

The Mating Game

Sex, Love and Courtship in the Zoo

by
JUNE JOHNS

with photographs by
JACK SMITH



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RHINOCEROSSES

After the elephants, the largest land animal of the world is the rhinoceros, the most common species being the African black which weighs approximately 30 cwt and stands about 5 ft high at the shoulder. Equipped with two horns, one in front of the other, measuring up to 4 ft in length, the male rhino is bad-tempered and unpredictable and at maturity develops habits which are, to say the least, unlovely.

To begin with he ejects his urine towards the rear, sometimes to a distance of several feet. In the wild this is his means of demarcating his territory, though he does not usually defend it against trespassers. In zoos unwary visitors are liable to be sprayed unless the quarters are designed in the public interest.

His love life is fraught with danger not only for himself, his bride and his possible offspring, but also for keepers. Until recently few births occurred in captivity, zoologists being so alarmed at the fierce battles which took place before a union can be consummated that they were unwilling to risk losing either one or both of the valuable pair.

The first black rhino to be born in a zoo was at Chicago Zoological Park in October 1941, and the first in Europe at Frankfurt in 1956. Since then several have been born in zoos, and all the courtships have been violent, although less so when the pair live together. In many zoos, however, they inhabit separate enclosures and are brought together only during the monthly oestrus which lasts between twenty-four and

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forty-eight hours. This is signalled by the enlargement of the female's vulva, her decreased appetite and the shrill whistling noises she makes (to which the male responds with deep sighs!).

It is a frightening moment when the communicating door is raised and the 2,000-lb, thick-skinned, short-sighted rhino, capable of charging at 25-35 m.p.h., rushes in to attack his lady love. She is no less belligerent, and all available keepers stand ready to intervene with pressure hoses if the fight should get out of hand. Some rhinos blunt their horns by rubbing them against the walls, for they are not made of ivory but of closely compressed fibres. (One of the reasons that rhinos have been hunted down so assiduously is the belief among many Orientals that the horn, when powdered, is a powerful aphrodisiac.) The rhino's horn is his main armament, but the female too is equally armed and can give as good as she gets.

After an hour or more of continuous battle, the couple will either become more savage, in which case efforts are made to part them before serious injury results, or the female will consider the male a worthy mate. This is not to suggest that she becomes loving; she does, however, begin to parry his lunges and to behave as coquettishly as her grotesque body allows.

The act of copulation is instigated by her, and it appears to be nearly as exhausting as the preliminary skirmish. He mounts her from the rear, his erect penis measuring over two feet in length, and he sometimes experiences considerable difficulty in achieving penetration. Observers have reported that he ejaculates about once every ten minutes, and after an hour or more he has penetrated so deeply that all his four feet are off the ground and the female is staggering under his weight. When he withdraws, often after about an hour and a half, both animals are exhausted.

Some males lose interest in their companion once mating is completed, while others repeat the act a few hours later and even a third time before the oestrus ends. Often the pair become less aggressive towards each other and can share the same enclosure, especially if the female has become pregnant and no longer disturbs him by awakening his passion with each oestrus. When parturition approaches, however, it

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is usual for the female to attack the male and drive him from the enclosure some days before the baby is born.

The gestation period is about sixteen months and the newborn calf is frequently ejected like a cork from a bottle. It weighs about 130 lb. Some females assist in the expulsion of the placenta by walking backwards and stepping on the part which is on the ground. First-time mothers seem a little alarmed, but in successive pregnancies they help the infant to its feet and have it suckling within two hours. Most of them make excellent mothers, and there have been cases where father has joined the group and has become so fond of playing with his calf that he has lost all interest in copulation, even when invited repeatedly by his mate. More often, however, there is great difficulty in reintroducing mother and father after the infant has been weaned. The pair tolerate each other only for the immediate act of sexual intercourse, returning to do battle once they have recovered their strength.

When Chester's rhinos, Susie and Roger, were reunited after the birth of their son, Susie attacked Roger with such force that with her horns under his belly she lifted him aloft. They charged at each other repeatedly and their roars could be heard all over the Zoo.

The attitude of rhinos is mutually belligerent not just during sexual activity. Although they share an enclosure again, each evening, when fresh branches are thrown to them, Susie tries to grab the lot and threatens Roger when he approaches. Despite his superior size and strength, however, he seldom uses brute force to get his share, but pushes her aside and seizes what he wants, attacking her only if she does not give way.

But Chester Zoo had another problem. When the parents were put together again, the two-year-old calf was transferred to a separate enclosure. After some fighting, Susie and Roger began to show sexual interest in each other. Before it could develop, however, their son began bawling, whereupon Susie lost interest in sex and tried to break out to reach her calf. It appears that the son called for her in this fashion only when his father was on the point of mating. Whether this was coincidence or he could identify the different grunts and sighs being emitted by the father, is not known. In the wild the son

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would have been driven off, but this is impossible in a zoo. Even if the enclosure were to be doubled in size it would still not be big enough to contain two mature males.

