

# HORNBILLS

## Family BUCEROTIDÆ

Vol. I., p. 103.

ALTHOUGH this family of bizarre birds is one of the most characteristic groups of the Eastern equatorial tropics, the ordinary visitor to the hill stations of the Malay Peninsula will not often see any of the larger jungle species at close quarters, owing to their shyness and their habit of feeding in lofty trees. He may, however, often hear the sonorous notes of one or other of the species, and the sound of their flight, and from the summits of hills which command a clear view of the jungle beneath will not infrequently see parties in flight from one feeding-ground to another.

The species described in Volume I. are never jungle birds, and I have, therefore, omitted all reference to them here. Of the remaining species inhabiting the Malay Peninsula any one may, at times, occur in the mountains, though no records exist. I have, therefore, given a key by which they may all be identified, though only the commoner mountain species are here described in full.

### KEY TO THE MALAYAN SPECIES OF JUNGLE HORNBILLS

1	{	Centre pair of tail feathers very long, nearly twice the wing; helmet or casque abruptly truncated in front, forming a flat bony plate . . . . .	<i>Rhinoplax vigil</i> , p. 49
		Tail not nearly so long; helmet not abruptly truncated in front . . . . .	2
2	{	Tail almost square . . . . .	3
		Tail wedge-shape, the outer feathers much shorter than the middle pair . . . . .	7
3	{	Chin and throat feathered; tail with a median white band . . . . .	4
		Chin and throat naked; tail without a median band . . . . .	5

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|---|---|--|---|
| 4 | { | Casque, cylindric, the point curved upwards . . . . .  | <i>Buceros r. rhinoceros</i> , p. 51    |
|   |   | Casque, flattened above, rising into a square corner on each side . . . . .                    | <i>Dichoceros b. bicornis</i> , p. 51   |
| 5 | { | Casque, high in front, wrinkled or grooved, extending back over the skull . . . . .            | <i>Cranorrhinus corrugatus</i> , p. 52  |
|   |   | Casque, flattened, composed of overlapping plates, not extending back over the skull . . . . . | 6                                       |
| 6 | { | Base of both mandibles with transverse corrugations . . . . .                                  | <i>Rhyticeros undulatus</i> , p. 52     |
|   |   | Base of both mandibles smooth . . . . .  | <i>Rhyticeros subruficollis</i> , p. 53 |
| 7 | { | With a copious white crest of hair-like disintegrated feathers . . . . .                       | <i>Berenicornis comatus</i> , p. 53     |
|   |   | Crest, black . . . . .   | 8                                       |
| 8 | { | Crest bushy, the feathers normal; basal portion of tail, dirty-grey; tip, black . . . . .      | <i>Anorrhinus galeritus</i> , p. 55     |
|   |   | Crest not well developed; with clear white tips to the tail feathers . . . . .                 | <i>Anthracoceros malayanus</i> , p. 56  |

*Rhinoplax vigil***The Helmeted Hornbill**

PLATE 2 (Figure 5)

*Buceros vigil*, Forst., *Ind. Zool.*, 1781, p. 40 (Tenasserim).

*Rhinoplax vigil*, Elliot, *Mon. Bucerot.*, 1877, pl. 10, text; Hume and Davison, *Stray Feath.*, vi., 1878, p. 115; Grant, *Cat. Birds, Brit. Mus.*, xvii., 1892, p. 427; Blanford, *Faun. Brit. Ind., Birds*, iii., 1895, p. 158; Robinson, *Journ. Fed. Malay States Mus.*, ii., 1909, p. 173; Butler, *Journ. Straits Branch, Roy. Asiat. Soc.*, No. 32, 1899, p. 26; Stuart Baker, *Faun. Brit. Ind., Birds* (2nd ed.), iv., 1927, p. 305.

**Malay Names.**—Burong terbang mentua; burong torak.

**Description.**—Size, very large; the central tail feathers greatly elongated; casque, abruptly truncated, leaving a flat plate of very dense, hard, ivory-like tissue. Chin, throat, neck all round, and a narrower stripe down the back, naked.

**Adult.**—Head and short crest, blackish, a stripe over the eyes and the ear coverts, dull chestnut; rest of upper surface, including the wing coverts, scapulars and inner secondaries, dark brown, paler on the rump and tail coverts, the latter with lighter centres; outer secondaries and primaries, blackish, with white tips on the central pair; inner aspect of wings paler, a large spot at the angle of the wings, white. Tail, brownish, paler than the back, with broad subterminal black band and white tip, the outer pairs almost entirely

white, with a broad, black subterminal band. Under surface, with the breast, dark brown; the remainder pure white.

