

BROADBILLS

Order EURYLAIMIFORMES

ANATOMICALLY the broadbills are very closely allied to the pittas, though externally their appearance is very different and their habits are quite dissimilar.

The most characteristic feature is the bill, which in most of the species is very broad and flat, with the nostrils visible. The tarsi, in contradistinction to the pittas, are very short, but the feet are large and strong. The wing is weak and rounded and the tail variable, one species having it much longer than the wing, another less than half the length; but the feathers are always much graduated.

The plumage in most of the Oriental species is bright-coloured, though there is one dull-coloured genus; there is nearly always some difference between the sexes and there is a distinct juvenile livery.

The breeding habits are peculiar; all the members of the family build large untidy nests of leaves, tendrils and vegetable debris, which in nearly all cases are suspended from a creeper over water. The eggs are generally spotted, but in one species are uniform.

The family is not a large one and has its headquarters in the Malaysian region, not extending to New Guinea or Australasia. Quite recently it has been shown that the family is represented in Africa by a genus of small birds (*Smithornis*) which has hitherto been classed with the flycatchers.

The habits of these birds are exclusively arboreal, and the diet, in the main, is insectivorous, though it is said that one or two of the smaller forms will eat fruit on occasion. They are not particularly active in habit, but can fly well when pressed. In Malaya they are not found in open country nor, as a rule, in village and orchard-land, but are very common in secondary and old jungle to some distance up the hills, while one species is confined to the higher mountains. They are rare near the sea, and though some authorities say that one form occurs in mangrove swamps this is not the case in the Malay Peninsula, within my knowledge, with the possible exception of certain small islands near Singapore.

Seven species are found with us, of which five are here dealt with.

KEY TO THE SPECIES HERE DESCRIBED

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| 1 | { | Nostrils quite concealed by plumes; bill | } <i>Calyptomena viridis continentis</i> , |
| | | not much flattened; colour mainly | |
| 2 | { | Nostrils quite bare; bill much flattened; | } <i>Cymbirhynchus macrorhynchus</i> |
| | | colour not green | |
| 3 | { | Bristles at gape long and conspicuous; | } <i>Corydon sumatranus</i> suma- |
| | | plumage red and black | |
| 4 | { | Bristles at gape absent or feeble; with no | } <i>Eurylaimus ochromalus ochro-</i> |
| | | red in plumage | |
| 3 | { | Larger, bill very coarse, a bare space | } <i>Eurylaimus javanicus harterti</i> , |
| | | beneath eye | |
| 4 | { | Smaller, bill finer, space beneath eye | } <i>Eurylaimus javanicus harterti</i> , |
| | | feathered | |
| 4 | { | Head, black | } <i>Eurylaimus javanicus harterti</i> , |
| | | Head, purplish red | |

*Calyptomena viridis continentis***The Green Gaper or Broadbill**

Calyptomena viridis continentis, Robinson and Kloss, *Journ. Fed. Malay States Mus.*, xi., 1923, p. 54 (Isthmus of Kra).

Calyptomena viridis, Raffles (part); Stuart Baker, *Faun. Brit. Ind., Birds* (2nd. ed.), iii., 1926, p. 474.

Malay Name.—Burong takau (though this word is frequently used of barbets).

Description.—Bill higher and more arched than in the other broadbills, almost covered by the loreal feathers, which are lengthened and directed forward and upward.

Adult male.—General colour above and below, shining iridescent grass-green, not infrequently with a bluish tinge; a small yellow spot in front and above the eye; a larger black spot in front of and above this, almost concealed by the loreal feathers; a still larger black spot behind the ear coverts. Three diagonal black bars across the wing coverts, lesser, median and greater, formed by the middle portion of the feathers. Primaries, black, all except the outer edged with green on the outer web to near the tip; secondaries, green, the inner webs mostly green. Inner lining of wing, black; wing coverts and axillaries, black. Tail above, green; below, blackish, strongly washed with blue-green.

Adult female.—Duller, with the loreal feathers short. No black markings and little or no gloss on the feathers. Primaries, brown with green edges; wing lining and under wing coverts, ashy, the quills with paler edges to the inner webs. Upper tail coverts not nearly reaching the end of the tail as in the male.