The nearest a rhino comes to playing is when he wallows. Given a bare patch of land, the first rhino to arrive at the zoo demarcates his territory, then, with horns, hoofs and shoulders, begins to excavate a hollow into which he rolls himself at regular intervals each day. Ideally he should have a bathing-pool, but some zoos rely on frequent hosing down. (The worst are those which provide concrete floors, thus depriving the animal of a basic need.) Successive generations of rhinos use the same wallow holes and in the wild some have been in use for thousands of years.

The white or square-lipped rhino is found in only three small areas of the world, the Sudan, Uganda and Congo, and is in danger of becoming extinct. It has been introduced to game reserves in southern Africa and Kenya and to two, the Hluhluwe and the Umfolozi, in Zululand. These animals are not really white at all, but lighter than the black variety. Since 1950 a few pairs have been sent to selected zoos in different parts of the world in the hope that they will breed and save the species from extinction. The first to be born in captivity was a male whose mother was received at the National Zoological Gardens in Pretoria some years ago. The calf was born in October 1969 in a five-acre enclosure at the Zoo.

A pair came to Chester in 1962 at a cost of £3,000 each, and here proved to be far less troublesome than the African blacks. All keepers are warned that they must never enter an enclosure containing a rhino. It is virtually impossible to predict either their temper or their movements, and no matter how quiet and docile a rhino may appear, both male and female are liable to charge without warning. The white pair at Chester, however, have never been known to lose their temper and they have even tried to fraternize with their neighbours, the blacks.

Zoos that have separated their white pairs at the onset of preliminary mating battles are now finding immense difficulty in reintroducing them, while those pairs which have stayed together from infancy do not seem to be sexually interested in each other. So far no one has come up with a satisfactory solution, and as the male has a rut not always coinciding

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with that of the female, a zoo may need to keep several females for one male to increase the chance of their coming on heat at the same time.

HIPPOTAMI

Since the hippopotamus disappeared from the face of Europe in the Great Ice Age half a million years ago, it has had a long career in captivity. As far back as 29 B.C. the Roman Emperor Augustus kept the first living specimen to be imported into Europe.

In the wild forty to fifty females and young often live in a group, while the males keep to themselves except when wooing and mating. They are better equipped for life in water than on land: their nostrils have valves, and both eyes and nostrils are raised above the level of the face to act as periscopes. They can remain under water for about four minutes, but they often frequent rivers and lakes about three feet in depth so that they can walk along the bottom, their nostrils just above the surface of the water. Although they weigh between two and four tons, they are extremely agile, and when they come ashore at night to browse on low-growing foliage they have been known to climb steep banks 100 ft or more in height. On land each animal has a very small narrow territory which he marks out with urine and faeces as if with a spray-gun, whirling his tail like a propeller and scattering the dung in all directions.

When the hippo has been out of the water for some time he appears to be sweating blood. Actually it is just sweat, but it is dark and oily. Although they are supposed to be protected in their natural habitats, hippos are often shot for food, and their inch-thick skin is so hard when tanned that it commands a high price, being used for polishing diamonds. Human dentures used to be made from hippo teeth because they do not go yellow with age to the same extent as elephant ivory.

In captivity hippos are obliging exhibits; they have been known to live well over forty years and regularly produce young. The male has a backward-pointing penis, but it does not seem to hamper his sexual activities. These are often mistaken for high-spirited play, usually taking place in the water where he mounts the female from the rear.

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The female has a monthly oestrus and the gestation period is eight months. As her time approaches, the female tries to drive the male out of her enclosure. If she is unsuccessful—and there may not be a separate pen for him—the offspring are in danger. The male is sometimes blamed, but observation has shown that the offspring are usually killed accidentally by the mother in her frantic efforts to evict her mate—if she has not managed to do so before parturition.

The mother gives birth in the water. If no pool is available she will do so on land, but she is much happier if she can follow her instincts and remain in the water. The calf, weighing about 90 lb, is propelled to the bottom as it is ejected into the world. It rises to the surface immediately, only to be pushed under again by its mother. It then suckles under the water, while its mother lies on her side on the bottom of the pool. Both rise frequently for air.

Within a week the female is sexually receptive again, but although she and her mate copulate, conception does not often take place very soon, perhaps being inhibited by lactation. The father is usually gentle and, if permitted by his mate to see it, playful with the calf. Even where the female forbids him—and she may attack him—he does not retaliate, but retreats as far as he can.

One point which has to be remembered by keepers is that a normally friendly and comparatively tame female hippo becomes savage when she has young. Hippos tend to have a quirky family life; one male in Moscow bit the head off his newly born calf, while the son of the resident pair in Belle Vue, Manchester, celebrated his sixth birthday by goring his mother to death as she fed.

The hippos' huge, constantly growing canine and incisor teeth are social weapons used for fighting between rivals, who will try to drive their eye tooth into their opponents' flanks. In the wild they have traditional fighting grounds on which are found fragments of the teeth that have been broken in battle.

