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AND

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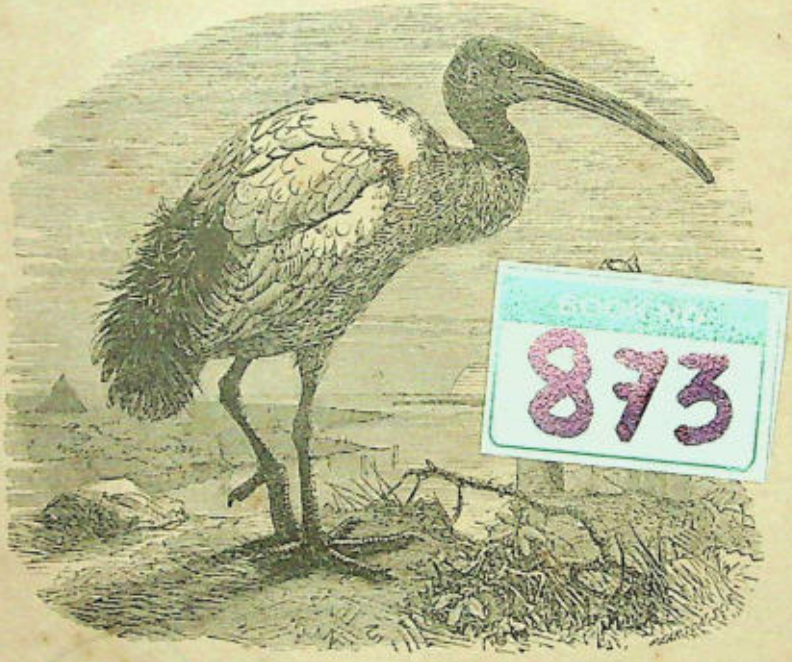

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PREFACE.

The present volume completes the Fourth Series of 'The Ibis' and the twenty-fourth of the whole work, and brings about a change in the Editorship of this Journal, such as has usually taken place at the close of each series.

As arranged at the last Meeting of the Members of the British Ornithologists' Union, held in May last, Mr. Salvin now retires from the position he has held for the last twelve years, and the Fifth Series will be commenced in January next under the Editorship of Mr. Sclater and Mr. Howard Saunders.

With the roll of the Union steadily increasing in length, and the yearly volumes of 'The Ibis' growing in bulk, we may confidently look forward to a prosperous future for our undertaking and for our favourite science.

O. S.

P. L. S.

British Ornithologists' Union,
6 Tenterden Street, London, W.
December, 1882.

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CORRIGENDA.

Page	Line	
4,	10,	for ROUROUL read ROULROUL.
71,	1,	for TACHYPEDES read TACHYPETES.
94,	27,	for *cristatus* read *cristata*.
98,	31,	for JUGGER read JUGGUR.
210,	1,	for PERSICA read PERSICUS.
252,	24,	for PŒNA read PAENA.
268,	15,	for *aurita* read *auritus*.
272,	21,	for TROCALOPTERON read TROCHALOPTERUM.
281,	16,	for *Trocalopteron* read *Trochalopterum*.
298,	38,	for *Heirofalco* read *Hierofalco*.
358,	11,	for CITHAGRA read CRITHAGRA.
381,	15,	for ARENARIUS read ARENARIA.
,,	24,	for SUBARCUATA read SUBARQUATA.
392,	24,	for *melanotus* read *melanonotus*.
425,	3,	for ARENARIA read ARENARIUS.
462,	8,	for *Nyctocorax* read *Nycticorax*.
466,	13,	for *Oidemia* read *Œdemia*.

THE IBIS.

FOURTH SERIES.

No. XXI. JANUARY 1882.

I.—*Ornithological Notes made in the Straits Settlements and in the Western States of the Malay Peninsula.* By Lieut. H. R. Kelham, 74th Highlanders.

[Continued from 'The Ibis' for 1881, p. 532.]

Gallus ferrugineus, Gm. The Jungle-fowl.

The common Jungle-fowl, the "Ayam-utan" of the Malays, is exceedingly plentiful throughout the native states; but I never met with it on the island of Singapore, and it is not common, if, indeed, found at all on Pulo Penang.

Whether or not the Malay species, Temminck's *G. bankiva*, is really distinct from the Indian, it is hard to say; but if it is distinct, both kinds are certainly found in the Malay countries; for while stationed in Perak I shot, out of the same tract of jungle, unmistakable specimens of *G. ferrugineus*, with the rich golden hackles and white ear-patches, also birds of far darker, in one case almost black, plumage. But the wild Jungle-fowl interbreed so much with domestic roosters from the villages, that I cannot help thinking these dark-coloured birds to be the results of such intercourse particularly as many of them, though very unlike the typical

G. ferrugineus, are not like one another, varying much in the intensity of their colouring.

In Perak I found Jungle-fowl breeding from March to July; and the young, when three or four weeks old, were capital eating—far better than the full-grown bird, which has but little more game flavour than the ordinary domestic fowl.

