

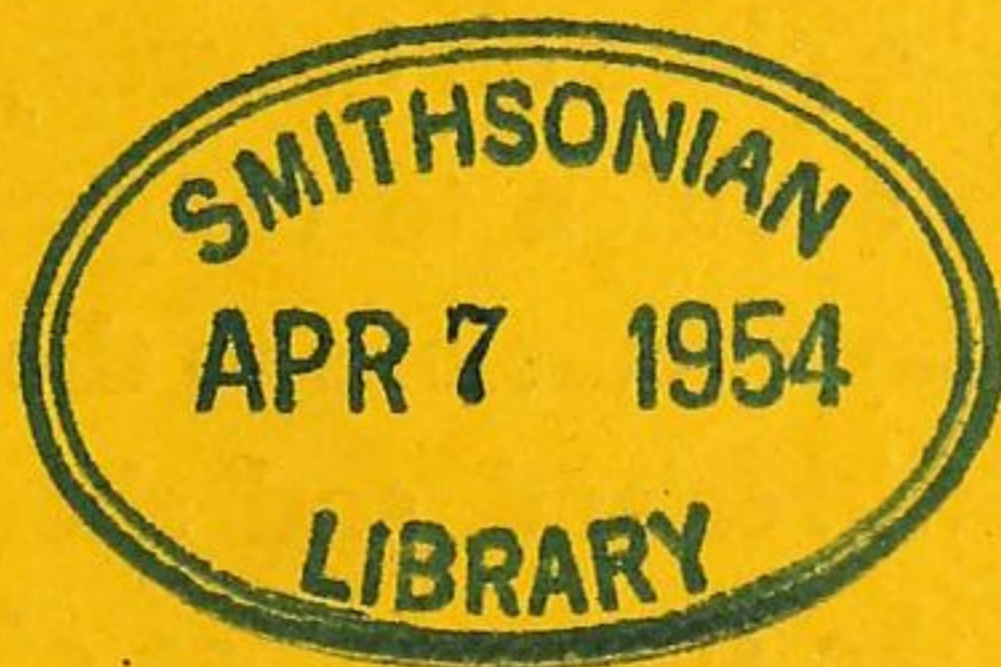
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SÁLIM ALI, S. B. SETNA, H. SANTAPAU



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FURTHER OBSERVATIONS ON THE GREAT INDIAN  
ONE-HORNED RHINOCEROS (*R. UNICORNIS* LINN.)

BY

E. P. GEE, M.A., C.M.Z.S.

(With two plates)

INTRODUCTION

Since writing the paper 'The Life History of the Great Indian One-horned Rhinoceros (*R. unicornis* Linn.)' published in Vol. 51, No. 2, pp. 341-348, more information on the mating, breeding and life span of this species of rhino is available from Kaziranga Wild Life Sanctuary in Assam. To this have been added some observations on rhino attacking humans, noises made by rhino, occasional sociability of rhino and dung heaps of rhino.

MATING

A fifth case of rhino actually mating was observed in Kaziranga by L. Rynjah, the Divisional Forest Officer, and R. C. Das, the Range Officer. While accompanying the D.I.G. Police in the sanctuary on March 10th, 1953, at 4 p.m., they came across a pair mating. L. Rynjah has described the incident as follows: 'The female standing as usual and the male on the top of her back like the mating of buffaloes. We first saw them from a distance as the grass all around has been burnt and we approached quite near to them and they did not seem to mind us . . . we watched them for about half-an-hour. When they finished they separated as other animals do and grazed again together nearby'.

'Three days previously', continued L. Rynjah, 'the Range Officer when conducting the American Consul General round the sanctuary saw the same pair running and playing between themselves and making a whistling like sound . . . the female passing urine at short and



frequent intervals . . . . Both these rhinos rushed towards the elephants and came as close as about 30 ft. but stopped in front of the elephants when the mahouts and Range Officer made a noise'.

It appears that this pair of rhino resented disturbance at the time of courting, but at the time of actual mating did not mind the close proximity of the forest elephant and visitors.

