

HERONS AND BITTERNS

Order ARDEIFORMES

Family ARDEIDÆ

THE herons and bitterns¹ are included by many systematists in the same order as the storks, from which they differ in the presence of powder-down patches on the sides of the body, under the wings, and in having the middle claw serrated or pectinated. In addition, the herons are, in the majority of the species, provided with ornamental plumes on the head, back or breast, which are not found on the storks. The legs are long and there is always a marked web between the middle and outer toe, and a less pronounced one between the middle and the inner one. The tail is short, either of ten or twelve feathers.

The plumage is very varied, but very many species are white or grey, while yellow, buff and various shades of brown, greenish-yellow buff, and slaty black are common. Very many species acquire ornamental plumes on the head, back or breast in the breeding season. Apart from these plumages there is often a distinct winter or non-breeding garb, to which the plumage of the young assimilates.

The nests are usually built of sticks, in trees or bushes, and the eggs are always unspotted, usually blue, occasionally white or drab. The young are hatched helpless.

The food is mainly animal, fish, crustaceans, shells and insects, but sometimes in part vegetable.

The family is cosmopolitan, with the exception of the circumpolar regions, and some seventy or eighty species are known. About eighteen species are found in Malaya, of which I have selected three of the commonest for description in this volume.

KEY TO THE SPECIES OF HERONS HERE DESCRIBED

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| General plumage dark green and grey | . | <i>Butorides striata javanica</i> , p. 39 |
| General plumage white | . | <i>Bubulcus ibis coromandus</i> , p. 40 |
| General plumage chestnut-bay | . | <i>Ixobrychus cinnamomeus</i> , p. 42 |

¹ If one takes into consideration all the known species of the world it is almost impossible to make a satisfactory division between herons and bitterns, there being so many intermediate forms. Broadly speaking, all forms with ten tail feathers only, and with the bill serrated, are

*Butorides striata javanica***The Little Green Heron**

Ardea javanica, Horsf., *Trans. Linn. Soc.*, xiii., 1821, p. 190 (Java).

Butorides javanica, Kelham, *Ibis*, 1882, p. 195; Oates, in Hume's *Nests and Eggs Ind. Birds* (2nd ed.), iii., 1890, p. 249; Blandford, *Faun. Brit. Ind.*, iv., 1898, p. 395; Sharpe, *Cat. Birds, Brit. Mus.*, xxvi., 1898, p. 177.

Malay Name.—Puchong bakau.

Description.—*Adult.*—Sexes almost alike. Head with lengthened occipital feathers, greenish black; back of neck, slaty grey; scapular feathers very elongate and narrow, grey, with a greenish wash, the shafts, narrowly white; back, greenish grey; upper tail coverts, more green; wing coverts, oily green, with buffy margins whiter on the outer ones, inner aspect of the wing, pure grey, lighter towards the tips; axillaries and under wing coverts, grey; edge of wing, white; tail feathers, greenish, powdered with grey; beneath, pale grey. Upper lores and a streak over the eye, white; below and behind the eye a black streak, nearly encircling the ear coverts, which are grey; a white streak from the angle of the gape, bordered below by dusky grey. Beneath, chin, throat and middle of abdomen, white, with a greyish median stripe to the middle of the breast; sides of the breast and flanks, light grey. Under tail coverts, white, with grey tips; thighs, greyish on their outer aspect, whitish on the inner.

Female.—Slightly duller, with the breast washed with light fulvous, the primaries rather greener and the edges of the wing coverts deeper buff.

Immature.—Without the narrow, elongate scapulars; mantle, dusky greenish brown; wing coverts, with triangular buffy tips. Feathers of the head with sandy shaft stripes, broadening towards the tips. Beneath, striped with black and dusky grey, the under tail coverts with broad incomplete bars of white and dusky.

Soft Parts.—Iris, yellow; orbits and face, apple-green; upper mandible, black; lower, greenish yellow; feet, greenish yellow.

Dimensions.—Total length, about 17.5 in.; wing, 6.5 to 7 in.; tail, 2.5 to 2.8 in.; tarsus, 1.9 to 2.1 in.; bill from gape, 2.9 to 3.1 in.

Range in the Malay Peninsula.—Throughout the country, north to south, and on most of the islands in suitable localities.

Extralimital Range.—Throughout Southern Asia, east from Sind to the Malay Archipelago, Celebes and the Philippines, and in Formosa and Hainan. Also in the Mascarene Islands. Numerous names for various local races have been proposed.

Nidification.—In many parts of its range this bird breeds in colonies, and there are one or two such associations on the coasts of Perak and Selangor. The nest is a loosely constructed platform of small sticks, and may be situated

bitterns, while all herons have twelve tail feathers, and the edges of the bill plain. This definition, however, includes *Bubulcus* and *Ixobrychus* as bitterns and excludes such a typical species as Raffles bittern (*Gorsachius goisagi melanolophus*) from the section. There is, perhaps, a further distinction to be drawn from the habits, as herons are more diurnal than bitterns.

in bushes quite close to the ground or on trees at a fair height. The number of eggs is recorded as from two to five, varying somewhat in shape—from rather long to broad ovals, sometimes with one end distinctly pointed. The texture of the shell is very smooth, without gloss, and the colour is a very pale bluish green. Blanford gives the average dimensions as 1'60 by 1'21 in.

