(VI)

CONSERVATION BREEDING OF WESTERN HOOLOCK GIBBON AT AIZAWL ZOOLOGICAL PARK, MIZORAM

Bunopithecus hoolock, Hoolock gibbon, the only ape species in India, is found in the evergreen rain forests of Northeast India, south of Brahmaputra River, Bangladesh and Myanmar up to the river Chindwin (Tilson, 1979; Mukherjee, 1982; Alfred and Sati, 1990; Choudhury, 1989, 1990, 1991). It has been categorized as endangered species by IUCN (Groombridge, 1993) and listed in the Schedule I of the Wildlife (Protection) Act, 1972. They are the second largest of the gibbons, after the Siamang. They reach a size of 60 to 90 cm and weigh 6 to 9 kg. The sexes are about the same size, but differ considerably in coloration: male is black with remarkable white brows, while female has a grey-brown fur, which is darker at the chest and neck. White rings around the eyes and around the mouth give their face a mask-like appearance.

The hoolock gibbons are specialized in many ways, i.e. they are frugivorous, highly territorial, practice brachiatry, and monogamous. They prefer the upper canopy of forest, and sleep and rest in emergent trees (Leighton, 1987). They rarely move on the ground and most of the time they are found up in the trees. While walking down on the ground, it moves on two legs, while its forefeet balance the whole body. Their calls serve to locate family members and ward off other gibbons from their territory. Their diet consists mainly of fruits, leaves, eggs, small vertebrates, insects, spiders, flowers and buds. In a degraded habitat, they have been observed feeding on bamboo shoots too. The preferred fruit species are *Amoora wallichii*, *Anthocephalus cadamba, Artocarpus chaplasha, Bischofia javanica*. The preferred roosting trees are *Dipterocarpus macrocarpus*, *Mesua ferrea* and *Castanopsis indica* (Choudhury, 1991).

Hoolocks are strictly monogamous. The sexual maturity is attained at 7 years of age. They usually mate during the rainy season. The gestation period is about 7 months, i.e. about 183-225 days after which single offspring is born (Geissmann, 1991). However, during this study at Aizawl zoo, the baby was born after about 165 days of mating. Infants are hairless and rely on their mothers for warmth. Within six months of birth their fur changes to black. Young gibbons stay with their parents until they are past adolescence. In captivity, gibbons usually attain sexual maturity at an age of about 6-8 years, but this appears to be highly variable (Geissmann, 1991). At maturity, offspring probably leave the natal group or may be chased off by their parents.

In Mizoram, a total of 72 gibbon groups were identified based on actual sightings, songs and personal communications with the local people and forest staff. Out of this, 37 groups were reported in the village forests, followed by 20, 10, 5 and 3 groups, respectively in wildlife sanctuaries, reserved forests, national parks (WII and USFWS, 2005). Another study mentioned 128 individuals in 9 population groups from the state (PHVA, 2005). This species is now threatened by habitat loss and by hunting for food, for oriental medicine and for the pet market (Choudhury, 1990, 1991, 1996a; Mukherjee *et al*., 1992). The disturbance and fragmentation of the habitat has resulted in reduced availability of their preferred food thus affecting their distribution in the state. Shifting cultivation, conversion of natural forests to teak plantations, and encroachment of forest land for settlement are the main factors leading to the destruction and fragmentation of its habitat in the state. This makes gibbons particularly vulnerable to hunting and predation. Most populations are very small and declining (Choudhury, 1996b; Mukherjee *et al*., 1992), and many populations in small patches of habitats will probably go extinct in the near future (Alfred and Sati, 1990). In addition, their highly territorial nature, or 'spatial inflexibility' prevents them from exploiting food resources in adjoining areas that are occupied by other groups (Mackinnon and Mackinnon, 1984). Further, the strictly arboreal habit and brachiatry makes their movement out of or between forest patches impossible if there is no continuous canopy to serve as a corridor, therefore extinction risks are very high (Laurance, 1991). Although gibbons are long lived, they are monogamous, live in small family groups, and their reproductive output is low, which means that population sizes cannot exceed beyond a small maximum even if environmental conditions improve. All these characteristics make gibbons highly susceptible to habitat fragmentation and disturbance. In the present paper details about organizing the successful breeding of this species at Aizawl zoo have been discussed.

The Aizawl zoological park was established in 2006. It is located at Sakawrtuichhun village, which is 15 km from Aizawl on Aizawl to Lengpui Road. There are 7

hoolock gibbons in the park. These have been mainly donated by the people from different parts of the state. Out of these, 2 are males and 5 are females. The Aizawl zoological park has the distinction of being amongst the 8 zoos in the country that are having the hoolock gibbon (CZA, 2010). The gibbon enclosure was constructed in 2001-02. The total area of the enclosure is 1,740 sq. m. and a 2.5 to 4m wide moat has been constructed along the visitor gallery of the enclosure. Since the trees inside the enclosure are not very tall and are still growing, these gibbons spend quite a long time in walking along the moat. The night shelter consists of a room of 52 sq. m. It has been divided into two compartments.

The breeding programme for the hoolock gibbon was started in the zoo in the year 2006 and after receiving the news of the successful breeding of hoolock in Arunachal Pradesh (PTI, 2008) attempts were made to ensure their successful breeding at Aizawl zoo too. The male hoolock was introduced in the wet moat gibbon enclosure in July 2009 which was already having 4 females since 2005. Initially the male was not accepted in the group and was always chased away by the females, however, after a month or so, the male became dominant in the group and seen close to a female, named Buangi, which was in the zoo since 2003. Since then the pair was always found together caring, embracing and grooming each other. The pair became quite attached and possessive with each other and was not seen interested in mixing with other gibbons. Mating appeared to have occurred somewhere around 20th January. After that one of the females, named Bawihbawihi, which was most aggressive and dominant before the male was introduced in the enclosure, always chased the male. On 16th February 2011, there was a fierce fight between the two and the female was badly bitten by the male on the thigh and forearm. Necessary medication was provided to the female and it took about a month to wounds to heal.

After this incidence, the dominant female and the breeding pair was kept in the night shelter on rotation basis that is when the breeding pair was in the night shelter the dominant female was taken out in the open and vice versa. This process was repeated for several days but after about a month the dominant female refused to enter the night shelter, therefore, the breeding pair was kept in the night shelter continuously for about two months. The female was found to be pregnant with bulging stomach and the pregnancy progressed day by day. After few days, it was felt that the night shelter was not a proper place for the development of foetus because of its small size, lack of fresh air and poor light conditions. Therefore, on 28th May this pair was again shifted to the wet moat enclosure and the field staff was placed there permanently to ensure that the breeding pair especially the female is not disturbed. Luckily no fight or untoward incidence occurred and after few days it was observed that the belly of the pregnant female became more swollen and she became more lethargic and it was observed that the female is not far from giving the birth. Therefore, the breeding pair was again shifted to the night shelter on 16th June. Finally on 5th July, a milestone achievement happened in the history of the Aizawl Zoo that the female, Buangi gave birth to a young gibbon at 10.00 a.m. Coincidently, the baby was born on the same date as it happened at Itanagar Zoo (Sentinel, 2008).

After few days of the birth it was observed that the development of the young hoolock was not up to the mark i.e. it appeared quite weak and was not performing any activity. It was probably due to the less appropriate conditions inside the night shelter because of its small size and lack of proper sunlight and fresh air. Therefore, the family was again shifted to the breeding centre on 4th August and since then the young one is showing good development and growth.

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