

LIST OF FAMILIES

	PAGE
GAME BIRDS (<i>Galliiformes</i>)	1
BUSTARD-QUAILS (<i>Turniciformes</i>)	30
PIGEONS AND DOVES (<i>Columbiformes</i>)	34
COOTS, RAILS AND CRAKES (<i>Ralliformes</i>)	67
PETRELS, SHEARWATERS AND ALBATROSSES (<i>Procellariiformes</i>)	85
GULLS, TERNS AND SKIMMERS (<i>Lariformes</i>)	88
STONE-CURLEWS, PRATINCOLES, CRAB-PLOVERS, JACANAS, PLOVERS, STILTS, CURLEWS, SANDPIPERS AND SNIPE (<i>Charadriiformes</i>)	110
HERONS AND BITTERNS (<i>Ardeiformes</i>)	175
STORKS (<i>Ciconiidae</i>)	203
IBISES AND SPOONBILLS (<i>Plegadidae</i>)	211
CRANES (<i>Gruiformes</i>)	216
DUCKS AND GEESE (<i>Anseriformes</i>)	218
FRIGATE BIRDS, TROPIC BIRDS, PELICANS, GANNETS, DARTERS, CORMORANTS (<i>Steganopodes</i>)	229
GENERAL INDEX	249
INDEX TO NATIVE NAMES	263

THE BIRDS OF THE MALAY PENINSULA

GAME BIRDS

Order GALLIFORMES

Vol. I., p. 1; Vol. II., p. 1.

ALTHOUGH the sportsman includes snipe and other wading birds, the ducks and their allies, various sea-fowl, the pigeons and other birds in his definition of "game birds," the term is more properly restricted to embrace only the well-known pheasants, turkeys, partridges and quails, together with a host of lesser-known but closely allied birds, such as the megapodes and curassows.

Though this is not a work in which details of classification based on deep-seated anatomical characters can suitably be discussed, it should be pointed out that even in a popular book of this character it was perhaps incorrect to include the bustard-quails under one heading with the rest of the *Galliformes* as was done in the first volume of this series. Recent osteological investigations, by Dr P. R. Lowe, based largely on certain bones of the skull, have shown beyond any reasonable doubt that these birds have undoubted claims to be regarded as a quite distinct group (*Turniciformes*) of equal standing with the true *Galliformes*, but perhaps somewhat more closely allied to the *Columbiformes*, or pigeons and doves.

In a book of this kind it would be superfluous to give elaborate diagnoses by which the different orders and groups of birds can be accurately defined. It will suffice to state that game birds, which form a fairly well characterized group, can usually be recognized by their stout, compact body, with rounded wings fitting close to it. The legs are strong, suitable for running and scratching, and the toes large, and, unlike the bustard-quails, there is always a hind toe, making four toes in all. In many forms the legs of the males, and in a few cases of the females, are armed with one or more pairs of spurs, varying in size and degree of sharpness according to species. The bill is stout and thick, and is usually short, with the culmen or ridge much arched. The nests, in Oriental species, are almost always on the ground and are very simple. Eggs are numerous, rarely less than four, and the young are capable of looking after themselves immediately after hatching. When first hatched they are clad in down, often of diverse pattern.

In the Malay Peninsula are found in a wild state a peafowl, Argus pheasants (two species, one of which is very rare and as yet known only from a limited

area in the mountainous areas of Pahang), peacock-pheasants (two species), two other pheasants popularly known as "fire-backs," six tree- or wood-partridges, a jungle-fowl and a quail.

Of these fifteen species eight have good claim to be regarded as inhabitants of the Malayan mountains, and, of these, three are, so far as is known, strictly confined to the higher hills of the Peninsula and are not found elsewhere. The other five mountain dwellers are more regular inhabitants of lower levels, and the remaining seven species are, typically, inhabitants of the lowlands, rarely ascending the hills. The peculiar indigenous forms are a tree-partridge (*Arborophila campbelli*), an Argus pheasant (*Rheinardius ocellatus nigrescens*), and a peacock-pheasant (*Polyplectron inopinatus*). Of the Malayan game birds only one species, a small quail (*Excalfactoria c. chinensis*), is likely to attract the attention of the ordinary observer; it is mainly an inhabitant of grass and waste lands.

It is natural that Europeans in Malaya should associate the term "game bird" with the sporting proclivities displayed by the pheasants, grouse and partridges of Europe, and the opposite habits of the local species, combined with the very different type of country in which they are found, have produced the common impression that pheasants and partridges are absent from the jungles of the Malay Peninsula. Actually, some species are very common in their chosen haunts, but they mostly frequent dense forest, often in the hill-country: in their habits they are usually very shy and take wing with extreme reluctance. Most of the specimens in the local museums were obtained by trapping, the traps being set by native collectors with an intimate knowledge of the birds' habits. The chance of a shot is rarely presented.

Jungle-fowl used to afford excellent sport in the early mornings and evenings when they emerged from the thick bush-scrub surrounding the buffalo grazing grounds, and peafowl can be obtained with a small rifle when, in the early morning, they are met with in small parties on the sandy banks of the rivers on the east coast. The blue-breasted button-quail (*Excalfactoria c. chinensis*) is also common in suitable localities throughout the Malay Peninsula and offers fair shooting to those whose tastes run in the direction of such small game. With the three exceptions noted above no true game bird of the Malay Peninsula can be considered as a "sporting bird" in any sense of the word. In most cases unless the visitor is sufficiently enthusiastic to devote much time and trouble to their pursuit, and to undergo not a little discomfort in the process, his acquaintance with any of the local game birds is likely to be limited to hearing the never-to-be-mistaken call of the Argus pheasant at early morning or, more frequently, at late evening or far into the night.

In most localities this pheasant is possibly not uncommon, though extremely shy and very wary, but all the other species are probably, as compared with related forms in the mountains of Sumatra, Java or Tenasserim, actually rare. This may be due in part to the operations of the jungle tribes, or Sakai, who, where they are at all numerous, lead the local game a very hard life, but is more likely to be caused by unsuitability of the very steep hill-sides to the needs of the birds, admitting of the maintenance of a very limited stock.

KEY TO THE SPECIES OF GAME BIRDS HERE DESCRIBED

- 1 { Large birds, wing always over 12 in.
in length 2
Smaller birds, wing less than 12 in.
in length 4
- 2 { Upper tail coverts greatly elongated
in the male, forming a "train";
both sexes crested, the feathers
of the crest broadened at the tips *Pavo muticus*, p. 27
Upper tail coverts not greatly elongated
in the male; head either
not conspicuously crested or
with a bunch of hair-like feathers
at the back of the head 3
- 3 { Secondaries enormously lengthened,
much larger than the primaries,
and furnished with large ocelli
(male); breast, chestnut (female) *Argusianus argus argus*, p. 23
Secondaries normal, spotted with
white, but without large ocelli
(male); breast, brown (female) . *Rheinardius ocellatus nigrescens*, p. 26
- 4 { With metallic ocelli in the plumage 5
Without metallic ocelli in the
plumage 6
- 5 { Sides of the head bare; top of the
head markedly crested . . . *Polyplectron malaccensis*, p. 20
Sides of the head feathered; top
of the head not crested . . . *Polyplectron inopinatus*, p. 22
- 6 { Tail much more than 4 in. in length 7
Tail always less than 4 in. in length 10
- 7 { Lower back and rump brightly
coloured, red, orange, etc. 8
Lower back and rump without bright
colours, brown, blackish, etc. 9
- 8 { Tail feathers, buff *Houppifer e. erythrophthalmus* (male),
p. 14
Tail feathers, blue-black and white . *Lophura rufa* (male), p. 16
Tail feathers, metallic green . *Gallus gallus gallus* (male), p. 18
- 9 { Mantle, yellowish buff streaked
with black *Gallus gallus gallus* (female), p. 18
Mantle, blue-black *Houppifer e. erythrophthalmus*
(female), p. 14
Mantle, chestnut *Lophura rufa* (female), p. 16
- 10 { Crown with a hair-like crest *Rollulus roulroul*, p. 10
Head not crested 11

- | | | | |
|----|---|---|---|
| 11 | { | Wing less than 3 in. | <i>Excalfactoria chinensis chinensis</i> , p. 13 |
| | | Wing more than 5 in. | 12 |
| 12 | { | Mantle conspicuously spangled | |
| | | black and white | <i>Caloperdix oculatea oculatea</i> , p. 8 |
| | | Mantle not spangled | 13 |
| 13 | { | Legs with spurs | <i>Rhizothera longirostris longirostris</i> ,
p. 4 |
| | | Legs without spurs | 14 |
| 14 | { | Hind toe with a small nail only | <i>Melanoperdix nigra nigra</i> , p. 11 |
| | | Hind toe with a well-developed claw | 15 |
| 15 | { | Upper breast, grey | <i>Arborophila campbelli</i> , p. 5 |
| | | Upper breast, chestnut | <i>Tropicoperdix charltoni charltoni</i> , p. 7 |

Rhizothera longirostris longirostris

The Long-billed Partridge

PLATE I

Vol. II., p. 6.

Perdix longirostris, Temm., *Cat. Syst. Orn.*, 1807, p. 158 (North Sumatra).

Rhizothera longirostris, Ogilvie-Grant, *Cat. Birds, Brit. Mus.*, xxii., 1893, p. 183; Robinson, *Journ. Fed. Malay States Mus.*, i., 1906, p. 125; Robinson and Kloss, *Journ. Nat. Hist. Soc. Siam*, v., 1921, p. 17.

Rhizothera longirostris longirostris, Stuart Baker, *Faun. Brit. Ind., Birds* (2nd ed.), v., 1928, p. 400.

Malay Name.—Burong sĕlanting.

