

Some Observations of Captive Musophagidae

By Myles Lamont
Langley, British Columbia

Overview

The family Musophagidae consists of some 23 currently recognized species, known collectively as touracos. The classification of touracos has a long history of controversy, and the number of species recognized at any given time has varied accordingly. There are still a few subspecies whose taxonomic status is somewhat uncertain. The family consists of both forest and wooded savanna dwellers, all of which are restricted to the African continent. Almost all species of the family have been represented in aviculture at one point or another; perhaps the Bannerman's Touraco (*Tauraco bannermani*), Ruwenzori Touraco (*Musophaga johnstoni*) and Rusopoli's Touraco (*Tauraco ruspolii*) are the only species not currently being kept in captivity outside of Africa.

Touracos are perennial favorites among softbill enthusiasts, both in the private and zoological sectors. Their fantastic personalities, vocalizations, and relative ease of reproduction have all contributed to their captive popularity. Hand reared birds are very friendly, curious and very much enjoy attention; the only downfall of having one as a pet is their continuous passing of fruit!

The most commonly kept species at the time of this writing are the Red-crested (*T. erythrolophus*), White-cheeked (*T. leucotis*), Lady Ross's (*M. rossae*), Violacious (*M. violacea*), Hartlaub's (*T. hartlaubi*), Gold Coast (*T. p. persa*) and White-bellied Go-away

Bird (*Corythaixoides leucogaster*). Species not listed should be monitored and their breeding encouraged due to imports becoming increasingly difficult to obtain, with CITES species needing to be brought into the U.S. through a breeding consortium controlled by the USFWS.

The Touracos have only been commonly bred within the last couple of decades. Unique behaviors and diet-related issues are still being discovered, some of which will be discussed here.

Dietary Observations

All touracos are basically frugivores, with some species requiring a higher intake of plant material than others. This has been found to be the case in the Great Blue Touraco (*Corythaeola cristata*) (Rutgers, 1972) and this could be one reason for the lack of breeding success that has been exhibited by this species in the captive situation. Observations of the Lady Ross's Touraco eating leaf material have been made on numerous occasions by the author. Preference



Lady Ross' Turaco helping with diet preparations.
Photo by Myles Lamont

seemed to be of young leaves of the Populus family; however, leaves of the Alnus and Sambucus species were also eaten, but to a lesser extent. The Violacious Touraco has also been seen eating some leaf material, but not to the same degree as the Lady Ross's. The species in the genus Tauraco, such as the Red-crested and Gold Coast, were not observed eating any leaf material. My personal theory to this is that the larger species of touraco have had to resort

to non-fruit items during dry periods when fruit is not as readily available, whereas the smaller species are capable of surviving on fewer amounts of fruit due to their smaller size. Perhaps due to this dependency on non-fruit items, the reason for the failure to establish the Great Blue Touraco in captivity is a diet too rich in fructose, or the lack of fibrous material causing gastric failure. This has been the suspicion of some European breeders (Pers. com. Kim Willems). Also, this apparent 'disadvantage' could perhaps be the reason why there is only one 1 species of very large touraco.

Due to the preference of leafy material displayed by the Lady Ross's, chopped head lettuce and romaine are offered when it is available (mainly during the winter months when access to leaves is not an option). I have now attempted to introduce flowering buds from fruit trees such as apple, plum and cherry to see if there is an interest in these.



A hand reared White-bellied Go-away Bird. Hand reared touracos become very trusting of people.

Photo by Matt Schmit

On the International Touraco Society website (www.touracos.org) there is an article by Owen Joiner on the breeding of the Great Blue Touraco, in which he makes reference to the failure of two chicks that were artificially incubated. He comments on one of two chicks that hatched, "The first hatched chick made it to day nine and then succumbed suddenly to an intense gastric infection." This observation has been made with other species of frugiverous birds and even some species of Tinamiformes. Inoculation with fecal flora of adult birds could be a solution to this problem (Chris Sheppard, in print). Wild Great Blue

Touracos have been seen feeding their chicks regurgitated leaf matter from eight days onward, but were not seen feeding any insect matter (Candy, 1984).

Although considered frugivores, like toucans, touracos are known to consume some animal material both on their own and when it is offered to them. One Red-crested male would take mealworms from the hand with great pleasure, even when no babies were present. Mealworms have also been part of the diet of other touraco breeders, some of which were readily consumed outside the breeding season as well (Steel, 1973). This same Red-crested male also offered me a regurgitated slug on one occasion, showing that mollusks may be part of their natural diet, or used as a protein source for growing chicks. There were two offspring present at the time this male was seen eating the slug. Observations of White-cheeked Touracos catching and consuming tadpoles have been made at Grangewood Zoo, while at liberty (Parkins, 2004).

Other protein sources that touracos have eaten include wax worms, ant eggs, earth worms, termites, caterpillars, dried shrimp, geckos, young chicks of other birds, and pinky mice. Interestingly enough, mosquito larvae at the bottom of an almost empty water dish were also seen to be consumed (Humphreys, 2004). It is my assumption that touracos prefer these types of insects and animals due to their moist exterior and the ease of which they can be swallowed.

