Breeding the Asian Black Hornbill

a Dream Come True

Anthrococeros malaynus

by James Miller, Ramona, CA

[Editor's Note: This may be a first breeding. If anyone knows of a previous breeding of this species, in the U.S. or anywhere else in the world, please send documentation to the AFA Business Office. D.R.T.]

Photo by James Miller

Adult pair of Asian Black Hornbills. The female is much smaller than the male and has a black mandible compared to his horn-colored mandible.

For years I've dreamed of being able to work with hornbills. Something about this unique family of birds always fascinated me. I spent hours studying everything I could find on them and talking to people with experience with them. I read every article and book I could find, and all the information put out by the Captive Breeding Specialist Group. It even reached the point where I had to promise my wife that I would not say "I want" when going to a zoo or bird show where there maybe any hornbills.

We were offered a pair of Asian Black Hornbills *Anthrococeros malaynus* in late 1995 and, needless to say, we jumped at the opportunity.

Not being overly familiar with this species, I did a little research and found that it is a medium sized hornbill that is basically all black with broad white tips on the tail feathers. Males have horn-colored bills with a more pronounced casque, while the female is a little smaller bird with an all black bill and small casque and red throat and cheek patches. There is a broad superciliary stripe (we call it an eyebrow) that varies from all white to charcoal gray in individuals.

This species seem to have a large range including Thailand, s from Trang, Peninsula Malaysia, Sumatra and other islands. It is a very adaptable species and should be easy to establish in captivity if people will work with it. There have been reports of them nesting in the tops of open palms in the wild, probably because of lost of habitat and large trees due to logging.

When we received the pair they were placed into a flight cage that measures 6 ft. wide x 8 ft. high x 32 ft. long. The back and front eight feet are covered with plywood, the front shelter is where the food station is located and the back shelter is where the nest box is located. There are three perches in the flight, one in the front at the food station, one in the back in front of the nest and one low in the middle for sunning. Moist clay-like mud is provided in a cement tub placed in the ground by the middle perch. All perches are firmly mounted as hornbills can hit a perch very hard when they land. Plants in the flight include figs, guavas and a Tasmanian Tree Fern.

The nest is made of ¾ inch plywood with a second layer attached to the face on the inside to give a total thickness of 1½ inches thick at the entrance which provides a thicker surface for mudding up. You must remember that hornbills seal the entrance after the hen goes in to start laying and in many species the hen will completely molt all flight and tail feathers at once while in the nest. The edge of the entrance was roughened by drilling small hole all around it, .098 size drill.

The nest measures 19 in. x 19 in. x 18 in. tall. The entrance hole is a modified diamond shape being about five inches at the widest point and eight inches tall. The bottom of the entrance is about 2 ½ inches from the bottom of the nest, so the hen can easily reach the entrance to defecate through and receive food from the male.

Upon release into the flight, the pair made themselves right at home, eating guavas and figs off the trees. Although I was told that this is a very nervous species that needs a lot of privacy, they showed no fear of me while feeding and would come within two feet of me. They were also very curious about their surroundings, always stretching to see what was going on around them. Their flight was in a high traffic area being within 20 feet of our horse corrals.

We placed them on a diet that includes apples, pears, cut grapes, papaya, blue-berries, figs, kiwi, guavas, bananas, frozen mixed vegetables, mice, crickets, wax worms, lizards, grasshoppers, soaked Zu Preem, Kaytee low iron softbill and mynah pellets, and Butcher Blend dog food. Some fruits are fed seasonally and animal protein is limited and increased during the breeding season. Asian hornbills are less carnivorous than a lot of the African hornbills are.

