

# HORNBILL

1985 (3)



BOMBAY NATURAL HISTORY SOCIETY

The cover picture shows Royle's Pika or Mouse-hare (*Ochotona roylei*) photographed by our member, Mr N. D. Mulla. Mouse-hare are small, tailless animals, with short, broad, rounded ears, short legs, the front pair being shorter than the rear.

The home of pikas or mouse-hares is central and north Asia from where they have spread into Eastern Europe and North America. Royle's Pika ranges through the Himalayas, from Kashmir (from 14,000 ft or 4300 m) in the Northwest, thence eastwards along the Himalayas where it descends to 8000 ft (2400 m). Timid by nature, the animal is strangely confiding and tame. It feeds on a wide variety of herbs and grasses, and is loosely colonial in its habits. Active during daytime hours, Royle's Pika has the habit of cutting stores of plant food, which it piles under rocks for drying and then stores into its burrows. In winter months it does not hibernate, and is believed to cut tunnels under the snow to reach its various food stores. Its breeding commences in late spring and continues up to late summer. Possessing a shrill whistling call, the pika jerks its whole body upwards while vocalising.

The Society was founded in 1883 for the purpose of exchanging notes and observations on Zoology and exhibiting interesting specimens of animal life. Its funds are devoted to the advancement of the study of zoology and botany in the Oriental Region. The Society also promotes measures for conservation of nature.

Membership of the Society is open to persons of either sex and of any nationality, proposed and recommended by one or more members of the Society; and also to persons in their official capacity, scientific societies, institutions, clubs, etc. in corporate capacity.

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J. C. Daniel, P. V. Bole and A. N. D. Nanavati.

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The first annual subscription of members elected in October, November, or December will extend to the 31st December of the year following the election.

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## EDITORIAL

We are often surprised by the behaviour of government officials charged with the protection of our forests and Wildlife who break the rules which they are supposed to enforce, probably under the impression that their duty is to enforce the rules and not to obey them personally. A similar warped thinking often affects naturalists who commit acts which cannot be termed anything but vandalism. One of our observant members who wishes to remain anonymous but identifies himself with a wry sense of humour as a 'Bush Chat' has given us a number of instances of what we would term as acts of vandalism.

Such acts, if they had been done by someone else often through ignorance, the naturalists would have denounced vigorously and vociferously. We reproduce below in his own words, 'Bush Chat's' observations.

### 'VANDALISM BY NATURALISTS IN THE SANJAY GANDHI (BORIVLI) NATIONAL PARK, BOMBAY'

'Keen well meaning nature lovers sometimes cause suffering to wildlife and also cause destruction. Some examples are given here:'

1. 'Poking umbrella ferule into kingfishers' nest holes to find out if anything comes out!'
2. 'Knocking on the tree with a stone to make the bird in the nest hole above fly out. A dead

tree having a spotted owlet's and a myna's nest near Vihar Lake in Borivli National Park is a good example. Every Sunday and holiday about a dozen persons take turn to "knock on wood". Their *guru* has kept a large stone ready for them under the tree.'

3. 'Thrusting fingers into Sunbirds' nests to find out whether there are any eggs or young ones. If there are, removing them to count.'
4. 'Similarly with a Rufous Woodpecker's nest. A young *adivasi* boy was made to climb the tree having the woodpecker's nest. Three young ones were brought down for examination.'
5. 'Under a culvert a Redrumped Swallow used to nest every year. It was shown to a Naturalist who said *wah, wah* at the discovery. Later on he wanted to follow up development of the nest and one day put his finger in to find out whether there were eggs in the egg chamber. When he could not reach the egg chamber with his finger, he inserted a long stick into the retort-shaped nest, and pierced the egg chamber. The bird deserted the nest never to return.'
6. 'Hornbill nest in the Pongam Valley. Groups of birdwatchers

standing on the slope talking loudly and disturbing the parent bird bringing food for the young ones. A photographer kept vigil at the nest continuously keeping his camera on a tripod and standing on the slope, thus showing himself against the sky. The bird would come with food, look at him, drop the food and fly away, starving the young ones. He was asked to sit down and camouflage himself.'

7. 'A group of photographers went on a nature trail and saw a bird nest. There were no eggs; the bird was about to finish the nest. Some of them returned after a few days to find the bird incubating. They took photographs. The news spread. One jealous person went alone, took photographs of the bird on the nest, and destroyed the nest so that others would not have the opportunity to make a priceless photograph.'
8. 'Two photographers located a

cup-shaped bird's nest. It had three eggs. The bird was bold and would come to sit on the eggs when these observers were near by. They took photographs, but the eggs were hidden in the cup, the bird firmly sitting on them. An idea struck! They drove the bird away, took the eggs out, kept pebbles on the nest floor, and placed the eggs above the pebbles to make them visible. The bird came and gave a protesting display, perching on the nest. They got their shot.'

9. 'A keen nature watcher and educationist once was a trail guide. He would take people to show them a unique ant's nest. To prove that ants were within, he would tap on the nest, and the ants would rush out in alarm. This he did for some time, till the ants left the nest. And on one such trip another nature lover plucked the nest and took it home as a decoration.'

### Acknowledgement

We are grateful to Seth Purshotamdas Thakurdas & Divaliba Charitable Trust for financial help for the publication of *Hornbill*.

## FEEDBACK

I would like to point out a couple of inaccuracies in the April-June issue of the *Hornbill*.

While the Golden Tree Snake (*Chrysopelea ornata*) is rarely seen elsewhere, it is actually quite commonly seen in parts of West Bengal where it is one of the regular "venomous" snakes of the snake charmers.

*Can thieves be guides to naturalists?* is a strange piece indeed. We used to "hypnotize" chickens and other creatures when we were children by forcing them to lie down and stroking them. Later on in life we did the same to 10 foot alligators. Putting a weight on the head probably makes the animal, which was forcefully held down, think that the beastly human is still there putting pressure on its head and so it doesn't move.

The article reveals where the problem lies. The authors first discussed the phenomenon, made a conclusion and then set about trying to prove that their conclusion was valid. *Moral*. Following a scientific line of inquiry is to reach a conclusion, not to prop up a hypothesis.

ROMULUS WHITAKER  
*Director, Madras Crocodile  
Bank Trust*

As usual, it is a pleasure to have the *Hornbill* arriving. Knowing how difficult it is to get regular publication like this one out on time, I con-

gratulate you and thank you.

There are two points which I would like to draw your attention to in the 1985(2) issue. (1) The photograph illustrating Rehmani and D'Silva's article is wrongly captioned "Little Cormorants and Shags nesting ....." These birds do not nest there, but arrive to roost. I may further add, by allowing the lake water to get polluted, the "City Fathers" of Jamnagar are encouraging a massive breeding of mosquitoes, and it is interesting that as a body of water dies, Blackwinged Stilts tend to increase and other species to dramatically decline. Conservation in Gujarat and for that matter in India is declaring paper sanctuaries and putting up prohibitory notices, almost every sanctuary and national park is under heavy seize. For instance, at no time has Gujarat Government finally settled issues regarding the Gir National Park and there is a continual demand to open the forest up for grazing. The present drought in Saurashtra will test the political commitment to prevent at all costs, any relaxation in grazing entries into the National Park. Right now, I am caring for a Nilgai fawn whose cheek has been torn by pariah dogs now freely roaming along with domestic stock in the Hingolghadh Education Sanctuary.

LAVKUMAR KHACHER

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## Captain Forsyth — Naturalist in Gondwana

James Forsyth, soldier, forest officer and naturalist, was one of the first Europeans to write in detail on the natural history of the forests of middle India; his name has endured as the author of *THE HIGHLANDS OF CENTRAL INDIA*. However, he died, when only 33, ravaged by smallpox, malaria and finally blood poisoning, twelve years before the Society was founded.

Forsyth was born, probably in Scotland in 1838, son of Dr. Rev. James Forsyth who later became Minister of West Parish Church, Aberdeen. The family home, in the fashionable Rubislow Terrace, is now the premises of a surveyors and a dentist. In addition to a sister who died in infancy, he had two brothers, one became a surgeon and the other a merchant in Burma. James graduated from Marischal College, University of Aberdeen in 1856 with an M.A. By February 1857 he was in India, enlisted as an Ensign and cadet of Infantry. He served in the 59th and 49th Native Infantry in Bundelkund and the sub-Himalayan terai, becoming a Lieutenant in 1858. In 1861 he is recorded as Adjutant in the 25th Native Infantry (Punjabis) at Jabalpur. Much of his leave seems to have been spent exploring and hunting in the nearby Satpura hills. In 1861 he took a month's leave with shikari Bamanjee, travelling up the River Narmada, above Jabalpur. They shot chital from

'dugouts', tracked cattle-lifting tigers and coursed sambar in the company of Gond woodcutters and their dogs. Earlier that year he had been instrumental in ensuring that the Governor-General of India, or at least one of his party, shot a tiger a few miles from Jabalpur cantonment. Someone, of less sure aim, put a bullet through both sides of Forsyth's howdah.

His interest in the forests and his powers of observation were noted and Captain G.F. Pearson, first Conservator of Forests for the region, selected him as an Assistant-Conservator. Although Forsyth was formally seconded from the Bengal Staff Corps on 7th February 1862, he started forestry work in 1860, at the age of 22. The first few seasons' work involved Pearson and his small staff in collecting half-burnt timber scattered throughout the forests. This task arose out of an inopportune Government announcement that the forests would come under their control, after a 'certain time'. Wholesale felling by speculators produced vast teak graveyards, from which timber could not be collected and was burnt in the hot weather fires. After this work Forsyth made at least two long journeys through the Gondwana hills, which provided much of the substance of his book. Travelling by foot, horse, elephant and canoe, the major aim was to search for valuable forests.

In January 1862 Forsyth set off from Jabalpur on his first major exploration, with a camel, five ponies and two tents. The camel, caught running wild in Bundelkund, was later killed by a tiger in Betul. Travelling west, past Narsinghpur, the party turned southwest to Pachmarhi in the Mahadeo hills. Pearson had negotiated the lease of the plateau from the thakur and part of Forsyth's brief was to build a bungalow — the beginnings of the hill station of today. He explored the surrounding forests of Seoni, Chhindwara, Bori and Betul before returning to Jabalpur at the end of July. At Betul he despatched a man-eating tiger, which had killed 100 people, closing several roads. During the following monsoon he appears to have prepared his first book *THE SPORTING RIFLE AND ITS PROJECTILES* which appeared in 1863, followed by a second edition in 1867.

The second exploration documented in *THE HIGHLANDS OF CENTRAL INDIA* began in January 1863. With Captain Burton, he passed via Mandla and Raipur to explore the country around the Mahanadi river. They paused for two days to hunt barasingha on the dadars of the upper Halon valley, the present day Kanha Tiger Reserve. They then descended the Mahanadi river in a sal canoe, through what is now the Hirkud reservoir, to Sambalpur. In March they struck south to the Gujrat states of present day western Orissa, looking for teak. By follow-

ing the Jonk river to the north they rejoined the Mahanadi, completing a circle. The third leg of the journey took them north of Bilaspur to explore unknown forests and investigate the 'elephant problem' of crop raiding pachyderms. By early May they reached Ratanpur, the eclipsed crumbling Rajput capital of the region, but Forsyth became progressively weaker with smallpox. While Burton explored to the northeast, to Uprora, Forsyth recuperated at a cooler, higher altitude amongst the Bhumia at the Laafagarh fortress, under the care of the local thakur. After eight days rest he set off on elephant-back to meet Burton at Matin. However, when a Bhumia brought news of a solitary tusker close by, Forsyth impetuously set off in pursuit, in 'sleeping drawers and slippers', and collapsed during the stalk. On the 1st of June they reached Amarkantak and rested for few days in the cool air of the peak, before, very ill and weak, commencing a 'dreadful' march to Jabalpur. They reached their destination on the 16th July, covering nearly 1000 miles in six months. Forsyth was so debilitated that he resigned the Forest Department, much to the regret of Pearson who described him as "one of the ablest men I ever had under me". His replacement, Lt. Freeborn, did not last long, having to leave the service on failing his Hindustani exam.