At the first glimmer of daylight, and again towards evening, the Jungle-cocks may be heard in all directions, crowing loudly, and by very careful stalking may occasionally be got at; but I found far the most successful plan was, either early in the morning, or else about sunset, to sneak quietly along the edges of clearings and patches of cultivation, which at those times the Jungle-fowl frequent in search of food; and in this way, by dodging from bush to bush, I frequently rendered a good account of them. But it required the most careful stalking, as on the slightest alarm the birds ran into the thick jungle, where it was almost useless to follow them. Once or twice I shot them in thick cover by letting my dog hunt them up into the trees, which they did not leave till I was within range.

In Province Wellesley the Malays decoy Jungle-fowl by imitating the crowing and flapping of the wings of the cock, when the birds coming to accept the supposed challenge are shot.

The following are descriptions of birds I shot near Kwala Kangsar, Perak:—The cock, though in magnificent plumage, wanted the white ear-coverts; he was about 22 inches in length, tarsus 3 inches; irides orange; head and neck covered with long golden hackles, darkest on the head and nape; the back and long upper tail-coverts rich chestnut, the latter of a golden hue; primary and secondary wing-coverts black, glossed with metallic shades of purple and green; lesser coverts rich maroon; wing-quills dusky, with rufous margins to the outer webs; tail black, glossed with green; underparts dull black, with some of the feathers edged with brown.

The hen is of much plainer plumage. Upper parts brown, minutely freckled with a paler and more rufous shade of the

same colour, with some of the feathers pale-shafted; the hackles are black, short, and edged with yellow; underparts pale rufous-brown; the feathers of the breast pale-shafted; length of bird about 15 inches.

GALLUS VARIUS, Shaw.

In the Botanical Gardens at Singapore there was a specimen of this handsome Jungle-fowl; but probably it had been imported.

EXCALFACTORIA CHINENSIS (Linn.). The Blue-breasted Quail.

This tiny but most beautifully marked Quail swarms throughout the Malay States, being found in almost every dry paddy-field or tract of scrub and grass-covered ground. It is difficult to flush, not rising until almost trodden on; then, after skimming over the grass with a Partridge-like flight for fifty or sixty yards, it drops like a stone, and is hard to put up again, even with a dog.

The sudden way in which they drop to the ground frequently deceives the inexperienced sportsman, who, thinking he has made a successful shot, hurries to where the bird apparently fell, and makes a long and fruitless search, while the object of his pursuit is running as hard as it can lay legs to the ground to a distant part of the field.

They are very good eating, but so small as to be scarcely worth a charge of shot; and after being a few weeks in the country, and ceasing to look on them as a novelty, one seldom fires at them, confining one's attention to larger game, in the shape of Snipe, Plover, &c.

The sexes are very unlike in plumage, the male being by far the more handsome and brightly-coloured bird. One shot near Saiyong, Perak, on 24th April, was 5¼ inches long; irides deep crimson; legs bright orange; beak black; head and upper parts brown; feathers of the back pale-shafted, and banded, mostly on one web only, with black; wings pale brown, some of the coverts edged with rufous and bluish grey; forehead, cheeks, sides of neck, and breast bright bluish grey; moustache-streak and broad crescentic mark

on throat pure white, bordered by a deep black line; chin and throat black; abdomen ruddy chestnut. The female is not nearly so boldly marked: one shot at Singapore on 7th November measured 5¼ inches in length, tarsus ¾ inch; legs orange; irides red-brown; supercilium, throat, and forehead rufous brown; chin dull white; breast dingy brown, with narrow black cross bars; feathers of flanks much lengthened; the white and black markings of the throat, also the chestnut abdomen of the male, were wanting.

Rollulus rouroul (Scop.). The Crested Partridge.

Though not rare, this bird is seldom seen, being very shy, and on the approach of danger trusting to its legs rather than taking flight. All my specimens were snared in the neighbourhood of Kwala Kangsar.

Captain Wardlaw-Ramsay tells me he found it plentiful round Mount Ophir; and I saw several skins in Malaccan collections. These birds thrive well in confinement, but are not easily tamed: some which were in my aviary for several months were always wild, hiding directly any one appeared in sight; but early in the morning, when all was quiet, and they thought they were not observed, they used to come out of their hiding-places and feed on rice and Indian corn.

The male is very handsome, with a crest of red plumes on its head; the female is without the crest, and of much duller colours than her mate.

Rhizothera longirostris, Temm.

While stationed at Kwala Kangsar, Perak, a Malay brought me one of these curious Pheasant-like birds, which he had snared, and I put it in my aviary; but it only lived a few weeks.

I also saw a couple in confinement, at Singpore, in Mr. Whampoa's garden; but he could not tell me any thing about them, not even where they came from. They were about the size of a domestic hen, wings and tail short, legs whitish, tarsus spurred, irides dark brown, beak black; sharp, and very much curved; plumage rich brown, mottled and spotted with a darker shade of the same colour; at the base of the

neck and on each side of it was a greyish-blue patch; feet and claws very large and powerful.

