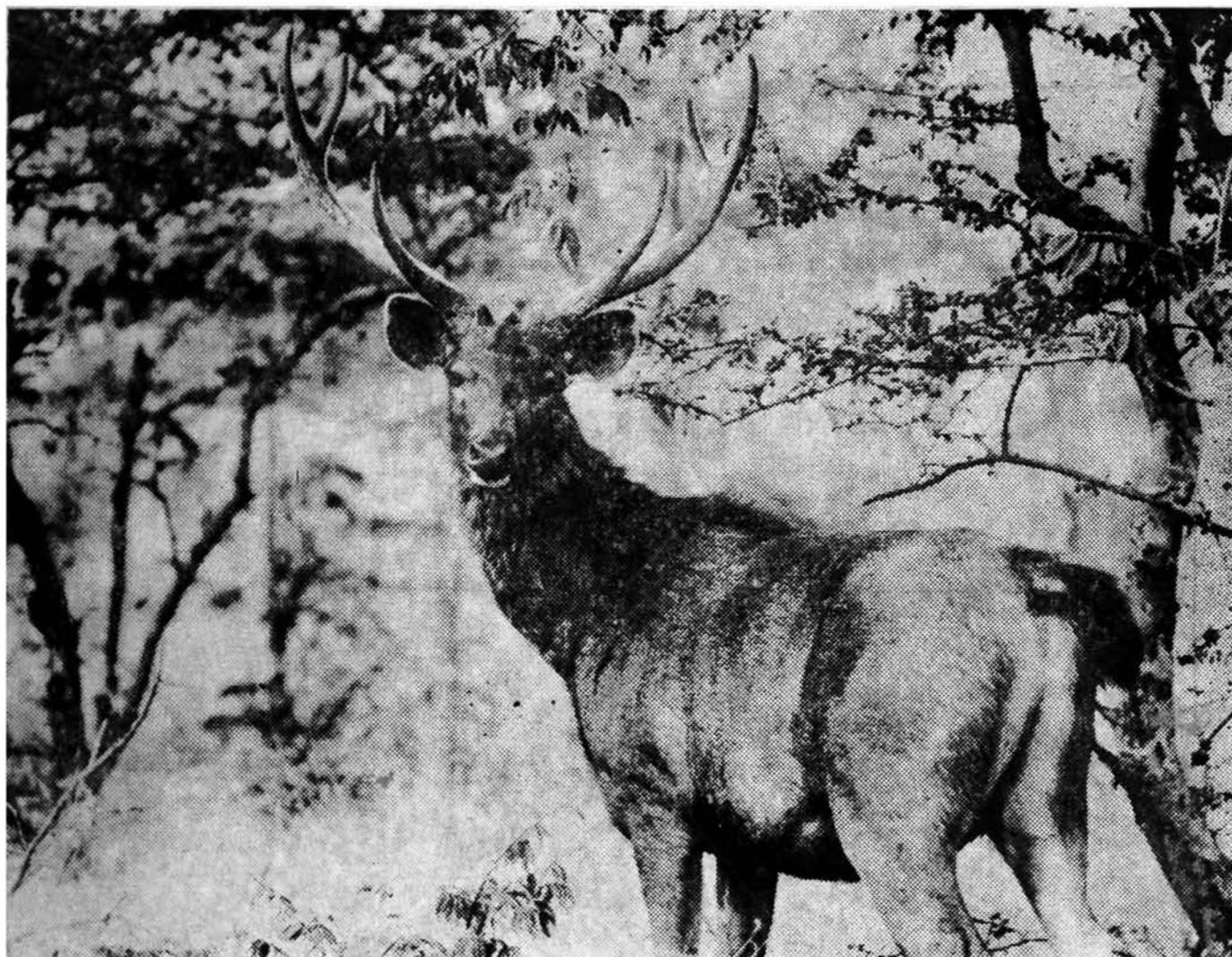


**MADRAS NATURALISTS'
SOCIETY (Regd.)**



FIRST ANNIVERSARY

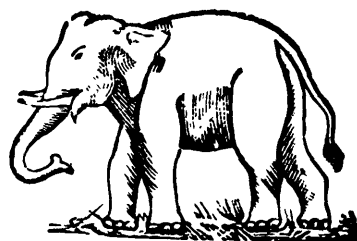
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Madras Naturalists' Society (Regd)

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SOUVENIR

Released on the occasion of their

FIRST ANNIVERSARY CELEBRATION

Held On 24th February 1980

Photographs on the Front and Rear Covers

BY. M. KRISHNAN

WITH

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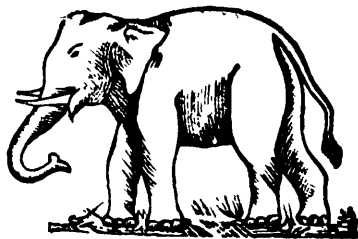
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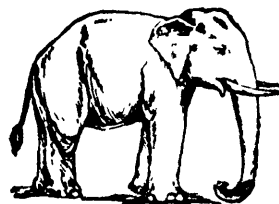
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PROGRAMME

Welcome Address — By the President
DR. M. V. RAJENDRAN

Inaguration and releasing
the Souvenir — His Excellency
SHRI. PRABHUDAS PATWARI
The Governor of Tamil Nadu

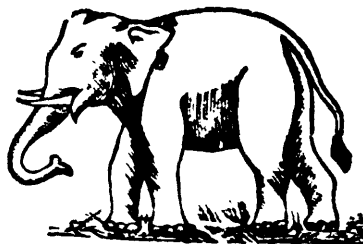
Speech by — **S. JAGANNATHA RAO**

Vote of Thanks — **RAJAN**, Secretary

Film show on wild life

National Anthem

A Collection of Photographs taken by the members will be
exhibited in the hall.



MEMORANDUM SUBMITTED

By Madras Naturalist's Society

To His Excellency the Governor

PRABHUDAS PATWARI on February 24, 1980

May we the members of Madras Naturalists' society (Regd.) submit the following for your kind consideration and orders.

1. Concession to bonafide members of our society who will produce their identity cards be permitted to occupy forest rest houses at concessional rates as they go there mainly for study purposes. These concessional rates may be subject to a minimum of rupees three as against the present rates of rupees fifteen to rupees twenty per day per person.
2. Allotment on lease of five years to the society, a piece of land about a ground in area for camping, in selected sanctuaries and reserve forests. These sites will be fenced by us to enable the members to camp and study the flora of these areas.
3. Prohibition of shooting and protection of birds in the following areas in Madras. The Adyar river estuary, the Manali pond opposite to the guest house of Madhavaram dairy development project and Velachery. This will enable over a hundred species of birds, many of which are migratory to roost and feed without disturbance.
4. Introduction of social forestry in large scale in Tamilnadu to meet the fuel and commercial needs, thereby saving and improving existing forests.
5. Erection of adequate number of observation towers over water-holes in all wild life sanctuaries.
6. Allotment on lease the island on the edge of Buckingham canal at Ogium river estuary, Muttukadu on Mahabalipuram road, to the society for development into a nature camp site.
7. Declaration of Guindy deer sanctuary as a national park.

Members of Madras Natrulists' Society.



MESSAGE

Dr. SALIM ALI

46, Pali Hill

Bandra,

Bombay-400 050

14, January 1980

Dear Shri Rajan,

Thank you for your letter of 7 January,

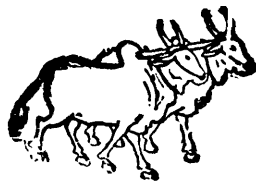
I am happy to learn of the diverse activities of the Madras Naturalists' Society, and of your members' visit to Silent Valley and their active efforts to save it from destruction. I am glad also that you intend to bring out a Souvenir to celebrate the first anniversary of the Society. Personally I feel that one year is too short a time for such celebration, and that a minimum period of five years **active existence would be a more appropriate period. However, I give you my blessings with the hope that the Society will remain as active as now and prosper in every other way.**

With best wishes.

Yours sincerely,

(Sd) SALIM ALI

With best compliments from:—



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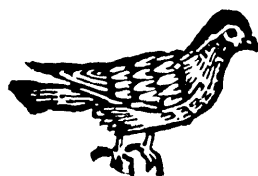
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Hony. Legal Advisor	—	SHRI K. V. RAO, B.A., B.L.
Hony. Auditor	—	SHRI. R. VISVANATHAN, B. Com., A.C.A.
Registered Office	—	13, Ayalur Muthiah Mudali Street, Madras-600 001.

ABOUT OURSELVES

The Madras Naturalists' Society was formed in December 1978. It is a registered Society of Nature and Wildlife lovers in Madras. The objective of the society is to educate the public on the beauty of our fauna and flora and the need for conservation of the same.

The members of the society meet quite often and discuss matters relating to wildlife and nature. A monthly bulletin is circulated to the members and to some of the sister societies. The bulletin covers members' articles and observations on fauna and flora. The society organises periodic lectures by eminent persons on various subjects in Natural History. Notable among them during 1979 were: Dr. Prof. Carl Ganz, internationally known herpetologist from Michigan University, Dr. A. G. K. Menon of the Zoological Survey of India, Madras, Dr. K. V. Kurup of the Zoological Survey of India, Madras, Shri Bhoja Shetty, Chief Conservator of Forests, Tamilnadu and Dr. Robert Grubh Asst. Curator of B. N. H. S.

The Society had arranged [Nature Camps for the members to Silent Valley, Periyar Game Sanctuary, Point Calimere, Kalakkad Sanctuary, Mundanthurai Sanctuary, Rajamally Sanctuary etc. Some of our members took part in the Manali Camp in Himachal Pradesh sponsored by the **WWF**.

With the co-operation of the Zoological Survey of India, Madras the Society conducted "Deer Count" in the Guindy Reserve Forest twice last year.

We have plans to arrange lectures with slides and films in schools in Madras to create love and interest among children in Nature and Wildlife. We sincerely hope that the Government, Educational Institutions and the Public will co-operate with us in making this venture a success.

