

myself that it is nothing personal but an inbuilt fear of man which the animals have developed because human action has exceeded the natural limits of predation. Man is the embodiment of unpredictable danger, so I could never be accepted as part of the ecology of tigerland and can only remain a secret witness to the animals' lives.

Excerpted from Tiger! The Story of the Indian Tiger (London: Collins, 1978).



E. P. GEE

The Rhino of Kaziranga

*The Assam tea-planters were a small, select group, with a love of the outdoors, camping, angling and shooting. Gee as a conservationist had a big-game hunter's world-view—his only book *The Wildlife of India* is skilfully woven together from several articles written over three decades travelling across wild India. He surveyed the status of lions in Gir Forest and the wild ass in the Rann of Kutch, rode an elephant in Kanha in central India and watched wildlife along the shores of Kerala's Periyar lake. But it was the great Indian one-horned rhinoceros that perhaps ranked first for him both as a writer and a photographer. The Kaziranga national park in Assam, set up initially as a reserve in 1908, was and still is the most significant stronghold of a species that once ranged across the Indo-Gangetic plains. The wet savannah grasslands along the river Brahmaputra showcase an array of wild animals that now exist nowhere else in one place: the wild buffalo, the elephant, the swamp deer, the tiger and the great Indian one-horned rhino.*

Gee's account is especially interesting on two counts. It reflects how 'amateur' naturalists, in this case a tea-planter were often closely associated with particular national parks. Further, it shows how a small group of Englishmen who stayed on in India carved out a new public role as conservationists.

The history of the Indian rhino is also the story of the changing vegetation and climate of this sub-continent. Rhino existed during the Mohenjo-Daro era about 5,000 years ago, in the plains of the Indus river of what is now West Pakistan. Some rhino seals, relics

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of that ancient civilization, are preserved in the Indian National Museum, New Delhi. That region was then green and fertile: it lost most of its natural vegetation due to cutting and over-grazing by the local population, as happened in many parts of North Africa and the Middle East. The climate there has also gradually changed.

It is recorded that the invading Emperor Timur hunted and killed many rhino on the frontier of Kashmir in A.D. 1398. In the sixteenth century there were rhino in parts of the west of the sub-continent, and as far north-west as Peshawar. In his memoirs the Emperor Babur describes how he hunted rhino in bush country near the Indus as late as 1519. About that time the King of Cambay (in western India) sent a rhino as a present to the King of Portugal, and this was shipped from Goa. This was the first Indian rhino ever to be seen in Europe, for the ones brought to Egypt, Greece and Rome in ancient times were most probably African white rhino, from the Nile in Sudan.

Partly due to capturing and killing, and partly due to the clearing of the habitat for settlement, cultivation and grazing, the rhino gradually disappeared in the west. Even in the Ganges valley rhino became extinct during the nineteenth century. By 1900 they only survived in southern Nepal, northern Bihar, northern Bengal and Assam.

The Brahmaputra valley in Assam in the last century was mostly covered with thick grass and jungle. Then came the tea industry, with labourers imported from other parts of India; and a lot of clearing was done for opening up of plantations. At the end of the century the railway in Assam was constructed, and vast numbers of settlers and graziers entered the valley. Wild life gradually became scarcer, and in particular the rhino was very much hunted by sportsmen and poachers alike.

A special reason for the persecution of the rhino is the fanciful belief in the wonderful properties of its horn. The rhino horn is not really horn at all, but consists of compressed or agglutinated 'hair'; or, more scientifically, keratin fibres cemented together in a hard compact mass. It is not fixed to the skull, like the antlers of a deer which grow on pedicles, or like the horns of an ox or antelope which grow on central cores of bone connected to the skull, but is epidermal and rests in the flesh and can be knocked off by a hard blow. When a rhino's horn is thus struck off, the wound bleeds profusely but within a year a new horn will start to grow there.

Medical properties have long been attributed to the rhino's horn. It was supposed to be a good insurance against poison, as it was believed that a drinking cup carved from rhino horn would split in twain if poison was added to the contents! Another belief was that a drink served in such a cup would start frothing if poison had been added! Kings in eastern Asia, therefore, used such drinking cups, one or two of which are still preserved in museums and elsewhere.