In 1861 Richard Temple had become Chief Commissioner of the



newly formed Central Provinces. In 1864 he singled out Forsyth to become Assistant Commissioner and Settlement Officer for Nimar district, downstream the Narmada at Khandwa. At the end of the monsoon Forsyth visited the Sonpur elephant fair by the Ganges, buying ten animals for £ 150 each. During the monsoon of an unspecified year he visited the Nilgiri hills, stalking sambar. For Christmas 1864 he visited forests east of Mandla, having for dinner an extraordinary "Peacock, sambar tongue, barasingha, chital cutlets, fillets of nilgai, boiled quails, roasted teal and plum pudding and mince pies out of Cross & Blackwell tins". In 1865 he went down the Godaverri river to Chanda and mentions a 1000 mile trek but does not record where.

In 1867, after three year's work on the Nimar settlement report, he visited England. On returning to India he temporarily rejoined the Forest Department, to relieve an ill Major Pearson, as Acting Commissioner of Forests. The following few years appear to have been spent back in civil work in Nimar and he was promoted to captain in 1869. In February 1870 he records shooting in the Hathi hills of Nimar, but by the end of the year he had returned to Scotland; no reason is given for leaving India. On May 1st 1871, whilst his book was in press, Forsyth died of pyaemia at 38, Manchester St. Marylebone, aged only 33.

His brief life was unusually pro-

ductive — M.A., Captain in the Bengal Army, Settlement Officer, Deputy Commissioner, Acting Conservator of Forests and two books. His contemporaries speak highly of his abilities — a loss "a severe blow to the Province" Stebbing wrote of him "as one of the most brilliant and versatile young officers of that day. Possessed of high powers of observation, a cultivated mind, and literary gifts unusual for a military officer of the period" Unfortunately, we only have his writings as an insight into his character. He comes over as unusual combination of academic, practical forester and explorer with wide interests spanning natural history, archaeology, history, anthropology, hunting, ballistics and geography. His wide travels impressed upon him the biogeography of central India and Forsyth appears to have been the first to note the sympatric distributions of sal tree, barasingha, jungle fowl, soil type and race of tribal people, noting their co-occurrence in an isolated patch at Pachmarhi, embedded in teak forest. His writings are free of the exaggerated accounts of hunting prowess which clutter similar works and within the Victorian prose there are some vivid descriptions of the hills — "*Sterculia urens*, a tree that looks as if the Megatherium might have climbed its uncouth and ghastly branches at the birth of the world." Headings from his book show the breadth of interest — The Mohwa Tree, Adventure with a Snake, Dance of the Peacocks, Description of Gonds

and Korkus, Sivaism, Purchasing Elephants, Ancient Remains, Large Herds of Red Deer and Effects of Exposure. Appended were five appendices including information on the diseases of elephants, useful trees and the preservation of natural history specimens. As do other shikar books of this period, he recounts some marvellous jungle stories, such as the origin of the man-eating panther of Dhuma. When a couple, returning from pilgrimage at Benares, met a panther, the man, a Baiga priest, transformed himself into a panther in order to persuade the animal to leave them in peace. However, on returning to his wife, who he had instructed to feed him a powder capable of rejuvenating his human form, she was so terrified that she dropped the charm and lost it. In despair at being imprisoned in the guise of a panther, the Baiga killed her and revenged himself on all the humans he could find.

In THE HIGHLANDS OF CENTRAL INDIA Forsyth is critical of both fellow Europeans and Government forest policy, particularly with regard to the welfare of the indigenous tribal people. Through the mid-Victorian paternalism, a genuine affection and respect for the tribals, such as the Baiga, comes through. He was aware that life in Gondwana, for both animal and

human, was changing fast and cautioned about the decline of the gaur. He speculated as to the possibilities of irrigation in removing the "famine demon" and warned against "rash interference with the life-giving forests of hilly regions where rivers are born". However, in common with his contemporaries, he did shoot considerable numbers of game, including a few cheetahs.

The HIGHLANDS... which in England sells for nearly £ 100, has not been superseded as a general account of Gondwana, although it is obviously rather out of date. It received good reviews in 1871 and it was regretted that such an able, observant and sympathetic officer did not live to determine future Province policy. Chronic ill health plagued the early European forest officers in central India. At least Forsyth outlived the adage "two monsoons are the life of a man" to lay the foundations of the Madhya Pradesh Forest Department and leave vivid accounts of the hills a century ago.

PAUL NEWTON

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*This section which follows from Forsyth's THE HIGHLANDS OF CENTRAL INDIA will give the reader an idea of the conditions obtaining in Central India (Madhya Pradesh) at that period of time—EDS*

I spent nearly a week of this time in the destruction of a famous man-eater, which had completely closed several roads, and was estimated to have devoured over a hundred human beings. One of these roads was the main outlet from the Betul teak forests towards the railway then under construction in the Narbada valley; and the work of the sleeper-contractors was completely at a standstill owing to the ravages of this brute. He occupied regularly a large triangle of country between the rivers Moran and Ganjal; occasionally making a tour of destruction much further to the east and west; and striking terror into a breadth of not less than thirty to forty miles. It was therefore supposed that the devastation was caused by more than one animal; and we thought we had disposed of one of these early in April, when we killed a very cunning old tiger of evil repute after several days' severe hunting. But I am now certain that the brute I destroyed subsequently was the real malefactor even there, as killing again commenced after we had left, and all loss to human life did not cease till the day I finally disposed of him.

He had not been heard of for a week or two when I came into his country, and pitched my camp in a splendid mango grove near the large village of Lokartalae, on the Moran river. Here I was again laid up through over-using my sprained ten-

don; but a better place in which to pass the long hot days of forced inactivity could not have been found. The bare brown country outside was entirely shut out by the long drooping branches of the huge mango trees, interlaced overhead in a grateful canopy, and loaded with the halfripe fruit pendent on their long tendril-like stalks; while beneath them short glimpses were seen of the bright clear waters of the Moran stealing over their pebbly bed. The green mangoes, cooked in a variety of ways, furnished a grateful and cooling addition to the table; and the whole grove was alive with a vast variety of bird and insect life, in the observation of which many an hour that would otherwise have flown slowly by was passed. A colony of the lively chirping little grey-striped squirrel lived in every tree, and from morning to night permeated the whole grove with their incessant gambols. My dogs would have died of *ennui*, I believe, but for the unremitting sport they had in stalking and chasing these unattainable creatures, whose fashion of letting them get within two inches of them while they calmly sat up and ate a fallen mango, and then whisking up and sitting just half a foot out of reach, jerking their long tails and rapping out a long chirp of defiance, seemed highly to provoke them. Clouds of little green ring-necked paroquets flew from tree to tree, clambering over and under and in every direc-

tion through the branches to get at the green mangoes. A great variety of bright-coloured bulbuls, several species of woodpecker, and the golden oriole or mango-bird, flashed about in the higher foliage, while an incessant hum told of the unseen presence of multitudes of the insect world.

A few days of a lazy existence in this microcosm of a grove passed not unpleasantly after a spell of hard work in the pitiless hot blasts outside; but when the Lalla brought in news of families of tigers waiting to be hunted in the surrounding river-beds I began to chafe; and when I heard from a neighbouring police post that the man-eater had again appeared, and had killed a man and a boy on the high road about ten miles from my camp, I could stand it no longer. I had been douching my leg with cold water, but now resorted to stronger measures, giving it a coating of James's horse-blister, which caused of course severe pain for a few days, but at the end of them resulted, to my great delight, in a complete and permanent cure. In the meantime, while I was still raw and sore, I was regaled with stories of the man-eater—of his fearful size and appearance, with belly pendent to the ground, and white moon on the top of his forehead; his pork-butcher-like method of detaining a party of travellers while he rolled himself in the sand, and at last came up and inspected them all round, selecting the fattest; his power of transforming

himself into an innocent-looking woodcutter, and calling or whistling through the woods till an unsuspecting victim approached; how the spirits of all his victims rode with him on his head, warning him of every danger, and guiding him to the fatal ambush where a traveller would shortly pass. All the best shikaris of the country-side were collected in my camp; and the landholders and many of the people besieged my tent morning and evening. The infant of a woman who had been carried away while drawing water at a well as brought and held up before me; and every offer of assistance in destroying the monster was made. No useful help was, however, to be expected from a terror-stricken population like this. They lived in barricaded houses; and only stirred out when necessity compelled in large bodies, covered by armed men, and beating drums and shouting as they passed along the roads. Many villages had been utterly deserted; and the country was evidently being slowly depopulated by this single animal. So far as I could learn, he had been killing alone for about a year—another tiger who had formerly assisted him in his fell occupation having been shot the previous hot weather. Betul has always been unusually favoured with man-eaters, the cause apparently being the great number of cattle that come for a limited season to graze in that country, and a scarcity of other prey at the time when

they are absent, combined with the unusually convenient cover for tigers existing alongside most of the roads. The man-eaters of the Central Provinces rarely confine themselves *solely* to human food, though some have almost done so to my own knowledge. Various circumstances may lead a tiger to prey on man; anything, in fact, that incapacitates him from killing other game more difficult to procure. A tiger who has got very fat and heavy, or very old, or who has been disabled by a wound, or a tigress who has had to bring up young cubs where other game is scarce—all these take naturally to man, who is the easiest animal of all to kill, as soon as failure with other prey brings on the pangs of hunger; and once a tiger has found out how easy it is to overcome the lord of creation, and how good he is to eat, he is apt to stick to him, and, if a tigress, to bring up her progeny in the same line of business. The greater prevalence of man-eaters in one district than in another I consider to be that I have mentioned. Great grazing districts, where the cattle come only for a limited season, are always the worst. Where the cattle remain all the year round, as in Nimar, the tigers rarely take to man-eating.

As soon as I could ride in the howdah, and long before I could do more than hobble on foot, I marched to a place called Charkhera, where the last kill had been reported. My usually straggling

following was now compressed into a close body, preceded and followed by the baggage-elephants, and protected by a guard of police with muskets, peons with my spare guns, and a whole posse of matchlocked shikaris. Two deserted villages were passed on the road, and heaps of stones at intervals showed where a traveller had been struck down. A better hunting-ground for a man-eater certainly could not be. Thick scrubby teak jungle closed in the road on both sides; and alongside of it for a great part of the way wound a narrow deep water-course, overshadowed by thick jaman bushes, and with here and there a small pool of water still left. I hunted along this nala the whole way, and found many old tracks of a very large male tiger,\* which the shikaris declared to be the man-eater. There were none more recent, however, than several days. Charkhera was also deserted on account of the tiger, and there was no shade to speak of; but it was the most central place within reach of the usual haunts of the brute, so I encamped here and sent the baggage-elephants back to fetch provisions. In the evening I was startled by a messenger from a place called Le, on the Moran river, nearly in the direction I had come from, who said that one of a party of pilgrims who had been travelling unsuspectingly by a jungle road had

\* A little practice suffices to distinguish the tracks of tigers of different ages and sexes. The old male has a much *squarer* track, so to speak, than the female, which leaves a more oval footprint.

been carried off by the tiger close to that place. Early next morning I started off with two elephants, and arrived at the spot about eight o'clock. The man had been struck down where a small ravine leading down to the Moran crosses a lonely pathway a few miles east of Le. The shoulder-stick with its pendent baskets, in which the holy water from his place of pilgrimage had been carried by the hapless man, was lying on the ground in a dried-up pool of blood; and shreds of his clothes adhered to the bushes where he had been dragged down into the bed of the nala. We tracked the man-eater and his prey into a very thick grass cover, alive with spotted deer, where he had broken up and devoured the greater part of the body. Some bones and shreds of flesh, and the skull, hands, and feet, were all that remained. This tiger never returned to his victim a second time, so it was useless to found any scheme for killing him on that expectation. We took up his tracks from the body, and carried them patiently down through very dense jungle to the banks of the Moran; the trackers working in fear and trembling under the trunk of my elephant, and covered by my rifle at full cock. At the river the tracks went out to a long spit of sand that projected into the water, where the tiger had drunk, and then returned to a great mass of piled-up rocks at the bottom of a precipitous bank, full of caverns and recesses. This we searched with stones and some

fireworks I had in the howdah; but put out nothing but a scraggy hyaena, which was of course allowed to escape. We searched about all day here in vain, and it was not till nearly sunset that I turned and made for camp.

