

the midst of thin forest jungle. It chiefly occurs in pairs, now and then several, not far from each other. Early in the morning, the cock-bird may be heard uttering his peculiar guttural call or broken crow, *Chee-kee-herray—Chee-kee-kerray*, which can be heard a very long way off, though by no means loud, and is answered on all sides. On approaching the spot whence the sound proceeds, if carefully looked for, he may be seen seated on the stump of a tree, or a thick bush, or an ant-hill or other elevated spot; but when he finds himself discovered, he slinks down, and runs off in a way that puzzles dogs much.

The female breeds from June to August, laying seven or eight eggs of a creamy or smoky white, generally near the shelter of some bush. "The poults," remarks a writer in the *Bengal Sporting Review*, "begin to call soon and chirrup like Crickets." When the grass is not too high, the Painted Partridge affords very fair shooting with a steady pointer, as also in the wheat fields in November and December, when the birds have scattered. I have seen this bird perch on a low tree, but very rarely, and only when disturbed by a dog; certainly not so commonly as is implied by a writer in the *Bengal Sporting Magazine* for 1841. This Partridge is very fair eating, especially when kept long enough and eaten cold.

Francolinus Phayrei, Blyth, (if distinct from *F. pintadensis*) is common in all upper Burmah as at Thyet-Myo, and has a very similar call to the Painted Partridge, but is more given to frequent grassy spots among jungle. *Tetrao pintadensis*, Scopoli, (*perlatus*, Temm.) from China, has been separated by Reichenbach as *Margaroperdix*, but on what grounds it would be difficult to say.

2nd.—Rock or Sand Partridges.

Gen. CAOCABIS, Kaup.

Syn. *Perdix*, Bonap.—*Chacura*, Hodgson, postea *Pycetes*.

Char.—Bill somewhat lengthened, stout, red; tarsi of male with a blunt spur, red; tail of twelve or fourteen feathers, not quite concealed by the upper tail-coverts; a small nude patch behind the eye; plumage not mottled.

The Red-legged Partridges form a well marked group, spread over the temperate and warmer parts of Europe, Western and

Central Asia, and the north of Africa, including Madeira and the Canary islands. They are well characterized by a plain unmarked plumage with some rich bands on the flanks, and, as Blyth remarks, they have the desert-coloring in some degree. They affect rocky and hilly ground, in preference to cultivated lands, and associate more or less in coveys. Gray makes a sub-family *Caccabinae* of this and *Ammoperdix*, but rather strangely joins with them *Tetraogallus* and *Lerwa*. Bonaparte retains the generic name of *Perdix* for this genus, as it was undoubtedly the *Perdix* of the Ancients.

820. *Caccabis chukor*, GRAY.

Perdix, apud GRAY, HARDW., Ill Ind Zool. 1. pl 54—BLYTH, Cat. 1503—GOULD, Cent Him. Birds, pl. 71—*P. græca*, var. of several authors—*Chukor*, H.

THE CHUKOR PARTRIDGE

Descr.—Plumage above pale bluish or olive ashy, washed with a rufous tinge; lores black, and a white band behind the eye; ear-coverts rufous; wings reddish ashy, the coverts tipped with buff, and the primaries narrowly edged with the same; tail ashy on the central feathers, the laterals tinged with rufous; face, chin, and throat, fulvous or rufous, surrounded by a black band which begins at the eye, and forms a sort of neck-lace round the throat; below this the neck and breast are ashy, changing to buff on the abdomen and under tail-coverts; flanks of the breast and belly beautifully banded, each feather being ashy at the base, with two large black bands, the terminal one tipped with fine maroon, and the space between the bands creamy white.

Bill red; irides yellowish white; legs and feet red. Length 15 to 16 inches; extent 24; wing $6\frac{3}{4}$; tail $3\frac{1}{2}$; tarsus $1\frac{3}{4}$; bill at front 1; weight 18 oz. to $1\frac{1}{2}$ lb.

The female closely resembles the male, but is slightly smaller, and wants the spurs.

This fine Partridge is so very closely allied to *Caccabis græca* of the South of Europe, Africa, and Western Asia, that it has been considered to be a climatic variety of that species, but most systematists keep it distinct. It appears to differ in the less ashy

tint of the European bird, which moreover appears to have the dark collar of greater extent, and in our bird having the chin and throat always more or less rufous.

The *Chukor* is found throughout the Western Himalayas, from the lowest range to the Snows, and passing over into Thibet, but it does not extend so far east as Sikim. It is also met with in the salt range of the Punjab, and its more alpine regions, passing into Afghanistan. It prefers bare and rocky hills with low scrub or jungle, near cultivation.

"In our part of the hills" says Mountaineer (*i. e.* in the North-western Himalayas) "the *Chuckore* is most numerous in the higher inhabited districts, but is found scattered over all the lower and middle ranges. In summer they spread themselves over the grassy hills to breed, and about the middle of September begin to assemble in and around the cultivated fields near the villages, gleaned at first in the grain fields which have been reaped, and afterwards during winter in those which have been sown with wheat and barley for the ensuing season, preferring the wheat. A few straggling parties remain on the hill sides where they breed, as also in summer many remain to perform the business of incubation in the fields. In autumn and winter they keep in loose scattered flocks, very numerous, sometimes to the number of forty or fifty, and even a hundred. In summer, though not entirely separated, they are seldom in large flocks, and a single pair is often met with. They are partial to dry stony spots, never go into forest, and in the lower hills seem to prefer the grassy hill sides to the cultivated fields. This may probably be owing to their comparatively fewer numbers, as I have observed that many others of the feathered race are much shyer and more suspicious of man when rare, than those of the same species in places more numerous. Their call is a kind of chuckling, often continued for some time and by a great many birds at once. It is uttered indiscriminately at various intervals of the day, but most generally towards evening.

"The *Chuckore* feeds on grain, roots, seeds, and berries; when caught young, it becomes quite tame, and will associate readily with domestic poultry.

"From the beginning of October, *Chukore* shooting, from the frequency and variety of the shots, and the small amount of fatigue attending it, is to one partial to such sport perhaps the most pleasant of any thing of the kind in the hills. About some of the higher villages, ten or a dozen brace may be bagged in a few hours. Dogs may be used or not at the discretion of the Sportsman; they are not at all necessary, and if at all wild are more in the way than otherwise."

"The male," says Major Brown,* "is very bold, and is tamed for the purpose of fighting. In a domesticated state, he makes no hesitation in offering battle to every animal, and pecks very fiercely, always searching for a tender part; the nose of a dog, or the naked feet of the native servants immediately attract his attention, and he soon makes the object of his attack fain to run." "When reclaimed" says another writer in the same periodical "this bird is peculiarly bold, fearless, and entertaining. It trots about the house, and is as familiar as a little dog. It is amusing to see its antipathy to quick motions in others. It will follow a servant who hurries into a room, pecking at his heels, scouring away when he attempts to turn upon it. It is still more persevering against the poor wight who moves backwards and forwards as he pulls the punkah. Half asleep at his task, he is roused by a fierce attack on his legs. He attempts to continue his work, and at the same time to drive away the intruder, but it is of no use; and he is at last obliged to call for assistance to rid him of his persecutor."

The Hen-chukor lays from eight to fifteen eggs, of a creamy white, according to one writer; pure white according to Adams; and the male bird is said to remain near the nest during incubation, and may be heard calling all day, its call much resembling that of the domestic hen, being a '*cuc-cuc*' often repeated, and the Cashmeeres call it *kau-kau* from its cry. The Affghans call it the Fire-eater. It is considered to be excellent eating. In Ladak it is said to be numerous in the cultivated part of the country, and is there called *Nek-pa*.

* Beng. Sport. M g.

Caccabis rufa, the Red-legged Partridge of France and Western Europe, has been partly naturalized in England, and drives away the common Partridge. *C. petrosa* has been unnecessarily separated by Kaup as *Alectoris*.

Close to the red-legged Partridges come the Sand-partridges.

Gen AMMOPERDIX.

Char.—Of small size; bill somewhat lengthened, red; wings long; tarsus wholly devoid of a spur or even of a knob. Otherwise as in *Caccabis*.

The Sand-partridges may be said to be simply dwarf Chukors, to which they are allied in color, habits, and geographical distribution. Only two species are known, both found in Western Asia, one of which extends into the North-western limits of our region.

821 *Ammoperdix Bonhami*, GRAY.

Perdix, apud GRAY, P. Z. S.,—GOULD, Birds of Asia, pt. III., pl. 4—figured Beng Sport Mag 1843—*P. griseogularis*, BRANDT. —*Ssei*, H. in the Punjab

THE SEESEE PARTRIDGE

Descr.—Male, above pale isabella brownish, finely freckled with dusky; the crown of the head and cheeks grey; forehead and a narrow line over the eye black; lores and ear-coverts silky white, rufous posteriorly; beneath this a narrow black line; rump and upper tail-coverts much speckled with black; primaries dusky within, isabella brown on the outer webs, with dusky pencillings, and all but the first, barred on their outer webs with whitish; tail chestnut brown, paler at the tip, and freckled with black; beneath, the throat is greyish white, the breast delicate grey, and the sides of the neck grey with numerous white spots, and a few black specks; breast pale rufous isabelline or vinaceous; the feathers of the flanks whitish tinged with vinaceous, and dashed with rufous and dark brown; lower tail-coverts pale chestnut.

Bill fleshy, (brownish yellow according to Adams); irides hazel brown; legs and feet olive yellow. Length 10 inches; wing 5; tail $2\frac{1}{2}$; tarsus $1\frac{1}{2}$; bill at front $\frac{5}{8}$.

The female differs, according to Gould, in having the black markings of the head replaced by freckled black and white; the

general colour more grey and the wings more freckled. According to Blyth, she wants the ashy crown of the male, and is minutely mottled all over, both above and beneath.

This small species of Partridge was named almost simultaneously by Gray and Fraser after the first gentleman who had sent specimens to Europe. It is closely related to *A. Heyi*, but is somewhat larger, and that species wants the white spots on the sides of the neck. The females are said to resemble each other very closely. One point of difference of the two species mentioned by Gould, viz, the colour of the legs, is contradicted by Adams, who says that the color of the legs of *Bonhami* is a 'lighter brownish yellow than the bill.'

The Seesee, as this small Partridge is named, is only found in the Punjab, in the Salt range of hills, more abundant across the Indus on the Suleiman range, near Attock, and in the Khyber and Bolan passes; and it is still more common in Affghanistan and Persia, whence the original specimens were sent. It is there called *Tee-hoo*. Gould states that it was also brought from Thibet by Lord Gifford. Adams says that it is not found further south than the Salt range; but a writer in the *Bengal Sporting Review*, on the game of Sindh, distinctly indicates it under the name of the Rock or Barbary Partridge as found across the Indus. It frequents rocky ground with brushwood here and there, and is often seen in company with the Chukor which it much resembles in habits; is found in coveys which when sprung rise with a startling noise, and feeds much on a kind of wild Thyme. The flesh is said to be delicious. The name *Seesee* is given from its call. Theobald found the eggs, twelve in number, of a clear cream colour, laid in a slight hollow among stones in the hills.

