FOREST NOTES AND OBSERVATIONS

MANAGING SMALLER LIFE-FORMS IN A ZOO

Guindy National Park is among the smallest national parks in India with an area of 2.7 km^2 of which 22 acres is set aside as Children's Park which was, inaugurated by the late Prime Minister of India, Pandit Jawaharlal Nehru. The Children's Park is basically a zoo meant for children to play in a naturalistic environment and grow up appreciating nature. Most people like seeing larger animals such as Elephants, Tigers, Panthers, Rhinos, Giraffes, etc. However, the purpose of a zoo is defeated if it only puts on display these charismatic and already well-known species and neglects to educate the public about the other forms of biodiversity. Thus, a conscious effort has been made over the last three years to diversify and keep smaller, lesser-known life-forms in Children's Park. This also suits the park because it has a very small area and so developing a zoo in tune with modern concepts of large, moated enclosures especially for larger mammals is not found to be feasible.

The first attempt was made in 1996, by starting a Butterfly enclosure, probably the first of its kind in India. To begin with the enclosure was a closed one with mesh and net to keep the butterflies from escaping. A large number of flowering plants were grown as in a garden, with a bias towards those species which have nectar-yielding flowers used as feed species by butterflies. The plants were carefully selected keeping in mind the requirement of butterflies and based on studies done in Guindy National Park. Sugar solution was also provided in the beginning but was later found to be not required and the practice was discontinued. The butterflies however were found to be short-lived (14-15 days). Close observation revealed the culprits to be Geckos which made a beeline for the enclosure, attracted by so many butterflies. The Geckos had to be carefully stalked and physically removed, their burrows packed in and all gaps in the wire and mesh closed but the Geckos proved to be more determined and motivated than we were and kept coming back to prey on the butterflies. Under the circumstances, it did not seem worthwhile releasing butterflies into the enclosure and so the enclosure remained as it is. But soon butterflies were found inside. First thought to have emerged from existing pupae, it was soon found that they were wriggling in through gaps in the mesh/net attracted by the flowers in bloom.

In the second phase of the plan, in 1998, the net on the sides was removed to allow freedom of movement and the enclosure size increased. In this area species used for egg-laying and as feed by caterpillars were planted. Several species of butterflies visit the enclosure such as Common Crow, Lime Butterfly, Common Leopard, Tawny Coster, Common Rose, Crimson Rose, Cabbage White, Great Orange-tip, Blue Pansy, Lemon Pansy, Yellow-orange Tip, Common Emigrant, Common Tiger, Striped Tiger, Blue Tiger, Danaid Egg-fly, Pioneer, Common Mormon, Bush Brown, Evening Brown, Blue Bottle, Zebra Blue, Small bluish-butterfly, etc. Apart from Geckos, predators such as

Spiders, Green whip-snake, etc. have also been seen to visit the enclosure. A Painted Grasshopper has also been living on a *Calotropis* plant for the last few months while beetles, milkweed bugs, seven spotted cockroaches, etc. have also been noticed.

During 1999, spider enclosures were built to house different species of spiders. The enclosures, were made of glass and mesh on metal stands with 1 cm of sand and soil and potted plants inside. The first spider to be released (in March) was the colourful Banded four-leg, an orb weaver that makes a web to catch its prey. The spiders settled down fast, promptly building a web and very soon laying an egg sac (within 2 months of release) followed by two others. About 250 young have emerged from the first egg sac recently. The heat inside the enclosure was worrying but this is being countered by spraying water twice a day. This spider has grown visibly fatter since becoming captive probably due to constant supply of food. A female Giant spider was found to have "invaded" this enclosure and laid its own egg sac where it remained till it was forced out and placed in another enclosure. The second spider to be released into an enclosure was Daddy long-legs/Box long-legs. This was given a similar enclosure and laid eggs sacs from which young spiders emerged out in less than a month's time. Many of the young spiders were found to have preferred going out of the enclosure to live on their own but the rest of them (30%) still remain inside. In the fourth invertebrate enclosure, Scorpions have been kept. While spiders are given flies, small cockroaches and crickets, the scorpions prefer large cockroaches and crickets. Both take only live prey. The scorpions while in enclosures similar to those of the spiders, have been provided with tiles and are always found under them. On 25.9.1999 the first scorpion put in the enclosure (in April) was found to have given birth to young ones - tiny white miniature versions of their parents carried piggy-back on top of the mother.

The latest enclosures have been prepared for housing amphibians. These had been collected from different places in the city and suburbs and had been placed with Geese and Turtles in their ponds for several months where they survived quite well. Then the erstwhile reptile enclosures were cleared of all snakes (given to AAZP, Vandalur) and modified for keeping amphibians. In addition to ponds of stagnant water, a meandering channel with gradual slope has been built running through all the enclosures. The water flows into a small sump from where it is pumped up and back into circulation. Green frogs/ Indian pond frog. Common Indian toad, Cricket frog, Indian burrowing frog and Jerdon's bull frog were introduced, each species in a separate enclosure. Most of the frogs however decided to dig underground in selected spots instead of enjoying the water. So the depth of soil and gravel is being reduced but old tiles, stones, more vegetation, etc. is provided to give cover for the frogs. In the evenings lighted bulbs are used to attract insects for the frogs to prey on and this is also the best time to see the frogs and toads. There are plans to further modify the enclosure to give a greener tropical appearance and make it more attractive to visitors as well as the amphibians. Hopefully these would also breed in the future. The experience with all the invertebrates and smaller vertebrates have been very encouraging so far and such enclosures can be started in other zoos also especially those with a limited area at their disposal.

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