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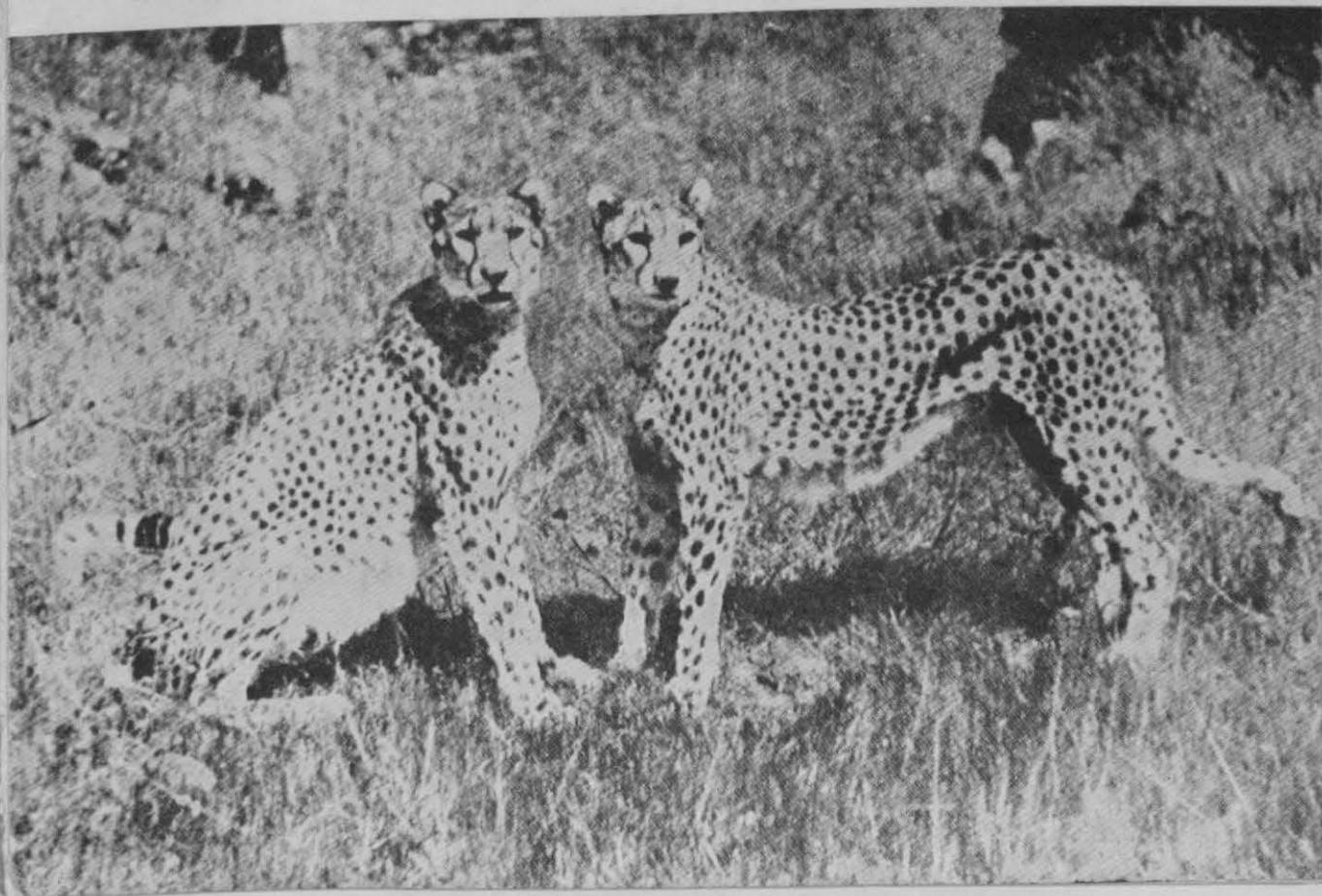
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A PAIR OF WILD CHEETAS IN THE DECCAN JUNGLES.

—Photo by: Maharaja Kolhapur



Let Us Count Our Tigers

By

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It is high time that we started, in real earnest, the actual counting of our tigers. There are not many of them left. It is heartening to find the recognition of this position and the serious thinking over the future of this, the most magnificent of the cats of the world. Let me tell you some facts about the tigers that I know. We can perhaps pool our honest experiences to evolve the commonsense and rational approach to the problem of counting the tigers.