The other species, *A. Heyi*, is also figured by Gould, in *Birds of Asia*, pt. III., pl. 5. It is found in Western Asia, Palestine, Arabia, &c.

3rd.—Grey or Bush Partridges.

The Grey Partridges of India come under this head; they are somewhat similar in coloring to the English Partridge, but differ in being strongly spurred.

Gen. ORTYGORNIS, Reichenbach

Syn. *Plectroperdix*, Blyth.

Char.—Bill lengthened, tip well turned over; legs red, with one strong and sharp spur, occasionally two; tail rather short, of twelve feathers, wings moderate.

This form, as far as we know at present, is peculiar to the Indian continent, but some of the African Partridges appear nearly allied to it. Only two species are known, very similarly coloured above, but differing greatly in size and haunts. They are bold birds, of truly perdicine habits, having a great tendency to form coveys; but they run much and very rapidly, and frequently perch, as well on bushes and low trees, as on high reeds.

822. *Ortygornis Ponticeriana*, Gmelin.

Tetrao apud Gmelin—Sykes, Cat 159—Jerdon, Cat 273—Blyth, Cat. 1506—*Perdix orientalis*, Gray—Hardwicke, Ill. Ind. Zool. 1. pl. 56, f. 2—*Titar*, H—*Gora Titar* of some—Kawunzu, Tel.—Koudari, Tam

THE GREY PARTRIDGE.

Descr—Head above olive brown, rufous on the forehead, over the eyes, and on the nape, lores and face also rufous, with black specks; ear-coverts silky hair-brown; upper plumage, including the wing-coverts, upper tail-coverts and central tail-feathers, speckled brown, each feather being rich red brown with three bars of creamy yellow, and paler and somewhat olive brown at the tip; primaries pale brown; outer tail-feathers rich chestnut brown, with a dusky brown terminal band, pale tipped; beneath the chin and throat are whitish with small dark brown spots, forming a triangular mark; the rest of the lower plumage ochreous white or creamy, most pronounced on the breast, and with numerous minute cross-bars of brown, somewhat broader on the breast and sides of the neck, where it mingles with the upper plumage; lower tail-coverts ferruginous.

Bill dusky plumbeous; irides hazel brown; legs dull red. Length about $12\frac{1}{2}$ to 13 inches; wing 5; tail $3\frac{1}{2}$; tarsus not quite 2; weight 11 to 12 oz.

The male is strongly spurred, generally only one spur on each leg, occasionally two, the second at the base of the first. Females only differ in not being spurred, and in being a trifle smaller. Young birds have the chin and throat strongly tinged with fulvous.

The Grey Partridge is found throughout the greater part of India, but not frequenting mountainous or forest-clad districts, and it is totally wanting throughout the Malabar Coast, as far at all events as N. L. 17°—18°. It is also very rarely met with north of the Ganges, although recorded as a bird of Nepal by Hodgson, and it is replaced generally in Bengal by the next species. It is not known in Assam nor in any of the countries to the Eastward. Westward it is very abundant in Sindh, and some parts of the Punjab, and it is stated to occur in Persia, as Mr. Blyth informed me, where known as '*Jirufti*.'

It frequents alike bush-jungle, and cultivated lands, being often found in gardens and compounds; and very generally near villages, concealing itself in hedge-rows and thickets. It associates in coveys of varied number, from five to fifteen, is often very difficult to flush, running for a great distance, and with amazing speed, and taking refuge in thick bushes and hedges, whence driven with difficulty. When flushed, it rises with a loud whirr, flies very strongly, but does not take long flights. It frequently perches on low trees and shrubs, and on the branches of thick *Euphorbia* hedges. Its call is a peculiar loud shrill cry, and has, not unaptly, been compared to the word *Pateela-pateela-pateela*, quickly repeated, but preceded by a single note uttered two or three times, each time with a higher intonation, till it gets, as it were, the key note of its call.

This Partridge breeds, chiefly in the dry weather, from February to May or June, the hen-bird laying usually eight or ten eggs, of a cream or stone colour, under a hedge-row or thick bush. One writer in the *Bengal Sport. Review* says, from twelve to eighteen eggs, greyish speckled with red and brown. It occasionally, it is stated, breeds in grain fields, and many nests are said to be destroyed in reaping the crops. "The young," says the same writer, "soon get strong on the wing, and attempt to call when only five

days old." In flight this bird is not unlike the English Partridge, and I have known many sportsmen who considered them to be the same bird. It is considered to be a stronger flying bird, and to be more difficult to bring down.

Though generally dispersed throughout the country, they are seldom so plentiful as to induce Sportsmen to go out after them alone, but a few generally form part of the bag after a day's shooting in Southern and Western India. "I have found Greys with my pointers" remarks a writer in the *Beng. Sport. Mag.* (XIV. 90) "always in a steady way, but subject of course to the peculiar habit of that skulking, running bird; fond of bushes, and strong on the leg, they will walk or dodge before the dogs and sportsmen in a tiresome way, tantalizing and trying to the temper of both man and beast; still the dogs will be staunch to their trail, drawing on them, and standing until they are sprung." It is not, in general, considered good eating, being usually dry and insipid. One writer, however, in the above quoted Periodical, says, "In this respect it has not had justice, being, in October and November, superior to our Black Partridge, but in this country game is so much spoiled in cooking that there is no knowing what to make of it, as it is invariably roasted as dry as a stick." The best way of cooking dry game in this country is the Gypsy or Mexican fashion of enclosing it in a lump of good fire-clay, and roasting it in the fire. Birds (and hares) otherwise dry and insipid, come out of their case juicy and tasty.

When not disturbed much, and near villages, the Grey Partridge is by no means a shy bird. It is easily tamed, and may be brought to follow his owner about like a dog, even through a crowded street. It is very commonly kept by Mussulmans in small cages, sometimes for fighting, as it is highly pugnacious, and fights with great spirit and obstinacy. Partridges with double spurs are esteemed the most for fighting. It will readily utter its call when spoken to, and is generally liberated on a grass plain for a run every morning, returning to its cage when called upon. It is also used as a decoy for wild birds, a tame bird being put down near a covey and made to call, when he is invariably met by a cock-bird, and a battle ensues. The Bird-catcher approaches

cautiously and seizes the wild bird as it is heedlessly engaged in the fight.

This Partridge feeds on grain and seeds of all kinds, and is very partial to small grasshoppers, white ants and other insects. It is often accused of being a dirty feeder when living near villages, but I am inclined to think unjustly.

823. *Ortygornis gularis*, TEMMINCK.

Perdix, apud TEMMINCK—BLYTH, Cat. 1505—HARDWICKE, Ill. Ind. Zool. 1 pl. 56, f. 1.—*Khyr*, or *Kyah* or *Kaijah*, H. —occasionally *Bun-tutar*, 'Chikore' or 'Bengal Chikore' of sportsmen in Bengal.

THE KYAH PARTRIDGE

Descr.—Top of the head olive-brown; supercilium, lores, and a streak below the eye, pale buff or fulvous, and a dusky line passes through the eyes to the upper part of the ear-coverts; upper plumage brown, barred with narrow cross streaks of whitish or fulvous, edged black, and the shafts of the feathers mostly white, except those of the hinder part of the back and rump; primaries plain brown externally, passing to ferruginous brown within; tail ferruginous except the central feathers; beneath, the chin and throat are bright ferruginous brown; the rest of the lower plumage, with the sides of the neck, are brown, with white streaks, edged by black, which on the breast and belly become large dashes or blotches, giving a handsome character to the plumage; lower tail-coverts ferruginous, and the under surface of the wings mostly ferruginous also

Bill blackish; irides dark brown; legs dull red. Length 15 inches; extent 22; wing $6\frac{2}{3}$; tail 4; bill at front nearly 1; tarsus $2\frac{1}{2}$; weight 17 oz. to 1 lb. 6 oz.

The male is furnished with a strong and sharp spur, $\frac{1}{2}$ inch long. The female is a trifle smaller, and wants the spur. Length $13\frac{1}{2}$ to 14 inches.

This fine bird in its upper plumage, very closely resembles the common Grey Partridge, but the lower surface is very different,

being longitudinally dashed with white instead of narrowly barred; it is nearly double the size, and has very different distribution and haunts.

The Kyah Partridge is found throughout Bengal, from Tirhoot and Goruckpoor to the Sunderbuns, and extending eastwards into Assam, Sylhet, Cachar and Tipperah. South of this it is not recorded, but it may occur in Chittagong. In the Western Provinces of Bengal, it is chiefly found on the north bank of the Ganges, crossing in a few suitable localities from Monghyr to Rajmahal, and also found between the Bhagirutty and the Ganges; but not extending to Kishnagur, it is said, nor to the vicinity of Calcutta. It is stated that it used to be found along the banks of the Roopnarain River, but is so no longer. It is found up to the base of the Himalayas, and I have heard of its occurring in the Oude Terai, but it apparently does not go further west.

The favorite grounds for this Partridge are thick beds of reeds and long grass along the banks of rivers, jheels, and water-courses; and especially in those swampy patches of reeds where the creeping Rose-bushes form thickets impenetrable to ought but an Elephant, though hardly "frequenting swampy churs and reedy waters, the same as the Bittern, Snipe and Heron" as one writer states. "The strongest depths" says a writer in the *Beng. Sport. Mag.* "whether in patches, or in continuous, wavy, thick grass, or seas of jungle hold them." If cultivated land be near, so much the better, for this Partridge loves to feed on open patches of Mustard, Dhal and other pulses, and indeed during the cold weather may frequently be found in the fields at all hours of the day. Occasionally it resorts to dry grassy plains with scattered bushes, but much more generally grassy churs near water. During the rains, and when some of its usual haunts are flooded, it betakes itself to the fields, hedgerows and bush jungle, and at this time affords good sport even to the Sportsman on foot; and, in some localities when flooded, the Kyah may be seen flying from tree to tree.

This Partridge is generally, except when breeding, met with in somewhat scattered coveys, which rise three or four at a time with a cackling scream; they fly strong and straight with outstretched

neck, seldom going to any distance, but dropping into some thick covert, and thence often dislodged with difficulty; for it runs much, even among the thick reeds. It very generally, however, especially in swampy thickets, perches on the high reeds, and generally roosts there

The call of the Kyah is quite similar in character to that of the Grey Partridge, though in a somewhat different tone, and not uttered so hurriedly, and the preliminary chuck is exactly that of its congener. It is one of the earliest birds astir, crowing at day-light, as well as frequently also during the day

The Kyah breeds early in the spring, in some localities, at all events, from March to May, and at this time is very difficult to put up; indeed, I have seen an Elephant almost break down a bush before the Partridge would rise. The eggs are said to be laid under some thick bush, in a dry spot, and to be white like those of the Grey Partridge. It is a very quarrelsome bird, fighting much with his own species, and one writer states that "the scars of former fights disfigure the breasts of almost every bird you kill." It drives off the Black Partridge if it comes across it.

