering mobility constraints at Ganjarban, we had to hasten our course of action. Our ears pricked up to every sound of the jungle, hoping to hear some rustle or any 'elephantine sound' when bushes before us parted with a faint rustle to reveal the head and shoulders of an enormous Sambar stag, moments later he stepped forth revealing his massive body in all its grandeur. Almost immediately, we heard a constant rattle of

branches, from behind a thick shrub around 100 m from where we stood, followed by curious sounds of sniffs and rumblings. We knew he was there. But the presence of a dense cover indicated no clear shot. So we chanced our luck and waited in silence. Annoyed and vexed by the intruders persistent pursuits he eventually came out into clear view facing us broad side, making another perfect occasion to dart. But once again the blessed charge misfired. Just when Dr Johnsingh opened the barrel to readjust the charge holder, the tusker mock charged towards us, but sensing flurry atop Premkali, he beat a hasty retreat and the next moment I saw the dart whiz past at the disappearing animal. It was 3:25 pm. This time it hit, and on the rump. Shocked and bewildered of the smack on his back, the dazed creature ran berserk and out of sight.

Then began another tale of tension and anxiety. For the first time since afternoon we completely lost track of him. He bolted too fast to make any speculations or reconstruct any evidence of his escape and to compound our worries the wireless set with the ground party failed, hence after a futile attempt to get through the message we finally called out for them.

Minutes later there were 20 of us on a desperate bid to locate the tranquillized elephant. We spread out in an extended line brushing through the undergrowth stumbling over bulky trunks and tangled roots, looking out for tracks and rummaging all possible quarters of its refuge amidst prayers galore. Fifty minutes had already passed by, a sudden fear and anxiety overcame us and our distress became awfully obvious when we realized the tracks that we expectantly followed earlier were **Premkali's!!** Not locating the animal on time meant its death for certain, and an end to further collaring and the thought of it being in sternal recumbency haunted us over and over again. Brushing aside ominous

thoughts we combed through the stretch where we expected the animal to be. It was 5 pm now and close to dusk, our disheartened group met again to chalk out a better strategy. We now decided to spread out, but in a different direction i.e., till the *rau* to complete the entire stretch. Soon as we dispersed Moti found the dart which meant the tusker lay somewhere around and just as the intensive search began, we heard frantic calls of '*mil gaya*' coming from the side of the *rau*. As expected earlier, Ramsaran who had already reached the *rau*, spotted the mammoth there. Overwhelmed by the call, a host of emotions overcame me, it was a mixture of joy, relief and anxiety to most of us as we frenziedly dashed out of Ganjarban.

Jumping down the bank of the *rau*, I saw him clumsily crouched against the setting sun and as expected he was in the sternal position. Hoping for the best I reached the site of commotion. Supported by the wall of the *rau* he had his right foreleg under the chest. He looked dazed with his eyes open blowing out intermittent groans and grunts. An anxious Moti was insistent on immediately reviving the animal, and since he was not on his chest and breathed normally Dr. Johnsingh and Dr. Goyal wanted his collar on. However after a little debating Vinod promptly settled over the numb creature, tightening the nuts and bolts. Then he injected 4 ml of revivon. He was at his fastest best and did a perfect job. All was done in about 12 minutes and there was no time for measurements.

The group now distanced itself from this inanimate giant and patiently waited for any movement. Five minutes later, much to our relief we saw his back move. Sluggishly rising on his haunches he tugged out his lone tusk from an entangled root. Silhouetted as he looked in the twilight he slowly rose on his fours, and stood there trying to gain his bearings and may be wondering what had happened.

We watched him intently until he totally merged with the winter darkness. The crescent of the moon shone brightly in a cloudless dark sky and just as we walked towards the guest house, I looked back at him with a sense of apology and expectancy, for he may have answers to questions unknown.

