Hand Rearing a Great Blue Turaco at Paradise Park, Hayle, Cornwall.
Corythaëola cristata

by Rebecca Waite

Introduction and Background

The Great Blue Turaco (Corythaëola cristata) is the largest of the turaco family measuring between 70-75cm in length and weighs between 820-1250g. The body is bright blue and the wings are quite short and rounded, with a stout body and a long tail. Both sexes are identical in colouration which does not change throughout the year. They live in sub-saharan Africa and inhabits Montane rainforest’s and gallery forests from sea level to around 2700m. They feed mainly on fruits, but also favour leaves, shoots and flowers.

The pair of turacos housed at the Paradise Park have been together since February 2010. Almost from the moment they met they have displayed and called for each other and now have a very strong pair bond. As soon as we placed nests in the the enclosure they started to gather flimsy twigs and broad leafed plants to build their nest.

We tried several types of nest to begin with, all large platforms with raised edges on them to prevent twigs from falling off, and various nesting substrate on the bottom, such as wood shavings, sand and hessian sacking. The birds would build the nest and even occasionally lay on these platforms but would abandon the eggs after a few days. It was thought that the nests they were building were too flimsy and were simply falling apart. We then managed to purchase some very large wicker baskets which we placed in the same area inside the hut on the existing platform and also another one outside of the hut under some shelter. The birds took to these very quickly and even if the flimsy nest consisted of only a handful of twigs the birds were happy to sit in them, lay their eggs and incubate them.

The first clutch of two eggs they laid were abandoned only 3-4 days before they were due to hatch. On inspection of the eggs it was found they had fully formed, and what looked like, healthy chicks inside them. The birds laid a second clutch and did the same thing, again these eggs were also fertile. The next clutch of eggs that were laid were taken and artificially incubated after the second egg had been laid. They were incubated in a Grumbach incubator for the remainder of their incubation period. One egg was infertile but the other we placed under a brooding pair of White cheeked Turaco (Tauraco leucotis) the moment it started to externally pip. We had previously successfully used this pair of White cheeked Turaco to foster many other species of Turaco. Initially they seemed to be rearing the chick successfully, but by day 6 the chick had died. It was thought that the size of the rapidly growing chick, and its demand for food, was just too much for the foster parents and they simply could not keep up.

After this set back we again allowed the birds the opportunity to incubate and rear for themselves, in the hope that they just needed practice in doing so. Finally in late 2010 our first chick hatched under the female turaco. This entire breeding attempt was monitored via cameras that we had set up to view the nest so we did not have to disturb the turacos but could easily view the nest to see exactly what was happening. Once the chick had hatched the female seemed very attentive and appeared to be trying to feed it. The following day it was obvious that something was wrong. The chick was not responding to the females attempts to encourage it to feed and after viewing it on the monitor it was decided to go and investigate. Unfortunately the chick had died.

Reluctantly we all agreed that a hand rearing attempt was our most realistic option and despite its difficulties we had little to lose. Before embarking on hand rearing we researched all available protocols for hand raising this species and decided to adopt the protocol developed by the San Diego Zoo. We already had good links with staff from the San Diego Zoo, namely Pat Witman
and Clancy Hall, and I, together with a colleague from the park, had been fortunate enough to visit the collection in November 2009. I had seen at first hand how their turacos are kept and what diets they use for hand rearing, although it was made clear to us that their protocol was only partially successful.

During the winter months all our Turacos are locked in their heated shelters overnight. With the extremely cold and prolonged winter months in 2010 we took the decision to prevent the hen from continually laying and thus risk egg binding, by shutting the male and female in separate huts by night and allowing them individual access to the main enclosure during the day, with each bird taking turns outside. Once winter had almost passed they were once again let out together into the enclosure by day (whilst still being locked away at night for extra warmth). They immediately started calling and copulation was frequently observed. Within days the female had laid a single egg in her hut. This egg was taken for incubation.

