

HORNBILLS

Family BUCEROTIDÆ

THE hornbills (*Bucrotidæ*) are a moderate-sized group, found throughout Africa, except the Mediterranean region, and Southern Asia, extending to Papua, but not into Australia. The Asiatic forms are the most varied in type.

The family is distinguished by a very large bill, generally slightly curved, and provided with a casque or helmet, differing greatly in the various genera and with the age of the individual. Feet are heavy and clumsy, with the soles somewhat broadened, and the tail sometimes with the two centre tail feathers much elongated.

The members of the family in most cases nest in holes in trees, generally lofty, and the females are built up into the nesting holes, either by the males or by their own efforts, and remain so during the whole process of incubation, only the beak emerging through a narrow slit left for the purpose, the nesting bird being fed by its mate.

The food is, in the main, fruit, though captive birds are not averse to meat, lizards, etc., and fledgeling birds, while one species is said to capture fish.

The bases of the flight feathers are bare, with the result that flight is very noisy, in one species resembling the noise of a traction engine in the distance, labouring up a heavy incline.

The colours are varied, but never brilliant ; the sexes differ slightly, usually in details of the tail and the size and coloration of the bill and casque.

Habits are semi-social, the birds travelling in small parties, and often covering great distances in their search for food.

Twelve or thirteen species are known from the Malay Peninsula, but, with the two exceptions here described, all are birds inhabiting heavy forest, and will be dealt with elsewhere.

KEY TO THE SPECIES HERE DESCRIBED

- Outer tail feathers entirely white *Anthracoceros convexus*, p. 104
Outer tail feathers with only the terminal
third white *Anthracoceros m. leucogaster*, p. 105

*Anthracoceros convexus***The Southern Pied Hornbill**

Buceros convexus, Temm., *Pl. Col.*, ii., 1832, p. 82, pl. 530.

Anthracoceros convexus, Ogilvie Grant, *Cat. Birds, Brit. Mus.*, xvii., 1891, p. 364.

Malay Names.—Burong kělengking ; burong lilin ; burong lang ling.

Description.—*Adult.*—Whole upper surface, deep black, glossed with green, feathers of the head narrowed and elongated. Primaries and secondaries the same, all except the innermost and the outer primaries broadly tipped with white and with white bases. Centre pair of tail feathers black, glossed green, very narrowly tipped with white, remainder pure white ; throat and upper breast, black ; rest of under surface and edge of wing, white, the bases of the feathers black (described from a female from Tanjong Hantu, Dindings, 8th August 1918).

Immature (apart from the character of the bill).—Have a varying degree of black on the basal portion of the tail feathers, greatest in extent on the pair next the central ones.

Soft Parts.—*Male*: iris, red ; bare skin behind the eye and on the sides of the throat, silvery white ; in front of the eye, purplish cobalt ; bill, ivory-white ; back of the casque and a large patch at the anterior end, blackish ; a black patch at the base of the lower mandible ; feet, brownish leaden. *Female*: casque smaller, tip of the bill and cutting edges of both mandibles, blackish ; patch at base of lower mandible, brownish anteriorly. *Immature*: casque reduced to a raised knife-edge on the bill, which is pale yellowish green, with no black markings.

Dimensions.—Total length, about 30 in. ; wing, 11·8 to 12·5 in. ; tail, 11·5 to 13 in. ; tarsus, about 2 in. ; bill varying much with age. Females average slightly smaller than males.

Range in the Malay Peninsula.—From the Patani States, south to Johore. Probably Singapore Island, as it is common on the islands to the south of it. Rather doubtfully on Penang, the specimens in the British Museum labelled as from there probably coming from Province Wellesley.

Extralimital Range.—Sumatra, Borneo, Java.

Nidification.—There is no information on the nesting of this species in the Malay Peninsula.

Habits.—Essentially a bird of the sea-coasts, but not in mangrove, and the banks and neighbourhood of the larger rivers ; commoner on the eastern than on the western side of the Peninsula.

This hornbill, which is a bird of cultivation and never found in old jungle, is the most conspicuous species on the Pahang river and its tributaries, as far as human habitations extend, and may constantly be seen flying across the river in the early morning and late afternoon. Its cry is a harsh cackle, and its flight laboured, consisting of three or four beats of the wings following in rapid sequence, succeeded by a coasting flight in which the wings are held rigid.

It is gregarious, the flock consisting of from three or four to as many as forty individuals. The food is principally the fruit of various large species of banyan (*Ficus*) and the trees are systematically worked until they are stripped bare.

Anthracoceros malabaricus leucogaster

The Northern Pied Hornbill

Buceros leucogaster, Blyth, *Journ. Asiat. Soc. Bengal*, x., 1841, p. 922 (Tenasserim).

