

# OWLS

## *Order* STRIGIFORMES

Vol. I., p. 76; Vol. II., p. 33.

NATURALISTS of a past generation grouped the owls, or "nocturnal birds of prey," together with the vultures, eagles and hawks, etc., or "diurnal birds of prey," and called the heterogeneous assemblage "birds of prey," or "raptors," in which the harriers were supposed to represent a link between the two main divisions. In external appearance there are certainly many points of likeness between an owl and a hawk. Both have a strong, much hooked and compressed beak and large, curved sharp talons. Later research, chiefly anatomical, suggests that the early systematists were at fault in supposing such a close relationship between the two groups of birds, and the owls are now regarded by many as more closely allied to the nightjars and their allies, which they resemble in their large eyes, soft plumage and nocturnal or crepuscular habits. The general appearance of an owl is familiar to most people. The "face" is curiously flattened as a "facial disc," which is bordered by the "ruff" of short, stiff feathers. The large eyes are directed to the front rather than to the sides as in most birds. The carriage of the body is usually rather upright. The plumage is curiously fluffy or soft and the flight almost noiseless. As could be expected from their nocturnal habits the plumage is never bright, but a sombre dress of mottled greys, browns and white. Some of the species are dimorphic and have distinct grey and brown, or rufous, phases. The plumage is very soft and the feathers are plentiful. The sexes are alike in colour but females are usually larger than males.

Tufts of feathers ("ears") often adorn the top of the head and owls are furthermore peculiar in that the eye is shut by the upper eyelid closing down and not by the lower eyelid being raised, which latter method is normal among birds.

The wing has eleven primaries. The tail is usually short and square. The feet are sometimes covered with feathers, sometimes naked. The outer toe is reversible.

Most owls lay their eggs, which are always pure white and almost round, in holes in trees.

The food consists of animals of various kinds, chiefly mammals, birds, reptiles, fish, and large insects.

The family of owls is a large one, and its members are widely spread and

found almost everywhere in the world except the circumpolar regions. Some of the species are migratory. Sixteen species are known from the Malay Peninsula. Three of these have northern and southern subspecies and another is represented by one resident and two migratory subspecies, making a total of twenty-one forms in all for the Malayan avifauna. One species, *Athenoptera spilocephala*, is a mountain bird, not found in the lowlands.

## KEY TO THE MALAYAN LOWLAND OWLS

- |    |   |   |   |
|----|---|---|---|
| 1  | { | Most of the tarsus bare or with scanty hair-like feathers . . . . .                                   | 2   |
|    |   | Most or all of the tarsus thickly feathered . . . . .   | 4   |
| 2  | { | Lower parts, whitish, tinged with buff and sparsely spotted . . . . .                                 | <i>Tyto alba javanica</i> , p. 65             |
|    |   | Lower parts, brown, heavily streaked with black . . . . .   | 3   |
| 3  | { | Under parts merely boldly streaked . . . . .  | <i>Ketupa ketupu ketupu</i> , p. 55           |
|    |   | Under parts with obsolete bars as well as streaks . . . . .   | <i>Ketupa zeylonensis leschenault</i> , p. 54 |
| 4  | { | Large birds, wing over 11.5 in. . . . .   | 5   |
|    |   | Smaller birds, wing about 9 in. or less . . . . .   | 8   |
| 5  | { | Under parts streaked . . . . .  | 6   |
|    |   | Under parts barred . . . . .  | 7   |
| 6  | { | Very large: wing about 15 in.; long ear tufts . . . . .   | <i>Bubo coromandus klossii</i> , p. 56        |
|    |   | Smaller: wing about 12 in.; ear tufts very short . . . . .  | <i>Asio flammeus flammeus</i> , p. 54         |
| 7  | { | Mantle heavily spotted with white; under parts, mixed orange-buff and buff, barred blackish . . . . . | <i>Bulaca orientalis orientalis</i> , p. 62   |
|    |   | Mantle, brown, barred rufous; under parts, white, barred blackish . . . . .                           | <i>Huhua sumatrana sumatrana</i> , p. 57      |
|    |   | Mantle, almost immaculate brown; under parts, buffy barred with brown . . . . .                       | <i>Bulaca leptogrammica maingayi</i> , p. 64  |
| 8  | { | Mantle and back, uniform . . . . .  | <i>Ninox scutulata</i> subspp., p. 62         |
|    |   | Mantle and back, barred . . . . .   | <i>Glaucidium brodiei tubiger</i> , p. 64     |
|    |   | Mantle and back, spotted or mottled . . . . .   | 9   |
| 9  | { | Abdomen, pale pink, with a few black spots . . . . .  | <i>Phodilus badius badius</i> , p. 66         |
|    |   | Abdomen, grey or brown . . . . .  | 10  |
| 10 | { | Tarsi feathered to base of toes . . . . .   | <i>Otus bakkamæna lempiji</i> , p. 59         |
|    |   | Lower part of tarsi bare . . . . .  | 11  |

- |    |  |   |  |
|----|--|---|--|
| 11 |  | A broad pale band on the forehead;<br>under parts distinctly spotted . . . . .    | 12                                       |
|    |  | No broad pale band on the forehead;<br>under parts streaked and mottled . . . . . | <i>Otus scops malayanus</i> , p. 59      |
| 12 |  | Larger: wing, 7 to 7.5 in. . . . .  | <i>Otus sagittatus</i> , p. 59           |
|    |  | Smaller: wing, 5 to 5.2 in. . . . .   | <i>Otus rufescens malayensis</i> , p. 61 |

*Asio flammeus flammeus***The Short-eared Owl**

Ear tufts very short; legs and toes feathered.