From the description and behaviour of this pair, and after a careful scrutiny of photographs and cine shots, it seems certain that this is the same pair which I had earlier christened as Romeo and Juliet. These two almost mature rhino were observed and photographed by me as early as on 1-11-1952 when I was taking R. C. Morris round the sanctuary, again by me on 3-1-1953, and by E. R. Dungan on 7-2-1953. They were seen together by the Range Officer as late as 10-4-1953. All this time, some five months, they were inseparable; and this goes to show that courting and pairing can be prolonged over a considerable period.

It will be noticed that the case of mating recorded above falls within the same period in which the previous four cases occurred—a period of 'two months lasting from the end of February to the end of April'. I am not yet, however, myself fully convinced that there is any such fixed mating season, as the months of February, March and April are the 'season' in which nearly all visitors come, very few people visiting the sanctuary during the monsoon from May to September.

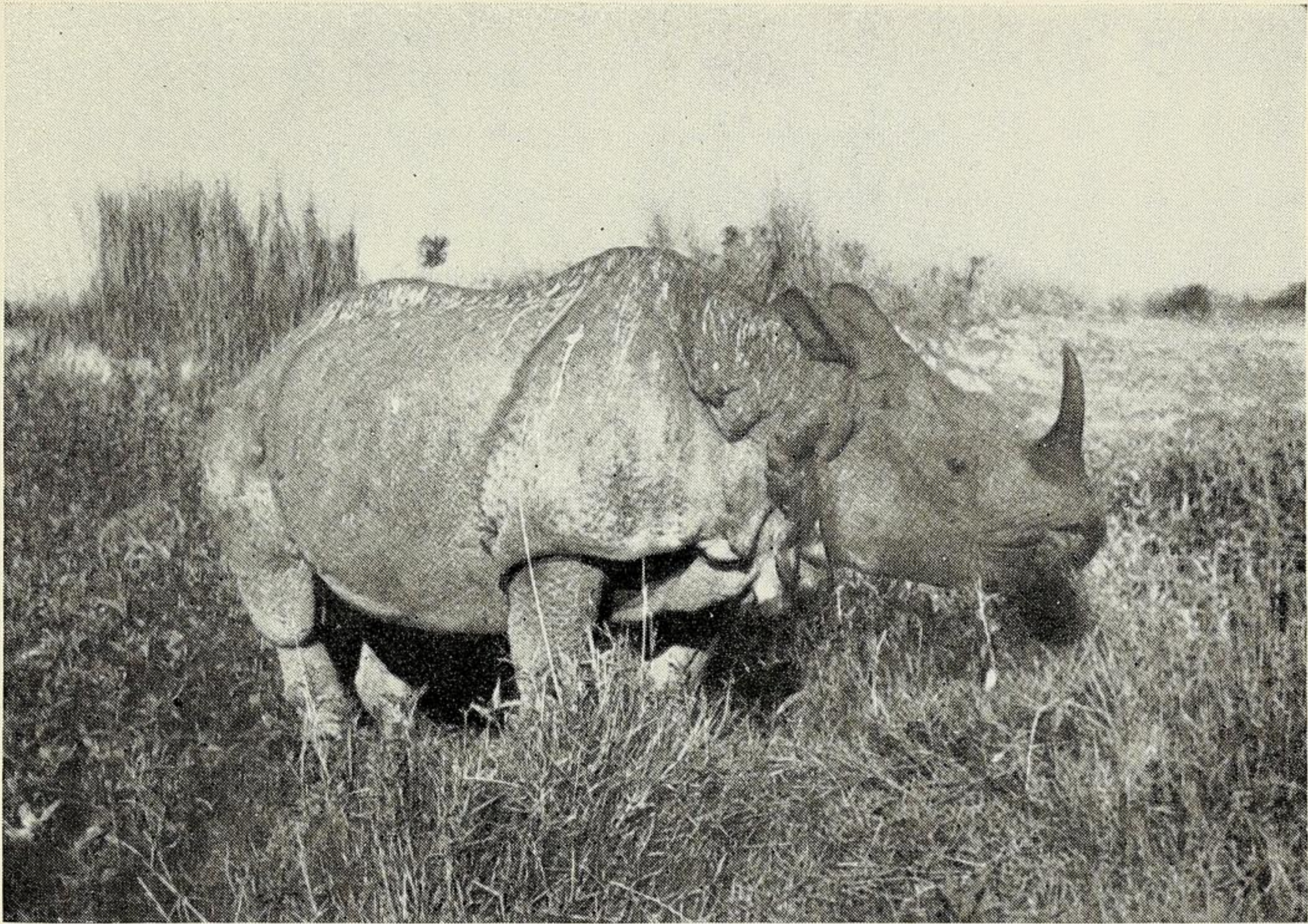
Mating may not, therefore, be confined to the spring months. On 2-8-1953 at Hathikuli I observed two adult rhino moving about so closely together that they were almost certainly a bull and a cow. And again on 15-8-1953 I observed two pairs of rhino, of which one pair actually indulged in a little flirting. I am now inclined to believe that the main mating season is February, March and April; but that mating also occurs in January and May, and may possibly also occur in June, July and August.