Krishna Bhatnagar

As Prachi and Krishna (Luck ladies!) narrated the whole collaring operation, I will briefly mention here one unforgettable event which I consider as the most interesting and exhilarating experience I had during the two days exercise. This was my third visit to an **Elephant Country**, and second to Rajaji National Park. During the operation, I was in Ground Party with Dr. Goyal, Krishna and other field assistants, while Dr. Johnsingh led Elephant Party who was successful in tranquillising elephants later. Prachi and Yashveer (Camera man?) were also in the elephant party. I was told that the ground party was supposed to observe the elephants carefully and follow the darted elephant if it runs away from the group. We were on top of a hill, watching the elephant group which was busy feeding, without bothering about our presence. We waited for over half an hour, and all of a sudden we heard a gun shot followed by a loud, painful trumpeting. We could even hear the strength of the call slowly going down and eventually stopping.

Dr. Goyal was still waiting for a call from Dr. Johnsingh, and as soon as he got the message through 'walky talky' that a female was tranquillised, he literally pushed us down hill from where we heard the sound. We were excited and more enthusiastic to see her, and rushed to the spot where she was lying down. Every one was busy in taking body measurements, collaring elephant, photographing, video tapping, etc. After everything was over, Dr. Goyal was ready with

revivon, Dr. Johnsingh was urging others to rush back, except me. As Pemkali did not have enough room for more than four persons, he asked me to climb on a tree if I wanted to watch the elephant recovering from anaesthetic condition, for which I was most interested. But I first hesitated little as I wasn't sure whether he was joking or seriously suggesting.

A minute later Dr. Goyal injected revivon, and others disappeared, leaving Yashveer, Prachi and Krishna on elephant back. With horror and enthusiasm, I ran to a nearby Sal tree which was located just 10m away from the elephant. The tree was of medium size and did not have any branch in the lower half. Some how I had to climb the tree and found a suitable place to watch her revive. After making myself comfortable on the tree, I looked around and the moment I saw nobody in my view, I was little frightened and thought; "she is going to come and uproot the sal tree on which I am sitting". Still she was motionless, and exactly after 5 minutes she moved her tail and trunk. I was watching her very keenly and curiously, anticipating next move of her. Slowly she opened her eyes and the first thing she did was, touched her collar with the trunk!. Then she tried to stand up but failed. Again she tried but this time she managed to lift herself up half and was on her knees.

Finally she stood up and was facing me. By this time my fear mixed with excitement peaked and I tried to conceal myself in a big branch which, I thought, will obstruct my closeness to her. Then she turned back slowly and walked for five metres ahead and stood for some time. Likewise, she kept proceeding towards the direction of her fellow group members. I felt myself relieved from fear and got down from the tree. Since the area was new to me, I could not make out the right path to our camp site. However, I started walking on a path which led to the direction where all others went. Approximately after 200 mts of walk, I heard some branches being broken and movement inside the bushes. I was thrilled to feel some elephants around and immediately thought of my safety. Unfortunately, it was difficult to run ther amidst high bushes which were also blocking the whole view of the forest. For a moment I did not know what to do and stood there for a minute, thinking of a way to escape from elephants. Then I hurriedly climbed another tree and looked around to see how far the elephants were from me. And what I saw made me laugh at myself for taking such an effort for nothing; since there were langurs on a tree and sambars inside the bush. Amused and happy at the event, I retraced my way to our camp site Dholkand Guest house, having had my last laugh of the day's hunt.

K. Ramesh



AN ODE TO HORNIBILLS

Aparajita Datta

Hornbills are a trifle big,
And what they chiefly dig
Is - if you please, - a FIG

The female is sealed in a hole
On the bark of a big tree bole
Feeding his brood is the male's chief role

These birds take life with undue gravity
And always seem to be engaged in some important
activity

I suppose it must be some dire necessity
which makes them go into such a tizzy
Watching them makes one's head go dizzy

On tall trees, they usually park
Just before it gets much too dark
And hark,
their call sounds like a bark!
But alas, just for a petty lark
A hunter raises his gun, and takes his mark
What a jark (*sic*)!