V. J. Rajan,
Hony. Secretary,
Madras Naturalists' Society.

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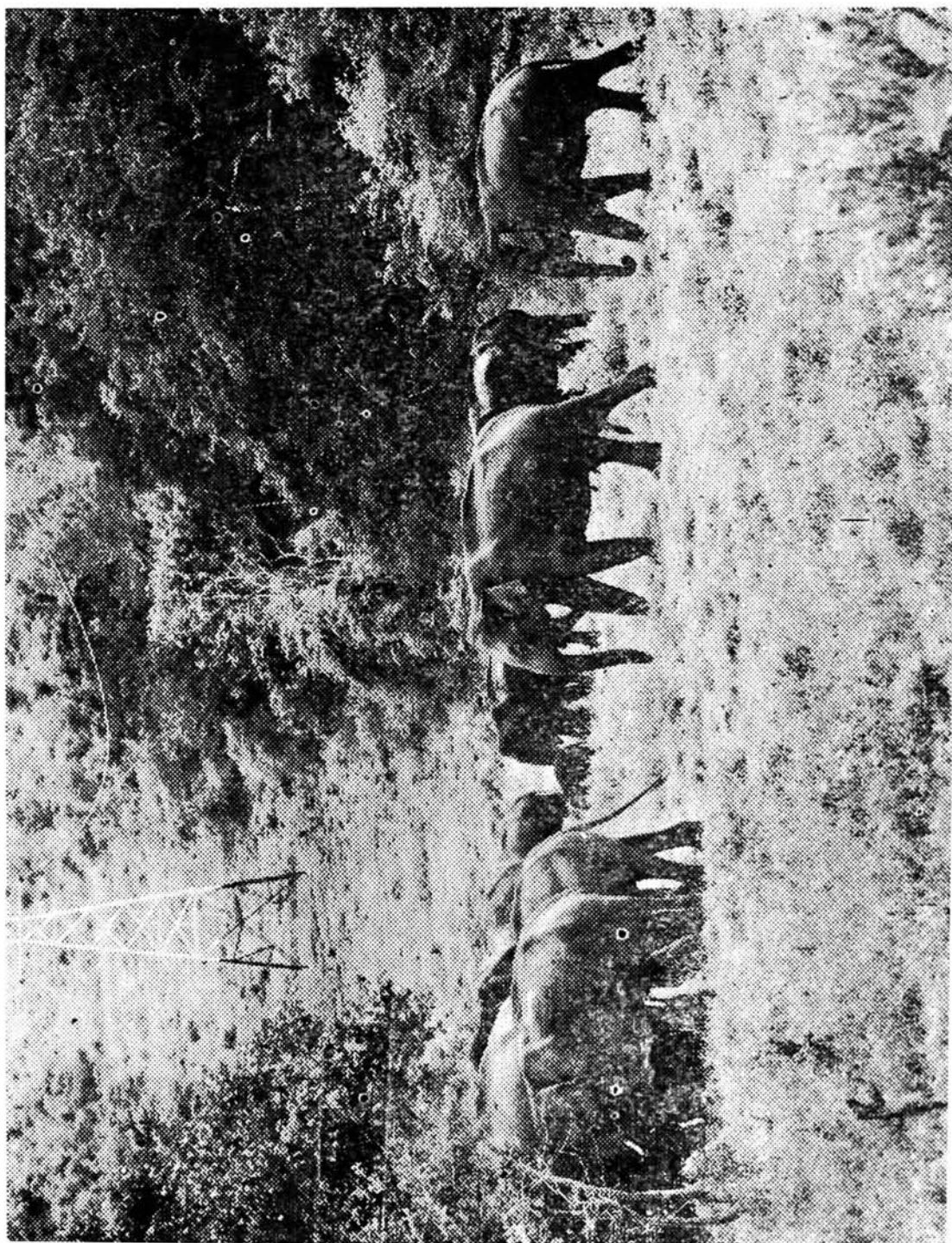
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THE SILENT VALLEY



Photographs-- **M. RAGHURAMAN**



· Photo— **M. KRISHNAN**

SAVING INDIA

M. KRISHNAN

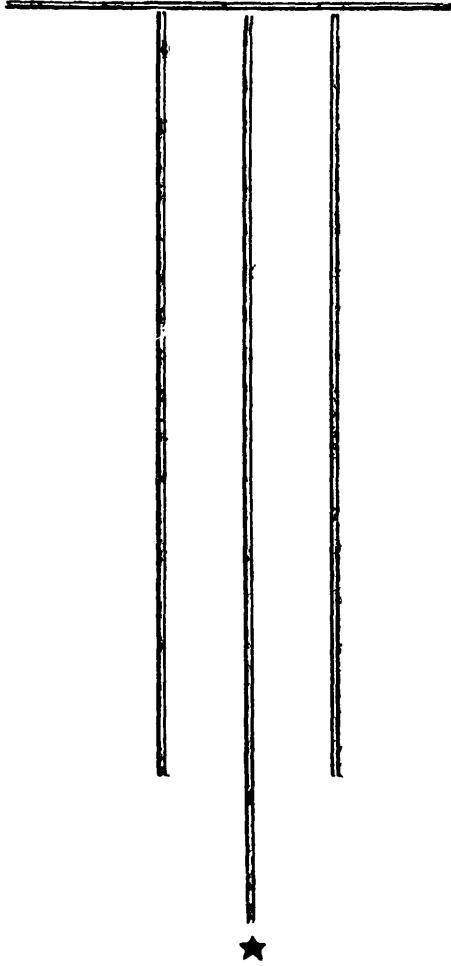
It is ironic, even tragic, but deplorably true that in the bad old days of colonial rule and despotic princely power the integrity of our vast and ancient land was much better safeguarded than in the past three decades. In fact, the physical disintegration of India has assumed threatening proportions only since Independence.

On detached consideration, it will be realized that to some extent this was inevitable. Not because of our newly evolved constitution (though a major defect in it is that while it has many provisions for securing the interest of the people, there is nothing in it to protect the land) but since our population had increased enormously by the time it was enacted and has continued to increase, naturally at an accelerated tempo. To meet the growing demands of our burgeoning industries and our ever-growing populations, our governments (in sole charge of the land and with an acute awareness of their need to be popular) have, with hasty and uncoordinated wastefulness, depleted the country and eroded its physical entity. What is lost is lost, much of it irretrievably, but there is still enough left truly representative of the magnificent and varied natural richness of India for preserving its identity. Let us return to this later, and first consider what is meant by the hallowed name, India, to each of us.

It means many things to many people, for the quiddity of any country is many-faceted, and certain aspects of this complex identity may appeal far more powerfully to an individual than all the rest. A scholar may think of the country mainly in terms of the classical wealth of an Indian language, to a musician or musicologist it may be mainly the vastness of a regional school of music, to the student of philosophy the profound discourses of our great thinkers must seem all important, and even to a gifted cook the culinary traditions of that part of the country to which he belongs must seem vital. But granting this diversity of individual apprehension, surely no country is merely a conglomeration of its cultural accretions. It has, besides the colour of its human past, its own unmistakable and immemorial physical identity. It is significant that the poets who have sung of India have sung of it, not as the home of any cultural heritage, but of its mountains and valleys, its rivers and extensive coastline, and their superbly varied vegetation and animal life. Those familiar with classical Tamil will know of a quite unique set of poetic rules termed **tinnai**, whereby the land is divided into four main tracts and a residual fifth, and the flowers and the trees, the birds and the beasts, typical of each tract are specified. Some years ago, along with the distinguished botanist, Dr. B. G. L. Swamy, I checked the biotic truth of these **tinnai** conventions, and we found their fidelity to nature and ecological comprehensiveness most impressive.

Today, with the country torn between power-hungry political parties none of which seems interested in preserving India's natural identity, the outlook is depressing. A country can be lost otherwise than by invasion and conquest — it can be frittered away by depletion till its integrity is irrevocably lost. Our politicians may say (they do say it — remember the sneering remark of a recent Chief

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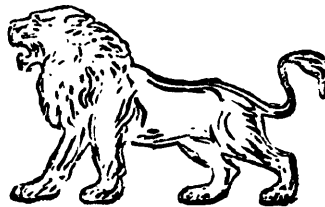


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Minister that his state could not afford ecological luxuries?) that the "landless poor" must be provided with holdings from the forests (presumably so as to convert them into the "landed poor" who, however, have votes), and that it is necessary, in the interests of the people, to further deplete our best natural areas, but one must be either credulous or uninformed to believe that ——— and the pity of it is that our countrymen are both uninformed and indifferent to nature.

Here is a factual argument: rebut it if you can. The integrity of India depends, much more than on anything else, on its geomorphology and its wildlife ——— and by 'wildlife' is meant not only the fauna but also, and even more, the natural vegetation that provides the animals with fodder, cover and a setting, and the land with its character. Much of this has already been depleted by thoughtless, ramified and uncoordinated exploitation in diverse ways. But even today, if only 5% of the total area of the country can be preserved as it is, selecting the likeliest and most typical areas still left, the essential identity of the country can be assured to future generations, and we would be one of the richest countries in the world in our wildlife.

Before going deeper into this, I must make it unmistakably clear that all that is now needed to ensure the recovery of these selected 5% areas to their pristine opulence is to provide them with total environmental protection, that is, to free them in all ways from human activities and only from human activities. Nothing further needs to be done or is advisable — the itching desire to aid and abet nature's recovery by the provision of artificial adventitious aids must be manfully suppressed, and this requires considerable will power and trust in nature, for the wish "to paint the lily and gild refined gold" is human and almost overpowering. In India today this is all that needs to be done, whatever may be the position in other countries. This is my conviction after a lifetime's study of the insidious consequences of human disturbance to wildlife, and I cannot detail the experience and reasons behind this conviction here, for they are lengthy and complex — I ask to be believed. The collection of leaves, thatching grass and other natural produce, cattle grazing, poaching of all kinds. and the frequent passage of men especially men on foot) through the area, will all have to be totally eliminated, and this is no easy task, but if it is done, recovery is certain in a decade or so. It is not only forests that are envisaged in this 5%-of-the-country preserves — lagoons, marshes, deserts, scrub and coastal tracts all have their individual character and wildlife and are typical of India. And if a country cannot provide for its people with 95% of its total land and waters, there is something seriously wrong with the efficiency of its administration that needs to be set right. All our wildlife sanctuaries together constitute less than 1% of the total land area, and still we find forestry operations, cattle grazing and the collection of minor produce being permitted in the overwhelming majority of them!

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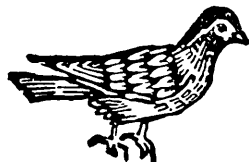
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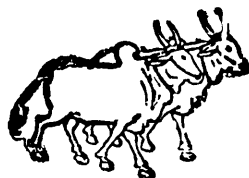
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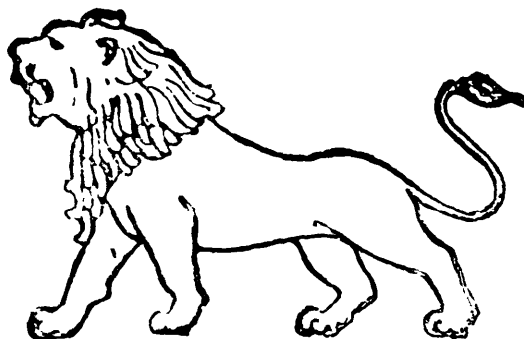
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A major setback to a coordinated wildlife conservation effort on a national scale is that we have no national wildlife habitats: under the constitution, the States have the entire control of all its area and the Centre can only advise, advice that is seldom listened to, leave alone acted upon.

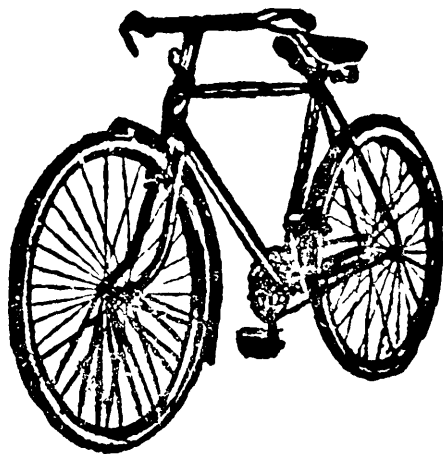
Another frustrating handicap to effective wildlife conservation in our country is popular apathy to nature, an apathy due mainly to ignorance. We have no heritage of scientific natural history in our culture, and on popular interest in wildlife. We have no specific names even for many plants and animals, and no Indian language distinguishes the antelopes from the deer, though antelopes are much closer to cattle than to deer. In the west, so much less rich in its flora and fauna, an informed popular concern for nature has been developed and provides a fascinating and wholly natural interest in life, even to the children: its value in providing a ready and uncontrived relief to the stresses and strains of a highly competitive and machanised existence is widely recognized, almost as a therapy. Here, in India, things have become increasingly difficult for quite different reasons, but a live involvement in our wildlife will surely provide a vital and sustaining interest that is no less valuable.