Ground-colour, pale yellowish buff, the under parts boldly streaked with dark brown, the streaks heaviest on the throat and breast. Tail and wing quills heavily barred with brown; crown and nape like the breast; remaining upper parts heavily mottled and blotched with dark brown. Wing, roughly 12 in.

A very rare winter visitor to the Malay Peninsula. It has been taken as far south as Singapore.

*Ketupa zeylonensis leschenault***The Ceylon Fish-Owl**

*Strix leschenault* Gmelin, *Syst. Nat.*, i., pt. i., 1788, p. 287 (Ceylon).

*Ketupa zeylonensis* (part), Sharpe, *Cat. Birds, Brit. Mus.*, ii., 1875, p. 4; Oates, in Hume's *Nests and Eggs Ind. Birds*, iii., 1890, p. 96; Oates, *Cat. Birds' Eggs, Brit. Mus.*, ii., 1902, p. 321; Blanford, *Faun. Brit. Ind., Birds*, iii., 1895, p. 281; Robinson and Kloss, *Journ. Nat. Hist. Soc. Siam*, v., 1922, p. 109.

*Ketupa zeylonensis leschenault*, Stuart Baker, *Faun. Brit. Ind., Birds* (2nd ed.), iv., 1927, p. 409; Stuart Baker, *Nid. Birds Ind. Emp.*, iii., 1934, p. 509.

**Malay Name.**—Tumbok kětampi; burong hantu (generic).

**Description.**—A large owl, under surface with heavy blackish-brown shaft stripes, the feathers on each side of the stripe with narrow bars of pinkish white and wavy dark brown, the latter the narrowest.

**Adult.**—Lores, whitish, the shafts black, the tips also broadly black; face, dark brown with black shaft stripes; ruff, pale brownish. General colour above, pale brown, pinkish on the head and nape, with blackish-brown shaft stripes, broadening towards the tips. Wing coverts and scapulars coarsely vermiculated with pale brown and whitish and with buffy white spots on each web. A large white spot on the outer web of the outer scapulars. Primaries, dark brown, broadly barred with mottled pale brown, these bars being almost clear white on the outer web; secondaries with the pale bars broader and more irregular. On the inner aspect of the wing the pale bars almost creamy white and the bases of the feathers entirely so. Lesser inner wing coverts barred rufous and white with broad black shaft stripes; greater

series, black, the basal half of the feathers creamy white; axillaries regularly barred rufous and dirty white, their shafts narrowly black towards the tips. Tail, dark brown with five narrow irregular vermiculated bars of buffy brown with dark centres, tip similar, bars beneath paler without the dark centres. Beneath, chin and throat white, the latter lightly striped with black; rest of under surface, pale pinky brown with narrow darker wavy bars on each side of a broad blackish shaft stripe. Under tail coverts similar, the longest almost without the cross-bars. Thighs, buffy brown, almost unmarked; tibial plumes without the shaft stripes, but regularly barred.

*Immature*.—Not materially different from the adult. Plumage soft and loose, cross-bars on lower surface hardly in evidence on belly and flanks. Whitish patch on scapulars absent.

**Dimensions**.—*Male*: total length, about 20.5 in.; wing, 16.5 in.; tail, 8 in.; tarsus, 3.5 in.; bill from gape, 1.9 in. *Females* are slightly larger.

**Soft Parts**.—Iris, chrome; bill, greenish grey, tipped with black; feet dirty green (*Robinson and Kloss*).

**Range in the Malay Peninsula**.—Found in the northern parts only: from the Burmese boundary as far south as Bandon and Trang in Peninsular Siam.

**Extralimital Range**.—The *species* has a very extensive range. Throughout India, south of the Himalayas; the Indo-Chinese countries. Ceylon. West to Palestine and east to South China.

**Nidification**.—There is no record from the Malay Peninsula. In Bengal it seems that this owl prefers to nest near water. The sites chosen are very varied, and authors have recorded eggs taken at the tops of tall trees from old vultures' nests; from holes, hollows and depressions in trees; and on ledges of rock, etc. Sometimes there is no attempt at nest-building. Mr Stuart Baker writes: "In Dacca I found them breeding in the broken-down mausoleums round about the numerous tanks on the race-course. The eggs were laid on the platforms under the roofs with no pretence at a nest, but nearly always a mass of pellets and very unsavoury remains formed a bed for the young ones." The white eggs are reported as usually two in number. They measure about 2.4 by 1.85 in.