Shooting the Kyah is, in many parts of the country, only possible on Elephants, as the high grass and reed jungles it frequents are impenetrable to man or dog; and moreover Tigers are occasionally found in the heavy jungles they frequent. But where the patches of reeds and rose bushes are thinner, and of small extent, and with fields and moderately high grass at hand, the sportsman may manage to get a good many shots if aided by a few strong and determined beaters and a good spaniel. Early in the morning, too, by walking down the reedy bank of a jheel or river, bordered by fields, and having a beater or two, with a good dog, you will get several shots as the birds fly across you into their cover. "The scent of this bird" says a writer in the *Beng. Sport. Mag.* "is most gratefully warm to pointers. My dogs would stand to the dead birds as staunchly as to the living ones."

The flesh is excellent if kept, though somewhat more dry than an English Partridge. The same writer above quoted says: "Of all the game birds of India known to me, cold roast Chikore, in my opinion, bears away the palm for delicacy of flavour and texture in

the meat. During the months of November and December, it forms an unrivalled dish 'for the Epicure in gamcy flavour, and an additional inducement to the sportsman to fag and find."

This Partridge has had the name of *Chickore* erroneously applied to it by sportsmen in Bengal, and various writers in the Indian Sporting Magazines have kept up the error. Thus it is well figured by George Trigger as the *Chickore*; and previously a group of them as the *Common Chickore*; and one sportsman, on reading a correct statement that the *Chickore* Partridge is only found in the Himalayas, immediately publishes an article, stating that the writer was perfectly mistaken as to the *Chickore* being found only in the hills; for, that he has shot many near Rajmahal, and elsewhere, he himself having been deceived by the name popularly applied to this Partridge. A bad figure of it is elsewhere given as the *Wood Partridge* of Bengal, also a misnomer. No native ever applies the name of '*Chickore*' to this bird, and it is to be hoped sportsmen will give up applying this name to it, both as being perfectly erroneous, and as misleading naturalists and others.

The Kyah is easily reconciled to confinement, even when taken old, and eats greedily of almost every thing, but having a special preference for white ants. "They are" says the same writer previously quoted, "the most restless creatures imaginable, always on the move and trying to get out at any channy and bar of the cage. Those which I had, called regularly at day break, sometimes in the afternoon, and in the middle of the night, when there was bright moonlight, and I have heard the wild ones answer them in the night from the borders of the jungle"

Probably not far from this group should come the *Malayan Rhizophora*, founded on the *Perdix longirostris* of Temminck. In habits it is said to resemble the Francolins, not associating in coveys. Both sexes are spurred.

The true Partridges, *Perdix* of most authors, (*Starna* of Bonaparte) are not represented in India, but one species occurs on its northern confines, in Thibet, *Perdix Hodgsoniæ*, Gould, made the type of the genus *Sacfa* by Hodgson. It is figured by Gould in the *Birds of Asia*, pt. IX., pl. 2, and appears to be quite of the same

type as the true *Perdix* of Europe, being without any indication of a tarsal spur. It has been lately shot by several sportsmen, Captain Smythe, Lt. Forbes, and others, who have sent specimens to the Asiatic Society of Calcutta; but I am not aware of its having been killed on this side of the Himalayas, so shall not include it in the 'Birds of India.' I add a brief description. The upper plumage is olive brown, the lower parts buff; it has a good deal of chesnut red on the sides and back of the neck and wings; the head is red, with white specks, and there is a black line from the forehead round the ear-coverts and throat. A belt of black-edged feathers on the upper part of the belly represents the horse-shoe marks of the English Partridge. Length 13 inches; wing 6; tail $3\frac{1}{2}$.

Perdix cinerea, the English Partridge, has eighteen tail-feathers; it chiefly affects cultivated lands, and is found over all Europe and Western Asia as far north as Siberia. It always associates in coveys, which in winter occasionally collect into packs of several coveys.

The African Partridges are very numerous. They form several groups, two of them, *Pternestes* and *Clamator*, of great size, and sometimes called Pheasants by colonists at the Cape and elsewhere. Some of these extend into Arabia, and travellers there have also called them Pheasants and Jungle-fowl. Blyth indeed is inclined to consider them 'Pheasants with Partridge tails,' but this I cannot agree to. They are mostly devoid of spurs, but some, called Francolins by Dr. A. Smith, have large and even double spurs, *Chatopus* and *Scleroptila* of modern ornithologists.

4th. Wood-partridges.

Gen. ARBORICOLA, Hodgson.

Syn. *Arborophila*, Hodgson.

Char.—Tarsus not spurred; toes long, with long claws; tail of twelve feathers, short, of rather soft texture.

The Hill-partridges or Green-partridges as they are sometimes called, occur throughout the Himalayas, but are found nowhere else in India proper. They extend into the hilly regions of Assam and the Burmese provinces, as far, at all events, as Tenasserim,

and south of this they are replaced by one or more nearly affined genera. They are of rather small size and plump form, and are the most forest-loving of the family; being only found in dense forests in mountainous districts, or in thick scrub; they live in coveys, and have a whistling call. The sexes differ slightly in plumage, in some of the species at all events.

There are two species within our limits.

824. *Arboricola torqueola*, VALENCIENNES.

Perdix, apud VALENCIENNES—BLYTH, Cat. 1510—*P. megapodia* TEMMINCK, Pl. col. 462, 463—*P. olivacea*, GRAY—HARDWICKE Ill. Ind. Zool. 1, pl. 57—*Ban titar*, and *Peura*, II. *Phokras* in some parts of the North-West Himalayas—*Kohempho*, Lepch.—*Kangkum*, Bhot.

THE BLACK-THROATED HILL-PARTRIDGE.

Descr.—Male, crown of head and ear-coverts ferruginous, passing down the sides and nape of the neck; lores and supercilia black, the latter bordered by a narrow white line; shoulders, back and rump olive with dusky lunules, deepening to black spots on the rump; wing-coverts mixed olive and chesnut, with a few large black spots; chin and throat black, the outer feathers white-margined; the neck and upper part of breast bright olive, with a circle or torque of white below the black throat; the lower breast and belly whitish; the flanks olive, broadly dashed with chesnut and with large white spots; tail olive, black-speckled, and a terminal dark bar.

Bill black; irides deep brown; legs red. Length $10\frac{1}{2}$ to 11 inches; extent 18; wing $5\frac{1}{2}$; tail $2\frac{1}{2}$; tarsus 1 $\frac{1}{2}$. Weight 8 oz.

The female has the head and neck olive with black speckles; the chin, throat, and sides of the neck light chesnut, with black marks; the neck and breast olive with a chesnut gorget; the rest as in the male.

This pretty Partridge is found throughout the Himalayas, from Simla to Darjeeling. In Sikim it is found from about 6,000 to 9,000 feet, and is often taken in winter by imitating its whistling call. The female is figured in the *Bengal Sporting Magazine* under the name of the *Phokras*.

"This handsome little Partridge," says Mountaineer, "inhabits the forests and jungles, and is never found in open spots or the cultivated fields. It is most numerous on the lower ranges, in the wooded ravines and hill sides from the summit to near the base, but does not occur at the foot of the hills or low down in the valleys. It is not so common in the interior, but met with to an elevation of about 9,000 feet. It is rather solitary in its habits, generally found in pairs, but occasionally, in autumn and winter, five or six will collect together, and keep about one spot. It is a quiet unsuspicious bird; when alarmed it utters a soft whistle, and generally creeps away through the underwood if not closely pressed, in preference to getting up. Its flight is rapid, oftener across the hill than downwards, and seldom very far, in general not more than 80 or 100 yards. Its food being much similar, it is met with in the same places as the Coklass Pheasant, and both are often found together. Indeed, in winter, in some of the forests of the interior, Argus, Moonall, Coklass, and Kalleege Pheasant, and the Hill partridge are sometimes all found within a compass of 50 or 60 yards. I have not seen the nest or eggs. It feeds on leaves, roots, maggots, seeds, and berries, in confinement it will eat grain; in a large cage or enclosure its motions are very lively, running about with great spightfulness from one part to another. It occasionally mounts into the trees, but not so often as a forest bird might be expected to do. In the forests of the interior, in spring, it is often heard calling at all hours of the day. The call is a single loud soft whistle, and may be easily imitated so as to entice the birds quite close. At other seasons it is never heard to call except when disturbed."

825. *Arboricola rufogularis*, BLYTH.

J. A. S. XVIII. 819—BLYTH, Cat. 1511—*Kohom-but-pho*, Lepch.
—*Lakom*, Bhot.

THE RUFOUS-THROATED HILL-PARTRIDGE.

Descr.—Male, as in the last species, but the black undulations on the back are generally almost obsolete; it has the red head of the last, but the throat, front, and sides of the neck are deep ferruginous, with some small black specks on the throat, and a black

torque or collar separating the ferruginous sharply from the purer ashy of the breast; an ill defined whitish streak with black specks on each side of the throat, and similar but more rufescent supercilia.

Bill black; irides red brown; orbits dull lake red; legs red. Length $10\frac{1}{2}$ to 11 inches; extent 19; wing $5\frac{1}{2}$; tail 2; tarsus $1\frac{1}{4}$.

The female has the dusky bars and undulations well developed, and the throat is more ferruginous than the female of the last, but otherwise there is little difference.

The rufous-throated Hill-partridge was discriminated by Blyth from specimens sent from Darjeeling, and we are ignorant of its range west of Sikim. It probably, however, extends into several of the hill ranges of Assam and Syllhet, for I procured it on the Khasia Hills. Its habits, voice, &c., are very similar to those of the previous species, from which it is not generally distinguished, but the natives of Sikim discriminate them, and have different names for them. The present species is found at lower altitudes than the former one, occurring chiefly from 3,000 to 6,000 feet of elevation, or rather more. Neither of these Partridges are readily obtainable by the sportsman at Darjeeling, owing to the density of the forest. Now and then dogs will put up a covey at which a chance shot may be had; but in general they can be best procured by imitating their whistle, and thus decoying them within short range of the gunner.

