

Excursion to - Alipore Zoo

Organized by- Department of Zoology

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Group photo at Alipore Zoological Garden

ZOOLOGICAL GARDEN, ALIPORE



INTRODUCTION:

The **Zoological Garden, Alipore**, also called the Alipore Zoo or Calcutta Zoo, is India's oldest formally stated **Zoological Park** (as opposed to royal and British menageries) and a big tourist attraction in Kolkata, West Bengal. It has been open as zoo since 1876, and covers 18.81 ha (46.5 acres). It is probably best known as the home of the now expired **Aldabra giant tortoise, Adwaita**, who was reputed to have been over 250 years old when he died in 2006. It is also home to one of the few **captive breeding** projects involving the **Manipur brow-antlered deer**. One of the most popular tourist attractions in Kolkata, it draws huge crowds during the

winter season, especially during December and January. The highest attendance till date was on January 1, 2018 with 110,000 visitors.

- **Location:** No. 2 Alipore Road, Alipore, Kolkata-27, West Bengal, India
- **Coordinates:** 22.535913⁰N; 88. 332053⁰E
- **Land area:** 18.81 ha (46.5 acres)
- **No. of animals:** 1266
- **No. of species:** 108

MAP OF ALIPORE ZOOLOGICAL GARDEN



HISTORY OF ALIPORE ZOOLOGICAL GARDEN

Since establishment of the Zoological Garden, Alipore on 24th September, 1875, zoo has passed through several phases. Initially the citizens of Kolkata at that time came forward with

generosity in the process of establishing the zoo with financial help and they also donated animals from their collections to the zoo.

Then land development started and some animal house were constructed to house animals."Mullick House" is the first animal house constructed within the zoo financial help of Raja Rajendra Mullick Bahadur, the first Indian donor.The park was initially run by an honorary managing committee which included Schwendler and the famous botanist George King.

LIST OF SOME CAPTIVE MAMMALS IN ALIPORE ZOO

Sl. No.	Common name	Scientific name	Habitat	habit	reproduction	IUCN category
1	Indian One Horned Rhinoceros	<i>Rhinoceros unicornis</i>	Assam, West Bengal, Uttar Pradesh and Nepal	herbivorous	Produces single calf after a gestation period of 474-488 days	Endangered (protected by the Wild Life Protection Act 1972)
2	Brow-antlered Deer	<i>Cervus eldii eldii</i>	Manipur	herbivorous	Usually after a gestation period of 8 months	Endangered (protected by the Wild Life Protection Act 1972)
3	Indian Lion	<i>Panthera leo persica</i>	Gir Forest , District of Gujarat	carnivorous	Gives birth 2-4 cubs after a gestation period of 103-105 days	Endangered (protected by the Wild Life Protection Act 1972)
4	Bengal Tiger	<i>Panthera tigris tigris</i>	Western region, Nepal, Bangladesh & Myanmar	carnivorous	gestation period of 103-108 days usually gives birth 2-3 cubs	Endangered (protected by the Wild Life Protection Act 1972)

5	Sloth bear	<i>Melursus ursinus</i>	India, Sri- lanka	leads solitary life, good climber	Usually gives birth 1-3 young after a gestation period of 7-8 month	Endangered (protected by the Wild Life Protection Act 1972)
6	Common marmoset	<i>Callithrix jacchus</i>	South America, Central America	herbivorous	Gestation period of 144 days & give birth 1-2 baby.	Threatened (protected by the Wild Life Protection Act 1972)
7	Giraffe	<i>Giraffa camelopardalis</i>	Africa Sudan, Somaliland to South America.	herbivorous	Gestation period of 455- 488 days & give birth 1 calf.	Vulnerable (protected by the Wild Life Protection Act 1972)
8	Jungle Cat	<i>Felis chaus</i>	India (except high Himalayas)	Carnivorous	Gestation period of 65 days & give birth 3-5 kittens.	Least Concern (protected by the Wild Life Protection Act 1972)
9	Chimpanze e	<i>Pan troglodytes</i>	Guinea, Uganda, Tanzaniya.	herbivorous	Gestation period of 202- 260 days & give birth 1-2 baby.	Least Concern (protected by the Wild Life Protection Act 1972)

