



## Family ÆGYPIIDÆ

## Vultures

THE vultures, large carrion-feeding birds of repulsive aspect, are distinguished from all other birds of prey by their bare heads and necks.

They are birds of very powerful flight, with long wings—so much so, that when gorged with food they have difficulty in rising from the ground. About twenty-five species are known, all birds of black, brown or dingy white plumage, spread over the whole of Africa, the warmer parts of Asia (but not extending to the Malay Archipelago or Australia) and the Mediterranean countries.

In North, Central and South America occurs another group, *Cathartidiformes*, which comprises the condor of the Andes and the turkey buzzards, with similar external appearance and habits to the vultures of the Old World, but with anatomical differences so great that they are regarded by many ornithologists as having ordinal rank equal to that of the whole of the remaining *Accipitriiformes*.

There are three vultures on the Malayan list, or possibly four, and two are here described. Securing their food entirely by sight, it is obvious that a heavily forested country is quite unsuited to them, and it is for this reason, probably, that they do not extend to the Malay Archipelago.

## KEY TO THE SPECIES OF ÆGYPIIDÆ HERE DESCRIBED

- General plumage glossy black; throat ruff  
 inconspicuous, black; bare parts red . . . *Torgos calvus*, p. 60  
 General plumage dark brown; lower back  
 white; throat ruff conspicuous, white; bare  
 parts, dull slate-colour . . . . . *Pseudogyps bengalensis*, p. 62

*Torgos calvus*

## The Black or King Vulture

*Vultur calvus*, Scop., *Del. Flor. et Faun. Insubr.*, ii., 1786, p. 85 (Pondicherry).

*Otogyps calvus*, Sharpe, *Cat. Birds, Brit. Mus.*, i., 1874, p. 14; Kelham, *Ibis*, 1881, p. 364; Oates, in Hume's *Nests and Eggs Ind. Birds* (2nd ed.), iii., 1890, p. 209.

*Torgos calvus*, Kaup, *Isis*, 1825, col. 1144; Herbert, *Journ. Siam. Soc., Nat. Hist. Suppl.*, vi., 1926, p. 328.

**Malay Names.**—Burong reng, ěreng, hěreng; nok reng<sup>1</sup>: he rang (*Siamese*).

**Description.**—Head and neck, red, a large fleshy wattle on each side, extending to the ear.

**Adult.**—Glossy black above, browner on the scapulars and back;

<sup>1</sup> The Malay names are obviously Siamese loan words.

primaries, black ; the secondaries brown with darker tips ; a small black ruff. Patch on chest, blackish brown, edged with downy white. Flanks and upper part of thighs, downy white, with a large oval bare patch on the lower thighs brick-red.

*Immature*.—Head and neck with white down ; ruff feathers rather longer, brown, not black ; general colour, brownish, not glossy ; feathers of the breast and belly with whitish edges ; under tail coverts, dirty-white.

**Soft Parts**.—Iris, creamy yellow ; bare skin on head and neck, red in part mottled with dusky, the bases of the wattles, yellow ; bill, black ; feet dull red.

**Dimensions**.—Total length, 29 to 35 in. ; wing, 23 to 26 in. ; tail, 10·2 to 11·5 in. ; tarsus, 3·9 to 4·3 in. ; bill from gape, 2·6 to 2·9 in.

**Range in the Malay Peninsula**.—From the northern border south to Taiping in Central Perak. Not on any of the islands except Salanga (Junk Zeylon).

**Extralimital Range**.—The greater part of India, Burma and the Indo-Chinese countries, but not extending into the Malay Archipelago.

**Nidification**.—There are no records of the breeding of this vulture in Malaya, but Herbert (*loc. cit.*) gives the following account of it in Central Siam :

“The nest is a huge platform of sticks, measuring 4 by 3 ft. and about a foot thick. The extra length in one direction provides a convenient perching-ground for the male when visiting the sitting bird, and later on it serves as a feeding-ground for the young. The lining of the nest consists of twigs, some of which have the green leaves on them, also thin strips of the sheath leaf of the betel palm, and in the paddy district straw is sometimes used. Nesting commences in the latter part of November, and the egg is laid at the end of January or early in February. The egg is a very perfect oval in shape, dead-white in colour, with the faintest suspicion of green in it. The membrane inside the egg appears to be white when it is visible, but when the shell is viewed through the blow-hole, against the light, it is deep green in colour. The shell has a slightly rough surface and is distinctly granular in appearance, with numerous crease-like grooves forming up towards one end. Only one egg is laid, the measurements being 3·55 by 2·55 in.”

**Habits**.—This handsome vulture is common throughout the northern parts of the Malay Peninsula, south to Taiping on the western, and into Kelantan on the eastern side of the Peninsula. At one time it was found in Perak as far south as Ipoh, and there are several records of its occurrence even in Singapore. Improved sanitation and control of cattle-disease is gradually banishing it from the British sphere in the Peninsula.

It is found associating with the smaller and less powerful brown vulture, *Pseudogyps bengalensis*, though this bird treats it with respect and gives pride of place to it. It is, however, never so numerous. It has the usual habits of its family, feeding on carrion and on garbage of all kinds. In the streets of the town of Puket, in Junk Zeylon, we found it specially numerous, and it is very abundant in the Patani States, its numbers being greatly augmented at times when cattle plague is prevalent and there are many dead or dying beasts about, when it gorges so that, without a run, it cannot lift itself from the ground,

though when once in the air its flight is more powerful and effortless than that of the smaller species. In Patani the birds used to roost in large numbers on some very tall Dipterocarpous trees near the river-mouth, which appeared to be the only rendezvous for all the individuals of the species within a radius of very many miles, as, except when feeding, Dr Annandale and myself never met with them elsewhere in the state.

*Pseudogyps bengalensis*

**The Brown White-backed Vulture**

*Vultur bengalensis*, Gmel., *Syst. Nat.*, i., 1788, p. 245 (Bengal *ex* Lathan).