I must not shirk mentioning another handicap our wildlife conservation effort suffers from, our experts. Many of them do not know enough to know how little they know, and therefore cannot be accused of deceit in their claims to expertise — but these men are wholly harmless, others see through them. But regrettably, barring a few, the people who do know something about our wildlife have their interest sustained, not by their subject but only by the personal benefits and recognition they can get out of it, and are therefore pretentious, insincere and jargon-ridden in what they say or write. They even form mutual-benefit coteries and cliques — by some form of poetic justice, these often result only in mutual recriminations and jealousies and anyway they get no joy from wildlife — nor does our wildlife get anything from them.

Will our wildlife, and India's identity, survive these many hazards? Conservation in our country to-day is mainly a human and governmental problem and not one of technical knowledge or expertise, and who knows, there may be changes for the better. And luckily I will never know the answer to this question, for it can be known only decades later.



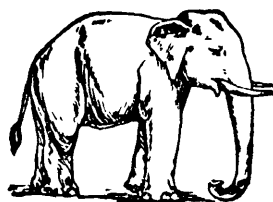
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Yellowthroated Bulbul-*Pycnonotus xantholaemus* (Jeredon) in Gingee

T. Koneri Rao

Muttanadu Reserve Forest, about 5 square miles in area, is in Gingee in South Arcot District of Tamilnadu. The forest comprises of good scrub and is cornered on the South West by Vukari Malai (992') and on the West by Ethumalai (980') and on the North East by the historic Rajagiri Hill (866'). The river Varahana-nadi forms the eastern border of the forest. All the three hills consist of huge granite boulders with patchy vegetation. North West of Muttanadu Reserve Forest is the Siruvadi Reserve Forest, 3 square miles in extent, with two hills of 1143' and 1112'.

Rajagiri Hill is the main tourist attraction in Gingee and the hill is surrounded by scrub, boulders and cultivation. Half way up the hill there is Kamalakanni Amman Temple at the foot of a towering wall-like rock. The vertical rock has a few ledges. I made my first bird trip to Gingee in July 1978. Rajagiri Hill and its surrounding area looked very impressive to me with birds like Spotted Doves, Little Brown Doves, Grey Partridges, Painted Spur Fowls, Bulbuls, Swifts and Dusky Crag Martins and so too to a pair of Shahin Falcons which had selected one of the ledges above the temple as their permanent abode. Around 10.00 a.m. when I was half way up the hill, my attention was drawn to a spectacular mock-fight display and peculiar noises (male?) of the falcons. One of them appeared to be slightly bigger in size and this could be the female. Most of the time it was seen engaged in preening its feathers. The other falcon (probably the male) appeared to be active. It called now and then kek...kek...kek...kek and was observed to be restless, trying to tease its partner with funny type of calls. It was also seen darting at Dusky Crag Martins when the latter flew past their abode.

After watching the falcons for an hour or so I decided to return. While I was coming down, I turned my head to see in time a bird of 7.5" long on a jamun tree (*Eugenia jambolana*) and trying to gulp a jamun fruit. The bird had very bright yellow chin and throat and it looked somewhat like a smaller edition of a female Golden Oriole. In a flash it flew off with loud burst of calls which were identical to Whitebrowed Bulbul. But the bird seen was not a Whitebrowed Bulbul, as it had no brows and the throat was very bright yellow. In order to identify the bird I made frantic search for books to get a coloured plate. I could not get any and by elimination process, keeping in mind the habitat, I called it Yellowthroated Bulbul. Later it proved to be correct! According to Ripley's "Synopsis of Birds of India and Pakistan" its range is "Sothern Andhra, Madras, Mysore in the Chitaldrug and Bangalore districts, and Kerala (Anaimalai Hills, one record), in sparse thorn scrub and light deciduous forest, from 2000 to 4000 feet." But I saw the Bulbul at about 400' (Gingee is 300' MSL).

Description and habits of Yellowthroated Bulbul

Description of Male: Length 7.5"; wing 3.3" tail 3.6"; tarsus 0.8" bill from gape 0.8". Bill and legs black; irides red. Forehead, crown and sides of the head, yellowish green; the feathers near the nostrils dusky; chin and throat bright yellow; upper plumage grey; the upper tail coverts tinged with green; wings and tail brown; outer webs washed with yellowish green; and the tail-feathers tipped with yellowish white; breast and sides of the neck and of the body grey turning to whitish on the abdomen; under tail-coverts and edge of wings bright yellow; thighs dull yellow; under wing-coverts pale yellow"- (Fauna of British India)

Female similar to male.

This Bulbul was reported in 1947 from Palni Hills of Madura district by Edward G. Nichols between 2000 and 4000 feet. Dr. Salim Ali had collected some specimens from Thondebhave (2500') and Jogimaradi (3400') both from karnataka in December 1939 and January 1940 respectively. Its occurrence was also reported from Udayagiri in Nellore District. But much was not said regarding its habits. N. B. Kinnear and H. Whistler were to undertake bird survey of the Eastern Ghats in 1929 and Gingee was one of the places in their programme. But I think, Gingee had not materialised for some reason.

Yellowthroated Bulbuls move in pairs. When the Redvented and Redwhiskered Bulbuls are very confiding and often seen in gardens near bungalows, the Yellowthroated Bulbul is very shy. But, I feel, it is not as shy as the whitebrowed Bulbul. Yellowthroated Bulbul is slim and more compact and has slightly longish tail than the Whitebrowed species. Its calls are very similar to Whitebrowed Bulbul but slightly lesser in tone and somewhat melodious.

Bulbuls are generally fruit eating birds, Dr. Salim Ali's specimens of Yellowthroated Bulbuls collected in Mysore were examined for stomach contents. They contained drupes of Devadaru and Sandal on which they were observed feeding. When I revisited Gingee in December 1979, I saw a pair sitting at the foot of the Rajagiri Hill showing their beautiful grey backs to me and facing the sorghum field in crop. I thought they had come to the field to take some grain to supplement its food, as jamun and banyan were not in fruit. It was found that the Redvented Bulbuls take bajra grains, flowers of calotropis procera and some insects as supplements when fruits were scarce.

Breeding season seems to be around May but very little is known regarding its breeding activities.

A study of this species in Muttanadu Reserve Forest, which is perhaps the nearest place of occurrence from Madras, may throw more light on the status of this Bulbul.



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Role of National Parks and Wildlife Sanctuaries

By K. A. BHOJA SHETTY.

The uncontrolled increase in human population has laid nature in ruins over most parts of the globe. Vast extents of primeval forests have been cleared to open up land for agriculture, housing, industries and other developments. The process of destruction goes on unabated, although the disastrous consequences of such thoughtless and unplanned development are becoming more and more apparant. Destruction of protective forests in the catchment areas of rivers is the chief contributing factor for most floods in our country. Clearance of vegetation has also accentuated drought conditions. Smoke and other effluents from industries, indiscriminate use of pesticides and dangers of nuclear fall-out threaten to make the earth uninhabitable.

The extent of destruction may be judged from the fact that during the period of approximately 2000 years of the Christian era, the world has lost through extinction about 106 known forms of mammals. The extinction of nearly 67% of these forms was witnessed during the last hundred years. Besides these, numerous species of birds and other animals have also become extinct in the recent ages. Notable among the mammals which become extinct in the Indian sub-continent during the recent times are cheetah or the hunting leopard, the small one-horned rhinoceros and the Asiatic two-horned rhinoceros. The lion and the great one-horned rhinoceros are on the verge of extinction on the country, having been reduced to a few hundreds and confined to very restricted locations. There are many other species which lead a precarious existence and whose survival is in danger.

In the overcrowded world of today nature cannot any longer defend itself by remoteness or inaccessibility. It is in this context that the national parks and wildlife sanctuaries play an important role. These can serve as the last stronghold or refuge for the fast dwindling wildlife. Their main objective should be to protect the representative ecosystems and endangered species of plants and animals.

The concept and definition of national parks and wildlife sanctuaries differ from one country to another. The 10th General Assembly of IUCN meeting in New Delhi in November 1969 laid down the following guidelines for constituting national parks.

WITH

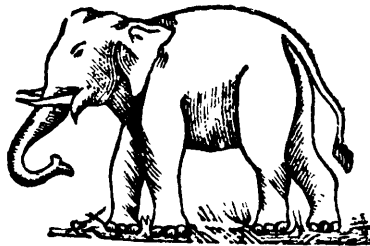
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"A national park is a relatively large area (1) where one or several ecosystems are not materially altered by human exploitation and occupation, where plant and animal species, geomorphological sites and habitats are of special scientific, educative and recreative interest or which contains a natural landscape of great beauty, and (2) where the highest competent authority of the country has taken steps to prevent or to eliminate as soon as possible exploitation or occupation in the whole area and to enforce effectively the respect of ecological, geomorphological or aesthetic features which have led to its establishment, and (3) where visitors are allowed to enter, under special conditions, for inspirational, educative, cultural and recreational purposes."

In India while the principles underlying national park and wildlife sanctuary are practically the same, the former can be created by an Act of the State legislature whereas the latter can be set up by an executive order of the Government or the concerned department. The status and degree of permanency and protection is therefore much higher in a national park than in a sanctuary.

As already outlined earlier in this article the main objective of national parks and wildlife sanctuaries is the conservation of natural fauna and flora. However, they are also important for many other reasons, namely, as a valuable tool in developing tourism, as recreational areas and as an important aid in preserving the physical and mental health of people in a world of artificiality, urbanization and mechanization. They can also serve as ecological sample areas for our guidance in restoring managing and utilizing properly the world's renewable natural resources.

Al though we have a fascinating variety of animals and plants our knowledge of this gift of nature is still peripheral. National parks and wildlife sanctuaries are invaluable laboratories for undertaking-biological research. They can also function as educational centres to combat against ecological illiteracy and bring home to the people that mere technological progress, with total disregard towards nature and environment is shortsighted and dangerous. It is therefore important that an interpretive service is set up in our national parks and wildlife sanctuaries by employing educated and well trained guides, in order to explain to the visitors the faunal, floral, geomorphological and other salient features and thereby make their visit interesting, useful and educative.

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National parks and wildlife sanctuaries are getting more and more popular as centres of recreation and tourism. Many countries, particularly in Africa, have built up a flourishing international tourist trade based on their parks. Most people are willing to spend money and time merely to experience joys of wilderness and to escape from the din and bustle of modern civilization.

An important point to remember, however, while opening up parks and sanctuaries for tourism, is to ensure that they do not deteriorate due to overuse. Such a danger is already felt in many national parks, particularly in the U. S. A. The damage and disturbance caused by tourists pouring in millions can be easily imagined. Opening up of parks and sanctuaries by a network of roads and setting up tourist lodges, hotels and kioks, indiscriminately all over to attract tourists can, before long, ruin an area that one is piously hoping to develop. Therefore the concept of zonation is now being introduced in the management of parks and sanctuaries which permits tourist only into certain parts while others are reserved, primarily for conservation and scientific study.