Indian One horned rhinoceros

- **COMMON NAME** :Indian one horned rhinoceros
- **SCIENTIFIC NAME**:*Rhinoceros unicornis*
- **DISTRIBUTION**: Found in Assam, West Bengal, and Nepal etc.
- **IUCN CATEGORY** : Endangered (protected by the wild life protection Act 1992)

CHARACTERISTIC FEATURES:

- **SIZE**:The body sizes of the rhinoceros are 3.7 –3.8m (male) and 3.1-3.4m (female) in length.
- **WEIGHT**:The weight of animal is 2200 kg (male) and 1600 kg (female).
- **HABIT**:Herbivores in nature.
- **LIFESPAN**:The lifespan of animal is average 40 years.
- **FOOD**:Rhinoceros are herbivores. So, they feed grasses, leaves, branches of shrubs, trees etc.
- **REPRODUCTION**:produces single calf after a gestation period of 474 – 488 days.



Brow-Antlered Deer

- **COMMON NAME** : **Brow-Antlered Deer**
- **SCIENTIFIC NAME** :*Cervus eldii eldii*
- **DISTRIBUTION** :Found at southern part of loktak in Manipur etc.
- **IUCN CATEGORY** :Endangered (protected by the wild life protection Act 1992)

CHARACTERISTIC FEATURES:

- **SIZE:**The body size of animals are 95-115 cm in length.
- **WEIGHT:**The body weight of animal is 90-140 kg (male) and 70-12kg (female).
- **Habit:**Herbivores in nature.
- **LIFESPAN:**The lifespan of animal is average 12-15 years.
- **FOOD:**Feeds on grasses, leaves, branches of shrubs and floating vegetation etc.
- **REPRODUCTION:**usually after a gestation period of 8 months.



Indian Lion

- **COMMON NAME :** Indian lion
- **SCIENTIFIC NAME :***Panthera leo persica*
- **DISTRIBUTION :**Found in Gir forest, district of Gujarat in India etc.
- **IUCN CATEGORY :**Endangered (protected by the wild life protection Act 1992)

CHARACTERISTIC FEATURES:

- **SIZE:**The body size of animals are 2.82-2.87m (111-113 inch) in length.
- **WEIGHT:**The body weight of animal is 160-190 kg (male) and 110-120 kg (female).
- **Habit:**Carnivores in nature.
- **LIFESPAN:**The lifespan of animal is average 17-18 years (female) and around 16 years (male).
- **FOOD:**Lions prefers large prey species within a weight of 190-550 kg. They most commonly feeds chital, sambar, nilgai, cattle buffalo etc.
- **REPRODUCTION:**Usually gives birth 2-4 cubs after a gestation period of 103 – 105 days.



Bengal Tiger (Our National Animal)

- **COMMON NAME** :Bengal Tiger
- **SCIENTIFIC NAME** :*Cervus eldii eldii*
- **DISTRIBUTION** :Found at southern part of loktak in Manipur etc.
- **IUCN CATEGORY** :Endangered (protected by the wild life protection Act1992)

CHARACTERISTIC FEATURES:

- **SIZE:**The body size of animals are 270-310 cm (male) including tail and 240-265 cm (female) including tail in length.
- **WEIGHT:**The body weight of animal is up to 325 km (717 lb).
- **HABIT:**Carnivores in nature.
- **LIFESPAN:**The lifespan of animal is average 8 – 10 years.
- **FOOD:**It prefers to hunting large ungulates such as chital, sambar, gaur and mammals also.
- **REPRODUCTION:**Gestation period of 103-108 days usually gives birth 2-3 cubs.

Sloth bear

- **COMMON NAME** : Sloth bear
- **SCIENTIFIC NAME** :*Melursus ursinus*



- **DISTRIBUTION** :Found in India Sri Lanka etc.
- **IUCN CATEGORY** :Endangered (protected by the wild life protection Act 1992)

CHARACTERISTIC FEATURES:

- **SIZE:**The body size of animals are 1.4-1.9 m in length and shoulder height is 2-3 ft.
- **WEIGHT:**The body weight of animal is upto 192 kg (male) and upto 124 kg (female).
- **Habit:**Herbivores in nature.