*Pseudogyps bengalensis*, Sharpe, *Cat. Birds, Brit. Mus.*, i., 1874, p. 11; Kelham, *Ibis*, 1881, p. 364; Blanford, *Faun. Brit. Ind., Birds*, iii., 1895, p. 324; Oates, in Hume's *Nests and Eggs Ind. Birds* (2nd ed.), iii., p. 205, 1890; id. *Cat. Birds' Eggs, Brit. Mus.*, ii., 1902, p. 227.

**Malay Names.**—Reng, ěreng or hering; nok reng: ee reng (*Siamese*).

**Description.**—*Adult.*—Head and neck bare, with dull brown bristles on neck, the lower part with short downy tufts at the back, and a ruff of short white down. Mantle, wing coverts, primaries, tail feathers and upper tail coverts brownish black, the secondaries lighter brown; lower back, rump, under wing coverts and axillaries, flanks and thighs, white, a patch on the chest black, with a large tuft of white on each side; breast and abdomen dark brown with narrow white shaft stripes.

*Immature.*—Head and neck less naked, covered with softy dirty-white down; feathers of the ruff, elongated, whitish, with brown edges; general plumage paler brown than in the adults, including the back and rump; wing coverts brown, with narrow white shaft stripes; breast and abdomen pale brown, with broad white shaft stripes.

**Soft Parts.**—*Male adult.*—"Iris, dark brown. Cere and bill black, except basal half of upper mandible, which is greyish white. Bare neck; skin, brownish leaden, a patch on each side of upper part of basal half of neck, bluish grey. Legs dark brown, claws black." *Female, immature.*—"Iris, legs and claws as in male; whole bill blackish. Bare neck; skin, bluish grey, with the exception of a small brownish patch adjoining lower mandible" (Williamson).

In 1901 I recorded the base parts of an adult female from Patani as—iris, black; naked skin of the head, greenish yellow; feet, black.

**Dimensions.**—Total length, 30 to 36 in.; wing, 22 to 24.5 in.; tail, 9.5 to 11 in.; tarsus, 3.7 to 4 in.; bill from gape, 2.6 to 2.85 in.

**Range in the Malay Peninsula.**—On the east coast of the Peninsula as far south as Kelantan. On the west to North Perak, and in former times to Malacca. Common in Junk Zeylon. There are *visual* records from Singapore but no vultures have occurred in the island for very many years past.

**Extralimital Range.**—Throughout India but rare in the Himalayas and in the west. The Indo-Chinese countries, east to Tonkin and Cochinchina. Not in Ceylon.

**Nidification.**—There are no Malayan or Siamese records. In Pegu it often breeds in company, making a nest of sticks lined with green leaves high on trees. Only one egg is laid, exceedingly variable in shape and size, from long ovals to almost perfect spheres, but usually a somewhat broad oval, slightly compressed or pointed towards one end; in colour they are usually dull white, but some are speckled or blotched towards one end, with pale reddish brown. As incubation proceeds the eggs become much soiled. Oates gives the average dimensions of a large series as 3·26 by 2·42 in.

**Habits.**—This vulture was formerly found rather farther south than the black vulture, as Davison records having seen it in Malacca about 1878, and there is a specimen from that settlement in the British Museum, obtained about 1850, by Dr Cantor. In habits it is precisely similar to the black vulture but, as noted above, is much more abundant.

### *Pandionidæ*

#### Ospreys and Fishing Eagles

THIS family—restricted by many authorities to the world-wide osprey described below, but in which, following Dr Sharpe, I have included the grey and white fishing eagles, *Polioaetus*—is in many respects a link between the owls and the other Accipitrine birds.

Bill much hooked, upper mandible festooned, not toothed. Tail nearly square; feet with the outer toe reversible or partially so; the soles furnished with prickly scales.

The osprey is described below; the two species of fishing eagles found in Malay are grey and white birds of considerable size that haunt the large rivers, sometimes far into the interior. Occasionally, but rarely, they are found on the coast, but never on the open sea, being at most estuarine or mangrove-channel birds.

### *Pandion haliaetus haliaetus*

#### The Osprey

*Falco haliaetus*, Linn., *Syst. Nat.*, i., 1766, p. 129 (Europe).

*Pandion haliaetus*, Sharpe, *Cat. Birds, Brit. Mus.*, i., 1874, p. 449; Kelham, *Ibis*, 1881, p. 367; Blanford, *Faun. Brit. Ind., Birds*, iii., 1895, p. 314.

**Malay Name.**—Lang siput.

**Description.**—Tail nearly square; legs covered with hexagonal scales; soles with prickly scales; feathers of the head much elongated and pointed; claws powerful, much curved.

**Adult.**—Head all round white, the feathers of the crown heavily striped with brownish black and edged with fawn; upper parts dark brown, often with a purplish gloss in freshly moulted birds, the feathers usually with paler edges; wing coverts with dark centres; primaries, black, white towards the base on their inner aspect; secondaries, brown; axillaries, pale fawn; under

wing coverts with large dark brown centres and buffy white tips and edges. Tail, brown, with irregular dark bars and with broad white bars on the inner webs, the centre pair nearly uniform.

Sides of the head with a broad dark brown band down the sides of the head to the neck; beneath, white, a band on the breast with the feathers pointed, with dark shafts, and with broad V-shaped marks of greyish brown.

*Immature*.—The upper surface with much broader pale edges to the feathers; the lesser wing coverts on the inner margin of the wing often entirely white, the dark band on the breast not so pronounced, and the tail, especially the outer feathers, with more numerous and more distinct bars.

**Soft Parts**.—Iris, bright yellow; bill, black; cere, dull greyish green; legs, greenish yellow; claws, black.

**Dimensions**.—Total length, 20 to 22 in.; wing, 18 to 20 in.; tail, 9 to 10 in.; tarsus, 2·2 to 2·4 in.; bill from gape, 1·6 to 1·9 in.

