



Raising Lady Ross's Turacos at Disney's Animal Kingdom

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Disney's Animal Kingdom
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Disney's Animal Kingdom (DAK) is comprised of many unique and interesting animal habitats. The African aviary is located just outside of Harambe village on Pangani forest exploration trail. This 62 ft. W x 120 ft. L x 40 ft. H free-flight aviary with large trees, lush vegetation, and a two-tiered waterfall which empties into both upper and lower ponds is home to 23 species of birds native to Africa, including a pair of Lady Ross's Turacos *Musophaga rossae*. The aviary has become home to our first Lady Ross's Turaco chick, a unique breeding situation because the rearing of this chick, although closely monitored by the aviary staff, was left entirely up to the parents and occurred in this very large free-flight habitat. Turacos are often hand-reared or foster reared in smaller, more accessible environments. In addition, the African aviary is visited by as many guests in one month as visit most other zoos in one year!

Lady Ross's Turacos are widely distributed from northern and eastern Zaire, southern Sudan, Uganda, western Kenya, northeastern Tanzania, Rwanda, Burundi, to all of southern Zaire, northeastern Angola, and northern Zambia. They inhabit the canopy of evergreen forests, deciduous thickets, and rainforests remaining high in the trees. (Ed. Fry, Keith, and Urban, 1988) Although they may glide from tree to tree, they are best appreciated as they hop from perch to perch, running along branches more than flying. (Phalen, Tociłowski, and Faske, 1999).

These birds are very active and gregarious. They may occur in feeding groups as large as 12 individuals, although they are more often found in pairs. (Ed. Fry, Keith, and Urban, 1988) These birds are monogamous, solitary nesters that exhibit moderate to extreme territorial behavior, especially when nesting. Sexually monomorphic, both sexes have a crest of dark crim-

son, the skin around the eyes is bare and yellow in color, along with a yellow frontal shield and bill. The rest of the body is a glossy blue-black and the eyes are brown. The family Musophagidae is unique in that many of its members produce one or both of the copper based pigments green turacoverdin and red turacin. The red pigment is confined to the wings and in Violaceous, *Musophaga violacea*, and in Lady Ross's Turacos to the crest. (Phalen, Tociłowski, and Faske, 1999)

The hand-reared female was acquired on 10 October 1997 from Chaffee Zoological Gardens of Fresno, and the foster reared male (by Schalow's Turacos, *T. shalowi*) on 11 December 1997 from the Houston Zoological Gardens in Houston, Texas. Both turacos were six months old when acquired and were housed initially at a holding/quarantine facility in Gainesville, Florida until 3 February 1998 when they arrived at DAK.

The pair was released into the free-flight aviary on 15 February 1998. The turaco pair was acclimated and introduced to each other prior to release. It didn't take long for them to begin showing signs of bonding and interest in each other as mates. By 25 March 1998, the pair was observed spending a considerable amount of time together and were seen displacing other birds in the aviary. Courtship and nesting behavior were observed 40-52 days after their initial release into the aviary. Courtship involved long trilling vocalizations, allopreening, wing flashing, bill fencing, and solicitation by the female for feeding from the male. The pair also began carrying small twigs in their beaks and became increasingly aggressive to other birds in the habitat. Displacement behaviors exhibited by the pair include chasing, and actual physical attacks, though other birds were never seriously injured.

The turacos were undaunted in their courtship and nesting behavior except for the presence and interference of a hand-raised 1.0 White-bellied Go-away-bird, *Corythaixoides leucogaster*, that also came from Houston. Both of the Lady Ross's Turacos showed interest in this male White-bellied Go-away-bird, alternating between aggressive and nonaggressive (even courtship-like) behaviors. Due to the interference of the White-bellied Go-away-bird with the Lady Ross's Turacos, and other difficulties he presented, this bird was removed from the aviary.

A great deal of nesting activity was observed throughout 1998 and into 1999 as the birds continued to carry nesting material and investigate nest sites. The intensity of their courtship displays increased. By 27 September 1999 a nest was observed in a clump of bamboo, *Bambusa* sp., approximately 30-35 feet above the ground.

The nest consisted largely of sticks approximately 1/8 inch in diameter of various lengths broken from the tree branches, not observed to be picked up from the ground. The sticks also appeared to come from the same type of tree, possibly a Chinese Elm *Ulmus parvifolia*; the nest also consisted of a large amount of leafy foliage. Both the male and the female contributed to building the nest.

Upon completion, it was the male that spent most of the time tending the nest site, joining the female 3-4 times a day in their courtship ritual. No copulation was observed. By 6 October 1999 it became apparent that incubation of one or more eggs was taking place, as one adult remained on the nest at all times. The early days of incubation found the male primarily on the nest in the early mornings and late evenings, while the female incubated from late morning (approximately 1130 to 1400) until approximately 1900. Towards the end of the incubation period, which lasted approximately 24-

25 days, the female incubated considerably more than the male, only observed coming off the nest to eat. The pattern of taking turns incubating became more irregular. The birds rarely switched at the nest site, instead meeting in the top of a Tipu tree, *Tipuana tipu*, approximately 15 feet away from the nest site, where they would call in unison, after which one bird would silently return to the nest.

Since the Lady Ross's Turacos remained faithful to their nest and incubation, a decision was made to release 1.1 White-bellied Go-away-birds into the aviary. On 10 October 1999 the pair of White-bellied Go-away-birds were released into the aviary in the hopes that the Lady Ross's would be so involved in their incubation they would not pay attention to the newly released birds.