- **LIFESPAN:**The lifespan of animal is maximum 12-15 years and their average lifespan is 20 years.
- **FOOD:** They feeds on mowha trees, mangoes, sugar cane, jack fruit etc and also feeds different leaves and branches.
- **REPRODUCTION:**Usually gives birth 1-3 young after a gestation period of 7-8 month.

SOME CAPTIVE BIRDS IN

ALIPORE ZOO

Sl. No.	Common name	Scientific name	Habitat	habit	reproduction	IUCN category
1	Great Indian Hornbill	<i>Buceros bicornis</i>	Found in India, South-Western China, Bangladesh, Western Thailand, Laos, Cambodia, Malaysia and Sumatra.	Feeds on fruits, fish, reptiles, termite etc. They have a strong preference for figs but also eats snakes and lizards.	Lays 1-3 eggs.	VULNERABLE (According to IUCN Red list)
2	Adjutant stork	<i>Leptoptilos javanicus</i>	Northeastern India, Bangladesh, Pakistan etc.			ENDANGERED (According to IUCN Red list)
3	Golden Pheasant	<i>Chrysolophus pictus</i>	Founds in the	Feeds on leaves and buds of small shrubs.	Lays 6-12 eggs; incubation period 22 days.	LEAST CONCERN (According to IUCN Red list)
4	Lutino rosella	<i>Platycercus sp.</i>	Australia and nearby islands	They eat mostly fruits & seeds	They lay several eggs at a time	LEAST CONCERN (According to IUCN Red list)
5	Cockatiel	<i>Nymphicus hollandicus</i>	Found in Australia	Eats seeds, cereals, grains, fruits, nuts etc.	Lays 4-5 eggs at a time; incubation period 18-22	LEAST CONCERN (According to IUCN Red list)

					days	
6	Peafowl	<i>Pavo cristatus</i>	Found in India, Bangladesh, Sri Lanka	Feeds on grain, vegetable, insects, lizard.	Lays 3-5 eggs at a time; incubation period 28 days	THREATENED (According to IUCN Red list)
7	Bare eyed cockatoo	<i>Cacatua sanguinea</i>	Found in Australia.	Feeds on fruits, seeds, nuts etc.	Lays 2 eggs at a time; incubation period 23-26 days	LEAST CONCERN (According to IUCN Red list)
8	Yellow & Blue Macaw	<i>Ara ararauna</i>	Found in South America, Tobago & Trinidad.	Feeds on fruits, Nuts and seeds.	Lays 2-3 eggs at a time; incubation period 28 days.	LEAST CONCERN (According to IUCN Red list)

A VISIT TO REPTILE HOUSE OF ALIPORE ZOOLOGICAL GARDEN, KOLKATA





SOME INFORMATION REGARDING REPTILE FAUNAS

LIST OF SOME REPTILES IN ALIPORE ZOO

Sl. No.	Common name	Scientific name	Habitat	Habit	Reproduction	IUCN category
1	Marsh Crocodile	<i>Crocodylus palustris</i>	India, Sri Lanka, Myanmar	Good swimmer, carnivorous	40 eggs: incubation period 60-90 days	Endangered (protected by the Wild Life Protection Act 1972)
2	Russells' Viper	<i>Vipera russelli</i>	India, China, Taiwan	Venomous, basically nocturnal in habit. Feed on rodents, birds, lizards etc.	30-40 young are born	LEAST CONCERN (According to IUCN Red list)
3	Monocellate Cobra	<i>Naja kaouthia</i>	India, Bangladesh, Nepal, Bhutan, Myanmar etc.	Venomous snake, feeds on frogs, toads, mice, small birds, fish etc.	Lay 10-15 eggs which hatch in 60-70 days.	LEAST CONCERN (According to IUCN Red list)
4	Gharial	<i>Gavialis gangeticus</i>	Found in inland water of India	Feeds on fish	Lays 10-90 eggs; incubation	Endangered (protected by the Wild