**Range in the Malay Peninsula**.—Along the coasts and tidal rivers.

**Extralimital Range**.—The osprey is almost cosmopolitan in its range, but is not found in South America. The forms from America; Asia, Europe, and Africa; and Australasia differ subspecifically, chiefly in size and in the amount of white on the head. Both the Asiatic and the Australasian races probably occur in the Malay Peninsula but the existing material is inadequate to determine the point, the more so as the bird is largely a migrant to the country during the winter months.

**Nidification**.—I very much doubt if the osprey breeds in Malaya. In other parts of the world the nests are immense structures of sticks added to from year to year and occupied for generations. They are usually built on trees. The eggs are oval in form, the shell coarse in texture and without gloss. The ground-colour is cream to pinkish buff, heavily blotched with reddish brown and chocolate. The dimensions average 2·4 by 1·77 in.

**Habits**.—The osprey, though widely distributed throughout Malaya, is by no means numerous and is hard to secure; I have not examined more than a dozen specimens from Malaya proper, though it is fairly common in Siam. Records are mainly during the winter months. On those occasions that I have come across it it has always been on the coast, usually near small rocky islands and always solitary or in pairs. It is a shy and wary bird, much more so than the sea-eagle, and is never or rarely seen near the fishing stakes, like that species and the Brahminy kite. Sometimes it frequents the channels among the mangroves, perching on the bough of some tall dead tree on the verge, watching for fish, on which it projects itself with great velocity, returning with its capture to its perch, where it devours it, though sometimes it feeds in the air.

The Malay name for the osprey is *lang siput*, or oyster hawk, as they say that the bird always flies up-stream warning the shellfish of the incoming tide with its scream. The name, however, is shared with the sea-eagle.

## Falconidæ

WITH the exception of the African secretary-bird, *Serpentarius*, with which we are not concerned, the *Falconidæ* include all the remaining diurnal birds of prey.

The family has been subdivided into many groups by some authors but, as Blanford has pointed out (*Faun. Brit. Ind., Birds*, iii., p. 328), these divisions, if they are to take cognizance of natural characters, will have to be very numerous, and I have therefore left all our Malayan species under one heading.

In a country that is, in the main, covered with a dense forest canopy, members of this order, unless they are migratory or marine species, or dwell in or near the ricefields, are difficult to observe, and rarely come under notice. This is especially true of the larger forest eagles, such as *Ictinaetus* or *Lophotriorchis*, which are really not very uncommon but are merely inaccessible. Of the latter, for instance, neither Mr Kloss nor myself, in over twenty-five years' residence in Malaya, has ever handled specimens in the flesh, though from mountain-tops I have often seen it soaring over the tree-tops beneath me.

In the north of the Peninsula, where there is more open country, and the jungle is rather thinner, raptorial birds are apparently much more common than in the south. It is, for the reasons given, more than doubtful if this is actually the case.

## KEY TO THE SPECIES OF FALCONIDÆ HERE DESCRIBED

1	{	Size very small, wing less than 5 in. . . . .	<i>Microhierax fringillarius</i> , p. 67
		Size much larger, wing always more than 5'6 in. . . . .	2
2	{	Tarsus feathered on to insertion of toes . . . . .	<i>Spizaetus cirrhatus limnaetus</i> , p. 69
		Tarsus not so feathered . . . . .	3
3	{	Size small, less than 6'5 in. ; middle toe long and slender . . . . .	<i>Accipiter gularis gularis</i> , p. 71
		Size much larger ; middle toe normal . . . . .	4
4	{	Head crested . . . . .	<i>Spilornis cheela bassus</i> , p. 65
		Head not crested . . . . .	5
5	{	Size moderate ; tarsus short ; with rufous in the plumage . . . . .	<i>Haliastur indus intermedius</i> , p. 73
		Size large ; tarsus long ; with no rufous in the plumage . . . . .	<i>Cuncuma leucogaster</i> , p. 75

*Spilornis cheela bassus*

## The Malay Serpent Eagle

PLATE 2

*Falco. bassus*, Forster, *Naturgesch., African Vog.*, 1798, p. 55 (Java).

*Spilornis pallidus*, Walden ; Sharpe, *Cat. Birds, Brit. Mus.*, i., 1874, p. 290, pl. 9.

*Spilornis cheela*, Lath. ; Blanford, *Faun. Brit. Ind., Birds*, iii., 1895, p. 357.

*Spilornis cheela malayensis*, Swann, *Syn. of the Acciptr.* (2nd. ed.) 1922, p. 132 (Raub, Pahang).

**Malay Name.**—Lang bĕrjambul.

**Description.**—*Adult.*—Above, brown, with a purplish wash, the scapulars with narrow white tips; lesser wing coverts, greyish, with a small white spot at the tip of each web. Primaries black, with two broad bars of earthy brown, whitish on inner margin of inner webs, these bars being whiter on the inner aspect of the wing, the basal bar mottled; secondaries brownish, the terminal parts black with the extreme tip white; under wing coverts, liver-brown, with a series of large rounded white spots on each web. The axillaries, paler brown, with similar series of white spots; edge of the wing, whitish; tail, blackish, browner towards the base, with a broad median band, about 2 in. wide, of mottled greyish brown and white; tips of the feathers narrowly white, preceded by a broader but irregular brown band. Head heavily crested, deep black, the bases of the feathers broadly white, the longest feathers, except in very old birds, narrowly tipped with buffy; sides of the face and ear coverts grey. Beneath throat, grey; sides of the neck and the chest, uniform pale brown, rest of the under surface with regular series of rounded white spots on both webs, the spots margined with dark brown; these series of spots become more regular and clearer on the lower belly and thigh ends. Tail coverts with regular bars of white and liver-brown of equal width.