An important role that the national parks and wildlife sanctuaries play is in the preservation of genetic diversity of life. Forests, particularly in the tropics, contain a wide variety of species, both plants and animals and they constitute a very valuable store house of gene resources. Each species is important in determining the future course of evolution. In the balance of nature there is a close and intricate interaction between the various species of flora and fauna and the habitat and any interference can seriously upset this balance with disastrous consequences.

It is wellknown that most of the cultivated crops and domestic livestock owe their origin to ancestors which existed in the wild. The diversity of genetic resources in the nature are yet to be fully studied and utilised. Their potential in man's endeavour to produce more food, clothing and other essential requirements to ensure this survival and welfare is immense.

The Expert Committee constituted by the Government of India in 1969 to review and to suggest improvements in the management of national parks and sanctuaries and to make recommendations regarding future policy for wildlife conservation in the country has indicated that atleast 4% of our total land area be reserved for wildlife (including floristic preserves). At present the area under national parks and sanctuaries in the country is only about 0.6% of the land area. In Tamilnadu



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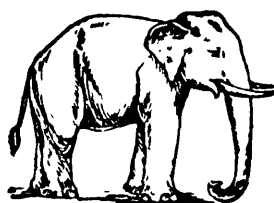
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there are eight sanctuaries/national park with a total extent of about 2 lakh hectares. which is approximately about 1.6% of the land area. In addition a number of representative forest blocks, covering an area of about 22,000 hectares, have been constituted as nature reserves with the object of preserving the different forest types. There is obvious need to bring in a larger area under the programme of conservation so that we may bequeath to the future generations the rich legacy and heritage that we possess. However, a great deal will depend on the foresight and awareness of the Government and the people to realise that conservation is a positive and essential way of land use and to ensure that the sanctity of our national parks and sanctuaries is not violated in the name of development and progress.



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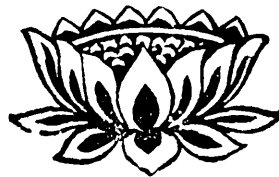
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ECHIS AND ECHINACEA

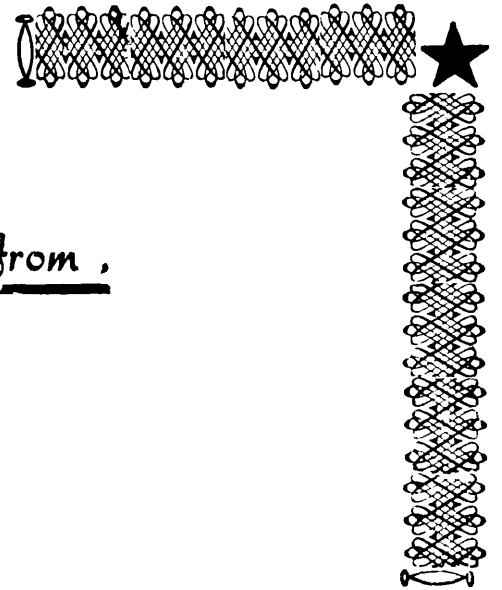
DR. M.V. RAJENDRAN, M.A. Ph.D., R.I M.P. (Homaeo)
(Director, Madras Snake Park Trust)

The popular Saw-scaled Viper *Echis carinatus* is the smallest of all vipers of the world, though it is said to be one of the "Big Four" poisonous snakes of India. It inhabits all scrub jungles of Tamil Nadu, Kerala, Andhra Pradesh and Karnataka. It is very common in the dry areas of North India. It is nocturnal, biding during day time in holes and crevices of rocks, woods and in under shrubs. Identifying this snake is pretty easy. Dirty brown in colour with thin wavy white lines on the flanks connected by cross lines at intervals a white cross mark on the head, centrally placed free or attached to a cross line on the neck, thick head, round eyes, narrow neck, short thick body, the size of a pen, about a foot in length, body covered by rough keeled scales, these keels cut like the teeth of a saw producing a sound like sawing when the segments of the body rub and coil in opposite direction, a semi side winding progression all these characteristic marks of *Echis*.

The bite does not cause immediate death, but the venom is haemotoxic. In about ten minutes the bitten part begins to swell with burning sensation. Swelling increases and spreads fast. If the right toe received a bite the whole leg right up to the knee and even up to the thigh may be painfully burning and swelling. If not treated at once the swelling does not subside for a few days even after injection of cortisone or antivenin.

The bite is very common in villages. More than 120 cases I have attended (from Tirunelveli district area alone). From 1 - 4-'76 to 1-3-'79 about 100 cases I attended came from villages. Most of the bites occurred between 7 p.m. & 10 p.m. Nearly 70 percent on the foot, 20% on the right hand often on the thumb, one case on the back, two on the thigh, a few on the ankle. People from the country side often take some local medicine, some herbs. But often this leads to injurious effects. Poison lingers in the system, swelling increases, after the fourth day around the bite hard gangrene is formed, on the 5th and 6th day rotting of flesh in the gangrene sets up. Pain may subside but the poison circulated in the body attacks the spine, A few cases of insanity has been noted. In severe bites internal bleeding is also noticed, haematuria sets in. The saw-scaled vipers of Ceylon and South India are small in size, but those occurring in Jammu Kashmir are longer and possess more venom. I have seen one from Israel about 2½ feet long and comparatively stouter than the Indian form. Mr Bhat from Jammu has published his studies of 310 hospitalised cases. All were treated with antivenom, six showed signs of insanity, four died, gangrene formation was common.

Echis bite is the easiest to handle because it gives the physician time to study the case. Except the two cases I noted practically more than hundred cases was treated successfully with ECHINACEA MOTHER TINCTURE. This is a wonderful homaeopathic preparation.



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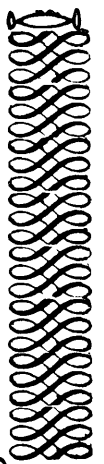
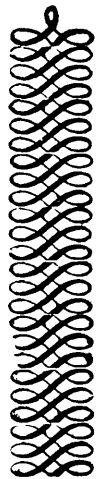
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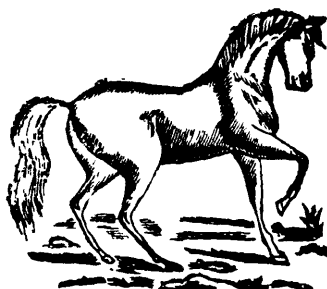
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The plant **ECHINACEA ANGUTIFOLIA** was introduced in **Manhemann's garden** in Germany from South America. This belongs to **compositae** family, the family of sunflower plant. The root of the plant is used in preparing the mother tincture and other potencies I use only the mother tincture both externally and orally. It is often the question of time elapsing between the bite and treatment. The one case of bite on the back, was a boy of 18 who was resting at the bus stop in **Samathanapuram, Palayamkottai**. He rushed up to my house within twenty minutes. The swelling was spreading, he was screaming with burning sensation. **Echinacea Mother tincture** was applied around the swelling. It was shrinking and shrinking and in thirty minutes disappeared. Just one internal dose of 20 drops in two ounces of water was sufficient. Complete cure was effected. In order to demonstrate the poison fangs I tried to catch the neck of a **Saw Scaled viper**. It turned round and caught my left thumb. In five minutes I applied externally **Echinacea**. The pain disappeared, swelling did not appear. It takes nearly ten to twelve minutes after the bite to start swelling. **Echinacea** is diuretic in nature. It keeps the kidney clean and it arrests functioning all internal and external swelling. I have treated successfully three cases of cobra bites, one case of **Russell's viper** bite, even after severe bleeding from gums. Administration of the medicine is carefully done. About 15 to 20 drops in about three or four ounces of water is orally administered at an interval of 20 minutes. Overdose should be avoided. I use more than one ounce in belated cases of **Echis** bite reaching me after three days. Ofcourse the dosage and interval is maintained. The cure is delayed. Complete cure is established after 24 hours in such case. No side effect is noticed. Externally the mother tincture is applied using cotton on the bite and around. The swelling which is tense becomes soft and slowly shrinks. Use of tobacco in any form and coffee or tea is stopped during the treatment. The patient is given plenty of pure water to drink. The mental condition of the patient is to be watched. In treatment of snake bites the mental alertness of the physician is equally important. Constant watch is necessary, in the early stage even in belated cases.



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Notes on breeding of the Yellow-wattled Lapwing (*Vanellus Malabaricus*)

BY V. SANTHARAM

One of the most common and conspicuous birds of the Adyar estuary throughout the year is the yellow-wattled lapwing. The terrain with open land with few bushes scattered about is quite ideal for the breeding of these attractive birds. They are very noisy in their breeding season which commences by April and the birds are always engaged in combats with crows, which take a fancy in attacking these birds. If one approaches the nest, the birds get noisier and often rise, calling loudly and fly overhead at a very low height. I have noticed that the birds which call when I approached the nest site are not only the nesting birds but also some good natured neighbours. Birds ranging from 2-6 or even more call simultaneously from various directions and distract one's attention. Is this a social behaviour of these birds? Or are the birds calling together because all of them have a nest in the neighbourhood? After calling, the nearest bird (probably the parent bird) making sure it has drawn the attention of the intruder tries to lure him away from the spot by a broken leg display. The bird walks in an absurd manner with bent legs, as though it had suddenly grown lame, with its body close to the ground. Often it squats on the ground, without stopping the calls, (to give the impression it has a nest there, or to show that it is too weak?) and after a few seconds walks a few paces and repeats this act.

The nest is nothing but a scrape on the ground without any cover, surrounded by pebbles, twigs, pieces of dry cowdung and sometimes sea shells. The one nest, observed last year had the scrape covered with pieces of shells. In all the nests observed, the nest and its contents merged with perfection to its surroundings. The pattern of the eggs laid in the nest, generally, seemed to have their narrower ends meeting in the middle, though it was not the case always. The markings on the eggs varied and had at least two distinct varieties. One had the darker markings and blotches smaller and more in number while another had larger and fewer blotches. Is there any reason for this kind of distinction in the pattern of the egg?

Birds are supposed to lay eggs in the early mornings. If this applies to the lapwings then the birds should be laying eggs every alternate day or with a gap of over two days. I hope the following observation could justify this statement. On the evening of 6.6-79, I found a nest with one egg, laid in a scrape surrounded by pebbles. I could not go to the site the next day and when I went to the nest on the evening of 8th, I found only one more egg added in the nest, though there should have been three eggs by the date. I could not watch further developments at this nest as the eggs were missing when I next came to the spot. Could any reader suggest the time-gap between the laying of one egg and the next?

What is the period of incubation of eggs in the case of the lapwing? I have two, rather scanty, observations. I had seen 4 eggs in a nest on 29-6-79. On 21-7-79 (i.e. on the 23rd day since the eggs were first seen), three of the eggs hatched and the young ones were seen at about 4.45 p.m. The unhatched egg probably hatched the next morning. The other nest,



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also with 4 eggs was located on 3-7-79. Accidentally, I stamped one of them, leaving behind three eggs. The nest survived and on 24-7-79 (i.e on the 22nd day since they were first seen) two of the three eggs hatched, though only one chick and the unhatched egg could be seen in the nest. Both nests had the eggs hatched mainly in the late afternoon, at about 4.00-4.30 p.m.