**Hand-rearing**

The egg was placed in the Grumbach incubator that was used for the previous eggs, and on the 9th February 2011 the egg started to internally pip. A day later it had externally piped and then finally on the morning of 11th February the chick had hatched at a weight of 37.14g. We then followed the hand rearing protocol given to us by San Diego Zoo as a guide on what to feed and when. This protocol had been successful in rearing chicks in 2000, 2001 & 2003, but unfortunately since then it had not been successful.

On the first day after hatch we waited 6 hours and for the begging response to begin before feeding. This first day we gave it only Dioralyte solution for the first two feeds (using a syringe) then a mixture of Kaytee Rainbow Exact parrot food soaked in the Dioralyte solution until it was completely hydrated and soft. This could be kept refrigerated for 24 hours before being discarded. However, I always placed the food in a metal food dish sitting in warm water to take the chill off the Kaytee before feeding. To feed the Kaytee I used a pair of tweezers and tore off small chunks to feed the chick, it took to this readily. I always removed the chick from the brooder when feeding, as it was easier to feed it on a flat surface than in its bowl nest. I would feed the chick until he wanted no more but it was very surprising the amount that would be consumed in one sitting for something so small. The first day of hatching it produced no faeces even with stimulating the cloaca. The first faeces were passed on the second day. It was only necessary to stimulate the cloaca up to the 3rd day by which time the chick would then defecate after every meal. The turaco’s weight was recorded before the first meal of the day to check its weight against the existing data from San Diego Zoo.

The temperature in the brooder started off at 36°C which was decreased by 1°C every other day. The humidity was maintained at around 65-75%. The turaco chick was fed every 2 hours from 06:30-20:30. The chick was kept in a metal “coop cup” bowl with a small piece of Astroturf in the bottom to help the feet develop properly, and surrounding the chick on the sides of the bowl was paper toweling that kept the chick away from the edge of the metal bowl and prevented it from chilling. Using this method it meant the matting and toweling could be changed regularly to keep the chick clean.

On the second day, for 3 consecutive days, Betamox palatable drops were given once a day as a prophylactic, in case of any infection picked up while hatching. By day 6 the pin feathers on the wings were starting to develop and the turaco became inpatient if it was not fed as soon as it was taken out its brooder. It would actively try and move towards the bowl containing the food and the tweezers to encourage me to speed up! At this stage the turaco’s weight was noted to be higher than the ones successfully hand raised at San Diego and this continued to be the trend until the chick was around 30 days old, when its weight started to even out and become similar to the San Diego birds.
On day 8 very small pieces of soft, steamed, broccoli dipped in the Dioralyte solution were given to the turaco towards the end of each feed of Kaytee. The turaco seemed to enjoy this so much so that by day 12 I had to start feeding it the colourful Kaytee first and leave any green bits of Kaytee till last with the broccoli. If I fed him green Kaytee first this is the only colour he would eat, presumably thinking it could be the broccoli he loved so much?

At day 10 the Dioralyte solution the Kaytee was soaked in was changed to boiled, cooled water, and the chick was given access to sunlight for around 15 minutes a day. Day 12 the chick was observed flapping its wings and beginning to preen itself. At this point the chick was moved to a flat bowl with the Astroturf and paper toweling so it could stretch its wings more easily.

On day 14 the feeds were cut down to every 2 ½ hours and fed from 06:30-20:30. The diet was also changed slightly by adding small pieces of chopped papaya and banana (also moistened in water). As with the broccoli this new addition to the diet was fed after the Kaytee was consumed and indeed after the broccoli. After a day or so I also had to avoid feeding yellow or orange pieces of Kaytee as well as the green Kaytee until last, as the turaco would not eat the other colours once he had had these, again presuming they were the banana or papaya?

On day 16 two dishes were left in the brooder between feeds, one with water and the second with some food. The turaco was also standing well for itself by now.

By day 17 the turaco was seen eating small amounts of broccoli from the dish, and on day 18 small amounts of banana and papaya also. On day 17 the turaco was fed every 3 hours from 06:30-20:30 and was seen trying to perch on the edge of the food dish so on day 18 perching was also added to the brooder.

By day 22 the nesting bowl was removed as it was no longer being used. Vocalizing was noted from day 21/22 when I came in to the room to feed the chick.