To a casual observer these birds look like the hens of some species of Pheasant. They are known among the Malays by the name of "Burang salantung."

Turnix plumbipes, Temm. The Black-breasted Bustard-Quail.

For some time I put down this Bustard-Quail as Sykes's *T. taigoor*; but apparently it is distinct from that species.

It is very plentiful throughout Western Malayana; but I rarely found more than two or three together; in fact, I generally flushed them singly, and, as a rule, on ground covered with scrub or long grass. Like all the Quails, they are very difficult to put up, trusting to their legs more than their wings.

In my note-book I have written as follows:—

"Kwala Kangsar, Perak, 8th June, 1877. Today I shot a female specimen of the Malayan *Turnix*, almost identical with *T. taigoor* of Sykes: my bird measures 6¼ inches; irides yellowish white; bill and legs bluish lead-colour; it has but three toes; throat and upper part of breast black; underparts and the wings rufous brown, barred on the wings and lower part of the breast with black; head and neck freckled with black and white spots; claws white; weight slightly over 2 oz.

"When walking through the jungle I often flush these Quail. Small open patches appear to be their favourite resorts; and I very seldom find them in the paddy-fields, where the little *Excalfactoria chinensis* swarms."

Among the "lalang" grass round the barracks at Singapore, Bustard-Quail were very common, breeding during May, June, and July.

On 1st July I found a brood of five young ones running about with their mother among the flower-beds in the Botanical Gardens, and on 24th August disturbed a family of them in the long grass close outside our mess; they could not fly more than a few yards at a time, so were easily caught.

One I carefully examined, though fully feathered, could

scarcely fly at all, but ran at a great pace, and showed much cleverness in hiding itself by crouching flat on the ground, taking advantage of any hole or depression; its irides were straw-colour, like those of the adult.

I used to see the Malays in Perak employ these birds as decoys to catch others of their kind, much in the same way as Dr. Jerdon in his 'Birds of India' describes it as being done by the natives in the south of India.

The decoy, usually a hen bird, is enclosed in a small wicker cage, having an arrangement by which, on the breaking of a thread which is stretched across the bars, a net springs over the front of the cage. This contrivance is placed in a likely spot in the jungle; and the wild Quails, attracted by the "calling" of the decoy, try to get at it, and, fluttering against the outside of the bars, break the thread, set free the spring-net, and are caught.

Dr. Jerdon says that in India all the birds thus caught are hens, as are the decoys: unfortunately I neglected to see if such was the case in Perak; but if so, it conclusively proves that it is not sexual desire, but their pugnacity, that is so fatal to them. The female is the larger and by far the more handsome bird of the two—the male wanting the deep-black throat and upper breast, and being altogether less boldly marked.

Glareola orientalis, Blyth.

The Swallow-Plover is very common during the seasons of migration, arriving at the same time as the Golden Plover, *Charadrius fulvus*; but I never met with it at other times of the year. During March, and again in September and October, great numbers pass over the island of Singapore; but they are then so tame that it is poor sport shooting them: often they squatted so closely that I walked within a few yards before they would rise; then they frequently settled again after flying a short distance. Perhaps this extraordinary tameness was owing to the fatigue occasioned by migrating. I noticed that they were generally found in large flocks on cultivated ground, and were particularly fond of ploughed land, more especially if it was on a hillside.

The vernal migration takes place early in the year; in my note-book is the following passage :—

"Kwala Kangsar, Perak, 22nd February, 1877. This afternoon I paddled down the Perak river in a canoe to Campong Saiyong, accompanied by H——, on our way getting a Golden Plover out of a pair which were sitting on a sand-bank in the middle of the river.

"A little further on, on another sand-bank, we saw an enormous flock of birds, which every now and then rose with shrill cries, and after flying a few yards settled again, squatting flat on the sand. Not knowing what they were, we stalked them, and bagged six, losing three more, which fell into the river and were swept away.

"At first I took them to be the European Pratincole, but now see, as stated by Jerdon, that they differ from that species in having the tail less forked; they must be migrating, as on no former occasion have I seen any here; and their being in such numbers, and so easily approached, makes it still more probable that they are on passage. When fired at the big flock broke up into small parties of from ten to twenty; but after a short time they all returned to the sand-banks. While on the wing, flying close over the surface of the water, the most noticeable points about them were their Swallow-like wings and white rumps."

In plumage the sexes are alike; but immature birds which I shot in Singapore during September were not nearly so decidedly marked as the adults, moreover they were much mottled and freckled with brown. The pectinated middle claw, large eye, wide gape, their flight, and the way they crouch flat on the ground, all seem to point to a relationship between these birds and the Caprimulgidæ.

SQUATAROLA HELVETICA (Gm.). The Grey Plover.

Identical with the European species. The Grey Plover is common among the islands and along the coasts of the peninsula from October to March, but appears to breed further north. On 13th April 1879, I had over a dozen brought to me, which had just been caught on the coast a few miles

south of Malacca; and of these one showed considerable signs of the breeding-plumage, its breast being much blotched with black. During October, November, and December some may always be shot on the shores of Pulo Oobin, Pulo Nongsa, and the other rock-girt islands near Singapore; a female which I shot off Pulo Oobin was sitting on an isolated rock in company with a large flock of Ringed Plover (*Ægialitis geoffroyi*).