All the young ones observed had down feathers and were seen moving, though some very clumsily, tripping often as they moved. They uttered a single-noted call which sounded something 'like phiv'. The crown, back and wings had olive green feathers with dark blotches, spots etc., a dark (black?) stripe bordered the crown at the nape and there was a whitish collar round the hind neck (Separating the olive green of the crown and back) The whitish underparts were lined with buff. The beak was black and the legs generally pale yellow and in one case greenish (The size of the newly-hatched chick was about $1\frac{1}{2}$ times that of the egg and when squatting or 'freezing' to the warning calls of the parent birds, it has a shape similar to that of the egg. When freezing, the young birds tolerate even the ants which move on their head and body The young birds are led away from the nest as soon as they are hatched. In the first case in about half an hour's time the chicks had moved 35-40 yards away from the nest.

On one occasion, I had a face-to-face encounter with an immature lapwing. It was slightly smaller than the adult bird with dark brown head, dull ashy brown on the back less prominent wattles and white underparts. It was lying under a bush just a couple of feet from me. Till I squatted, the bird remained frozen, without any movement. As soon as I sat down, the bird rose and ran fast, halting at a distance, pretending to feed again running a few paces, again pretending to feed etc. The speed with which it moved was quite amazing.

On the whole, I had seen 7 nests. The total number of eggs being 18. Of these, 6 were smashed 5 missing and 7 hatched safely. A total number of 10 chicks including 7 which were observed as eggs at first were seen. Some immature birds were also seen. The high mortality rate of over 61% of the eggs observed of this species is due to the presence of cattle (on one morning I counted over 30 head of cattle) and also that of graziers, fishermen and other people including bird-watchers (I myself had stamped one!). Given some protection, the birds may have a better chance of survival.



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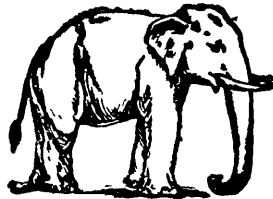
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THREAT TO THE TAJ WILD-LIFE AND PEOPLE OF BRAJ MANDAL DUE TO POLLUTION FROM MATHURA REFINERY

BY

PROF. T. SHIVAJI RAO

Professor in Environmental Engineering & Head, Dept. of civil Engg.
Andhra University, Waltair (A.P.)

The people of India are heirs to a priceless heritage of cultural values which have been handed down through the millenia. The Mathura area is known as the birth place of Lord Krishna and contains sacred temples and priceless treasures of art. The Agra Fatehpur-Sikri Region also represents the highest point of Indo-Muslim art and architecture. The marvellous monuments of Fatehpur-sikri, the Agra Fort, the tombs of Akbar at Sikandra and of Itmad-ud-daulah at Agra, and the Taj Mahal all these are symbolic of the fusion of cultures which took place in the birth place of India's civilisation during the Mughal period. In addition, the Ghana Bird Sanctuary at Bharatpur gives refuge to countless migratory birds which come from as far a field as Siberia, settle and breed here during the winter months.

The priceless heritage is endangered by the indiscriminate location of a highly polluting oil refinery in the Mathura region endowed with the least environmental-carrying-capacity. Mathura Agra and Bharatpur form a triangle, each side of which is approximately 30 miles in length. Fatehpur-Sikri the 14th wonder of the World, is located half-way between Agra and Bharatpur. The gigantic refinery is under construction at a cost of about Rs. 200 crores at a site 6 miles below Mathura and 25 miles above Agra, around the right bank of the Yamuna river. (See Figure)

The predominant critical wind direction at this point is from the refinery site in the North West to Agra in the South East. (Figure) During winter, the surface air movement over this region forms part of the anti-cyclonic lower air movement over Northern India and the consequential persistently stable conditions of winds from October to February tend to bring down the pollutants along the Yamuna Valley. The summer Water-flow in Yamuna becomes negligible. Thus the water and the air regimes of this Yamuna valley become the most vulnerable water and air pollution corridors of Mathura-Agra Region. It is not the refinery perse that is causing the problem. In fact, if it was located downwind instead of upwind of Agra, most of the pollution problems that cause serious concern to-day would not have arisen.

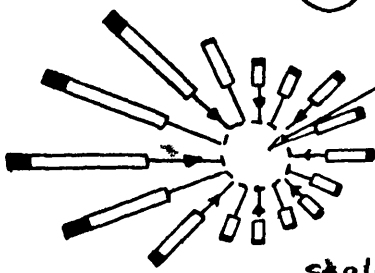
CONSEQUENCES OF IMPROPER SITING

Due to improper siting of the refinery in an area that has neither sufficient ventilation capacity of the air regime nor the dilution and self-purification capacity of the air regime nor the dilution and self-purification capacity of the water regime, many gigantic problems of pollution will crop up. The damaging effects of the same are described here.

WIND ROSE AT AGRA

CALM 0.4 4.10 >10 M.P.H.

NO of observations (HOURS) 16,366
% of calm 4%



Scale.



TO DELHI
140 KM

MATHURA

Refinery site

TOWNSHIP OF REFINERY
Effluent Drain to Yamuna

RIVER YAMUNA

BHARATPUR

AGRA WATER WORKS
on Yamuna

AGRA

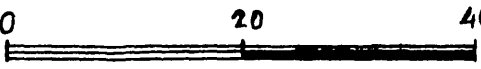
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MATHURA REFINERY AND ENVIRONS (UNDER CONSTRUCTION)

(a) WATER POLLUTION:

Lakhs of people of Agra region will be exposed to serious health hazards due to water pollution, leading to extensive morbidity and mortality in the long run. The water pollution problem assumes serious condition as the water from the Kitham lake may not be available for supplementing the flows in Yamuna during summer. Moreover the diversion of water from Yamuna for the growing needs of domestic, industrial and agricultural use in the upper reaches of Mathura and Agra in the immediate future will magnify the toxicity of refinery pollutants and inflict more damage on the existing uses of water for drinking, bathing, irrigation, fish-culture and animal husbandry operations.

Although the I. O. C. proposes to treat the liquid effluents to the I. S. I. Standards (I. S. 2490) as specified by the U. P. State Water Pollution Control Board, still the residual toxic chemicals make the Yamuna water unfit as a source of raw water for public water supplies and bathing ghats as per I. S. I. Standards (I. S. 2296) in terms of parameters like Phenols, B. O. D. and Dissolved Oxygen due to insufficient dilution water available. Moreover the waters thus polluted contain some toxic and a few carcinogenic components which pass through food chains and ultimately reach man, and other forms of life useful to man. Moreover, the oil will result in concentrating other fat soluble poisons like insecticides and pesticides in the polluted waters, making them available to the aquatic food chains in higher concentrations than would otherwise be the case. According to a Survey conducted by NEERI, the waters of Yamuna are already polluted and the additional load of pollution from the Refinery and its multiplier effects will render the chlorinated drinking water of Agra sufficiently poisonous to affect man and his progeny.

These poisons damage the liver, kidney, heart, nervous and reproductive systems of man and also cause cancer in the long run. Thus Yamuna water contaminated by the normally purified effluents of the Refinery cause irreparable damage to human beings, cattle, fishes, birds and other forms of life and thereby to agriculture. Since the existing ground water sources are insufficient and distasteful, it is highly dangerous to contaminate the water of Yamuna, the only source of drinking water for lakhs of people of Agra region.

(b) AIR POLLUTION :

Since the emissions from the Refinery comprise substantial amounts of oxides of sulphur, carbon and nitrogen, hydro-carbons, ammonia organic acids and particulate matter, they create nuisance for about 8 kilometers around the plant. The I. M. D. reported in 1973 itself very high levels of Sulfur-di-oxide at various distances from the Refinery. Even the TECNECO report predicted short-term high levels of SO_2 of 300 to 400 $\mu\text{g}/\text{m}^3$ at a distance of 20 Km. from the refinery. Studies have not been made about the levels of other pollutants emitted by the refinery at different places and their impact on properties and art treasures. The air pollutants from the refinery also cause serious public health hazards. For instance they cause bronchitis, asthma, emphysema, head-aches, nausea, suffocation, irritation of throat, watering of the eyes,

lung cancer, cardiovascular and chronic diseases. Such health hazards will affect people in different villages and towns of Braj Mandal, due to emissions from the refinery and its multiplier-effects. The topography, high relative humidity and persistent stable winds create intense smog conditions, leading to decreased visibility, traffic accidents and health hazards in an extensive area. Besides Taj Mahal and other monuments, even the Radhaswami Marble Temple under construction is bound to be ruined in the long run.

(c) TOURIST TRADE :

Tourism is at present a major source of employment and income, and its development mainly depends upon an unspoilt environment. Some environmental values are generally sacrificed in return for expected gains from certain types of development; but for development of tourism the maintenance and nay, even the improvement of these values on a grand scale is essential. Well-planned tourism in fact helps both to justify and enhance the quality of the environment in any local area with fragile eco-systems, historical monuments, holy temples and other areas of scenic beauty but endowed with poor environmental carrying-capacity.

Many agencies estimate that nearly 10,000 people visit Taj Mahal daily and entrance fee collected ranges between Rs. 50 and Rs. 60 lakhs per year. About 50% of the foreign tourists visit Taj Mahal. It is estimated that the income from these tourists in five years would exceed the cost of the Refinery. Many tourist industries thrive around the Taj-hotels, air, rail and bus tours, making miniatures of Taj. Many guides and small shop owners, the rickshaw pullers, tonga-wallahs and taxi-drivers flourish on the tourist trade. Thus thousands of people of Mathura-Agra Fatehpur-Sikri and Bharatpur depend upon tourism for their survival.

Today we are planning to attract about 2 million Foreign tourists and earn Rs. 300 crores in foreign exchange annually. As such we cannot encourage such activities which lead to the gradual deterioration of our monuments. Further, the commissioning of this gigantic Oil Refinery will, sooner or later lead to the development of many more pollution-generating ancillary industries, and down-stream units. With this accelerated industrial and urban growth, the local atmosphere will be loaded with extra pollution from the increased automobile, Railway and domestic sources.

While the Refinery provides jobs to 1100, it may throw 10 to 15 thousands of people who depend upon the tourist trade out of jobs due to the creeping effects of pollution, leading to growing poverty and ill-health, resulting in negative development of this region

(d) BHARATPUR SANCTUARY :

Recently a French wild-life expert Mr. Havre visited Bharatpur and described this sanctuary of 30 sq. Km. (3000 ha.) as one of the finest and the best in the world. He said it is our National duty to save it. About 2 to 3 lakhs of enchanting birds including some rare ones inhabit that area. The pollutants from the proposed oil refinery, and other concomitant industrial and urban complexes will disrupt the eco-systems and consequently this region may not hereafter attract hordes of wild-ducks rare species of

birds and geese from far off areas like central Asia and Siberia. Besides, Avifauna, many wild animals like the black buck, blue bull, spotted deer, Sambhar, and wild bore of this region may disappear soon due to slow poisoning of their food chains and pollution. The bird watchers and others interested in Nature study may lose, for ever, the unique opportunity of unravelling the mysteries of Nature!

For sake of a truncated Mathura refinery whose life span becomes too short due to exhaustion of Bombay High Crude in 20 years and global reserves in 40 years, we need not destroy the magnificent marble monuments which lasted in Athens for 2400 years when man-made pollution discoloured and destroyed them during the last 30 post-war years due to improper location of industries around the Greek capital. For the sake of the immediate gains of a few, we need not sacrifice the long term interests of millions of people and marvellous Eco-systems.