*Immature.*—Paler brown above, the head with more white, the longer crest feathers with a broad mottled brownish subterminal bar; face and region of the jaw, blackish, not grey; chin and throat white, with black shaft stripes broadening to the tips. Wing coverts brown, with pale bases. Primaries more barred, and tail with two pale bars narrower than the single pale bar of the old bird.

Younger birds still, have the whole of the upper surface and the wing coverts with broad whitish buff tips.

*Note.*—The plumages described above are those most frequently met with, but, as in so many hawks, no two birds, even from the same district, are exactly alike, and the plumage suffers greatly from bleaching. The juvenile stages are not as yet thoroughly understood, but it seems probable that the bird does not attain its fully adult dress until the end of the third year at least.

**Soft Parts.**—Iris, light chrome; bill, bluish slate; culmen, blackish, sometimes with pale tip; cere and orbital skin, lemon; feet, dirty wax-yellow; claws, black.

**Dimensions.**—Total length, 20 to 22 in.; wing, 13.5 to 15.5 in.; tail, 8.5 to 10.5 in.; tarsus, 3.1 to 3.4 in.; bill from gape, 1.5 to 1.7 in.

**Range in the Malay Peninsula.**—Throughout the Peninsula, south to Johore; probably, on occasion, on all the larger islands, though it has been actually recorded only from Koh Samui and doubtfully from Singapore.

**Extralimital Range.**—Possibly a short distance into Southern Tenasserim and in Southern Siam, Borneo and Sumatra. Farther north the size of the bird increases and the breast is distinctly barred. Very many races have



received names based on size and relative intensity of coloration, but not all are entitled to even nominal distinction.

**Nidification.**—There are no details on record of the nesting of this bird in the southern parts of Malaya, though it is, of course, a resident and breeding bird.

Bingham found the nest of the closely allied *S. c. rutherfordi*, in the Thoungyeen Valley, North Tenasserim, on 14th March. The nest, which was in a fork of a Dipterocarpous tree, was a mass of large sticks,  $3\frac{1}{2}$  ft. in diameter and  $1\frac{1}{2}$  ft. thick, with a superstructure of small sticks, lined with very fine twigs. The single egg, now in the British Museum, is a broad oval, the shell rough and without gloss, of a dull white, with blotches of reddish brown, which are confluent at the larger end and form an almost uniform cap. The dimensions are given as 2·57 by 2·08 in.

**Habits.**—Widely spread, over open country, in the ricefields and along the courses of the larger rivers; also in the forests, and ranging up the hills to a considerable elevation, though it is not yet certain that the forest-haunting bird, which is much darker in colour, is not subspecifically distinct. The bird is seen, usually singly but occasionally in pairs, wheeling high over the ricefields in search of food, which is principally snakes, lizards, large frogs and crabs. Small birds, such as weaver birds and sparrows, and occasionally, duck and domestic poultry, are also attacked, often with great regularity. Food is not eaten on the wing but taken to a perch—usually on a tall tree on the borders of a ricefield or overhanging a river—and there devoured at leisure.

Flight is not rapid but the bird can plane and circle for long distances with the wings held rigid. The note is a loud melancholy squeal or whistle which has extraordinary carrying powers.

**Note.**—The plate, by Mr Grönvold, depicts with accuracy the bird usually met with in the low country of the southern half of the Malay Peninsula. The specimen figured is an old but not aged bird from the territory of Malacca. In the process of reproduction the throat has been rendered a little too brown. The crest has been drawn so as to show the colouring and the bird occasionally erects it as indicated; more usually, however, it is expanded laterally and not vertically, the feathers lying flat, or almost flat, on the nape, forming a mat of feathers, possibly protective against the strokes of snakes, on which the bird largely feeds.

### *Microhierax fringillarius*

#### The Malay Black-legged Falconet

PLATE 3

*Falco. fringillarius*, Drapiez, *Dict. Class. d'Hist. Nat.*, vi., 1824, p. 412, pl. 5 (Sumatra).

*Microhierax fringillarius*, Sharpe, *Cat. Birds, Brit. Mus.*, i., 1874, p. 367; Kelham, *Ibis*, 1881, p. 364; Oates, in Hume's *Nests and Eggs Ind. Birds* (2nd ed.), iii., 1890, p. 183; Blanford, *Faun. Brit. Ind., Birds*, iii., 1895, p. 434; Stuart Baker, *Ibis*, 1918, p. 67.

*Microhierax cærulescens*, Stuart Baker, *Ibis*, 1918, p. 67.

**Malay Name.**—Lang b lalang.

**Description.**—Bill with a very marked "tooth." Plumage soft and silky.

*Adult.*—Upper surface, including external aspect of wing, glossy black, with a greenish cast. Primaries and secondaries, toothed with white, not reaching the shafts, on the inner webs; axillaries and under wing coverts, white, sparsely flecked with black. Tail black, the inner webs spotted with white. Forehead narrowly white, a broad white band from behind the eye down the sides of the neck. Lores, ear coverts, region round the eye, hinder parts of the cheeks, sides of the body, flanks and outer face of thighs, black. Forepart of the cheeks, chin and throat, white, often tinged with buff, rest of the under surface ochreous rufous, very variable in strength of tint. Females as a rule have the ochreous rufous of the under surface more strongly developed than the males, but this character is not constant.

*Immature.*—The black of the upper surface duller, and with minute pale tips to the feathers; under surface without ochreous rufous but forehead and stripe behind the eye rufous buff.

**Soft Parts.**—Iris, dark brown; orbital skin, plumbeous; eyelids, black; bill, legs and feet, black (Davison); not infrequently yellow (Robinson). *Immature*: bill, rosy to yellowish horn; culmen more or less blackish.

**Dimensions.**—Total length, 5.7 to 6.7 in.; wing, 3.7 to 4.1 in.; tail, 2.1 to 2.7 in.; tarsus, 0.65 to 0.75 in.; bill from gape, 0.5 to 0.6 in. The females are decidedly larger and more heavily built birds than the males.