Even now rhino horn finds a ready market in eastern Asia, especially in China, as an alleged aphrodisiac for 'restoring lost manly vigour'. Thirty years ago it used to be worth half its weight in gold: now it is priced even higher. At a recent auction in Gauhati which I heard of, a party of Bombay merchants came in a chartered plane, and purchased the whole lot at Rs 2,525 (about £189) per lb.! The present price of African rhino horn in East Africa is only £2 10s. per lb.

The Survival Service Commission of IUCN has for some time been considering the possibility of putting some kind of artificial 'substitute' for powdered rhino horn on the market in large quantities, to forestall the demand for real rhino horn at the expense of the few surviving animals. But I think this idea has now been dropped on the grounds that it would be most unethical to put such a spurious 'drug' on to the market however worthy the ultimate objective might be.

I understand that tests made in chemical research laboratories in Basle (Switzerland) have conclusively shown that rhino horn has no biochemical or hormonal properties whatever. Investigations as to its potential effects as an irritant, I believe, show that any possible temporary results would be offset by injurious side effects.

Another fanciful belief in some parts of eastern Asia was that a rhino horn placed under the bed of a woman at the time of childbirth would assist her in her labour! Persons owning a horn would rent it out to expectant mothers for the equivalent of about £ 30 each time! Yet another absurd belief was that a rhino horn left to soak in a filled bucket turned the water into a sort of elixir of life, of which members of a family would sip a spoonful every day!

It certainly seems extraordinary that, even in this space age of science and technology, such absurd beliefs still persist. It is to be hoped that there is some truth in the report that legislation has now

been introduced in China prohibiting the use of rhino horn for alleged aphrodisiacal and other 'benefits'.

Cow rhino in India carry horns as big as seen on bulls, in fact the sexes are almost indistinguishable at first sight. The record horn of an Indian rhino, in the British Museum, is twenty-four inches. The largest I have ever seen in Kaziranga is one of eighteen inches recovered by the Forest Staff from an old animal which had died, and I have seen and photographed one of an estimated length of sixteen inches on a live rhino. The average horn to be seen in Kaziranga would be about eight inches, I think.

Apart from the horn, almost any part of the body of a rhino can be marketed. Even the urine is drunk by some persons, tiny pieces of hide and bone are worn as charms against sickness, and the meat is believed by some to be not only palatable but also a combined passport and ticket to the land of eternal bliss!

One of the last unspoilt and unoccupied grassy areas of the Brahmaputra valley was the one which is now Kaziranga Wild Life Sanctuary. It stretches for some twenty-five miles along the southern bank of that huge river, just to the north of the Mikir Hills in the centre of Assam. It was a sportsman's and poachers' paradise until 1908 when it was realized by the authorities that there were only about a dozen rhino left.

After being constituted as a Forest Reserve and closed to shooting, Kaziranga became a 'Game Sanctuary' in 1926. And in the late 1940s its name was officially altered to 'Wild Life Sanctuary' because the word 'game' refers to those animals and birds which are shot for trophies and for meat, whereas the term 'wild life' embraces all living creatures and implies their conservation.

In the early 1930s Kaziranga was a closed book, a sort of *terra incognita* completely left to itself by the Forest Department. I remember trying to get permission to go there in 1934, but the rather lame excuse of the British DFO was, 'No one can enter the place. It is all swamps and leeches and even elephants cannot go there.' Shortly afterwards the very fine Chief Conservator, A. J. W. Milroy, thought otherwise, and decided to clean up the poaching which had recently started again and to open up the sanctuary for visitors.

I have talked to the Forest Officer who was the first to be deputed to survey Kaziranga in the mid-1930s. He found poachers' camps at every *bheel* (small lake), and about forty carcasses of rhino with

the horns removed. The Mikirs, the simple, peaceful but very interesting tribal folk who dwell in the Mikir Hills just on the southern boundary of the sanctuary, were among the many poachers. And when they ran away from the Forest Staff their 'tails' (the ends of their embroidered loin-cloths) were caught hold of by the pursuers. The Mikirs would then draw out their sharp chopper knives and cut off their own 'tails' to facilitate their escape.

