

Walker S. 1986. Cheetahs, now and then. Zoo's Print:18-21.

Keywords: *Acinonyx jubatus*/cheetah/captive breeding/zoo

Abstract: 15 years ago, only two zoos in the world had been successful in breeding this exotic cat. Even today captive cheetah births are cause for excitement although a number of zoos have now bred them.

# Cheetahs, Now and Then

By Sally Walker

*When Mr. C. D. Krishne Gowda wrote his article (P.17) on rehabilitating cheetahs fifteen years ago, only two zoos in the world had been successful in breeding this exotic cat.*

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## Captive Cheetah Breeding

According to the 1984 edition of the International Species Inventory System Abstract (which covers all US, Canadian and some European zoos) i.e. June and December, a total of 38 member zoos were holding 192 cheetahs. Six zoos had a total of 32 births in the last 12 months. Of these now nearly 200 cheetahs, about 85%, were born in captivity.

As a matter of comparison it is interesting to note that 75 zoos exhibit a total of 309 Snow Leopards with 14 zoos breeding and producing 31 offspring last year. Now, eighty-six% of the Snow Leopards are captive-born. Two hundred and twenty nine Western zoos exhibit 1045 Siberian Tigers of which 97% are captive born, but less than 50 zoos are holding only 111 of our famous Bengal tiger with 98% captive born and 0% taken from the wild. The Bengal Tiger has become so commonplace in the West that zoos have stopped breeding them. Breeding in fact is now carefully controlled in both subspecies.

Yet there is grave concern over the difficulties of breeding cheetahs in captivity. Of all the wild cheetas brought into captivity in the last 15 years, only 10-15% have reproduced. If we do not want to continue taking wild cheetahs (and indeed it has become a "cannot" more than a "don't want") this is bad news for maintaining genetic diversity in the world's captive breeding population. Again for comparison, the Species Survival Group for Snow Leopard has determined that zoos need to keep an ideal number of 300 Snow Leopards to maintain genetic diversity in captivity, but no

more—to prevent over-loading captive breeding facilities. (If a zoo joins a Species Group it agrees not only to loan or exchange its animals according to the comprehensive breeding plan worked out by the Committee but also to stop breeding more animals when it is felt that the optimum number has been attained for captivity.) We do not know if an ideal number of cheetas has been fixed yet, but since there are deficiencies and complications in the genetics of cheetahs even in the wild state it may be more numbers are required in captivity than for other species.

In fact, it is said now that genetic variations even in wild cheetahs is very low. According to preliminary results of a study of US captive cheetahs and African wild cheetahs by researchers from the American Cancer Institute it seems that cheetahs have not reproduced well in captivity because their genes were not sufficiently diverse. Scientists feel this may explain why of all the thousands of cheetahs taken for hunting and kept in such luxury by their royal owners, there is not one instance of captive breeding. Lack of genetic variation also could account for a failure in their bodies to accept surgically implanted skin grafts and their proneness to viral infection. (New York Times News Service).



*A young cheetah cub born in San Diego  
Wild Animal Park*



*Cheetah in San Diego Wild Animal Park*

Therefore a number of zoos have been doing high-tech research into the ways and means of enhancing the reproductive potential of the cheetahs.

The San Diego Wild Animal Park research team for example has been successful in treating previously infertile female cheetahs with hormones implanted under the skin in a portable pulsating pump. Myrie, an infertile female was treated with gonadotropin in January 1984 and delivered two cubs in June 1984.

Another project, also at San Diego Wild Animal Park has undertaken the study of cheetah semen for potential fertility. It has been discovered for example that semen collected from wild and captive males using tranquilization and electroejaculation technology, shows a low sperm count and a high incidence of abnormal sperm which would make conception difficult even if the animals mate.

An interesting individual in the research effort is a three-year old hand-reared male cheetah named Pesach whose keepers have taught him to ejaculate in to a hand-held bottle on command.

Semen collection is normally a stressful business requiring tranquilization and electroejaculation. By obtaining regular semen samples in this nontraumatic "non-invasive" fashion researchers can establish normal semen parameters for cheetahs-i.e. uniformity of ejaculate from one male to compare with others and perhaps establish an optimal breeding season. So far it has been shown that Pesach's sexual potential has not been adversely affected by captivity as his semen compares favorably with that of wild cheetahs.

Another research area in which Pesach's unique training will help is in cypopreserving, or sperm freezing for later artificial insemination. A relatively new technique for carnivores, artificial insemination with frozen semen will be the only means of preserving genetic diversity among captive cheetahs. Already there is a relatively small group of cheetahs which have bred in captivity.

Research in this new field has been hampered by the difficulty of obtaining a sufficient quantity of fresh semen for comparing different freezing methods. Pesach, and his keepers are in a position to rectify this difficulty.

In India we take a particular interest in these new developments because there is a possibility of reintroducing cheetahs back to Indian forests. The ultimate success of this venture may depend on obtaining required number of cheetahs through such high technology reproductive techniques.

### **The Cheetah in Captivity**

Of course the first and most well-known instances of captive cheetahs were the pets of Moguls and Maharajas. But the more contemporary history of zoo cheetahs begins in 1829 when a cheetah was kept in London Zoo. The Central Park Zoo, New York exhibited a cheetah in 1871. The early part of this century there were a number of cheetahs in various zoos but they did not live long and did not become a real attraction in zoos until after 1945.

Before 1960 most cheetahs came from East Africa. As a result of a sharp drop in the wild population in that area however, since 1960 they have been taken from Southwest Africa.

