

Housing the Red Panda in captivity

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The Red Panda (*Ailurus fulgens*) is a rare animal of the eastern Himalaya. It is found at an altitude between 7,000 and 12,000ft altitude. This carnivore, adapted to bamboo feeding, is the only member of the family Ailuridae.

The Padmaja Naidu Himalayan Zoological Park is the only zoo in the country which is breeding this animal in captivity. In spite of the Red Panda's presence in the Zoo since its establishment in 1958, the first systematic, scientific and successful breeding took place in the year 1994.

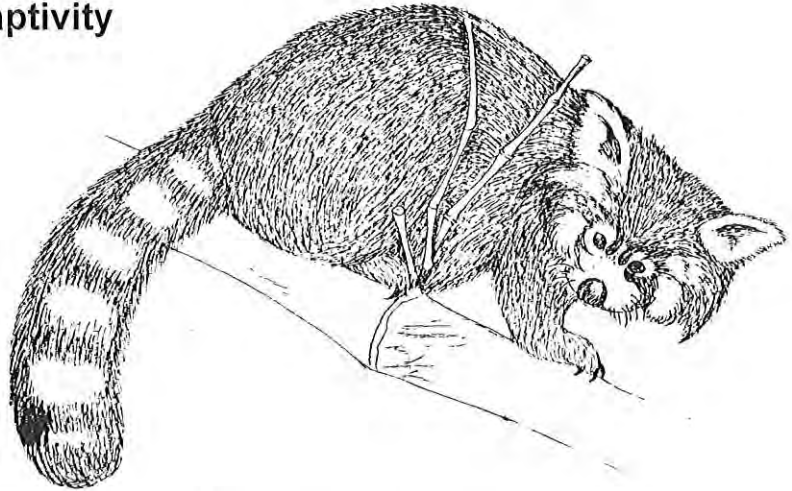
The study shows that proper housing was essential for breeding the red panda in captivity. Enclosure design was the most important component of housing. Generally, not much attention is paid to enclosure design, on which the entire routine of the animal depends. Wild animals usually are more active during dawn and dusk in the wild but the animals in zoos, on the contrary, are shut in small cubicles when the zoo closes in the evening. They are freed in big outdoor enclosure when the zoo opens. During day time, wild animals generally take rest at a safe place in the jungle. The zoo management does not have much choice as the zoo keepers are available only during the day. This is in fact a precautionary measure against the escape of animals.

In addition, the size of the night enclosure is often so small that animals do not get sufficient space even to move. In Darjeeling, it is reported that at times more than 20 Red Pandas were brought from the forests. These cat bears, in addition, to existing ones, were closed in a small house consisting of six rooms not more than 5 x 5 ft. area. After some time the effect was visible in the form of permanent shedding of tail hair. The zoo keepers considered it an incurable skin disease. Although seasonal shedding of hair occurs every year, the tail soon becomes bushy again.

The problem of animals is compounded by the presence of visitors who continuously tease and torture the animals. All this, adversely affects the natural routine of the animals. As a result the animals also start behaving erratically. In Darjeeling, once a Red Panda used to "dance". It was proudly called a 'Dancing Panda'.

To overcome this problem, the Central Zoo Authority has issued guidelines for maintenance of wild animals in captivity. For Red Panda, the approved design has the top closed. It is prescribed to avoid the escape of animal because the Red Panda is a good climber. Modern designing disapproves artificial touch, unless extremely essential. Therefore, it was decided to design moated enclosure for Red Panda in Darjeeling.

From the studies it was revealed that the Red Panda although



an expert climber, never jumps from one branch to another. Moreover, it hesitates to climb big trees unless there are sufficient branches to support the climb. Consequently, a height of 6ft from inside including 2ft overhanging was considered sufficient. The first moated enclosure in Darjeeling had 8ft height from inside. It had no overhanging. Although it was considered too high by many experts, yet they restrained themselves from speaking it out openly. Later on, a Red Panda escaped even from this enclosure. Investigations showed that the last evening the Keeper had left a door of night enclosure open. The animal could find out an outlet through this open door to the roof. The red panda was recovered the next morning from the adjoining forests.