Description.—*Adult male*.—Top of the head and nape, chestnut-brown, back of the neck, clear grey with large black spots, the spots in many cases barred with chestnut-brown. Mantle and scapulars mixed olive-brown and chestnut with large spots of black on the inner webs and with broad shaft stripes of clear yellow buff. Back, rump and upper tail coverts mottled grey and yellowish buff, some of the feathers with fine black shaft stripes expanding into small spots near the tips. Primary coverts, primaries and secondaries, dull brown mottled or toothed with buff on the outer web, some of the secondaries washed with chestnut at the tips. Rest of the wing coverts irregularly mottled with grey and yellowish buff, the greater portion of the outer webs clear yellow buff. Tail, ochraceous buff with double wavy bars of black and yellow. A broad blackish stripe from behind the eye to the ear coverts; a bright chestnut-rufous stripe running from the nostril over the eye and broadening on the sides of the nape. Rest of the head, chin and throat bright rusty brown; lower neck and breast, grey. Remainder of the under surface, thighs and under tail coverts, pale buff becoming whitish on the abdomen. Tarsi with a pair of short, blunt spurs.

Adult female.—Generally similar to the male but the grey of the breast and hind neck replaced by rufous chestnut. Chin, throat and breast, rich chestnut, and the remaining under parts much deeper buff. A pair of spurs as in the male.

Immature.—According to Ogilvie-Grant the “quite young male” resembles the female in general plumage, but the feathers all round the neck have buff shaft stripes, and the chin, throat and cheeks, middle of the belly, and thighs are whitish. Another author states that the young male is like the female but shows traces of barring on the flanks and breast.

Soft Parts.—Bill, black; irides, chocolate; feet, pale whitish yellow.

Dimensions.—Total length, 14.5 in.; wing, 7.7 in.; tail, 3.5 in.; tarsus, 2.3 in.; bill from gape, 1.4 in. The female is slightly smaller.

Range in the Malay Peninsula.—Throughout the whole length of the Peninsula in suitable localities but not on any of the islands.

Extralimital Range.—The northernmost record is a specimen recorded from South Tenasserim: it also occurs in Peninsular Siam. South of the Malay Peninsula it is found in Sumatra and the low country of Borneo, being replaced in the mountains of the latter island by an allied form.

Nidification.—Apparently unknown.

Habits.—The long-billed partridge is a well-known game bird in the Malay Peninsula, though not very common anywhere, and emphatically not a sporting bird. Not much is known of its habits, but it seems to prefer dry jungle in submontane country and is not commonly found in the low country or at any great height on the mountains. It is most abundant in those localities where the undergrowth is largely composed of bamboo. It is extremely shy and wary and rarely takes to flight, trusting to its running powers, which are very considerable, and to the protection afforded by the tints of its plumage, which harmonize in a wonderful way with the dead leaves of the jungle. Its note is a shrill whistle, harsher and less sustained on one note than that of *Rollulus roulroul*, and is usually heard after or shortly before dusk and dawn and sometimes throughout the night. The note is readily imitated, and Malays snare the bird by calling it up to the trap, using a bamboo call. It is readily domesticated and may occasionally be seen with the domestic poultry kept by Malays and Sakais.

The birds figured (two-fifths natural size) are a male from the Krau river, Pahang, 1st November 1913, and a female from Rawang, Selangor, 12th August 1905.

Arborophila campbelli

Campbell's Tree-Partridge

Vol. II., p. 7.

Arboricola campbelli, Robinson, *Bull. Brit. Orn. Club*, xv., 1904, p. 28 (Telôm, 3500 ft., Perak-Pahang boundary); Robinson and Grant, *Ibis*, 1905, p. 165, pl. iv.; id. *Journ. Fed. Malay States Mus.*, i., 1905-1906, pp. 105, 126; Robinson, *op. cit.*, ii., 1909, p. 167.

Malay Name.—Sang serok gunong.

Description.—*Adult male*.—Top of the head, nape, lores and periocular region, jet-black, a broad, white supra-loral stripe, ending immediately above the eye, the feathers with black shaft stripes; a white stripe from the base of the lower mandible broadening posteriorly until it reaches the ear coverts,

which are greyish black. Mantle, back and upper tail coverts, golden olive-brown, each feather with three narrow bars of black. Primaries, brownish black, outer primary coverts and secondaries, black, their outer webs broadly margined with chestnut, remaining wing coverts, greyish olive, their concealed portions black. Tertiaries and scapulars, greyish olive, with a broad oblique subterminal bar of black and a terminal one of chestnut. Inner aspect of wing greyish, the inner wing coverts whitish, grey at the base, the outer series, sooty black, axillaries, greyish white. Tail feathers above, blackish, vermiculated with olive-brown, beneath, greyish olive. Sides of the neck, black; a somewhat ill-defined black-and-white stripe from each side of the occiput to the nape, the bases and margins of the feathers being white. Below, chin and upper throat, black; feathers of the lower throat with their bases white, forming an ill-defined collar. Chest and upper abdomen, dark grey, lower abdomen, paler, whitish in the middle, with a brownish tinge; flank feathers greyish, shading into olive-brown near the extremity, with a subterminal rufous-buff shaft spot and a terminal black band; concealed patch of downy feathers under the wing, grey. Thighs, greyish olive, obscurely barred with orange-buff and tipped with black; under tail coverts with their bases black, their tips greyish olive.

Adult female.—Does not seem to differ very greatly from the male, but has the black of the head not so deep, somewhat tinged with olive.

Immature.—A half-grown female closely resembles the adult, but is less olive, more rufous above, with the breast more clouded with rufous rust and with pale shaft stripes to the tips of the feathers; the sides of the breast have irregular blackish bars.

Note.—There is a good deal of variation in the amount of white on the head and face; in some specimens, possibly in old birds, it is greatly reduced, so that the head is almost completely black. An erythristic variety occasionally occurs in which all black is lacking from the wings and the mantle is much less olive.

Soft Parts.—Iris, brown; bill, black; gular and orbital skin, brick-red; tarsi and claws, bright sealing-wax red. Young birds have the bill reddish pink at the tip.

Dimensions.—Total length, 10 to 11 in.; wing, 5.5 to 5.8 in.; tail, 1.9 to 2.1 in.; tarsus, 1.55 to 1.7 in.; bill from gape, 0.8 to 0.9 in.; culmen, 0.65 to 0.7 in.

Range in the Malay Peninsula.—Along the main range of the Peninsula, from Gunong Kerbau in Perak to Gunong Menang Gasing in Southern Selangor.

Extralimital Range.—The form is a very distinct one, peculiar to the Malay Peninsula.

Nidification.—This tree-partridge breeds at between 4000 and 5000 ft. in the higher mountains of Selangor, in March. The nest is made on the ground, below small stemless palms, and consists of a very loose, flat pad of sticks and dead leaves, about six inches in diameter. The eggs are two in number, very pointed at one end, pure white and somewhat glossy, with numerous scattered pores; they measure 1.62 by 1.25 in.

Habits.—This bird is a rare and little-known species. At one time we thought that it was confined to the main range, but Mr A. T. Edgar has recently met with it on the Larut Hills. Not known from the Pahang Mountains. It does not seem to descend below about 3500 ft., and is commonest between 4000 to 5000 ft. On Cameron's Highlands, where it was first discovered, it is extremely rare and shy, keeping to the gullies and river valleys, and to the areas overgrown with slender rotans, on whose fruits it largely feeds. In Selangor it frequented damp and swampy flats, where a small red berry of a creeping plant, *Pratia begoniaefolia*, was its favourite food. Insects, notably termites, and small snails, are also eaten.

Living in fairly dense jungle, the birds do not use their wings much, but run with great rapidity, though when forced to flight it is rapid and powerful. They are generally seen alone or in pairs, but our Dyaks have met coveys of four or five on several occasions. Nothing definite is known of its note, but a low whistle, softer and more melodious than that of the long-billed partridge, which is sometimes heard at dusk in the localities it affects, is probably correctly attributed to this species.

Tropicoperdix charltoni charltoni

The Malayan Chestnut-breasted Tree-Partridge

PLATE 2

Vol. II., p. 9.

Perdix charltonii, Eyton, *Ann. and Mag. Nat. Hist.* (i.), xvi., 1845, p. 230 (Territory of Malacca).

Arboricola charltoni, Ogilvie-Grant, *Cat. Birds, Brit. Mus.*, xxii., 1893, p. 221.

Tropicoperdix charltoni, Robinson, *Journ. Fed. Malay States Mus.*, i., 1906, p. 126; Robinson and Kloss, *Journ. Nat. Hist. Soc. Siam*, v., 1921, p. 18.

Tropicoperdix charltoni charltoni, Stuart Baker, *Faun. Brit. Ind., Birds* (2nd ed.), v., 1928, p. 398.

Malay Name.—Sang serok.

Description.—*Adult.*—Sexes alike. Whole of the upper surface clay-brown, the crown more uniform, the remainder irregularly barred and vermiculated with black and with faint white or buffy markings. Wing coverts paler on the outer webs and the scapulars with large black subterminal spots on the inner webs. Primaries and secondaries, brown, the former narrowly edged with buff and the latter irregularly mottled and barred with rufous buff on the outer webs. Inner aspect of the wing greyish, the outer under wing coverts, black, the inner ones and the axillaries pure white. Tail feathers, rufous brown, barred and vermiculated with buffy. Forehead striped with white; a superciliary stripe of black and white feathers, the white broadening on the nape. A black horseshoe on the neck broadest on the sides, succeeded by a narrow chestnut collar interrupted on the nape, but broadening out on the chest; ear coverts clear rufous chestnut. Chin and throat white, the feathers tipped with black. Middle of the breast and flanks broadly barred

black and rufous buff ; sides of the breast, buff, mottled and barred with black and with a yellowish-buff tip to the feathers. Lower breast and abdomen, clear orange-buff, whiter on the middle of the belly. Thighs, mingled black and buffy white. Under tail coverts, whitish, their bases and edges blackish or rufous buff.

Immature.—The maroon-chestnut patch on the breast less extensive and the black bars on the lower breast and flanks less defined.

Soft Parts.—Iris, dark hazel ; orbital skin, reddish orange ; bill blackish, yellowish green at the tip of the lower mandible, reddish at the base ; tarsus and claws, waxy yellow often tinged with green.

Dimensions.—*Male*.—Total length, 11 in. ; wing, 6·3 in. ; tail, 2·5 in. ; tarsus, 1·6 in. ; bill from gape, 0·7 in. Females appear to be slightly smaller than males.

Range in the Malay Peninsula.—From the northern limit south to Malacca ; much commoner, or at least more easily obtained, in the more northern areas.