When Kaziranga was opened to visitors in the year 1938, I was one of the first to go and see it. Two friends and the Range Officer accompanied me, and we had a most exciting time on our two riding elephants. When I first saw rhino, they appeared to be most improbable-looking and prehistoric-like with their quaint features and thick armour-plating. Our party carried two rifles, one on each elephant, for 'self-defence', but this practice of taking defensive weapons into a sanctuary was soon discontinued, and since then I have never taken a rifle or gun with me in self-defence at any time anywhere in India.

Rhino were then unused to seeing human visitors, and often their reaction was to charge those intruding into their haunts. At that time the Forest riding elephants were not trained to stand their ground in the face of a charging rhino. Their instinct was to turn tail and flee; and as the *mahouts* felt likewise, the result was sometimes headlong flight through the tall grass for a mile or so. I remember writing my remark in the visitors' book, 'Twice charged by rhino, and the elephants each time bolted for some distance.'

A few months later some planter friends of mine visited the sanctuary, by which time the rhino of that vicinity had become more accustomed to visitors. After paying the fees for entering the sanctuary and for riding elephants, they wrote in the same remarks column, 'Rather disappointing. Charged only by the Forest Department!'

Nowadays the rhino which inhabit the areas frequently entered by visitors on elephant-back are 'well-behaved' and rarely charge unless there is a cow with a young calf. In the other parts of the sanctuary, however, where visitors seldom go, one is liable to be charged. But the elephants are now staunch and trained to stand their ground, and in any case a charging rhino will very rarely press home its attack. Nearly always it suddenly stops short, wheels round and eventually trots away, snorting all the time.

On the very rare occasion when a rhino actually presses home

its charge at a riding elephant, or attacks a man on foot, it does not use its horn as a weapon of offence. Unlike African rhino, the Indian rhino has never been seen to use its horn thus: instead it uses the tushes (large incisor teeth) in its upper and lower jaw, especially the latter, and bites its victim with an upward thrust of the head. Consequently the lower tush nearest to the victim will often make a single gash, which has given rise to the imaginary belief that it has used its horn. African rhino have shorter jaws and lack the powerful tushes of the Indian rhino.

Moreover I have never heard of an Indian rhino sharpening its horn, or even rubbing it, in the wild state, as African rhino do. So when you see an Indian rhino rubbing down its horn on the walls and iron bars of its enclosure in a zoo, it is probably because of parasites which cause itching and therefore rubbing. Ralph Graham, Assistant Director of the Brookfield Zoo in Chicago, found this out; and managed to cure his pair of Indian rhino of rubbing their horns by applying mud which had been suitably medicated for killing the parasites. After this treatment, the rhino stopped rubbing, and their horns grew properly.

In their wild state Indian rhino are nearly always found during the heat of the day resting in wet muddy wallows, a sure protection against external parasites, and against the flies which try to lay their eggs between the folds of the thickly armour-plated skin.

There is an old legend as to how the rhino got its armour-plating. Once upon a time Lord Krishna decided to give up elephants as battle animals, and to use the rhino, because *mahouts* were too easy a target for enemy archers. So a rhino was captured, dressed in armour and trained. But when the animal was brought before Lord Krishna, it was found that it was too stupid to learn and obey orders, so it was driven back to the forest—with its armour still on it. And so to this very day rhino still have on them the armour-plating of that particular animal.

As a matter of fact, rhino were actually used by some of the old kings in Indian as front line 'tanks' in warfare. They had iron tridents fixed on to their horns when so used, and this implies a certain amount of training.

It is interesting to speculate whether the great Indian one-horned rhino, whose scientific name is *Rhinoceros unicornis*, was the origin of the legends of the unicorn. Certainly the ancient popular belief that the unicorn could detect poison by dipping its horn into a

liquid tallies with the alleged magical properties of the rhino horn. Also the belief that the unicorn was the only animal that ventured to attack the elephant seems to have something in it.

Considering that both the elephant and the tiger are afraid of the rhino, this latter creature could with justification be termed 'the king of beasts'. A tiger will hunt a baby rhino and often succeeds in snatching away a very young one when the mother is off her guard. No single tiger would dare attack an adult rhino, as the following story shows.

In 1886 a certain 'sportsman' went out on elephant-back in the area which is now Kaziranga to shoot rhino. He encountered one and fired about a dozen shots at it from very close range. The wounded rhino made off, and as it was late in the evening the hunter returned to his camp. Next day he followed up the bloody trail of the badly wounded rhino and came across it while it was actually engaged in fighting and keeping off two tigers. 'One tiger,' the account says, 'had his neck fearfully lacerated, evidently by the rhino's teeth; the other was also covered with blood.' The 'sportsman' fired at both tigers, which escaped, and then finished off the unfortunate rhino.