In the wild the animals have sufficient space to move about. In captivity, however, the animal is confined in small area. To make full use of the available area, there is a need to enrich the enclosure. Enrichment gives good scope for exercise to the animal. Proper enrichment also ensures privacy to the animal in case the animal needs rest. Visitors also prefer naturalness i.e., an animal coming out of the thicket, or locating a hiding animal is more enjoyable.

The Red Panda is an arboreal animal. Therefore, there should be sufficient arrangement for climbing facilities. In absence of trees, logs may be placed in the enclosure. Dry trees with sufficient branches dug in the enclosure will give more natural look than the logs joined with nails or wires. The nails or wires should be carefully used and be checked from time to time. Care must be taken that pointed objects should be removed from the enclosure. Once a Red Panda died when it fell down from the tree and a piece of wood, approximately 5" long and more than 1" in diameter, punctured the hip of the animal. The piece broke inside. This could be detected only after the death of the animal. Captive red pandas are not aware of the strength of the branches of trees. They often fell down when they reach the small branches. This happens more often if the red pandas are shifted to new enclosures. In this particular case, the red pandas were checked when it was found incapacitated. The check up after capture failed to give any clue. It was thought that the

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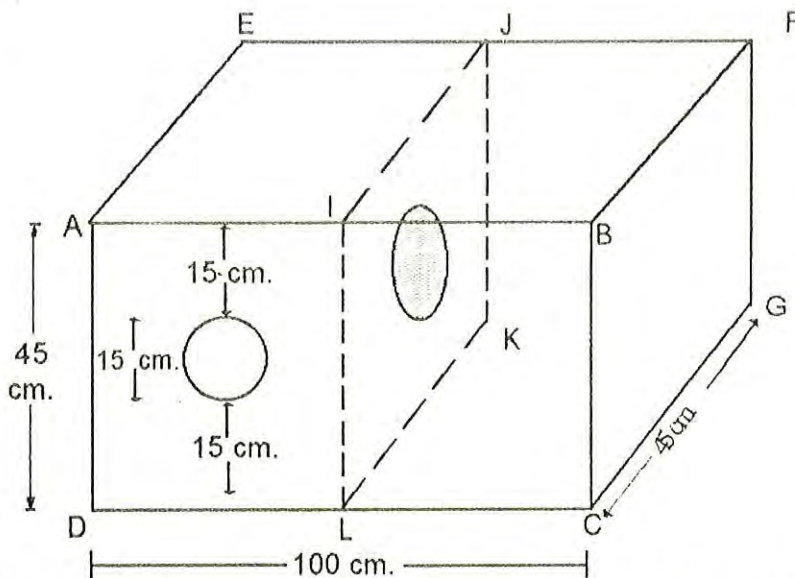


Figure 1 (Top). Nest Box (rear view); Figure 2 (Bottom) (front view). ABCD - front side; EFGH - rear side; IJKL - internal partition; FGNM - doors on rear side for keeper's use.

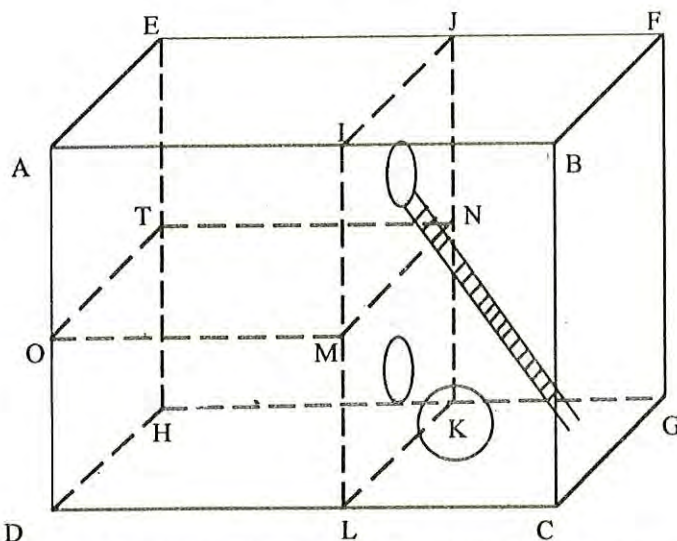
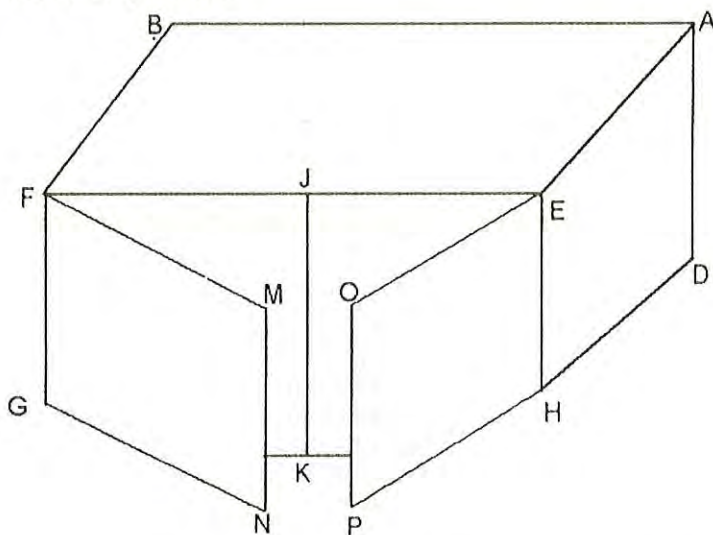