Extralimital Range.—Extends northwards through Peninsular Siam to Tenasserim. An allied race is found in Tonkin and North Annam, and another in the lowlands of North Borneo. It has been recorded from Sumatra, but its presence in that island needs confirmation.

Nidification.—Unknown.

Habits.—This partridge is common in dry jungle at Bandon in Peninsular Siam and at one time was common on the lower slopes of the Larut Hills towards the sources of the Kurau river. It has also been obtained in Upper Perak, in North Pahang and Kelantan. The original types and two other specimens in the British Museum are stated to have come from the territory of Malacca, but we have never seen specimens from south of Central Perak and Pahang and their provenance is doubtful. Little is known of its habits : as we are acquainted with it, the bird is found in small coveys in rather dry jungle at the foot of limestone hills, where it feeds on seeds, berries and white ants. Large numbers trapped by Malays on the lower Larut Hills were from dense, damp, evergreen jungle. Mr Seimund describes the note as a low, soft, double whistle.

The bird figured is a male (half natural size) from Bandon, Peninsular Siam, 30th June 1913.

Caloiperdix oculea oculea

The Malayan Ferruginous Wood-Partridge

Vol. II., p. 7.

Perdix oculea, Temm., *Pig. et Gall.*, iii., 1815, pp. 408, 732 ("India" : restricted Central Malay Peninsula).

Caloiperdix oculea, Ogilvie-Grant, *Cat. Birds, Brit. Mus.*, xxii., 1893, p. 223 ; Blanford, *Faun. Brit. Ind., Birds*, iv., 1898, p. 131 ; Robinson, *Journ. Fed. Malay States Mus.*, i., 1906, p. 126.

Caloiperdix oculea oculea, Stuart Baker, *Faun. Brit. Ind., Birds* (2nd ed.), v., 1928, p. 399.

Malay Name.—Sang serok rimba.

Description.—*Adult.*—Crown, rich chestnut becoming paler on the lores, sides of the head and superciliaries ; a dirty blackish stripe from behind the eye over the ear coverts. Feathers of the nape barred with black and white washed with chestnut. Mantle, glossy black, the feathers outlined with pure white and with white V-shaped barrings in the region of the shaft ; back, rump and upper tail coverts black with broad arrow-shaped rufous bars. Scapulars and wing coverts clay-brown with large guttate black spots at the tips, the tips paler on the outer webs and with narrow rusty edges. Primaries, dark smoky brown ; secondaries the same, the outer webs towards the tips mottled and margined with rufous and buff. Tail feathers, black, irregularly barred and waved with olive-brown and rufous, less abundantly so on the outer pairs, which are very narrowly tipped with whitish. Under surface bright ferruginous chestnut, paler on the throat and whitish buff on the middle of the abdomen : some of the lower flank feathers and the outer under tail coverts with sub-terminal black spots and a whitish-buff tip ; rest of under tail coverts black with a broad rufous-buff tip and an orange shaft stripe near the base. Sides of the body, barred black and white or buffy white. Tarsi usually with a single pair of short, sharp spurs or, rarely, two smaller, blunter pairs set close together.

Immature.—Young birds have the occipital region with crescentic bars of black and the feathers of the upper breast and chest sparsely and irregularly spotted or barred with black.

Soft Parts.—Iris, brown ; bill, brown ; feet, dull greenish yellow.

Dimensions.—*Male.*—Total length, 10.5 in. ; wing, 5.9 in. ; tail, 2.5 in. ; tarsus, 1.75 in. ; bill from gape, 0.87 in. Females are slightly smaller.

Range in the Malay Peninsula.—From the northern extremity to the territory of Malacca, where, however, no specimens have been obtained in the last sixty-five years. It is common in certain localities in the north of the Peninsula, but in the Federated Malay States it is extremely rare and known only from high elevations.

Extralimital Range.—To the north the range extends through South-West Siam to Tenasserim as far as the head-waters of the Tavoy river. Allied races are found in Sumatra and Borneo.

Nidification.—“ A nest found by Robinson at the end of May is said to have been like a well-made nest of *Arborophila*, a matted pad of grass under the shelter of a scrubby bush. The single egg it contained was a glossy pure white ” (*Stuart Baker*).¹

Habits.—This handsome partridge, which is rare in collections, is common in low-country jungle throughout Peninsular Siam, being found in bevvies of four or five in bamboo or even secondary forest. It is also common in the interior of Perlis, a small state north of Kedah, where we found it fairly abundant in the swampy jungle at the foot of precipitous limestone hills. In most parts of the Peninsula, however, this bird is either entirely unknown or extremely rare ; a single specimen was obtained at a height of about 3000 ft. on Menang Gasing, a mountain on the main range in the south-east of Selangor.

¹ I cannot trace this record : it appears to have been communicated verbally.—F.N.C.

It is almost certain to be found on the Cameron Highlands and other places on the main range. There are skins ascribed to Malacca in the British Museum collection, but the only authenticated specimen is one obtained by Dr Maingay about 1867. In Perlis it is found in small parties in dense forest, generally along the edges of small streams, and feeds on seeds, birds and insects, principally white ants, of which it is very fond.

Rollulus roulroul

The Crested Green Wood-Quail

PLATE 3

Vol. II., p. 7.

Phasianus roulroul, Scop., *Del. Flor. et Fauna Insubr.*, ii., 1786, p. 93 (ex Sonnerat, Malacca).

Rollulus roulroul, Ogilvie-Grant, *Cat. Birds, Brit. Mus.*, xxii., 1893, p. 207; Blanford, *Faun. Brit. Ind., Birds*, iv., 1898, p. 111; Oates, *Cat. Birds' Eggs, Brit. Mus.*, i., 1901, p. 43, pl. iii., fig. 6; Robinson, *Journ. Fed. Malay States Mus.*, i., 1906, p. 127; Robinson and Kloss, *Journ. Nat. Hist. Soc. Siam*, v., 1921, p. 19; Stuart Baker, *Faun. Brit. Ind., Birds* (2nd ed.), v., 1928, p. 368.

Malay Names.—Burong siul; burong chichit.

Description.—*Adult male.*—Crown to the level of the eyes, a narrow superciliary stripe running down to the nape, the whole under surface and the thighs, black; the breast glossed with purplish blue. A tuft of long, black, bristle-like hairs from the middle of the crown: a white band, broadest on the median line across the crown, succeeded by a dense bushy crest of long, hairy, maroon feathers, blackish at the extreme base. Nape, mantle, back, rump and most of the upper tail coverts, dark lustrous sage-green glossed with purple, especially on the sides of the mantle. Primaries and secondaries together with their coverts, dark brown, the primaries mottled with rufous on their outer webs, the others with chestnut; innermost wing coverts and scapulars, blackish, glossed with maroon and purplish blue. Tail feathers and longest upper tail coverts, black.

Adult female.—Entire head and nape, blackish grey; frontal tuft of bristles as in the male; an occipital crest just perceptible, blackish. Throat, blackish grey. Mantle, back, rump and upper tail coverts, dark green; chest and breast similar; greyish green on the belly and flanks; primaries, secondaries and secondary coverts, brownish, rather paler than in the male and more profusely barred and mottled with blackish; lesser and median wing coverts and the scapulars, dull chestnut, faintly edged with maroon. Tail feathers, greyish black; under tail coverts, blackish obscurely tipped with green; thighs, mingled chestnut and greyish.

Immature male.—Like the adult female beneath, with the belly partially greenish grey.

Immature female.—Primaries and secondaries more mottled, the wing coverts broadly tipped with buffy white; under surface with dark rufous-brown feathers on the breast and flanks.

Nestling.—Clad in dark chestnut down, more rufous on the crown and sides of the head ; beneath, paler, more whitish on the throat and middle of the abdomen. The rufous down on the head persists until the birds are nearly half-grown.

Soft Parts.—*Male*.—Iris, brown, hazel-brown or slaty grey ; bill, black, scarlet at the base ; bare skin on the sides of the head and carunculated tissue round the eye brilliant crimson ; feet the same.

Female.—Iris, hazel ; eyelid, carmine ; post-orbital patch, lake ; bill, uniform black, sometimes slightly tinged with red at the base ; feet, coral-red.

Dimensions.—*Male*.—Total length, 10 in. ; wing, 5·7 in. ; tail, 2·5 in. ; tarsus, 1·7 in. ; bill from gape, 0·95 in.

Female.—Total length, 9·5 in. ; wing, 5·2 in. ; tail, 2·4 in. ; tarsus, 1·65 in. ; bill from gape, 0·85 in.

Range in the Malay Peninsula.—Throughout its whole length in suitable localities but not on any of the adjacent islands.

Extralimital Range.—From Tenasserim through South-West Siam, south to Sumatra, Banka, Billiton and Borneo.

Nidification.—No details are to hand regarding the nesting habits of this bird. According to Oates, the eggs are broad ovals pointed at one end and pale creamy buff in colour, the average dimensions being 1·5 by 1·19 in. Mr Stuart Baker records that a captive bird laid four pure white eggs.

Habits.—This wood-quail is one of the commonest game birds in the Peninsula and is found almost everywhere except among the mangroves and in sandy littoral tracts, ranging up the mountains to 4000 ft. and over, wherever heavy jungle exists. It is found in parties of four or five up to ten or twelve or even more, males and females together. The favourite haunts are fairly open dry jungle, especially where there are many bamboos or stemless palms among which the food, consisting largely of seeds, fruits, insects and small molluscs, is secured. The note is a low mellow whistle from which the Malay name is derived. Though not quarrelsome in captivity, it is not easily domesticated and usually dies for no very obvious reason.

The birds figured (half natural size) are a male from Changkat Mentri, Perak, 8th September 1918, collected by Mr C. Boden Kloss, and a female from Kuala Tahan, Pahang, 8th July 1920, collected by a native collector.

Melanoperdix nigra nigra

The Malayan Black Wood-Partridge

PLATE 4

Cryptonyx niger, Vig., *Zool. Journ.*, iv., 1829, p. 349 (type locality fixed as West Sumatra by Robinson and Kloss, 1923).

Melanoperdix nigra, Ogilvie-Grant, *Cat. Birds, Brit. Mus.*, xxii., 1893, p. 228 ; Oates, *Cat. Birds' Eggs, Brit. Mus.*, i., 1901, p. 44 ; Robinson, *Journ. Fed. Malay States Mus.*, i., 1906, p. 127.