Charadrius fulvus, Gm.

The Eastern Golden Plover is very plentiful during the north-east monsoon, but goes north in April to breed, returning again to the south of the peninsula towards the end of September. In Perak, during January and February, I found them in large flocks on the edges of all the jheels, particularly those in the neighbourhood of Kota Lama, Saiyong, and Sengan; but they got scarcer in March. The 8th April was the latest date on which I shot one, which, in company with another, was sitting on a sand-bank in the middle of the Perak river; it had almost fully assumed the black breast of the breeding-season. In 1879, while stationed at Singapore, as late as 13th April a Malay fisherman brought me a large cage full of Terns and shore-birds, which he had netted on the sands near the mouth of the Moar river; and among them were several Golden Plovers, all in various stages of the breeding-plumage; so probably they nest somewhere towards the north of the peninsula, though in Singapore and the south they are most certainly migratory.

In Singapore, though no very large bags were to be made, they often, during October, afforded me a capital afternoon's sport. In the neighbourhood of Tanglin the best places for them were the Chinamen's gardens and the cultivated hills near Cluny; but there was also good ground near Changie, at Galang, and on the Trafalgar estate.

When shot at some distance inland they are very good eating; but a coast diet spoils them for the table: some I shot on the sea-shore at Panaga, in Province Wellesley, were quite uneatable, having a strong, fishy, decayed-seaweed kind of flavour.

In my notes are many references to this species, among them the following:—

"Tanglin, Singapore, 2nd October. Early this morning three Golden Plovers were running about our lawn-tennis ground, close to the public road; they were very tame, allowing me within a few yards before they rose, and even then flying but a short distance. In the evening, at dusk, while several of us were playing tennis, laughing and talking, a Golden Plover circled round two or three times, then settled on the ground in our midst. I never saw one so tame, but believe it was migrating, and so tired as to be regardless of danger and glad to rest anywhere."

ÆGIALITIS GEOFFROYI (Wagl.). The Sand-Plover.

Found in great numbers on the coasts of the peninsula during the north-east monsoon. Towards the end of November 1879 I found enormous flocks of them at low tide on the shore of Pulo Battam; they were then all in the brown-and-white winter plumage. One, which I shot out of a flock of Charadriinæ which rose from a rock in mid channel between Pulo Oobin and Singapore, was $8\frac{3}{4}$ inches in length; irides dark brown; beak at front $\frac{19}{20}$ inch; legs black; tarsus $1\frac{5}{6}$ inch; upper parts and streak below the eye dull brown; forehead, tip of tail, and the underparts white: date 10th January.

The summer plumage is very different from that of the winter-time. In my note-book I find the following notes concerning two specimens obtained alive from the Malaccan coast on 13th April 1879:—

"The two Sand-Plovers which were brought to me today differ much in appearance; both are *Æ. geoffroyi*. My identification has been confirmed by Mr. Davison; so there can be no mistake; but they are certainly very unlike one another, one being in the ordinary brown-and-white winter plumage, the other, a female, in the rufous colours of the breeding-season. This last, Mr. Davison tells me, is the only specimen in summer plumage that he has ever seen in these parts. The following is an accurate description of it:—

"Length $8\frac{1}{2}$ inches, bill at front 1, tarsus $1\frac{1}{2}$; bill black;

irides dark brown; forehead, lores, ear-coverts, and streak below eyes black; spot on each side of forehead, the chin, throat, abdomen, margins of inner webs of the primaries, white; upper parts hair-brown, tinged with rufous, particularly on the head and neck; a broad band round the upper part of the breast bright rufous."

ÆGIALITIS MONGOLICA (Pall.).

Frequents the coasts during the north-east monsoon. On 23rd November I shot one out of a flock on the shores of Pulo Battam, near Singapore. Length barely 8 inches, tarsus $1\frac{4}{10}$, beak at front $\frac{3}{4}$; upper parts dull brown, tinged, particularly on the wing-coverts, with rufous; the forehead and under-parts white, with a rufous tinge, deepest on the breast. It is rather like, but smaller than, *Æ. geoffroyi*.

ÆGIALITIS DUBIA (Scop.).

On 23rd November, 1879, I shot a specimen of this small Ringed Plover out of a party of five on the sandy strand bordering Pulo Battam. At first I thought it was *Æ. minuta*; but that bird has the basal half of the beak yellow, while in this the whole of it is black.

I shot another during November on the parade-ground at Tanglin, Singapore.

LOBIVANELLUS ATRONUCHALIS, Blyth.

The Red-wattled Lapwing is common in Perak, and Larut, frequenting the edges of jheels and the swampy valleys in the jungle. I never found a nest; but they probably breed in the peninsula, as I saw a pair near Kwala Kangsar, Perak, as late as the first week in May. Earlier in the year I shot several in the neighbourhood of that place, also some few at a jheel near Sengan, lower down the river.