Hunting here, maybe a way of life,
But what seems to be causing more strife
Is that tree felling is rife

If all ye, think, this is yet another entreaty
to plea for their security
Nay, but it seems to me such a pity
That those of you in the city
Should be unaware of this soon-to-be rarity
I suppose, that is what drove me to pen such a poor
ditty
And before this poem degenerates even further into
banality
I shall end it with a definite finality.

..... and to squirrels

Some people sneer, I study giant squirrels
because they are 'cute'
But I say, my Foot
I could argue that such an idea is moot

They scoff, what's the big deal
A squirrel doesn't even make a
a satisfactory meal

So here follows a few facts to make your head reel -
The bark of many trees they peel
with such unflagging single-minded zeal
that the poor trees rarely can heal
even licking the sap before it can congeal

And at times they hide their food in a cache
to which they generally dash
For a future solitary bash
Where other squirrels are not
allowed to gatecrash
And if they do, they may even get a gash
If you think this is too rash
Consider their plight
when resources are slight
so it seems to me quite alright
If they fight for what is theirs by right

Their homes are situated at a great height
Where they shelter for all of the dark night
Leafy twigs hold it together tight
From here they venture out in the morning light
And roam till the day remains bright

Though they belong to the Order Rodentia
Because of their peculiar life-history credentia
By ecologists, I am told that they have been elected
To be grouped as K-selected

Their problems are associated with
high spatio-temporal patchiness
If you think that this is yet another catchiness
to screw your happiness
Let me remark with regard to the same
That is hardly my aim

And I think you will agree that its well-nigh time
that I ended this tortured yet educative rhyme



MY MEMORIES OF THE CORBETT TIGER RESERVE

Anvesha Singh, Age : 10 yrs.

Today on 14th December we are starting from Chandrabani, Dehra Dun for Jim Corbett Tiger Reserve situated in the middle of Uttar Pradesh. We reached Corbett at 7:30 p.m. and halted at Dhikala. We had our dinner at 8:10 p.m. in a nearby restaurant at the New Forest Rest House. We were very tired so we washed ourselves and fell asleep listening to the Bible recited by Wilson uncle.

On 15th we woke up at 6:00 a.m. sharp and had our bed tea with nice cakes (home-made) which was brought by Bipasha. We got ready soon and reached the elephant station at 7:10 a.m. and took a wonderful elephant ride. We saw Otters, Sambhars, Barking deer, Pied kingfisher Grey-headed flycatcher and some Warblers. The otters were in Ramganga River. There was a beautiful school of Golden Mahaseer in the shape of 'V' in the crystal clear water. We were very happy and returned back. Then we went to a nearby resthouse and there climbed the trees of guava and had fun. Manu teased Bipasha a lot. But fun is fun. Then, we went to "Mota Sal" a very old tree of Sal. Its height was about 48.3 mt and girth was about 6.5 mts. This one was the biggest tree of Sal in Corbett. Afterwards we went to see Ghariyals and crocodiles. We saw two Ghariyals and went to Gairal a nearby resthouse. While going to Gairal a wild tusker

blocked our way for half an hour when we stayed in the bus. After that he ate a lantana bush and went back where it came from. We reached Gairal and played many games. Since it was dark soon, we stopped playing fearing scorpions and snakes in the thick grasses. We had a nice dinner. Sawarkar uncle was telling stories about animals and forest, all others enjoyed his stories. We had camp fire there and went back to Dhikala in our rooms to sleep. I had dreams of the green forests and my mother.