#### BREEDING

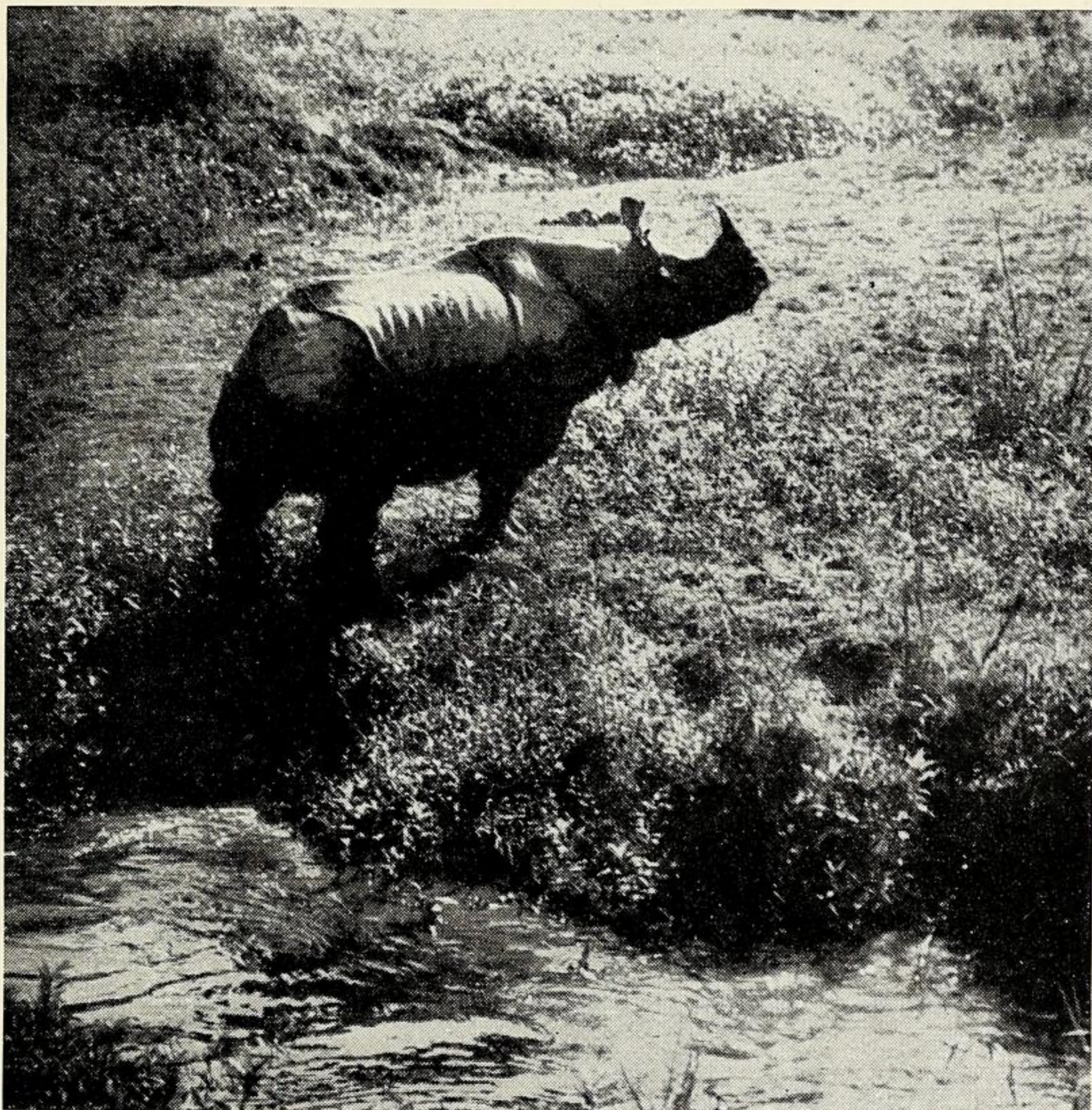
Another case of a newly born rhino calf in Kaziranga has recently been reported. On the night of 9/10-8-1953 four labourers of Hathikuli Tea Estate were in their *tongi* (look-out hut built on poles) watching over their paddy fields at night, to drive away rhino and other crop-raiding animals. One particular rhino could not be driven away, and actually charged the men, who fled to their houses. Returning with a force of twenty men, they drove the rhino across a small stream back into the sanctuary.