DIVERGENT VIEWS OF EXPERTS AND OFFICIALS

This problem became complicated, because one wing of a Union Ministry is working against another. For instance, the strong protests of Archaeological survey of the Ministry of Cultural affairs were brushed aside by the Ministry of Petroleum. Surprisingly, scientists of the Indian Meteorological Department of the Ministry of Tourism and Civil Aviation have been working against the interests of the Tourism Department of the same Ministry. The expert opinion of the Technical Adviser in Public Health and Environmental Engineering to the Government of India was contradicted by the amateur environmentalists of the National Committee on Environmental Planning and Coordination of the Ministry of Science and Technology and thus the project was cleared from environmental angle.

Similarly, the scientific views of the conservation and environmental specialists of the Expert Committee on Environmental Impact of Mathura refinery were brushed aside by a vast majority of the members whose fields of specialisation happen to be other than ecology and environmental pollution control. Even the Director of National Environmental Engineering Research Institute questioned the validity of various assumptions made by the Indian Meteorological Department in computing the Sulphur-di-oxide pollution of Agra due to emissions from the refinery. When Dr. G. Torraca, one of the consultants of the Italian Expert Group challenged the conclusions of the Italian Expert Committee Report on the air pollution threat to Taj Mahal, they admitted the serious limitations of their own report and stated that they cannot give a guarantee to the safety of Taj Mahal due to pollution from the refinery.

At one time, in July 1977 the Minister for Petroleum informed parliament that if the Expert Committee headed by Dr. S. Varadarajan gave an opinion that Taj Mahal will be affected by the pollution from the refinery, he will get the location changed and at another time in July 1978 he argued in the opposite direction. The Expert Committee when questioned about the pollution threat to Taj in November 1977 refused to consider the problem by stating that the issue did not lie within its term of reference; and strangely the same expert committee has gone out of its way to express its hasty opinion that there was no need to shift the site for the refinery on an earlier occasion in May 1976 and that too in the absence of many of its members including the experts on air pollution control.

While the Expert Committee opines that by the time the refinery goes into production, commercially proven processes for Sulphur-di-oxide removal may become available for minimising air pollution the Adviser to the Ministry of Petroleum frankly admits that such gas treatment technology has proved to be a miserable failure all over the world. But the Secretary to the Ministry of Petroleum still hopes that the scientists who succeeded in sending a man to the moon will come to his rescue sooner or later to provide the answers to control pollution to such an extent that Taj and other monuments, and the life of Braj Mandal will not be in danger in the long run.

VIEWS OF PARLIAMENTARY COMMITTEE

Considering the ecological, cultural, health and economic aspects and also the divergent views of experts and officials on this problem, the Select Committee of Parliament on Air Pollution Bill, headed by Dr. Karan Singh concluded that the Mathura refinery poses a clear threat to Taj Mahal and suggested that atleast the most polluting units of the refinery should be shifted to Etawah region. This report was submitted to Parliament on May 19, 1979. Subsequently, Mr. Morarji Desai, the former Prime Minister told news men on 25th June'79 that his Government would stop work on the refinery if it was convinced that pollution from the plant will be a danger to the Taj Mahal "We have got to go into it more fully" he said. But unfortunately, the Lok Sabha was dissolved and the air pollution bill lapsed.

PUBLIC ACTION NEEDED

In the mean time, the scientists and officials of the Government who are not accountable for the consequential environmental damage arising out of their thoughtless actions are trying their best to confuse the public about the threat to Taj and life of Braj due to air and water pollution from the Mathura refinery. Such indiscriminate interactions of man with Nature have to be fought against tooth and nail by scientists, technologists political leaders and mass media people who are wedded to a reasonable degree of social responsibility as envisioned under articles 47 to our constitution.



TROPHIC CHAIN THROUGH A BIRDWATCHER'S LENS

BY ABRAHAM VERGHESE

Amateur Birdwatching Association

7, Lakshmiah Road, Ulsoor, Bangalore-560008

Nature is such an intricate system that is rarely possible to untwine its complex webs. One organism depends on another for more than one reason, the most evident dependence being for food. Critical and continuous observation can at least help in understanding a part of this web. And one such instance I wish to narrate.

I was studying in 1975, the behaviour of Common Green Bee-eater (*MEROPUS ORIENTALIS*) in the University of Agricultural Sciences, Bangalore. The bee-eaters, in their typical sallying flight, swooped on butterflies, then perched on electric wires, battered the prey and ate them. As to whether the wings and / or body of the butterflies are eaten, perhaps first raised by Aitkin, in the early part of this century, I don't wish to touch upon. But what interested me was a particular species of butterfly, abundant in the area, and on which the bee-eaters preyed on.

The habitat where the bee-eaters foraged in small groups, especially prior to roosting, was a valley with high land embankment on either side. A narrow stream flowed below, and the valley supported a mixed vegetation of herbs, shrubs, grasses and creepers.

The butterfly most abundant was the sulphur butterfly (*PIERIS* sp. Pieridae: Lepidoptera) on which the bee-eater chiefly fed on. A search below the valley revealed that the caterpillars of this butterfly was feeding on a legume herb, *CASSIA OCCIDENTALIS*. A few caterpillars were reared to adult stage, in the laboratory on the cassia plant, to confirm its identity.

Regular visits to this area continued and in a matter of five weeks the voracious caterpillars devoured over 200 cassias. The adult butterflies which now found that very few plants were available for egg laying began thinning down. This had direct consequence on the bee-eaters which also began dwindling in this particular area.

From this one can infer a simple relationship in terms of a trophic chain. The valley supported the cassias, which in turn the caterpillars. These worms metamorphosized into chrysalis, from which emerged the sulphur butterflies. Those which escaped the bee-eaters, further reproduced. The cycle went on till the cassia host plants dwindled. Thereafter, the faunistic changes were evident in the valley.

Thus, these inter relationship, along a food or trophic chain, clearly shows the dependence of one organism on another, directly or indirectly. Certainly there would be a consensus when I say that these relationship have to be considered when attempts are made to conserve an organism.

ACKNOWLEDGEMENT:

My discussion with Mr. A. K. Chakravarty was useful in preparing this article.



GUINDY NATIONAL PARK

WILSON P. DURAIRAJ, IFS.,

Wildlife Warden : Madras—20.

HISTORY :

Forests or wood lots are seldom found within or in close proximity to municipal limits of metropolitan cities. Among the exceptions are the famous Hyde Park in London, Zurich Municipal Forests in Switzerland and the Park near Brussels in Belgium. It is indeed fortunate, nay, providential that our City of Madras is blessed with the Guindy National Park within its city limits to serve so to say, as a sanctuary for the people of the city, away from the hustle and bustle of the daily noisy routine chores. The citizens of Madras over it to the then Government of Madras in 1817 for its purchase from its owner Thiru Gilbert Ricketts. It was then known as "Guindy Lodge". It served as the country residence and week-end resort for the Governor of Madras from 1825. It was constituted into a Reserved Forest in 1910. It became the permanent residence of the "Raj Bhavan" of the Governor of Madras from 1947 when the Governor moved into it, giving up the city residence in the Government Estate in the busy location of Mount Road. The total area was then about 500 ha.

The then Governor of Madras, the late Thiru A. J. John, offered to relinquish the bulk of the extensive park area (about 400 ha) attached to Raj Bhavan, as a contribution to the public amenities in the city and as a measure of austerity and economy in expenditure on the Governor's Estate. While approving that proposal, the then Prime Minister of India, Thiru Jawaharlal Nehru expressed the hope that the park area would be preserved and a portion utilised as Children's Park. Accordingly the Forest Department took over the area in March 58 and maintain a part of it as Children's park with a mini-zoo, playthings, Children's library and other amenities for children. After parting with portions of the area for the Indian Institute of Technology, the Gurunanak Educational Society, the Cancer Institute, Memorials for the National Leaders Gandhiji, Rajaji and Kamaraj and setting aside the extent required by Raj Bhavan, the area was declared as a National Park in 1978 under Section 35 of Wildlife (Protection) Act of 1972. The extent of the National Park is 270.57 ha.

FLORA :—

The park is botanically very interesting. It forms the most easily accessible area for botanising and one of a very few to carry even today a relict vegetation, truly representative of the natural carnatic coastal evergreen thorny scrub jungle of our Southern dry zone. The vegetation has been modified only by a few additions of ornamental and fruit trees that have been progressively planted in the blanks. There are more than thirty species of trees including the sandalwood and numerous species from the undergrowth.

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FAUNA :—

The Indian Antelope, popularly known as the blackbuck (*Antilope cervicapra*) and the spotted deer (*Chital-Axis axis* (Erxloben)) are the foremost of the fauna in the park. It is not definitely known when the deer were introduced in the area. Naturalists hold that this scrub jungle is not the normal habitat of either of these two animals and yet these two have flourished in the area and breed in the area without fear of human beings.

BLACK BUCK :—

The incidence of Blackbuck, the entire population of which in India is now estimated to be only about 15,000 is noteworthy. It is necessary to reminisce here a little, on the past distribution of this animal and consider the present distribution to this animal and consider the present distribution, to fully appreciate the significance of their incidence here.

The incidence of Blackbuck is known since the days of Alexander the Great in the Fourth Century B. C. However records giving detailed accounts of blackbuck are available only from the 16th Century A. D., the days of the Moghuls, when hunting blackbuck with Cheetas and staging blackbuck fights were prevalent. According to one estimate there were once 4 million blackbuck in India. While parts of the Deccan plateau and the Northwestern India were noted for the greatest abundance of the animals, they were distributed continuously all over India except in the West Coast, Southern tip of the peninsula, Gangetic deltaic region and the Himalayan tract. Their numbers and distribution dwindled down to 80,000 in 1947 and to 8000 in 1964 according to estimates by the Wildlife Preservation Society of India, the largest concentrations being in Bhavnagar district of Gujarat in the West, Rajasthan in the northwest and in Guindy National Park and Point Calimere sanctuary in the South. The reasons for the marked decline are not far to seek. The main cause was the destruction of the habitat triggered by the Second World War and by human population explosion. Indiscriminate killing contributed partly to the destruction.

The figures obtained at the last two census operations (direct count method) carried out in the park with the co-operation of the Madras Naturalists' Society and Zoological Survey of India are tabulated below:

Date	Buck	Doe	Yearling	Fawns	Total
26—11—78	84	156	57 (young)	—	297
25— 2—79	117	127	115	9	368

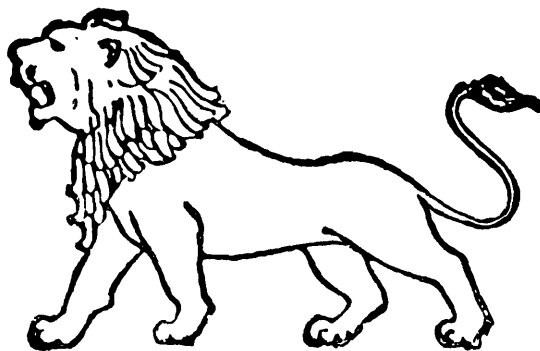
We can justly be proud of this incidence in such a number which shows signs of multiplication, with the protection offered.