I clearly remember—I can even see it now in all its details as it happened 34 years back—that rain bedrenched June afternoon with the soft sun playing into the thicket, when stalking after what I had thought a wild boar digging under a bush, I stumbled onto the *Dhanaberani* tiger deeply engrossed in gorging over a freshly killed cow. I was then 12 years old with a double 12 bore breach-loader—one had to, in spite of the laws, start with such a gun very early in life. I did not have any previous experience of meeting an independent tiger at close quarters. I could have, if I did touch him only, perhaps induced a turn of his head out of the bush and then put a red hot contractile into his brain to earn my first tiger on tender-foot. But, I did not. The reasons were the cautious company of two tribal boys with me and the lack of enough fool-hardy courage. It was good. For it would not have been so tame a process as my discreet retreat.

That was my first visual cognizance of a real wild tiger. I had had, earlier to that, acquaintance with his kind. I took up the gun at the age of eight, a light single barrel English muzzle-loader of my mother—later I changed over to dad's double-barrel breach-loader—and had some good hunting in stalking big game from the age of eleven. *I disagree with the ICBP recommendation for the stoppage of free sale of air rifles. I would wish the younger generation, including the school children, to take up even the real weapons in the proper way of sports—not the armchair poacher types—well guided and early in age. We cannot help conservation with soft-pedalled, often distorted, outlook of the coming generation and our own th orisation on escapist formulae on conservation.*

In those days there was plentiful wildlife in the forests 15 kms. north of Cuttack, the historical town (now a city) in Orissa—sambhur, chital, kakar, wild boar, a host of smaller game, bear, panther and tiger. There were also the seasonal visits of the elephants and occasional influx of wild dogs.

We knew the tigers by their territorial names—*Dhanaberani, Kaliomba, Sapa, Panchbhaia*, etc. There used to be enough food and space for 4 to 6 tigers—a tigress with cubs counted

as one—within a quadrant of 15 to 20 kms. radius from our village, Bhagatpur. During the 15 years of my early shikar days, to my knowledge at least 12 tigers were killed—sports or otherwise—in that small area, without any permanent decrease in the average number of tigers in the range.

Know what it is now? All gone with a sigh, a decade back; even the forests. There is now only the tangled confusion of bushes and blanks; a dreary destitution left in the wake of "human progress".

Towards the south of Cuttack were the Chandaka forests—the famous Chandaka sanctuary in particular. What variety and number of animals! Elephant, tiger, gaur, sambhur, chital, kakar, panther, bear, etc —ask the old timer in the neighbourhood. It is difficult to believe the stories of that richness hardly two decades back. The gaurs have now gone for good. Sambhur, chital, kakar and even the wild boar are in their last gasp. And, the last tigress in the area, a cattle-lifter, jumped in, 3 years back, for the male tiger in the open air enclosure at the adjacent Biological park, Nandankanan. There she remains, named 'Kanan', the vanguard of the famous tigers of Chandaka forests, a captive for life in the zoo.

I do not think there is any likelihood of natural influx of tigers into any of those two depleted ranges north and south of Cuttack. Natural influx requires some adjacent pressure zone. There is none. For the story is, by and large, the same all over the state. Is it any different elsewhere in this country, if not worse?

In the two decades of my active service as a forester in the state, I have seen far better tiger forests depleted in less than a decade, even. Some of the finest tiger lands in the country, and hence the world, are the northern parts of the Eastern-ghats lying in Orissa in the districts of Phulbani, Ganjam, Kalahandi and Koraput. The latter two had for long been famous for the numerous tigers and the equally large number of man-made man-eaters (of the 7 man-eaters that I have shot, 6 had been man-made by irresponsible L.G. shots). At present the tigers here have been so thinned out and so much scattered in population that in many cases a tiger may roar hoarse with its mating calls, there will be no response from any prospective mate because there is none within hearing distance. There will be no procreation and thus no stable population. When such individuals die or are killed there will be no more tiger left in those areas, like what had happened to the Chandaka sanctuary. Surely it deserves serious thinking and positive action, with counting as the first step.

It is the man-eater or the confirmed cattle-lifter that provides us with reliable symptoms to assess the most important parameters in the behavioural pattern of the tiger; its territory, its methods of predation and how far restricted is its mobility within the command area of predation.