					period 72-90 days	Life Protection Act 1972)
5	Aldabra Giant Tortoise	<i>Aldabrachelys gigantea</i>	Found in Aldabra island in Indian Ocean	Herbivorous	Females lay between 9-25 eggs. Incubation period is about 8 months	Vulnerable (According to IUCN Red list)
6	Water Monitor	<i>Varanus salvator</i>	Found in West Bengal, Odisha, Assam	Carnivorous	Females lay eggs between 25-30 .	LEAST CONCERN (According to IUCN Red list)
7	Indian Starred Tortoise	<i>Geochelone elegans</i>	Found in central and southern India, Sri-Lanka.	Herbivorous	Lays eggs 3-7.	Vulnerable (According to IUCN Red list)
8	Indian Rock Python	<i>Python molurus</i>	Found in Nepal, India, Bhutan.	Carnivorous	Lays upto 100 eggs. Incubation period 60-80 days.	Near Threatened (According to IUCN Red list)
9	Tokay Gecko	<i>Gekko gekko</i>	India, Bhutan, Nepal , Indonesia.	Insectivorous	Female lay 1-2 eggs. Incubation period 60 days.	Threatened (According to IUCN Red list)

Ex- Situ Conservation

Introduction:

- Biodiversity encompass variety and variability of all forms of life on Earth that play a great role in human existence. It's conservation embraces maintenance, sustainable utilization and restoration of the lost and degraded biodiversity through two basic and complementary strategies called *In- situ* conservation and *Ex- situ* conservation.
- *Ex- situ* conservation is the technique of conservation of all levels of biological diversity outside their natural habitats through different techniques like zoo, captive breeding, aquarium, botanical garden and gene bank.
- *Ex- situ* conservation method plays a key role in communicating the issue, raising awareness, and gaining widespread public support for conservation action and for breeding endangered species in captivity for reintroduction.
- The *ex-situ* conservation concept was developed earlier before it's official adoption under the Convention of Biological Diversity signed in 1992 in Rio de Janeiro. In

genera *ex-situ* conservation is applied as an additional measure to supplement *in-situ* conservation that means *ex-situ* conservation and *in-situ* conservation is interlinked.

Role of Zoological Garden In Ex-Situ Conservation:

- Zoos or Zoological Garden or Zoological Parks in which animals are confined within enclosure or semi-natural and open areas displayed to the public and in which they may also bred. They are considered by universal thinkers and environmentalist as important means of conserving biodiversity.
- Not only zoos act as institution, museums, research laboratory and information banks of rare animal behavior. As it attracts many visitors each year, it also has an economic value.
- Zoos bred many endangered species to increase their numbers. Such captive breeding in zoos has helped to save several species from extinction. Management of animals in zoos includes animal identification, housing, health, nutrition as well as addressing and way of interaction with the public.
- As many visitors visit zoos every year, their education and marketing services play a key role in communicating the issue, raising awareness, changing behavior, and gaining widespread public support for conservation.
- Zoos support conservation by educating the public, raising money for conservation programs, developing technology that can be used to track wild populations, conducting scientific research, advancing veterinary medicine, and developing animal handle techniques.
- By studying animals in captivity and applying that knowledge to their husbandry, zoos can provide valuable and practical information that may be difficult or impossible to gather from the wild.
- Not only zoo plays a valuable conservation work by breeding endangered species and returning them to the wild but also can be used for business that makes money, this means that animals are often bred for commercial purpose.
- So, it can be said that zoo garden has a great effect not only in conservation but also in our economy.

CAPTIVE BREEDING

Captive breeding is an integral part of the overall conservation action plan for a species that helps to prevent extinction of species, subspecies, or population. It is an intensive

management practice for threatened individuals, populations, and species by anthropogenic and natural factors. In small and fragmented populations, even if the human caused threats could be magically reversed, the species would still have a high probability of extinction by random demographic and genetic events, environmental variations, and catastrophes. Thus, under sufficient knowledge on the biology and husbandry of the species, captive breeding helps individuals in the relative safety of captivity, under expert care and sound management by providing an insurance against extinction. Stock for reintroduction or reinforcement efforts, opportunities for education, raising of awareness, scientific and husbandry research, and other contributions to conservation are also possible through captive breeding.