**Habits**.—A ricefield bird, lying up for the day in patches of jungle, or scrub adjacent thereto, and emerging at dusk. The food is mainly fish, with the capture of which the prickly soles are correlated, but crabs and small mammals are also taken. I have no record of the note in the Malay Peninsula, but Blanford renders it as a loud, dismal cry, *haw-haw-haw-ho*.

### *Ketupa ketupu ketupu*

#### The Malay Fish-Owl

Vol. I., p. 81.

A large species with relatively long, unfeathered tarsi.

Upper parts, dark brown, much variegated with pale buff and the feathers with tawny edges. Tail and wing quills broadly barred. Under parts, rich buff with broad, black shaft stripes.

Total length, about 18 in.; wing, 13 to 15 in. This large owl is very common in the lowlands of the Peninsula, especially on the coastal plains and where there are ricefields. In the north it is particularly common. It is also numerous in Singapore, where there are no ricefields.

In Lower Perak Mr A. T. Edgar has seen nests in rubber estates, one in a hollow tree, one in a large bird's-nest fern, both about thirty feet from the ground. Season: September to December. The single egg measures 1.91 by 1.69 in. Mr V. W. Ryves found an egg in Negri Sembilan on 29th April. Mr G. C. Madoc tells me that he has taken the egg, in January (Selangor), from a brahminy kite's nest that he himself had robbed of the kite's eggs only the previous month. This egg measured 2.16 by 1.75 in.

The food consists of fish, frogs, small mammals, large insects, etc. During the day it usually roosts in a tall tree, sitting on a bough close to its junction with the trunk. Sometimes it emerges in the late afternoon well before dusk. In Peninsular Siam it is replaced by a slightly paler subspecies, *K. k. aagaardi*.

### *Bubo coromandus klossii*

#### **Kloss's Dusky Horned Owl**

*Bubo coromandus klossii* Robinson, *Journ. Fed. Mal. States Mus.*, iv., 1911, p. 246 (Perak); Robinson and Kloss, *Journ. Nat. Hist. Soc. Siam*, v., 1922, p. 110; Stuart Baker, *Faun. Brit. Ind., Birds*, iv., 1927, p. 417.

*Bubo coromandus* (part), Sharpe, *Cat. Birds, Brit. Mus.*, ii., 1875, p. 35; Blanford, *Faun. Brit. Ind., Birds* (2nd ed.), iii., 1895, p. 286.

**Malay Name.**—Unrecorded specifically: burong hantu (generic).

**Description.**—A very large and powerful owl with long ear tufts. Feet strong, tarsi feathered to beyond the insertion of the toes. Plumage, dark brown with darker shaft stripes, especially on the under surface.

*Adult male.*—General colour above, dark greyish brown, blackish brown on the mantle and inner scapulars; feathers of the head and nape vermiculated with greyish white and with dark shaft stripes, not very conspicuous; lores, greyish white with black tips; side of the head, brownish grey; ear coverts, deeper brown bordered behind with blackish; ear tufts, dark brown. Under surface freckled with white and greyish brown, with a yellowish-buff tinge to the centre of the abdomen and with dark blackish-brown shaft stripes; under tail coverts the same, but more coarsely barred with black and with pale creamy-buff tips; thighs and tarsal feathers coarsely streaked with black. Outer scapulars with their outer webs freckled with whitish. Primaries externally almost uniform dark brown with indications of paler bars towards the base; secondaries with broad bars of dull buff freckled with black, the bars broader towards the edge of the inner web; on the inner aspect of the wings these bars are much broader and paler creamy buff. Lesser wing coverts, buffy tinged with reddish and with regular narrow black bars, the greater series black, their bars and outer webs creamy; axillaries, dark brown, barred with rufous. Tail, dark brown with three

bars and the tip rufous-buff, much paler and more distinct on the under surface.

**Soft Parts.**—Iris, yellow; bill, greenish horn with black base; feet, leaden.

**Dimensions.**—Total length, 21.5 in.; wing, 15 to 15.7 in.; tail, 8.7 in.; tarsus, 2.55 in.; bill from gape, 1.55 in.

**Range in the Malay Peninsula.**—Known only from three specimens from North Perak, Malacca and the Dindings.

**Extralimital Range.**—Several specimens of the present subspecies are on record from South-West Siam. On account of its general dark coloration it is very distinct from the ordinary Indian form, though Nepal and Assamese birds approach it. It presents a curious instance of discontinuous distribution, as no owl of the kind has ever been obtained in any part of Burma proper, or in Tenasserim.

**Nidification.**—Unknown. The breeding habits can be expected to be very like those of the typical race which in India, according to Blanford, deposits its two white eggs "in a stick nest, more or less lined with green leaves and a few feathers or a little grass. Sometimes the deserted nest of an eagle or some other bird is utilized, and occasionally the eggs are laid in a hollow tree." The same authority states that the eggs measure about 2.33 by 1.89 in.

**Habits.**—Nothing particular is known. A specimen collected in Perak was shot in the daytime in a small patch of jungle on a low hill. Others obtained by Mr C. Boden Kloss at Koh Lak in South-West Siam were obtained under very similar conditions. The Indian form is said to be not specifically nocturnal and to live on small mammals, birds, frogs, etc.