On 16th, the third day I got up at 6:15 and got ready at 7:15 a.m. Manu went for the elephant ride again. Bipasha went in the gypsy with Mr Wilson and jovial Khati Uncle. I enjoyed the green and beautiful trees of Sal, Khair, Soj etc. (which appeared so beautiful and caring to me). I also saw Golden Oriole, Shikra, Indian tree pie and Crested-Hawk Eagle. Then I went back to the room and got it tidy in a few minutes. I went back to the watch-tower and as I started taking notes Manu came running and told me that he saw a leopard, four tuskers and sambhars from a distance. When all uncles came back from elephant and gypsy ride, we went to take our breakfast. On our way back we stopped at the entrance of the Corbett Tiger Reserve and went to nature shop and visited the museum. Then we returned back to Dehra Dun.

THE TALE OF TAILS

Vinayak Mathur, Age : 9 yrs.

Hello ! I am Vinayak. I go on our campus trail every Saturday. I have seen many birds, and now I will tell you about some birds and their tails. One may ask if the tail is important for birds ? Yes, it is. The tail is important for birds because it helps them to change directions, maintain balance and perch on branches of trees.

THE PEACOCK



The peacock has a long and colourful tail. It looks majestic when it spreads out its tail which is like a huge fan when raised up behind its head. The tail which is almost four feet long, has green feathers which have beautiful blue 'eyes' with copper brown border around it. The tail of peacock is known as "TRAIN". The longer the train, better are its chances of finding a mate. These birds eat grains and tender shoots

of plants, insects, lizards and snakes.

THE COMMON BABBLER

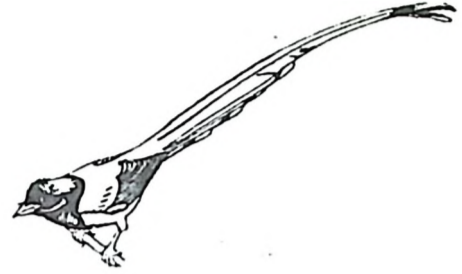
These birds are dull brown with darker patches on the back. The tail is fairly long and looks untidy.



They spend most of their time on the ground looking for insects and grubs. They also eat grain and berries. They drink the nectar found in flowers. The short tail helps them in short distance flights.

BLUE MAGPIE

The blue Magpie is a small bird but it has a very long tail. The tail feathers are sometimes as



much as fifteen to seventeen inches long. They are blue, tipped with white. The long tail helps it glide through the canopy of trees. These birds eat fruits and insects and have also been seen stealing eggs and young ones of other birds.

PARIAH KITE

The Pariah kite is a large brown bird with a forked tail. It lives mainly on offal, garbage insects, worms and anything that can be picked up. The long, forked tail gives it stability while soaring in the air.



RACKET TAILED DRONGO

It is deep glossy black with a black tuft on the forehead. It has a very long forked tail. The tail is longer than the bird itself, and consists of two long thin feather like wires which widen out at the end. The ribbon like tail gives the bird additional stability when it flies through the trees, hawking on insects. Drongos feed on moths and large insects and drink the nectar of flowers.



Good bye, friends. Next year I will tell you about other birds. Happy New Year to you all.

BIRDS' BEAKS

Kanishka Singh, Age : 9 yrs

Introduction:

As we have teeth to eat, birds have beaks to feed but unlike humans, birds have different kinds of beaks. In this article, I Kanishka Singh will discuss about different kinds of beaks of birds and their food.

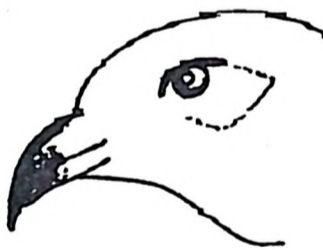
WEAVER OR BAYA BIRD



About the size of a sparrow, these birds weave a mass of dried grass in the shape of a funnel. It has two entrance; one at the side and one on the top. The nests hang from a branch near a water source. These birds nest in a colony and you can see these colonies near our Institute pond.

TAWNY EAGLE

This bird is almost of a size of a Kite. Its beak is like a sharp edged instrument which can tear at the flesh of live birds which it feeds upon. This is a typical "RAPTOR" beak. SO BEWARE.