In my notes is the following passage:—

"Singapore, 21st November, 1879. This afternoon I shot a few Snipe and Plover in the swampy valley behind our barracks, also put up two Red-wattled Lapwing, one of which I shot. It is exactly like those I used so often to get in Perak; but here it is a rather rare bird, and one seldom hears its plaintive cry, so well rendered in Dr. Jerdon's work by

the words 'Did he do it! Pity to do it.' A male, shot at Saiyong, Perak, on 13th April, measured about 12½ inches in length, tarsus 3; beak red, black at its tip; orbits and wattles red; irides red-brown; legs yellow; head, neck, and breast deep black; ear-coverts, streak down each side of neck, band across upper part of the back, abdomen, and the tail white, the last broadly barred with black; upper parts and wing-coverts dull brown, glossed with metallic shades of purple and green; greater coverts broadly tipped with white; wing-quills black; the shoulder furnished with a short blunt spur; hind toe very minute. Its stomach contained vegetable matter and particles of quartz."

STREPSILAS INTERPRES, Linn. The Turnstone.

About the middle of April 1877 a Malay brought me a cage of eighteen or twenty Turnstones, which he said he had netted on the sands near the mouth of the Moar river; they were in most beautiful plumage.

I saw large flocks of Turnstones scuttling about at the water's edge on the beach at Pulo Nongsa during September, and shot one or two of them.

GALLINAGO STENURA (Temm.). The Pintail Snipe.

Although the European Snipe (*G. scolopacina*) is occasionally found, the one commonly met with in the Malay States is the Pintail Snipe (*G. stenura*), dozens (I think I may almost say hundreds) of it being obtained for one of the former. But in general appearance the two species are so alike that any body not a naturalist, nor of a very inquiring nature, may easily shoot throughout a whole season in that land of the longbills, Province Wellesley, without knowing that his spoil differs in the least from the well-known Snipe of the British Isles.

But if, while resting from his labours after a few hours' plodding through mud and water under the blazing sun of those parts, he will turn out his well-filled bag and carefully examine its contents, it will be found that, with hardly an exception, the birds are "Pintails."

The tail, instead of being of soft rounded feathers, as is

the case with the English bird, has eight rigid pin-like feathers on either side, though I have seen specimens in which these stiff feathers were but seven in number. This is the most marked characteristic of the species, and at once determines the identity of a specimen; but the Pintail also has the axillary plumes more richly barred than its European brother—though, unless one had some of each kind laid side by side for comparison, the differences between the two species would probably pass unobserved.

It is only at a certain season that Snipe abound in the Malay peninsula: from May to July, both months inclusive, it is hard to find a single bird; but about the middle or end of August they begin to arrive in Province Wellesley and Pulo Penang, extending to Malacca and the extreme south of the peninsula, including Singapore, ten days or a fortnight later, though they are not found in great numbers in any of these places until later in September.

However, it is impossible to lay down a hard and fast rule, as the migration is much influenced by the weather; but it may safely be said that the great body of the Snipe do not come south until the commencement of the wet and stormy period which proclaims the breaking-up of the south-west monsoon.

Towards the end of April they return north to their breeding-grounds; and I doubt if any remain to nest in the peninsula, though in Perak I have shot a few stragglers as late as the second week in May.

With reference to the habits of the Pintail, my experience is that, as a rule, they are not found in any number in the paddy-fields—that is to say, when the crops stand high; and though I once, at Panaga, on November 6, 1877, in about three hours, bagged twenty-five couple on paddy-land, still it was the only occasion I am able to record; and then, I believe, their presence was due to the paddy being scattered about in patches and much mixed up with reeds and coarse herbage.

Their favourite ground is where the jungle has been burned, and the vegetation, just beginning to spring up, shows in green shoots above the blackened soil. Another sure finding-

place is rough land, with bushes, small pools of water, and moist places scattered here and there; but everywhere it will be found that during the intense heat of the day the Snipe avoid the open country, and seek shelter from the sun under thick bushes, or in the shade of high jungle. They then lie very close, and when flushed rise with a listless flight, not unfrequently settling again after flying eighty or a hundred yards; but of course this is not the case in districts where they are much shot at and disturbed.

Though undoubtedly, as a rule, the Malay Snipe are not so wild nor so active on the wing as is the European species, still they afford excellent sport, and are by no means easy to shoot, particularly during the early morning, when, revived by the cool night air, they dart and twist along at a great pace; also among bushes it requires very quick and straight shooting to make any thing of a bag.

As soon as the sun gets low they leave the covert and scatter themselves all over the country in search of food; often on moonlight nights, when out in the jungle after pig, on crossing open pieces of ground where, during the day, not a bird could be found, I have heard Snipe rise, squeaking on all sides. One most keen sportsman of my acquaintance sallied forth on one of these very bright nights; but, though the Snipe swarmed, he returned without having done more than frighten them,—not to be wondered at, considering how deceptive is the light of even the most brilliant tropical moon.