Arboricola atrogularis, Blyth, is very closely allied to *A. torqueola*, but differs in the male not having a chesnut head. It appears to be *P. olivacea* of Buch. Hamilton, and is found in the Tipperah Hills and Chittagong. *A. intermedia*, Blyth, occurs in Arrakan; and *A. brunneo-pectus*, Tickell, is from Tenasserim. This species has the wings strongly marked with chesnut. One species, *A. sphenura* is stated to occur in China. To the same group belong *Perdix personata*, Horsfield, and *P. javanica*, Gmelin, both from Java. *Peloperdix*, Blyth, founded on *Perdix charltoni* of Penang, is a distinct though affined form; and it appears to me that *P. punctulata*, Gray, figured in Hardwicke's Ill. Ind. Zool., is either the same bird as *P. charltoni*, or some nearly related species, perhaps *P. chloropus*, Blyth. *Caloperdix*, Blyth, founded on the *Tetrao ocellatus*, Raffles, (*Perdix ocella*, Temminck) is a very beauti-

ful species, poorly figured in Hardwicke's Illustrations. This is not unfrequently double spurred, and, says Blyth, displays unmistakeable affinities for *Polyplectron* and *Galloperdix*. It extends up the Malayan Peninsula as high as Mergui. It appears to me that *Perdix thoracica*, Temminck, supposed to be from the Philippine Islands, is more allied to this group of Wood-partridges than to true *Perdix* with which Blyth would class it. It has a larger and firmer tail than *Arboricola*, and possesses spurs, which, however, are irregular in number.

As a very anomalous form of spurless Partridges might here be placed *Rollulus* (formerly *Cryptonyx*) *coronatus*, the crowned Partridge of Malacca, extending to Mergui, remarkable for wanting the claw of the hind toe; and *R. niger*, (the female of which is *R. ferrugineus* of Gray in Hardwicke's Illustration,) the type of *Melanoperdix*, which possesses a minute hind claw. Gray places these birds in a distinct sub-family (*Rollulina*, Bonap.) in which I think he is right; indeed from their coloration, the fan-like crest, and the different colour of the sexes, they ought rather to be placed with the *Gallina* than with the Partridges. The crest is similar to that of the crowned pigeons, *Goura*, and the bare frontal plumes of *Rollulus* are only represented, elsewhere, in this family, by some of the American Partridges.

5th. Bush-quails

The dwarf Partridges or Bush-quails, belong more strictly to this sub-family than to that of the true Quails, though placed among the latter by Bonaparte.

Gen. PERDICULA, Hodgson

Bengal Sporting Review, 1837, 1 p. 344.

Char.—Bill short, thick, well curved; tarsus with a blunt tubercle; wings firm, much rounded, outer web of most of the primaries sinuated and moderately firm; tail short, of twelve feathers. Of very small size. Sexes differ in plumage.

This genus is peculiar to India proper, not being found to the east of the Bay of Bengal, nor, as far as we know, across the Indus. It is not very distantly removed from *Perdix*, and has also some more remote analogies with the American Partridges. The species are called Bush-quail by sportsmen, and are found either

in bushy ground or in thin forest jungle. Hodgson noted the firm and quasi-spinous character of the plumage of the neck and breast.

826 *Perdicula Cambayensis*, LATHAM.

Perdix, apud LATHAM—*Coturnix pentah*, SYKES, Cat. 156—HARDWICKE, Ill. Ind. Zool. 2 pl. 45 f. 3—Zool. Trans. 2 pl. 3—*C. argoondab*, apud GOULD, Birds of Asia, pt. XV., pl. 13*—JERDON, Cat. 278—BLYTH, Cat. 1517—*P. rubicola*, HODGSON—*P. rubiginosa*, VALENC? *Girza*, II.—*Girza pitta*, Tel.

THE JUNGLE BUSH-QUAIL

Male, above rich dark reddish brown, mottled with dull rufous; a long yellowish or rufous white supercilium, narrowly edged with black, and an indistinct pale line from the gape; between this and the supercilium rufous brown; the shafts of the feathers of the back of the neck and the back white; many of the feathers of the back with black markings; and the scapulars and wing-coverts richly marked on their inner webs with pale creamy white and black; primaries red-brown, with fulvous or tawny spots or bars; tail with a few black bars; beneath, the chin is rich chesnut, and the rest of the under surface white, tinged with rufescent on the lower abdomen, flanks, vent and lower tail-coverts, with numerous cross bars of black, small on the throat and sides of neck, increasing in size on the breast and abdomen, and disappearing towards the vent. Bill dusky, with reddish tinge; irides light brown; legs yellow-red. Length $6\frac{1}{2}$ inches, wing $3\frac{1}{4}$; tail $1\frac{3}{4}$; tarsus $1\frac{1}{16}$.

The female has the lower plumage rufous, with whitish shafts in some specimens, and the black markings of the upper plumage less distinct; the throat is generally darker rufous than the rest of the lower plumage. In some specimens the rufous tinge is more distinct above, and in others less so, and the brown has more of a greyish tinge. The absence of the rich rufous throat in many of Col. Sykes' specimens is probably a mark of immaturity.

This pretty little Bush-quail is extensively distributed throughout India, and is found at all levels from the sea-coast to nearly 5,000 feet of elevation. In the south of India it is chiefly found in the more wooded districts in Malabar, Mysore, on the eastern

* Except the account of its habits by Sykes and Burgess which relates to the next bird.

Ghâts, and on the various hill ranges, being rare in the low Carnatic and bare table-land. Colonel Sykes found it on the higher ranges of the western Ghâts at 4,000 feet, and it is found throughout Central India as far as the northern slopes of the Rajmahal, Monghyr and Mirzapore hills. It is not generally found on the north bank of the Ganges, but Hodgson gives it as found in the Sub-Himalayan zone; and Adams says that it is found in the valleys of the lower ranges of the Himalayas. It does not occur in Lower Bengal, that I know of, nor in any of the countries east of the Ganges, but it is said to be common in the N. W. Provinces.

I have very little doubt of its being Valenciennes' bird, although Sykes is inclined to think it distinct, but the markings, as described, are quite those of the present species and not of the next. Adams quotes it as *Perd Asiatica*, Latham, but I am inclined to apply that specific name to the red Bush-quail, which is stated by Latham to occur chiefly in the Mahratta country, whilst *cambarensis* is from Guzerat, where, as far as we know, only the present species is found. Adams, however, states that he has only seen this bird in the upper Himalayas, and not on the plains of India.

In the South of India this Bush-quail frequents open forests; thick patches of jungle, and especially grassy hill sides with a few scattered bushes: also fields near hills or jungle. Riding through some of the more open forests, especially in the upland districts; a bevy of this little bird is often seen crossing the road, or feeding on grain dropped by cattle. In the North-west Provinces, however, they appear to frequent gardens, bushes and hedge-rows in more open ground, near stations. Hodgson states them to be migratory in Nepal. A writer in the *Bengal Sporting Magazine*, vol. xi., says that "they are very abundant in the plains of upper India, indeed in some places, scarcely any other game is to be had. According to my observations they are not migratory, but pair and breed about the same time as the Rain-quail (*Coturnix coromandelicus*) in the rains. During this period, the plumage of the male is really handsome. I have seen the parent birds leading forth their young exactly as a Partridge would. A covey of them in my garden never fails me for breaking in my setters."

This bush-quail is found in coveys or bebies of from six to eight to a dozen and more, and generally all rise at once with a loud whirring noise, uttering cries of alarm, and after a short flight drop down again into the jungle.

A tolerable figure is given in the volume of the *Bengal Sporting Review* for 1836, pl. 1, f. 6, under the name of the Bush-quail.

827. *Perdicula Asiatica*, LATHAM.

Perdix, apud LATHAM, also Lauwau Partridge, LATHAM, No. 41.—GOULD, Birds of Asia, pt. XV, pl. 12, (except the account of its distribution and habits)—Coturnix argoondah, SYKES, Cat. 155, and Trans. Zool Soc. vol 2. pl 2.*—JERDON, Cat. 277—BLYTH, Cat. 1518.—*P. rubiginosa*, VALENC?—*Iowa*, II.—*Lawunka*, Tel.—*Sin-hadeh*, Tam. *i e* the red quail.

The Rock Bush-Quail.

Descr—Male, upper plumage brownish rufous, the feathers minutely freckled and lined with black and tawny; the feathers of the head and neck tipped with black, and some of the scapulars and wing-coverts with irregular black blotches, primaries dark brown with tawny bars on the outer webs; tail with the lateral feathers also barred; a narrow white line passes over the eye from the base of the bill, bordered by dusky, and another short line below this from the gape; the rest of the face, chin and throat bright rufous; the whole lower parts, including the sides of the neck, being white with numerous cross bars of black, and tinged with rufous on the flanks, lower belly and thigh coverts.

Bill dark slaty, irides brown; orbits pale; legs red. Length $6\frac{1}{2}$ inches; wing $3\frac{1}{2}$; tail $1\frac{1}{2}$; tarsus barely 1.

The female differs in having the upper surface more uniform rufous brown, and the whole of the lower parts are pale rufous, albescent on the vent; supercilia barely perceptible. Some specimens of males are more uniformly rufous than in the above description, and want the black markings. Judging from the character of the female these birds should be young males.

*NOTE.—Blyth in his Cat. looks on this as *pentah*, the former as *argoondah*, Sykes, but I think that I have correctly applied those names here.

This species differs more from the preceding one than is apparent from the description alone. It is always more rufous than the last, and wants the rich markings on the scapulars. The females are very similar to each other, but those of the present species are more uniform in their coloration than those of the last.

The Rock Bush-quail is found over most of Southern India, avoiding the Malabar Coast and forest districts generally, as well as the more highly cultivated portions. It is abundant in parts of the Carnatic and Mysore, as well as in the more barren portion of the Deccan, but does not appear to occur in the North of India at all beyond the Nerbudda, although very suitable ground for it occurs both at Mhow and Saugor. It frequents rocky hills with low scrub jungle, and especially barren uncultivated plains, scantily covered with low bushes of *Zizyphus* or *Carissa* and other thorny shrubs, out of which the bevy rises, ten or a dozen or twenty together, with a startling suddenness and bustle, dispersing more or less among the neighbouring bushes. The flesh of this Bush-quail, as well as of the last, is perfectly white, and it makes a good pie; plain roasted they are not so good as the species of *Coturnix*, being dry and with little flavour.

The *Lowa* is much used for fighting among the Mussulmans of Southern India, as indeed, the *Geerca* is also, though not so common, nor so highly esteemed. Burgess found this Bush-quail breeding from December to March, but found only four pale buff eggs. It probably lays considerably more.

The next species differs from the previous ones by its more slender and red bill, and the male wants the tarsal tubercle; but it has the rounded wings and much the same habits as the Bush-quails with which I shall continue to associate it, though as a somewhat aberrant species. Gould has separated it under the generic name of *Microperdix*.

828. *Perdicula erythrorhyncha*, SYKES.

Coturnix, apud SYKES, Cat. 117—and Zool. Trans. vol. 2, pl. 1—
JERDON, Cat. 279—BLYTH, Cat. 1525—HARDWICKE, Ill. Ind.
Zool. 2, pl. 44, f. 2—GOULD, Birds of Asia, pt. XIV. pl.
-16—*Kokni lowa*, H. of some Shikarees.

THE PAINTED BUSH-QUAIL.