Behavioral Observations

Touracos can be both parent and hand reared, although there is a large difference between the two. Although parent reared can become fairly comfortable and even eat from their keeper's hand, for the most part they are quite skittish, and take much longer to regain trust of their keeper once they have been caught or handled. Hand reared birds are unmistakable; both sexes will open their wings to show their bright red primaries and emit an "Oooohhhh" sound to 'greet' their keeper. It is usually males that do this, and is normally a sign of territorialism rather than a 'greeting,' as they will do this when they are approached by other touracos, especially during the breeding season.

Hand reared males, in my experience, often become quite defensive of their hens, nests, chicks, eggs and

even their flight. I have often been attacked by territorial males, some more so than others. One particular White-cheeked male will jump on my head and knock off my glasses while I am in the flight to change his water dish or to remove his food bowl. The only time I have been attacked by a female is while attempting to band a chick; this was a hand reared female. Most parent reared females will leave the nest before I approach, and the parent reared males will normally only bluff attacks and threaten from a distance.

In my experience, all the hand reared birds have proven to be better breeders than their parent reared counterparts. Touracos do not seem to imprint to humans as do parrots, swans, cranes and other



Four hand reared Great Blue Turaco chicks.

Photo by Matt Schmit

species of birds. Rather, they lose their fear of humans and in some cases will view them as competition or a threat; hence the aggression displayed by hand reared males. One particular hand reared Gold Coast female showed a particular interest in knocking off my hat, and would often show strong signs of territorialism; however she was paired up with a female as there were no males available for her at the time. Her behavioral displays correlated with that of other males, and I presume she took on the 'male' role of the pair as they would both lay and share incubation of the eggs.

Although hand reared birds can be aggressive, they can also be coaxed into becoming very affectionate and curious individuals. One particular Lady Ross's male is an extremely friendly bird and wants to be involved with all the chores going on in the aviaries. He will perch on the sink and watch the dishes being cleaned, he will sit on the edge of the food bucket and help himself to fruit when it is being chopped, and will constantly try to 'feed' or 'court' his keeper by sharing digested fruit as he does with his mate. This particular bird is by far the most relaxed and comfortable touraco we have around humans, and he is also much easier to handle than the rest. This attribute

also makes the hand-reared birds much less likely to succumb to stress related problems.

Although a somewhat dangerous practice, allowing touracos liberty of the property, park or zoo is becoming common practice. Most literature is regarding free ranging birds in England and Europe, where natural predators are fewer and less diverse than in North America. This practice, although risky, is one of the best ways to observe some of the unique and interesting behaviors these birds display; it also shows their incredible adaptability to making use of the food sources available. Most free ranging birds are offered fruit throughout the day, but it appears they are quite capable of fending for themselves, and during periods where natural fruit is readily available, they seem to not require any additional feeding at all.

One on occasion, we had a pair of Gold Coast Touracos rear their own chick during the month of July. Within their aviary was a large branch of a cottonwood tree which, unknown to us, had ripped a small hole in the netting during a small windstorm. The juvenile bird, which was now eating on its own, managed to squeeze through this hole and escape. Once we noticed the bird was gone and found the hole, we presumed it would not last, but still placed out a food dish just in case. Over a period of a week or so, no food had been taken and we ceased putting more food out. Approximately two weeks or so passed by without any observation or sign of the bird; then while pruning branches on the top of the aviary one day, I noticed some movement in one of the Cottonwood trees on the perimeter of one of the flights. It was very difficult to tell if there was actually a bird there since the green feathering blended in so well with the foliage, but on approach it flew off to the next tree, confirming my suspicion. The bird was directly above the cage of its parents, and I began to notice some vocal exchange between the parent birds and the escapee over the following weeks.

A food dish, as well a half melon and some grapes, were placed on the top of the aviary, with the dish being inside a have-a-heart trap in the hopes of catching the bird. I never noticed any attempt made to eat any of the food that was offered, most likely due to the abundance of natural food sources at that time of the year, with Indian plum *Oemleria cerasiformis* and Blackberries *Rubus discolor* being readily available in late July.

To see a free-flying touraco, flying 50 feet above you, with the sun shining through its red primaries is a sight to see! As hard as we tried to re-capture the bird, the thought of allowing it to roam free until winter became a more realistic option. Although losing it to a bird-of-prey was a strong possibility, the only abundant raptors in the area were Cooper and Red-tailed hawks, the former catching sparrow size birds, and the latter mainly restricted to catching rodents. Owls and raccoons were another concern, since both are fairly prominent in the area as well. (I am still uncertain whether or not the red primaries on the touraco would act as an attractant to predators or if the bright colours would deter them from attacking him, acting as a warning sign like that of poison dart frogs, monarch butterflies, etc. Since touracos are birds that they would surely have never seen before, it would be interesting to see which it would be.)