Immature.—Young males are at first like the females and gradually change to that of the adult, the feathers of the head and throat being first to alter. The black bars on the wing coverts and the spot behind the ear coverts then appear; young birds do not seem to be often obtained.

Soft Parts.—Iris, dark or hazel; bill, sage-green, the culmen black; feet, yellowish green.

Dimensions.—Total length, 7 to 8 in.; wing, 3·9 to 4·4 in.; tail, 2 to 2·8 in.; tarsus, 0·8 to 0·9 in.; bill from gape, 1 to 1·15 in. Females are rather larger than males, with the tail distinctly longer.

Range in the Malay Peninsula.—South to Selangor; Penang Island.

Extralimital Range.—North to Amherst in Tenasserim; the typical race comes from Sumatra, while that from Borneo also differs.

Nidification.—Mr Seimund and I found this bird breeding in Bandon, Peninsular Siam, on 25th June. The nest was hanging from a bough over water and resembled that of the black-and-red broadbill. It was an elongated bag-shaped structure of dead leaves and interwoven fibre, with the entrance at the side, near the top. It contained two hard set eggs. They were light creamy yellow in colour, somewhat glossy, and in shape elongated ovals, measuring 1·25 by 0·83 in., approximately, the eggs being very much broken in blowing.

Habits.—Common in secondary and old jungle up to about 3000 ft. in altitude, and going about in small parties of six or seven, which keep well among the branches and are not nearly so much in evidence as the other broadbills. Davison says it is almost entirely frugivorous and he is almost certainly correct. I have never heard its note.

Note.—The bird from Malacca, southwards to Johore and Singapore Island, is smaller than that from the north of the Peninsula, and larger than the typical Sumatran bird discovered by Sir Stanford Raffles. It is probably the form described as *Calyptomena acuticauda*, Swainson, *Anim. in Menag.*, 1837, p. 296, fig. 48B. The alleged differences are insignificant and possibly not maintainable.

Cymbirhynchus macrorhynchus malaccensis

The Black-and-red Broadbill

Cymbirhynchus macrorhynchus malaccensis, Salvad., *Atti. R. Acad., Tor.*, ix., 1874, p. 425 (Malacca).

Cymbirhynchus macrorhynchus (Gm.), Kelham, *Ibis*, 1881, p. 382; Blanford, *Faun. Brit. Ind., Birds*, iii., 1895, p. 7.

Cymbirhynchus macrorhynchus macrorhynchus, Stuart Baker, *Faun. Brit. Ind., Birds* (2nd ed.), iii., 1926, p. 466.

Malay Names.—Burong hujan-hujan; burong rakit.

Description.—*Adult*.—Sexes alike. Long and stiff black bristles at gape. Head, lores, face, chin, mantle, upper back and a band on upper breast, black. Throat, under surface, lower back and upper and under tail coverts, maroon-

crimson, the feathers with white bases; thighs, black. Outer scapulars, which are long, narrow and pointed, pure white. Primary and wing coverts, black, the former with a patch of white on the inner webs of all except the first three; under wing coverts and axillaries, creamy white, the lesser ones near the edge of the wing, which is orange, black-edged. Tail, black, the outermost feathers with a diagonal white band near the tip of the inner web.

Immature.—The black of the upper surface duller; the red upper tail coverts less glossy; throat, below the chin grey, which is succeeded by a line of white feathers with crimson tips, so that there is a triple band of white, crimson and black on the throat; white scapulars, shorter and less pointed. Median wing coverts with small rounded white spots on the tips, the lesser ones with larger yellowish white spots. In still younger specimens the black throat band is almost non-existent.

Remarks.—In many birds, in old feather, the lower surface and especially the flanks are streaked and mottled with orange, the colour of the wing edge. The amount of white on the tail feathers is also a variable feature, becoming greater from south to north.

Range in the Malay Peninsula.—The whole Peninsula, Junk Zeylon and Penang; Singapore but not the Langkawi, Tioman or Bandon Islands.

Extralimital Range.—North to Tenasserim; Siam, Annam and Cambodia. Almost identical forms occur in Borneo and Sumatra. That from Aracan, south to Rangoon, is slightly more distinct (*C. m. affinis*).