### *Huhua sumatrana sumatrana*

#### The Malay Eagle-Owl

*Strix orientalis* Horsfield (not *S. orientalis* Shaw, 1809), *Trans. Linn. Soc.*, xiii., 1821, p. 140 (Java).

*Strix sumatrana*, Raffles, *Trans. Linn. Soc.*, xiii., 1822, p. 419 (Sumatra).

*Bubo orientalis*, Sharpe, *Cat. Birds, Brit. Mus.*, ii., 1875, p. 39.

*Huhua orientalis*, Blanford, *Faun. Brit. Ind., Birds*, iii., 1895, p. 289.

*Huhua sumatrana*, Robinson and Kloss, *Journ. Nat. Hist. Soc. Siam*, v., 1922, p. 110.

*Huhua orientalis sumatrana*, Stuart Baker, *Faun. Brit. Ind., Birds* (2nd ed.), iv., 1927, p. 419; Stuart Baker, *Nid. Birds Ind. Emp.*, iii., 1934, p. 515.

**Malay Name.**—No special name recorded: burong hantu (an owl).

**Description.**—A large owl with very long ear tufts; plumage below, white regularly banded with black-brown.

**Adult.**—Head above, lesser upper wing coverts and outer webs of ear tufts, dark almost uniform sooty brown, the occipital feathers and the inner

webs of the ear tufts with numerous narrow bars of rufous-buff, whiter on the ear tufts; sides of the face, whitish, the loreal bristles with black shaft stripes and tips; posterior ear coverts, blackish. Remaining upper surface, including the scapulars and tertials, rather paler brown with irregular bars of rufous-buff narrower on the nape; a white patch on the outer web of the scapulars. Tail, brown with wavy bars of mottled white and blackish and a narrow white tip, these bars and tip much clearer beneath. Outer primaries, almost uniform dark brown, the inner ones and the secondaries with broad white bars tinged with creamy; under wing coverts and axillaries, white clearly spotted with black. Under surface, chin and throat, dirty white, regularly barred with blackish; breast, barred dark chocolate and rufous; abdomen, flanks, under tail coverts, thighs and tarsal feathering, white, boldly spotted and barred with black, these bars much broader but less regular than those of the breast and throat.

The above is the plumage of the very adult bird; in the majority there is less distinction between the barring of the breast and the abdomen, the upper surface is paler and more barred, while the head has frequently remains of the narrow, regular cross-barring of the immature plumage.

*Immature*.—Very different from adults. Almost pure white, above and below, with regular blackish bars, broader on the wing coverts. Primaries and tail feathers as in the adult but markings rather more distinct.

**Soft Parts**.—"Bill, cere and feet clear yellow, iris wood-brown, claws black, horny green at base" (*Davison*).

**Dimensions**.—Total length, 17 to 18.5 in.; wing, 13.25 to 14.25 in.; tail, 6.5 in.; tarsus, 1.75 in.; bill from gape, 1.5 in.

**Range in the Malay Peninsula**.—Sparsely distributed throughout its length, though records are lacking from the eastern states. Singapore Island, but not apparently Penang.

**Extralimital Range**.—Tenasserim from near Moulmein to the southern limit; Sumatra and Banka. Birds from Java are subspecifically distinct (*H. sumatrana strepitans*); the status of Borneo birds is doubtful.

**Nidification**.—In Sumatra, Dr E. Jacobson states that it nests in the bird's-nest ferns (*Asplenium nidus*) which grow in great masses high on the boles of forest trees. No nesting material is used and on three occasions one young bird was found by him, though the natives state that two are occasionally reared.

Mr Stuart Baker attributes to this species twelve eggs sent to him from the Malay Peninsula. They measure about 2.1 by 1.7 in. and are "said to have been taken from caves in the low hill cliffs at the foot of the mountains some way inland from Simpang [Perak] and again from Selangor."

**Habits**.—A bird of the heavy jungle, but not ascending the hills above 2000 feet. It is met with occasionally in the daytime but is not so diurnal as the fishing owls (*Ketupa*). I have no information as to the call. The food includes birds, rats and other small mammals.

*Otus scops malayanus***The Little Malay Scops Owl**

Vol. I., p. 80; Vol. II., p. 38.

A very small species in which grey and rufous "phases" of plumage occur, with many birds intermediate between the two. In the extremes the general tone of the plumage is either buffy grey or chestnut-bay, the whole very finely vermiculated with black. Upper parts, indistinctly spotted with buff and streaked with black; scapulars and wings with large black-edged white spots. Under parts, indistinctly streaked with black and mottled with white.

Total length, about 7.8 in.; wing, 5.6 in.

Very little is known about this small owl and the nest and eggs have not been found in the Peninsula. It has not yet been formally recorded from the east side of the Peninsula and on the west it is commoner in the north than in the south. It is, at least, partially migratory because it occurs on light-houses and small islands in the Straits of Malacca in the autumn. Locally collected specimens indicate that it prefers the coasts to inland districts and open country to heavy forest.

*Otus bakkamæna lempiji***The Malayan Scops Owl**

Vol. I., p. 78, pl. 4.