It was almost dusk, when we were a few miles from home, passing along the road we had marched by the former day, and the same by which we had come out in that morning, when one of the men who was walking behind the elephant started and called a halt. He had seen the footprint of a tiger. The elephant's tread had partly obliterated it; but further on, where we had not gone, it was plain enough—the great square pug of the man-eater we had been looking for all day! He was on before us, and must have passed since we came out in the morning, for his track had *covered* that of the elephants as they came. It was too late to hope to find him that evening; and we could only proceed slowly along on the track, which held to the pathway, keeping a bright look-out. The Lalla indeed proposed that he should go a little ahead as a bait for the tiger, while I covered him from the elephant with a rifle! But he wound up by expressing a doubt whether his skinny corporation would be a sufficient attraction, and suggested that a plump young policeman, who had taken advantage of our protection to make his official visit to the scene of the last kill, should be substituted, whereat there was a general but not

very hearty grin. The subject was too sore a one in that neighbourhood just then. About a mile from the camp the track turned off into the deep nala that bordered the road. It was now almost dark, so we went on to the camp, and fortified it by posting the three elephants on different sides, and lighting roaring fires between. Once in the night an elephant started out of its deep sleep and trumpeted shrilly, but in the morning we could find no tracks of the tiger having come near us. I went out early next morning to beat up the nala; for a man-eater is not like common tigers, and must be sought for morning, noon, and night. But I found no tracks, save in the one place where we had crossed the nala the evening before, and gone off into thick jungle.

On my return to camp, just as I was sitting down to breakfast, some Banjaras from a place called Dekna—about a mile and a half from camp—came running in to say that one of their companions had been taken out of the middle of their drove of bullocks by the tiger, just as they were starting from their night's encampment. The elephant had not been unharnessed, and, securing some food and a bottle of claret, I was not two minutes in getting under way again. The edge of a low savanna, covered with long grass and intersected by a nala, was the scene of this last assassination; and a broad trail of crushed-down grass showed where the body had been dragged down towards the

nala. No tracking was required; it was horribly plain. The trail did not lead quite into the nala, which had steep sides, but turned and went alongside of it into some very long grass reaching nearly up to the howdah. Here Sariu Parshad (a large government mukna I was then riding) kicked violently at the ground and trumpeted, and immediately the long grass began to wave ahead. We pushed on at full speed, stepping as we went over the ghastly half-eaten body of the Banjaras. But the cover was dreadfully thick; and though I caught a glimpse of a yellow object as it jumped down into the nala, it was not in time to fire. It was some little time before we could get the elephant down the bank and follow the broad plain footprints of the monster, now evidently going at a swinging trot. He kept on in the nala for about a mile, and then took to the grass again; but it was not so long here, and we could still make out the trail from the howdah. Presently, however, it led into rough, stony ground, and the tracking became more difficult. He was evidently full of go, and would carry us far; so I sent back for some more trackers, and with orders to send a small tent across to a hamlet on the banks of the Ganjal, towards which he seemed to be making. All that day we followed the trail through an exceedingly difficult country, patiently working out print by print, but without being gratified by a sight of his brindled hide. Several of the local shikaris were admirable

trackers; and we carried the line down within about a mile of the river, where a dense thorny cover began, through which no one could follow a tiger.

We slept that night at the little village, and early next morning made a long cast ahead, proceeding at once to the river, where we soon hit upon the track leading straight down its sandy bed. There were some strong covers reported in the river-bed some miles ahead, near the large village of Bhadugaon, so I sent back to order the tent over there. The track was crossed in this river by several others, but was easily distinguishable from all by its superior size. It had also a peculiar drag of the toe of one hind-foot, which the people knew and attributed to a wound he had received some months before from a shikari's matchlock. There was thus no doubt we were behind the man-eater, and I determined to follow him while I could hold out and we could keep the track. It led right into a very dense cover of jaman and tamarisk, in the bed and on the banks of the river, a few miles above Bhadugaon. Having been hard pushed the previous day, we hoped he might lie up here; and, indeed, there was no other place he could well go to for water and shade. So we circled round the outside of the cover, and, finding no track leading out, considered him fairly ringed. We then went over to the village for breakfast, intending to return in the heat of the day.

About eleven o'clock we again faced the scorching hot wind, and made silently for the cover where lay the man-eater. I surrounded it with scouts on trees; and posted a pad-elephant at the only point where he could easily get up the high bank and make off; and then pushed old Sarju slowly and carefully through the cover. Peafowl rose in numbers from every bush as we advanced; and a few hares and other small animals bolted out at the edges—such thick green covers being the midday resort of all the life of the neighbourhood in the hot weather. About the centre the jungle was extremely thick, and the bottom was cut up into a number of parallel water-channels among the strong roots and overhanging branches of the tamarisk. Here the elephant paused and began to kick the earth, and utter the low tremulous sound by which some elephants denote the close presence of a tiger. We peered all about with nervous beatings of the heart; and at last the mahout, who was lower down on the elephant's neck, said he saw him lying beneath a thick jaman bush. We had some stones in the howdah, and I made the Lalla, who was behind me in the back seat, pitch one into the bush. Instantly the tiger started up with a short roar and galloped off through the bushes. I gave him right and left at once, which told loudly; but he went till he saw the pad-elephant blocking the road he meant to escape by, and then he turned and charged back at me with horrible roars. It was very difficult



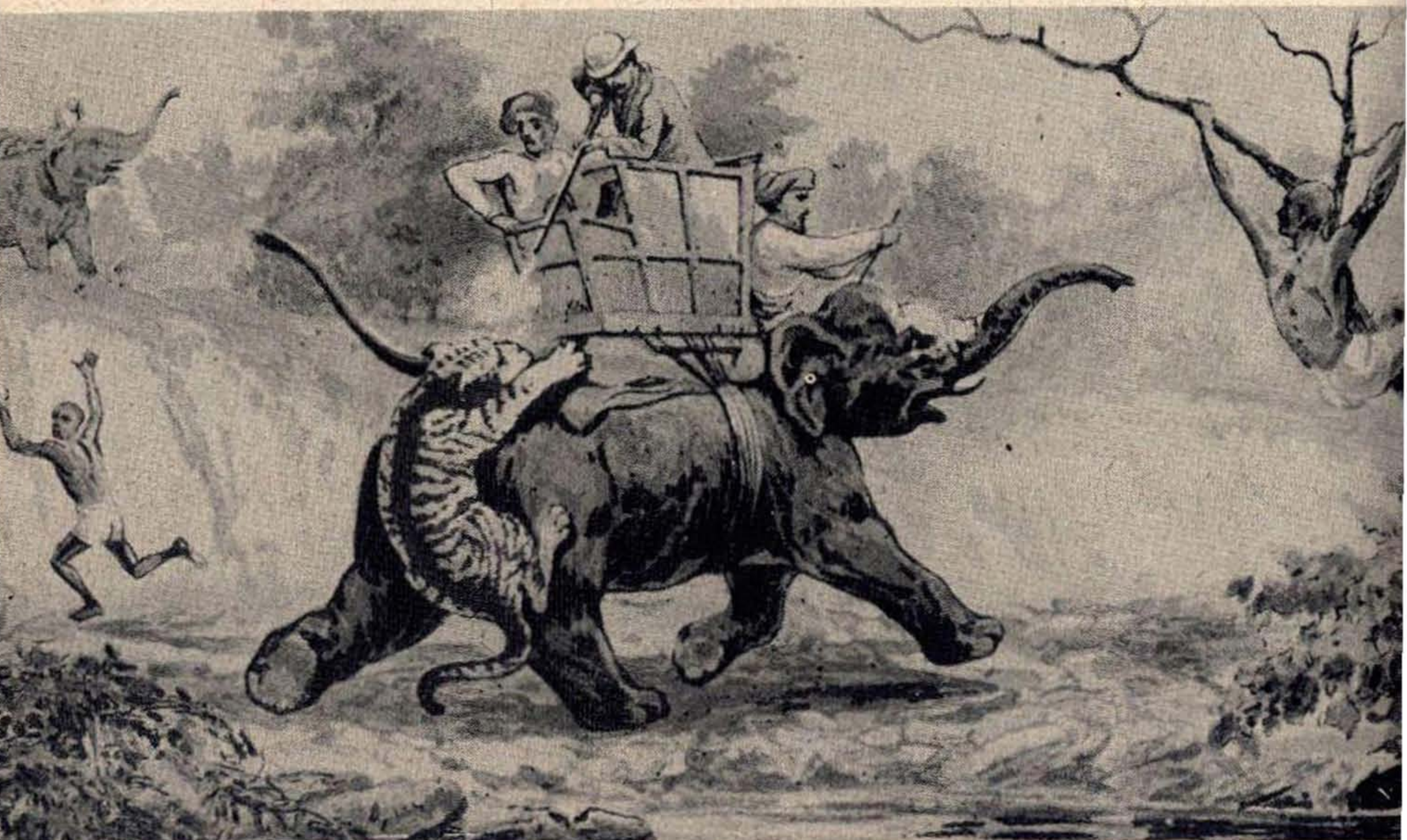
to see him among the crashing bushes, and he was within twenty yards when I fired again. This dropped him into one of the channels; but he picked himself up, and came on again as savagely though more slowly than before. I was now in the act of covering him with the large shell rifle, when suddenly the elephant spun round, and I found myself looking the opposite way, while a worrying sound behind me and the frantic movements of the elephant told me I had a fellow-passenger on board I might well have dispensed with. All I could do in the way of holding on barely sufficed to prevent myself and guns from being pitched out; and it was some time before Sarju, finding he could not kick him off, paused to think what he would do next. I seized that placid interval to lean over behind and put the muzzle of the rifle to the head of the tiger blowing it into fifty pieces with the large shell. He dropped like a sack of potatoes; and then I saw the dastardly mahout urging the elephant to run out of the cover. An application of my gunstock to his head, however, reversed the engine; and Sarju, coming round with the utmost willingness, trumpeted a shrill note of defiance, and rushing upon his prostrate foe commenced a wardance on his body, that made it little less difficult to stick to him than when the tiger was being kicked off. It consisted, I believe, of kicking up the carcase with a hind-leg, catching it in the hollow of the fore, and so tossing it backwards and forwards among his

feet, winding up by placing his huge fore-foot on the body and crossing the other over it, so as to press it into the sand with his whole weight. I found afterwards that the elephant-boy, whose business it is to stand behind the howdah, and, if necessary, keep the elephant straight in a charge by applying a thick stick over his rump, had had a narrow escape in this adventure, having dropped off in his fright almost into the jaws of the tiger. The tiger made straight for the elephant, however, as is almost invariably the case, and the boy picked himself up and fled to the protection of the other elephant.

Sarju was not a perfect shikari elephant; but his fault was rather too much courage than the reverse, and it was only his miserable opium-eating villain of a mahout that made him turn at the critical moment. He was much cut about the quarters; but I took him out close to the tents two days after and killed two more tigers without his flinching in the least. The tiger we had thus killed was undoubtedly the man-eater. He was exactly ten feet long, in the prime of life, with the dull yellow coat of the adult male—not in the least mangy or toothless like the man-eater of story. He had no moon on his head, nor did his belly nearly touch the ground. I afterwards found that these characteristics are attributed to all man-eaters by the credulous people.