Next morning a baby rhino was found caught up in the masses of water hyacinth in the small stream. R. C. Das, the Range Officer, was called to the spot, and he succeeded in rescuing the baby which was 'most savage with fear for the first half hour and then became very quiet. There were six leeches on it, but no blood. It was a pinkish colour, and had no tushes and no teeth. The place where the horn will grow was very soft. It was calling for its mother like a buffalo calf, and its mother was answering from a distance with a similar call'.





The last picture taken of the Boora Goonda, a few months before it died



*Author*

The Kan Katta (Torn Ear) when it first came to Mihimukh had, in addition to its torn ear, a scar on its nose and three gashes on its flank. In this picture, taken a month later, the gashes had healed up





*Author*

This pair, known as Romeo and Juliet, were seen together for five months



*A. Jairamdas*

Six of the seven rhino seen together at one mud wallow ; another one had just left



The Range Officer sat up in the *tongi* the following night, with the baby rhino tied up below. At about 10.30 p.m. the mother rhino crossed the stream and approached. The baby was released, and mother and baby became re-united. On 11-8-1953 they were not seen, but on 12-8-1953 they were both seen together across the stream by the Hathikuli labourers.

Presuming that this calf was two weeks old when found, it must have been born on July 26. With a gestation period of  $18\frac{1}{2}$  months this means that mating took place on January 12, 1952.

The dimensions of the calf were:—

The Hathikuli Calf—

Height	...	...	...	1' 10"
Length (including tail)	...	...	...	3' 9"

#### LIFE SPAN

The aged solitary bull rhino, known to all and sundry as the Boorra Goonda and referred to on page 346 of my previous paper, died on June 8, 1953. It was seen by the local herdsmen on June 6, and it was observed that it had become very slow in movement. On the morning of June 8, it was found lying dead, outside the sanctuary and not far from the huts of the herdsmen. Its teeth were very worn, and it is presumed that its death was due to old age. Its measurements, as given by the Range Officer, were:

Length from root of tail to tip of nose	...	...	...	10' 9"
Height at shoulder	...	...	...	5' 9"
Length of horn (front curve)	...	...	...	14"
Weight of horn	...	...	...	2 lbs. 6 oz.
Value of horn (at present market rate)	...	...	...	Rs. 1,875

The death of this fine old rhino will be a great loss, for the locality in which it had lived in solitary retirement for at least 15 years is the very place where visitors usually enter and leave the sanctuary. There is some consolation, however, in the fact that another old bull rhino, called the Kan Katta, has turned up to take its place.