This episode demonstrated the boldness, powers of endurance and agility of the Indian rhino. It can easily outstrip an elephant, and can gallop, jump, twist and turn quickly—none of which things an elephant can do. For an elephant cannot run, but can only shuffle along at a fast walk at about twenty miles per hour; and an elephant cannot jump, in fact it cannot cross a crevice or ditch of more than six feet in width, which is the maximum length of its stride.

All of the world's five species of rhino, the two in Africa and the three in Asia, are in peril of becoming wiped out by man; and because of this danger a world committee has been appointed to try and save them from extinction.

The two African species are in less immediate danger: the African black (or hook-lipped) rhino are now believed to number 11,000 to 13,500 while the African white (or square-lipped) rhino are fewer, about 2,500 to 3,500. Both of these rhino are two-horned, and the former is a browser while the latter is a grazer like the Indian rhino.

The three Asiatic species are much fewer in numbers. My own estimate of the great Indian one-horned rhino is as follows: Nepal 185, Bengal 65 and Assam 375, making a total of 625. The Asiatic or Sumatran two-horned rhino are now believed to number about

170; mainly in Burma, Malaya and Sumatra, and there is a female of this species in the Copenhagen Zoo. The Javan or lesser one-horned rhino is now confined to the Udjong Kulon Reserve in western Java and number somewhere between 25 and 50. There are no Javan rhino in captivity anywhere.

In size the African white rhino is the largest. Then comes the Indian, and then the African black. Next comes the Javan, and smallest of all is the Sumatran. It is interesting to note that in the case of two grazing species, the African white and the Indian, when a mother and calf are on the move the baby goes ahead in front, while the mother follows behind—presumably as a precaution against a prowling lion (in Africa) or a tiger (in India) in grassy country. This precaution would not be so necessary in the case of browsing rhino in scrub tree forest.

All three Asiatic species used to be found in India. The Javan lesser one-horned rhino was once 'fairly common' in Bengal, especially in the Sundarbans, but became extinct in India about 1900. The Sumatran two-horned rhino still existed in the Mizo (formerly Lushai) Hills of Assam up to about 1935—when it was exterminated. Although this rhino is two-horned, the anterior horn is small, while the posterior one is often very insignificant indeed.

The great Indian one-horned rhino also would undoubtedly have ceased to exist, but for the strict protection given to it when its numbers fell to a very low level at the beginning of this century. What are the reasons why rhino cannot survive the battle of life? Some people say it is slow of hearing and short-sighted, but I am not so sure of this.

I myself think that it is generally slow-witted and foolhardy. Most wild animals in India instinctively run away from danger and seek concealment in thick cover. The blundering rhino does the opposite. It continues grazing till danger is quite close, and then instead of retreating and hiding it is liable to expose itself still more by charging. Also it has the habit of depositing its dung at certain fixed places, and a would-be slayer can wait for a rhino at one of these large dung heaps, to which the animal finally approaches backwards.

Some people have suggested that these rhino dung heaps may denote 'territory', but I do not think so. I have observed that any rhino will deposit its excreta at any heap, and that rhino do not usually stay in a particular locality, but move about from place to place according to the availability of grazing. I think that individual

animals, while passing near a dung heap, will decide by 'association' to make use of it. Quite a number of other herbivorous animals deposit their droppings at particular spots, for example nilgai and other antelopes, without necessarily demarcating territory.

Although the rhino is a solitary creature, I have seen as many as seven of them all together in one wallow; but these came from different directions and departed from the wallow, when disturbed, in seven different directions. As an Indian poet has said:

'Fearing nothing, caring for nothing,
Wander alone, like the rhinoceros.'

Several writers on animals have described the Indian rhino as only uttering one noise, a grunt! I have heard four noises: a roar or a bellow when newly captured, a snort when excited or disturbed, a grunt when not disturbed and a peculiar whistling sound at the time of courting and mating. I think it is the female which makes this whistling sound, while the male grunts; but I notice that several sportsman-writers of the old days have described a whistling noise made by a mortally wounded rhino.