On day 25 the amount of broccoli, banana and papaya given was increased and the Kaytee was not soaked as much so it was less 'sloppy' and generally fed in large pieces. The turaco was moved to a larger brooder on day 27 as it was quickly outgrowing the one it was already in.

On day 28 the chick was fed every 4 hours from 07:00-18:30

Day 32 saw the introduction of figs to the diet which were taken readily. And day 33 the feeds were cut down to 5 hours and fed from 7:30-18:00.

On day 36 the turaco was moved to an indoor pen with perching and a heat lamp by day and back to the brooder by night so it could stretch its wings and begin to try exploring its environment. Newspaper was used on the floor as wood shavings posed a potential risk of being consumed by the chick. Straight perches were used so as to limit the risk of the bird becoming caught in a fork.

By now the turaco was eating mostly independently or with a little coaxing. On day 45 apple, pear, melon, grapes, blueberries, Softbill Kaytee and a Low Iron Insectile mixture were also given in the food bowl which was left in the enclosure. This was similar to the adult diet and the turaco seemed to enjoy the added fruits. The Kaytee Rainbow Exact was still being provided as the young turaco would still consume a large amount of it daily.

The turaco was then moved to a large outdoor enclosure by day and locked away at night in a heated hut with a heat lamp. The chick was still being weighed every morning to ensure it was putting on sufficient weight. By now the young turaco was around 100g less than the average San
Diego Zoo weight, but still eating well and with the added exercise of the outdoor enclosure she started putting on weight faster.

On day 69 I noticed in the morning that the chick had not eaten very much from the night before and had dropped around 16g it weight from the previous morning. Occasionally the chicks weight had fluctuated for a day or so before gaining more, but that morning something did not seem right. The turaco seemed fine in itself but was not interested in food, which was extremely unusual as it had always eaten something no matter how full it was. I monitored her throughout the morning. The chick took a small amount of food but even the favorites of broccoli and the large orange pieces of parrot Kaytee would not tempt it to eat very much. I also observed the chick drinking water a few times, which was unusual as she was choosing this over the food. After consulting with the park’s curator, who had also been monitoring the chick during its development, the vet was called in. The vet agreed that there was something not quite right. The young turaco was slightly fluffed by now and sleepy eyed, something I had never observed with this bird in the past. The chick was given an injection of Doxycycline and a course of Marbocyl tablets. In that one day it had also lost over 90g of weight and by the end of it was only passing very watery faeces.

The next morning, with some trepidation, we went to went to see how the bird was. It was fine! Almost back to its old self, eating lots! The chick had even kept the same weight overnight.

From here on the young Great Blue Turaco has continued to thrive and is slowly putting on the lost weight. As I type this, she is 90 days old and has a weight of 516g which is now around 200g down from the San Diego Zoo birds. However, she (DNA sexed as a female) is very fit, boisterous and a strong flier with her adult feathers almost all developed. Since her loosing the weight she has only been given apple, pear, banana, papaya, blueberries and the new favorites of strawberries and raspberries. I am hoping to introduce the Low Iron Insectile mix and Softbill Kaytee again within the next week when I am sure that she will continue to put on the weight. Even though this is one of the more challenging species that we have reared it has been worth every minute and I have found it to be extremely rewarding.

Products mentioned in the text;

Dioralyte – Sanofi-aventis, One Onslow Street, Guildford, Surrey, GU1 4YS, UK.
Kaytee Rainbow Exact – Kaytee Products, Inc. 521 Clay Street, Chilton, WI 53014 USA.
Betamox palatable drops – Norbrook Laboratories Limited, Station Works, Newry, Co.Down, BT35 6JP, Northern Ireland.
Softbill Kaytee - Kaytee Products, Inc. 521 Clay Street, Chilton, WI 53014 USA.
Low Iron Insectile Mix – Orlux, Versele Laga
Doxycycline – Shellmed UK, Loughrea County Galway, Ireland.
Marbocyl- Vetoquil UK Ltd. Vetoquil House, Great Slade, Buckinghamshire Industrial Park, Buckinghamshire, NK18 1PA, UK.
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