Figure 3. Nest Box (inside view). ABCD - front side; EFGH - rear side; IJKL - internal vertical partition; MNTO - internal horizontal partition; FGQP/HERS - doors for keeper's use.

hip bone could have been fractured after fall from the tree.

For enrichment, the enclosure must have good vegetative cover. Large number of trees should not be planted. This will take care of the climbing facilities when the trees grow. The trees should not be allowed to grow too tall. Bonsai like trees will make viewing of animal better. At the same time smaller height will ensure safety of the animal in case of fall from the tree. There should not be branches overhanging the enclosure. These branches should be at least 5/6 feet away from the boundary wall inside the enclosure. Nor the branches of outside trees should be allowed inside the enclosure.

A good grass cover will enhance the beauty and will ensure naturalness. Bamboo planting is ideal for the Red Panda enclosure. The animal will, however, never allow edible bamboo to come up.

In the wild the females give birth in the hollows of trees or rock crevices. It is not an easy task to provide such facility. Bringing such trees from the forests may not be economically viable. To ensure proper breeding, there must be resembling arrangement. Old system of management prescribes night shelter in the enclosure. These shelters are houses where animals are shut during the night time. Now emphasis is given to keep the animal in the open 24 hours. The night shelter these days is so designed that it may be used by the animal for feeding, breeding and for rest even during the day time.

Instead of night shelters, nest boxes were designed for breeding the animal. The nest boxes are wooden boxes as shown in figures 1 and 2. The most suitable size is approximately 1 x 45 x 45 cm. The box is divided into two chambers of equal size. Slightly smaller size may be inconvenient if more than two cubs are born. Four cubs were born in Darjeeling Zoo in 1998 to a female. It was the second occasion anywhere in captivity. There may be fighting for space as the cubs grow. too big a size may also be inconvenient to the animal.

The nest box has a hole approximately 15cm diameter, 15 cm above the floor for entry of the animal. The object of keeping the door slightly higher than the ground is to prohibit the cubs from falling down when they start crawling. At the same time the female has no difficulty in passing through the hole. Another hole of same size at same height is created in the inner chamber. Care must be taken that the holes are not in a straight line. Visibility inside the chamber