Before dismissing Sarju from these pages, I would like to record an anecdote of his sagacity which I think beats everything I have heard of the elephant's intellect. He was a consummate thief, and had grown so cunning that he would unfasten any chains or ropes he was tethered with, which he often would do of a dark night if not watched, and proceed to roam about seeking what he might devour. His favourite object on such occasions was sugar-cane, and if he got into a field of this would trample down and damage the greater part of it. Many a long bill have I paid for such depredations. He would never allow himself to be caught again after such an escapade while his keepers pursued him with sticks and threats, but surrendered at once as soon as they resorted to persuasion, and promised not to beat him. One night the people of the camp were sitting up late over a small fire, and saw Sarju

unloose his foot-chain and stalk off through the camp. Presently he appeared sniffing about the place where a grain-merchant had brought out his sacks during the day to supply the wants of the camp. A sack of rice, nearly empty, lay under the head of a sleeping lad, and Sarju paused and seemed to ponder long how he might annex its contents. At last he was seen to gradually withdraw the bag with his trunk, while he replaced it with the sloping edge of his big fore-foot in supporting the head of the boy. Having gobbled up the rice with much despatch, he then rolled up the bag, and returning it under the boy's head, stalked away! I was told this story next morning by several respectable natives who saw the whole affair, and who had no object in telling a lie about it. For my own part, knowing what Mr. Sarju was capable of, I believe it.



*A tiger hunt*  
(See p.15)

## The Golden Gecko of Tirumalai Hills

The IMPERIAL GAZETTEER OF INDIA published in 1890 says of Tirupati that "it is celebrated throughout southern India for the temple on Tirumala, the holy hill, 2500 feet high. This place often known as Upper Tirupati, is 6 miles distant from Tirupati town and situated in 13°41' N and 79°21' E. The shrine is dedicated to Venkateswaraswami, an incarnation of Vishnu, and is considered so holy that formerly no Christian or Musalman was allowed even to ascend the hill. Since 1870, however, European magisterial and police officers go up occasionally on duty, and visitors are sometimes allowed there as a special case."

One of the visitors who took advantage of the relaxation to visit to the holy hill at this early period was R. H. Beddome. He had joined the military service of the East India Company as a stripling of 18 years in 1848 and was posted to the 42nd Madras Native Infantry. In 1857 on account of his devotion to botany and natural history Beddome was made chief assistant to Dr. H. Cleghorn, the first Conservator of Forests of Madras Presidency and succeeded him as Conservator in 1869. Beddome's official status gave him exceptional opportunities for collection and he described several new species of amphibians and reptiles. Among these was a Gecko with peculiar toe pads and golden body colour which he obtained from Tirumalai hill and described in Vol.

I of the *Madras Monthly Journal of Medical Science* in 1870 as a new genus and species and named it *Calodactylodes aureus*. The Gecko was apparently forgotten thereafter.

A century and fifteen years later conditions had changed considerably. Tirumalai Hill was now open to anyone who wished to go up the hill. We were on a survey of the proposed Venkateswara Wildlife Sanctuary as a part of the exercise under the National Wildlife Action Plan for identifying areas still pristine enough to be preserved for posterity by the State and Central Governments. The Venkateswara Sanctuary had been particularly commended to us for its variety of flora and fauna by Mr Pushp Kumar, the Additional CCF, Andhra Pradesh.

Tirumalai Hills is a very essential part of the Venkateswara Sanctuary. Among the many endangered and rare species that the sanctuary has the Golden Gecko holds pride of place. Beddome's notes on the habits and habitat of the species made over a hundred and fifteen years earlier were brief and cryptic. He had collected the Gecko from the steep, narrow, rocky ravines that slashed the Tirumalai hills in various directions. If you could not guess the habitat correctly it was like looking for a needle in a haystack.

In the end the first sighting of the species was purely accidental. Ac-



*The habitat of the Golden Gecko*

*Photo: J. C. Daniel*



*The Golden Gecko of Tirumalai Hills*

*Photo: J.C. Daniel*

accompanied by Mr Upendra Reddy, DFO (Wildlife), Mr Raghavendra Gowd, Deputy Range Officer, B. Sreeramulu and Nagaraj, a local guide, we were returning from a survey trip, when we halted near a pile of rocks to look at Rock Agama Lizards. Some time was spent in chasing the wily Rock Agamas which expertly slid into crevices at the last moment leaving us futilely trying to winkle them out. It was while we were attempting to locate a male Rock Agama in his gaudy breeding colour of black and red who had precipitately left his display perch on the trunk of a tree and deftly slipped below a massive solitary block of granite, that the first specimen of the Golden Gecko was sighted in the deep recess of a overhang. A slight tap with a stick and a groggy gecko was in our hand. The toe pads and the golden colour immediately identified the gecko

and there was a fair amount of jubilation at the rediscovery of the species after 115 years. Photographs were taken and putting the gecko in a collection bag we left for our camp happy that we had added another feather to the Society's cap. This was the second rediscovery by the Society, the first being the bird, Finn's Baya rediscovered in the Kumaon Terai. We hope that we would have equal success in the search for Jerdon's Courser, another enigma of the Eastern Ghats.

Subsequent specimens that we saw of the Golden Gecko were not golden in colour, some were sand grey, some were nearly maroon and others of various shades of brown but the peculiar toe pads made identification unmistakable.

J.C. DANIEL  
BHARAT BHUSHAN



*Close-up of a ravine*

*Photo: J. C. Daniel*

# NEWS, NOTES AND COMMENTS

## **IUCN Conservation Award to Mrs. Indira Gandhi**

Prime Minister Rajiv Gandhi accepted the highest award given by the International Union for the Conservation of Nature (IUCN) on behalf of his late mother, the former Prime Minister Indira Gandhi. The *John C. Phillips Memorial Medal* was presented to Prime Minister Rajiv Gandhi at a ceremony in Geneva on 17th June 1985.

The award, named for one of the pioneers of the conservation movement, has been given every 3 years since 1963 by IUCN in recognition of outstanding service to conservation. Last June IUCN's Council decided to bestow the 1984 edition on Mrs Gandhi because of her steadfast support for International Nature Conservation. The award was announced at IUCN's General Assembly in Madrid in November 1984.

The IUCN Citation accompanying the Phillips Memorial Medal reads in part: 'Indira Gandhi was a gifted naturalist from her earliest years, her sense of kinship between people and nature was already developed in her childhood outlook and grew with her until she became a legend in her own time as a dedicated champion of nature conservation... Her heartfelt support for the *World Conservation Strategy*, the *World Charter of Nature*, and many other interna-

tional initiatives and agreements aimed at putting conservation into practise worldwide, was a source of great inspiration to the global conservation movement''.

## **World Pheasant Association**

The new Chairman of the World Pheasant Association from 1st June will be Keith Howman. The appointment is perhaps appropriate as on the 7th September WPA celebrates its 10th Anniversary and Keith Howman is one of the six founder members. He is probably best known for having the largest collection of rare pheasants in captivity in Europe.

## **Soviet Union to stop Commercial Whaling**

The Soviet Union, the world's second largest whaling nation, has announced its intention to stop commercial whaling by 1987. Speaking at the 37th annual International Whaling Commission (IWC) meeting in Bournemouth, UK, USSR Commissioner to the IWC Dr Ivan Nikonorov said the Soviet Union plans a temporary stop in Antarctic commercial whaling starting in 1987. This is two years after the moratorium was to have begun.

Conservationists are delighted with the announcement but are urging the Soviet Union to comply with the moratorium decision to end all commercial whaling by the 1985/86 season.

Dr Nikonorov added that whaling would be postponed until research by the IWC Scientific Committee indicated the recovery of whale stocks.

"Our country fully shares the concept of conservation and recovery of whale stocks in the world's oceans," he said.

### **Hai-Bar Reserve, Israel**

The Hai-Bar Reserve is located on the Yotvata salt flats over an area of 8,000 acres, surrounded by savannahs and cliffs and dotted with acacia trees.

In this fenced area are breeding groups of animals which inhabited the area in Biblical times as well as later periods. The Bible lists animals found in Israel and today 2000 years later, only a small number of those animals mentioned in the scriptures now occur in the wild in Israel. Some of them are revealed in the rock inscriptions found along the passages used by ancient travellers and desert dwellers (these inscriptions can still be seen on a visit to Elat and its surroundings). There is also testimony found in the diaries of travellers and visitors to the area over the centuries.

In 1964 a campaign was started to collect those animals that remained in several breeding groups in zoos throughout the world or in small wild herds in Africa and Asia, such as ibex, oryx, addax, ostrich, wild ass and gazelles. Today they flourish in the Hai-Bar.

Close to completion is the Biblical Desert Predators' Center, due to open in October 1985, which will hold wolves, foxes, hyenas, the Israeli leopard, wild desert cats and others and a display of rodents and reptiles.

For further information, please refer to RONNY MALKA, Hai-Bar Arava, P.O. Box 667, 88105 Elat, Israel.

### **Financial Assistance to Scientists**

The Indian National Science Academy invites applications from deserving scientists for extending them partial financial support to participate in important international scientific conferences/symposia abroad for 1985-86. Scientists interested to avail of financial support from the Academy for international conferences to be held during 1985-86 are requested to apply in the prescribed proforma which can be obtained from the office of the Executive Secretary, Indian National Science Academy, Bahadur Shah Zafar Marg, New Delhi - 110002.

The Conferences to be supported by INSA fall under three different categories, viz. Category I: International Conferences organised by the International Council of Scientific Unions (ICSU) and its affiliated bodies, hence categorised as ICSU conferences; Category II: International Conferences organised by other agencies, hence categorised as Non-ICSU Conferences; Category III: Travel Fellowship grant to

young Scientists below the age of 35 years for INSA-COSTED Travel Fellowship grant.

### **Aspects of the ecology of the Himalayan Musk Deer**

The Himalayan musk deer (*Moschus chrysogaster* Hodgson) occurs sporadically throughout the Himalaya within a range of 2,400 m to the tree line between 3,600 m and 4,570 m. A study of this endangered species was conducted by Michael J.B. Green in the Kedarnath Sanctuary of Uttar Pradesh, North India, between February 1979 and December 1981, within an area of 2.5 km<sup>2</sup> that comprises evergreen oak and conifer forest, birch-rhododendron scrub and pasture.

Musk deer were encountered on 151 occasions for a total of 64 h 23 min during 1,521 h of fieldwork. Only solitary musk deer were recorded except once, when two males were observed fighting. The continuous home ranges of a young adult male, an older adult male and an adult female were 15.0 ha, 31.6 ha and 26.8 ha, respectively, based on their tracks in snow during winter.

The diet consisted mainly of forbs and woody plant leaves, which were selected at all times of the year. Grass, moss and lichen were avoided except in winter when grass and lichen were selected together with browse.

The main factors responsible for the decline of the Himalayan musk

deer are habitat destruction and the commercial exploitation of the species for its valuable musk. A crude assessment of the international traffic in musk suggests that from 18% to 53% of the Himalayan population, tentatively estimated at 30,000 animals, may be killed annually.

### **The East Asian Tertiary-Quaternary Newsletter**

Published by Centre of Asian Studies, University of Hong Kong.  
Editors: Robert Orr Whyte,  
Catherine Badgley

At the closing session of the Palaeoenvironment Conference at this Centre in January, 1983, delegates decided that a *Newsletter* covering the geographical scope and geological time scale adopted at the Conference would provide for the continuing interchange which was desirable.

**Geographical scope:** Within the area bounded by 75° to 150°E. longitude and 20° to 50°N latitude, but extending to adjacent regions when data are relevant to the core area.

**Geographical time scale:** from early to mid-Tertiary up to the emergence of man.

**Subjects covered:** geology, geomorphology, palaeoclimatology, palaeobotany, palaeozoology, palaeoanthropology.

Annual subscription 50 \$ HK.