Purpose :

Captive breeding is generally carried out for one of these main purposes:

1. To produce animals for commercial purposes (pets, food, fibre, medicine, and other human uses).
2. To produce animals for zoos, aquaria, research institutions, and other public facilities.
3. To increase captive population numbers of threatened or endangered species. In some cases, these individuals are part of a management programme aimed at eventually reintroducing captive-bred animals into wild habitats and populations. In other cases, captive facilities claim to be breeding animals for such purposes -but the animals may not be suitable - or they are not part of a legitimate conservation and management programme.

Advantages of Captive Breeding:

- To increase a wild population that is decreasing due to a range of factors.
- The zoos are able to recreate the natural habitat of the captured animals.
- The enclosures are able to protect animals from any predators.
- Zoos are able to protect endangered species of animals and also have breeding programs to enrich the populations of animal species.
- Zoos can cross breed animals and also increase the gene pool of an animal species by breeding animals from different zoos in different parts of the world.
- The captivity of animals means that we are able to see animals that we wouldn't get the chance to see normally.
- We are able to learn more about animals that aren't indigenous to where people live.
- Zoos are also able to take in animals that would otherwise be killed or remove animals from situations such as animal cruelty.

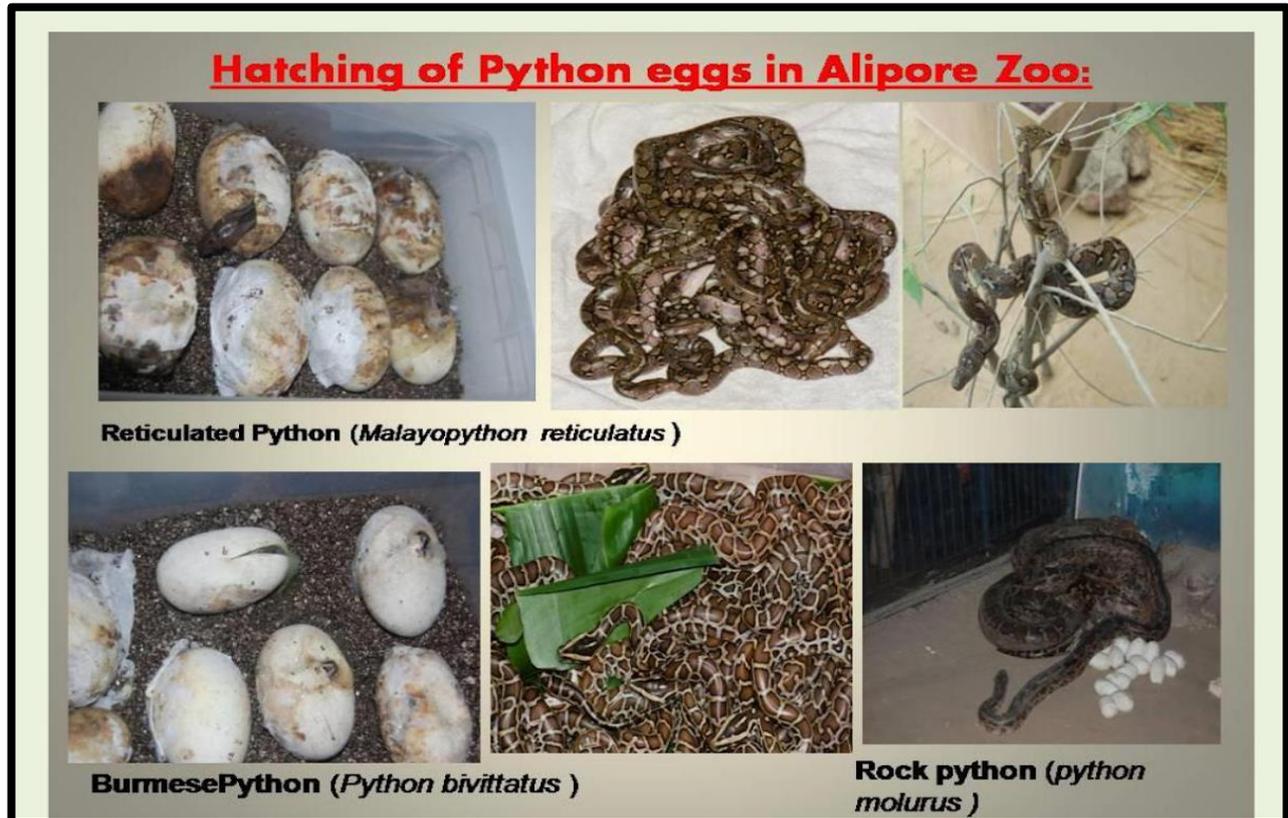
Disadvantages of Captive Breeding:

- Sometimes animals can be kept in a restrictive environment such as small cages.
- In some parts of the world animals can be forced to perform for visitors and can be very badly treated.
- There are arguments against bringing animals out of their natural habitats.
- When animals are removed out of their natural habitats the environmental conditions could vary in a zoo.

- The animals aren't free to do as they like in a zoo like there are in the wild.

CAPTIVE BREEDING IN ALIPORE ZOO, KOLKATA

2017



Captive breeding of pythons:

Three pythons in Kolkata's Alipore Zoo gave birth to 56 snakelings, thanks to the efforts of a team of skilled snake breeders hired by the zoo. Interestingly, all three pythons were of three separate species - Rock, Burmese and Reticulated. The Rock python laid two eggs, both of which hatched. The Burmese python laid 41 eggs in March of which 34 hatched in April. The Reticulated python laid 28 eggs, of which 20 hatched. Reticulated python is the longest snake species in the world and heaviest among the three.

EGGS PRESERVED CAREFULLY

These eggs were collected and sealed using various materials and carefully preserved at 30-33 degrees Celsius. Usually the number of eggs laid in one go is between 10-15 but this marks a bumper breeding for Alipore Zoo officials to boast about it. In this case the heat could have

played a spoilsport but it was the use of technology and precision that has created history with the longest snake laying the highest number of eggs in Kolkata.

Ashish Kumar Samanta, Director Alipore Zoo explained, "We are very proud. We have made history. This is due to the sincere efforts of the team. The Burmese python laid around 35 eggs, the Reticulated python laid 20 eggs, and the Rock python laid two eggs. We carefully sealed the eggs and monitored the temperature conditions."

Captive breeding of some other animals done in 2017



Brow Antlered Deer:

In the month of October and November, a total of **four fawns** were born. **two fawns sitting.**



Painted Stork:

In the month of November and December, a total of **five juveniles** were born. **two juveniles to the right.**



Monocled Cobra:



Rat Snake:

On 15.09.2017, eggs (24 in no.) of Monocled Cobra and rat snake were rescued from a factory store by the DFO, 24 Pargana (south) division and handed over to Zoological Garden, Alipore. Eggs were kept under artificial incubation maintaining temperature (30-35 degree Celsius) and humidity (approx. 80-85%). Ten eggs of Monocled Cobra were hatched on 14/10/2017. Rest were of these snakes' eggs hatched on 03/11/2017. The hatchlings are now in the nursery.



First mother with kittens:



Second mother with kittens:

Fishing Cat: Four kittens of fishing cat-the state animal of West Bengal, were born in October 2017.

2018

Captive breeding of tiger:

Snehasish, a 5 year old tiger, was caught from the wild in Odisha, initially kept in Nandankanan Zoological Park in Bhubaneswar, shifted to Alipore zoo for a while and then transferred to the North Bengal Safari Park in Siliguri. “He stayed here for a few months before being sent to north Bengal,” Samanta said, adding that in Siliguri, Snehasish mated successfully with the only tigress there, Sheela, leading to the birth of three cubs. “He had successfully mated in the very first attempt and that’s the reason we are hopeful that he will do for us what hasn’t been done in the past five years,” the director added.

- **AGGRESSIVE FEMALES AN ISSUE**

Though the latest development has rekindled hope of tiger breeding in Alipore Zoo, the authorities are worried how the females would react. All the five tigresses at the zoo are frustrated, thanks to apparent disinterest shown by the males towards mating.