Habits.—This bittern is widely distributed throughout the country, but is by far more common on the coast, among the mangroves, though it is occasionally seen in more open stretches and on coral reefs. Up-country it is confined to large swamps and to the banks of the larger rivers. On the coast it is distinctly diurnal and may be seen at all times of the day, but on the rivers away from the sea it is much more nocturnal, lying up for the day amongst thick bushes or on trees in the swamps. It feeds on crabs, frogs and small crustaceans.

When perched among the mangroves this bird is protectively coloured. It sits with its wings hunched up and its bill pointed almost vertically upwards, and is quite difficult to distinguish from a broken stump. Except at the breeding season it is generally met with solitary or in pairs, but Kelham has noted it sitting in hundreds on the fishing stakes in the Singapore Straits. I have seen it in similar situations in Klang and Penang, but never in such large numbers.

Bubulcus ibis coromandus

The Cattle Egret

Cancroma coromanda, Bodd., *Tabl. Pl. enl.*, 1783, p. 54 (Coromandel).

Buphus coromandus, Kelham, *Ibis*, 1882, p. 193.

Bubulcus coromandus, Blanford, *Faun. Brit. Ind., Birds*, iv., 1898, p. 39; Oates, *Cat. Birds' Eggs, Brit. Mus.*, ii., 1902, p. 130, pl. v., fig. 2.

Bubulcus ibis coromandus, Herbert, *Journ. Siam. Soc., Nat. Hist., Suppl.*, vi., 1926, p. 352.

Malay Name.—Burong bangau; nok kin-pling (*Siamese*).

Description.—*Adult in breeding plumage.*—With coloured ornamental plumes on breast and back. Head not white. Back of head with lengthened feathers. Head, neck, all round throat and lengthened plumes on breast, bright orange, the plumes on the back more vinaceous or apricot. Rest of the plumage pure white.

Adult in winter plumage.—Without any ornamental plumes, plumage pure white, with only a small patch of pale orange in the centre of the crown.

Immature.—Similar to the winter plumage, very young birds lacking even the orange on the crown.

Soft Parts.—*In breeding plumage:* iris, bright yellow; bill and orbits, orange-yellow; feet and toes, black with a greenish tinge. *In winter plumage and young:* iris, yellowish white; bill and orbits, pale yellow or yellowish chrome; feet, black.

Dimensions.—Total length, 18'5 to 20 in.; wing, 9'5 to 10 in.; tail, 3'4 to 3'8 in.; bill from gape, 3 to 3'2 in.; tarsus, 3'3 to 3'5 in.

Range in the Malay Peninsula.—Throughout the Peninsula and on all the larger islands in suitable localities.

Extralimital Range.—Throughout India but not in the extreme west. Ceylon, Andamans, north through China to East Siberia, Korea and Japan; east, through the Indo-Chinese countries to Hainan, Formosa and the Philippines, through the Malay Archipelago to Celebes and the Moluccas.

Nidification.—Though it is certain to breed in the country there are no records of the nesting habits of this bird from the Malay Peninsula, nor did Davison and Oates find it breeding in Tenasserim and Pegu.

Mr Seimund and myself found it commencing to nest on nearly dead mangrove-trees, dividing the swamps from the ricefields, near the mouth of the Bandon river in Peninsular Siam. The birds were in flocks of from fifty to a hundred, and very many were young birds or had not yet assumed the orange breeding plumes.

Mr Herbert found this egret breeding in Central Siam in June and July. He describes the eggs as "almost white, with a faint tinge of blue. The texture is fine and smooth but the shell is not very hard and the surface is without gloss. Either three or four eggs are laid." The average dimensions of twenty-five eggs are given as 1.76 by 1.35 in.

In India it breeds in June to August, often in very large associations in company with other egrets. The nests are made of loose sticks, built in trees, and the clutch consists of from three to five very pale greenish eggs, sometimes nearly white and often with a faint tinge of blue. Blanford gives the dimensions as 1.71 by 1.32 in., but in shape and size they are extremely variable.

Habits.—The cattle egret is very widely distributed throughout the Malay Peninsula, but like many ricefield birds is vastly more numerous in the north and east of the Peninsula than it is in the south and west. It is common at times in Perak and also in the south of Johore, but, even where there are ricefields, is not numerous in Selangor or in Negri Sembilan and Malacca, where the conditions are apparently favourable.

It is nearly always in close attendance on cattle and buffalo and is often seen perching on their backs or following them when engaged in cultivation. It feeds on insects and ticks obtained from the cattle, grasshoppers, small crustacea and worms. It is equally at home on the embankments and drier portions of the ricefields and on the grazing-grounds, roosting at night in company on the higher trees at the edge of cultivation. It is not—or only very rarely—found on mud-flats on the coast or in salt-water swamps.