GOLDEN BACKED WOODPECKER

This bird is bigger than the Myna and is fairly common in our campus. It is seen frequently on the tree trunk banging its head - but not in anger; this is called "pecking" by which it picks up insects from the tree trunk. I wonder if he ever gets a "HEADACHE !".



GREY HORNBILL



This bird is seen in our campus and the sal patch. The beak has a "Casque" on top. This bird eats mainly "Ficus" fruits. With its big beak, it seals its nest with mud plaster during its breeding season. Its call is like a shrill horn, may be that's why the name HORNBILL.

ROSE RINGED PARAKEET

This bird needs no introduction. Many people keep them in their house, which is quite unfair to the birds. They have curved beak with which it cracks fruits and feeds on the seeds. It feeds on fruits like apple, cherry, guava, mango etc.



PURPLE SUNBIRD

Smaller than a sparrow, this bird looks very beautiful in the sun - when all its colors shine as bright jewels. The beak is long and curved down. It is used as a "straw" to sip nectar from flowers. This bird is also seen in our campus.



CORMORANT

This large bird is seen everyday in our Institute pond. It has a long beak with which it catches fishes. In other Asian countries, they train cormorants to catch fish for them and earn lot of money. In return, the bird gets to eat 2-3 extra fishes. Sometimes, the bird, instead of giving the fish to the owner, eats the fish !smart fellow!



TAILOR BIRD

This bird is commonly seen in our campus. It has a thin, straight, pointed beak with which it stitches up leaves to make a nest. The nest looks perfectly stitched with thread and tailor's needle. This bird feeds on insects.



RIVER TERN

This bird is seen flying above water and diving down to catch a fish from the water. The beak is long and pointed. It also feeds on small insects.



SPOONBILL

As its name implies, the beak is shaped like a spoon with which it picks small fishes, molluscs, and snails from the mud bank. Its shape serves as filter from where water gets drained out. This bird can be seen near large water bodies.



I hope this is enough for this issue. Next time some more on different birds.

Till then...., Happy New Year.

Happy bird watching

GOD'S WONDERFUL NATURE

Bipasha Bhattacharya, Age : 11 yrs.

The birds sing,
and make us happy.
The trees swing,
with a humble heart
and helps us survive.
The high steep mountains
guard and protect us.
These are God's gift my friend !
Save it or our future,
friends will never know,
How charming the earth had been before.

WAS IT A MOCK CHARGE !

Bipasha Bhattacharya, Age : 11 years

We were in Corbett National Park for a short trip. I along with two of my friends Anvesha and Kanishka, and with other uncles reached the park on the evening of 14th December 1996. I was very thrilled to be there in the forest without my parents. In the early hours of the next day we all enjoyed our Elephant ride spotting many herbivores and birds. After lunch we had gone to a huge watch tower for Elephant sighting. We could see a herd of Elephants consisting of seven adults and a baby Elephant. While the elders went up the tower, we the children did not climb the huge tower because it could have been risky for us. After every one came down we had to proceed to Gairal as per schedule. Our elders decided to go by jeeps by taking the forest roads and we were taken by Khati uncle in the bus by the main road.

Now, we were on our way to Gairal, another nice spot in the Corbett National Park. It was about 3 O'clock in the afternoon. We were five passengers with one guard, two helpers and the driver of the bus. While merrily enjoying on the way and sighting birds enroute, suddenly we saw a male tusker Elephant on the main road emerging from the *Lantana* bushes. As he started moving towards us my heart stopped beating for a while and I got extremely frightened. My only consolation was being with the group along with a guard who was carrying a gun. At the same time I did not like the gun to

be fired at the poor animal. Khati uncle asked the guard to load the gun but due to some problems the gun could not be loaded. This made us more frightened. One of our friends started crying. The giant looked fierce with reddish eyes and ears. It appeared to be charging towards us. To add to our misfortune a Maruti Gypsy was behind our bus whose driver was in a great hurry to overtake us. The men sitting in the gypsy vehicle did not realise that a tusker had blocked the road and was coming towards us. The driver of the gypsy became furious and kept pressing the horn. We shouted and requested him to move back but he stood still. The bus being forced to move back hit the gypsy vehicle and broke its head lights. At this moment we were feeling very scary, since the gypsy was not moving, the gun could not be loaded and the massive tusker was marching forward towards us.