**Range in the Malay Peninsula.**—Throughout its length and on all the larger islands.

**Extralimital Range.**—Extending into Central Tenasserim, Southern Siam and Cochin-China, Java, Sumatra, Borneo.

**Nidification.**—Breeds in the early part of the year in the Malay Peninsula. Few eggs, however, from Peninsular limits are on record.

The nest is found in holes in trees, usually made by woodpeckers or barbets, and one to three eggs are laid on a small pad comprised of the remains of insects, the wings of butterflies and dragon-flies and the elytra of beetles.

The shape is described as a regular but rather broad oval, and the colour dead-white, close in texture, with no appreciable gloss. The eggs are usually much discoloured and stained.

One obtained by Kellow near Simpang, Perak, on 11th February, measured 1.16 by 0.95 in.

Though this little hawk usually nests as described above, it does not always do so. One pair nested, and brought up a pair of young, in a hole under the eaves of the museum at Kuala Lumpur, and were observed to feed their young on butterflies, dragon-flies and large lamellicorn beetles. What were probably the same pair nested later in a hole in the broken-off trunk of a durian-tree in the museum grounds.

**Habits.**—A singularly bold and fearless little hawk, often, as Davison has noted, attacking birds larger than itself, though in the main it lives on large grasshoppers and other insects, as its Malay name denotes. It is found throughout the country in open country and in jungle, on the plains and in the hills up

to about four thousand feet, though its favourite haunts are patches of recently cleared land, where tall dead trees have been left standing, on the branches of which it perches, making short flights after insects, etc., and returning to its bough to devour them. It usually flies in pairs, never more, male and female, often perching close together, like lorikeets, or one immediately above the other. The birds are about very early and very late, but seem to hunt in the hottest part of the day and to be much less active in dull weather, perhaps from the nature of their food. I have never heard them utter any note. The bird figured is a male from the vicinity of Kuala Lumpur, Federated Malay States.

*Spizaetus cirrhatus limnaetus*

**The Changeable Hawk Eagle**

*Falco limnaetus*, Horsfield, *Trans. Linn. Soc.*, xiii., 1921, p. 138 (dark phase).

*Falco caligatus*, Raffles, *Trans. Linn. Soc.*, xiii., 1922, p. 278 (Sumatra).

*Spizaetus limnaetus*, Sharpe, *Cat. Birds, Brit. Mus.*, i., 1874, p. 272; Oates, in Hume's *Nests and Eggs Ind. Birds* (2nd ed.), iii., 1890, p. 149; Blanford, *Faun. Brit. Ind., Birds*, iii., 1895, p. 395.

*Limnaetus caligatus*, Kelham, *Ibis*, 1881, p. 366.

*Spizaetus cirrhatus limnaetus*, Robinson and Kloss, *Journ. Fed. Mal. States Mus.*, xi., 1924, p. 225.

**Malay Names.**—Lang hindek, lang kepala puteh, lang rimba.

**Description.**—A large eagle, only slightly, or not at all, crested; claws very powerful; legs feathered, nearly to the toes.

**Adult.**—*Dark phase.*—General colour, sooty blackish brown, darker on the throat and mantle; bases of the primaries, greyish white on the inner webs; tail beneath, mottled with grey and white on the basal two-thirds of the feathers; the shafts white.

*Light phase.*—Head and sides of neck, buffy, the centres of the feathers with broad, blackish brown shaft stripes; mantle, scapulars and wing coverts, dark brown, the latter with white bases and pale edges. Primaries, brownish black, sometimes greyish on the outer webs, the secondaries much browner, with suggestions of bars in certain lights. Inner aspect of wings, greyish, whitish toward the base of the feathers and with narrow black bars; axillaries, brownish salmon, broadly edged and toothed with white; under wing coverts white with broad bars of black, edge of wing, white; tail, pale brown above, with four or five narrow black bars, a broad subterminal bar and a narrow buffy white tip; beneath, greyish white, with similar dark bars; sides of the face whitish, the ear coverts with narrow black streaks. Beneath, white, with broad dark streaks becoming bars on the flanks and belly; the throat with defined median and lateral dark streaks; feathering of the legs uniform buffy white.

**Immature.**—Lores blackish, the tail darker brown, the black bars narrower and more numerous than in the adult. Whole under surface and the under wing coverts pure white, without spots or streaks.

*Nestling*.—Clad in white down, feathers of the head and nape tinged with ochreous buff. Flight feathers and those of the mantle dark brown, with narrow white edgings.

*Note*.—The dark and pale plumages are quite distinct and do not grade into one another, but are in no sense specific or subspecific, nor are they in the least associated with locality. Both forms may be represented in the same nest. The dark birds do not vary much, or perhaps the variation is not so obvious, but the light phase is very inconstant, dependent in part on age. Young birds, as noted above, are almost uniform, but with age the dark stripes below become more numerous and heavier, while the tail becomes paler, with fewer and broader black bars.

**Soft Parts**.—Iris, bright yellow; bill and cere, black; feet, dirty-yellow; claws, black. *Females*: have the iris more yellowish brown, and young birds, dark greyish brown, yellowish brown or greyish yellow, with the gape and cere yellowish, the bill greyish black and the feet brighter yellow (Jacobson and Wilson).

**Dimensions**.—Total length, 24 to 28 in.; wing, 14.5 to 17.5 in.; tail, 10.5 to 12.5 in.; tarsus, 3.9 to 4.3 in.; bill from gape, 1.7 to 2.1 in. *Females*: are much the largest birds.

**Range in the Malay Peninsula**.—Widely though sparsely distributed throughout the length of the Peninsula and on all the larger islands.