In the Malay Peninsula the breeding plumage is assumed some time in March and entirely lost by the middle of November. As in Sumatra, the species is partially migratory, but in the former country the birds arrive in March, April and May, whereas in the Peninsula numbers are increased in the winter months. This is probably due to merely local movements, as the species does not appear to make extensive sea-passages, and it is of rare occurrence in the Straits of Malacca, at any rate in the northern and central sections.

*Ixobrychus cinnamomeus***The Chestnut Bittern**

Ardea cinnamomea, Gmel., *Syst. Nat.*, i., 1788, p. 643 (China).

Ardetta cinnamomea, Kelham, *Ibis*, 1882, pp. 189, 195; Oates, in Hume's *Nests and Eggs Ind. Birds* (2nd ed.), 1890, iii., p. 252; Sharpe, *Cat. Birds, Brit. Mus.*, xxvi., 1898, p. 236; Blanford, *Faun. Brit. Ind., Birds*, iv., 1898, p. 402; Oates, *Cat. Birds' Eggs, Brit. Mus.*, ii., 1902, p. 132.

Ixobrychus cinnamomeus, Herbert, *Journ. Siam. Soc., Nat. Hist. Suppl.*, vi., 1926, p. 353.

Malay Name.—Burong puchong bendang : nok yang sawey (*Siamese*).

Description.—*Adult male.*—Chestnut-rufous bay above, including wings and tail, head rather darker; inner aspect of wings, cinnamon, the axillaries and under wing coverts, golden buff, with a pinkish tinge; sides of the face and ear coverts as the back. Chin and throat, whitish, with a narrow median stripe of blackish chestnut; rest of the under surface, buffy chestnut, paler on the middle of the belly and the under tail coverts; elongate feathers on each side of the breast, blackish with pale buffy margins.

Adult female.—Mantle and back, dull brown with a pinkish wash, the head darker, the forehead greyish; wing coverts, rufous chestnut, toothed on the outer webs with triangular spots of blackish and pale sandy. Primaries and secondaries, pale chestnut, greyish at the tips and base. Inner aspect of quills, pale salmon at tips, grey at base; under wing coverts, buffy, with dark streaks; tail feathers, pale cinnamon. Sides of the face and neck, chestnut. Chin and throat, whitish, with a dark median streak; rest of the under surface, yellowish buff, broadly streaked with blackish brown; flanks, cinnamon; lower belly and under tail coverts, pale sandy; thighs, dark cinnamon, almost purplish.

Immature.—Like the female but the head darker, the upper surface blackish with broad yellowish white edgings to the feathers, giving a mottled effect; wing coverts the same but the edges broader; sides of the head streaked; the centres of the feathers dark, with pale rufous edges.

Soft Parts.—Iris, yellow or brownish, with a white ring round pupil; upper mandible, blackish sepia with yellow edges; lower mandible, dull yellowish with light brownish base; feet, greenish or yellowish green, soles yellow. *Immature birds* have the upper mandible paler.

Dimensions.—Total length, about 15 in.; wing, 5·3 to 5·7 in.; tail, 1·8 in.; tarsus, 2·1 in.; bill from gape, 2·5 in.

Range in the Malay Peninsula.—Throughout its length; in Junk Zeylon and Penang, and probably on the islands of the Bandon Bight. Abundant on Singapore Island many years ago, but scarcer now, as it has been much persecuted by Chinese shooters.

Extralimital Range.—Very much the same as the little green bittern, but not extending so far to the west in India, and not in the Mascarene Islands.

Nidification.—The nest, as described by Oates, is a loose pad of grass, built

on swampy ground among reeds. In Pegu the clutch is from five to six, but Seimund has obtained nests near Kuala Lumpur containing only three. The eggs are oval, without gloss, and dull, almost chalky white, sometimes with a very faint blue tinge. Eggs in the British Museum average 1'31 by 1'04 in. The breeding season in the Malay Peninsula is probably from April to July, but little information is available.

Herbert (*loc. cit.*) describes nests and eggs found near Bangkok at the end of June, and at Tachin in August, in very similar terms. The eggs measured 1'26 by 1'05. He comments on the difficulty of finding the nest. Malays note the same; the discovery of a nest of this bird, or of the white water-hen, confers on the fortunate finder the gift of invisibility (*perabun*). The nest therefore commands a high price among the criminal classes!

Habits.—This bittern is resident throughout the year in the Malay Peninsula, but I think it possible that its numbers are augmented during the months from November to March by migrants from the north, though the route followed is not by sea, as the bird is never obtained at the lighthouses or on the small islands in the Straits of Malacca. It lives in the neighbourhood of ricefields and in the thick vegetation bordering the rivers and watercourses, but is not a denizen of salt or brackish water-marshes. It is a very familiar bird to sportsmen when out snipe-shooting, as it is constantly flushed, flying in a very direct line, with the neck rather bent back and the feet extended stiffly, close together, behind the tail.