Hippos seem to accept captivity quite happily and, unlike the rhino, they do give warning when their temper is beginning to rise. It is man's fault if the danger sign—the wide-open mouth exposing all the teeth—is mistaken for a yawn. In some zoos hippos have adapted their danger signal as a

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means of begging, but the basic instinct that impels a hippo to extend its jaws before it attacks is older and more firmly entrenched, and people who value their hands would do well not to make the mistake of believing that the animal is merely sleepy.

PIGMY HIPPOS

Pigmy Hippos are a comparatively recent discovery. They are less aquatic than their relatives, and much smaller. They measure 2 ft 6 in. at the shoulder, 6 ft in body length and weigh about 400 lb. Early explorers described them as sweet-tempered, but this has not been borne out by records, and recent experience has shown them to be irascible, even savage. In the wild they lead solitary lives in swampy forests, and in zoos they are even less to be trusted than standard hippos.

Chester's pair, Phyllis and Maxie, have spent several years together, copulating at each oestrus but producing no offspring. In 1968 two females were sent by Whipsnade Zoo to be mated by Maxie, since Phyllis appeared to be infertile. She resented their presence, however, and immediately they arrived attacked both of them and Maxie with such force that she had to be removed. When the visitors had recovered from the onslaught, they obligingly accepted Maxie's love-making, but, alas, neither became pregnant and eventually they were sent back to Whipsnade. The following year (1969) a third female was loaned and it was decided that, if she remained childless, it would suggest that Maxie was at fault. Unlike Phyllis, who was born in Washington, Maxie was caught wild in Liberia and should have a strong blood-line. (Since in-breeding inevitably occurs in zoos, wild-caught animals are thought to be more virile.)

Some zoos advocate the use of hormones or wheat germ oil to stimulate fertility, but there is always a risk of upsetting the animal's metabolism. On occasions some zoos have resorted to artificial insemination, but as this means the use of heavy sedation for either one or both of the participants, it is regarded as a grave risk to the animal's health.

One or two zoos have managed to breed pigmy hippos regularly by housing the prospective couple in separate enclosures and bringing them together in a mating pen when

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the female is in oestrus. If they do not mate, or mate but remain infertile, they are returned to their own quarters, and the next time the female is on heat—usually at monthly intervals—she is introduced to a different male. The successful results suggest that females are particular about whom they allow to sire their young; or it could be that the rather odd-shaped penis of the male pigmy hippo depends for success on a matching-shaped female.

TAPIRS

According to legend, the tapir was made by God from odds and ends left over when He had finished creating everything else. There are four species, the Malayan tapir (black with a white saddle) and three dark-brown South American varieties. All stand about 3 ft high, are 6 ft long and weigh about 400 lb. The infants are born after thirteen months' gestation, with white dots and dashes over their bodies and legs. This colouring fades and finally disappears when the young are half-grown.

The tapir spends most of his time in the water and the South American one has developed a clever way of shaking off its chief enemy, the jaguar. When the attacker springs on to the tapir's back, usually from an overhanging bough, it tries to get a grip with its claws on the slippery leathery hide. The torpedo-shaped tapir sets off at speed for the nearest dense thicket through which it charges, trying to scrape the predator from its back, and thence into the deepest water it can find.

Zoos which try to keep tapirs without providing a pool for them have great difficulty in keeping them healthy, for they will not willingly defecate except in water, and as a result they develop chronic constipation and even prolapse of the rectum. Given adequate water, however, they will live happily in a group, producing their young without having to be isolated.

Line dominance appears to play some part in the tapir's way of life, for if a member of the group is so inferior as to be persecuted by the others without having the courage to stand up for itself, its life will be made wretched. The inadequacy of such an individual seems insuperable, for when it is re-

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moved, as one was from Chester, and sent to another zoo, the new group of tapirs will treat it in exactly the same way. The only answer is to exhibit the outcast alone where no other can dominate it.

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Cats That Walk Alone

Never is love-making more dangerous than when practised by the thirty-six species of cats. If the mates ever feel affection for each other they seldom show it, and, as many zoos have found to their cost, what starts out as a prelude to love often ends up in a bloody battle, if not in murder.

TIGERS

Tigers are among the least inhibited of cats, and in captivity their copulation is frequent and ferocious. In the wild each animal has its own territory and they come together only during mating, but in zoos that have a large enough paddock the male and the female are sometimes kept together. This is because, once a pair has gained mutual confidence, they rarely kill each other. But if one were to be moved, even if only for a few weeks, it is quite likely that they would fight to the death once they were reunited.

If the pair have not been brought up together they are introduced by having cages side by side. Some zoologists believe they are ready to accept each other when they touch whiskers in a kiss through adjoining bars or netting. If the female is in oestrus at the time—and her restless behaviour and swollen genitals are the sign—there is more chance of the male being friendly. It has happened that at the first meeting one has sunk its teeth into the other's jugular vein while keepers have been helpless to save the victim. If there is no immediate attack, the female may become kittenish and roll