Descr.—Male, forehead, lores, and crown of head black, a white frontal band, continued as a supercilium over each eye; upper plumage rich olive brown, with black lunules; scapulars, wing-coverts and secondaries with large patches of black, the shaft pale yellow, and some faint cross lines of the same; primaries brown, the outer webs barred with dark rufous; tail brown with black spots, and barred with narrow pale yellow lines; beneath, the chin is pure white, bordered by black; the rest of the lower parts are rufous, passing into olive brown on the sides of the neck, and with a few spots of black on the breast, increasing in size on the sides of the neck and breast; feathers of the flanks with large spots of deep black tipped with white

Bill and legs fine red; irides yellow brown Length $6\frac{1}{2}$ inches; wing 3, tail $1\frac{1}{2}$, tarsus 1

The female differs in having the chin, supercilium, forehead, and face rufous, in place of white, and the head is brown instead of being black

This very handsome Bush-quail has only been found on the higher lands of Southern India, extending along the crest of the Ghâts, from the Wynaad to near Poonah, at all events. I have observed it on the Neilgherries, in the Wynaad, and in Coorg; Col. Sykes recorded it from the valley of Karleh, associating with *Francolinus pictus*, and Mr W Elliot obtained it on the intervening ranges of Dharwar It is far from rare in Wynaad, and abundant on the Neilgherries, frequenting bushy ground and patches of ferns on hill sides, or in the valleys. It frequently enters gardens at Ootacamund, and may be watched from the windows, running actively about, picking up seeds and insects, and I have known many fall victims to the stealthy pounce of some domestic Cat. It lives in moderately large bevvies, which rise all together, but with less whirr than the other Bush-quails, their plumage generally being softer and not so firm.

No other species are known.

Sub-fam. COTURNICINÆ, Quails

Wings pointed, rather long; bill moderate; tarsi not spurred; of small size. Sexes differ somewhat in coloration Of univer-

sal distribution throughout the Old World, but culminating in Australia and Eastern Malayana.

The true Quails are not always kept distinct from the Partidges, but their longer and more pointed wings, great powers of flight, and migratory habits of some, together with their distribution, point them out as a separate group. They are the most widely distributed division of Rasores, being found throughout the whole old continent, as far as New Zealand. One genus is peculiar to Australia and neighbouring islands; and there are two others differing very slightly from each other which have a still wider distribution

Gen. COTURNIX, Brisson

Char.—Bill somewhat slender, straight, or slightly curved; tarsi without spurs; tail very short, rounded and soft, concealed by the upper tail-coverts; wings lengthened and pointed, the 1st and 2nd quills longest.

This genus is most numerous in species in the Southern regions of Asia; one species only, the common Quail, being found throughout the greater part of Asia, Europe and Africa.

829. *Coturnix communis*, BONATERRE.

BLYTH, Cat. 1521—*C. dactylisonans*, TEMMINCK—SYKES, Cat. 163—JERDON, Cat. 275—GOULD, Birds of Europe pl. 263—*C. indicus*, HODGSON—*Batter* or *burra batter*, H—*Ghagas batter*, H. of Falconers—*Gogari yellichu*, Tel.—*Pera kadeh*, Tam.—*Lowa*, Mahr. (according to Sykes)—The European Quail.

THE LARGE GREY QUAIL.

Descr.—Male, head brown, with pale edging to the feathers, and a central pale line; eyebrows, cheeks, and lores whitish, with the ear-coverts partially brown; the upper plumage brown, each feather of the back, scapulars, rump and tail having on one side of the pale yellow shaft a fine black patch, and some pale cross striæ; wing-coverts greyish-brown, with narrow streaks and bars of pale yellowish, black bordered; primaries dark brown, with pale rufous spots and bars on the outer webs; beneath, the chin is dull white; the throat rufous brown, with a double blackish

or brown band or collar, separated by some yellowish white, and a few blackish spots on the breast and sides of neck; the rest of the lower plumage pale rufous, deepest on the lower neck and breast, and becoming earthy on the flanks and vent; the long feathers of the flanks pale chocolate color, with a broad central yellow stripe and some black blotches.

The female chiefly differs in wanting the rufous brown patches on the throat and breast, which is much spotted with brown; she is larger than the male.

Bill horny brown; irides yellow brown; legs pale fleshy. Length $7\frac{1}{2}$ inches; extent $14\frac{1}{4}$, wing $4\frac{1}{4}$; tail nearly 2; tarsus 1. Weight $3\frac{1}{2}$ to 4 oz

The European Quail is found throughout India, in considerable numbers, during the cold weather, most migrating during the rains, and breeding elsewhere, but a few pairs remaining and breeding in various parts of the country, especially towards the West and North-west. The Grey Quail, as it is generally termed in India, generally rises singly or in pairs, but considerable numbers are found together; and, in some localities, and in certain seasons, it occurs in great profusion, and affords excellent sport to the gunner. It is found in long grass, corn-fields, stubble and fields of pulse, wandering about according as the crops ripen in different parts of the country. It is less numerous towards the south of India than further north; but in beating grass-lands for the small Florikin, many are flushed. Dogs stand very steadily to Quail, and in the cool weather excellent sport is to be had, fifty couple being not unfrequently bagged by one gun in a mornings' shooting in the North-western Provinces. In parts of Bengal, they also abound much, and I have heard of seventy-five brace being killed by two guns. I have received several authentic notices of this Quail breeding in India, among other parts of the country in Rajpootana and Bundelkund.

The female lays eight to twelve eggs, dull whitish, blotched and speckled with umber brown. Gunga, in the *Bengal Sporting Magazine*, says, that on one occasion, he found four whitish eggs, dotted and blotched with pale red. The same good observer states, with reference to the abundance or otherwise of Quail, that 'if the

country which lies between us and their breeding country be defective from bad seasons, they proceed on, and reach us in great numbers; on the contrary, if they find food nearer at hand, they stop.' Hodgson states that they reach the valley of Nepal, in greatest numbers, at the ripening of the autumn and spring crops, respectively. Quails are netted in great numbers in some parts of the country, and many are also caught in hair-nooses. The Nepalese have an ingenious way of catching Quail. They put a pair of imitation horns on their heads, and walk slowly about the stubble fields, twirling some blades of grass in their hands in a way to imitate the champing of grass by cattle, and as these birds are not alarmed by cattle, they succeed in driving any quail they see under a small net, which they then drop, and secure the bird.

Sykes, Yarrell and others have expended much learning and paper in endeavouring to show that this bird was the species that supplied food to the starving Israelites, referring to its migratory habits as a proof thereof. It will be seen on referring to page 501, that the large Pin-tailed Rock-pigeon is considered, with more probability, to have been the bird referred to by the Historian.

830. *Coturnix coromandelica*, GMELIN

Tetrao apud GMELIN—BLYTH, Cat. 1523—GOULD, Birds of Asia, pt. VI., pl. 7—*C. textilis*, TEMMINCK, Pl. col. 35—JERDON, Cat. 276—SYKES, Cat. 154—*Batter* or *batteyr*, II—*Chinna yellichu*, Tel.—*Kade*, Tam.—'Rain-quail' of some Sportsmen.

THE BLACK-BREASTED QUAIL.

Descr.—Male, upper surface closely resembles that of the Grey-quail, but somewhat brighter, and the colours more pronounced, the yellow stripes being in greater number, chin and throat pure white; two narrow cross bands of black on the throat, the upper one joined by a longitudinal stripe on each side, from the base of the lower mandible; below these, the breast is black, breaking up into black blotches on the abdomen, extending along the flanks as far as the vent; lower belly white, tinged with rufous on the flanks and lower tail-coverts; primaries plain unbarred brown.

Bill dusky; irides brownish-red; legs fleshy-yellow. Length 6 to $6\frac{1}{2}$ inches; extent 12; wing $3\frac{1}{2}$; tail $1\frac{1}{4}$; tarsus $\frac{7}{8}$. Weight $2\frac{1}{4}$ to $2\frac{3}{4}$ oz.

The female wants the black breast and cross bars, and has the neck and breast spotted with dark brown.

Young males have less of the black on the breast which is broken up into spots and blotches. During the breeding season, the black breast is more marked, the bill also is darker, and the legs redder.

This Quail bears so close a resemblance to the large Grey-quail, that many Sportsmen consider it to be the same, in spite of the difference in size, in which they are confirmed by the opinion of some natives who assert that the Rain-quail is the male bird of the Grey-quail. Looking at the upper surface of each, they certainly present a very close similarity, but the lower plumage differs much in the males, less so in females. The two birds, however, may always be distinguished by a glance at the primaries, which are unspotted brown in the present bird, barred in the Grey-quail.

The Rain-quail, as it is called by many Sportsmen, is found throughout the whole of India, rare in thickly wooded or forest districts. In many parts of the country where the grass is short and much dried up in the hot months, it is not found, or at all events, it is rare till the rains have commenced, and the young grass is springing up, when numbers appear all over the country, entering gardens and grassy compounds, and their pleasant whistle *whut-whit*, stronger in its tone than the call of the Grey-quail, may be heard at all hours. On this account it has received its popular name of 'Rain-quail.' Several writers in the *Bengal Sporting Magazine*, including Hodgson, used to consider the Coromandel and Rain-quail to be distinct; but the well-known 'Gunga' shewed that they were the same bird, and that the supposed distinction probably arose from Sportsmen considering that *Rain-quail*, so called, were never met with, except during the rains, whereas they are found at all seasons, but attract attention less in the cold weather, and indeed are then often confounded with the Grey-Quail.

Although it thus moves about, according to the seasons, from one part of the country to another, it is not strictly a migratory bird, and will occasionally be found in suitable spots where there is grass or good cover, at all seasons. It is frequently found in pairs, now and then in bevvies, which however, do not generally rise at once like the Bush-quail. Though not the special object of the sportsman's attention, several of this Quail are frequently shot, along with the large ones. Throughout considerable part of Bengal, this bird does not appear to occur, or at all events to be plentiful during the rains, and as it is the most moist and grassy part of the country, probably many of the birds that disperse over the country during the rains, find shelter and food there in the hot weather. Both this and the Grey-quail are very partial to the grains of Cheenec, a small Millet cultivated extensively in Bengal during the hot weather and rains.

This Quail lays, from six to eight eggs generally, of a creamy pink colour, with a few brownish spots, in a tuft of grass, in June and July.

The Rain-quail extends to Assam, Sylhet, and upper Burmah. I found it abundant at Thayet Myo, in May and June.

Several other true Quails are found in Australia, New Zealand, and some of the most Eastern Islands of Malayana, viz., *C. Novæ Zealandiæ*, Q. and G; *C. pectoralis*, Gould; and *C. Realleni*, S Muller. *C. lustrionica*, Hartl, is, perhaps, an *Excalfactoria*.

The genus *Synoicus*, Gould, comprises some large-sized Quails peculiar to Australia, and there termed Partridges.

Gen. EXCALFACTORIA, Bonaparte.