Malay Name.—Burong bẽtam.

Description.—*Adult male*.—Uniform glossy black except the wing quills and the greater coverts, which are dark blackish brown. For a partridge the bill of this species is curiously short and thick, and the back toe or hallux in both sexes is remarkable on account of its very small nail.

Adult female.—Dark chestnut above, brighter on the rump and upper tail coverts, darker on the head; scapulars, rufous chestnut towards the tips with a broad subterminal black bar. Primaries and primary coverts, brown, lighter than in the male; secondaries the same, mottled and vermiculated with rufous chestnut on the outer webs. Tail feathers, blackish brown, more or less vermiculated with chestnut on the outer webs. Beneath, throat whitish, breast dark chestnut, becoming paler and more rufous on the flanks and under tail coverts, the latter boldly vermiculated with black; the flanks often lightly barred with black; middle of the belly dirty whitish yellow. Thighs, dirty chestnut-buff, mingled with white.

Immature female.—The whole upper surface paler, irregularly vermiculated with blackish, the inner secondaries strongly so; most of the feathers with pale buff tips, the black subterminal bars on the scapulars not pronounced and preceded by bright golden-buff spots. Beneath with the bases of the feathers largely white and with concentric black bars. Middle of the belly white; lower flanks, thighs and under tail coverts, pale rufous with narrow black bars.

Young male.—Like the immature female, but the upper plumage mixed with glossy black. Nearly adult males still have the bases of the feathers of the under parts white.

Soft Parts.—*Male*.—Iris, dark brown; bill, black; feet, pale lead-grey.

Female.—Iris, dull brown; bill, horn; feet, pale grey.

Dimensions.—*Male*.—Total length, 10·5 in.; wing, 5·6 in.; tail, 3 in.; tarsus, 1·8 in.; bill from gape, 0·75 in.

Female.—Total length, 9·5 in.; wing, 5·4 in.; tail, 2·6 in.; tarsus, 1·75 in.; bill from gape, 0·75 in.

Range in the Malay Peninsula.—The southern two-thirds of the Malay Peninsula from Province Wellesley south to Johore but not in Penang or any of the islands.

Extralimital Range.—The species is also found in Sumatra and Borneo, but in the latter island in a slightly differentiated form.

Nidification.—The nesting habits of the typical race found in Sumatra and the Malay Peninsula are not known, but of the closely allied Bornean subspecies C. Hose obtained three clutches of five eggs each in the Baram district in September. Two eggs collected in the same month and district are broad ovals, obtusely pointed, dull white, only slightly glossy and with scattered pores. Measurements, 1·6 by 1·25 in.

Habits.—This is one of the rarer game birds of the Malay Peninsula, and owing to its extreme shyness is rarely met with by the European, nor is it easily trapped. We have, however, found it not uncommon in the Pondok Tanjong Forest Reserve in North Perak, and on the Tahan and Triang rivers in Pahang. It frequents dense jungle in the low country and up to about 2000 ft., but not higher, and is usually found in forest where there is much undergrowth of

stemless palms. As far as our knowledge goes, it is found usually singly or in pairs and apparently not in such large coveys as the species of *Arborophila* or *Rollulus*. Our collectors and Malays state that the note is a double whistle rather like that of *Rollulus*.

The birds figured are a pair (half natural size) obtained by a native collector at Rawang, Selangor, in July 1912.

Excalfactoria chinensis chinensis

The Blue-breasted Button-Quail

Vol. I., p. 3.

Tetrao chinensis, Linn., *Syst. Nat.*, i., 1766, p. 277 (ex Edwards, China).

Excalfactoria chinensis, Oates, in Hume's *Nests and Eggs Ind. Birds*, 2nd ed., iii., 1890, p. 448; Blanford, *Faun. Brit. Ind.*, *Birds*, iv., 1898, p. 112; Oates, *Cat. Birds' Eggs, Brit. Mus.*, i., 1901, p. 47, pl. 4, fig. 2; Robinson, *Journ. Fed. Mal. States Mus.*, i., 1906, p. 128.

Excalfactoria chinensis chinensis, Herbert, *Journ. Siam. Soc.*, *Nat. Hist. Suppl.*, vi., 1926, p. 336 (Nidification); Stuart Baker, *Fauna Brit. Ind.*, *Birds* (2nd ed.), v., 1928, p. 369; Edgar, *Bull. Raffles Mus.*, 8, 1933, p. 122 (Nidification).

Malay Name.—Pikau: nok khum kai-na (*Siamese*).

Description.—*Adult male*.—Middle of the head, nape, back and rump, earthy brown, broadly mottled and splotted with black and in freshly moulted birds washed with richer brown, most of the feathers with whitish buff shaft stripes, disappearing in older birds, when the back tends to become almost uniform. Forehead, sides of the head and neck, lesser and median wing coverts and some of the upper tail coverts, maroon-chestnut. A narrow white band from the nostril to the eye, with a broader black band beneath it; a broad white patch below the ear coverts, chin and throat black, the black carried up in a narrow line to the ear coverts, behind the white patch; a white gorget on the lower throat, extended in a narrow line to the ear coverts and margined on both sides narrowly with black. Primaries and secondaries dull brown, slightly vermiculated with brownish buff; tail feathers, completely hidden by the coverts, chestnut-maroon.

Adult female.—Upper surface like that of the male, but top of the head darker, forehead and stripe over the eye pinkish buff, not slate-grey. Breast pinkish buff; lower breast, flanks and under tail coverts, buffy white, barred with bracket-shaped black bars, these bars becoming almost obsolete on the breast in old birds. Centre of the abdomen, uniform dirty-white. Wings and wing coverts as in the male, but lighter and with no trace of grey.

Younger males.—Are browner and less blackish above, the buff shaft stripes more pronounced; the chestnut edgings to the wing coverts generally seen in the old birds are hardly developed, and the blue-grey of the under parts predominates over the chestnut, and on the flanks is flecked with sandy buff and black.

Fledgelings.—Have the upper parts broadly striped with yellowish buff,

the throat pale sulphur-yellow, and the feathers of the chest and flanks blackish with broad white shaft stripes.

Soft Parts.—Bill, black, the lower mandible, lead-grey ; irides, crimson in the male, hazel in the females and young ; feet and legs, pale chrome-yellow ; claws, dark horn.

Dimensions.—*Male*.—Total length, about 5 in. ; wing, 2.75 in. ; tail, 0.9 in. ; tarsus, 0.8 in. ; bill from gape, 0.45 in. *Female*.—Size similar.

Range in the Malay Peninsula.—Throughout the Peninsula in suitable localities. Islands of Penang and Singapore, and probably Langkawi, Salanga and Koh Samui and Koh Pennan, though not definitely recorded from there.

Extralimital Range.—The greater part of India, throughout Indo-China to China, Formosa and Hainan. Slightly modified forms occur in the Sunda Islands, Celebes and the Moluccas, the Philippines, Australia and New Britain.

Nidification.—The breeding season is very variable, from January to July or August. The nest is very slight, consisting merely of a few wisps of withered grass, placed in a hollow among low bushes or in high lalang grass. The eggs are usually four or five, but occasionally six or seven, to the clutch. In Perak, Mr A. T. Edgar considers that the usual clutch is six or seven. The colour is dull greenish olive, faintly speckled with black. The eggs are rather pointed at one end and measure about 1 by 0.75 in.

Habits.—The blue-breasted quail is common in settled districts throughout the Malay Peninsula, but is not found in jungle or on the hills except where these have been deafforested. It is met with principally in stretches of abandoned cultivation and mining-land that have been overgrown with coarse grass, or in paddy-fields that have just been reaped or are lying fallow. It is especially abundant in the *tana tēnggala*, or ploughland, along the banks of the Jelei and Lower Tembeling rivers in Pahang. Usually it is found singly or in pairs, but towards the end of the year in coveys of six or seven that lie very close.

Its food is almost entirely grass seed. Blanford and others state that its note is a low, double whistle.

Houppifer erythrophthalmus erythrophthalmus

The Rufous-tailed Fire-back Pheasant

Phasianus erythrophthalmus, Raffles, *Trans. Linn. Soc.*, xiii., 1822, p. 321 (West Sumatra).

Acomus erythrophthalmus, Ogilvie-Grant, *Cat. Birds, Brit. Mus.*, xxii., 1893, p. 283 ; Robinson, *Journ. Fed. Malay States Mus.*, i., 1906, p. 128.

Malay Names.—Kuang bērtam ; mata merah.

Description.—*Adult male*.—Top of the head, throat and ear coverts, black, without gloss ; neck and chest, black, highly glossed with blue ; belly, flanks, thighs and under tail coverts, black, slightly glossed with bluish green, some of the upper flank feathers vermiculated with white. Nape and mantle, black, glossed with violet and vermiculated with white ; wing coverts, scapulars and

secondaries, black, glossed with bluish green and with narrow, wavy, white bars; lower back, fiery bronze, darkening into fiery maroon on the rump. Upper tail coverts, black, glossed with violet. Primaries, brownish black, mottled with whitish on the outer webs. Tail, pale buff, blackish at the base.

A pair of sharp tarsal spurs in both sexes.

Adult female.—Uniform black, glossed with steel-blue, except on the head, middle of the breast, abdomen, thighs and primaries.

Immature male.—A young male has the tail feathers mottled with black, and some of the wing coverts with brownish-buff terminal bars; on the under parts glossy blue-black feathers of the adult plumage are mixed with duller feathers, some with terminal rufous spots representing an earlier generation of plumage.

Immature female.—An earlier plumage, apparently quite unlike that of the adult, is represented in a bird not fully grown, but mostly in adult plumage. On the upper parts the wing coverts and some of the quills are dull black mottled with rufous; on the under parts the centre of the abdomen is whitish, and some of the feathers of the breast and flanks are marked with rufous.

Soft Parts.—*Male*.—Upper mandible, greenish horn; lower mandible, wax-yellow; iris, dark hazel; facial skin, brilliant orange-scarlet; feet, lead-grey.

Female.—Similar, but the facial skin much duller and the bill almost black.