When the Kan Katta (Torn Ear) first arrived in this locality near Mihimukh in November, 1952, it charged the forest elephants on which were the D.F.O. and some visitors, but was warded off by shouts. When I first saw it on 14-12-1952, it seemed to have become used to humans; and since then it has become even more reconciled to its new life of exile near human habitation.

#### RHINO ATTACKING HUMANS

The two rhino named Romeo and Juliet were twice involved in an attack against humans. Firstly on 7-2-1953 E. R. Dungan was taking cine shots of these two rhino as they were playing, courting and chasing one another. With him were two companions, one of which was the Assistant Conservator of Forests of the sanctuary. They apparently approached too close, and one of the two rhino suddenly started chasing the A.C.F. The A.C.F., a young man, ran as fast as he could over the dry ground, but the rhino put on a



sudden burst of speed and easily caught up. With the impact of its nose and mouth on the shoulder of the A.C.F., the latter fell headlong and broke his collar-bone. The rhino then quietly departed without attempting further pursuit.

Again on 7-3-1953, when the Range Officer was taking the American Consul General round the sanctuary, both these rhino (Romeo and Juliet) 'rushed towards the elephants and came as close as about 30 ft. but stopped in front of the elephants when the mahouts and Range Officer made a noise'. Three days later, when actually mating as previously described, this pair was quite unheeding of the presence of humans on elephant-back.

In another part of the sanctuary recently a villager had placed some fish lines in the shallow stream which forms the southern boundary. One day he was inspecting these fish lines. While his dug-out boat was being pushed through the thick water hyacinth it actually struck a rhino which was resting unobserved in the water. The rhino rose up, put its foot through the bottom of the boat and inflicted an injury on the man with one of its lower tusches, causing a gash 6 in. long on the thigh.

The following three cases were recently reported by an A.C.F. from Laokhowa Reserve, and I am indebted to the Senior Conservator of Forests for forwarding a copy to me. Laokhowa Reserve is an isolated continuation of Kaziranga westwards down the Brahmaputra river. I give the A.C.F.'s own words as far as possible:

1. 'On 1-2-1953 . . . one of my Assistant Foresters, Khageswar Bora, went for enumeration of trees in a cut line . . . going forward with the enumeration book and the pencil in hand looking up at trees in front of him for direction to callipering. The reserve being very open with Simul and Koroï with plenty of thatch underground he could walk forward at a speed as the trees for callipering were very few. He was thus going forward with his eyes fixed above, suddenly, when he looked down, he was face to face with a full grown male rhino. The rhino looked at him, he dropped down his pencil and the note-book on the spot and screamed out "Oh, I am undone, I am undone".'

'At the same time he was pacing backwards fixing his eyes on the rhino which was so long looking at him curiously; and hardly he paced back about 6 steps when the rhino rushed forward and pushed at his right knee with his mouth. After two pushes, the Assistant Forester fell down on his buttocks on the thatchy ground. He raised his two legs and kicked at the rhino's mouth and at the same time screamed out. The rhino paused for a moment and then walked back about 15 ft. from the Forester. Thinking that the rhino had left, the Forester got up instantly to run.

'But lo, the rhino stopped and looked back when it saw that the fellow had got up the rhino again rushed at him. Surprisingly enough this time also he knocked the Assistant Forester at the same knee and got him down. The Forester repeated the same thing. Suddenly the rhino began to run at his heels.

'The Assistant Forester got up, called for his two Abor labourers and picked up his note-book, pencil, hat, etc. He took rest on the spot and then continued his works. After completing the enumeration in the line he returned back to the camp in the afternoon and



reported to me. He got bruises on his right leg and no injury was done to him.'

2. 'In the same reserve of Laokhowa on another day two of the . . . men were cutting thatch. A rhino's path in the forest is just like a footpath. You can quite easily go on such a path even if it is in very dense thatchy area. The men were cutting thatch just near a rhino's path. They could hear nothing as the sickle made a sound with the thatch which could easily submerge any other sound.

'They were engrossed in their works cutting the thatch leaning forward with their haunch up when suddenly they got a tremendous knock on the buttocks and both of them fell on their faces. When they looked up they saw one wild rhino on his heels. The fellow knocked them down with his flattened big belly without any knowledge to himself. The rhino passed and the labourers resumed their works.'