During droughts, when the ground is parched and cracked by the heat, the Snipes probe the buffalo-dung, perforating the heaps with thousands of small holes in their search after the worms which collect beneath.

I think that there can be little doubt that Province Wellesley, opposite the island of Penang, is by far the best Snipe-ground in the peninsula, probably owing to its being extremely flat, well watered, cleared of jungle, and perhaps to its being very near the limit of the migration south. To a very great extent it is covered with paddy-fields; and on the rough uncultivated land bordering these the Snipe are extremely plentiful, enormous numbers often being shot in a day. One

morning early in November 1877 I bagged thirty-five couple by midday, and had quite as good sport on other occasions; but during the season of 1879, which was an exceptionally good one, the birds simply swarming, far larger bags were made, an officer of my regiment having bagged fifty-six couple to his own gun on one day, and fifty-four on another. But this represents good shooting; for it must not be imagined that the birds can be knocked down with a stick. Far from it, anything over twenty couple means really straight shooting and hard work, as the walking is bad and the heat intense.

A good retriever is very useful; but few dogs can stand the sun for any length of time. I used to keep mine closely clipped, except his head and a broad stripe down his back, which proved a great protection to his spine; but in spite of all precautions, after a time, he got altogether out of condition. Without a dog birds are often lost, particularly on bushy ground, though the Malay boys, sharp little urchins, with more intelligence than clothes, who follow and carry one's cartridges, are generally very good at marking down the dead and wounded; still a dog is preferable to the best of human retrievers.

Near Taiping, in the native state of Larut, I was once one of a party who attempted to shoot Snipe from elephants; but I cannot advise any one to go and do likewise, at least if their dinner depends on what they kill. It happened thus. We had been all day in the jungle after a rogue elephant, which had done considerable mischief; but he proved two much for us, and got safely away to the hills without giving any one the slightest chance of a shot, though at one time we were close to him. In the afternoon, on our way home, we had to pass near a celebrated Snipe-ground of considerable extent, swampy, and much overgrown with low bushes. "Let's try and shoot some Snipe from our elephants' backs!" exclaimed one of our number. The novelty of the thing pleased all; so off we started; and a queer sight it was. Five elephants advanced in line, about a hundred yards apart, each carrying two guns; while in the intervals, but a little in the rear, came several Sikhs of the military police of the district, fine

tall fellows in scarlet turbans. These followed us, nominally to pick up the spoil; but, unless it takes five men to carry one Snipe, their labours were light. The Snipe were very plentiful, and for half an hour there was a tremendous banging; but I need hardly say that the result was almost nil. Personally I expended quite thirty or forty cartridges for two Snipe and a green Pigeon; all together I do not believe the ten of us averaged a bird apiece. But it was not to be wondered at; for as "scaipe! scaipe!" resounded and up went one's gun, the elephant would make a tremendous plunge, and one's shot went anywhere but towards the object aimed at; often, I expect, much nearer the head of our mahout, or some of our Sikh followers, than was at all pleasant for them. I know it would have taken a good deal to induce me to change places with the mahout, perched as he was on the neck of the elephant, with my companion and myself slung in baskets on either side of the great lumbering brute, and firing away as hard as we could. As we sat sideways in a small cane basket, with our legs dangling over the side, straight shooting was almost an impossibility; for, to say nothing of the jolting of our animal, I, on the off-side, could fire only at birds rising to my left front, and then in a very cramped position; and the man on the near side had similar difficulties to contend with. Between these two firing-points squatted the unfortunate mahout: he never made any remark, except to his charge; but I expect he offered up a prayer of thanksgiving to Mahomet when the whole performance was over and he found his head still on his shoulders.

Rhynchæa bengalensis (Linn.).

The Painted Snipe, as it is called, though not really belonging to the true Snipes, is a bird frequently met with by the sportsman in Malayana.

The Painted Snipe *may* be a resident and breed in the Malay peninsula, as is the case in India, though my experience inclines me to think it migratory. In any case, if not a true migrant, it certainly moves about the country, only

appearing in certain districts at particular seasons. I never heard of it nesting in the peninsula, and never even saw it except during the north-east monsoon, when it is fairly plentiful, frequenting the same ground as the common Pintail. I have shot Painted Snipes in the north of Perak during the months of January, February, and March, and found them in considerable numbers further south during October.

Out of a bag of twenty couple of Snipe shot in province Wellesley on November 9, more than half were of the Painted species. They seem to collect in small parties; for when one is flushed two or three more are generally to be found somewhere near; but they rise with a heavy Owl-like flap, as a rule settling again within forty or fifty yards. Thus offering an easy mark, and being moreover poor eating, they are scarcely worth shooting.

The chief characteristics of the Painted Snipe are the beautiful ocellated plumage and the Curlew-like bill, curved downwards at the tip, also shorter than that of the common Snipe. The female, with the handsome chestnut throat, is larger and more brightly-coloured than the male..

Gallinago scolopacina, Bp.

Compared with the Pintail species, the common European Snipe is rare in the Malay States.

Limosa ægocephala (Linn.).