Soft Parts.—Iris, emerald; bill, robin's-egg blue, lower mandible, mostly chrome-yellow; feet, purplish blue. *Immature birds* have the iris bronze, the upper mandible blackish, with dirty bluish base, the lower mandible dirty-blue.

Dimensions.—Total length, about 8·5 to 9 in.; wing, 3·9 to 4·1 in.; tail, 3·5 to 3·9 in.; tarsus, 0·87 to 0·95 in.; bill from gape, 1·2 to 1·3 in.

Nidification.—In the Malay Peninsula the breeding season is from April to the end of July, or even later. A nest found by me in the interior of the Patani States on 22nd July was in secondary jungle, suspended from the projecting limb of a small tree about 8 ft. from the ground, and looking like a mass of debris left there by a flood. The nesting chamber was formed in the upper portion of an elongate oval about 11 in. long and 15 in. in its greater circumference, and was entered by a circular hole furnished with an eave. The materials were palm fibre, twigs, creepers and aerial roots, with a few leaves; the inside was neatly lined with grass, and the eggs, three in number, were deposited on a bed of fresh green leaves. In shape the eggs were slightly elongate ovals, the shell being rather dull and of a pinky white colour, thickly covered with dark terracotta-brown blotches fairly evenly distributed, though they formed a rather thick zone towards the larger end of one egg. Dimensions, 1·07 by 0·77 in.; 1·1 by 0·80 in.; 1·12 by 0·77 in. The nests are nearly always as described above, and are usually suspended over ponds or streams, generally the latter, at a variable height above the ground, not more than about 20 ft.—sometimes as little as 8 or 10 ft. As a rule they are hung to the end of an aerial root or creeper, but sometimes they are attached above its termination. In the upper reaches of the Tahan river the nests were

especially common, every hundred yards or so, together with those of the larger dusky broadbill.

Habits.—The black-and-red broadbill occurs everywhere in the Malay Peninsula in suitable localities, from sea-level to about 1500 ft. With us it frequents the courses of streams and rivers above the influence of the tides and secondary and primeval jungle where this is not too thick, but does not inhabit gardens and orchards as it is said to do in Tenasserim. Along shady streams it is a very conspicuous bird in flight, the long white scapulars catching the eye at once. It is occasionally seen in small parties, but more usually singly or in pairs. Its food is entirely insects, and I have seen it catch the big blue and yellow moths which flutter about jungle streams in the early morning. Davison says of the call of this and the succeeding species that "it consists of a few single notes uttered at short intervals, and ending in a sort of rolling metallic-sounding chir-r-r-r."

Corydon sumatranus sumatranus

The Dusky Broadbill

Coracias sumatranus, Raffles, *Trans. Linn. Soc.*, xiii., 1822, p. 303 (Sumatra).

Corydon sumatranus sumatranus, Stuart Baker, *Faun. Brit. Ind., Birds* (2nd ed.), iii., 1926, p. 464.

Malay Name.—Burong hujan-hujan.

Description.—*Adult.*—Sexes alike. Bill much hooked; edge of mandibles much curved; a bare space below the eye; no bristles at gape but a series of short plumules at margin of chin. General colour, sooty black, browner below; point of chin, dusky grey; remainder, throat and upper breast, whitish brown suffused with rusty brown. In the middle of the back a concealed elongated spot, pale yellowish to yellowish orange, formed by the basal two-thirds of the feathers. Primaries with a bar of white increasing in breadth inwardly towards the bases of the feathers. Outer four pairs of tail feathers with a subterminal bar of white, broader on the inner webs but less conspicuous on the inner feathers; middle two pairs unbarred.

Immature.—Duller and more sooty brown than the adults; under surface uniform, only a trace of the whitish chin and throat. Fiery orange spot on middle of back entirely absent.

Soft Parts.—Iris, brown; orbital skin, pink; bill, horny pink, lavender at the tip and on the edges of the mandibles; feet, brownish. Some birds have a whitish iris and dark maroon-red feet.

Dimensions.—Total length, about 11 in.; wing, 5·2 to 5·5 in.; tail, 4·9 to 5·3 in.; tarsus, 1·1 to 1·2 in.; bill from gape, 1·6 to 1·7 in.