*Immature*.—Differ mainly in the shape of the casque, which is rounded, not flattened in front. The feathers of the breast are paler, sometimes with rusty bases, and the lesser wing coverts have pale tips and edges.

**Soft Parts**.—Iris, dark litharge-red or reddish brown; the orbital, gular and naked skin generally Indian red or dark reddish brown; bill with the basal part dark red, or dark brownish crimson; the apical part dark ivory-yellow; the casque, dark red; the flat frontal plate, yellow, varying in depth of tint. The female has the naked back and hind neck reddish lilac; the sides and front of the neck, greenish blue, veined with sky-blue (*Hartert*); legs and feet, dirty orange-brown.

**Dimensions**.—Total length, 50 to 65 in.; wing, 19·5 to 21 in.; tail, 25 to 36 in.; tarsus, 2·8 to 3·4 in.; bill from gape, 6·5 to 7 in. Females are considerably smaller birds, with the wing up to about 18 in.

**Range in the Malay Peninsula**.—From the northern limit certainly down to Malacca, probably also in Johore, though there are no definite records therefrom.

**Extralimital Range**.—The extreme south of Tenasserim, Sumatra and Borneo.

**Nidification**.—Quite unknown. In West Sumatra Mr Jacobson records a female as approaching the breeding condition at the end of July.

**Habits**.—This giant hornbill is not really at all uncommon throughout the Malay Peninsula in heavy primeval jungle, from low elevations to a considerable height in the mountains, but only where there is tall and heavy timber. It is frequently seen, and still more frequently heard, but owing to its extreme shyness and habit of frequenting very lofty trees is not often obtained, as, practically speaking, a rifle is required to bring it down. The food is jungle fruit of many kinds, and the bird is almost as fond as are Malays of the evil-smelling bean, *Parkia speciosa* (*buah pĕtai*, Malay), which communicates its nauseous odour to the flesh of the birds, which in turn is transferred to the persons of human beings eating the hornbill. The bird is generally met with in quite small parties, rarely of more than four, and when passing from one feeding-ground to another travels at a very high altitude, flying with an action very similar to that of the other large hornbills—three or four beats of the wings in rapid succession being followed by a period in which they are held rigid, the rattling sound made by the air against the primaries being audible at a very great distance. The call of the bird is equally characteristic, being a series of single whoops at decreasing intervals, followed by a harsh laugh of single notes very rapidly uttered, whence the Malay name of “Chop-down-your-mother-in-law Bird” is derived; the story being that the ancestor of the bird was originally a Malay who, enraged with his mother-in-law, started to chop down the posts of her house, and was turned into the bird for his sin, the whoops representing the ringing note of the axe against the timber.

The reason for the peculiar structure of the casque is not certainly known, but it has been suggested that the bird uses its head to compact the gum with

which it closes the nesting hole of its mate. The frontal plate is extremely hard and dense, like vegetable-ivory, about a third of an inch thick, but behind it the casque is composed of loose and spongy cancellatous tissue, which no doubt prevents the shock of impact being transmitted to the brain.

Another peculiarity is that the bird possesses only one fully developed feather of the long central pair at a time, these being moulted alternately at very long intervals—a condition which is unique among birds (Wetmore, *Proc. U.S. Nat. Mus.*, 47, 1914, pp. 497-500).

*Buceros rhinoceros rhinoceros*

**The Rhinoceros Hornbill**

**Malay Name.**—Burong enggang.

General colour, black, with a slight steely green gloss; rump, upper and under tail coverts, belly and thighs, white; tail, white, with a broad sub-terminal black band. Casque, sub-cylindric, curving upwards, reddish orange bordered with black.

Size, large—total length, 45 to 50 in.; wing, 17.5 to 19 in. Female rather smaller, and without the black line bordering the casque.

The rhinoceros hornbill is the commonest of the larger species in the south of the Peninsula, as the great hornbill is in the north. It is found nearly everywhere in heavy jungle, from sea-level up to about 4000 ft., though rare at the higher levels. On the Larut Hills and Bukit Kutu in Selangor it is exceedingly common, less so in Negri Sembilan and Pahang. Its habits are similar to those of *Dichoceros bicornis*, but it is even noisier. It is easily tamed, and makes an excellent pet, but in captivity is most omnivorous, and not averse to engulfing a whole brood of chickens if opportunity arises.