**Extralimital Range**.—Widely distributed through the Indo-Chinese countries and through the Himalayan hill tracts, as far west as Kashmir. Also in Borneo, Sumatra, Java, the lesser Sunda Islands and the Philippine Islands.

**Nidification**.—There are no local records dealing with the nesting of the changeable hawk eagle in Malaya. In other parts of its range the species builds a large nest of branches in a tall tree, often lined with smaller twigs or green leaves, and lays one or, rarely, two eggs, which are described as pointed ovals; the shell is rather rough in texture and without gloss, the colour is usually uniform white, occasionally with a few small brown markings. Average dimensions, 2.75 by 2 in.

**Habits**.—Very widely distributed throughout the Peninsula, and also on occasion in the larger islands, but not abundant there. The country frequented is usually jungle and cleared areas adjacent thereto, for some distance up the mountains, but it is also met with in open country to a much greater extent than the smaller and handsomer species, *Spizaetus alboniger*, which is almost exclusively a bird of high forest. This race is usually seen singly or in pairs, and has a loud melancholy whistle. In open and inhabited country it is a persistent robber of Malay poultry and is greatly hated in consequence, elsewhere it seems to live on what birds and mammals it can obtain from the forest canopy, but it also descends to near ground-level, and its primaries are often much worn and damaged from contact with branches, etc. Like so many raptorial birds it has the habit of perching for long periods at a time on the higher boughs of dead trees and is often seen in such situations in the ricefields, though I do not think this species ever feeds on fish or snakes. It will often seize and make off with a wounded snipe.

In the Padang highlands of West Sumatra, Jacobson records this bird as not at all shy; in the Malay Peninsula, where perhaps guns are more numerous, it is distinctly wary. Davison (*Stray Feath.*, vi., 1878, pp. 11, 12) gives a good account of its habits in Tenasserim.

*Accipiter gularis gularis*

**The Japanese Sparrow Hawk**

*Astur gularis*, Temm. and Schleg., *Faun. Japon.*, *Aves*, p. 5, pl. 2, 1844, (Japan).

*Accipiter virgatus* (nec Temm.), Sharpe, *Cat. Birds, Brit. Mus.*, i., 1874, p. 150; Blanford, *Faun. Brit. Ind., Birds*, iii., 1895, p. 404.

*Accipiter gularis*, Ogilvie Grant, *Ibis*, 1896, p. 105; Hartert, *Nov. Zool.*, xvii., 1910, p. 211.

**Malay Name.**—Burong raja wali; lang (generic).

**Description.**—A small species; wing never exceeding  $8\frac{1}{4}$  in.; tarsi slender; middle toe and claw very long. Sexes differing greatly in plumage and size, with a distinct juvenile livery.

*Adult male.*—Whole upper plumage, including the external aspect of the wings, grey, varying in tint; a concealed white collar on the nape formed by the bases of the feathers. Tail as the back, but with four transverse bars, one at the base and one broader at the tip, inferior aspect of the tail whitish except for the black bars, the outer feathers showing no bars and the bars obsolescent on the outer webs of the remainder. Primaries barred with black and whitish fawn towards the base of the inner webs, the tertials with large clear white spots on the inner webs. Axillaries and under wing coverts regularly barred with black and fawn, the latter deeper and more dominant towards the edge of the wing; sides of the face and ear coverts greyish. Under surface, throat white, with a very narrow hair-streak down the centre; rest of under surface white, with a pinkish buff tinge, including the long under tail coverts and the thighs.

*Note.*—In all but *very* adult birds there is a suggestion of dark transverse barring on the sides of breast, flanks, thigh and under tail coverts. The tint of the under surface is also extremely variable, from almost pure white through pinkish, to quite a deep pinkish cinnamon. The upper surface also may be quite a dark or quite a pale grey—always, however, pure in tint without any suggestion of brown in fresh-plumaged birds.

*Adult female.*—Larger and different in plumage from the male. Head blackish grey; rest of the upper surface, including the tail and external aspect of the wings, dull liver-brown, the edges of the feathers slightly darker. Dark bars on the tail as in the male, but in addition there is a narrow pale tip; under surface of tail whitish, the inner webs of the outer pair of feathers with very narrow white bars, the bars on the outer feathers broader and equally developed on both webs. Inner aspect of the wing with the barring on the primaries extending nearly to the tips, the under wing coverts more spotted with black and whitish, whereas they are regularly barred in the male. Sides

of the head and ear coverts, greyish brown. Beneath, throat white, the mesial stripe broader than in the male. Rest of the under surface—except the under tail coverts, which are pure white—with transverse bars of pale liver-brown and white, the dark bars broader and more irregular on the breast, where the subterminal ones become almost diamond-shaped spots.

*Note.*—Females also show much variation, some birds being greyer and less brown above, and having the under surface with the dark bars narrower, more regular, and steel-grey in colour; but hardly two birds are exactly alike.

*Immature male.*—The upper surface much browner, the head dark, with rufous edgings to the feathers; all the other feathers with pale edgings broadest on the upper tail coverts; tertials with cinnamon-rufous tips and bars. Inner aspect of the wings with the pale bars strongly tinged with pale fawn; the under wing coverts almost uniform, only the greater series with blackish spots; tail with an additional dark bar above and the general colour beneath less grey, the feathers towards the base strongly tinged with fawn, the dark bars much more numerous on the outer pairs of feathers. Face with a whitish superciliary stripe, the other feathers with dark centre streaks. Beneath, throat buffy white, the centre streak broader than in the adult; breast the same, with broad dark brown centre streaks; remainder of under surface with large heart-shaped spots of rufous brown, the flanks more regularly barred with the same colour, the bars narrow, edged towards the base with dark blackish brown.

*Immature female.*—In general resembling the immature male but larger. Beneath, stripes on the breast much broader, and with the lower parts more strongly barred, not so markedly spotted.