Range in the Malay Peninsula.—Throughout its length; Penang Island and Junk Zeylon. Probably at one time on Singapore Island but doubtfully existent there at the present day.

Nidification.—The breeding season in the Malay Peninsula is from August to April and May, as Davison obtained very young birds at Klang early in

September, and Kellow found nests near Taiping from January to April. The nests are like those of *Cymbirhynchus*, but larger. I obtained one on the Sungei Tali, Ulu Bentong, Pahang, on the 16th December. It was a very large pyriform structure, made of dead creepers, etc., somewhat loosely interwoven, the entrance low down on one side and the lining and foundation formed of flat strips of palm leaf. It was suspended from the end of a rotan, 30 ft. from the ground, and contained three highly incubated eggs. These were rather wide blunt ovals, and in all three the ground-colour was pinkish white, but the markings varied, one having small yellowish brown surface spots and pale lavender shell-marks, evenly distributed all over the shell; in a second the spots, though equally fine, were mostly concentrated towards the larger end of the shell, the smaller end being almost devoid of markings; while in the third the spots were larger, the majority being clustered round the larger end, and the remainder sparingly scattered over the rest of the shell. The measurements in all three were 1'2 by 0'95 in.

Habits.—A bird of heavy jungle, ranging from the plains up to about 3000 to 4000 ft. along watercourses and damp ravines. Except when breeding it seems to keep in parties of seven or eight individuals, which are somewhat crepuscular and are often seen quite late in the afternoon, when it is getting dark in the jungle. I cannot say, like Davison, that I have found them especially stupid or sluggish. The parties I have seen were on high trees, actively searching the branches for insects, and they were not easily scared. The note is a harsh whistle, degenerating into a grating squawk when the bird is alarmed.

Eurylaimus ochromalus ochromalus

The Black, Pink and Yellow Broadbill

Eurylaimus ochromalus ochromalus, Raffles, *Trans. Linn. Soc.*, xiii., 1822, p. 297 (Singapore and Sumatra); Stuart Baker, *Faun. Brit. Ind., Birds* (2nd ed.), iii., 1926, p. 463.

Malay Name.—As the other broadbills.

Description.—*Adult male.*—Head, chin and throat, black; ear coverts, black at the bases, the tips white; a narrow white collar on the hind neck, joined to a gorget on the throat, which is tinged with pink. Mantle, black; lower back, lemon-yellow, mixed with black; upper tail coverts the same, their bases black; elongate scapulars as the back, their inner webs black. Wing coverts, primaries and secondaries, black, the latter edged with yellow on their outer webs; inner aspect of wing, greyish, the quills edged with whitish on their inner webs and with white bases; axillaries, lesser wing coverts and edge of wing, pale yellow, mottled with black on the outer coverts. Tail, black, with a large yellowish white subterminal spot on the inner webs of the feathers. Under surface with a broad, black pectoral band beneath the white gorget; breast and belly, vinaceous pink, becoming deeper in the middle of the abdomen; flanks, pale yellow, mixed with pink; under tail coverts and vent, pure yellow; thighs, black.

Adult female.—Differs from the male in having the black pectoral band interrupted in the middle.

Immature.—Forehead and superciliary stripe, pale yellow ; wing coverts tipped with yellow ; chin and throat, whitish. A band below the white nuchal collar, greyish, and the sides of the breast greyish, with the edges of the feathers whitish, sharply defined from the white of the throat. No black pectoral collar ; middle of the abdomen only, pink ; the rest of the under surface greyish white, streaked with darker grey. Still younger birds have no pink at all.

Soft Parts.—Iris, chrome, sulphur-yellow or whitish ; bill, robin's-egg or pale blue, with the tip black or green and the edges of the mandibles black ; feet, yellowish flesh or purplish flesh.

Dimensions.—Total length, about 6·5 in. ; wing, 3·1 in. ; tail, 2·1 in. ; tarsus, 0·8 in. ; bill from gape, 1·1 in.

Range in the Malay Peninsula.—As in the preceding species, but including Junk Zeylon Island.

Extralimital Range.—Tenasserim as far north as Ye in lat. 15° N. Sumatra. Not known from Siam or Indo-China. A modified form is common in Borneo.

