

Great Pied Hornbill

by Dale R. Thompson, Canyon Country, CA

The Great Pied Hornbill *Buceros bicornis* is one of the largest and best known of all the true hornbills. In recent years, this species has been called the Great Indian Hornbill. The scientific name "bucerus" means "having ox's horns." This species of hornbill has a large block-like casque above its mandibles. It has a black line at the junction to the bill itself. In adult males, the casque is double pronged in the front and ranges from mostly yellow to red-orange in color. In adult females, the casque is smaller and lays parallel to the mandible. The eye coloration in males is red while the eyes of the female are white.

The Great Pied Hornbill ranges from northeast India along the base of the Himalayas to Assam, China, Viet Nam, Laos and Cambodia. It ranges south through the Malay Peninsula to Indonesia including Sumatra and many other islands as well as. There is also an isolated population in India following the southwestern edge of the peninsula.

There are 54 recognized species of hornbills (Kemp, 1995) which are divided into two genera, *Bucorvidae*, the ground hornbills (two species) and *Bucerotidae*, the true hornbills (52 species). All hornbills belong to the order Bucerotiformes. They were originally classified in the order Coraciiformes which now include the kingfishers, rollers and bee-eaters.

The hornbills are unique among all birds in that the females, from within the nest, seal up the entrances to the point where only a narrow vertical slit remains. Through this slit, the females, and later the young, are fed by the male. Old food and feces are discarded out through this slit. During this time of concealment, the females of most hornbill species molt their flight feathers which grow in again before the bird leaves the nest. During this time she will incubate her eggs and

brood her chicks. An exception to the rule, the two ground hornbills do not seal themselves into nests.

Hornbills, as a group, have a geographic distribution that includes sub-Saharan Africa, India and much of southeast Asia including Indonesia and New Guinea. All hornbill species are omnivorous in their dietary habits with the two ground hornbills being mainly carnivorous while one other group, *Aceros*, is mainly frugivorous (fruit eating).

Hornbills are an Old World order and though the toucans of Central and South America fill the same ecological niche, they are not closely related. This is especially true in their breeding biology.

The Great Pied or Indian Hornbill has been exhibited in zoos for many years. They are very hardy after they are acclimatized, but care must be given where temperatures become so low that frostbite may cause damage to their toes or even their bills. But the cold weather is not ideal if reproduction is a goal.

I do not know when the first captive breeding of the Great Indian Hornbill was accomplished, but there is an early account of a successful breeding of this species at Jurong Bird Park in *Avicultural Magazine* (1978) by P.K. Choy, the Director. Another success

was at the St. Louis Zoological Park in the *Avicultural Magazine* (1987) by Bruce Bohmke, then Curator of Birds.

These are two excellent accounts of successful reproduction in captivity. Artificial nests are supplied and this seems to be a great stimulus for bonded pairs of hornbills. Great care is usually given to avoid disturbing the nest once the female has sealed herself inside. Recent studies now show that this may not be as important, but the male should generally be kept away during nest inspection as he can cause quit a disturbance. Most first-time nests, however, are not disturbed even though there is the urge to check for fertility or to see if there are any chicks.

Pair bonding appears to be very important in the success of hornbill reproduction, especially for the large species. Most are housed in large planted aviaries. It appears that the nest opening and where it is placed on the nesting log is very important. Having had the pleasure of listening to Pilai Poonswad of Thailand at the two Delacour/IFCB symposia (1983, 1987) in Los Angeles, has given me a real appreciation for the large Asiatic hornbills. In one of her proceedings, Pilai Poonswad has illustrated nest openings found in the wild. Most are long, narrow, vertical slots that appear like very flattened, vertical diamond shapes. Obviously, they follow the contour of the tree opening or cavity. Several zoos have modified their captive nests to follow these natural designs and their success rates have improved.

The height of the nest entrance is also very important in captive nests. It should not be placed too high above the bottom of the inside chamber as it would be difficult for the breeding

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female to receive food passed to her by the male outside. She must also be able to defecate out of the opening lest the nest itself become very contaminated. Many captive nests have the opening only a few inches above the floor of the internal chamber.

Many hornbill nests found in the wild have elevated ceilings within the chamber. This elevated portion of the chamber is often used by incarcerated females and even youngsters to escape danger from outside predators trying to enter the nesting chamber.

Most Asiatic hornbills are listed on CITES Appendices I or II and are protected. However, commercial logging in the countries where hornbills are found is always a threat to their continued existence.

The interest in hornbills has been increasing greatly over the past years. There have been several excellent studies of hornbills in the wild. Most notable are studies in South Africa by Alan Kemp; in southeast Asia by Cliff and Dawn Frith; in Thailand by Pilai Poonswad; in India by Modse Sanjeevareddy; in Indonesia by Mark Leighton; on the island of Narcondam by S.A. Hussar and in Uganda by Jan Kalina.

In 1993, an IUCN/ICBP Hornbill Specialist Group was formed that included the above persons and many

others, both in the field and in zoos. This led to many other groups being formed including the CBSC Hornbill Global Captive Action Plan Group and the AZA North American Hornbill Taxon Advisory Group in the United States.

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