A few rare white bucks were brought from Bhavnagar and introduced in the



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park by the then Governor of Madras, the Maharajah of Bhavnagar, about three decades ago. They have been breeding, with the normal buck and are now about a dozen.

OTHER ANIMALS:—

Among the other animals in the park the spotted deer or Chital are noteworthy. They are perhaps the most beautiful of all deer. They are prolific breeders. Their number in the park has been estimated at 393 on 26—11—78 and 675 on 25—2—79. These animals do not shun human habitations and keep constantly moving into and out of the park straying into the Indian Institute of Technology campus, the Highways Research Centre, the Engineering College, Central Leather Research Institute, Ranithottam and other neighbouring areas. Hence it is difficult to obtain a correct idea of the total population under the free ranging conditions they are in now.

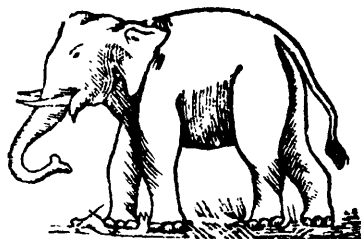
The bonnet monkeys, the jackals, the jungle cats, the small Indian Civet cats, the common plain civet cats, common mongoose and jungle hares are other mammalian fauna which have their abode in the park. Reptiles and insects are also well represented in the park.

AVI FAUNA:—

A rich variety of avifauna can be met within the park which is a paradise for bird watchers. Herons, king fishers, migratory waders like sand pipers, snipes and black winged stilts are met with in the two perennial tanks. Larks, yellow wattled lapwings, the grey partridge, cuckoos, shrikes, robins, wag-tails, bulbuls, warblers, bee-eaters, woodpeckers, crow pheasants, blue jay, doves, minivets, munias, barbets, Parakeets and the paradise fly-catcher are the notable birds seen in the park. The checklist of birds in the park prepared by Thiruvallargal Selvakumar and Sivakumar enumerates 112 birds.

ACCESSIBILITY:—

There is a network of roads, foot-paths and nature trails which offer excellent accessibility for viewing the wildlife amidst their natural sylvan settings.



“...Life would become very dull and colourless if we did not have these magnificent trees animals and birds ..”

—JAWAHARLAL NEHRU

I think I shall never see
A poem lovely as a tree
Poems are made by fools like me
But only God can make a tree!

—JOYCE KILMER

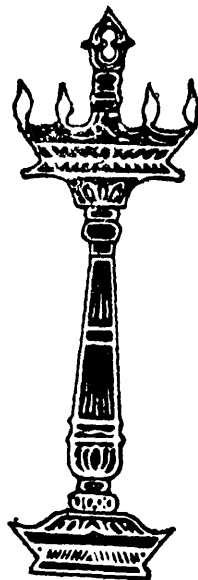


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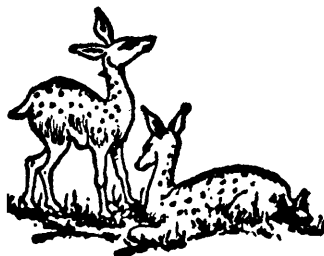
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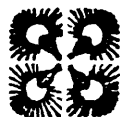


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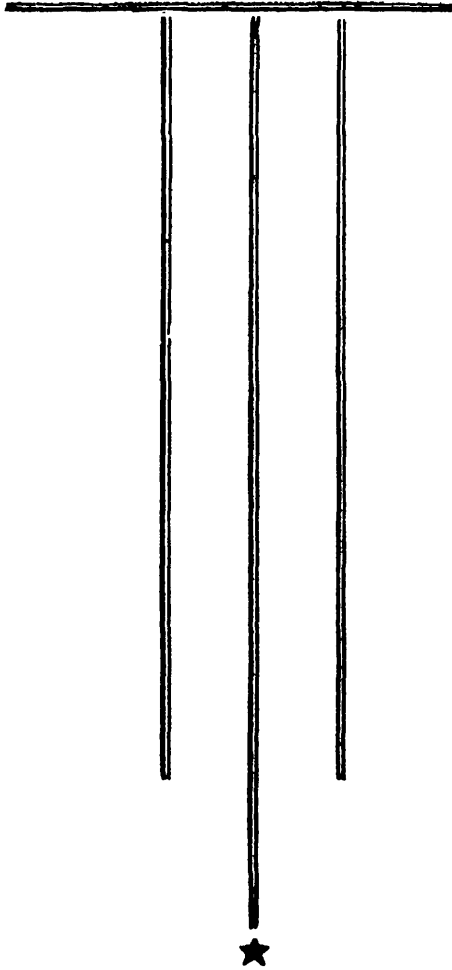
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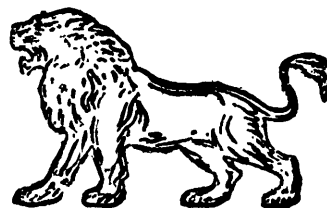


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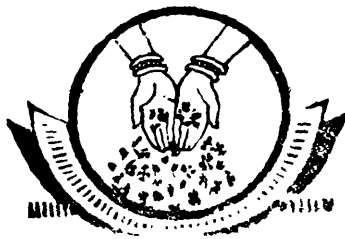


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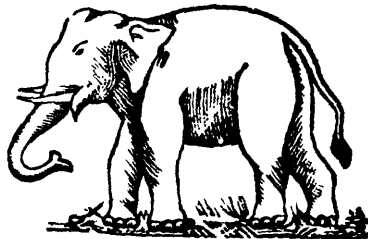
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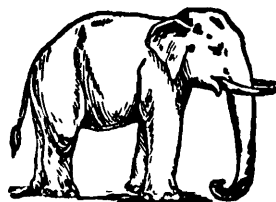
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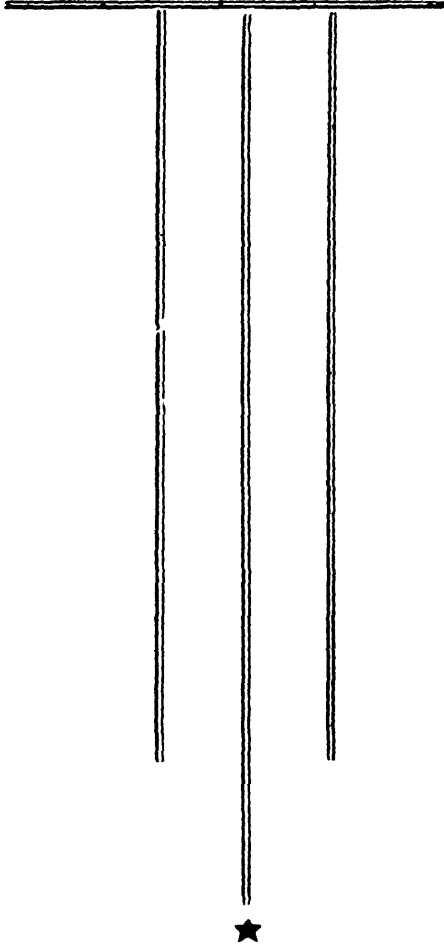
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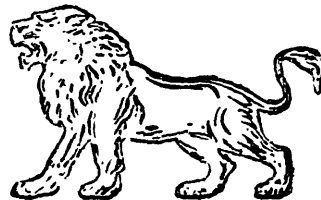
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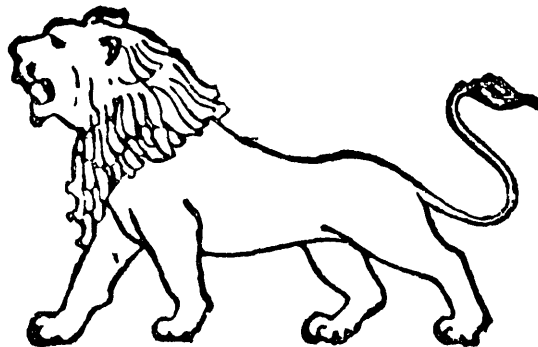


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“The Ecological Conscience”

R. A. KRISHNASWAMY

Every one to-day talks of the slow spread of conservation. Our progress in this area, still consists largely of letterhead pieties, and oratory. For every small progress of one step towards conservation, we are slipping back two steps towards destruction of the environment.

The usual answer to this is “more conservation education” Yes; by all means; but are we sure that only the volume of education effort needs stepping up? What is lacking in this? We have not **ASKED THE COMMON CITIZEN** to assume any real responsibility. We have only informed him, join some organisation what is profitable practice in conservation, vote at the right time, obey the laws, everything will be lovely, and the government will do the rest. The whole formulae is very easy to accomplish. It calls for no effort, no sacrifice, no change in our philosophy of values. Any decent and intelligent person, would not have done of his own accord to destroy what is not his, **IF GUIDED BY THE SOCIAL CODES OF HIS SOCIETY**. No important change in human conduct is ever accomplished without an internal change in our intellectual emphasis, loyalties, affections and convictions. The proof that conservation has not touched foundations of conduct lies in the fact philosophy, ethics, and religion have not given special sanctions.

The whole para above can be summed up in a single line. Man lacks the Ecological conscience, which is the ethics of community life. These are illustrated by a few examples.

A few weeks ago the press has reported the large scale pollution in the vegetables supplied to DELHI, and particularly the water pollution (High Nitrogen) in all the villages from where these vegetables are grown. The governmental agencies have taught these villagers better modes of vegetable growth, better products, better profitability, better living conditions for the growers. But here it stops. The local farmer has misused the knowledge of land use and has thought of ways and means which are profitable to him as an individual and has never thought of the community. In the above process of self improvement, he has destroyed the soil conservation philosophy. Today there can be no growth without heavy fertilisers input, high spraying of insecticides, and natural growth has been completely eliminated.

The second sample starts at that adjoining forests of Sariska Ranthambhor and may be in other similar habitats. Invariably the local residents, the fringe forest dwellers, are meat eaters. The normal menu would be pork, beef, mutton only depending on the financial availability, and left to themselves they would do so on special festive occasions, but always limiting their input to domesticated cattle. But it is the **TOWNSMAN** who is so bored of his town life that he wants to tickle his palate with venison. He is financially well off to take what he wants and has the necessary procedure of satisfying

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his whims and fancies. So the deer, cheetal, smaller ungulates fall foul of his raps, guns, and in the process he has taught the fringe forest dwellers a mode of easy money. The fallacy in "such conservation" is that it seeks to conserve one resource by destroying another. The foresters and conservationists are unable to think of the land as a whole. They are unable to think in terms of Man and his forest denizens as a total community. The conscience fails again when an individual sets a path for his own benefit.