A small owl with the legs feathered to the base of the toes. Upper parts, pale brown, closely mottled and freckled with black and buff and blotched with black. An ill-defined pale buff collar on the hind neck and much buff in the scapulars, forming an elongated patch on each side of the back.

Total length, about 8.75 in.; wing, 5.6 to 6.4 in.

This is the common small owl of the Peninsula, where it is found almost everywhere in the lowlands both in open country and forest. It is common in towns and villages. In the winter a migratory, paler and rather larger subspecies (wing running up to nearly 7 in.) is found in the north of the Peninsula as far south as the Langkawi Islands. This is *O. b. lettia*<sup>1</sup> of Siam, etc. Nests in holes in trees, etc.

*Otus sagittatus***The Large Malay Scops Owl**

*Ephialtes sagittatus* Cassin, *Proc. Acad. Nat. Sci. Philad.*, iv., 1850, p. 121, (Malacca).

*Scops sagittatus*, Sharpe, *Cat. Birds, Brit. Mus.*, ii., 1875, p. 98; Blanford, *Faun. Brit. Ind., Birds*, iii., 1895, p. 296.

*Otus sagittata*, Robinson and Kloss, *Journ. Nat. Hist. Soc. Siam*, v.,

<sup>1</sup> *O. b. condorensis* Kloss, to be more precise.



1922, p. 110; Stuart Baker, *Faun. Brit. Ind., Birds* (2nd ed.), iv., 1927, p. 430; Stuart Baker, *Nid. Birds Ind. Emp.*, iii., 1934, p. 521.

**Malay Name.**—Unrecorded specifically: burong hantu (generic).

**Description.**—Size small. Fairly uniform in colour; a frontal band of pinkish white, slightly mottled with black, extending to beyond the level of the eyes.

*Adult female.*—Chestnut-bay above, with very small, triangular, buffy white spots bordered with black beneath on the mantle and back, these spots larger on the inner scapulars; outer scapulars, yellowish white on the outer webs with three or four moderately sized black spots on the shafts. Lesser wing coverts, darker bay vermiculated with black and with minute buff spots on the tips. Larger series, paler, more yellowish on the outer webs and with sagittate buff markings on the shafts. Forehead to beyond the level of the eyes and a superciliary stripe extending to the ear tufts, white with a pinkish tinge, obscurely vermiculated with fuscous. Loral bristles, whitish with black tips, a broad ring round the eye, rufous-chestnut; ear coverts, pale at the base with broad dark rufous tips; ear tufts, chestnut-bay on the outer webs and tips, whitish, vermiculated and barred with black on their inner webs. Beneath, extreme point of chin, rufous, behind and above the jaw a patch of close-set feathers forming a partial ruff, pinky white with black tips; throat and breast, greyish brown vermiculated with black; rest of the under surface, golden buff, with small rounded black spots on the shafts of the feathers and largest on the centre of the belly. Flanks, thighs and under tail coverts, almost uniform golden buff. Primaries, barred brown and buff on the outer webs, barred black and rufous-brown on the inner webs, the black bands becoming darker and broader towards the base; secondaries, pale chestnut-bay almost uniform on the outer webs, regularly barred with pale bay and black on the inner webs, the innermost with narrower and more irregular bars which are edged with yellowish buff. Axillaries and lesser under wing coverts, golden buff, the greater ones black with pale buff bases. Upper tail coverts, chestnut with indistinct black bars irregularly margined with yellowish. Tail, chestnut-rufous with about ten transverse black bars, more distinct on the outer feathers and towards the base.

*Adult male.*—Similar, but rather paler beneath, the ear tufts with black tips and clear white inner webs.

*Note.*—In specimens, presumably representing either immature birds or another phase, the general tone of the plumage is darker brown, less chestnut-bay, the under surface is more tinged with grey and the breast more strongly vermiculated. The black spots above and below are larger and more numerous. In one bird the scapulars are strongly barred with black on their outer webs.

**Soft Parts.**—Irides, deep brown; bill, legs, feet and claws, bluish white; cere, bluish green.

**Dimensions.**—Total length, about 9.5 in.; wing, 7 to 7.5 in.; tail, 4.8 in.; tarsus, 1.1 in.; bill from gape, 0.9 in.

**Range in the Malay Peninsula.**—This owl seems to have been not very

rare in the old Malacca trade skin collections which mostly came from the district round Mt Ophir. The collectors of the Selangor Museum obtained a male on Bukit Tangga in Negri Sembilan and Mr C. J. Aagaard met with it in the Patani States. I do not know of any other recent specimens.

**Extralimital Range.**—Known from Meetan on the slopes of Muleyit in the north and Maliwan in the extreme south of Tenasserim.

**Nidification.**—The only details recorded concern eggs said by Mr Stuart Baker to have been taken in Siam and Perak, but without further evidence we are not yet disposed to accept these numerous eggs as those of this very rare owl.

**Habits.**—Very little is known of the habits of this rare owl. From the localities in which it has been obtained it is evidently an inhabitant of dense submontane jungle. The single specimen obtained by Davison in Tenasserim is recorded as having been feeding on insects, chiefly moths.