Dimensions.—*Male*.—Total length, 20 in.; wing, 9.5 in.; tail, 7.2 in.; tarsus, 2.9 in.; bill from gape, 1.25 in.

Female.—Total length, 16.5 in.; wing, 8.5 in.; tail, 6 in.; tarsus, 2.8 in.; bill from gape, 1.2 in.

Range in the Malay Peninsula.—Throughout the Peninsula southwards from Kedah, but commonest in the more southerly districts: not on any of the adjacent islands, the localities "Penang" and "Singapore," ascribed to certain old specimens in the British Museum, being almost certainly erroneous.

Extralimital Range.—Found also in the lowlands of Sumatra, but replaced in Borneo by a closely allied subspecies. In the highlands of Sumatra the related species, *Acomus inornatus*, Salvad., occurs.

Nidification.—Nothing very definite is on record as to the nesting habits; natives state that the nest is made among the rubbish at the base of the stemless palms, which are common in the localities affected by this bird, and that four or five whitish-brown eggs are laid.

Habits.—Essentially a denizen of low-country jungle, in which it is found in parties of five or six, usually composed of one cock and four or five hens, though sometimes two cocks are found in company. Very little indeed is known of the habits of this pheasant, which is now by no means a common bird in the central portion of the Malay Peninsula, although at one time it must have been very abundant in the territory of Malacca and the northern parts of Johore, judging from the numbers of Malacca trade skins that are to be found in European museums.

As a rule it does not ascend the hills, but inhabits much the same type of country as *Melanoperdix nigra*. In some districts it is not uncommon in old second-growth jungle, or "bĕlukar," in the vicinity of small native villages.

Like its near allies, it is polygamous, and the females appear to be very much more numerous than the males. In domestication it is very lethargic, but feeds readily on rice, peas and white ants. Some kept were very silent, only occasionally uttering a low, croaking cry.

Lophura rufa

Vieillot's Fire-back Pheasant

Phasianus rufous, Raffles, *Trans. Linn. Soc.*, xiii., 1822, p. 321 (West Sumatra).

Lophura rufa, Ogilvie-Grant, *Cat. Birds, Brit. Mus.*, xxii., 1893, p. 286; Blanford, *Faun. Brit. Ind., Birds*, iv., 1898, p. 87; Oates, *Cat. Birds' Eggs, Brit. Mus.*, i., 1901, p. 52; Robinson, *Journ. Fed. Malay States Mus.*, i., 1906, p. 129; Robinson and Kloss, *Journ. Nat. Hist. Soc. Siam*, v., 1921, p. 19; Stuart Baker, *Faun. Brit. Ind., Birds* (2nd ed.), v., 1929, p. 316.

Malay Names.—Pëgar; ayam pëgar.

Description.—*Adult male.*—Head with a bushy crest of decomposed plumes, the shafts almost naked at their bases. General plumage, black, glossed with metallic violet except on the wings, where the gloss is steely green; lower back, flame-colour, deepening into maroon on the upper rump, where some of the feathers are tipped with metallic violet; lower rump feathers and most of the upper tail coverts glossed with violet or steely green. Middle two pairs of tail feathers entirely white; third pair white on their inner webs and on the tip of the outer web; fourth pair flecked with white at the tip of the inner web; remaining four pairs black. Primaries, black; primary coverts with hardly any gloss. Under surface, glossy black; the feathers of the sides of the breast and flanks with white shaft stripes, broadening towards the tips. Belly and thighs, black without gloss; under tail coverts, glossy black. Feet with long and very sharp spurs.

Adult female.—General colour above, cinnamon-rufous finely vermiculated with black; head crested. Primaries, chestnut waved with black, except on the outer webs of the outer primaries; tail feathers rather darker, unwaved, but the middle pairs mottled with black. Beneath, chin and throat thinly feathered and dirty-white; breast, cinnamon-rufous, the feathers broadly edged with white; lower chest and flanks, blackish brown, broadly edged with white; abdomen, white; under tail coverts, mixed black and chestnut; thighs, dull chestnut, upper part as the flanks.

Young male.—Young birds begin to acquire the plumage of the adult at a very early age, before they are half-grown and before any sign of spurs has appeared. In a bird in the change the belly is blackish with narrow white edgings, and the black feathers of the upper surface are finely powdered with white. Middle tail feathers, dark chestnut, with narrow black bars and shaft stripes on the flanks narrower than in the adult, and rufous, not white. This seems to be the last sign of immaturity to disappear, and perhaps in the minority of birds it is persistent through life.

Soft Parts.—*Male*.—Bill, whitish or pale greenish ivory ; irides, red ; facial skin, cobalt ; feet, vermilion-red or ivory tinged or blotched with red.

Female.—Bill, greenish-horn colour ; facial skin, purplish blue ; irides, red ; tarsal scutes, crimson in front, whitish behind.

Dimensions.—*Male*.—Total length about 26 in. ; wing, 11·7 in. ; tail, 10·5 in. ; tarsus, 4·2 in. ; bill from gape, 1·6 in.

Female.—Total length about 23 in. ; wing, 10·25 in. ; tail, 7·5 in. ; tarsus, 3·7 in. ; bill from gape, 1·5 in.

Range in the Malay Peninsula.—From the extreme north to the extreme south. Not recorded with certainty from any of the islands off the coast with the exception of Salanga or Junk Zeylon.

Extralimital Range.—As a species, found from the extreme south of Tenasserim to Sumatra, but the status of the Sumatran form or forms is uncertain at the present ; represented in Borneo by the rather distinct *L. ignita*.

Nidification.—Very little is known of the nesting habits in a wild state, but an egg laid in captivity at Singapore is described by Oates as being of a regular oval form, fairly glossy and of a pale creamy-buff colour, measuring 2·2 by 1·6 in.

According to Mr Stuart Baker, two eggs from the Waterstradt collection are dated Malacca, April 1899, and are said to have been laid by wild birds "in a nest composed of dead leaves, grass and bamboo-spates under some thick low bushes in dense evergreen jungle."

Habits.—Widely distributed throughout the Peninsula in low-country jungle, especially near the big rivers, but not very abundant. The best account of the habits is that of Davison, who observed the bird in the extreme south of Tenasserim and whose notes are here reproduced.

"These birds frequent the thick evergreen forests in small parties of five or six ; usually there is only one male in the party, the rest being females, but on one or two occasions I have seen two males together ; sometimes the males are found quite alone. I have never heard the males crow, nor do I think that they ever do so ; when alarmed both males and females have a peculiar sharp note, exceedingly like that of the large black-backed squirrel (*Ratufa melanopepla*). The males also continually make a whirring sound with their wings, which can be very well imitated by twirling rapidly between the hands a small stick, in a cleft of which a piece of stiff cloth has been transversely placed. I have often discovered the whereabouts of a flock by hearing this noise. They never come into the open, but confine themselves to the forests, feeding on berries, tender leaves, and insects and grubs of all kinds, and they are very fond of scratching about after the manner of domestic poultry and dusting themselves. When disturbed they run rapidly away, not in different directions, but all keeping much together ; they rise at once before a dog, getting up with a great flutter, but when once well on the wing, fly with a strong and rapid flight ; they seldom alight again under a couple of hundred yards, and usually on the ground, when they immediately start running."

*Gallus gallus gallus***The Common Red Jungle-Fowl**

Phasianus gallus, Linn., *Syst. Nat.*, 10th ed., 1758, p. 158 (Pulau Condore, off the mouth of the Mekong).

Gallus ferrugineus, Oates in Hume's *Nests and Eggs Ind. Birds*, iii., 1890, p. 417; Blanford, *Faun. Brit. Ind., Birds*, iv., 1898, p. 75.

Gallus gallus, Ogilvie-Grant, *Cat. Birds, Brit. Mus.*, xxii., 1893, p. 344; Oates, *Cat. Birds' Eggs, Brit. Mus.*, i., 1901, p. 59; Robinson, *Journ. Fed. Malay States Mus.*, i., 1906, p. 129.

Gallus ferrugineus ferrugineus, Robinson and Kloss, *Journ. Nat. Hist. Soc. Siam*, v., 1921, p. 21.

Gallus bankiva robinsoni, Stuart Baker, *Faun. Brit. Ind., Birds* (2nd ed.), v., 1928, p. 298.

Malay Names.—Ayam hutan; ayam dĕnak; ayam borga.

Description.—*Adult male.*—Top of the head, dark orange; mantle, orange-red, shading into golden orange on the longer hackles, which have their bases black and shaft stripes pale yellow, the black extending some distance towards the tip of the feather in an elongated V. Feathers of the mantle and wing coverts hidden by the hackles, black, glossed with violet or steely green; scapulars, secondary coverts and middle of the back, maroon, darker on the back and shading into golden orange on the rump hackles. Primary and secondary coverts, black, glossed with metallic purplish green; primaries, brownish black, the outer webs edged with buff; secondaries, with the outer half of the outer webs, chestnut; the remainder, glossy steel-black. Longer upper tail coverts and tail feathers, bronzy green; the middle tail feathers more purplish. Under surface, including the under tail coverts, black, slightly glossy. Surface of the tail beneath, oily black. A long, sharp spur on each foot. Males have a *post-nuptial* or "*eclipse*" plumage. In July and August most cocks have short central tail feathers and the long neck hackles moulted, but these are replaced by November.

Immature male.—The male is at first very like the female; older birds differ from the adult in the feeble development of the comb, lappets, spurs and hackles; the feathers beneath the neck hackles, dull black, with little gloss. The chestnut parts of the secondaries mottled with blackish.

Adult female.—Top of the head, chestnut; this colour continued as a broad, ill-defined band round the neck. Short hackles of the neck and upper mantle, golden yellow; more orange on the sides of the neck, each feather with a broad black median stripe and a pale shaft stripe. Rest of the upper surface, including the outer webs of the secondaries, earthy brown, finely vermiculated with black; more coarsely so on the secondaries; feathers of the mantle and scapulars with fine white shaft stripes. Primaries, dull brown, a trifle paler or mottled on the outer webs. Beneath, foreneck, chestnut; breast, pale rufous brown, becoming paler on the abdomen, each feather with a pale shaft stripe; sides and flanks, earthy brown, vermiculated with black, also with

pale shaft stripes. Under tail coverts, brownish black. Tail feathers, brownish black, the centre pair with both webs and the others with the outer web mottled with pale rufous. No spurs on the tarsi; comb and lappets rudimentary.