It is wrong to think that when a tiger becomes a man-eater, it gets some of the intelligence of man and ".....avoids leaving behind his pugmarks by making leaps over open

paths and cleverly keeps to hard ground....." (page 75, CHEETAL, Vol. 12, No. 1). Quite on the contrary, it would be busy sneaking near the paths and roads, and often leaving much of its spoor on such paths and roads. The chances of getting human prey in such areas are evidently much better. The tiger during its gradual aberration to regular man-eating, has to absorb this inevitable impression to be a successful predator on man. And, be it a man-eater or a cattle-lifter, the basic trend of its behaviour, a strong territorial habit, remains largely unchanged. Its pattern of movement in such a territory will depend on the layout of the land, the terrain, the nature of cover and the concentrations of these abnormal preys.

Regular cyclic rounds in the territory have been often noticed by me from kill evidences obtained from local enquiries and the police stations, records. The problem of tracking the aberrant tiger is much simplified thereafter. And when one knows the forests, anticipation-stalking yields much quicker results. I have shot quite a few man-eaters and confirmed cattle-lifters in this way, by tracking them in their own patterns of movement.

Agreed, that no two tigers are same, and also that there may often be wide variations in the psychological makeup of the cubs of the same litter. But, when a tiger starts leading its own independent life, what will it do to maintain the chances of getting food at regular intervals? The tiger has to deal with mobile quarries which are as alert and agile to avoid it as its own keenness and necessity to get them in time. The tiger cannot afford to be unmethodical. The instinct is ingrained. It has to know its territory well and learn the technique and timing of getting at the prey without causing undue scare or drain at any particular place.

Let me draw a parallel behavioural pattern in human beings—a semi-nomadic hill tribe in Orissa, the *Kharias* for example. In the northern parts of Orissa there is a compact block of nearly 2000 sq. kms. of beautiful rolling table-land, the famous Simlipal hills, still with a rich cover of forests and wide variety of wild life. Here live the *Kharias* whose main subsistence comes from the forests—the edible tubers dug deep from underground. Different family groups of *Kharias*, have, by tradition, specific hereditary territorial limits of operation. Each group covers its jurisdiction in a methodical pattern and takes a part of the produce at each place, leaving enough in the soil to continue to grow till the next trip so as to ensure sustained production of the tubers. They also collect various kinds of minor forest produce—great experts in collecting rock-bee honey. Last year, I wanted some of the experts of a group to go with me to a new area to collect honey. "No", they said with emphasis, "we do not know the area. We will get lost". I remembered my own predicament when alone with my gun I had twice lost my way and had to stay over-night in unfamiliar forests. I also thought of that lone tiger with all its accumulated experience and impressions gained in its command area, supposedly trying to change its habitat. Why should it do so, I thought, unless very peculiar circumstances forced it out of its home territory?

Take the case of the Bori man-eaters in Kalahandi, a family of 4 (mother and 3 grown up cubs) - in 1963. They took to man-eating and within a month killed and ate up 15 persons. The forest was totally shunned by the villagers and their cattle. All forest work stopped. But the tigers continued to stick on for quite some time when on March 15, 1963, hungry and desperate, they offered me a lucky chance to get the mother (8'-8" round the curve) and a female cub, almost adult (8'-2"). Both had been carrying maggotted L.G. wounds. With their exit, the man-eating stopped. Their persistence in the home forest in spite of growing difficulty in getting food, proves the rule — the parameter of established territory.

But there are exceptions to the rule also, I have seen such a tiger in 1956—a ten-foot male—who had been partially disabled, in his fore-legs, by a porcupine in the Similipal Hills. Driven by sheer hunger he had left his home forests for whatever, however and wherever.

When I suspected him, I kept track of his movements and did some stalking too. He ended up with his last attempt on a man 50 kms. away from his original territory. I had to chase him down his trail to get him by lying prone on the ground, a hot contractile quickly placed in his brain from 6 metres (what I could not do at the age of 12, I did at 32; but 20 years is a long time and a lot of experience, too). Autopsy showed not a single speck of solid right from the stomach to the rectum; nothing but some water. With such a howling hunger, why talk of animals, even human beings would lose their normal bearings.

I have also seen quite a few tigers driven away from their home forests in the southernmost region of Orissa—the Motu-Malkangiri area in Koraput district. Large scale deforestation, over 400 sq. km., for the Dandakaranya and other settlements and the hydel projects, uprooted the tigers, the other rich wildlife and the rare wild buffalo. Many got killed. Others fled and tried to find new refuges to somehow stick on till they got settled in the new habitats. But for how long?