Personally I did not meet with this Godwit; but Mr. Davison showed me a specimen caught with birdlime, at the same time as two Whimbrel, on the rocks off Changhie, on the north coast of Singapore.

Numenius arquata (Linn.). The Curlew.

Plentiful along the coasts during the north-east monsoon. I shot a few off Changhie and among the islands in the Johore Straits, but found them just as well able to take care of themselves, and just as hard to get at, as in cooler climes.

Referring to a visit I made during November to Pulo Nongsa, a small island off the south coast of Singapore, in my note-book is :—

"The tide being very low, a broad belt of coral-reef sur-

rounded the island, affording feeding-grounds to hundreds of shore-birds of all kinds; so we landed, or rather waded ashore, in hopes of getting at the Curlew and Plover, of which we saw a great many; but, as usual, the former were exceedingly wary, and, without giving us the ghost of a chance, made off to a distant sandbank, loudly uttering their shrill cries, as if to deride the unsuccessful sportsman and warn all other birds of his approach."

Numenius phæopus (Linn.). The Whimbrel.

Flocks of Whimbrel frequent the coasts during the north-east monsoon. In my notes I find:—

"Singapore, 26th November, 1879. The other day, while shooting Pigeons on Pulo Battam, we put up a large flock of Whimbrel from the belt of mangroves bordering the shore, but did not get a chance at them; but next day Mr. D—— bagged eight in two shots."

Tringa minuta, Leisl. The Little Stint.

I shot one of these Stints on Pulo Battam, near Singapore, on 25th November 1879; it was a male in winter plumage, length about 6½ inches; head and the upper parts whitish brown, the feathers dark-shafted; the two central tail-feathers dark brown, the others dusky, all narrowly edged with white; the underparts white, dusky on the breast; bill at front ¾ inch, tarsus ¾.

Totanus glareola (Linn.). The Spotted Sandpiper.

This Sandpiper is by no means a rare bird; I shot several in Perak and in Singapore. A female, killed at Kota Lama, Perak, on 19th April 1877, measured 9 inches, tarsus 1½, beak at front 1¼; legs dull green; irides dark brown; head, upper parts, and the wings dull brown, spotted with grey; a dusky streak passes from the base of the upper mandible to the eye; supercilium and underparts white, dusky on the breast and much streaked with brown; the upper tail-coverts pure white; tail barred with dark brown. A specimen shot in Singapore during November was less distinctly spotted than the above.

In my notes I find :—

"Singapore, 18th November, 1879. This afternoon, while Snipe-shooting in the Mount-Echo valley, close behind our barracks, I came on a large flock of Spotted Sandpipers (*T. glareola*) feeding in the swampy fields, which are awful walking, letting one through at every step over one's knees into soft filth. The Sandpipers were rather wild, rising with shrill cries as soon as I got within forty or fifty yards, but settling again after flying round and round for a few minutes. Feeding with them were a great many Yellow Wagtails (*Budytes taivanus*); and I got several specimens of both them and the Sandpipers at one shot."

Tringoides hypoleucos (Linn.).

The common Sandpiper is plentiful in Singapore and the neighbouring isles; during November 1879 I found great numbers of them on the shores of Pulo Nongsa and Pulo Battam, and on many occasions saw them settle on the fishing-stakes, which stand five or six feet above the surface of the water. In China I once saw a Sandpiper dive and swim under water with wonderful ease. I find the following notes, made at the time, in my journal :—

"6th October, 1878, Kowloon, near Hong Kong. Towards evening we left the hills and returned to our boat, near which, on the sands, we shot a few Waders. One of these, a Common Sandpiper (*T. hypoleucos*), fell wounded into a brook; and my dog ran to retrieve it; but just as he was going to pick it up, it dived like a Duck and swam *under* water a distance of over twenty yards. The stream was of no width, and the water as clear as crystal; and standing within a couple of paces, I most distinctly saw the bird propelling itself with its wings as it swam beneath the surface of the water."

[To be continued.]

II.—*Notes on Woodpeckers.*—No. II.* *The Genus* Iyngipicus.

By Edward Hargitt, F.Z.S.

It is more with the view of eliciting than of supplying information that I bring the present paper before ornithologists. Although the series of specimens at my disposal has been considerable, as will be seen by the list given below, it has by no means sufficed for thoroughly settling the many difficult points which every one admits to be connected with the study of this genus. I have here, however, to thank Dr. Günther for the facilities I have enjoyed in working at the British Museum, and also to record my acknowledgments to Captain Wardlaw-Ramsay, who lent me his entire collection of *Iyngipicus*, with some undescribed species therein, and, lastly, to Mr. Henry Seebohm and Mr. Eugene Oates, who generously gave me all the specimens in my own collection, from which most of the descriptions are taken.