- **EVEN MEDICINES FAILED**

The zoo authorities have left no stone unturned since 2015 to get the tigers to mate. The zoo authorities even administered a number of libido-enhancing medicines and vitamins and gave the tigers more covered space. But nothing worked.

- **AGE MATTERS**

According to zoo authorities, the age of the tigers is one of the prime reasons behind their lack of interest. The natural lifespan of a tiger is 12 to 14 years in the wild and up to 16 years in captivity. They are most fertile between five and eight years of age. Three out of the four tigers in the zoo are older than 11. The only young (eight-year-old) tiger caught from the wild in the Sundarbans also doesn’t show much

interest. They are more cautious and unlike the captive-bred ones, are easily disturbed by human presence. So, human smell or sound can distract them.

Captive breeding of Asiatic lion :

After two decades, a lion cub was born in the Alipore Zoological Gardens. The cub was born to 11-year-old Viswas and 5-year old Sruti, a pair of Asiatic lion brought from the Hyderabad zoo under an animal exchange programme last October. Alipore zoo director A K Samanta said the last lion cub was born in the zoo in 1998.

Captive breeding of Eastern grey kangaroo:

A female eastern grey kangaroo gifted by the Yokohama zoo in Japan last year also gave birth to a joey. The new addition takes the kangaroo count in zoo to five — two males, Melonpan and Mint, and two females, Punka and Kinako, were brought from the Japan zoo on October 26.

Samanta said that Punka, aged around two now, gave birth to the joey. “It conceived in February this year. In mid-March, it developed maggots inside its pouch and while treating it, we came to know that it has already given birth. Only three days ago, the joey popped out of its mother’s pouch for the first time. Some visitors also got a glimpse of it that day,” said Samanta.

The young kangaroo or joey is born at a very immature stage when it’s only about 2 cm long and weighs less than a gram. Immediately after birth it crawls up the mother’s body and enters the pouch. While red kangaroos leave the pouch at around eight months and continue to suckle for another three to four months, grey kangaroos leave at about 11 months, continuing to suckle until they are as old as 18 months.

The last kangaroo — a red one — was born in the zoo in 2011. It had died in the zoo in November 2015. The joey was born to one of the four red kangaroos brought from the Czech Republic. Three of them died of myopathy that affects their muscles.

Problems regarding captive breeding in Alipore Zoological Garden

- Family planning programme has not been a success in a small pocket of Kolkata but the authorities have spotted a blessing in disguise in the rising numbers. Captive breeding at Alipore Zoo has raised the inventory of several animals, many of which are not found even in the wild in the country. The headcount of giraffes, zebras, macaws, barking deer and marmosets in Alipore Zoo have increased manifold in the past three years. The number of giraffes has shot up to 8 while there are seven zebras.

The barking deer enclosure as well as the macaws enclosure house 25 members. The numbers of several other inmates is also healthy. With every new arrival, the mood at the Alipore address, which often criticized in the past for shabby treatment of the inmates, turns celebratory. In the world of zoos, animals are exchanged with each other. The well-populated enclosures at the onset of the peak season also mean that the visitors will be regaled. Captive breeding of macaws is rarely heard of in Indian zoos. The increase in the population of zebras and giraffes is also an achievement in itself because both these species aren't found in the wild anywhere in India. Improvement in the healthcare and general upkeep of the animals are mainly responsible for the success of the captive breeding programme. Former zoo vet, DN Banerjee, said all animals were being vaccinated and dewormed at the recommended intervals. "We also give them vitamins and medicines to improve their immunity and fertility."

Last year, the zoo had to let go of three adult elephants because the size of their enclosure didn't conform to the norms fixed by the Central Zoo Authority. But two young elephants were brought in from north Bengal. While the increase in numbers is seen as an achievement in terms of providing wildlife species a congenial captive environment, the zoo authorities are worried about not being able to maintain the comfort factor that the animals need. At 45 acres, the Alipore Zoo which is home to over 1250 animals is one of the smallest zoos in the country. Animal rights activists have often criticized how inmates are kept in cramped enclosures.

REFERENCE

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