3. 'On another occasion by the same time in the same reserve one of the labourers was returning to the camp in the evening with two bundles of thatch dangling on two sides of his shoulder. With such a load the labourers generally go on strides rather than walk. Unfortunately he was coming on a rhino's track.

'All on a sudden he felt a rhino heading through his opening in between the two legs. This happened when the rhino was coming from behind with his head downwards (it is known that head of a rhino lies much lower nearer the ground). The fellow could not think a moment when he found himself lying on the rhino's back with his back on it, the load of thatch bundles being fallen on sides. In the next moment the fellow was thrown on one side of the track and the rhino trudged along forward very majestically.'

Case 1 seems to confirm the experience of the first episode with Romeo and Juliet: that rhino do not usually press forward their attack once a man has been downed. Case 2 is peculiar—perhaps it was because the men were 'down' all the time that the rhino ignored them. Case 3 is extraordinary, and comment is difficult.

#### NOISES MADE BY RHINO

Early writers on natural history in India have described the rhino as uttering no sound except a repeated grunt. For example (Sterndale 1884): 'The only voice of the beast recorded is a grunt'. Sportsmen in the last century, however, have referred to the noise made by a rhino when wounded, and one of them (Lt.-Col. Pollok, 1879) wrote '. . . it makes such a noise it can be heard a long way off. The noise once heard can never be forgotten'.

I myself was present at the capture in 1949 of a young female rhino, caught in a pit for the Cairo Zoo. It uttered deafening cries, to be answered by its mother in the distance.

During the last cold weather in Kaziranga some interesting observations go to show that a whistling noise is made by rhino at the time of courtship, probably by the female. In the afternoon of 3-2-1953 E. R. Dungan observed for half an hour a pair of rhino at Laodhubi Bheel playing and courting. One was whistling and the other was snorting—he could not be certain which sex was making



which noise, but thinks that the male was doing the snorting and the female the whistling.

Again at Mihimukh in the early morning of 13-2-1953 he saw another pair chasing each other, whistling and snorting. And on 7-3-1953 there was the case of the Range Officer seeing Romeo and Juliet 'running and playing between themselves and making a whistling-like sound . . . .'

A theory has been advanced (S. Dillon Ripley, 1952) that when the urge to mate comes on, rhino take to wandering—the whistling sound being a 'recognition' sign between physiologically-attuned members of the opposite sex. But the cases of whistling noises reported to me and described above occurred only during the courting stage, and appear to have been made by only one sex, the other sex making the snorting noises. Further observation on this point is needed.

#### OCCASIONAL SOCIABILITY OF RHINO

The Great Indian One-horned Rhinoceros is generally regarded as a solitary animal, and it has also been suggested (S. Dillon Ripley, 1952) that rhino are solitary except 'during a fight or when mating' and that dung heaps belong to individual rhino of either sex and denote 'territory' when they are not in mating condition.

But from personal observations made in Kaziranga since 1939 I have found that, although the rhino is not actually a gregarious animal, there are certain conditions other than sexual which bring them frequently together. At the time when the areas of burnt-off grass produce tender green shoots in the spring rhino will congregate in small groups while grazing; and I once saw as many as six rhino in this way within a space the size of a football field, and have often seen them in threes and fours.

At the time, also, of standing rice crops during the months of August, September, October and November the same phenomenon occurs. For example on 15-8-1953 I visited the area at Kaziranga known as Kohora Grazing, which is outside the sanctuary but typical rhino country and adjacent to cultivated rice fields. Within two hours, in an area of about one mile long by a quarter of a mile wide I counted twenty-two rhino at close quarters, without searching for them in the elephant grass. They frequented this open area in the daytime, and were in the habit of raiding the newly planted paddy at night, so the local people told me. In one place four rhino, three adult and one three-quarter-grown, were huddled together on dry ground, so close that they were almost touching each other. Further on was a pair together in some shallow water. Later I came across seven rhino together—the Kan Katta a little apart and the other six closer together, all seven of them in an area of about one acre. Two of them were a pair and walked away together, and after a short while indulged in a little flirting.