Soft Parts.—*Male*.—Bill, pale horn-colour, reddish towards the base of the lower mandible; iris, orange or yellowish brown; feet, pale lead-colour; comb, bright crimson; facial lappets and skin on the throat, pinky red, paler than the comb. In the south of the Peninsula the ear lappet has generally a patch of whitish on the lower half; birds examined from Trang, in the Siamese Malay States, and from Upper Perak, have the lappet entirely red.

Female.—Soft parts duller in colour.

Dimensions.—*Male*.—Total length, 27 in.; wing, 9.5 in.; tail, 13.5 in.; tarsus, 3.1 in.; bill from gape, 1.2 in.

Female.—Total length, 16 to 18 in.; wing, 8 in.; tail, 6.2 in.; tarsus, 2.3 in.; bill from gape, 1.1 in.

Range in the Malay Peninsula.—Universally distributed throughout the Malay Peninsula in suitable localities up to about 1000 feet in altitude. Probably at one time wild on the islands of Penang and Singapore, though it does not occur on them now. Found on the larger islands of the west coast, such as Langkawi and Salanga, but not on those of the east coast.

Extralimital Range.—Races of the red jungle-fowl are found from Kashmir through India, Burma, Yunnan and Tonkin, south through Siam and French Indo-China, the Malay Peninsula to Sumatra and Java. Not recorded from Borneo, but east of Java found in Bali, Lombok, Timor, the Celebes, throughout the Philippines and other islands east to the Sandwich Islands. It seems not improbable that in all localities east of Java and Bali the bird has been artificially introduced. The subspecies occurring in Java and South Sumatra is certainly distinct from the form or forms inhabiting the mainland of Asia, but there is much difference of opinion concerning the status of the continental races. It is customary to regard the Indian bird as distinct from that found farther east in Burma, Siam, the Malay Peninsula, etc., and some authors maintain four races, one in India, another in Tonkin and North Annam, a third in French Indo-China (excluding the extreme north), and a fourth in Burma, Yunnan, the Malay Peninsula and North Sumatra. That birds included in the fourth section belong to one race we have no doubt whatever. The main character on which the other races are differentiated is the size and colour of the ear lappets, but we are not yet disposed to accept any arrangement based on this character, which we mistrust, as final.

Nidification.—We have no details concerning the nidification in the Peninsula except the following notes which have been supplied by Mr A. T. Edgar of Perak. Most birds seem to nest in January and February but nests have been noted from December to the middle of May. The eggs are slightly glossy, creamy white, and measure about 1.9 by 1.4 in. The nest is a hollow in the ground, in secondary or scrub jungle, the eggs being laid on dry leaves or grass. The clutch in Perak is usually six eggs.

Habits.—Very common in most parts of the Peninsula, except in the mangrove zone and in rugged, mountainous districts. The favourite localities

affected are patches of secondary jungle in the vicinity of cultivation and the thick and tangled vegetation clothing the banks of the larger rivers ; they are also often very numerous in bamboo forest. The crow is very like that of the domestic fowl, but less sonorous and not so prolonged. They feed early in the morning and in the late afternoon, when they come out on the edge of ricefields or on to patches of grass surrounded by thick cover, retiring to the jungle in the heat of the day. On the east coast they are especially common in the thick bush scrub surrounding the buffalo grazing grounds, into which they emerge in the early mornings and evenings, affording excellent shooting ; elsewhere they keep to cover too close to afford much sport. They are found in small parties usually consisting of an old and a younger cock and several hens, but occasionally they are met with paired. Hens with chickens keep to themselves and are seldom met with except in the closest proximity to dense cover.

Polyplectron malaccensis

The Malay Peacock-Pheasant

Phasianus malaccensis, Scop., *Del. Flor. et Faun. Insubr.*, ii., 1786, p. 93 (territory of Malacca).

Polyplectron bicalcaratum, Ogilvie-Grant, *Cat. Birds, Brit. Mus.*, xxii., 1893, p. 357.

Polyplectron malaccensis, Robinson, *Journ. Fed. Malay States Mus.*, i., 1906, p. 129 ; Stuart Baker, *Faun. Brit. Ind., Birds* (2nd ed.), v., 1928, p. 292.

Polyplectron malaccense, Robinson and Kloss, *Journ. Nat. Hist. Soc. Siam*, v., 1921, p. 22.

Malay Names.—Kuang (or kuau) chërmin ; kuang ranggas ; kuang bulan ; kuang ranting ; kuang pongsu ; mërak pongsu.

Description.—*Adult male.*—On the top of the head are elongate feathers, forming a crest ; these are barred with white basally, but otherwise metallic greenish purple. Throat, whitish, superciliary and malar feathers, black and white ; ear coverts, uniform glossy black. Feathers of the hind neck, barred black and white, the black with a purplish sheen. Scapulars, outer aspect of the wing and mantle, with the ground colour, whitish buff, thickly spotted with brownish black, each feather with a subterminal, approximately round spot of metallic violet (green in certain lights) surrounded by black, and in some cases with an outer ring of buff. Concealed portions of the feathers washed with rufous. Back and rump feathers like the mantle, but without the metallic spots. Upper tail coverts with the black and buff markings more coarse, each with a large metallic spot extending over both webs, and with the terminal portion of the feather strongly washed with rufous. Primaries, dull brown, with paler freckling on the outer webs ; secondaries, coarsely mottled brown and yellowish buff, more uniform on the inner webs. Greater under wing coverts as the primaries, the lesser coverts dark brown, irregularly waved with whitish. Under surface, dull brown, waved and mottled with yellowish buff and with thin, white shaft stripes to the feathers. Under tail

coverts coarsely and very irregularly barred with broad black and narrow wavy pale lines. Tail feathers above as the upper tail coverts, but the metallic ocelli on the outer web only, except in the central pair : beneath similar, but the ocelli replaced by a corresponding black spot. Tarsi with two pairs of spurs.

Adult female.—Top of head and nape, dark velvety brown, the feathers of the crown somewhat lengthened and broadened at the tip, forming a short crest. Ear coverts and sides of head, greyish brown ; throat, white. Under surface, including thighs and under tail coverts, dull brown ; the flanks, breast and under tail coverts inconspicuously mottled with a paler colour. Primaries, brown ; secondaries, mottled brown and yellowish buff on the outer web, nearly uniform on inner web. Mantle and outer aspect of the wing mottled black and yellowish buff, with a large subterminal spot of black, that on the longer scapulars showing a faint metallic gloss in old birds. Rest of upper surface except the hind neck, which is almost uniform brown, mottled brown and yellowish buff. Upper tail coverts, more coarsely mottled and with metallic ocelli as in the male, but smaller and less brilliant. Tail feathers, mottled black and yellowish white, the mottling much finer and the black markings much less clearly defined than in the male. Ocelli as in the male, but smaller and less brilliant. No spurs on the feet.

Juvenile.—A very young female is like the adult of the same sex, but lacks the ocelli on the upper tail coverts and tail. The latter is fairly regularly barred with black.

Soft Parts.—Upper mandible, blackish brown ; lower mandible, yellowish horn to brownish black ; feet, dark bluish grey ; naked skin on sides of head, yellowish or orange ; iris, bluish white or very pale blue.

Dimensions.—*Male*.—Total length, about 21 in. ; wing, 8·2 in. ; tail, 9·5 in. ; tarsus, 2·7 in. ; bill from gape, 1·25 in.

Female.—Total length, 17 in. ; wing 7·2 in. ; tail, 7·2 in. ; tarsus, 2·3 in. ; bill from gape, 1 in.

Range in the Malay Peninsula.—Throughout the Peninsula. Not recorded from any of the islands off the coast, except Junk Zeylon. Specimens from Singapore in the British Museum are wrongly localized.

Extralimital Range.—Extending into the south of Tenasserim. Known also from Sumatra.

Nidification.—Very little is known of the breeding habits of this bird. Mr Stuart Baker mentions an egg taken in South Tenasserim on 3rd March. It was one of a pair found in dense evergreen forest, and measured 1·83 by 1·4 in. The eggs of the closely allied *Polyplectron bicalcaratum* are said by Mr Baker to resemble "small richly coloured eggs of the domestic fowl, but nearly all have the whole surface minutely stippled with small chalky pits, which give them a distinctive character."

Habits.—The peacock-pheasant is not a very common bird in the Malay Peninsula. It keeps entirely to heavy jungle, and is found chiefly on the foot-hills and lowland districts between the sea and the main range ; it does not ascend the mountains to a greater elevation than about 1000 ft. It is an

exceedingly shy bird, shyer even than the Argus pheasant, and is very rarely seen though often heard, having a harsh bisyllabic call best rendered as *kwok-kwok*, three or four times repeated at various intervals. It appears to be solitary in its habits and sparsely distributed, as it is rare to trap more than one, or at most two, at one time in any given area.

Polyplectron inopinatus

Rothschild's Peacock-Pheasant

Vol. II., p. 5.

Chalcurus inopinatus, Rothschild, *Bull. Brit. Orn. Club*, xiii., 1903, p. 41 (Ulu Pahang); id. *Nov. Zool.*, x., 1903, pl. ii.; Robinson and Kloss, *Journ. Fed. Malay States Mus.*, viii., pt. 2, 1918, p. 103; Beebe, *Mon. Pheasants*, iv., 1922, pp. 43-49, pl. lxxiv., photo pl. 63.

Polyplectron inopinatus, Ogilvie-Grant, *Journ. Fed. Malay States Mus.*, iii., 1908, p. 55; Robinson, *op. cit.*, ii., 1909, p. 168.

Malay Names.—Kuau (or) kuang chermin gunong.

Description.—Head, very slightly crested; sides of the face, feathered. Male, with twenty tail feathers; female, with eighteen.