The male of the pair is very attentive to the hen. Upon receiving a large

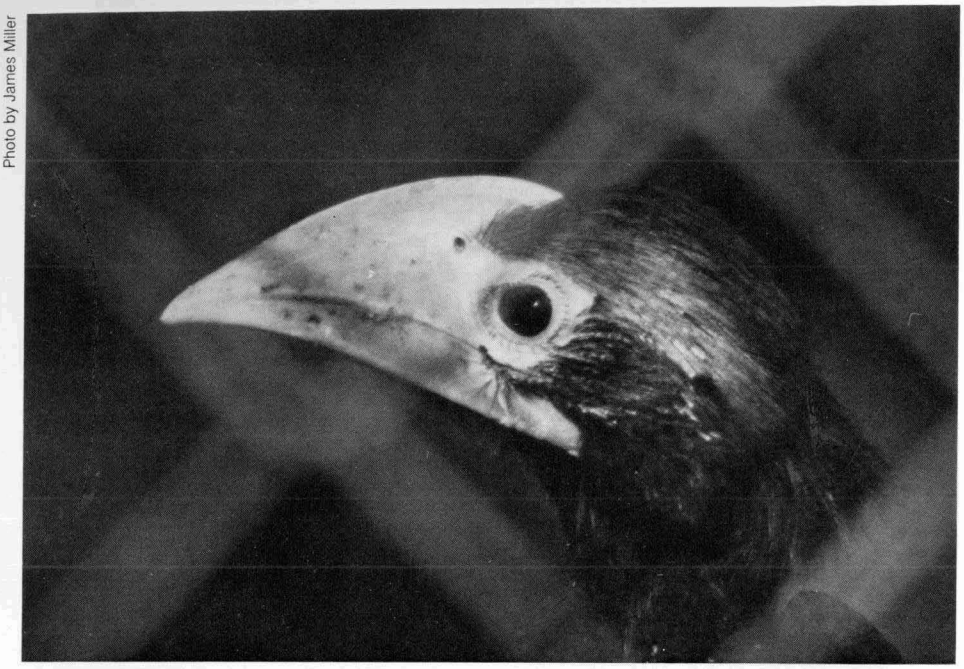

Photo by James Miller

No color or casque shows on the bill of this juvenile Black Hornbill.

grasshopper he would fly to the back of the flight and present it to the nest entrance and the to the hen. He would do this back and forth for about 15 minutes before actually feeding it to the hen. This alone was interesting and exciting to watch since pair bonding is very important for successful reproduction.

Their appetite doubled around April 1996 and they started sealing the box, unfortunately the hen was outside the box. I later found that they knocked out the inspection doors. The rest of the year was uneventful.

The 1997 season began early with the pair starting to seal the box in late January. On April 12th the hen was observed to stay in the box most of the day and was not completely sealed in until April 15th. The male was observed to feed the hen through the slit, food was delivered in the tip of the bill and by regurgitation. He was also observed throughout the nesting time to beat thick stemmed weeds then give them to the hen through the slit to line the nest with. Their food intake decreased back to normal after the hen was sealed in.

The only excitement during the incubation time came on April 18th when a six foot Gopher snake tried to attack the hen through the slit. I had to go in and remove it while the male sat at the food station stuffing his face, he did fly back and feed the hen as soon as I removed the snake from the flight. When I say that was the only excitement that does not take into account the fact that I was on pins and needles the whole time and nearly impossible to live with.

On May 15th the male was acting aggressive and nervous, gabbing food and flying back to the nest as fast as possible. The seal was broke from the top to the bottom and with binoculars I was able to check from the front of the flight and saw a small pink baby when the hen moved. I am pretty sure it hatched that day. My wife said she would have sworn that I had laid the egg and hatched the baby myself. It was one of the most exciting days of my life.

The next day the pair had resealed the entrance from the bottom about three inches. On May 28th the temperature reached into the high 90s, the pair reopened the slit to almost the full height. On May 31st I was able to see two babies and on June 6th at least one baby had its eyes open. Throughout the nesting time there was no major change in diet just an increase in food. I tried to make sure there was food in the dish at all times. They did increase their intake of blueberries to half a pound a day and received pinky mice everyday. We didn't feed larger mice till I felt the babies were big enough to digest them without a problem, I may have been a little over protective.

On July 25th 1997 the BIG day finally came, I went out in the morning to find the oldest baby had broken out of the nest. His flight and landings were extremely clumsy, he even fell over the low perch when he tried to land on it. He looked like a miniature of the male and would try to imitate the male. The total length of time from hatching was 72 days — approximately 12 days longer than expected. I guess, however, that my pair hadn't read the books because the hen didn't come out with the baby like she is suppose to.