*Remarks.*—I have tried to describe, without undue prolixity, representative adult and juvenile birds. Broadly speaking, it may be said that any pale edging to the feathers above, any longitudinal striping on the breast and spotting on the belly, are indications of immaturity. It is probable that the full adult plumage is not acquired until the third year at least.

**Soft Parts.**—Iris, lemon-yellow; bill, slate, black on culmen; greenish yellow on cere and gape; tarsi, greenish yellow; toes, more yellow; claws, slaty horn.

**Dimensions.**—*Male*: total length, about 11 in.; wing, 6·2 to 6·7 in.; tail, about 5·2 in.; tarsus, 1·8 in.; bill from gape, 0·7 in. *Female*: considerably larger and heavier; wing up to 7·8 in.

**Range in the Malay Peninsula.**—Throughout the Peninsula from Chaiya in Peninsular Siam and probably from farther north; also on Penang Island. Rare south of Malacca and in Singapore Island. Not recorded from other larger islands but probably occurring there.

**Extralimital Range.**—Parts of Siam and French Indo-China, throughout China; breeding in the north and in Japan. Certainly in Sumatra and Borneo, Palawan and the Philippines, and probably in Java, and the chain of the lesser Sunda Islands to Timor as a winter visitor.

**Nidification.**—There are no categorical records of the breeding<sup>1</sup> of this sparrow hawk in the Malay Peninsula; under the heading of *Accipiter virgatus*,

<sup>1</sup> It may, however, be possible to prove the existence of a resident breeding race, to which the name *Accipiter gularis nisoides* Blyth will apply.

A. L. Butler (*Journ. Straits Branch Roy. Asiat. Soc.*, No. 32, 1899, p. 29) states that he found a nest in April at the foot of the Larut Hills, Perak, with the bird sitting, but the tree on which the nest was built was unclimbable. There is certainly a bird of this genus on the high mountains of the Peninsula, which is possibly a permanent resident, but Mr Butler's record can hardly be accepted as evidence of the breeding of *A. gularis* within our limits.

The species breeds in Japan in April and also in China and South-East Siberia.

**Habits.**—This courageous little hawk is extraordinarily abundant along the coasts and on the small islands of the Straits of Malacca from September to December and again in March and April, and in the intervening period seems to be sparsely distributed over the whole of the Peninsula in all types of country, probably even in heavy forest, though in such localities, living above the tree canopy, it is rarely observed and even more rarely obtained. During the migration period ninety per cent. of the birds, at the lowest computation, are in the striped and spotted immature plumage, and adult birds of either sex are everywhere extremely rare. One may hazard the supposition that they betake themselves promptly to forest country and there escape observation, but at lighthouses, of over thirty birds obtained, not one was approaching maturity.

On the Aroa Islands, midway between Sumatra and the Selangor coast, where we spent some days in November 1906, there was a constant stream of these small hawks passing over the island. They were obviously half starving and showed extraordinary boldness in chasing and striking down birds larger than themselves, even following them into our tents. They were observed to kill *Pitta cyanoptera*, *Clamator coromandus*, *Surniculus lugubris*, *Dicrurus annectens* and *Hierococcyx fugax*—the latter cuckoo, it is said, possessing a mimetic resemblance to the hawk, which is evidently no protection against the actual model.

On the mainland the food consists largely of rice-birds or munias of various species, but even so large and comparatively heavy a bird as the green pigeon is successfully attacked. Flight is powerful and extremely swift and in following other birds quick turns and twists are made with great agility. In the instances I have seen it does not stoop to its quarry like most other hawks but attacks it from behind laterally, more or less on the same level.

A rather larger species of sparrow hawk and a smaller bird with much shorter toes are occasionally met with in the Malay Peninsula, more commonly in the northern districts; they will be described in due course.

### *Haliastur indus intermedius*

#### The Brahminy Kite

*Haliastur indus intermedius*, Gurney, *Ibis*, 1865, p. 28 (Java); Sharpe, *Cat. Birds, Brit. Mus.*, i., 1874, p. 313.

*Haliastur indus* (part), Kelham, *Ibis*, 1881, p. 368; Oates, in Hume's *Nests and Eggs Ind. Birds* (2nd ed.), iii., 1890, p. 170; Blanford, *Faun. Brit. Ind., Birds*, iii., 1895, p. 372.

*Haliastur indus indus*, Herbert, *Journ. Siam Soc., Nat. Hist. Suppl.*, vi., 1926, p. 331.

**Malay Name.**—Lang merah ; lang tembikar : nok heo deng (*Siamese*).

**Description.**—*Adult.*—Head all round, nape, chin, throat and breast, white, with narrow but distinct black shaft stripes. Rest of upper surface and wing coverts, secondaries and tail, rich rufous chestnut, darker on mantle, the tip of the tail whitish, most of the feathers with dark shafts ; abdomen and under tail coverts more brownish chestnut ; thighs paler. Primaries black, the bases of the outer webs rufous ; inner lining of wing, salmon-buff ; the wing coverts and axillaries deep maroon-chestnut.

*Immature.*—Head all round, rufous buff, with broad buffy white shaft stripes and tips to the feathers ; lores whitish, region round the eye and ear coverts brown. Upper surface, dark brown, darker on the scapulars and wing coverts, all the feathers with buffy white tips ; secondaries, dark brown, with pale tips ; tail dark, with pale tip, inclined to chocolate-rufous towards the base ; beneath, rufous brown, with pale central streaks ; belly and under tail coverts more rufous, with narrow dark streaks, the feathers whitish at the base ; inner aspect of wing much as in adult but the axillaries and under wing coverts more brownish, the greater series, salmon-buff.

**Soft Parts.**—Iris, deep brown ; cere, pale clear yellow ; bill, pale whitish green ; gape, whitish ; legs and feet, greenish yellow ; claws, black. *Immature* : bill and cere, greenish lead ; feet, dirty yellowish grey.