In their individual northward ramblings, a few of the tigers entered the forests of Ramgiri Range. Here I saw some of them and the tracks of others, when I was after the Gupteswar man-eater in December-January, 1967-68. I say it was an influx of tigers because I had fairly thoroughly seen those Ramgiri forests, about 300 sq. kms., in 1965-66 when there were only three tigers, and no cubs. How then these 9 in 1967-68? The man-eater had a wide beat overlapping those of 6 other adult tigers; and in the contiguous forests, there were the remaining two. This is how they had arranged themselves.

- i. A pair in the northern outer fringe towards Malchua.
- ii. A young male between villages Kirimiti and Jabapadar.
- iii. A female with a cub on the northern side of Ramgiri-Gupteswar road.
- iv. A huge impatient and irritable female to the south of the said road.
- v. A big male cattle-lifter near Panasput.

- vi. A young female often found in the road taking off from Matpad into the deep recesses of Dharamgarh forests.

I could clearly mark out the limits of all the above six tigers during the one week of my tracking the man-eater in convergent anticipation-stalking from Kirimiti, and the 13 days of trailing that animal (after my .375 magnum 300 grained soft-nose ploughed through the fleshy chest, left lung, ribs and out) till I got to the last remains inside a ravine 30 kms. away from where I had shot it. The other two tigers were outside the man-eater overlap.

There were already thirty human kills by the man-eater when I took up the tracking with what was supposed to be two days old pugmarks. In spite of the other tigers in the area it was possible to recognise the pugmarks of the man-eater—did not see many though. On 3rd January morning I saw its fresh pugmarks in the forests near Ramgiri. I saw the pugmarks of the tigress with the cubs and the big lonely tigress also. That day was the weekly market day at Ramgiri. Naturally the man-eater and I had both converged to that region—he to get one of the market going men and I to get him. Late that evening I surprised the man-eater, in apparent distress without food, crouching behind a log beside the path. A brave lady—an equally efficient tracker too, my fair cousin Nihar—was holding the 5 cell flash light. The first squeeze on the trigger produced only a loud click—a new Norma-Re cartridge! Immediate bolt action made the tiger move and simultaneously it got the next shot end-on. The flash light was steady till the end, and, that is the greatest back-up fortitude and confidence I have seen in my 38 years of holding a gun in the tiger land. There was no more man-eating thereafter—evident proof that I had shot the man-eater. This clearly points out some obvious and convincing symptoms which support what I have said earlier. That the tigers, even if they move out to a new area, soon try to establish their own territories. The confirmed man-eater's overlapping jurisdiction was a necessity in view of the large tracts of forests and scattered habitations and the human being keeping increasingly away from the forests. All these tigers were living side by side in a small range possibly with contiguous marginal overlaps and the general overlap of the man-eater. Yet there was no difficulty in distinguishing each individual to the extent of pin-pointing the man-eater. But of course it needs some field practice for efficiency in tracking and distinguishing the differences, which can be done by any body with a little interest in such field work. The measurements and rough drawings of the pugmarks with a few plastercasts make the work much easier and more confident.

While thinking about tracking I often remember of my boyhood *gurus*, Dina and Baraja. The former was a crack shot also, but the latter was the real uncanny tracker. Short lived as our average tribal is, both are gone with those vanished assets of nature which they loved so much. I have seen in the other tiger lands of Orissa, local talents also who could be placed on par with my *gurus*; the Langda of Malchama was even better than both, in tracking with

me the man-eater of Asurgarh. The most enthusiastic, however, of all, is old Makunda of Chhotkei in Angul Forest Division. His enthusiasm and confidence are infectious. And without being asked, he keeps, for his own pleasure, a keen interest on the local tigers, elephant and gaur.

Why do I name them? Because, with the vanishing tigers and the wild life, the number of such local talent is steadily decreasing. Who then is going to keep an eye on our tigers? When we actively wake up to the realities, who is going to lend the most effective hand of cooperation? We should keep the interests of such men, alive. We should cultivate their friendship and cooperation. We should leave our tables and be more with them in the forests. It will do much good to the tigers and other wild life too. It will do good to us also to refine our bookish outlook with pragmatic blending. *I am sure it will save us from wasting our time and the poor man's money in theorising on expensive projects of uncertain results.*

We need the help of many more of such local men like Makunda. And we need also to stimulate the custodians of our forests and the wild life, even at the lowest rung, to take an active interest in the wild life, particularly the tiger.