*Dichoceros bicornis bicornis*

**The Great or Homrai Hornbill**

**Malay Name.**—Enggang papan.

Head, chin and throat, black, as also the wings and wing coverts, and a broad band across the tail; a band across the wings; the tips and bases of the primaries and secondaries, the neck, belly, thighs, under tail coverts and tail, white, generally more or less stained with brownish buff. Casque, much flattened on top, coming to an edge in front and on the sides, whence the Malay name, "Plank Hornbill." Size, very large—total length, 50 to 55 in.; wing, about 20 in.; bill from gape, about 10 to 11 in. Females rather smaller.

Occasionally seen flying over the hills at some height, but not nearly so common in the south of the Peninsula as the rhinoceros hornbill. In Peninsular Siam and in the Patani States, on the other hand, it is by far the commonest of the large hornbills.

The species will be more fully described in Volume IV.

*Cranorrhinus corrugatus***The Wrinkled Hornbill**PLATE 2 (*Figure 3*)

Male, with the general plumage black, the sides of the head, the neck and the terminal two-thirds of the tail, white. Female, rather smaller, and with the head and neck black. Casque of male, wrinkled anteriorly, as if buckled by a collision. Lower mandible with transverse ridges not present in the female. Size, moderate; total length, 28 to 32 in.; wing, 14 to 16 in.

Singularly little is known of this hornbill also, and I have never myself seen a specimen in life. It appears to be largely confined to the coast, and, like *Rhyticeros subruficollis*, to perform considerable journeys over salt water. It is not at all likely to be found on the hills, or indeed far inland, but for the sake of completeness is mentioned here.

*Rhyticeros undulatus***The Malaysian Wreathed Hornbill**PLATE 2 (*Figure 2*)

*Buceros undulatus*, Shaw, *Gen. Zool.*, viii., 1811, p. 26 (Java).

*Rhytidoceros undulatus*, Grant, *Cat. Birds, Brit. Mus.*, xvii., 1892, p. 382; Oates, in Hume's *Nests and Eggs Ind. Birds* (2nd ed.), iii., 1890, p. 80; Blanford, *Faun. Brit. Ind., Birds*, iii., 1895, p. 147; Robinson, *Journ. Fed. Malay States Mus.*, ii., 1909, p. 173.

*Rhyticeros undulatus*, Stuart Baker, *Faun. Brit. Ind., Birds* (2nd ed.), iv., 1927, p. 291.

**Malay Name.**—Enggang gunung.

**Description.**—With low ridged plates on the culmen, varying in number with the age of the bird; bases of both mandibles corrugated; sexes different.

*Adult male.*—Top of head and crown, dark maroon-chestnut; sides of the head and neck, white, generally stained with buff; remaining plumage, black; the wings glossed with steely green; tail, pure white, generally stained with yellowish.

*Adult female.*—Without the chestnut on the head, which is like the rest of the plumage, black.

**Soft Parts.**—*Male*: iris, orange or red; the orbits salmon or chrome, with a transverse band of blue or dark green, interrupted in the middle; bill, ivory, reddish at base; feet, black. *Female*: "iris, hazel-yellow; inner ring, lemon; orbital skin, deep dull pink; bill, ivory; concavities of corrugations, brown; base of casque, brown; base of bill, olive. Feet, black; back of tarsi and toes, grey. Gular skin, turquoise and violet mottled; gular band, black" (*Kloss*).

**Dimensions.**—Total length, 39 to 42.5 in.; wing, 18.5 to 20.5 in.; tail, 14 to 16 in.; tarsus, 2.3 to 2.6 in.; bill from gape, 8 to 9 in. Females appear to be a good deal smaller than the males.

**Range in the Malay Peninsula.**—From the extreme northern border south to Malacca, but not recorded from Johore, though it probably occurs there. Also in Junk Zeylon, Terutau and Langkawi, and formerly, apparently, on Penang Island, though its existence there is doubtful at the present day.

**Extralimital Range.**—Widely spread in the countries east of the head of the Bay of Bengal, as far east as the Cambodian border. Borneo, Sumatra and Java.

**Nidification.**—Not recorded from the Malay Peninsula. Colonel Bingham and others have found it breeding in Tenasserim in February and March, the hen being plastered up in holes in lofty trees, usually Dipterocarps (*Hopea* spp). Baker says the clutch is two, rarely three, sometimes only one. The eggs are white, rather rough in surface, and like all hornbills' become much stained—a buffy yellow or yellowish brown. The average dimensions are 2.43 by 1.70 in.