### *Otus rufescens malayensis*

#### The Yellow-billed Scops Owl

*Otus rufescens malayensis* Hachisuka, *The Birds of the Philippine Islands*, iii., 1934, p. 52 (Mt Ophir, Malacca).

*Strix rufescens*, Horsfield, *Trans. Linn. Soc.*, xiii., 1821, p. 140 (Java).

*Scops rufescens*, Sharpe, *Cat. Birds, Brit. Mus.*, ii., 1875, p. 102.

**Malay Name.**—Unrecorded: burong hantu (generic).

**Description.**—Size small; colour very uniform, slightly spotted, but never vermiculated, with black on the body.

**Adult.**—Tawny rufous-brown above with small triangular spots of pale fulvous, largest on the mantle and wing coverts and becoming shaft stripes on the back and rump, the spots bordered posteriorly with black. Outer web of scapulars, yellowish with black cross-bars. Lores and forehead to level of eye, pinkish buff, the tips of the feathers and shafts black; face, reddish brown, darker round the eyes, the posterior parts of the ear coverts black, forming a stripe on the sides of the head; feathers of the ruff, paler towards the tips; ear tufts, pale with darker edges and tips. Primaries, blackish with pale cross-bars, clearest on the outer ones; secondaries, dull blackish mottled with tawny brown. Inner aspect of wing, blackish, the primaries with broad creamy white bars on their inner webs towards the base. Under wing coverts, buffy white, blackish near the edge of the wing, the greater ones with their terminal half black; edge of wing, buffy white. Tail, rufous brown, mottled with black with indistinct pale cross-bars, clearest near to the shaft, beneath paler brown with white shafts to the feathers. Lower surface, orange-brown with sparse small black spots on the tips of the feathers, absent on the flanks; under tail coverts, thighs and tarsal feathering, which barely extends to the base of the toes, rather paler.

**Soft Parts.**—Iris, brown; bill and feet, pale fleshy.

**Dimensions.**—Total length, 7.5 in.; wing, 5 to 5.2 in.; tail, 2.3 in.; tarsus, 1 in.; bill from gape, 0.9 in.

**Range in the Malay Peninsula.**—The southern half of the Peninsula: Selangor, Malacca, and Johore. Very doubtfully on Singapore Island.

**Extralimital Range.**—The Malayan race is not found elsewhere. The slightly less rufous, typical form is found in Java, Borneo and Sumatra. The species is also found in the Sulu Islands.

**Nidification.**—Unknown.

**Habits.**—Nothing whatever is known of the habits of this rare owl. Like *O. sagittatus* it is probably an inhabitant of dense lowland and submontane jungle away from the coast and most strictly nocturnal. I have never seen a specimen in the flesh, and it was not met with by the collectors of Hume and Davison.

*Ninox scutulata malaccensis*

**The Malay Hawk-Owl**

Vol. I., p. 83.

Upper parts, dark chocolate-brown, greyer on the head. Tail feathers, broadly barred with black. Throat and breast, reddish brown, streaked with buff on the throat and with buff and white on the breast. Abdomen, white heavily streaked or spotted with reddish brown.

Total length, about 11 in.; wing, about 7.25, and always under 8 in.

Common in most types of lowland country throughout the Peninsula. The food seems to consist chiefly of insects. Two other forms of the species visit the Peninsula in the winter months. Both are larger (wing over 8 in.) and whiter below than the resident race, and one form, *N. s. burmanica*, is markedly paler on the upper parts. This form is the resident bird of Assam, French Indo-China, etc., the other, *N. s. scutulata*, comes down from China and Japan.

In Lower Perak the white eggs (1.45 by 1.22 in.) have been found, at the beginning of April, by Mr A. T. Edgar, in a hole in a tree, thirty-five feet from the ground.

*Bulaca orientalis orientalis*

**The Malayan Orchard-Owl**

*Strix orientalis* Shaw, *Gen. Zool.*, vii., pt. 1, 1809, p. 257 (China, ex Lath.); Stuart Baker, *Nid. Birds Ind. Emp.*, iii., 1934, p. 505.

*Syrnium sinense*, Sharpe, *Cat. Birds, Brit. Mus.*, ii., 1875, p. 261; Oates, in Hume's *Nests and Eggs Ind. Birds*, iii., 1890, p. 114.

*Syrnium seloputo*, Blanford, *Faun. Brit. Ind., Birds*, iii., 1895, p. 278.

*Strix orientalis orientalis*, Robinson and Kloss, *Journ. Nat. Hist. Soc. Siam*, v., 1922, p. 108.

*Strix seloputo*, Herbert, *Journ. Siam Soc., Nat. Hist. Suppl.*, vi., 1926, p. 326; Stuart Baker, *Faun. Brit. Ind., Birds* (2nd ed.), iv., 1927, p. 403.

**Malay Name.**—Burong charek-kafan (*Winstedt*); burong hantu (generic).

**Description.**—A large owl; upper parts, rich brown, profusely spotted with white; under parts, mostly barred black and white.