The visible results of such stimulation I saw when I took up the first counting of the tigers in Orissa in December 1966. Many of the forest employees and the local men like Makunda, participated in the census. Later, whenever any of them met me he would start off talking first about the tiger in his area—very significant in the interest of the tiger and the wildlife also.

The method of counting was what is known as the 'cooperation census'. First week of December was the period of census. I have been asked, "Why in the first week of December?" Well, this time of the year it is getting fairly cold. There is heavy fall of dew which makes the coat wet. The thick grass and many of the other ground cover are getting coarser and are usually with troublesome spiny, hooky or sticky flowers, fruits or seeds. The tiger avoids these, especially during the early hours of the morning, and keeps more to the foot-paths, roads and open areas. The chances of seeing the fresh pugmarks, if not the tiger, are much enhanced. Moreover the harvesting season being half way through, there is more willing local cooperation. The early morning forest is not yet forbiddingly cold for the local participants in the cooperation census and hence there is more intensive tracking and replecation, to refine the counting of Forest Guards and other participants.

The parameters of the census are the strong territorial habit and the methodical movements of the average individual—aberrants are very rare which do not affect the effective use of the results.

Preparations for the cooperation census had been made in consultation with my colleagues. The standard counting sheet will be like the sample in facing page. Efficiency much depends on organisation. The pattern of field arrangement of the counting sheets by

THE WEEK'S LOG-BOOK

Date	Particular area visited	Time	Tigers seen				Pugmarks seen				Remarks including sl. No. of plaster cast, size of pugmark
			Male	Fema	Cubs	Unkn	Male	Forna	Cubs	Unkn	
1		Morn									
		Aftn									
		Even									
2		Morn									
		Aftn									
		Even									
3		Morn									
		Aftn									
		Even									
4		Morn									
		Aftn									
		Even									
5		Morn									
		Aftn									
		Even									
6		Morn									
		Aftn									
		Even									
7		Morn									
		Aftn									
		Even									

Signature of D.F.O.

Signature of participant

Signature of coordinator

the coordinators is very important. The coordinator for a small range is the Range Officer himself. In a big Range the Foresters are the coordinators under the overall supervision of the Range Officer.

The presence or absence of tiger in a forest is usually known both to the forest employees and the local people. When there were plenty of tigers, nobody really cared to know about how many and where. But still, the random examples cited by me would show that a rough idea about the number and locations was the inevitable sequence to a living with the tiger in the same environment.

The tiger population has drastically decreased during the past decade. In Orissa at least, you now find a lone one here, a pair there and no more any, elsewhere. The existing ones are thus better defined in individual location and territory. It is, therefore, easier to assess the anticipated counts for each coordinator to determine the intensity of work programme — stratification. The jurisdictions or maps for the counting sheets are so arranged as to minimise overlaps of territories. Each counting sheet may cover one or more F.G. Beats. When it covers more than one F.G. Beats, the concerned F.Gs form a group and have correlated counting to avoid duplication. This is done under the guidance of the coordinator. A tiger with a long and wide territory may still, by mistake, be counted as two different tigers, by two F.Gs, placed wide apart. A few such cases did happen in my 1966 tiger census in Orissa. It happened mainly in the Phulbani Forest Division. I and the Divisional Forest Officer, Sauri Bose, spread the topo-maps before us and positioned the related counting sheets on those. With some practical commonsense tuned to our and the Range Officers' local knowledge of tigers, the probable duplications were marked out. The double counts whenever found in the recheck, were eliminated. The total number of tigers in Orissa, thus counted in the first week of December 1966, was 326.

Was it an absolute count? Evidently not. No wild animal population count can be an absolute count. Take the case of the recent lion census, as told by Dharmakumarsingji (pp 48 to 56, CHEETAL Vol. 12 No. 1). With all the expenses—300 to 400 live baits alone (not without a lingering inducement also, left to the uninitiated lions to take to cattle-lifting) and all the men and maintenance—what was the result? I quote from page 52, “..... the Forest Department had already made an assessment of the lion population before the main census and had arrived at a low figure of 160 lions, which nearly coincided with the results of the main census.....”, and from page 56, “The result of direct visual count of lions. total of 162. This reveals that there are not less than 162 lions in the Gir Sanctuary and its environs”. To this figures of 162 has been added the pugmarks evidence counts in outlying areas to place the total finally at 177—evidently not an absolute figure either.