# Common marine shells of the Bombay coast

## Introduction

“Shells are at once the attraction of the untutored savage, the delight of the refined artist, the wonder of the philosophic zoologist, and the most valued treasures of the geologist.” So wrote a keen student of natural history in the 19th century and his words are as true now as they were then.

The popularity of shells is of ancient origin. For one reason or other, shells attract and please almost everyone. For nature lovers, one shared response is the desire to collect them. For the lovers of beauty, shells have always offered a wide variety of opportunities for man to express himself in carving of exquisite carvings and in the creation of shell mosaics. Another more prosaic use is as food.

The commonest objects on the Indian beaches are the shells of the soft bodied animals called by zoologists *Mollusca* and popularly known as shell-fish. The scientific term signifies that the animals are soft bodied, encased in a hard protective covering the shell, composed of some form of limy or calcareous material.

Marine shells are found in all the seas of the world, and they have chosen almost every possible living place from the rocky shores, high above the tide marks, to the deepest parts of the ocean, among coral

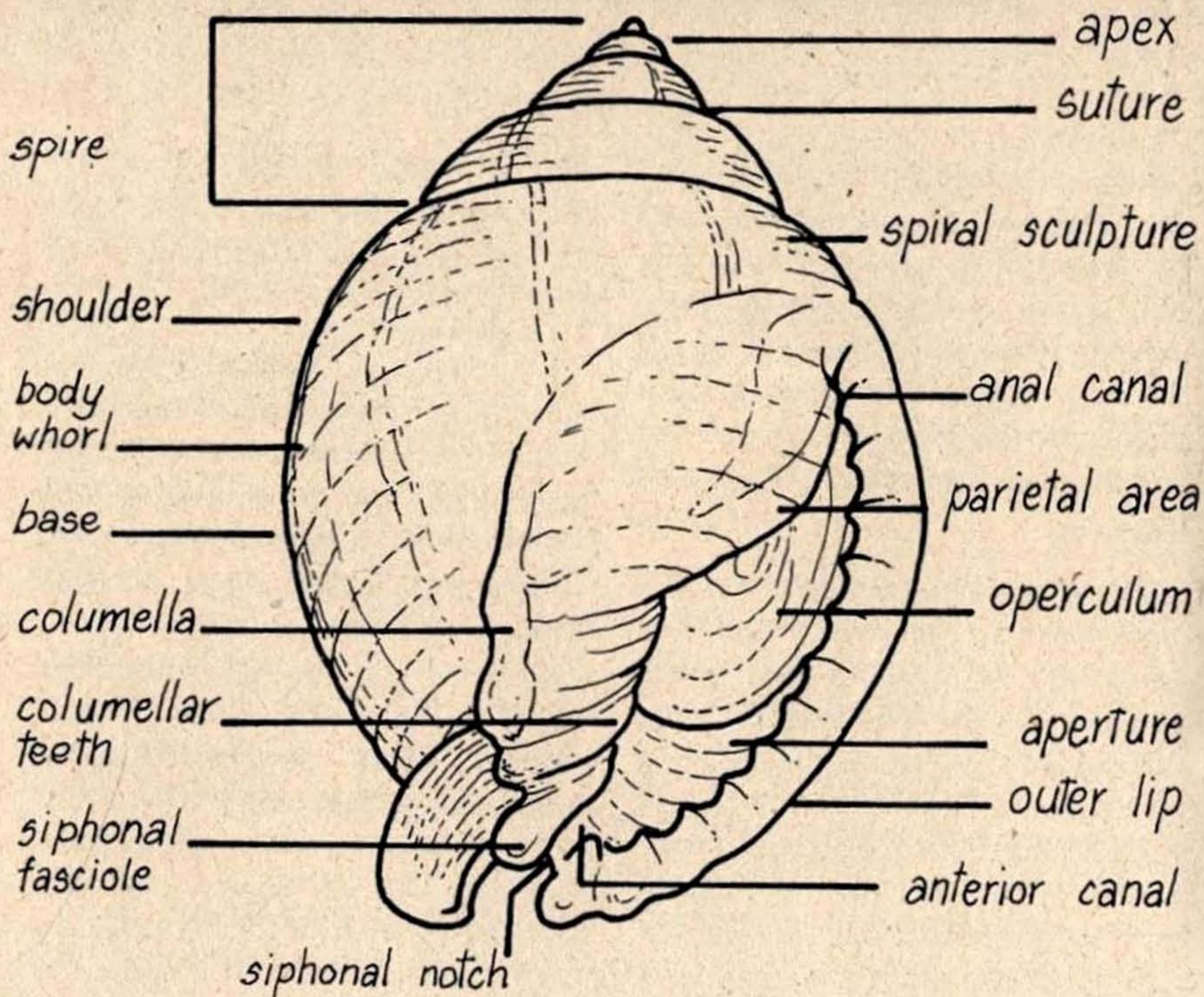
reefs, in stony deserts, in muddy and sandy shores. There are parasitic molluscs that live attached to other sea creatures.

The shells of mollusca are extremely diversified in shape, size and colour. Each may consist of two parts or valves as in Oyster and Mussel, or of a series of plates as in Chiton or of a single piece which is mostly twisted as in most of the Gastropods. Coloration in the shell material comes from pigments produced by special glands embedded in the edge of the mantle, i.e. body cavity. Bands, zigzag lines and triangles are produced by the sporadic production of pigments by these special glands. The diet of a mollusc can also have an effect on the extent of coloration.

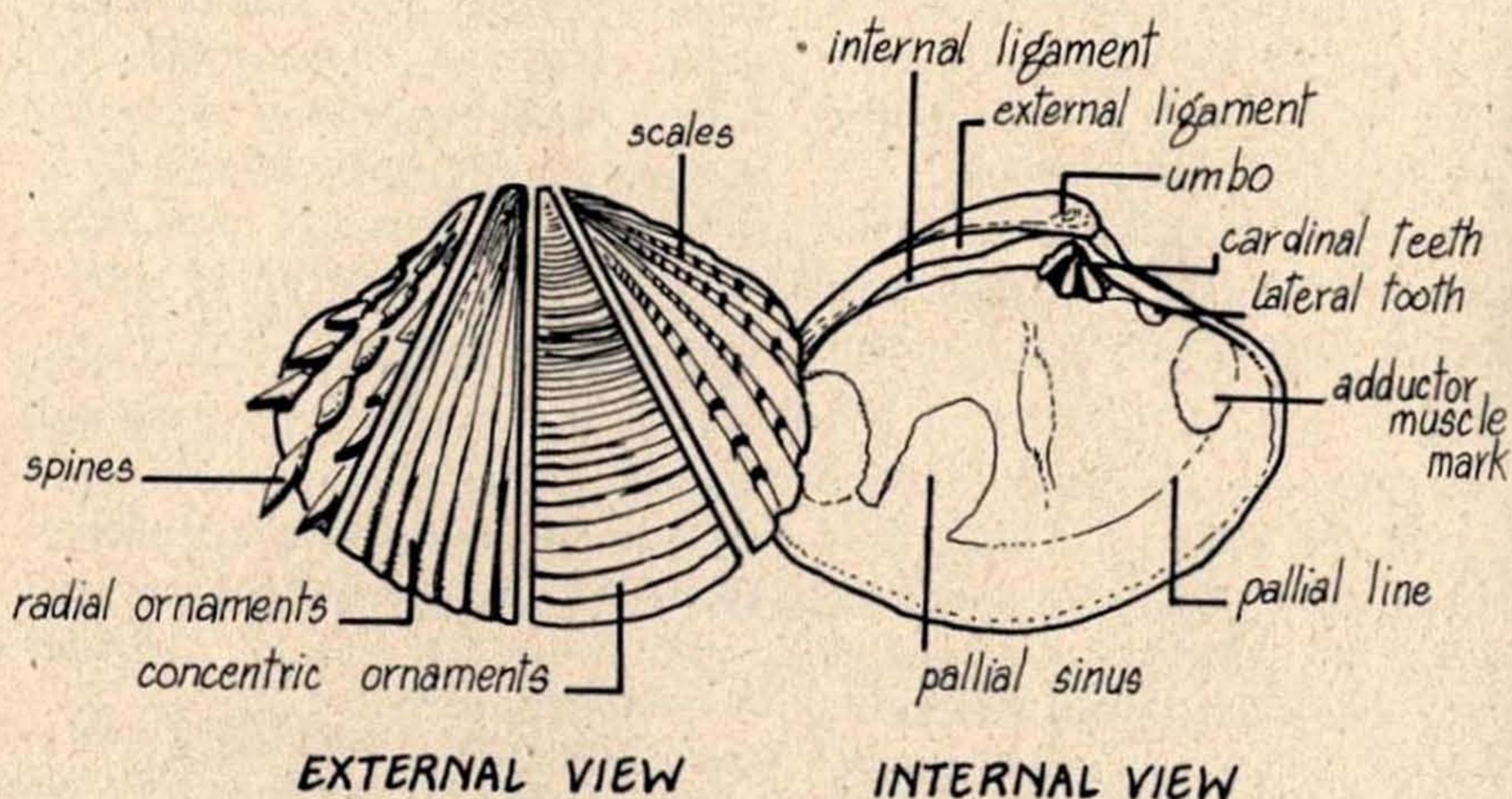
Molluscs are an important part of the ecology and economy of the sea. Edible molluscs serve as a major source of protein for many millions of people and as advances are made in the science of mariculture, they will become increasingly important in a world that is becoming more and more polluted.

With this introductory part we shall try to describe the common marine shells found in notable abundance in the Bombay area.

*Terminology used to describe the Gastropod Shell*



## THE GASTROPOD SHELL



## THE PELECYPOD SHELL

*Apex* — first formed part of the shell.

*Suture* — lines formed by joining the whorls.

*Spire* — visible part of all whorls except the last or body whorl.

*Spiral* — extending round the whorls more or less parallel with the suture.

*Sculpture* — relief pattern on the surface of a shell.

*Shoulder* — angulation of a whorl forming the outer edge of shelf.

*Posterior or Anal Canal* — channel or opening through which the animal passes waste matter. Usually at the posterior end of the lip.

*Parietal Area* — basal area of a coiled shell on the columellar side of the aperture.

*Body Whorl* — last complete whorl formed 360° from the lip.

*Base* — anterior end of shell.

*Columella* — central pillar of a coiled gastropod shell formed by the inner or axial sides of the whorls.

*Columellar Folds or Teeth* — thick folds formed on the inner side, edge of the columella.

*Operculum* — shelly or horny attachment to the animal with which it can more or less close the aperture of its shell.

*Aperture* — opening in a gastropod shell through which the animal emerges.

*Outer Lip* — (Labrum) — edge of the aperture.

*Siphonal Fasciole* — spiral band built up from the notches in the canal.

*Siphonal or Anterior canal* — channel at the anterior end of a shell

through which the animal can extend its siphon, a tube-like part of the mantle for the passage of water.

*Siphonal Notch* — depression or notch in the lip through which the siphon can be extended.

*Terminology used to describe pelecypod shell.*

*External View:*

*Spines* — surface sculptured with radiating ribs which bear long tapering appendages.

*Radial Ornaments* — surface sculptured with vertical ridges.

*Concentric ornaments* — surface sculptured with concentric ridges.

*Scales* — surface sculptured with strong radiating ribs bearing short and stout knobs.

*Internal view:*

*Umbo* — apex of the valve.

*Ligament* — due to which union of the valve is effected. Usually composed of two parts. An outer — *External Ligament* and an inner.

*Internal Ligament* — one or the other of them may be absent.

*Cardinal Teeth* — teeth placed immediately beneath the umbo.

*Lateral Teeth* — teeth present on either side of the cardinal teeth.

*Adductor Muscle Mark* — Impression in the interior of the shell due to adductor muscle.

*Pallial Line* — Impression formed due to mantle.

*Pallial Sinus* — Siphonal impression or impression due to retractile Siphons.