The first captive birth on record was in the Philadelphia Zoo in 1956 but the cubs didn't survive. Cubs born in Krefeld Zoo, W. Germany were successfully hand-raised in 1960. In 1966 two cheetah mothers in a private collection reared their own cubs. In 1970 San Diego Wild Animal Park started a proper breeding programme and by 1976 had bred and birthed 7 litters with a total of 31 cubs. After a dry period at SDWAP of 6 years with no births there has been another spurt of births since 1982 as a result of high tech reproductive techniques. The Winston Wildlife Safari in U.S.A. has the most cheetahs of any facility with 23 adults and 11 births in the last 12 months.

Ironically, India which was once a major habitat of wild cheetahs and a major holder of captive cheetahs has never bred the cheetah in captivity\* and Indian zoos have had problems even keeping them alive for very long.

Aside from the Maharajas collections an exceptional longevity record for a captive cheetah in India is 15 or 16 years in Mysore Zoo. The average is months or a couple of years.

That Mysore Zoo cheetah, in fact, may have been the last ever Indian cheetah. Then Curator of Mysore Zoo, Shree M. V. Anantharamaiah maintains that in the early 50's an Indian cheetah was gifted to the Mysore Zoo by the Mysore Maharaja's brother-in-law, the Maharaja of Bharatpur. Mr. Anantharamaiah is unshakable in

his conviction that the cheetah was an Indian cheetah in the face of numerous queries and repeated interrogation.

Efforts to locate the taxidermy model of this particular cheetah which died in the mid 60's have been unsuccessful. If it could be located and the skull examined, structural differences may indicate answers to taxonomic questions about Asian vs African cheetahs.

(Incidentally, efforts to locate the skull of any bonafide Indian cheetah have been in vain to date. Should anyone know of one he should contact Dr. M. K. Ranjitsingh, Director (WL), Krishi Bhavan, New Delhi.)

Several Indian zoos have exhibited cheetahs in the last decade including Kanpur, Hyderabad, Trivandrum and Mysore. For some years there were single cheetahs in 4 Indian zoos with no zoo prepared to send their cat to another zoo on breeding loan.

Finally Kanpur Zoo sent their female to Mysore to join Mysore's single male. Fed exclusively on buffalo meat the Kanpur female was suffering from a severe chronic skin infection and was not sturdy. A new diet of chicken, milk, and mutton liver worked wonders in a short time but the female expired of unknown causes in an accident just as she was regaining condition.

Recently the Metro-Toronto Zoo sent Mysore Zoo two cheetahs, a male and a female. These cheetahs had not bred at Toronto but it is hoped



*The Maharaja of Bharatpur gave a Cheetah to the Mysore Zoo The Maharaja of Mysore Marshall Tito and curator M. V. Anantharamaiah also pictured, The Cheetah lived 16 years in Mysore Zoo.*

\*Wrong See P. 26

that the change in environment may help. There is good reason for hope as San Diego Wild Animal Park reports that "novel conditions, such as providing new mates or new enclosures, will often stimulate breeding interest" (p.8 ZOONOOZ).

Mysore Zoo's enclosure is large (4 acres) and there is 2 : 1 male/female ratio both of which are often suggested as being necessary for breeding. Breeding theories are contradictory, however, with others emphasizing the need for pairing unfamiliar individuals, housing them far away from other African carnivores and limited contact with human beings.

Still others say a diet consisting of whole animals including fur and hooves as well as flesh and bone is all-important. Another theory is that fertility is limited to two months in summer and winter season.

Whatever the true theory Mysore Zoo with the only breeding group and the longest longevity record stands the best chance of breeding them in India at this time.

But we must ask ourselves why Indian zoos in general have such a poor record of keeping a native animal and what can be done to rectify the situation.

### The Big Picture

Scientists have been taking a hard look at the World Conservation Scene, or "the big picture" with a view to insuring the preservation not of each and every subspecies but at least of the major taxa which are most representative of their genus and most feasible to keep and breed on a sustained basis. Preliminary studies indicate that the world's present holding facilities are inadequate for maintaining more than about 2000 taxa of 250 individuals each. Obviously that means preserving all seven sub-species of tiger at the cost of saving another species would not be sensible or scientific. Also that investing space and financial resources in attempting to maintain and breed the blue whale in captivity would be a pointless and silly exercise.

The singular fact that emerges from a rather bleak picture of disappearing habitat (*in situ* facilities) and limited zoo space (*ex situ* facilities) is that if we want to make even a token gesture at preserving a respectable variety of taxa, we have to co-operate on a world-wide basis much more than we are doing now.

West and East, North and South have to transcend cultural and personal bias. Ego, professional competition, self-serving both at personal and national levels if continued at its present concentration will ensure failure as surely as a strong poison ensures death. We all have to become better people if we are to save our other terrestrial vertebrates.

India cannot hope to rehabilitate the cheetah without lots of help. It will not be sane or sufficient to release two or three in an "ideal" habitat and expect a few dozen in a few years. Zoos must learn simultaneously to breed them, as genetic booster stock. Given the variables the difficulties and the international genetic deficiency this has to be coordinated with all the cheetah breeders all over the world. Training in keeping and breeding cheetahs should be undertaken in collaboration with people who have done it successfully, and not just talked about it or written about it. The people whose hands are actually on the wheel, i. e. middle-level supervisors and keepers should be sent for training rather than officers who sit within the four walls and never dirty their hands in an enclosure. If we do not want to send illiterate keepers abroad we have then to hire educated keepers.

Success in these and other wildlife projects require a hard look at realities. It took half a century for western zoos to bring their cheetah breeding up to even a respectable standard. It should not take so long for us if we are not too proud to ask for help.