Adult male.—Head, neck, sides of the face and throat, greyish black, mottled with paler grey and having the tips of the feathers, and occasionally a fine shaft stripe, white, conspicuously so in the case of the throat and the sides of the head. Mantle, scapulars and secondary coverts, chestnut, with wavy lines of black, the bases of the feathers greyer, each feather with an ocellus of metallic green, surrounded by an irregular black ring, and with a whitish buff spot on the shaft towards the base. Back and rump similar, but the ocelli gradually disappear, until on the lower rump they are represented only by a whitish buff spot. Upper tail coverts, coarsely mottled black and rufous buff, the outermost with greenish metallic spots with a violet sheen, on each web. Primaries and under wing coverts, greyish black; secondaries, blackish, vermiculated with paler grey and suffused with chestnut on the outer webs and at the tips. Tail feathers strongly graduated, black, thickly mottled with small, clearly defined spots of rufous buff, becoming whitish at the tips, the mottling sparser on the basal portion of the inner web; the central pair without metallic spots, the next pair with the spot on the inner web much reduced, and all the others with metallic violet-green spots, one on each web, the inner the smallest. Aspect of the tail beneath, blackish, mottled at the tip with whitish spots. Under surface, greyish black, with obscure paler wavings, and speckled here and there with minute spots of greyish white. Abdomen almost uniform greyish, tinged with brown. Under tail coverts black, mottled and waved with rufous chestnut, and occasionally with a buffy white shaft stripe. Tarsi with two pairs of spurs, the lower usually the largest.

Adult female.—Somewhat similar to the male above, but lacking the metallic ocelli on the mantle and secondaries, which are replaced by black

spots having only a very faint lustre. Tail shorter, less graduated, the mottling finer, less regular and more rufous; wings and under surface similar to the male. Tarsi without spurs.

Soft Parts.—Iris, hazel; bill, bluish horn-colour, paler at the tip; feet, French grey with a bluish tinge; soles, yellowish green.

Dimensions.—*Male*.—Total length, 26 in.; wing, 7·8 to 8·1 in.; tail, up to 16 in.; tarsus, 2·8 in.; bill from gape, 1·15 in.; culmen, 0·85 in.

Female.—Total length, 18·5 in.; wing, 6·8 to 7 in.; tail, 9·5 to 11 in.; tarsus, 2·5 in.; bill from gape, 1·05 in.; culmen, 0·75 in.

Range in the Malay Peninsula.—From Bukit Fraser and the mountains above the Semangko Pass, along the main range to Gunong Ulu Kali and Gunong Mengkuang Lebar; Gunong Tahan and Gunong Benom in Pahang, Waterstradt's hunters having probably obtained the original specimens at Ulu Dong on this mountain.

Extralimital Range.—A very distinct species, confined to the Malay Peninsula, forming a connecting link between *Polyplectron* and the Sumatran genus *Chalcurus*.

Nidification.—Unknown in detail, but, from the dates on which chicks have been obtained, eggs may be looked for from December onwards. Beebe (*loc. cit.*) discovered the remains of a nest under a tree on the Pahang side of the Semangko Pass, and deduces that two white eggs are laid. The full clutch is probably more numerous.

Habits.—There is not very much to be said about the habits of this peacock-pheasant, except that it is strictly an inhabitant of very rugged and mountainous country. On the high mountains forming the border between Selangor and Pahang it is not at all rare, and occurs in small parties of four or five. Thick cover and shady gullies are frequented, and except at night the birds are almost always on the ground, and when on the wing fly heavily. The food is largely grubs, beetles and ants, but, like most Malayan game birds, these pheasants are very fond of the fruits of small climbing palms (*Calamus*), which on some mountains are inconveniently abundant. We have not heard any call, nor did our Dyak collectors know it, but Beebe—who came across the bird in the Ulu Liang district of Ulu Pahang, near Bukit Fraser, where it is very common—records it as a kind of chuckle.

Argusianus argus argus

The Malayan Argus Pheasant

Vol. II., p. 2.

Phasianus argus, Linn., *Syst. Nat.*, 12th ed., i., 1766, p. 272 (Chinese Tartary *errore* = Malacca).

Argusianus argus, Ogilvie-Grant, *Cat. Birds, Brit. Mus.*, xxii., 1893, p. 365; Blanford, *Faun. Brit. Ind., Birds*, iv., 1898, p. 71; Oates, *Cat. Birds' Eggs, Brit. Mus.*, i., 1901, p. 61; Robinson, *Journ. Fed. Malay States Mus.*, i., 1906, p. 131; Stuart Baker, *Faun. Brit. Ind., Birds* (2nd ed.), v., 1928, p. 286.

Argusianus argus argus, Robinson and Kloss, *Journ. Nat. Hist. Soc. Siam*, v., 1928, p. 23.

Malay Names.—Kuang ; kuau.

Description.—*Adult male.*—Top of head, and a short occipital crest, of velvety black feathers ; nape, clothed with hairy feathers barred black and white ; mantle, wing coverts and scapulars, black, patterned, mottled, irregularly barred or spotted with whitish buff and rufous, the latter very inconspicuous. Feathers of the back and shorter upper tail coverts, pale yellowish buff with rounded black spots, each feather with a very narrow edging of black ; longer rump feathers paler buff, more thickly spotted with black, the spots almost coalescing into irregular bars. Median pair of upper tail coverts, greyish white, very thickly barred with diagonal rows of quadrate or kidney-shaped spots, black with a paler centre. Rest of upper surface and the under tail coverts black, with narrow wavy bars of buff or whitish. Primaries, greyish brown, ornamented with closely set, rounded or kidney-shaped spots, black margined with rufous on the outer web and most of the inner web : shafts blue and next to them, on the inner web, a row of yellow spots separated by thin, black, transverse lines ; then a band of cinnamon-rufous closely spotted with white dots. Secondaries, whitish brown on the outer half of the outer web, lined with bars of black running in the direction of their length, the two outer bars broken up into series of confluent spots. Next the shaft a series of ocelli, increasing in size towards the tip ; each ocelli composed of a yellowish centre, with a white spot on one side and a greyish area shading into reddish brown on the other, the whole surrounded by a black ring. Inner webs of the secondaries blackish brown near the shaft, then greyish brown, with a series of large black spots, then shading off into white at the extreme edge, thickly spotted with black. Fore part of chest almost uniform chestnut, remainder of under parts irregularly barred and spotted with black, yellowish buff and chestnut. Elongated central pair of tail feathers, blackish on the outer webs near the shaft, the rest reddish brown, the inner webs grey, the whole of both webs thickly spotted with white dots. Other tail feathers somewhat similar, but darker and much more thickly spotted with white. Outermost tail feathers almost devoid of any shade of brown.

Adult female.—Feathers of the top of the head, buffy white, strongly edged with black, those of the nape less hairy than in the male, barred buff and black, some with chestnut tips ; neck, chestnut, almost uniform, the lower feathers vermiculated with black ; mantle, rufous buff, thickly mottled with black ; back, rump and upper tail coverts, chestnut-buff, vermiculated and irregularly barred with black. Primaries, bright chestnut, speckled and mottled with black ; wing coverts, scapulars and secondaries, black, boldly scrolled with strong yellowish-buff markings, the secondaries washed with chestnut on the inner portion of the outer web. Upper neck, almost uniform chestnut, shading on the rest of the under surface and thighs into brownish chestnut, finely vermiculated with black ; under tail coverts, blackish brown, with lighter vermiculations. Tail feathers, blackish, thickly marked with

irregular wavy lines of rufous, the markings bolder and more buffy on the outer webs of the central pair.

Immature male.—The male at first closely resembles the female in plumage. The long tail feathers, however, are not acquired at the first moult into adult plumage: the secondaries are shorter and narrower, with the ocelli smaller and duller.

Soft Parts.—*Male*.—Iris, greyish brown; bill, whitish horn; cere, grey; feet, red; naked skin of head, dull cobalt.

Female.—Feet duller red and bare skin on the head more slaty.

Dimensions.—*Adult male*.—Total length, 68 in.; wing to end of primaries, 18.5 in.; to end of secondaries, 35 in.; tail, 51 in.; tarsus, 4.3 in.; bill from gape, 1.75 in.

Adult female.—Total length, 29.5 in.; wing to end of primaries, 13.5 in.; to end of secondaries, 15 in.; tail, 13 in.; tarsus, 3.5 in.; bill from gape, 1.5 in.

Range in the Malay Peninsula.—Well distributed throughout the length of the Peninsula from north to south, but not found in Singapore or on any of the adjacent islands except Pangkor Besar in the Dindings territory, where it is abundant.

Extralimital Range.—Occurs as far north as Central Tenasserim: also found in Sumatra, but replaced in Borneo by the allied subspecies, *Argusianus argus grayi*.

Nidification.—Very little is known. In the Malay Peninsula the nest must be sought for on the ground in primary forest. Davison suggested that there was no regular breeding season. Two eggs laid in confinement are described by Oates as blunt ovals, smooth and fairly glossy; pale reddish buff in colour, freckled with pale reddish brown: size, 2.55 and 1.85 in length by 1.85 and 1.9 in. in breadth. Some eggs laid in confinement are said to be a rich coffee-colour.

“The full clutch of eggs will possibly prove to be two or three only, but hens in captivity lay four or five. Two eggs were taken by Waterstradt's natives in dense jungle on 20th May and 2nd July, and another egg was laid by a recently caught female on 27th March. One of these eggs is a very faint buff, the other two creamy white; in shape they are long well-pointed ovals, with a fine close texture” (*Stuart Baker*).

Habits.—The Argus pheasant is common everywhere in old jungle throughout the Peninsula up to about 4000 ft., but is not found in the swampy coastal districts. The bird is, however, so exceedingly shy that it is only very rarely indeed that it is possible to catch sight of one, and few Europeans have ever seen the bird in a wild state. Nevertheless, it is easy to trap, and the Sakais of certain districts often capture the chicks and rear them with their domestic poultry. The species is solitary in its habits, the males keeping apart from the females except at the breeding season. The male has the curious habit of clearing a playing or showing-off ground for himself by removing every leaf or fallen twig from a circular patch, sometimes four or five yards in diameter. These playing grounds are usually situated on steep ridges. The native name

of *kuau* is a good imitation of the call of the male : both sexes are heard almost as frequently by night as by day.

Rheinardius ocellatus nigrescens

The Malayan Ocellated Pheasant

Vol. II., p. 3.