Unfortunately, this was not the case as the Lady Ross's became immediately aggressive to the male Go-away-bird, attacking him several times and chasing him throughout the aviary. The female Go-away-bird avoided trouble by staying close to the howdy cage from which she was released. [*A howdy cage is a small cage placed within a larger enclosure to keep new birds close but separate from the existing inhabitants of the enclosure. ed.*]

After three attempts over a three day period it was decided to keep these two birds in the howdy cage until a later date.

On 27 October 1999 keepers began looking for signs of hatching by checking the ground under the nest for broken egg shells and making attempts to actually see into the nest (these attempts did not go well due to the height and location in the dense bamboo). The appearance of the nest changed quite a lot at this time, consisting mostly of twigs and sticks and very little leafy foliage as was observed earlier on in the building of the nest.

The first visual of the chick was 2 November 1999 at approximately 1200. The chick appeared very mobile in the nest and it was the male that was observed brooding at this time. The nest was always occupied by the chick (which was extremely active) and one adult. Rarely did the two

adults occupy the nest at the same time and, once again, the switch occurred in the Tipu tree across from the nest site. Regular feedings of the chick by both parents, usually the one brooding, were observed throughout the day. The number of these feedings increased as the chick got older. The food was regurgitated from the mouth of the parent into the mouth of the chick. Keepers were able to get an excellent visual on the chick on 7 November 1999. The chick was greyish/brown in color and the naked skin around the eyes was dark grey.

On 11 November 1999, the Lady Ross's Turacos were behaving rather strangely – they were observed close to the ground below and to the right of the clump of bamboo where the nest was located. The pair appeared to be watching something; they hopped from perch to perch, vocalizing and never leaving that small area. It was determined that the chick must have left the nest, as often happens around two weeks of age (Todd, 1988), and ended up on the ground. Keepers searched the area and, with some difficulty, found the chick sitting very still on the ground under the bushes. The chick proved very difficult to capture, scurrying about very quickly on the ground, making mad dashes for several feet and hiding very well.

Finally, the keepers had the chick in hand. When handled, the chick squirmed about and was very vocal emitting a repeated, high-pitched squeal. The chick weighed 199 grams, was checked out for any physical injuries from a possible fall from the nest, and left unbanded because it was still growing. Age was estimated to be about 18-20 days. Keepers placed the chick in a fishtail palm tree near the bamboo nest site. The chick made its way to the ground again, finally perching approximately eight feet off the ground in a tree above the pond.

The parents maintained a constant watch on the chick and were observed feeding it in various locations. The parents were never observed defending the chick, and no aggression toward the chick by other birds in the aviary was ever noted. By 1730 the chick was roosting approximately 18 feet off the

ground in the same tree. Keepers were concerned about the possibility of the chick falling into the pond and therefore placed leafy bamboo branches in the water below the roosting site as a precaution. By 13 November 1999 the chick appeared very comfortable in the aviary, moving quite well from branch to branch. Just a few days later the chick was taking short flights from tree to tree, following the adults throughout the aviary canopy.

One or both of the turaco parents roosted with the chick at night and during the day they always remained close by. Both parents continued to feed the chick and during one of those feedings some of the regurgitated food was dropped. A close examination of the dropped food showed that it consisted mostly of soaked Mazuri Parrot breeder, which is the main pelleted diet fed to the aviary.

At approximately 29-31 days of age the red coloration on the chick was becoming more prominent in the wings and crest, and the face area was showing the yellow coloration.

By 3 December 1999 the turaco chick was observed following the adults to feeding stations, where it would eat a few pieces of fruit from the food dish and then solicit feeding from one of the parents. At approximately 45-47 days old, the young turaco was eating more regularly from the food dishes.

It has often been suggested that turaco chicks should be removed from the parents flight before reaching six months of age to prevent aggression by the parents. The aggression by the parents toward the chick may be attributed to a variety of factors, such as the sexual maturity of the chick, the actual sex of the chick, and the amount of space available in the flight. No aggression was ever observed by the adult turacos toward the chick.

By 12 December 1999 the skin around the chicks eyes and the bill plate had changed from the juvenile blackish/brown to a blotchy yellow. The juvenile continued to spend a considerable amount of time on its own and was seen in close proximity to the adults without incident.

It wasn't long into December when



Photo by Michael Bowerman, Houston Zoo

Lady Ross's Turaco, Musophaga rossae.

the male turaco was observed breaking and carrying sticks to the old nest site while the female was close by. The pair was observed copulating on 16 December 1999 and the male turaco was observed feeding the juvenile later that day.

The juvenile turaco continued to become more independent flying off on its own, eating from food dishes, and becoming more and more curious. The youngster would still solicit feeding from its parents on occasion but the parents began to show more and more reluctance in offering feeding. By the end of December, both parents were ignoring the feeding solicitations of the juvenile turaco.

At the approximate age of 59-61 days, the weight and body size of the Lady Ross's juvenile appeared visually to be nearly that of an adult bird. The juveniles feather condition was slightly ratty and stress lines were visible on

the wings while the bird was in flight.

On 31 December 1999, the juvenile turaco was caught in a howdy cage on the upper level of the aviary in preparation for its first physical exam by the DAK veterinary team. The physical took place on 1 January 2000. The bird weighed 334.7 grams, was in good overall physical condition except for some stress bars on the primaries (the stress bars were of minimal concern as they are also found on adult and hand reared turacos), had blood drawn for DNA sexing, was given an injection of ivermectin, and was transpondered for future identification. The resulting DNA sexing showed the turaco to be female.

By 28 January 2000 the bird is in almost complete adult plumage (with just a slightly duller coloration), has been moved to an avian holding facility on DAK property, and weighs 326.7 grams. The bird is doing extremely well at the avian holding habitat, and

has completed a successful molt into adult plumage.

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