Then all of a sudden something struck the Elephant and he changed his way entering the *Lantana* bushes. The angry gypsy driver didn't look less furious than the tusker. He had a little fight with our bus driver and moved ahead. Though the Elephant had disappeared we all were still dazed and had not recovered from the shock.

I still wonder if the Elephant was actually charging towards us or was it a mock charge ?

LOGICAL POETRY

B.M.S. Rathore

Poetic Summary of the Course

Indicators

Purpose

Client Focus and new vision
 Managerial accountability and role division
 Process change and total quality
 Empowerment & Gender equality.

So in the end
 Up we (client) stand
 Token of appreciation
 -to course facilitator
 By raising two hands.

Output

Over 4 weeks & twenty days
 Around participatory ways
 Concepts , models and theory
 be it Laurance Curve or Citizens' Jury

The fattened folder, number of flip charts
 be considered output indicators
 Of the course
 that proved to be a total sell out.

Should there be still a doubt
 Easily one can workout
 By checking on Leo's recovery
 To confirm the Course Delivery.

Activity

1. Course Teaching

Day one & course introduction
 Future hopes & participant's expectation
 Group work norms
 And Best Practice for presentation.

CDR environment
 No standard package
 Blue print approach
 Close to wreckage..

Hub model
 and Total Quality
 Client Focus
 Managerial accountability.

Stakeholders recognition
 Interest and implication
 Leading to
 problem identification.

Problem of circularity
Cause & effect complexity
Unless developed into Problem Tree
Can pose severe difficulty.

Logical Framework
Separating Managerial accountability
Focus on client output
Added responsibility.

2. Participant's Presentation

Queen's Forest
ODA Project
World Vision,
Sadguru Foundation,
Red Crescent Mission
 KWAP Kenya
 Training Mania

Tiger Pie
Nigerian High
RMP CARE
Vietnam (VTAD) Share.

3. Extra Curricular Activities

All week end
a great fiesta
be it Notinghill
or Evita
 Roman Bath
 Brighton Beach
 Black Bush Market
 London Street.

पर्यावरण चेतना

वे कहाँ नहीं हैं ॥ पर्यावरणीय समस्यायें ॥
 उन्हें उठाने वाले लोग या संगठन नहीं हैं
 विकास विशाल, ये विनाश विकराल
 समझो अगर मती मारी गई है
 देश का ईंधन देश का चारा
 लेश मात्र रह गया हमारा
 अंधी आधुनिकता की दौड़ अब प्रकृति को नहीं गंवारा
 हरे वन ये प्राण वायु
 और उपजाऊ मिट्टी, मीठी धारा
 दूर हो रहे मानव से अब
 छोड़ रहे ये साथ हमारा
 अलख जग चुकी समाज में
 विकास की लूट को समझाने की
 अब तो प्रेरित हो सबको ही आगे आना है
 सूक्ष्म शिविरों को कर स्थूल
 अब पूर्ण समाज जगाना है ।

सुनीत नथानी

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| 1. | Manual of Wildlife Technique for India
Field Document No. 11 | Rs. 80/- |
| 2. | Technique for Wildlife Census in India | Rs. 100/- |
| 3. | A Guide to the Chemical Restraint
of Wild Animals Technical Report No.2 | Rs. 30/- |
| 4. | Procedures for Monitoring Wildlife
Health & Investigating Diseases | Rs. 25/- |
| 5. | A Pocket Book of Indian Pheasants | Rs. 23/- |
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| 7. | Turtle Trade in India | Rs. 100/- |
| 8. | A Manual for Planning Wildlife Management
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