MANOJ MUNI  
CARL D'SILVA

# ALERT

## Rajpipla—A plea for Conservation

The Rajpipla forests comprise the highland area at the Western extremity of the Satpura range between the Tapti and Narmada rivers ( $21^{\circ}50'N$   $73^{\circ}30'E$ ). The forests get the name from the nearby Rajpipla town, capital of the former princely state of Rajpipla, in which these forests were included. The vegetation is pre-dominantly dry deciduous interspersed with bamboo and strobilanthus. A few patches of moist deciduous forest exist in the interior.

This area of the Satpuras is of great importance in Indian ornithology as it is almost the meeting point of the northernmost end of the Western Ghats with the Westernmost tip of the Satpura range which in itself has been regarded by Sálim Ali as an "Ornithological highway" in Indian Ornithogeography.

The forest supports a high density of a variety of some of our magnificent birds of prey, e.g. the Hawk

Eagle, Serpent Eagle, Shikra, Sparrow Hawk, Falcons, a variety of owls including the Fishing Owl and Honey Buzzards and affords a unique opportunity (if undisturbed) for bird movement studies and for long term studies of our Birds of prey which are getting rarer and rarer in easily accessible lowland forest areas. Ecologically this area is also of great importance, being situated in the rain shadow and now catchment area of the Karjan Dam reservoir which will soon be completed. As the remaining forests disappear we will not only have irrevocably lost a distinctive habitat but this loss will have an adverse effect on the climate and agriculture of the area. In the long run the rural people will suffer at the cost of a few money minded individuals ruthlessly interested only in huge short-term profits who, with their political contacts are determined to continue to exploit and destroy the only remaining small patch of viably salvagable forest.

RISHAD NAOROJI

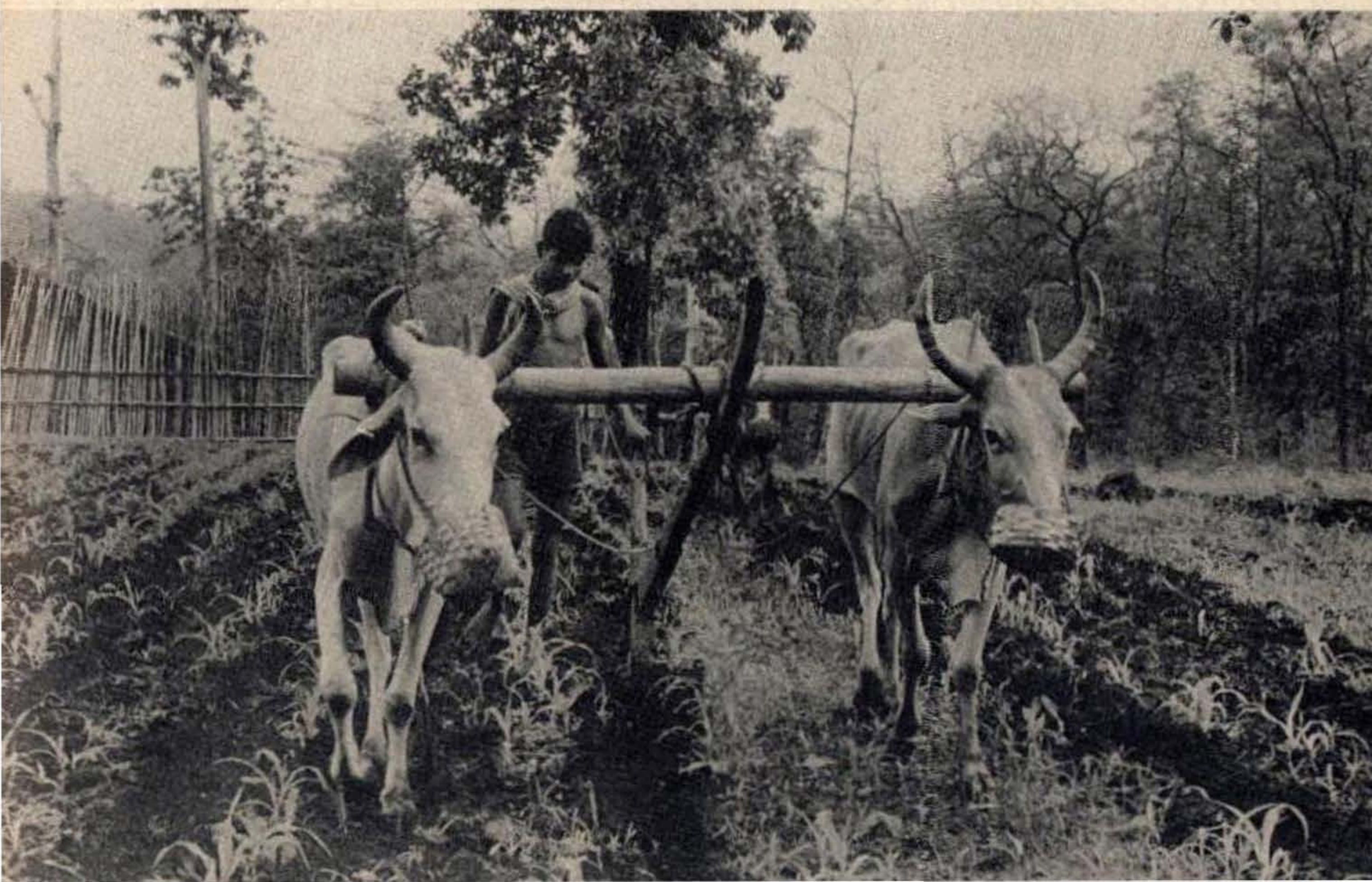
*Photo: Rishad Naoroji*

*A young Shikra exercising wings*





Above. *A female Shikra at nest.* Below. *Forest land under plough*  
Photos: Rishad Naoroji



## My experiences of photographing a Mottled Wood Owl

*This is the second part of the above article and is continued from p. 15 of Hornbill 1985(2)—EDS.*

The following season about the same period during the middle of March, the owls again nested in the same nest-hollow. Also the nest contained one small hatchling and one discoloured egg; perhaps, an addled egg as it did not hatch at all during the whole period of our photography.

As the hatchling was too small, it was thought best to start photography after a week. But in the meantime, two Γshaped wooden clamps with holes to screw — on the tripod-heads were nailed on to two branches over-looking the flight path of the bird's approach to its nest, at a suitable distance, level and height.

One black cardboard box (dummy) was also fixed to each of the clamps and left there, so that, the birds would get used to the presence of these objects near their nest. The clamp for fixing the camera was fixed to a branch approximately 8 inches from the point where the bird was anticipated and was observed to fly across to land at the nest branch. The clamp for fixing a flash unit was fitted to another branch 3 feet nearer to the flight path and at a slightly higher level.

While fixing the clamps, the placing of light-beam source and photo-

electric trigger receiver were also planned and noted. As it was already dusk by the time the preliminary preparations of fixing clamps were completed, it was considered worthwhile to spend an hour or so to observe the behaviour of the owls.

Around 6.40 p.m. both the parent birds flew in from the forest to perch on the eucalyptus and gave out their typical hoots, *ooh! ... ooh! ... ooh!* and then one of the birds flew away into the forest. The bird returned after half-an-hour to join its mate on the eucalyptus and a short while later one of the birds sailed forth to its nest through a wide gap between two umbrella-like branches of the nest-tree. It was also a relief to see that the birds were not alarmed by the fixtures near their nest, the other useful information gathered was their preferred line of approach to the nest which came in handy later on in our tactical placement of equipment.

After about a week, we reached the nest-site early in the afternoon and carried out the fixing of all equipment as shown in the diagram — the camera used was a friend's 2¼ inches sq. format motorized SLR with blade shutter (compur) and with a special feature that the

mirror could be flipped-up after focussing and composing, which makes the shutter to function first and then the winding of film, re-tensioning of shutter functions and, then again the mirror flips up thus eliminating extra noise and delay caused by the mirror-movement of an SLR with this feature the significant advantages of the silent and almost instantaneous qualities of the compur shutter were effectively utilised.

The conventional practice is to use powerful high-speed flash units in combination with photo-electric triggering for taking action shots of birds. The technical advantages of these high-speed units are constant duration of the flash 1/10,000th to 1/50,000th of a sec. depending upon the model used and, their higher output helps in the use of a smaller aperture to gain more depth of field, also more than one flash-head can be employed to enhance the lighting effect as desired by the photographer. Perhaps, the only drawbacks are bulk, weight and hazards of high voltage operation; especially in humid and wet conditions. But, these highspeed flash units are expensive and hard to come by and, they are just not obtainable in our country. So, I decided to try one of the modern small computerised flash units that are claimed to give a wide range of flash durations from 1/1000th to 1/30,000th of a sec. depending upon the distance and brightness of subject. The shorter the distance, the

shorter the flash duration. The aperture to be used depends mainly on the speed of film used. Medium speed film of 125 ASA was used for all the experiments and the computer dial of the flash indicated an aperture of between f8 & f11 for this speed of film. I chose to err on the slightly generous side and use f8 for all the shots of the owl.

The principle of operation of these units is that the light from flash reflected from the subject falls on the sensor of the unit, which feeds a signal to the computer that automatically regulates the amount of light required for correct exposure by the principle of quenching of energy as it builds up in the flash capacitor; which also varies the duration of the flash.

The camera fitted with standard 80 mm lens and lenshood, aperture set at f8, shutter speed set at 1/500th of a sec. was fixed on to the wooden clamp with a tripod head to facilitate precise arrangement of camera angle. It was approximately one foot below the level of the nest branch and pointing approximately 3 feet away from it.

Focussing was done on a long stick held perpendicular at the point where the bird was observed to fly-in, also the area covered by the lens at this distance was similarly measured with the stick to ensure that the bird is not missed or part of it cut-off by improper camera angle. The focus was approximately 8 inches and the area covered was ap-

proximately 50 inches square and depth-of-field at f8 was 7.5 inches to 10 inches.

The light-beam source was a prefocussed flash light (torch light) which was fixed to a branch opposite and slightly left of camera direction and at a slightly higher level to throw a 1 foot wide beam towards the photo-electric trigger receiver that was fitted to a branch approximately 3 feet left of camera and slightly above the level of the camera. The torchlight was powered by a lead acid battery to keep the beam steady and not vary in brightness or flicker due to drop in voltage or other causes as it happens when dry cells are used for the purpose. Moreover, the lead acid battery powers the light-beam for a longer period. The photo-electric receiver was powered by a set of dry cells as it requires less energy. As already described the small computerised flash was kept 3 feet in front of the camera, a foot above camera level and positioned carefully to throw light at the point of the bird's anticipated position where it would be just after breaking the light beam.

Alignment of light-beam source to throw its beam on the eyes of the photo-electric receiver had to be precisely aimed to use the centre of the circular light beam to fall in the centre of the photo-electric eye, to make the apparatus work efficiently. To achieve this, both the receiver and the flash light (light-beam

source) were fitted on to ball and socket units which facilitate finer adjustments.