With all the decrying of the attitude of the forest department and the cheap but practical methods of census conducted by the foresters, how was the so called 'direct visual count'

method superior to the stalking and pugmarks counts? And what positive advantage or reliance did it bring? To my mind, not to any extent that the expenses would justify. What, after all, is our aim in getting to know about the number of lions, tigers rhinos etc.? We want to get a reliable idea of the position with these vanishing assets (I am not considering the census for crop management). We want to base our assessments on reasonable practical lines—not hearsays and wild guesses—commensurate with the expenses. We want to evolve a pattern which can be repeated, without much pomp and drum-beating, by the local staff to give us a dependable grip on the trend of the population.

Let us again read between the lines—the census aspect only—and try to visualise the 'cooperation census' method applied by the practical foresters and the 'direct visual count' method as stated in the story. The cost of cooperation census is almost nil. The pattern can be fitted into the normal duties of the local staff—a little training, a small lead and a pat on the back for good work—and, it can be repeated every half year even. What, on the other hand, is the cost of the 'direct visual count'? From the story itself I guess it to be around Rs. 20 to 25,000. What is its confidence? Anybody's rational guess. And whatever it be, the confidence in the 'co-operation census' is equally as high (160 : 162 to 177). The cooperation census has its inherent level of error—all census methods have it in different proportions—which will repeat in the successive censuses to give us a near absolute confidence level in the population trends. What we are really concerned with is not the actual number but a reliable standard of measure, as near the actual as is economically possible, which will repeat true to give us the confident indication of the trend of the population—whether it is increasing or decreasing and that at what rate? This will give us the required grip on the management.

Take for instance the 326 tigers in Orissa in December 1966. The census results created a sensation and made everybody aware of the not too happy position with the scattered and much too thinned out population of tigers. Those who had been pressing for tiger shooting permits, became silent. Much concern was expressed by the press and the A.I.R. All shooting of tigers was stopped, except man-eaters. What was necessary, after earning this general concern for the tiger, was to press home the advantage by repeating the census—even twice, December and June—every year. It was done again only in December 1968. The result has not been published yet! I know it will disclose more distressing picture. I will be happy if there are even 250 tigers left in my state now. Because I know, the poacher—more of the cruel poisoning type using crop insecticides—has remained as active as ever for the skin, in spite of the ban for the export of tiger skins. The ban takes an awful lot of time to reach the distant folds of the tribal hills. But the bait of the smuggler—Rs. 1,000/- for panther and Rs. 1500/- for tiger skins, raw—offered to the local man is too much of a temptation to resist. I have seen written offers from Calcutta smugglers, carefully kept by the poachers in the area.

That is why I have been emphasising repeatedly that we have to act and act very fast with determination to save whatever we are still left with. The surest way to keep track of the results of our actions is to keep an eye on the population trend. If the number 326 in Orissa has now fallen below 250, there should be no hesitation to place the fact boldly before the people because without their help and sustained co-operation we will never be able to save our tigers or any of the other rare animals.

The co-operation census as explained here, should be repeated in all tiger areas, in this country, every six months—in the first weeks of December and June. In early June again, it is easier to find the tiger near the water holes and prominent concentrates of game niches. The December count will give the basic population trends and the June ones will form the backup image. Repeated as the counts will be every six months, the results should be flashed out effectively. More and more people will get interested in it. Soon there will be offers of voluntary participation by many existing and prospective conservationists. Small groups of youth camps, timed and distributed with the census works, can directly involve the younger generation who have to be actively associated with the future of the wildlife in this country.

Let us do it, I urge, in right earnest—count our tigers with the co-operation of all. Once we know the clearer truth about the tigers, we start seriously thinking on the problem of conservation. When we conserve this great asset in our wildlife we cannot but pay equal heed to its natural preys in other game animals. When we are in a position to allow the removal of a normal tiger for sports from any balanced range, we can judiciously permit the removal of some of the game animals also which would have fed the tiger had it continued to live and will thus form the surplus removable stock, after the exit of that tiger.

Stands to reason, is it not? And to commonsense, which of course is the most reliable sense often very much in need for application, but indeed, so very little applied in practice.