There is also the case of Romeo and Juliet remaining as a pair for at least four months before mating. And again there is the peculiar phenomenon of several rhino collecting at a small mud-hole during the hot days of the monsoon. When monsoon floods invade the sanctuary, the muddy wallows so much sought after by rhino



for warding of flies are very few and far between. The few that exist are in great demand, and several rhino sometimes have to share a wallow. For example, on 23-7-53 A. Jairamdas, while visiting Kaziranga in company with the Range Officer, saw no less than seven rhino lying in the same small mud wallow, which was so small that the animals were all touching each other.

#### DUNG HEAPS AND 'TERRITORY'

As for dung heaps belonging to individual rhino and denoting territory my own observations do not confirm this. It is my personal belief that, although rhino generally remain in one particular part of the sanctuary, they move about freely within that locality according to availability of grazing, mud wallows, water, crops to raid and so on.

I believe that dung heaps are used by any rhino which happens to be passing by, after the fashion of dogs at lamp posts. On 3-1-1953 while observing Romeo and Juliet in a place at least one mile distant from where I had seen them on 1-11-1952, I was following them on elephant-back. Juliet was leading and Romeo was close at her heels, and our elephant was at their left flank, slightly behind. As we were all passing a dung heap Romeo noticed it, turned off his course to it and went through the motions of defecating—without much result. Then he resumed his journey.

Again on 15-8-1953 I was on elephant-back observing a large bull rhino as it was making its way westwards. I kept directly alongside it at about fifty yards distance, waiting for a suitable opportunity to photograph it. After we had gone about a quarter of a mile in this way, the rhino noticed a dung heap in between us. Leaving its course and coming in my direction up to the dung heap, it turned round and deposited its dung. Then it resumed its course. My *mahout*, who said he had known rhino and their habits since he was a boy, stated that dung heaps 'are found all along rhino routes and are used by any rhino coming along'.

In this connection it is interesting to note that another observer (Bengt Berg, 1933) seems to have come to the same conclusion after a six weeks' sojourn in the Jaldapara Sanctuary of Bengal. He says (I quote from a rough translation): 'I found that the old assumption that the rhino visits the same place daily to relieve himself is not quite correct. It rather seemed to me that where one rhino had left his dung (the odour is overpowering) another one passing the spot was wont to do the same'.

It may also be noted that a sportsman-naturalist (Thom, 1935) has made similar observations on *R. sumatrensis* in Burma: 'The Sumatran Rhinoceros very seldom deposits its dung in the same spot daily. As a matter of fact, they seem to me to only do so when they accidentally cut across their own tracks at a spot where they have previously evacuated. The odour of the droppings, even though not their own, seems to attract the animal's attention and causes it to halt and evacuate at the same spot'.

In the area of Kohora Grazing and Vasalimari Bheel in Kaziranga it has been possible during the cold weather of 1952-53 to observe



some ten or twelve rhino, four of which were recognisable and known by name—Boorra Goonda, Kan Katta, Romeo and Juliet. These four recognisable rhino, together with the others, passed and repassed each other within a locality of about one and a half to two miles across. I presume that a weaker rhino will give way to a stronger one, or else it gets injured. I also presume that if two rhino which considered themselves equal were to meet in the non-mating season, there would be a fight and the loser would henceforth give way, thus establishing a social order of precedence, or 'peck order' as in the case of fowls.

One thing is certain: there is a lot of 'scrapping' going on all the time between rhino, and there are a great number of rhino with scars, torn ears and gashes, the majority of which may be bulls. The possibility of cow rhino also fighting among themselves should not be altogether excluded until further observation has brought more light on the subject.

When I first saw Kan Katta (Torn Ear) at Mihimukh on 14-12-1952, this bull rhino had a torn ear, three gashes on its right flank and a scar on its nose: it had evidently been defeated in battle and had retreated to the edge of the sanctuary. Thereupon the Boorra Goonda, an older bull, gave way without opposition and withdrew half a mile upstream to the east.

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