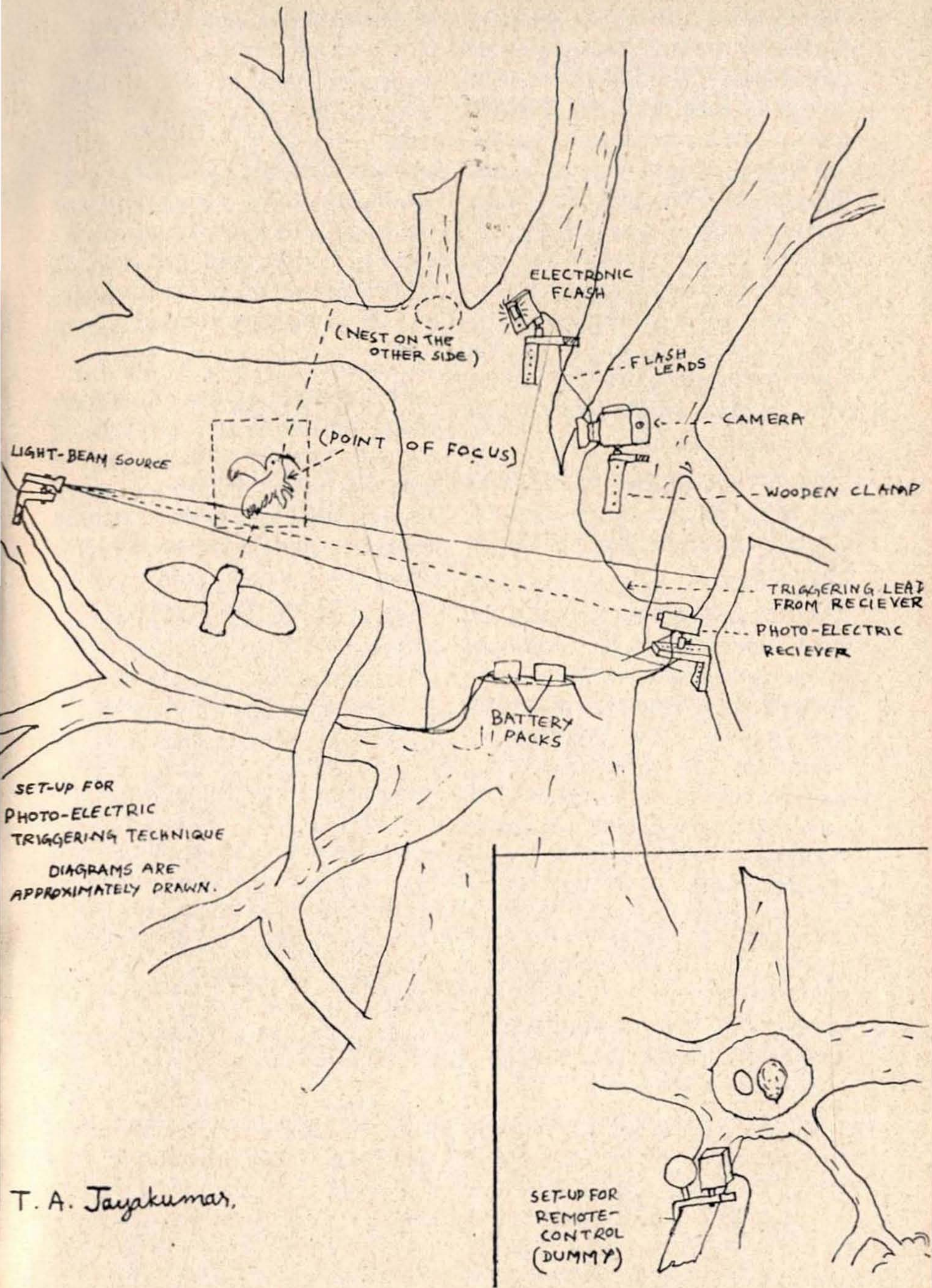
Then all equipments were switched on, the loaded magazine of camera was removed and a stick was used to manually interrupt the light-beam at the point of the bird's entry to test its functioning. When the stick broke the beam, the camera clicked accompanied by the flash of light. After satisfying with the working of the set-up, the loaded magazine was fitted to the camera and the sheath of the magazine was drawn out (light-beam, trigger receiver and flash unit were kept switched on) and I climbed down the tree.

My friend and I moved away to sit under a tree keeping our fingers crossed and hoping that everything would work alright for us.

As dusk fell, there was a hush in the atmosphere, the sweet fragrance of jalari trees which were just beginning to flower was being wafted to us in the evening breeze.

After a while, both the birds sailed into view. One perched on a eucalyptus tree and the other bird sat on top of an adjoining *jamun* tree and kept watch for some time. Then the bird on top of the *jamun* tree took-off to disappear into the forest. Half an hour later there came a call — *oooah!* from the forest and a shadowy form floated from the trees to land on another eucalyptus. Now, a duet of *ooh! ooh!* was kept up for a while and,





T. A. Jayakumar,

Diagram showing setting of equipment for photographing the nesting Mottled Wood Owl

then there was silence. Suddenly one bird sailed towards the nest tree but turned back to return to its perch among the eucalyptus. The glee-glee noise of the hungry nestling was being uttered in quick succession and this time one of the parent owl made another sortie to approach the nest between the gap of the two branches and sure enough there was a blinding flash which made the poor owl flutter helplessly down the tree, but it recovered before touching ground and flew back to the sanctuary of the eucalyptus grove.

*Ooah! ooaah!* the agitated call was being uttered by the owl annoyed at the rude treatment it experienced.

As the owl did not visit the nest again even after an hour we dismantled the set up. Of course, the owls were sitting on eucalyptus trees and seemed to supervise our operations of dismantling and waiting for us and cursing us to leave them alone; which we did, as we did not want to unduly disturb them any further.

Next day, on processing the roll I was delighted to see the image of a mottled wood owl carrying a lizard in its beak. It was well worth all the trouble and waiting for one year to get one picture of an owl.

Subsequently our six to seven sessions of photography lasting 4.30 hrs each session — 2 hours of setting up operations before dusk and 2 hours to sometimes even 3 hours after dusk of waiting for the owls to

oblige, yielded many pictures of the bird in action carrying its chief prey — garden lizard, but very few pictures of the bird were in sharp focus. The owls also became erratic and kept changing their behaviour, shifting of focus slightly forward and slightly behind the visualised flight path were tried, but with no success. Somehow the birds managed to keep out of the range of sharp focus.

The birds grew more timid of the equipment inspite of our care in camouflaging each piece with a suitable cloth cover, even a blimp was also used to cover the motorized camera to muffle the noise of the motor.

Once or twice the bird was observed to fly away from the nest after feeding which meant that the bird must have landed on the tree at a different point and had managed to hop and walk up to the nest to avoid flying through the light beam.

May be, the ordinary visible light beam was an annoyance discouraging the birds from taking the regular flight path. We thought possibly infra-red beam could solve the problem. Once again another friend readily helped in securing an infra-red filter for me to try.

It was a new experience indeed, when the filter was inserted over the light-beam source, it made the light completely invisible, but the triggering unit functioned equally efficiently with the infra-red beam. The unit tripped the shutter when the

stick was used manually to break the beam.

With high hopes, this set up was put to trial. On the first day of trial the owl was caught unawares as it flew in through the gap of the branches which was its normal flight path, resulting in an interesting and reasonably sharp picture of the owl with a bat in its beak; probably as a change of diet for its young.

Later on, the timid owls resorted to their old trick of landing on the tree and then hop, crawl and walk to their nest to feed the young. It was a frustrating experience to see the owls outwitting us and, coupled with this, the occurrence of regular bursts of gusty breeze of the season caused the branches to sway resulting in erratic tripping of the camera and flash also scared the birds. Quite naturally a series of flashes accompanied by the noise of the motorized camera would disturb any bird and this was too much for the timid mottled wood owls and they learned to avoid flying through the beam.

We had to be content with just the two usable pictures but plenty of practical experience was gained and gave us a true picture of the peculiar problems of the technique of photo-electric triggering.

It poses its own special problems and takes lot of hard work, planning and intelligent placement of the associated equipment to achieve consistent results and the problem of getting the bird in the field of

focus is a major factor which depends mainly on the distance of gap the bird flies through and the chance-factor too plays its own role.

Further, the limitations of the small computerised flash unit used was evident as the unknown factor of its flash duration at that distance of 5 feet added to the chance factor; whether it was sufficiently fast or not, was it consistent in its performance, and how much did the reflectance factor of the subject influenced the duration of the flash was all left to a matter of guess only.

Of course, the two pictures obtained are good enough but it would have been better if a constant duration flash giving  $1/15,000$  to  $1/20,000$ th of a sec., had been employed; at least the chance-factor could have been eliminated. It might be possible to 'doctor' the compact computerised electronic flashes by feeding suitable signals to the computer to give selectable and constant/flash duration with consistency of performance. If this could be achieved it would make these units very potent tools for the bird-photographer.

The mottled wood owls gave us an opportunity to learn a little more of their lives and behaviour and, also their different call notes were a source for arousing our curiosity and made us take deeper interest in bird call and bird mimicry. But, unfortunately the timidity of the owls curtailed our vigils of photography.



*Mottled Wood Owl*

*Photo: T.N.A. Perumal*

It was interesting to observe the owls preying mostly on lizard species. Although small rodents and in one instance a bat was also preyed upon by the owls as recorded by our camera — 9 times out of ten; they brought garden lizards to feed the young. It is a marvel indeed! how they are able to capture the lurking lizards in the dark, also the fact that the owls brought a bat is further intriguing and what technique do they employ in locating the hiding lizards? Their preference to this reptilian prey species which is also the favourite food of hawks and shikras — the diurnal raptors makes a very interesting subject for deeper investigation and study.

Our experiments in photo-electric triggering technique to obtain flight shots of these owls was educative in the extreme; as we learned the true facts about the particular problems, possibilities and the special advantages of the technique. Also, the sobering fact that it sounds simple only in theory and not that easy in real practice.

With this technique the bird is supposed to take its own picture when it breaks the beam by flying across it. But, in my opinion it is as difficult as any other technique of bird-photography. Perhaps the only difference is that more gadgets are necessary. But, the chief difficulty lies in getting the bird to take its

own picture. As the human reflexes are not consistent and quite often the shutter is clicked either a little too early or a little too late, which can be effectively overcome by using this technique. It is certainly an important and useful trick in the bag of a birdphotographer. Many a time it can be the only alternative to photograph difficult subjects, under difficult conditions, especially with nocturnal subjects, because in poor light or under low artificial light conditions the three dimensional viewing capacity of the human eye to judge distance and speed are hopelessly reduced, as the human vision becomes only a two-dimensional viewing system.

Our friends the owls must have had many a laugh at us, while attempting their photography. Though, timid in character they outwitted us in many ways and proved that they were the 'masters' of the situation except for the few occasions when the birds did obligingly co-operated with us by helping us with a few good pictures.

We really enjoyed every moment of the project of owl photography with photo-electric triggering technique; it was an educative informative, interesting and a fascinating natural history experience.

T. N. A PERUMAL

*Concluded*

## African Diary

*This series is continued from p. 21 of Hornbill 1985(2)—EDS*

### LIONS

Lions need no introduction and I shall restrict the reader to my own experiences.

I saw my first African Lions in the Ngorongoro Crater where two males had poached a wildebeest—the legitimate kill of a clan of hyaenas. The hyaenas were driven off their rightful prey and the Lions settled down to feed, the hyaenas watching noisily from a distance. Hans Kruuk who studied hyaenas in Ngorongoro and Serengeti observed that the Ngorongoro Lions were finding it relatively easy to live off kills scavenged from hyaenas who hunted regularly in the Crater.

Lions are widespread in most of the reserves and National Parks of East Africa. The lake Manyara climbing Lions are famous for their habit of climbing trees to escape the tsetse flies but Lions have now been observed climbing trees in other areas.

A sleeping pride of Lions can be boring to watch — they can sleep upto 12-13 hrs a day but young cubs always enliven the scene especially during evenings when it cools. Prides are usually easy to locate though sometimes they just disappear from an area and I have driven for three to four days without seeing a Lion.

In the Mara I familiarised myself with one pride and watched the cubs grow up. One young inquisitive male I particularly remember. He was most playful and confiding, sometimes resting in the shadow of my landrover. One day he really startled me and in doing so himself.