A curious thing about Indian rhino is that old animals, mostly bulls, on reaching a stage at the end of their life when they can no longer defend themselves against stronger ones, often 'retire' to the edge of the sanctuary. They then sometimes live for years close to where villagers provide a certain amount of protection for them, because younger rhino will not venture outside the sanctuary in such a manner. These old rhino usually carry the ugly gashes of conflict when they first come; and later on become a welcome tourist attraction of Kaziranga because if no rhino can be seen in the sanctuary, a visitor can generally be certain of finding one of these old ones which can be approached very closely.

Perhaps the most famous of these old half-tame rhino was the *boorra goonda*, which was admired and photographed at close quarters by many thousands of visitors during the fourteen years he lived just outside the entrance to the sanctuary. I once photographed him on the ground at a distance of only nine feet from his nose with impunity, much to the disappointment of a certain professional TV cameraman who was hoping for a charge—at my expense!

The *boorra goonda*, 'old big bull' in Assamese, died a peaceful natural death in 1953, and was much missed by all. But his place was soon taken by another 'ousted' bull called *kan katta* or 'cut ear'.

A number of rhino have been sent from Kaziranga to zoological gardens in different parts of the world for exhibiting to the public. Among the very first were Mohan (in 1947) and Mohini (in 1952) which went to Whipsnade. I assisted in the arrangements and care of these two young animals from the time of their capture to their loading in the planes which flew them to Britain.

Rhino are captured by the pit system. A pit about ten feet long, five feet wide and six feet deep is dug in the middle of a much-used rhino path, and then thinly covered with sticks and grass to camouflage it. A rhino, sometimes a calf walking in front of its mother, falls and is later removed in a wheeled cage dragged by an elephant to a stockade, where it stays for about a month before being taken to its final destination. This is all done scientifically and humanely by experienced men of the Forest Department.

When first captured a rhino, like a newly caught wild elephant, will display a wildness and apparent ferocity which has to be seen to be believed. This is because it suddenly finds itself in a position in which it has never previously been and in which its freedom of movement is totally restricted. It is purely due to fear, and this is proved by the fact that newly captured rhino and elephants become remarkably tame within a few days. Once they find that they are being well treated, their fear quickly disappears. I will always remember how Mohini, a baby rhino, after a very short spell of savagery, became devotedly docile and used to lick my hands whenever possible!

Mohan and Mohini at Whipsnade and the pair at Basle in Switzerland have successfully, reared two and three calves in each place respectively, and have provided us with much valuable information about their breeding habits. This information is of particular use when interpreted in the light of what can be observed in the wide open spaces of Kaziranga.

For instance we now know that when we see one adult rhino chasing another, it is probably not a case of a stronger bull pursuing a weaker one, or of a bull trying to catch up with a cow. It is almost certainly a cow 'in season' running after a 'reluctant' bull! A cow rhino comes 'into season' once every forty-six to forty-eight days throughout the year, unless it is served by a bull. Bull rhino are also believed to have periods when they are 'in rut', and the 'seasons' of both cow and bull must coincide before mating can take place. The gestation period is 16¼-16½ months. A rhino probably lives

as long as an elephant, about seventy years, though we have no definite proof of this yet.

For the last twenty-five years, ever since it was opened to the public, I have been visiting Kaziranga. I remember what it looked like before all the streams and *bheels* were invaded by that beautiful but terrible pest the water hyacinth. This was introduced into India from South America about fifty years ago as an ornamental plant. One tiny bit of it can spread over an area of 600 square yards in a few months, and it does incalculable damage. At first no animal in Kaziranga would touch it, except wild pig which grub up the roots in the dry weather. Nowadays elephants, rhino and buffalo sometimes eat a little of it, apparently with reluctance.

I have seen Kaziranga so many times when the strong, dry winds of February and March sweep the roaring man-lit fires through the elephant grass, leaving bare black patches of charred stalks. I have seen it often in April and May when the new freshly-growing grass attracts swamp deer and hog deer, now resplendent in their bright new summer coats.

I have boated through it during the peak floods of the monsoon months, and have secured what is probably the only photograph of a rhino swimming in deep water. The time I like best of all, however, is the end of the monsoon, October and November, when the floods have receded and the rains with their heat and humidity give way to cool, sunny days. It is then that most of the many kinds of grasses and reeds burst into flower, and in the distance to the north can be clearly seen the snow-capped peaks of the Eastern Himalayas, over a hundred miles away.