**Dimensions.**—Total length, about 19·5 in. ; wing, 14 to 15 in. ; tail, 8 to 9 in. ; tarsus, 1·9 to 2·1 in. ; bill from gape, 1·45 to 1·65 in. There is little difference in size between the sexes.

**Range in the Malay Peninsula.**—Throughout the length of the Peninsula and on all the islands, even the smallest.

**Extralimital Range.**—The greater part of Siam and Indo-China, where, however, it intergrades with the heavily striped typical form, *H. i. indus* ; the southern portion of Tenasserim, Java, Sumatra, Borneo and the Philippines. Amongst the eastern islands of the Malay Archipelago the stripes tend to disappear altogether, and the bird grades into the Australian race, *H. i. leucosternus* (Gould).

**Nidification.**—This common kite breeds in the mangroves and along the coast in the earlier part of the year but I have not taken the eggs. The nest is of sticks, usually near the top of a moderately high tree. Herbert describes the bird as breeding from the latter half of January to March in Siam : “ The eggs show little variation in shape, size or colouring. They are moderately broad ovals, very perfect in shape, with one end slightly smaller than the other. The ground-colour is dirty-white and often has a greenish tinge. It is generally feebly speckled or spotted with brown or a rusty reddish brown, though sometimes it is without markings altogether. The shell is usually smooth and has little or no gloss, but occasionally the surface may be quite rough to the touch. Two eggs are laid, and the average size of twenty is 2·08 by 1·62 in.”

**Habits.**—The Brahminy kite is exceedingly common on both coasts of the



Peninsula and on all the shores of the adjacent islands. It is also found for some distance up the larger rivers and wherever there are extensive stretches of ricefields. It is not, of course, a forest or jungle bird. In the larger harbours it congregates in considerable numbers, feeding on garbage and refuse from the ships, which is picked up from the surface of the sea, and often devoured in mid-air. It also frequents the fishing stakes and beaches when seine nets are being landed and picks up fish from the surface, but does not pursue fish when travelling in shoals, as do its larger relatives, the sea-eagles and ospreys.

Inland, on the ricefields, it lives on small crustacea, frogs and shellfish, and an occasional chicken or duckling from the villages bordering the fields. The call is a shrill mew or squeal, like that of a kite, uttered on the wing or when fighting for food with others of its kind.

*Cuncuma leucogaster*

**The White-bellied Sea-Eagle**

*Falco leucogaster*, Gmel., *Syst. Nat.*, i., 1788, p. 257 (New South Wales).

*Haliaeetus leucogaster*, Sharpe, *Cat. Birds, Brit. Mus.*, i., 1874, p. 307; Kelham, *Ibis*, 1881, p. 368; Blanford, *Faun. Brit. Ind., Birds*, iii., 1895, p. 368; Oates, in Hume's *Nests and Eggs Ind. Birds* (2nd ed.), iii., 1890, p. 161.

**Malay Name.**—Lang laut; lang puteh; lang siput.

**Description.**—Size, large; tail, wedge-shaped, the middle feathers longest.

**Adult.**—Head and neck all round and entire under surface, white, sometimes with very fine black shaft lines; feathers of the nape elongated and pointed, the tips grey; rest of the upper surface, including external aspect of wings, pure grey, becoming browner with wear; the upper tail coverts much darker. Primaries black, whitish at extreme base; axillaries and under wing coverts white, the greater series greyish; basal two-thirds of tail blackish, terminal third white.

**Immature.**—Head and neck all round, buffy brown, the crown paler, with dark shaft streaks, a dark brown patch above the ear coverts. Rest of upper surface, blackish brown, with pale edges to the feathers. Beneath, brownish, the feathers edged, streaked and mottled with yellowish buff. Longest upper tail coverts whitish, with dark tips. Tail white, the terminal fourth blackish.

**Soft Parts.**—Iris, brown; bill, plumbeous; cere with a slight greenish cast; legs and feet, livid whitish.

**Dimensions.**—Total length, 27 to 30 in.; wing, 20·8 to 22·5 in.; tail, 9·5 to 10·8 in.; tarsus, 3·7 to 4·1 in.; bill from gape, 2·1 to 2·4 in.

**Range in the Malay Peninsula.**—That of the Brahminy kite.

**Extralimital Range.**—From Bombay to Cochin-China; through the Malayan and Australasian regions, east to the Solomon Islands and the Western Pacific.

**Nidification.**—This sea-eagle nests among the mangroves or on small islets, making a large nest of sticks at the top of a tree. The breeding season is uncertain on the Malay Peninsula, but nestlings have been obtained in December,

and in February, which are the months in which the birds breed on the Burma coast and in the Nicobars.

The eggs of this species in the British Museum collection are oval in shape, the shell very coarse in structure, without gloss and dirty-white. The usual number is two and the average dimensions about 2·8 by 2·15 in.

**Habits.**—The white-bellied sea-eagle is universally distributed along the shores of the Malay Peninsula, and every few miles of coast, and nearly every rocky islet, has its pair of birds, which apparently keep to their own territory for year after year. The species does not travel far inland and is rarely seen on the ricefields, as is the Brahminy kite, nor does it travel beyond tide-water on the rivers. I should not give it the character for shyness that is attributed to it by Davison, and specimens when required are quite easily obtained.

The food is fish, captured alive, stolen from other birds or taken from the fishing stakes or seine nets, but sea-snakes enter very largely into the diet, and isolated rocks, which these birds frequent, are frequently littered with their remains. The sea-eagle is much more sluggish and less graceful in its movements and flight than the sea-kite, and spends much of its time perched on dead trees or on the top of the fishing stakes, with its head low on its shoulders and the points of the wings dropped. It is less noisy than the kite, its note being less shrill—more of a hoarse squawk.

Young birds, taken from the nest before they can fly, are readily tamed and make amusing pets, but consume enormous quantities of fish; they will eat meat, when given it, but do not care for birds.