Nidification.—Nothing is known of the nesting in Malaya. The eggs have been taken in Burma by Mr Mackenzie. They are like those of the preceding species but smaller, measuring 0·93 by 0·68 in.

Habits.—A more sociable and familiar bird than the larger broadbills. It is often found in the environs of villages and at the edges of the jungle and in clearings, nor does it seem so tied to water as most of its allies. It ascends the hills to about 2000 ft. but not higher. It is not so insectivorous in its diet as the other species and feeds largely on fruits, especially figs. Its flight is less powerful, and I have not seen it catching moths and beetles on the wing as do its allies.

Eurylaimus javanicus harterti

Van Oort's Banded Broadbill

Eurylaimus javanicus harterti, Van Oort, *Notes, Leyden Museum*, xxxi., 1909, p. 209 (Sumatra). Robinson and Kloss, *Journ. Nat. Hist. Soc. Siam*, v., 1923, p. 203.

Eurylaimus javanicus javanicus, Stuart Baker, *Faun. Brit. Ind., Birds* (2nd ed.), iii., 1926, p. 491.

Malay Name.—As *Cymbirhynchus m. malaccensis*.

Description.—*Adult male.*—Rictal bristles feeble, not reaching the nostril. Head and throat, purplish claret, darker on the crown, more reddish on the ear coverts, almost black on the forehead and lores ; back, rump and upper tail coverts, mingled black and pale yellow ; scapulars, which are long and narrow, pale yellow on the outer web. Wing coverts and quills, black, the secondaries with a spot of yellow on the outer web. Inner aspect of wing, greyish black ; the primaries buffy towards the base and narrowly edged with whitish on the inner web. Edges of wing, axillaries and under wing coverts, very pale yellow,

the outer coverts mottled with black and with a large blackish spot on the greater coverts. Beneath throat and breast, dark claret with a leaden glaze; a narrow black gorget formed by the tips of the feathers succeeded by a broader one of leaden glaze; rest of under surface, vinaceous claret, paler than the throat, without the glaze, the bases of the feathers, whitish; the bases of the under tail coverts, yellowish; thighs, black. Tail feathers, black, all but the centre pair with a yellowish white subterminal spot on the inner web, increasing in extent on the outer feathers and running almost across both webs on the outer two pairs.

Adult female.—Without the narrow black throat gorget.

Immature.—Head, dirty greenish brown; feathers of the nape, greyish, with pale yellow shaft stripes, broadening towards the tip. Wing coverts with large pear-shaped spots of pale yellow; scapulars and feathers of the back not specially elongated. Beneath, whitish buff, more yellowish on the flanks, the feathers of the breast edged with dark grey giving a striped effect. No indication of the pectoral bands. Under tail coverts more yellow than in the adults, and tail feathers with the subterminal white bars more developed. Here and there blotches of the adult plumage appear, mainly on the middle of the abdomen and the sides of the breast.

Soft Parts.—Iris, blue (occasionally emerald); bill, robin's-egg blue, the tip green, and the edges of both mandibles green or black; feet, pinkish flesh-colour or dirty pinkish brown. *Immature birds* have the iris greyish blue and the bill, blackish (Jacobson).

Dimensions.—Total length, about 9 in.; wing, 4'2 to 4'5 in.; tarsus, 1'1 in.; bill from gape, 1'3 in.

Range in the Malay Peninsula.—Throughout its length. Penang and Singapore islands; not recorded from other groups.

Extralimital Range.—North to Central Burma, the greater part of Siam, French Indo-China and Sumatra. Bornean and Javan birds differ slightly.

Nidification.—The nesting season is the same as that of the black-and-red broadbills, and the nests of the two birds are alike, the present one being probably larger. Stuart Baker (*loc. cit.*) states that the clutch is two or three eggs which are "white or creamy white, speckled, and spotted with deep purple, dark reddish brown or reddish lavender. Average dimensions 1'08 by 0'76 in."

Habits.—Those of the other species, but more of a jungle bird than *Cymbirhynchus* and rarely seen on the edges of clearings or the banks of large rivers. It ascends the mountains to about 2000 to 3000 ft., but is commonest in the foothills and rare or absent in swampy coastal country.