**Habits.**—By no means a common bird, at any rate in the south of the Peninsula, but more abundant, or at least easier to get, in the northern parts. It flies in small parties of five or six, and is exceedingly noisy, both during flight and when feeding, continually giving utterance to hoarse croaks. Its flight is also audible for long distances. On one of the higher hills of the Selangor main range, Gunong Ulu Kali, at nearly 5000 ft., we once came across a large party feeding on the fruits of a very tall tree, which appeared to be a species of *Baccaurea*. The fruits, which were the size of a small apple, were cracked open, and the seeds, covered with a juicy envelope, swallowed.

### *Rhyticeros subruficollis*

#### **Blyth's Wreathed Hornbill**

Differs from the preceding species only in being rather smaller, the wing not exceeding 17 in.; in having the plates at the base of the mandible not corrugated, and in lacking the dark median transverse bar on the gular skin.

Mention of this species in the present volume is perhaps out of place, as very little is known about it as a Malay Peninsular bird.

It is apparently of migratory habits, and has been met with at sea along the coasts of the Straits of Malacca, possibly crossing from Sumatra, and also in the mangroves on the coast of Selangor. Possibly it occurs also in the mountains, but more information is needed about it.

### *Berenicornis comatus*

#### **The Long-crested Hornbill**

PLATE 2 (*Figure 4*)

*Buceros comatus*, Raffles, *Trans. Linn. Soc.*, xiii., 1822, p. 339 (Sumatra).

*Buceros lugubris*, Beggie, *Malay Peninsula*, 1834, p. 513; id. *Ann. and Mag. Nat. Hist.*, xvii., 1846, p. 405.

*Anorrhinus comatus*, Elliot, *Mon. Buccrot.*, 1877, pl. 39, text.

*Berenicornis comatus*, Hume and Davison, *Stray Feath.*, vi., 1878, p. 106; Kelham, *Ibis*, 1881, p. 385; Grant, *Cat. Birds, Brit. Mus.*, xvii., 1892, p. 423;

Blanford, *Faun. Brit. Ind., Birds*, iii., 1895, p. 153; Robinson, *Journ. Fed. Malay States*, ii., 1909, p. 173; Robinson and Kloss, *Journ. Nat. Hist. Soc. Siam*, v., 1923, p. 134; Stuart Baker, *Faun. Brit. Ind., Birds* (2nd ed.), iv., 1927, p. 300.

**Malay Name.**—Enggang bulu.

**Description.**—Bill, much compressed, curved; casque, small, narrow, with a knife-like edge in front; head, with a heavy crest of disintegrated plume-like feathers; sexes with the plumage different.

*Adult male.*—Head and crest, white, often with a creamy tinge; under surface, a patch on the angle of the wing, the tips of the flight feathers, except the innermost secondaries and the whole of the tail, white; rest of the plumage, including the flanks, vent, under tail coverts and thighs, black, the wing coverts glossed with green; the feathers of the back and mantle with darker edges, producing a somewhat scaly effect.

*Adult female.*—The crest as dense as that of the male, but the extreme bases of the feathers black, and many of the feathers more greyish, with black shafts; a small patch at the base of the jaw and the point of the chin, greyish white; rest of the under surface, black; otherwise as in the male.

*Immature.*—The crest as in the female, but shorter, with broader dark bases to the feathers; sides of neck and under surface, sooty brown, with white tips to the feathers; back and rump, dark brown; greater wing coverts with white tips; tail, blackish, browner at the base, with white tips broadest on the outer feathers.

**Soft Parts.**—Irides in adults, wax-yellow; oil-yellow or dull greenish yellow in immature birds; in old adults the facial skin and the base of the lower mandible a deep rather dull blue; in somewhat younger birds it is a paler blue; in the next stage, pink, tinged with blue, and in the youngest bird, pink. Bill, black or greyish black, in the adults; yellowish horny or dusky greenish yellow, with large blotches of black on both mandibles, in young birds; feet and claws black at all ages.

**Dimensions.**—Total length, 36 to 42 in.; wing, 13.75 to 15 in.; tail, 17.5 to 21 in.; tarsus, 2.35 to 2.5 in.; bill from gape, 5.75 to 7 in.

**Range in the Malay Peninsula.**—From the northern extremity south to Mount Ophir on the Malacca border.

**Extralimital Range.**—Central and South Tenasserim, Sumatra and Borneo.

**Nidification.**—Quite unknown.

**Habits.**—In the Malay Peninsula this curious hornbill is widely, but very sparingly, distributed throughout the country, though it is very seldom seen at close quarters. It is met with in the low country, but ranges to a considerable height in the mountains, and on two occasions I have seen parties of it on the Semangko Pass or on Fraser's Hill. In January 1924, during a period of extremely heavy rain and dense mist, some six or seven alighted on our Nissen huts on Gunong Tahan, at a height of 5500 ft., having evidently lost their way in the fog.