Finally, on August 4th the temperature hit over 100 degrees and the male hadn't been to the box to feed since August 3rd in the morning. I decided to open the inspection door at which time the hen flew out. The babies seemed to be doing fine and I was surprised at how clean the inside of the box was. I open the slit some for air flow and so the hen could reach the babies to feed them. Later that day I found the second baby out and perching. On August 5th the third baby was out with the others — it was quite a sight to see five hornbills sitting on one perch together. None of the babies would take food directly from the male until the end of their first day out. For the most part, all of the feeding was carried out by the male after they came out. With the family group out, the female became very aggressive and vocal while the male remained mellow toward intruders. I also noticed that the youngest baby would return to the nest and sit in it for about half an hour at a time. As of November 9th, the babies still spent time in the nest.

In mid August the oldest baby was seen eating some on its own and by mid September was weaned with the other two weaning at the end of September.

We have started to cut back on our pet trade birds that we raise so we can have more time to work with the hornbills. Our goal is to have two to three unrelated pairs of any species we work with. We hope to be able to set up some kind of protocol for breeding these unique birds on a steady basis. We are concentrating on encouraging the parents to feed and raise their

babies rather than handfeeding. All babies are going to be placed in the hands of other breeders and not in the pet trade. We hope to share any knowledge we gain with other breeders and apply it to other species of hornbills. There are a lot of things we have yet to learn, such as when are they mature and in which species do the this year's young help parents raise next year's babies?

We have been working with Dave Swelland of Swelland Cages on plans for new flight cages and are about ready to start construction. The new flight for medium to large hornbills will be 12 ft. x 12 ft. x 30 ft. long and for small hornbills 6 ft. wide x 12 ft. high x 24 ft. long. All flights will be planted and have misters. We have also started putting in exotic fruit trees that are considered part of the natural diet of some of the Asian hornbills.

We have added two more species of hornbills to our program. Trumpeter Hornbill *Ceratogymna bucinator* and African Pied Hornbills *Tockus fasciatus semifaciatus* and look forward to working with them and are looking to add some of the large species to our breeding program.

After working and studying hornbills, I believe there are three key ingredients to successfully breed them. **1.)** pair bonding; the male must be attentive to the hen or she will not feel secure enough to seal herself in. Remember she is totally dependent on the male while sealed in. **2.)** nest site; a big enough box to encourage larger clutches with an entrance that is close to the bottom and narrow enough that the hen can barely get in (and you would be amazed at what a little opening the hen can fit through). For smaller species and maybe even medium sized birds a shelf inside that the hen can get on is recommended. The small entrance will make less work for mudding up, if the opening is too big they may give up and desert the nest. **3.)** You must like and enjoy the species you work with. After over 20 years of working with birds and other exotic animals I find this to be important no matter what species you are working with. I have raised Hyacinthine Macaws, caquies, Yellow-shouldered Amazons, Hoffman's Conures *Pyrrhura hoffmanni*, and Pileated Parrots *Pionpsitta pileata*, but can barely raise an African Grey or Moluccan Cockatoo and could not raise a Nanday Conure if my life depended on it. I am not overly fond of any of these three species and it shows in how they breed for me.

The hornbills, though, are working for me. I guess now my lifelong dream has come true.

I must give special thanks to three people who helped to make this dream come to be; my loving wife Benne who has put up with mice in the freezer, all my wants, and my change from a commercial breeder to what I feel is a true aviculturist, enjoying the birds I work with and not worried about making money off them.; my 12-year-old son Danny who helped with supplement feedings, observing the pair and feeding the whole collection by himself while I was at the A.F.A. convention just a few days after the babies came out. And last, to my special friend Dale Thompson, who willingly shared his knowledge and gave me encouragement and support when I was ready to give up breeding altogether. I hope that someday I can repay his friendship. Without these people none of this could have ever happened.

We would like to contact people with hornbills, no matter how many you have or what species. We want to share information, trade bloodlines, or help pair up single birds. Anyone with Black hornbills interested in starting a studbook or pairing up birds please contact me. We need to start working together and working with zoological institutions if these wonderful birds are to survive in the U.S. and maybe even in the world. We have arranged to trade one of our babies with the San Diego Wild Animal Park — they hatched out a baby in late July. The bird that comes from them will be placed with one of our babies and our third baby will be setup with a wild-caught bird when we can find it a mate.

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