The young bird was often seen gliding around the property, and he would often call from various locations in the area, but seemed to remain within an approximate 500m radius of the other birds. On one occasion I noticed him eating the berries of the Cascara tree (*Rhamnus pershianus*) which are inedible to humans, as well as Red Elderberry (*Sambucus callicarpa*) which is a favorite of the native American Robins. Unfortunately, my observations of this bird were cut short when it was found dead on the balcony of the house, where it appeared to have flown into the window and broken its neck. Birds let loose in parks in Europe have shown to have survived quite well, and are a unique attraction to visitors, especially those that are hand tame. I presume these birds are brought into heated areas during the winter months.

Nesting Behavior

Touracos are platform nesters. Our birds are offered nesting platforms with dimensions of roughly 10"x 6"x 6", placed in an undercover corner as some nests have been lost during heavy rains (Pers. com. David Bender). For pairs more reluctant to breed, hanging baskets are also offered, and are sometimes preferred to platforms. A sure sign of nesting is when birds are seen to be carrying small sticks and twigs in their beaks. They will often gather these in advances to laying and line their nest site with them. When finished, it often resembles that of a pigeon or dove nest. In addition to what is added to the nest by the parents, I place the Excelsior wood product in the base of the nest platforms as a substrate which the

chicks can easily grasp and lessen the chances of splayed legs. This material is also used when hand rearing chicks.

Pairs will often feed each other and exchange 'kisses,' where each bird rubs its beak or head on that of the other, while emitting a 'dib dib dib' type noise. This behavior seems to be used as pair bond



White-crested Turaco.
Photo by Glen Browning

enforcement and is usually done after the pair has been disturbed either by a human or other bird. It seems to be much like the ruffling of feathers when a bird has been disturbed, a way of relaxing or releasing built up anxiety or stress.

Breeding age males will often emit their territorial call when I am in eye sight, which will sometimes set off other pairs of touracos into their territorial calls as well. An example of this is when one of the hand reared Red-crested males emits his call, the hand reared Lady Ross's male, who is jealous of this male, will automatically start his call as well, and then sometimes the entire collection of touracos will start calling all at once - a fantastic sound to hear. Another territorial call that pairs and individual birds will emit is sometimes referred to as a 'growl'. Hand reared birds will do this to humans, and parent reared birds usually do this to other touracos. This particular call

is usually limited to when an individual approaches the flight and it goes along with the bird showing the primaries. The larger touracos will emit a lower call which lasts about 3 seconds, and the smaller touracos like the Red-crested will do a quick wing spread and a quick 'growl' only lasting about 1 second. This usually precedes an attack if there will be one. Parent reared birds usually do this when another touraco lands near their aviary, or flies onto the same branch, and this call is usually enough to cause the other bird to leave. Each species has its own unique call, and every individual has its own version of that call; it does not take long to be able to recognize exactly which bird is calling from a distance.

Each bird will share in incubation; some follow a fairly strict schedule. One pair of Red-crested Touracos is quite predictable in terms of who is on the nest at any given time. The female usually incubates during the day, while the male will incubate mostly at night and early in the morning. While the male is incubating, the female will bathe in her water dish and will often return to the nest when she is done, most likely to aid in keeping the proper humidity of the eggs. Both birds will sleep in the platform at night. During the day, the male will bring fruit to the female while on the nest and will 'stand guard' as long as she is sitting.

Chick Behavior

Most species of touraco chicks are black, with velvet like feathering. Their eyes are open when they hatch, and are fed mainly a liquid diet for the first few days by the parents, somewhat similar to the 'crop milk' of the Columbiformes. Soon afterwards, they start to



Turaco chick.
Photo by Myles Lamont

feed partly-digested fruit. Most pairs are very keen on feeding the softbill pellet; it is offered in large quantities once a chick is hatched. Young chicks do very little for the first week. They grow very quickly, most likely because

they are an open top nesting species so they would fall easy prey to most predators. Chicks will begin to 'beg' after about a week, emitting a soft squeak, while moving their wings up and down in an attempt to attract attention to themselves rather than their

sibling. Hand reared birds have been seen to do this, even when fully grown, when approached by their keeper or when offered fruit by the hand.

When the chicks fledge they often are found on the bottom of the aviary, where they usually spend the first day until they are able to climb up onto a branch or into a bush. I have never seen them climb wire; however, they must be able to do so, as somehow they manage to get to the top perches without there being any way to get there without having climbed the wire. Chicks are closed banded once they fledge, as sometimes parent birds will try to remove the bands when they are in the nest, causing severe leg damage.

Summary

The Musophagidae family offers a very unique and fascinating opportunity for the average aviculturist. Their colour, friendliness, character and relative ease of maintenance will ensure the popularity of this family of birds; however, the continued research into the habits, diet, and reproduction both in captivity and in the wild is crucial to get a better understanding of these relative newcomers to aviculture. With a number of these species threatened with habitat degradation, agricultural encroachment and hunting, the conservation of both in and ex-situ populations is vital to ensure that future generations can derive as much joy and pleasure from these birds as we have.

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