The third sample comes from certain areas of Orissa. At the village level there used to be tamarind, mango, neem trees generally on the road side or at the village pasture ground, which was also the weekly market and only meeting place for the community. These trees were the property of the community and their local fuel needs were adequately looked after by proper pruning etc. This system worked very well till a well-to-do landlord or an individual with vested interests started cutting the trees, after giving a nominal payment to the local 'Mukhia' or headman. These trees when they were removed, resulted in the local villagers going further distances for firewood, say nearby scrub jungles, reserve forests etc. Encroachment in forests resulted in woodfeeling from smaller need to a commercial venture. The village pasture land dried up, became a dust bowl, loss of forage matter, and the cattle were driven to the nearby forests, which in turn was dwindling due to woodfelling. The cattle penetrated deeper every year as the forage areas reduced till the government woke up and passed laws, sanctions. By which time the local people had sufficient data to prove that their fundamental rights were being curbed. It is thus that some of the sanctuaries, reserve forests have a perpetual problem of the villager versus conservation. Meanwhile the village pasture land or dust bowl is allotted to a school or housing resulting in further population influx and consequent pressure on the adjoining forests. All this happened not because of lack of education on environmental need but self interests of individuals and not "because the community has thrown overboard the "Ecological Conscience"

This is the set up in Kerala. An area is selected for setting up a factory paper, sugar, chemical or whatever the needs be as decided by the local authority. In the process of selection, the main item is requirement of large quantity of water both for the factory and the proposed housing complex. The water should also be available for a future expansion programme in about five years time. The site selected is near a river, and the villages are dependant on this river for their agricultural/drinking water etc on this single source. The power of the INDUSTRY and the wealth, induces the villagers to join the factory as workers. By becoming part of the factory setup, they sell their conscience and birthright for drinking water. The factory, the township goes on stream, everybody is happy. living conditions have improved. In a few years the villages downstream die slowly but surely, as the factory effluents and town sewage is dumped in the river, passing through an eyewash of purifier neutralisers etc. There is no more fresh fish which was the poor man's food, available once for the asking.

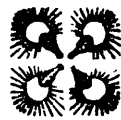
This is all due to factory spewing all its effluents in a community property the river. Laws on river pollution are enacted, inspectors are sent, officials talk

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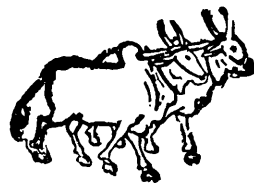
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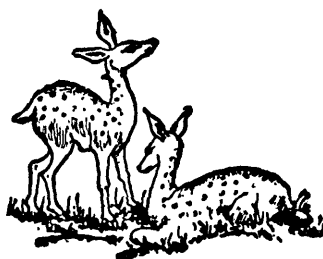
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about it, but who dares to penalise the factory or close it till the problems are solved. Now the lives of a thousand people in the factory are affected if any action is taken against the factory, So year after year the act remains, penalisation is forgotten All because the original project report never took factors on a long term basis of the community but only the vested interest of the industrialist.

The purpose of these examples is to show that it is not only lack of proper thinking of the larger interest but the continued perpetuation of these and similar acts by the busybody the politician, whose image in the society stays as long as the Problem stays and it is his individual interest to keep these Problems alive. This statement of mine may be far fetched but it is there from the example of the SILENT VALLEY CONTROVERSY. The Chairman of the State Electricity Board states on 2nd Jan "The Hindu" that all the objections to this project have come from outside the state that work would be started in full speed within twentyfour hours of the high court's decision The "Indian Express" dated 3rd Jan gives the judgement. How could the Chairman be that sure of a favourable judgement. It Should not be forgotten that the best scientific brains of this country have given an adverse opinion on this subject. Ultimately the ECOLOGICAL CONSCIENCE was thrown down by a political decision.

This brings us to the final para. If we grant the premise that an ecological conscience is possible and is needed, then its first tenet must be this; "ECONOMIC PROVOCATION IS NO LONGER A SATISFACTORY EXCUSE FOR UNSOCIAL LANDUSE OR USING A STRONGER LANGUAGE, "Ecological Atrocities". This does not mean a negative view of any development. Nineteen centuries of decline in the MAN-TO-MAN conduct has resulted in the death of the world around us. A NEW CODE OF DECENCY MAN TO LAND HAS TO BE EVOLVED. THROW YOUR WEIGHT AROUND ON MATTERS OF RIGHT AND WRONG ON LAND USE. CEASE BEING INTIMIDATED THAT A RIGHT ACTION IS IMPOSSIBLE BECAUSE IT IS NOT PROFITABLE OR THAT A WRONG ACTION IS TO BE CONDONED BECUASE IT PAYS. THAT KIND OF PHILOSOPHY IS DEAD IN HUMAN RELATIONS, AND ITS FUNERAL IN LAND RELATIONSHIP IS OVERDUE."



WEEK-END WILD LIFE CAMPING SPOTS AROUND MADRAS.

By

RANGE ROVER.

What is the limiting distance to a weekend camping spot? It all depends on the mode of transport one uses. For a car jeep/motor cycle it may extend upto 200 kms. By bus/train usually it limits itself to 100 kms and by cycle may be to 30 kms. After all one must enjoy the camp life in the jungle listening to its eerie sounds and breathe the early morning fresh air followed by a trek and a midday cool dip in the waterhole or river. By sunset the trip heads homewards. So it is one's own choice.

A light bag with one change of clothes with the usual tooth brush paste, soap, along with Binoculars, birdbook, some packed food a torch, matchbox, a ground sheet, a few first aid medicines, a penknife, a compass a map, a wristwatch and a water bottle form the camping gear for a weekend. It should not weigh more than 7.5 kgs. Always wear dull coloured loose fitting clothes and rubber soled shoes for comfort in jungles.

Here are a few lovely spots around Madras giving some details. The rest is the spirit of adventure and enthusiasm which makes or mars a camp.

No.	Camp site area	Kms.	What can be seen	Mode of Approach
1.	Vedanthangal	110	Dec-Feb waterbirds (Sanctuary)	Car, bus Motor cycle
2.	Vandalur	30	a good hilly scrub jungle: hyena porcupine, jackal, panther wildboar, deer etc.	Elec train. bus cycle,
3&4	Polur Amerdi	200 + 60 + 160	A real rough adventure with ghat roads Bison, deer, sambhar, panther, porcupine, bears etc. (Start early on Saturday)	Jeep, M/Cycle & trek bus or car upto Amerdi only
5.	Gudiyatham	150	Hilly scrub with deer porcupine, panther, wildboar etc.	car bus M/cycle

6. Sholinghur	80	Hilly Scrub as above	Do
7. Pulibone	165	Famous chamala valley with Hyena, panther deer, sambhar. bear porcupine, Snakes etc.	car, bus, train upto Tirupathi.
8. Mamandur	145	Good hilly Scrub jungle with wild life as in 7.	Train, car, bus, M/cycle.
9. Nelapattu	108	Waterbird Heronery famous for breeding pelicans (Nov-Feb)	Do.
10. Pulicat lake	70	Famous for Flamingos painted storks, all kinds of ducks & other water birds. From Dec to Feby Sail. boat timings	Train/car bus, M/cycle and then by boat- from Pudukuppam Tada-boat owner Dhamiah Chetty Important-Carry water/Lunch on board) about Rs. 50 per day from 7 a m. to 4-30 p.m.
11. Sathyavedu	80	low hills with scrub jungles- Panther, wildboar porcupine jackal etc.	Car, bus M/cycle
12. Kambakkam	90	Hill sides with perennial water hole, deer, samdhar wildboar. porcupine, snakes, good uphill trak.	by bus upto road head and 10 km walk.
13. Nagalapuram	80	Hilly Scrub with deer etc.	bus car m/cycle
14. Poondi	30	low scrub with jackals etc.	cycle car bus etc.

All the above have been visited by 'Rangerover' many times and hence selected for above adventure. In all cases one must be prepared to see some or none of the wildlife mentioned since no one can predict their movements. For the interested who want more details contact RANGE ROVER 13, Second Crescent Road, Gandhinagar-Adyar Madras-20.

Telephone 412624
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18-1-80

-RANGE ROVER-

W E T H A N K

all our well wishers who have been generous in taking advertisement space and making it possible to release this Souvenir. We also thank all those who contributed articles and photographs for the Souvenir We look forward to their continued co-operation and encouragement in the years to come.

Conservation Pledge

I give my pledge as an Indian to save and faithfully to defend from waste the natural resources of my country-Its soil and minerals. Its forests, waters and wildlife.

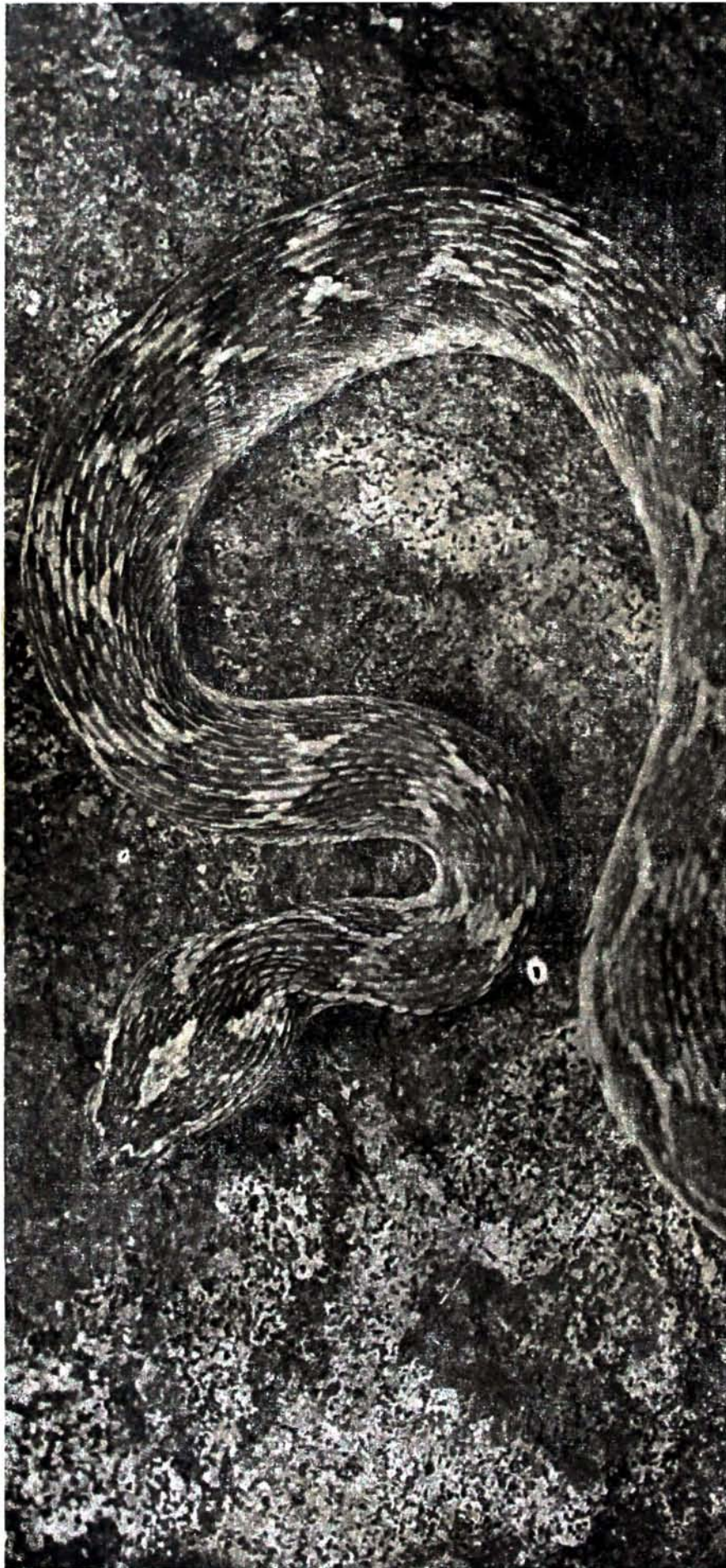


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