Char.—Very similar to *Coturnix*; wings less pointed and more rounded; 1st quill shorter than the 2nd; 3rd, 4th and 5th, graduating very slightly from the 2nd. Of small size, and rich plumage. Sexes differ much in plumage.

I should not have adopted this genus, had not Gould and other modern Ornithologists done so, for it differs but little from true *Coturnix*. It has a more limited geographic range, one species occurring in India, but none in Central or Western Asia, nor

in Africa. Several, however, are found in the Malayan islands and Australia.

831. *Excalfactoria chinensis*, LINNÆUS.

Tetrao apud LINNÆUS—GOULD, *Birds of Australia*, V, pl. 92—BLYTH, *Cat.* 1524—JERDON, *Cat.* 280—*Tet. manillensis*, GMELIN—*Cot. Philippensis*, BRISSON—*C. excalfactoria*, TEMMINCK—*C. flavipes*, BLYTH, (the female). 'Painted Quail' of some Sportsmen—Rain-quail in parts of Bengal.

THE BLUE-BREASTED QUAIL.

Descr.—Male, head and upper plumage olive-brown, with a central pale streak on the head; the feathers of the back pale-shafted, and with a black band usually on one side only of the shaft; primaries and their coverts uniform olive-brown, some of the greater secondary coverts edged with deep rufous, forming a narrow red wing band, the rest of the quills barred with black; forehead, lores, cheeks, ear-coverts, and breast, of a fine dark purple grey, chin and throat deep black, enclosing a white triangular moustachial patch from the base of the lower mandible; and below the black is a white collar commencing as a narrow line behind the ear-coverts, and curving down and increasing in width on the lower part of the throat; this is narrowly edged by black; the middle of the abdomen, vent and under tail-coverts, rich deep maronne, as are most of the tail feathers.

Bill black; irides deep brown; legs bright yellow. Length $5\frac{1}{2}$ inches; extent 9; wing 3; tail not 1; tarsus $\frac{3}{4}$. Weight $1\frac{1}{4}$ oz.

The female differs in wanting the pronounced lower plumage of the male bird; the supercilium, forehead, and throat are rufous, enclosing a dull whitish chin, the breast is brown, with dark cross bars, as are the feathers of the flanks which are much lengthened; the lower parts are whitish, tinged with earthy-brown. Length 5; extent 8.

This beautiful little Quail recalls the coloring of some of the American Quails, *Ortyginæ*, the grey and maronne tints being similarly present in one or more of that group. The upper plumage, however, is that of typical *Coturnix*. It is found in many parts of India; but generally rare, except in Bengal

and adjacent provinces, and is still more common in Assam and Burmah, where it is very abundant. Thence it extends through the islands to Australia, and it is said to be common in China and the Philippines. I have killed it once only in the Carnatic; one specimen is recorded in my Catalogue from Belgaum in Western India. It occurs occasionally in Central India, and in the Upper Provinces as far as Barcilly, but it is rare in all these localities, and perhaps only stragglers find their way so far. In lower Bengal it is tolerably abundant in damp grassy meadows, the edges of Indigo fields, and in the grass on road sides; and in Purneah, in the month of July, it was the only Quail I observed. It breeds in this month, the eggs being pale olive-green. When the young are full grown, they disperse all over the country, and this dispersion is greatly assisted, and in many parts, perhaps, caused by the heavy inundations to which great part of the country in Bengal is annually subjected, generally in August or September; and in the cold season they are replaced by the Grey-quail, and the so called Rain-quail. A female or young bird, evidently of this species, is figured in the *Bengal Sporting Magazine*, 1836, pl. 1 f. 5, the writer considering it possibly a young of *C. coromandelica*, and Hodgson as young of *C. communis*.

Other species of this pretty genus are *E. novæ guineæ*, Gmel.; *E. Adamsoni*, Verreaux; and *E. minima*, Gould, from Celebes, 'the smallest game-bird in the world.'

The American Partridges form the sub-family *Ortyginæ* of some, *Odontophorinæ*, Gray and Gould, the latter Ornithologist having published a valuable monograph of the group. They comprise several distinct forms, some crested, others not so; they are birds of a size intermediate between a Quail and a Partridge, and are found both in North and South America. One genus, *Odontophorus*, is chiefly found in South America. It has the bill short, much arched, and with two small teeth on each side of the lower mandible near its point. *Ortyx* and its near affines, *Lophortyx*, *Strophortyx*, *Dendrortyx*, are mostly from North America. They frequent fields, hedge-rows, and occasionally woods. The females are said to lay numerous eggs, from fifteen to twenty-four. Blyth remarks that *Lophortyx* appears to bear the same relationship to

Ortyx which *Caccalis* does to *Perdix*, i. e. in its mode of coloration; and the similarity of color of *Lophortyx* to *Excalfactoria* has been already alluded to.

The Guinea-fowls of Africa may either form a separate sub-family of the *Tetraonidæ*, or be considered a distinct family as they are by Bonaparte. They are birds of large size, with short tails of fourteen or sixteen feathers, grey spotted plumage, and with the skin of the head usually devoid of feathers, in other cases plumed, and the head is furnished in some with a bony casque, in others with a crest of feathers. The tarsus is not spurred. They are noisy and gregarious. Blyth considers them 'a most thorough Partridge genus'; I think them sufficiently distinct in appearance, habits, and their limited African distribution, to form a separate family. Bonaparte places the Guinea fowls near the Turkeys, in a separate group, (Cohort *Craces*), along with the *Cracidæ*, thus considering them removed both from the Pheasants (Cohort *Galli*), and the Partridges (Cohort *Perdices*). Several species are known, one of them *N. vulturina* having the feathers of the neck and breast hackled and lanceolate. Among the Guinea fowls should be placed *Agelastes meleagrides*.

Fam. TINAMIDÆ.

Bill moderate, slender, straight, or slightly curved at the tip; wings moderate or short; tail short, occasionally none, the upper tail-coverts lengthened and concealing the tail in many; tarsi unarmed; lateral toes short, hallux small and elevated, or wanting altogether; claws short and blunt.

The birds of this family, mostly peculiar to the new continent, and especially to South America, are represented in the old world and Australia by two or three genera, which have, by most systematists, been usually placed among the Quails, and were located by Cuvier next *Syrnhaptes*, from the absence of the hind toe in both. Blyth first, I believe, referred these birds to the present family.

The *Tinamidæ* differ remarkably from other *Gallinacæ* in the structure of their sternum, the inner emargination being very deep, but the outer one wanting, or rather the outermost projection of bone bounding it disappears altogether, leaving the sternum

very narrow, and with one deep notch. The furcula is very long and compressed, and its bony edge reaches the front of the sternal crest which is moderately raised. The stomach is muscular, and the intestines rather short with moderately long cæca.

The Indian members of this family may be placed in a distinct sub-family.

Sub-fam. TURNICINÆ.

Of diminutive size. Found in the old Continent and Australia. Three toes in one genus; the hind toe present in another.*

Gen. TURNIX, Vieillot.

Syn. *Ortygis*, Ill.—*Hemipodius*, Reinwardt.

Char.—Bill slender, of moderate length, straight, much compressed, slightly curved at the tip; nostrils linear; wings of moderate length, with the first quill longest in some, or the first three gently graduated; tail feeble, short, concealed by the upper coverts, of ten or twelve narrow feathers; tarsus moderate or rather long; toes moderate or rather short, separated at the base; no hind toe.

This genus is placed by Bonaparte and by Gray, in a sub-family *Turnicina* of the *Perdix*.

These diminutive game-birds may be said to have their head quarters in Australia, whence they spread into Malaya, India and Africa, one species being even found in Spain. Those whose nidification is known, lay several large eggs, dull brownish green with numerous dusky spots; Blyth says only four, like Plovers and Snipe.

Two types are discriminable, the one larger, with the plumage much mottled and barred with black beneath; the other smaller, with the plumage more or less pale or fulvous, with spots. To the latter, Gray restricts *Turnix*, applying *Ortygis* to the former, which Bonaparte distinguishes under the name of *Areoturnix*. I shall not adopt these divisions except as sections.

1st.—With the bill stronger, and the plumage of the females black-barred on the throat and breast. *Ortygis* apud Gray, *Areoturnix*, Bonap. In this section the females are larger than

* Mr. Parker's interesting paper on the anatomy of these birds reached me too late to incorporate here, but I will notice it in the Appendix.

the males, and the brightest coloured, as well as the boldest. They live chiefly in bushy jungles with grass.

832. *Turnix taigoor*, SYKES.

Hemipodius, apud SYKES, Cat. 164 (the male) and *H. pugnax*, Cat. 163 (the female)—Trans. Zool. Soc. 2, pl. (the male)—Beng. Sport. Mag. 1836, pl. 1. f. 8.—JERDON, Cat. 268 and 269—*T. ocellatus*, apud BLYTH, Cat. 1526, (rufous variety from S. India, and small variety from Bengal)—*T. rufa*, BONAP. ex. BLYTH—*T. bengalensis*, BLYTH—*Gulu* and *Gundlu*, H. in the South—*Salui gundru*, H. in the N. W. P.—*Puredi*, Tel. *i. e.* the bold one, (the female) *Koladu*, Tel, *i. e.* of no spirit, (the male)—*Kurung kadeh*, Tam. (the female), *An-kadeh* (the male)—Black quail of some Sportsmen.

THE BLACK-BREASTED BUSTARD-QUAIL.

Descr.—The female is rufous above, with transverse black lines on each feather of the back, scapulars and rump, these having also yellowish white lateral margins, internally edged with black, the crown of the head rufous with a series of black and white feathers, appearing as white spots set off with black, along the medial line; another and broader series over each eye; a third bordering the throat, which, with the middle of the foreneck to the commencement of the breast, (together with the more conspicuous feathers of the wings) is fulvous white, with tolerably broad black cross-bars; below the breast, light but bright ferruginous.

Bill dark slaty; irides pale yellow; legs plumbeous. Length about $6\frac{1}{2}$ inches; wing $3\frac{1}{2}$; tarsus $1\frac{1}{10}$; bill at front $\frac{1}{2}$. Weight $2\frac{1}{2}$ oz. or a trifle more.

The male bird differs in wanting the black on the throat and neck; the chin and throat being whitish; the markings on the head are whitish yellow without black specks; the throat and breast are faintly banded; and the whole tone of plumage is lighter and less pronounced than in the female. Length not quite 6 inches. Weight $1\frac{1}{2}$ to 2 oz.

It will be seen from the name I have adopted and the synonyms, that I do not consider this bird to be the same as the Burmese,

and (perhaps) Malayan race which also occurs within our limits, in the Himalayas, and hence I have taken Sykes' name as the one first bestowed on the peninsular race, albeit applied only to the male, as he considered the female to be *pugnax*, a Javanese bird. As thus understood, the present species may be said to inhabit the whole of Continental India including Ceylon. Specimens from different localities differ slightly. The Ceylon bird is altogether similar in the upper plumage to peninsular specimens, but rather deeper ferruginous beneath; whilst some from Bengal have a slightly darker and browner tone above, but with the whitish edgings to the feathers of the back still more pronounced and wider; whilst the ferruginous colour of the lower parts is perhaps a little paler.