Davison's account of the species in Tenasserim cannot be bettered, and I can confirm it in every respect, especially as regards the fact that this species

perches on much lower trees than the other large species. The note, as Davison says, is a "hoo-hoo," many times repeated, less raucous than other forms, and the flight is also less noisy. The food is mainly vegetable, and Kelham's captive bird fed voraciously on bananas, but, as in the case of the other large species, lizards and birds, and probably snakes, are also eaten, which may be the reason for the jagged serrations on the mandibles, which afford a better hold.

*Anorrhinus galeritus*

**The Bushy-crested Hornbill**

PLATE 2 (Figure 1)

*Buceros galeritus*, Temm., *Pl. Col.*, 1824, pl. 520 (Sumatra).

*Anorrhinus galeritus*, Ogilvie-Grant, *Cat. Birds, Brit. Mus.*, xvii., 1892, p. 391; Butler, *Journ. Straits Branch, Roy. Asiat. Soc.*, No. 32, 1899, p. 26; Oates, *Faun. Brit. Ind., Birds*, iii., 1895, p. 151; Grant, *Journ. Fed. Malay States Mus.*, iii., 1908, p. 48; Stuart Baker, *Faun. Brit. Ind., Birds* (2nd ed.), iv., 1927, p. 296.

**Malay Name.**—Burong kawan or burong mati sa kawan.

**Description.**—*Adult.*—Sexes alike. Casque much compressed, parallel with the bill, coming to a sharp edge in front; edge of mandibles serrated; crest very full, the feathers broad and soft. General colour, above, brownish black, with a dull oily green gloss; beneath, dull brown, more greyish on the middle of the abdomen and under tail coverts; tail, with the basal two-thirds brownish grey, glossed with greenish, the remainder, black.

*Immature.*—More brownish above, the feathers of the crown and crest edged with rufous; the wing coverts edged with sandy buff beneath, paler than in the adult; the breast, buffy brown; the abdomen, dirty-white. Tail as in the adult, but the pale part browner, the tip a duller black.

**Soft Parts.**—*Male*: iris, red or carmine; patch of skin at the base of mandible, and a large patch above and behind the eye, livid silvery white, with a strong bluish tinge or livid silver-cobalt; gular skin, purplish; bill, black, horn at tip; feet, greenish slate or greyish black. In some females the bill is largely ivory-white, the casque more yellowish.

In a young female the "iris was sepia-brown, with a lighter outer ring; the bill, blackish; tip, dirty-white; base of the lower mandible, greyish; feet, slate-grey; the claws, black" (*Jacobson*).

**Dimensions.**—Total length, about 32 to 34 in.; wing, 13.5 to 14.3 in.; tail, 11.5 to 13; tarsus, 2 in.; bill from gape, 5.6 to 6. Females are rather smaller than males.

**Nidification.**—Quite unknown.

**Habits.**—This species is widely spread throughout the Malay Peninsula as far south as Malacca, but is rare, or absent, in Johore. It is commonest in the submontane zone up to about 2500 feet, but is found as high as 4000 ft., and also in quite low country, but only in very heavy jungle. In habits it is exceedingly shy and wary, but it feeds on less lofty trees than the larger



hornbills, and is therefore easier to procure. It is usually met with in parties of five or six, up to fifteen or twenty. Flight is not so powerful or sustained as that of the larger species, and much quieter. Davison says its note is a harsh cackle, like that of the open-country hornbills of the genus *Anthracoceros*, but it is certainly a much less noisy bird than these species. Butler, who met with the birds on the Larut Hills, says that they kept up a curious shrill cry at intervals, which reminded him of the chorus raised by a litter of hungry puppies.

*Anthracoceros malayanus*

**The Malayan Black Hornbill**

Whole plumage glossy black above, duller beneath ; the tips of the four outer pairs of tail feathers, broadly white. In the male there is a broad stripe of white behind the eye, replaced in the female by a smaller stripe of silvery grey. Wing, about 12 in. In adults the bill and casque are yellowish ivory-white, black at the base of the casque and round the nostril, and at the base of the lower mandible. The casque projects forwards over the bill, so that the outline viewed from in front is highly concave. Young birds of both sexes are like the adult female, but have the bill and casque leaden black.

Little is known about this species in the Malay Peninsula except that it is mainly a low-country species, confined to jungle. It may, however, occur on the lower slopes of the hills, and the above short description should be sufficient to identify it.