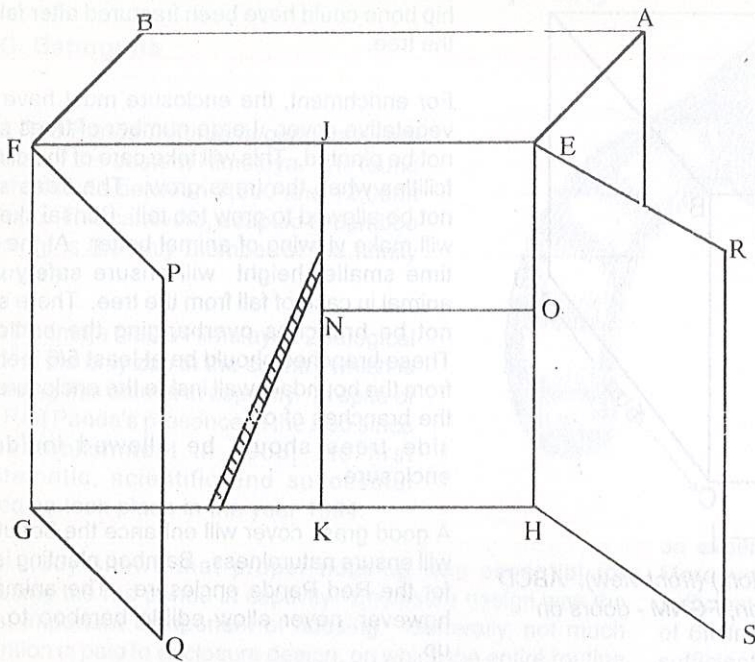


Figure 4. Multichambered boxes for housing Red Panda

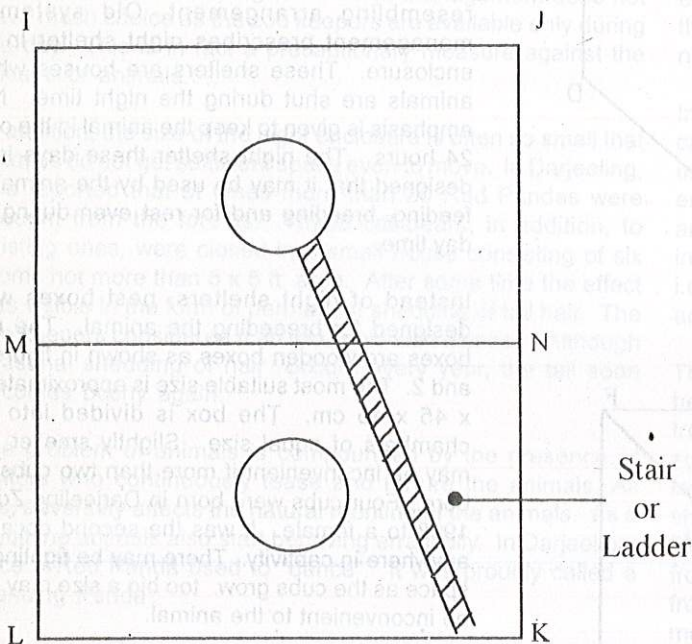


Figure 5. Tiered nest box.

from outside the box will reduce privacy. This will also make the purpose of another chamber futile. The mother always chooses the inner compartment for giving birth. This complication in the preparation of the box also helps in restricting birds from entering the nest box.

A few boxes with three chambers were also tried as shown in Fig 3,4 and 5. It was basically to add new design and with an idea that the feeding chamber should be separate from breeding chamber. The outer chamber would work as buffer.

Attempt was made in Darjeeling to provide eggs outside the nest boxes in hand made natural looking bird nests. But this gave better opportunity to the crows outside. In case birds still try to steal food from inside the nest box, they are likely to get trapped and themselves become food for the Red Pandas. A door is provided on the rear side for the use of Keeper for cleaning, feeding etc.

No cleaning is done after breeding when the mother is present with the cubs. Feeding during this time may be provided in another nest box. At least 2/3 boxes are provided in the enclosure. The Red Panda has the habit of shifting the cubs like cats. It may be due to disturbance in the zoos. There is no information on this behaviour in the wild.

Sometimes the nest boxes are provided with two floors as shown in fig. 3. A ladder is provided for easy access to the upper floor. To give natural look the nest box should be hidden in bushes. It may be covered with barks of the trees to give a look of stump of a tree. Bark of Sal (*Shorea robusta*) or Dhupi (*Cryptomeria japonica*) is very useful for this purpose. The nestboxes should be properly insulated from top so that water does not enter inside it. In some cases hole are created in the boundary wall of the enclosure. This is for entry to an attached closed room where a few nest boxes are provided.

The wall of the outdoor enclosure should be sufficiently high to avoid the entry of jackals or other predators. Cats sometimes manage to enter the enclosure. This may be harmful. Yet their presence prohibit the entry of rats which are more harmful. Moated enclosure should not be constructed in the areas where there is danger from leopards, clouded leopards or other predators. The enclosure gate should have the provision of double entry, to avoid sudden escape.

For better management, the Red Pandas should be kept in pairs. This helps during breeding. The father of the cubs does not create any problem for the cubs.