The black-breasted Bustard-quail affects grassy patches in the forests and jungles; also low bushy jungle, and is frequently to be found in fields of Chili, Dhal, and various dense crops, especially if near patches of jungle; for in open and barren country, or very highly cultivated country without jungle, it is comparatively rare. Occasionally small bevs of five or six are flushed together, but in general, it is put up singly, or two or three birds together. It feeds on grain of various kinds, but also very much on small insects, larvæ of grasshoppers and the like. The female has a peculiar loud purring call which must be familiar to many.

The hen-birds are most pugnacious, especially about the breeding season, and this propensity is made use of, in the south of India, to effect their capture. For this purpose a small cage with a decoy bird is used, having a concealed spring compartment, made to fall by the snapping of a thread placed between the bars of the cage. It is set on the ground in some thick cover carefully protected. The decoy-bird begins her loud purring call which can be heard a long way off, and any females within ear-shot run rapidly to the spot, and commence fighting with the caged bird, striking at the bars. This soon breaks the thread, the spring-cover falls, ringing a small bell at the same time by which the owner, who remains concealed near at hand, is warned of a capture; and he runs up, secures his prey and sets the cage again in another locality. In this way I have known twelve

to twenty birds occasionally captured in one day, in a patch of thick bushy jungle in the Carnatic, where alone I have known this practice carried on. The birds that are caught in this way are all females, and in most cases are birds laying eggs at the time, for I have frequently known instances of some eight or ten of those captured, so far advanced in the process as to lay their eggs in the bag in which they are carried, before the bird catcher had reached my house. The eggs are said to be usually deposited under a bush in a slight well-concealed hollow; they are from five to eight in number, and of a dull stone grey or green colour, thickly spotted and freckled with dusky, very large for the bird, and very blunt. In the Carnatic this bird breeds from July to September; further south from June to August, and in Ceylon, says Layard, from February to August. The females are said by the natives to desert their eggs, and to associate together in flocks, and the males are said to be employed in hatching the eggs, but I can neither confirm nor reject this from my own observations.

This bird I presume from the description to be the Rain-quail of a writer in the *Beng. Sport. Mag.* for September 1835, who says that "the scent is good and dogs find them well in the evening."

The flesh of this bird is excellent, mixed brown and white, succulent and tasty. Col. Sykes asserts that their fighting qualities are unknown in the Deccan, as also in Java; but they are well known in the south of India; and at Hydrabad in the Deccan, Arcot, and other places, many used to be kept for that purpose by Mussulmans.

833. *Turnix ocellatus*, SCOPOLI.

Oriolus apud SCOPOLI—BLYTH, Cat. 1526, (in part)—*H. atrogularis*, EYTON, (the female)—*H. taigoor* apud EYTON, (the male)—*H. plumbipes*, HODGSON—*H. pugnax* apud GRAY—*Timokpho*, Lepch.—*Timok*, Bhot

THE HILL BUSTARD-QUAIL.

Descr.—Female, very similar in appearance to the last, but darker, less rufous and browner above, the feathers minutely mottled, and with the pale edgings to the feathers of the back and scapulars, &c., almost wanting, giving quite a different appear-

ance to the plumage; the head too is generally blacker; the black spots on the wings are rounded, and have less of the character of bars and more that of spots. In size it is larger too than the peninsular species.

Bill slaty brown; irides pale yellow; legs leaden. Length fully 7 inches; wing $3\frac{6}{10}$; tail 1; tarsus 1; bill at front $\frac{9}{16}$ ths, stronger than in *taigoor*.

The male bird differs from the female much as that of *taigoor* does, and it has the same characters of the upper plumage as the female.

This species appears to inhabit the Himalayas, Assam and Burmah, perhaps extending into Malayana. Specimens from the Khasia hills and Burmah, quite agree with Himalayan birds, but those from Malacca are still darker, the whole head being blacker, the pale lines on the top of the head and the supercilia hardly contrasting; and the black wing-spots are still rounder than in Himalayan birds, Scopoli's name of *ocellatus* being perfectly applicable to such birds, a trifle less so to Himalayan specimens, and not at all to *taigoor*. It is possible that in Malacca an allied race, *pugnax*, takes the place of the Himalayan and Burmese birds, and perhaps interbreeds with it, as very probably the present bird may with *taigoor*, where the two meet, on the confines of Bengal to the North and East. How far this bird may extend along the Himalayan range westward, I know not, as there are no records of its occurrence further West than Nepal.

The Hill Bustard-quail is found on grassy slopes on the Himalayas, in cleared spots as Tea gardens, and fields; and the female has a similar, but still louder purring call than that of *taigoor*. The female is much more commonly met with than the male. It occurs up to a level of 7000 feet, and I have seen it occasionally in grassy compounds in the station of Darjeeling. I had the egg brought me once, very similar to that of *taigoor*, but darker and a trifle larger.

Other species belonging to this section are *T. pugnax*, Temminck, from Java, possibly the same as *T. luzoniensis*, Gmel.; *T. fasciatus*, Temm., from Macassar, figured by Gould, Birds of Asia, pt. XIII., pl. 16; and *T. nigrifrons*, Cuvier, from some of the islands. Two

African species, *T. nigricollis*, Gmel., and *T. hottentotus*, Temm., probably belong to this group.

2.—With more slender bills, the plumage beneath more or less rufous with a few spots, not black-barred, restricted *Turnix* of Bonaparte and Reichenbach. Sexes alike or nearly so.

834. *Turnix Dussumierii*, TEMMINCK.

Hemipodius apud TEMMINCK, Pl. col. 454, f. 2—BLYTH, Cat 1530—*T. taneki*, BUCH. HAMILTON apud BLYTH, J. A. S. XII. 181, bis—*T. joudera*, HODGSON—figured, Beng. Sport Mag. 1838 pl. 1 f. 1.—*Pedda daba gundlu*, Tel.

THE LARGER BUTTON QUAIL.

Descr.—Crown light brown, with blackish margins to the feathers; a central stripe on the crown; the supercilia and ear-coverts light fulvescent; nape bright ferruginous; back ashy brown, tending to rufous, the feathers with dark cross bars, most marked on the lower back and rump; scapulars and some of the nearest dorsal plumes with edgings of creamy yellow; wing-coverts light sandy brown, with a small black spot near the tip which is margined with pale yellowish; quills earthy brown, the primaries narrowly edged with yellowish white; chin and upper part of throat white; the rest of the lower parts ferruginous, deepest on the breast and upper part of the abdomen.

Bill yellow; irides yellowish white; legs deep yellow Length $5\frac{1}{2}$ to 6 inches; wing $2\frac{3}{4}$; tarsus 1; bill at front $\frac{7}{16}$.

This large Button-quail (as this species and the next are named by sportsmen in India) is found in open grassy glades in forests or jungles, both on the plains, and more especially in hilly countries, and is also found in grass jungles throughout Bengal and the countries to the eastward. It occurs throughout India in suitable localities, rare in the bare Deccan and North-western Provinces, not uncommon in open glades of the upland districts of Malabar, in the Eastern Ghats and in lower Bengal. It is always seen singly, in patches of long grass or thick cultivation, flying but a short distance, and is very difficult to flush a second time.

835. **Turnix Sykesii**, A. SMITH.

BLYTH, Cat. 1531—*T. Dussumierii*, TEMM. apud SYKES, Cat. 165—and GRAY, List of Nepal birds,—and JERDON, Cat. 769—*T. variabilis*, HODGSON, Beng. Sport. Mag. 1837 p. 345?—figured in the same periodical for 1836 pl. 1 f. 7—and for 1838 pl. 1. f. 2—*Dabki*, H. of some—*Tura* of others—*Chinnaj*, H. at Muttra—*Iabbi*, H. in Purneah—*Tatu battera*, Sindh—*Chinna* (or *tella*) *daba gundlu*, Tel.

THE BUTTON-QUAIL.

Descr.—Head brown, black-barred, with a pale supercilium and central stripe; upper parts chesnut brown, each feather finely barred with black, and edged with yellowish-white, conspicuously on the scapulars and part of the back, and, on the wing-coverts so broadly as to appear entirely yellowish white with chesnut, black-edged spots; quills dusky brown; rump and upper tail-coverts dark brown, closely barred with black, and with faint whitish edges to the feathers; throat whitish, with a few blackish specks on the sides; breast pale ferruginous, with the sides of the neck and breast with dark brown drops and lunules; abdomen whitish. Bill plumbeous; irides pale yellow; legs fleshy whitish. Length 5 to 5½ inches; wing 2¾; tarsus ¾.

This Button-quail, the most diminutive game-bird of India, was first named by Dr. A. Smith, in his Zoology of South Africa, when describing a nearly allied African species *T. lepurana*. It occurs throughout the whole of India, (not however affecting hilly or forest districts,) in grass, corn fields, and wherever there is thick herbage. It is flushed with great difficulty, often getting up at your very feet, flies but a few yards, and drops down again into the grass, not to be re-flushed but after a most laborious search, and sometimes allowing itself to be caught by the hand, or by a dog. Its name of *Dabki*, signifying 'squatter,' is given from this habit. It has a low plaintive moan of a single note. I regret that I know nothing of the habits of this or the previous species as to breeding, &c.

Other species of this group are *T. andalusicus*, Gmelin, figured by Gould, Birds of Europe, pl. 264, found in Africa and the south

of Europe, which has occasionally been killed in England, and there are other African species. *T. maculosus*, Temm., (*Blanfordi* Blyth) represents *Dussumieri* in Burmah. Several species from Australia, are figured by Gould in his Birds of Australia, and some of these appear to be similar to the birds of the first section; whilst others resemble *Dussumieri*; and one or two have the coloration of the African species mentioned below

The genus *Pedionomus* of Gould, differs in possessing a hind toe, and is placed by Bonaparte among his *Cotarnicinae*, but it clearly belongs to the present family. It is the *Turnici-gralla* of O. des Murs. Only one species is known *P. torquatus*, of which *P. microurus*, Gould, is considered to be the male. *Oxytelos*, Vieillot, (*Helortyx*, Agass.) has been dedicated to some African species, the best known of which is *O. merfremi*, V., (*nevosus*, Swainson).

The *Tinamidæ* of South America live in fields, or the edges of woods; and are said to run well but to fly badly; they lay seven or eight eggs, and are seldom found in flocks. They vary from 6 inches to nearly 15 in length. One genus *Tinamotis* makes a somewhat near approach to the Bustards.

ORD. GRALLATORES.

Grallæ, L.—Waders—Shore-birds.