Rheinardius ocellatus nigrescens, Rothschild, *Bull. Brit. Orn. Club*, xii., 1902, p. 55 (Ulu Pahang); Hartert, *Nov. Zool.*, ix., 1902, p. 538; Ogilvie-Grant, *Journ. Fed. Malay States Mus.*, iii., 1908, p. 56; Robinson, *op. cit.*, ii., 1909, p. 168; Beebe, *Mon. Pheas.*, iv., 1922, pp. 106-110, pl. lxxxi., photo pls. 68, 69.

Malay Names.—Kuang (or) *kuau* raya gunung, *kuang* or *kuau* *kěpala puteh*.

Description.—*Adult male*.—Upper surface, including the wings, deep black, each feather with treble or quadruple rows of rounded white spots quite defined from each other on each web; on close examination each spot is seen to be surrounded by a black area darker than the rest of the background, which is also covered by a reddish-brown vermiculation, hardly perceptible on the mantle, more conspicuous on the secondaries, rump and upper tail coverts, where the white spots are larger. Inner aspect of the wings a duller, more slaty black, with the spots smaller; white spots more elongate transversely, on the axillaries and wing coverts. Tail extremely long, much graduated, the feathers with numerous rows of white spots all surrounded by black or greyish black on a ground of reddish chestnut, the edges of the feathers much darker. Near the shaft the spots almost completely cover the base, leaving a single or double row of clear reddish areas on either side, generally with blackish centres on the outer webs, these areas having themselves the appearance of larger spots. Crown with short, black velvety feathers; a broad buff stripe from the nostrils over the eye; sides of the head and ear coverts, greyish brown; a heavy lengthened occipital crest of hair-like disintegrated feathers, the uppermost shortest and black, the undermost longest and silky white with a very faint buff tinge at the extreme base. Beneath, throat buffy; rest of the under surface more or less as the upper parts, but the spots more oblong, more regularly disposed in rows, and the ground-colour dark chestnut-red, not so black; middle of the belly greyish brown, the feathers faintly tipped with buff. Tarsus without spurs (rarely present in the allied *R. ocellatus* from Annam).

Adult female.—Very different from the male, with no white spots. Above, an earthy brown, vermiculated with blackish. Wings and tail more or less the same, but with numerous black bars bordered with coarse mottlings of ochreous buff. Inner aspect of quills greyish, with hardly any markings. Head as the male, but the crest shorter, mainly black, the inferior feathers rufescent; beneath, chin whitish buff, rest of under surface, including under tail coverts, brownish, finely and regularly vermiculated with black. Lower throat and breast more rufescent, the former almost devoid of vermiculations.

Soft Parts.—Iris, brown ; skin round eyes, bluish grey ; bill, horn, tinged with pink near the gape ; feet and legs, brownish grey.

Dimensions.—*Male.*—Wing, 14.5 to 15 in. ; tail, outer feathers, 15.5 to 17 in. ; longest pair up to 42 in. ; tarsus 3.8 in. ; bill from gape, 0.9 in.

Female.—13.2 to 14 in. ; outer tail feathers, 9.5 to 10 in. ; longest pair, 15 in. ; tarsus, 3.4 in. ; bill from gape, 0.85 in.

Range in the Malay Peninsula.—As yet known with certainty only from the lower levels of Gunong Benom and Gunong Tahan in Pahang, not improbably from similar altitudes in the mountains of Trengganu and Southern Kelantan, and possibly, but more doubtfully, from the main range in the vicinity of the Batang Padang Valley, South Perak. Within our knowledge not more than ten specimens are extant in museums.

Extralimital Range.—Peculiar to the Malay Peninsula. The original form is comparatively common in the mountains of the Annamitic chain, French Indo-China, extending over a wide range in latitude.

Nidification.—Unknown. The typical race is said to lay two white eggs, but little is known of its breeding habits.

Habits.—In Pahang, in certain localities, this wonderful pheasant is by no means rare, though even shyer and more retiring in its habits than the more familiar Argus pheasant. It is found in hilly country up to the level of about 3000 ft., possibly rather higher, but also occasionally descending to the level of the larger rivers, though only in dense jungle. On the lower slopes of Gunong Tahan it must have been about equally numerous with the common Argus, but certainly ranged higher up the hill. When the mountain was first ascended, from the Tahan river, and the original track was being cut, playing-grounds were quite numerous along the ridges and for a short distance below them, and occurred every quarter of a mile or so, but constant traffic caused the birds to desert them. Robinson was unable to distinguish the playing-grounds of the two species, and feathers of both were found upon them. The playing-grounds were usually made where the grade of the ridge flattened down, generally near or under some large tree ; they were sometimes very extensive, up to ten or fifteen feet in diameter, and were most meticulously cleared, every dead leaf, twig and growing seedling being removed. The call, "*kuan*," several times repeated at varying intervals, closely resembles that of the common Argus pheasant, but is, nevertheless, rather different, perhaps more resonant and less harsh. It is rarely heard in the heat of the day, sometimes in the early morning, but regularly at dusk and far into the night.

Pavo muticus

The Javan Peafowl

Pavo muticus, Linn., *Syst. Nat.*, 12th ed., 1766, p. 268 (Japan *errore* = Java) ; Ogilvie-Grant, *Cat. Birds, Brit. Mus.*, xxii., 1893, p. 371 ; Blanford, *Faun. Brit. Ind.*, *Birds*, iv., 1898, p. 70 ; Oates, *Cat. Birds' Eggs, Brit. Mus.*, i., 1901, p. 62 ; Robinson, *Journ. Fed. Malay States Mus.*, i., 1906, p. 131 ; Robinson

and Kloss, *Journ. Nat. Hist. Soc. Siam*, v., 1921, p. 23 ; Stuart Baker, *Faun. Brit. Ind., Birds* (2nd ed.), v., 1928, p. 284.

Malay Name.—Měrak.

Description.—*Male.*—Top of the head covered with curly metallic green and blue feathers, the blue predominating in freshly moulted birds. An upright occipital crest of the same colour, the feathers broadening to the tips, equally webbed on either side of the shaft. Neck, breast and chest bronzy golden green, the centres of the feathers deep blue and narrowly edged with black producing a scaly effect. Mantle, back and rump very similar, but the blue centres reduced. Wing coverts and scapulars, black, very strongly washed with blue, the inner ones broadly margined with bluish green. Primaries and bastard wing, pale chestnut-buff ; secondaries, brownish black, the innermost obscurely vermiculated with pale buff. Tail feathers, blackish brown, buffy at the base and on each side of the shaft. Under wing coverts, black, or salmon-buff. Abdomen, black, strongly glossed with green and blue ; under tail coverts and thighs, blackish. Modified upper tail coverts forming the " train " resplendent greenish bronze, the " eye " peacock-blue, surrounded by a circle of lustrous green and a much broader outer one of bronzy green. The feet armed with a pair of long, sharp spurs.

Female.—Lacks the long " train " and tarsal spurs of the male, but otherwise very similar. The main points of difference are on the dorsal surface, which is much less squamate than in the male, and vermiculated and barred with buff. Tail feathers, blackish, sparsely barred with pale brownish. Upper tail coverts about as long as the tail feathers, greenish bronze, barred with whitish buff.

Immature.—Young males resemble the female. Still younger birds of both sexes have the green feathers of the chest and mantle edged with white or pale rufous frecklings so that the squamous appearance of the adult is not so evident.

Soft Parts.—Bill, black, horn-coloured at the tip ; feet, black ; irides, dark hazel ; anterior portion of the bare skin on the face, lavender-blue, the hinder portion from the gape upwards, pale chrome-yellow.

Dimensions.—*Male.*—Total length without train, 52 in. ; with train, 83 in. ; wing, 19 in. ; tail, 24 in. ; tarsus, 6·6 in. ; bill from gape, 2·2 in.

Female.—Wing, 16 in. ; tail, 16 in. ; tarsus, 5·3 in. ; bill from gape, 2 in.

Range in the Malay Peninsula.—The peafowl has a somewhat peculiar distribution in the Malay Peninsula, being commoner on the eastern side and to the north than in the west and south. On the western side of the Malay Peninsula, common in Trang, Setul, Perlis, portions of Kedah and in the Perak river basin as far south as Lenggong north of Kuala Kangsar. Not definitely known from any other part of Perak or from Selangor, though there is a doubtful record from Bangi on the Negri Sembilan border. Not found in Negri Sembilan, except possibly on the upper reaches of the Triang river, which belongs to the eastern drainage system. Does not now occur in the territory of Malacca and probably never did so, specimens assigned to that locality probably coming

from other districts of the Peninsula. Not definitely known from Johore, but probably occurring in the north-eastern portion of the state.

On the eastern side of the Peninsula common on the lower reaches of the rivers almost everywhere in Patani, Kelantan and Trengganu, but not found in the far interior, except in Rhaman. Numerous on the Pahang river and its larger tributaries.

Extralimital Range.—To the south found only in Java ; we now believe that all records of “peacocks” from Sumatra refer to the Argus pheasant. North of the Malay Peninsula the range extends through Siam and French Indo-China ; it is also recorded from Yunnan. Also found in Burma, and apparently at one time it existed in a wild state as far north as Manipur and Cachar. M. Jean Delacour considers that the Burmese form can be separated as another race on account of its duller colour.

Nidification.—Little is known of the breeding habits. In Pahang the season appears to be during the wet monsoon from November to May, and males are generally in full feather in January and February, while the ornamental train has usually been shed by June or July. The egg is described by Oates as being a regular oval in shape with a strong glossy shell, varying from dull white or cream-colour to reddish buff in colour. Size from 2·75 to 3·4 in. in length and from 2·05 to 2·15 in. in breadth.

Habits.—Wherever it is found the Malay peafowl is fairly abundant. It is not as a rule met with in heavily forested country, but mainly affects the banks of large rivers, feeding on the edge of the river in the early morning and late afternoon, and retiring to the thick scrub that borders the stream in the heat of the day. At night it roosts in high trees, returning to the same place night after night if not disturbed. The note is a loud discordant squall, which has been likened by Davison to that of a tom-cat in distress, and is audible at a great distance, and which is well expressed by the Malay name *merak*, in which the accent is strong on the last syllable. The species is polygamous, and travelling on the Pahang river, or its principal tributary the Tembeling, family parties of a cock and four or five hens may often be seen on the broad sand-banks edging the river.