During a visit on elephant-back there is always the chance of a thrill; when an angry or frightened rhino may snort and charge. It is equally exciting whether the *mahout* makes his elephant stand its ground and thus call the rhino's bluff, or whether the elephant turns tail and flees through the tall, treeless grass, without any danger of overhead branches hitting you.

Apart from such minor thrills while on elephant-back, I can only recall two occasions on which I have had to retreat from a rhino when I happened to be on foot.

Rhino can be very dangerous, and every year a few people get killed by them. Because of this danger, visitors are not allowed to dismount from their riding elephant in the sanctuary, but being a person not without some experience and an Honorary Forest

Officer I have always been given some latitude by a co-operative Forest Department.

The first occasion was when I was determined to secure one or two steady cine shots of a rhino in an open place. An elephant is a most unsteady form of transport to do cine photography from. Accordingly when I reached a dried-up *bheel* (small lake) where a large bull rhino was grazing on the short grass, I signalled to the *mahout* to stop and make the elephant kneel down. Then I and a man, whom I had brought to assist me with photographic equipment, dismounted and cautiously approached the rhino on foot with the cine camera on its tripod.

When I got within 'shooting' range, I placed the tripod in position and started to film the rhino, which was now slowly coming straight towards me. I sent the man back to the elephant, while I continued to film the oncoming beast at a closer range. As soon as the rhino more than filled the frame of the view-finder, I thought it was time for me to quit. There was no time to take the camera and tripod with me.

As I was nearing the elephant, I turned round to look back. There was the rhino closely examining my camera. I mounted the elephant the usual way by standing on its bent hind legs and climbing up the rope under its tail, and there was the rhino still very interested in my camera. It occurred to me that if it had known anything at all about how to use a cine camera it could easily have obtained a very good shot of a man hurriedly scrambling on to the back of a frightened and trumpeting elephant!

The other occasion was when I was trying to photograph a pair of Pallas's fishing eagles at their nest high up in a *simul*, or Indian silk-cotton tree, in Kaziranga. I had built a *machan* about forty feet up another tree near by, so situated to make the best use of the morning sun from about 8.30 to 9.30 a.m. As there was usually a rhino of rather unpredictable temperament living in that neighbourhood, I had asked for an elephant to take me and my two men out there each morning, and bring us back a couple of hours later.

One morning the elephant did not turn up. I was in a quandary as to what to do. The sun was shining in a cloudless sky, and I could hear the eagles calling to each other with their loud and melodious *kooroo kooroo*. I just could not resist the temptation to risk a journey on foot to the site of the lofty tree with its nest.

'The elephant has not come,' I explained to my two men, 'but I am willing to go there on foot. Are you willing to come with me, or do you want to remain here?'

'Where the *sahib* goes, we will also go,' came the not unexpected reply.

We cautiously walked along the narrow track through the elephant grass, and I remember reflecting on how small and vulnerable we were and how very much higher than usual the fifteen-foot grass was. We reached the *simul* tree safely, and then followed an hour's photography. When the angle of the morning sun made further work impossible, it was time for the return journey through the tall grass.

We had not gone more than a hundred yards when there was a noise near by, and with a panicky 'Rhino coming!' both my men, who were aged about twenty, disappeared down the track, seemingly breaking all Olympic records.

At their age I could have run even faster. But I knew that a rhino can soon catch up with the fastest of humans. However, I also started to try and escape. The track was wet and slippery and much depressed in places by three-toed rhino and large circular elephant footprints.

After about ten yards, I did the best possible thing I could have done. I slipped and fell down, flat on my face, with the rhino very close at hand. I knew that an Indian rhino, unlike a wild elephant, will not continue its attack on a fallen victim, and I quickly rolled sideways off the track into the grass and remained perfectly still.

The rhino thundered past. After about twenty minutes the grass parted and one of the men, who had come back by a long detour, asked if I was all right. We then together went along the track, on to the main road and called to the other man. After a long time he emerged, too frightened to talk. Then, at last, he described how he had eventually thrown himself into a thick clump of grass, and how the rhino had stood over him breathing heavily before going on its way.

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