Lower part of the tibia bare; tarsus more or less elongated; feet of most, with the hind toe imperfect and raised, or absent; in a few long, and on the same plane as the front toes; bill very varied; tail usually short; wings lengthened

The nudity of the tibia to a greater or less extent, and the usually long legs, are the only general features characteristic of this order, which comprises a considerable number of Ground-birds of very varied appearance, habits, and structure. Many have long necks, proportional, in most cases, to the length of the legs. The bill varies from the gigantic beak of the Adjutant and *Mycteria*, to the short and slender bills of the Plovers and *Tringa*. The outer toe is usually joined to the middle one by a short web, and the inner toe occasionally; whilst in some the toes are perfectly separated. In a few the toes are bordered by a loose web. All, except those of the first family, (which cannot fly at all) and some of the Rails, fly well, and stretch their legs out behind them during flight. They frequent chiefly the edges of rivers, seas and lakes; many affect swamps, and a few dry plains or even sandy deserts. They feed mostly on fish, reptiles, molluscs, insects, &c., and a few on vegetable matter. In a large number, there is a vernal moult, and the plumage changes considerably, in many becoming more or less black, in others rufous. They comprise several very distinct groups, with anatomical differences, and of varied habits, which will be best noticed under each tribe.

They divide into two great groups, the one in which the young, as in the *Rasores*, run at once when hatched; the other in which the young are helpless at birth, and remain in the nest till near maturity, the whole forming five tribes.

A.—The young, when hatched, able to run at once.

1st, Tribe.—*Struthiones*, comprising the Ostriches, Emeus, &c.

2nd, *Pressirostres*, containing the Bustards, Plovers, and Cranes

3rd, *Longirostres*.—Snipes and Sandpipers.

4th, *Latitores* — Rails and Water-hens

B — With the young helpless at birth.

5th, *Cultirostres*. — Storks, Herons and Ibises.

Tribe—STRUTHIONES, Latham.

Brevipennes, Cuvier, — *Cursores*, Ill.

Of large size. Some with three toes, others with only two; wings undeveloped.

This tribe contains the Ostrich, Emeu, Cassowary, and *Apteryx*. They are the giants of the Bird kingdom, and by their massive form and size, as well as in certain points of structure, they approach the nearest to Mammalia, and, at the same time, may, in some respects (with Parker) be called 'unspecialized forms,' but hardly 'low and embryonic' They are divided into two families, *Struthionidæ* and *Apterygidæ*

The well known Ostrich of Africa, *Struthio camelus*, L., is the type of the former. It has the wings rudimentary, consisting of a number of large decomposed feathers, so well known as ornaments. The tail-feathers resemble those of the wings, the head and neck are almost bare, and the plumage lax, with the supplementary plume well developed. The bill resembles that of Bustards, and there are only two toes, the inner front toe being absent. The sternum is short, broad, and without a keel, the bones of the pubis unite as in Mammals, and the bones are quite destitute of air cells. The legs are very strong and muscular. They resemble Gallinaceous birds closely in their enormous crop, strong gizzard, long intestinal canal, and long cæca; and they feed on various vegetable substances, often swallowing stones and pieces of metal. They have moreover, a large sort of urinary bladder or pouch, and are the only birds that urinate. The penis of the male bird is long and often protruded. The Ostrich is polygamous, and the attendant females of one male deposit their eggs often to the number of twenty or thirty together, in the sand, where they are hatched chiefly by the heat of the sun, assisted by the male. The young, of course, run as soon as hatched. The Ostrich passes over from Africa into Arabia, and I have heard it stated that it is believed, many years ago, to have extended along the shores of the Sea, as far as Sindh.

A second species is supposed to exist, *S. epoasticus*, Bonap., from the very different egg brought occasionally. *Vide* J. A. S. XXVIII. 282.

The American Ostriches, of which two species are known, *Rhea americana*, and *R. Darwinii*, differ from the African birds in having three toes, the nails of which are nearly equal; and the head and neck are clad with feathers. The males perform the duties of incubation.

The Emeus of New Holland have also three toes. The body plumage resembles hairs, lying down on each side of the body from a central line or parting. The wings are still more rudimentary than in the Ostriches. The accessory plume of the feathers is nearly as large as the feather, so that two stems appear to arise from the same quill. They have neither casque on the head, nor naked orbits, nor caruncles. Two species are known, *Dromains novæ Hollandiæ*, and *D. ater*. The eggs are fine dark blue green.

The Cassowaries inhabit various islands in the Eastern Archipelago, and four species are now recorded. The wings consist of a few cylindrical, hard shafts, without any barbs; the claw on the inner toe is much larger than the others, and curved (as in *Grus* and other birds); the head and neck are naked, and are furnished with wattles of a bright color, generally blue and red. The body plumage is still more hair-like than that of the Emeus; the supplementary plume is very large, and there is a rudiment even of a third. The intestinal canal is short, the cæca small, and there is no proventriculus. It has been remarked that Emeus and Cassowaries resemble Bustards in their anatomy, whilst Ostriches and *Rhea* are more like Gallinaceous birds. Owen in his lectures states that Cassowaries are modified Coots, and Parker in his paper already alluded to, says that he feels certain that there is a near relationship between the Rail-tribe and the Ostriches; but that it is more philosophical to say that a Coot is a modified Cassowary. The best known species is *Casuarus galeatus* of New Guinea. The other species are *C. Bennettii*, Gould, the Mooruk; *C. uni-appendiculatus*, Blyth; and *C. australis*, Gould. The eggs of the Cassowaries are pale greenish.

The other family, *Apterygidae*, is composed of one genus only, *Apteryx*, a remarkable wingless bird from New Zealand, with a long Snipe-like bill, and the nostrils situated at the tip; short legs, and a short hind toe with a strong claw. The wings are so perfectly rudimentary that no trace of them is visible externally. The diaphragm is perfect, the stomach slightly muscular, the intestines moderately long, and there are moderately sized cæca. The feathers want the supplementary plumes. The birds are chiefly nocturnal, running rapidly, and they feed on insects. Three species are known, *A. australis*, *A. Mantelli*, and *A. Oweni*.

Fragments of some enormous birds have been discovered in New Zealand, and one of these, the *Moa*, is supposed only recently to have become extinct. The egg of one was infinitely larger than that of the Ostrich. Fossil remains of a gigantic Ostrich are found in the Sewalik range of hills.

Tribe—PRESSIROSTRES, Cuvier

Cursoræ, apud Bonaparte (in part)

Tarsi elongated, hind toe small or absent, bill moderate or short, thick, moderately depressed at the base, compressed on the sides.

This tribe, as I recognise it, comprises Bustards, Plovers, and Cranes; in all the young run from the egg. The majority feed chiefly on insects, a few on grain and vegetable diet. They may be distinguished from the next tribe, the *longirostres*, by their usually shorter and thicker bill, more robust make, average greater size; and in their habits they frequent the open dry plains more habitually than banks of rivers, shores or marshes. A few are migratory, others breed and remain here throughout the year. Several have a double moult, and the change of plumage which takes place, sometimes in the male only, in others in both sexes, is usually to black, in a few cases only to rufous. They lay but few eggs, usually four, sometimes two only, usually dark olive brown, blotched or plain. The Cranes are usually classified next the Herons, by some, indeed, in the same family, but their very different habits, the young running as soon as hatched, and the similarity of their bills, and general form to that of Bustards, all combine to remove them far from the Herons and bring them close to Bustards.

The *Pressirostres* may be distributed among the following families, all of which, except the last, are represented in India:—

1. *Otididæ*, Bustards and Floricans
2. *Cursoridæ*, Courser-plovers.
3. *Glareolidæ*, Swallow-plovers
4. *Charadriidæ*, Plovers
5. *Hæmatopodidæ*, Shore-plovers
6. *Thinocoridæ*, Game-plovers, a purely American group.
7. *Gruidæ*, Cranes

Gray, in his List of Genera, places *Thinocoridæ* among the *Rasores*, and considers the Swallow-plovers and Shore-plovers simply as sub-families of the *Charadriidæ*.

Fam. OTIDIDÆ.

Bill rather short, stout, broad at the base, somewhat compressed towards the tip; upper mandible convex and slightly curved; nostrils in a large membranous groove; legs long, rather stout; tarsi reticulated; three short toes united at the base by a small membrane; hind toe always absent; claws short and blunt; wings ample, more or less pointed, plumage mottled and game-like.

Bustards have the heavy aspect and form of Gallinaceous birds, which they also approximate somewhat in the form of their bill, and the short membrane at the base of their toes; but their more nude tibia, and their general anatomy ally them closely with the Plovers. They differ, however, from these last by their less muscular stomach, and partially polygamous habits; and they approach the Cranes and Cassowaries, and perhaps are distantly related to some of the *Thinocoridæ*, and also to the *Tinamidæ*. Their plumage is beautifully mottled, light olive brown or fulvous and black, and at the spring moult many of them assume various ornamental tufts and plumes, and more or less of a black colour, like several Plovers. Their food is chiefly insects, occasionally in dearth of this aliment, shoots of plants, grain, and vegetable matter. They lay two to five eggs, (or more it is said,) of a dark olive brown colour; and, though not strictly migratory, they wander about a

good deal in search of food and shelter. Their wings are strong and very ample, and, contrary to received notions, they use them very freely, and are capable of a tolerably strong and protracted flight. They are found throughout the Old World, extending to Australia.

The sternum has one deep fissure in some, two however in others; the stomach is capacious, with rather thin coats, the intestines are short; and the rectum large, making the nearest approach to the Ostriches. In some there is a gular membranous pouch (communicating with the mouth by a small aperture beneath the tongue), supposed by some to supply water to the female, but, as it only exists in the male bird, and as the Bustards do not appear to drink, it is more probably a sexual appendage, perhaps merely used in dilating the throat. Bustards can raise the feathers round the ears to catch any distant sound.

They vary a good deal in the length and curvature of their beaks, and in the length of the tarsus, as well as in the character of the plumage, and the changes they undergo; and they have been divided into several genera. India possesses representatives of three groups.

Gen. *EUPODOTIS*, Lesson

Char—Bill long, pointed nearly straight, legs long and strong; wings lengthened and very ample; male provided with a pouch; sexes alike in plumage or nearly so, but the female about a third smaller, no spring moult. Of very large size.

This genus contains some of the largest species in the family, and is found in India, China, Africa and Australia. They frequent bare open plains, as well as high grass and corn fields, and live entirely, or nearly so, on insect food chiefly large grasshoppers.

836. *Eupodotis Edwardsii*, GRAY.

Otis apud GRAY—HARDWICKE, Ill. Ind. Zool. 1, pl. 59—BLYTH, Cat. 1539—*O. nigriceps*, VIGORS—GOULD, Cent. Him. Birds, pl. 72—SYKES, Cat. 166—JERDON, Cat. 281—*O. lucionensis*, VIEILLOT? Tokdar, H.—Sohun, and Gugunbher in the North-western Provinces—Gurayin in Hurriana—Burra chirath in some parts—Batt-meka, or Bat myaka, Tel.