Anthracoceros malabaricus, Ogilvie Grant, *Cat. Birds, Brit. Mus.*, xvii., 1901, p. 365; Elliot, *Mon. Bucerot.*, pl. 13 and text (1877).

Anthracoceros albirostris, Blanford, *Faun. Brit. Ind., Birds*, iii., 1895, p. 145; Oates, in Hume's *Nests and Eggs Indian Birds* (2nd ed.), 1890, iii., p. 72; Robinson and Kloss, *Journ. Nat. Hist. Soc. Siam*, v., 1923, p. 132.

Anthracoceros malabaricus leucogaster, Stuart Baker, *Faun. Brit. Ind., Birds* (2nd ed.), iv., 1927, p. 289.

Malay Names.—As in *A. convexus*.

Description.—*Adult.*—As *A. convexus*, except that the four outer pairs of tail feathers are not all white, as in that species, but have only the terminal fourth white. Casque and bill rather different in coloration.

Immature.—The white on the tail less in extent, and mottled with black; casque rudimentary.

Soft Parts.—Iris, red; orbits, silvery, tinged with blue; bill, ivory and black; feet, greenish grey or black.

Dimensions.—Total length, 29 to 30 in.; wing, 11 to 11.5 in.; tail, 11.5 in.; tarsus, 1.8 in.; bill from gape, 5.6 in.

Range in the Malay Peninsula.—Takes the place of *A. convexus* in the north of the Peninsula. The farthest south from which we have specimens is Lassak, in the Plus Valley, Perak, so that the two species—they are not races—overlap slightly.

Extralimital Range.—The Indo-Chinese countries south from Central Burma and east to Cochin-China.

Nidification.—Not recorded from our area, though it almost certainly breeds in Peninsular Siam. Colonel Bingham found it nesting in Tenasserim at the end of March in a giant pynna (*Lagerstræmia flos reginæ*; Malay, *bungor bungor*):

“On 23rd March I found a nest of the above-mentioned hornbill in a hole in a huge decayed branch of this tree, fully fifty feet above the ground. To ascend the tree I had to get a ladder prepared, which a couple of Karens accomplished in about an hour and a half. It was constructed of bamboo, the rungs consisting of tough short pieces driven into the tree and tied at their other ends to a couple of long bamboos, which formed the outer side-piece of the ladder. So firm and strong did the affair look that I went up myself, and was able to examine the nest closely. This was, as I have said, in the stump of a decayed branch; but the entrance to the hole was greatly contracted by a substance

that looked like the bird's own dung ; on one side, however, an opening had been left, a mere slit, about 10 in. long by $2\frac{1}{2}$ in. in breadth, through which evidently the female received food. After carefully inspecting the outside of the nest, I proceeded to break it open with a *dah*, or Burmese knife, I had taken up ; and soon made a hole large enough for me to introduce my hand and arm. No sooner had I done so, however, than the female—who was, as I feel sure, seated on eggs—seized my wrist with a grasp like that of a vice, uttering the most horrible cries, and fluttering and struggling the while in the most determined manner. However, with some difficulty I dragged her out and, having ascertained with my disengaged hand that there were eggs in the hollow, managed to dispatch her by pressing her with my knee against the tree ; I was sorry to do this, but then her skin was necessary for the sake of the eggs. Having dropped her I proceeded to take the latter out ; these were two in number, of a dirty yellowish-stained white colour, and were resting on a few fragments of bark, a feather or two, and several berries in all stages of decay. They were, I regret to say, both cracked, evidently done in the struggle of taking the bird out, who by the way was as fat as butter and in first-rate feather, not looking at all ragged or dirty as I expected. The hollow was 2 ft. long by 10 in. in height, the entrance being an irregular oval in shape, and measuring 10 by $7\frac{1}{2}$ in., after the plastered dung was all removed. I forgot to mention that my attention was attracted to the nest by seeing the cock bird feeding its mate ; this he did by putting single berries, one after another, into the tip of her bill, which was shoved out of the slit ; after receipt of each berry she withdrew her beak apparently to swallow the food. I watched him for a good ten minutes with my binoculars before he saw me and took the alarm and flew off.

“ The eggs are typically much the shape of hen's eggs, and like these are sometimes a little broader, sometimes a little more elongated, and sometimes more pointed at the small end than the normal type. The shell is rather close and compact, the pores very inconspicuous ; white and with a slight gloss when quite fresh, but rapidly losing this and becoming discoloured as incubation proceeds. The eggs average 1·9 by 1·35 in.”

Habits.—As in *A. convexus*, but perhaps less of a riverside species. Common in Langkawi and Terutau, in flats near the sea, and even on small islands far out to sea, such as Pulau Butang in the Adang Archipelago, where I obtained a somewhat immature bird on 20th April 1911.