*Adult*.—Head above, blackish brown, with large white spots, the bases of the feathers golden buff; sides of face, ocular region and ear coverts, reddish buff; ruff feathers, dark chocolate-brown with narrow white bars at the tip; sides of the neck, broadly barred with white and black bars of equal width, the base of all the feathers golden. Nape, as the head but the white spots assuming the shape of bars; mantle, back and upper tail coverts, rather paler, chocolate-brown with white bars and spots, the white margined with black. Inner scapulars as the mantle, the outer ones with white bars margined with black, the bars broadening to the innermost. Lesser upper wing coverts, chocolate with a few white spots, median and greater series, slightly paler with large white spots and vermiculated with black towards the tips of the outer web. Bastard wing and primary coverts, dark brown, almost unspotted. Primaries, brownish, the outer feathers with narrow, incomplete white bars on the outer webs, the inner ones and secondaries more buffy and paler towards the bases with successively broader and more yellowish bars; inner aspect of wing, brownish, the inner primaries and secondaries largely creamy buff on their inner webs and with obvious bars towards the tip. Lesser under wing coverts and axillaries, white barred dark brown and washed with orange-buff; greater series blackish, creamy buff at the base. Tail, pale chocolate-brown, tip narrowly white, with obscure pale bars, much more conspicuous on the inner webs of the outer feathers; tail beneath, brown with broad whitish bars. Under parts, chin, buff, a large white patch on throat; rest of under surface, barred black and white, the white bands broader, the bases of the feathers rufous-buff, showing through conspicuously on the breast and where the plumage is disarranged. Thighs and feathered tarsi, white, washed with buff and barred with black; feathering of toes without bars.

*Sub-adult*.—Two birds, one marked "young" by the skinner, are rather redder in general tone than others. They have the greater upper wing coverts broadly tipped with white and rather more white in the scapulars.

*Juvenile*.—Upper plumage mostly banded white and dark brown (*Blanford*).

**Soft Parts**.—Iris, dark brown; bill, black; feet, dark olive. "The claws and visible portion of toes horny; bill and cere greenish black; irides dark brown" (*Davison*). *Ogilvie-Grant* records the iris of a Malayan bird as "yellow."

**Dimensions**.—Total length, 18.5 in.; tail, 7.5 in.; wing, 13.75 in. (a female), 14.3 in. (a male); tarsus, 2.5 in.; bill from gape, 1.6 in.

**Range in the Malay Peninsula**.—From the northern boundary to Singapore Island in the south including Penang and the Junk Zeylon group (Junk Zeylon and Koh Boi Yai).

**Extralimital Range**.—Pegu, Tenasserim, South Siam and Cochin-China. Closely related subspecies are found in Java, Bawean Island and Palawan. There is no reliable evidence for the occurrence of this owl in Sumatra or Borneo.

**Nidification**.—No local record. From Siam Mr E. G. Herbert records

finding two single eggs in large, open, branch holes, about twenty-five feet from the ground, in trees. One tree was near a temple. In both cases the egg was lying on the wood without nesting material. Mr Herbert describes his eggs as follows: "The eggs are very round ovals with both ends alike. They are pure white, with a very satiny surface and a fair amount of gloss. The shell has a number of pimples on the surface, as is so often the case with the eggs of the smaller owls, and this feature, together with the satiny appearance and peculiar shape, definitely mark it as a wood-owl's egg." Size about 1.95 by 1.6 in.

**Habits.**—This large owl is scarce in the south of the Malay Peninsula but it is quite common in the north, especially in Patani, where it is found in orchards and villages. At dusk it can be seen in the ricefields. In addition to the precise localities mentioned above we have seen specimens from Trang, Selangor, Perak and the territory of Malacca. In Burma, according to Oates, it is found in evergreen forests and groves of trees in the neighbourhood of pagodas and ruined monasteries, being strictly nocturnal in its habits and feeding mainly on large insects. Davison writes: "A pair frequented the forest at the back of the village of Bankasoon. They used to make their appearance soon after dusk and keep about the forest. I never knew them come into the open, till just about dawn, when they retired." And again: "The hoot of this owl is very peculiar, once heard never either to be forgotten or confounded with that of any other owl; it commences with a sort of rolling *hoo-hoo-hoo*, and ends with a prolonged and deep-drawn *hoo*."

*Bulaca leptogrammica maingayi*

**The Malayan Wood-Owl**

Vol. II., p. 35.

Upper parts, brown, the crown darkest, distinctly barred with buff on the tail and upper tail coverts, rather less distinctly on the wings and indistinctly on the scapulars and back. Scapulars patched with white. A broad streak on the eye and the face buff; feathers round the eyes, at the base of the bill and the ruff, dark brown to black. Chin, blackish; a large white patch on the throat; remaining under parts, pale buff closely barred with brown.

Total length, about 21 in.; wing, about 13.5 in.

Very little is known of this large owl in the Malay Peninsula, where it inhabits the forest on the foothills and mountains, but is also occasionally found in the lowlands. It is by no means common and there is no local record of the nest and eggs.

*Glaucidium brodiei tubiger*<sup>1</sup>

**The Lesser Banded Owlet**

Vol. II., p. 37.

A very small species. Upper parts, brown, rather greyer on the head, and everywhere barred with buff, the bars on the head narrower and whiter.