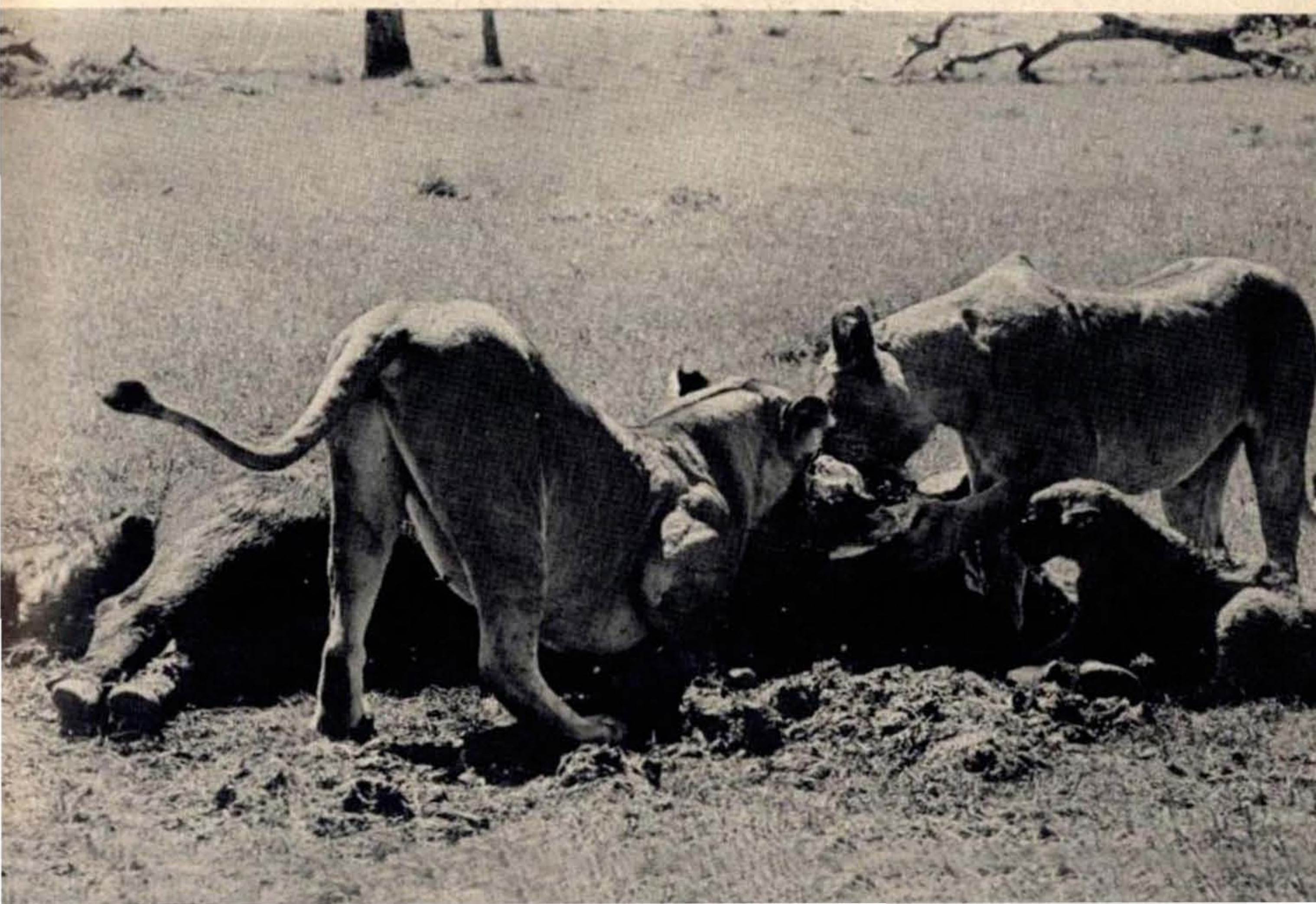
I had just exposed a roll of film on this particular pride and was reloading the camera with my back to the car window. After loading the film I turned with the camera towards the window and was startled by the young male watching me inquisitively his massive head framed in the window. I gasped involuntarily surprised and he was off in a flash and didn't stop running till he was a good 50 metres away.

Another incident is etched in my memory. I had just entered Keekorok lodge for an evening drink with 2 friends when we heard the death cry of a Zebra in the direction of the nearby air strip. We rushed back into the jeep and picking up the assistant game warden headed straight for the spot. Two zebras had been killed by the same pride one in an advanced state of pregnancy. In the headlights of the car we could make out 50-60 hyaenas waiting impatiently in the wings for an opportunity to feed.



*Above. A young lioness scratching her face in a crotch of a tree (300 mm lens, 5.6 fully open Tri-x). Below. This picture taken late in the evening in Masai Mara. Two lionesses had killed the buffalo two hours earlier*

*Photos: Rishad Naoroji*





*Above. Two young cubs playing. This is at Ngorongoro Crater. Below. A cub looks up jealously for attention as two lionesses greet each other*

*Photos: Rishad Naoroji*





The more excited they got, the more falsetto their calls. The night resounded with the earsplitting cackles of about 5 dozen hysterical hyaenas. Females and cubs were feeding on one carcass and two full grown young lions on the other. Regrouping themselves for the third time the hyaenas eventually managed to crowd and drive off even nipping the hindquarters of one of the two males who didn't tarry any longer.

After ripping open the belly of the pregnant zebra in a feeding frenzy uttering their cackles continuously, a fully developed foal pulled out from the belly was also devoured. Suddenly a earsplitting roar shook the night and the hyaenas scattered as a huge black maned Lion charged them and took possession of the

kill. He growled fiercely at some of the females who tried to approach but the cubs were allowed to feed. We left the pride feeding. There was a three-quarter moon that night which had just risen as I squeezed into my sleeping bag (the tent flaps being kept open) bathing the surroundings with yellow light.

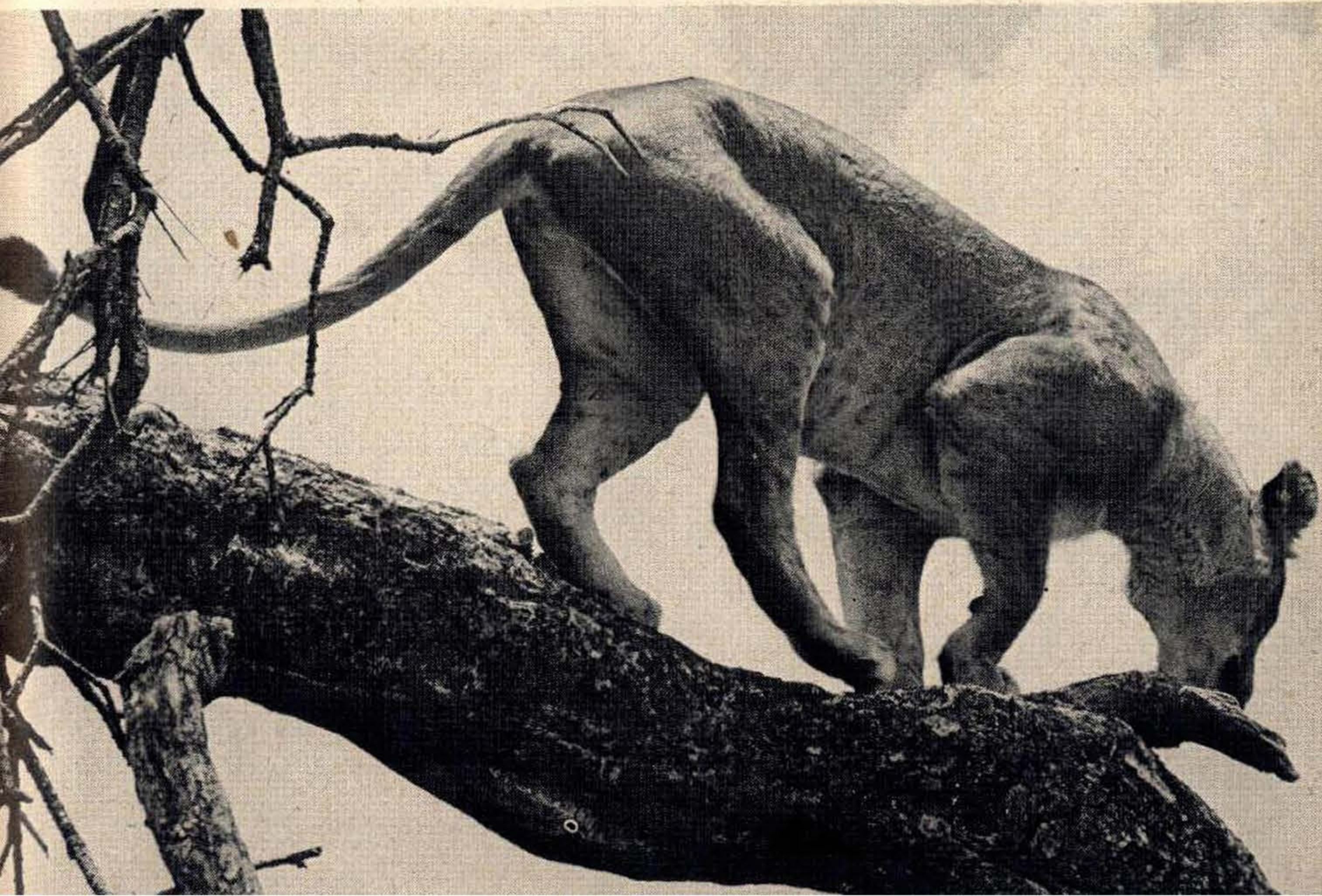
Suddenly the peacefulness of the scene was shattered by the combined roaring of the satiated pride. The air literally shuddered with primordial resonant roars and through the tent flaps I could see two lionesses silhouetted walk across my field of vision to settle nearby in the grass. The roaring ended as quickly as it had begun and I eventually fell asleep. It had been an eventful night.

RISHAD NAOROJI

*(To be continued)*

*A lioness poised against the sky a few seconds before the spring to the ground*

*Photo: Rishad Naoroji*



## Wanted information

### A CALL FOR INFORMATION ON THE WHITE STORKS IN INDIA

Urgent information is required on the present White Stork status in India for use during the International Stork Symposium due to be held in West Germany in 1986.

Of the 8 species found in India, all except the White and Black Storks are resident. The White Stork (see fig.) a winter visitor, flies down here from Europe, N. Africa and W. Asia. A subspecies, the Eastern White Stork (similar to the White Stork except for a slightly larger build and a black bill instead of red) flies in from Korea and Japan.

We begin sighting them from September/October in small parties on damp or wet marshlands. They winter in these areas upto March/April, after which they migrate back to their breeding grounds.

We wish to do a general status survey of these birds in their wintering areas. Such a distributional study has not been attempted so far, unlike their well known breeding status. In India they can be sighted in NW India, U.P., Bihar, West Bengal, Assam, Manipur, Orissa, M.P., Gujarat, Rajasthan, Maharashtra, Andhra Pradesh and Tamilnadu. We request members from any of these or other areas to send in any information on the White Stork. Please treat this matter as urgent and send information to the Society.



*The White Stork*



## **BOMBAY NATURAL HISTORY SOCIETY**

The Bombay Natural History Society is one of the oldest scientific societies in India and has been publishing a journal since 1886, which is recognised throughout the world as an authoritative source of information on the fauna and flora of this subcontinent.

### **Our members enjoy :**

1. A four-monthly natural history journal acknowledged to be the finest of its kind in Asia.
2. A forum for discussing and pursuing all aspects of Nature Conservation and the Environment.
3. A library with many rare books on shikar and natural history unavailable elsewhere, which may also be borrowed by outstation members.
4. One of the finest research collections in India on Mammals, Birds, Reptiles, Butterflies and other forms of animal life. These are available to members for study on the Society's premises.
5. Up-to-date information and advice on birdwatching, wildlife photography and fishing; natural history field trips and information on possible areas for field trips.

In short, the Society offers a range of activities and interests for the scientist, the amateur naturalist, the sportsman, and the lover of nature. Even if you are none of these the Society deserves your support because it is struggling to preserve our natural heritage and to safeguard it for our children.

*Please write for a membership form and also introduce your friends to :*

**Bombay Natural History Society**  
Hornbill House  
Shahid Bhagat Singh Road  
BOMBAY 400 023 (INDIA)