<sup>1</sup> *Glaucidium radiatum* (Tick.) is supposed to have been obtained by Cantor in Kedah, but we believe a mistake in labelling has occurred and do not admit the species to the Malayan list.

A broad orange-buff collar crosses the nape. Chin, throat and a narrow zone in the centre of the breast and abdomen, white; a brown band across the upper throat. Sides of the breast, brown, barred with buff; sides of the abdomen broadly streaked with rufous.

Total length, about 6 in.; wing, about 3.6 in.

A nocturnal species found only in the mountain forest in the Malay States, but turning up again in the lowland forest in the extreme north of our area. There is no Malayan record of the nest and eggs, which should be looked for in holes in branches high in trees.

*Tyto alba javanica*

**The Javan Screech Owl or Barn-Owl**

*Strix javanica* Gmelin, *Syst. Nat.*, i., 1788, p. 295 (Java); Oates, in Hume's *Nests and Eggs Ind. Birds* (2nd ed.), iii., 1890, p. 93; Oates, *Cat. Birds' Eggs, Brit. Mus.*, ii., 1902, p. 341.

*Strix flammea* (part), Sharpe, *Cat. Birds, Brit. Mus.*, ii., 1875, p. 291; Blanford, *Faun. Brit. Ind., Birds*, iii., 1895, p. 265.

*Tyto flammea javanica*, Robinson and Kloss, *Journ. Nat. Hist. Soc. Siam*, v., 1922, p. 108.

*Tyto alba javanica*, Herbert, *Journ. Siam Soc., Nat. Hist. Suppl.*, vi., 1926, p. 326; Stuart Baker, *Faun. Brit. Ind., Birds* (2nd ed.), i., 1922, p. 362; Stuart Baker, *Nid. Birds Ind. Emp.*, iii., 1934, p. 495.

**Malay Name.**—Unrecorded; burong hantu (generic).

**Description.**—Very like the common barn-owl of Europe.

**Adult.**—Above, vermiculated greyish and white, the bases and edges of the feathers pale golden yellow with a subterminal spot of black and a terminal one of white on each feather, the spots more rounded on the head; facial disc, whitish rufous near the eye in front; inner feathers of ruff, silky white, outer ones rusty buff, narrowly barred and tipped with black; wing coverts like the upper surface, but the bases more broadly golden, especially the primary coverts. Primaries externally vermiculated with grey, whitish and golden buff, with bars of blackish on the inner web, which is white; inner primaries and secondaries with a small black spot and a large white one at the tip of the shaft. Inner aspect of wing, white, the tips of the primaries mottled greyish and buff; lesser under wing coverts, white, spotted with blackish brown, the greater series white, their terminal third black. Tail, golden buff, with four narrow black bars and vermiculated with greyish black. Lower surface, white, buffy yellow on the breast and flanks, with small quadrate spots of black; under tail coverts, white; thighs as the flanks.

**Soft Parts.**—Iris, black; bill, fleshy white; cere, flesh-colour; tarsi and feet, fleshy brown (*Legge*).

**Dimensions.**—Total length, about 12.75 in.; tail, 4.9 in.; wing, 11.2 in.; tarsus, 2.5 in.; bill from gape, 1.3 in.

**Range in the Malay Peninsula.**—There are very few authentic records

from the Malay Peninsula. Kelham obtained one in Perak and there are two local specimens in the Raffles Museum.

**Extralimital Range.**—The present subspecies is found in Ceylon, India, French Indo-China, and is common in Bangkok and the neighbouring parts of Siam. Doubtful in Sumatra and Borneo, but found in Java and eastwards along the island chain to Timor.

**Nidification.**—There are no records from the Malay Peninsula. Elsewhere it nests in the roofs of buildings and ruins, and lays from three to six eggs, described as less round and more oval than those of other owls, white with a creamy tinge and measuring about 1·69 by 1·28 in. (*Blanford*).

**Habits.**—Like the common English barn-owl, the eastern form is described as nocturnal, feeding on rats and mice. The note is a screech, sometimes uttered on the wing.

It would appear that this owl is one of a small class of birds and mammals that in the Malay Peninsula are almost dependent on man. Such are the tree-sparrow (*Passer montanus*) among the birds, and the musk-shrew (*Suncus cæruleus*), the brown rat (*Rattus norvegicus*) and the bandicoot-rats (*Gunomys*) among the mammals. I doubt if any of these is strictly indigenous.

*Phodilus badius badius*

**The Lesser Bay Owl**

Vol. II., p. 34.

Sexes alike. Forehead, face and under parts, pinkish white, the under parts with scattered black spots. Upper parts, pale chestnut-bay, a patch on the occiput, a broad collar across the neck and the wings, irregularly, golden buff, the whole with scattered white and black spots. Tail and wing quills barred with black.

Total length, about 10·25 in.; wing, about 7·5 in.

A forest bird of nocturnal habits widely distributed in the Peninsula from Province Wellesley to Singapore, both in the lowlands and submontane country. There is no Malayan record of the nest. Very little is known of the habits, and in the Peninsula the species is far from common.