The only ornithologist who appears to me to have grappled with the question of the Indian species and races of *Iyngipicus* in a thoroughly practical manner is Mr. A. O. Hume, who has given a review of these birds in the third volume of 'Stray Feathers' (1875, p. 59), under the heading of *I. canicapillus*. Mr. Hume has enumerated five species of this genus as inhabiting India, viz. *I. pygmæus*, Vigors, *I. rubricatus*, Blyth, *I. nanus*, Vigors, *I. gymnophthalmos*, Blyth, and *I. canicapillus*, Blyth, and has, at the same time, given a brief diagnosis of these birds, but somehow has omitted to include *I. meniscus*, Malherbe. Most of Mr. Hume's remarks I can thoroughly indorse, and in the series of specimens which has come under my notice, I have found great variation of spotting in the tail-feathers, so aptly described by that author.

This diversity of spotting also holds good with respect to *I. semicoronatus*; for I have observed in Capt. Wardlaw-Ramsay's collection two specimens, one a male, adult, from N.-Khasia hills (*A. W. Chennell*) and a female from the Naga

* For No. I. see Ibis, 1881, p. 222.

hills (*H. H. Godwin-Austen*), in both of which the upper tail-coverts are margined with white. In the same collection there is the typical bird, also from the Khasia hills, in which, of course, the upper tail-coverts are black. It follows, therefore, that many of the Pygmy Woodpeckers are rather races or subspecies than true and clearly defined species; that is to say, that in many cases the diagnostic characters may be perfectly true for ten out of eleven birds, but that in the eleventh there may be a variation in the spotting or uniformity of the central tail-feathers, which prevents one giving an absolute specific definition that will hold good of every specimen procured. In the latter part of this paper I have endeavoured to give the correct synonymy of the different species of *Iyngipicus*. Mr. Hume, in his able review of the *Iyngipici* of India, refers to the synonymy as somewhat confused. He is indeed right; and I only hope that in my future studies of Woodpeckers I may not find the nomenclature in quite such a tangle as in the present instance. Nor is it possible to contemplate without regret the labours of two monographers of the Picidæ; for it is undoubtedly to Professor Reichenbach and M. Malherbe that we owe much of the confusion now existing in the genus. The former author, while ignorant of several well-known and perfectly characterized species, has created some new ones, which have puzzled ornithologists ever since. Nor are his efforts aided by the very indifferent plates (to speak of them mildly) which accompany his work. The monograph of M. Malherbe, again, bears every trace, in the letterpress, of careful study, and a desire to unravel difficult questions; but he has decidedly confused the members of the present genus, while he would appear to have left his artist to his own devices. Now, every one knows that even the best draughtsman requires, and every good one wishes, to be shown the points which should be brought into prominence in figuring a species; and this is not done in the case of Malherbe's plates. The mere fact of his having allowed Oudart to draw a *Sasia* with four toes, shows that there was a lack of careful supervision over the illustrations; and no one will find much assistance from Malherbe's figures of the *Iyngipici*.

Before proceeding to the synonymy of the species of this genus, it may be as well to say a few words on those recognized by Malherbe and his able critic, the late Professor Sundevall. The species mentioned by the former author are as follows:—

Picus variegatus, Malh. Monogr. Picid. i. p. 139, pl. xxxiii. figs. 8, 9.

Hab. Inde.

The figures are very poor; but, judging from the description, I have little doubt that the species here intended is the Javan and Malaccan bird called *Picus sondaicus* by Wallace, which I consider to be the true *I. auritus* (Eyton). Malherbe supposes Jerdon's *Picus hardwickii* to be the same; but this is, of course, an error. It is, no doubt, the true *P. variegatus* of Wagler, founded, as Dr. Cabanis has shown, on a Javan specimen; but, for reasons given below, the name *variegatus* cannot be employed for a Malayan species.

Picus freniger (Reichenb.), Malh. t. cit. p. 141.

As Malherbe has pointed out, the figure and description do not agree, and the species is indeterminable.

Picus canicapillus (Blyth), Malh. t. cit. p. 141.

This bird was not figured by Malherbe, apparently from lack of specimens; the species is well known to us at the present day.

Picus mitchelli (Malh.), t. cit. p. 142, pl. xxxii. figs. 1, 2.

This, as I shall endeavour to show later on, is identical with *I. pygmæus*.

Picus moluccensis (Gm.), Malh. t. cit. p. 143, pl. xxxii. figs. 4–6.

Malherbe considers the Philippine bird to be the true *P. moluccensis*; but, as Lord Tweeddale has pointed out (Trans. Zool. Soc. ix. p. 148), this is not the case.

Picus nanus, Malh. t. cit. p. 145, pl. xxxiii. figs. 1–5.

I have referred to this species more fully, further on; but it is a most puzzling question, because Malherbe wrote after seeing the type of Vigors's bird in the Zoological Society's Museum, an advantage I have not had, as no one knows the

fate of the original specimen of *P. nanus*. At the same time I believe that Malherbe must have forgotten or confused the identity of the species on his return to France; for the bird he figures is only the Indian form of *I. gymnophthalmus*, which I propose to call *Iyngipicus peninsularis*. Mr. Hume has identified the *P. nanus* of Vigors with the *P. hardwickii* of Jerdon; but the description of the dark occiput disposes of this; nor will Vigors's description suit the Malabar bird, as Malherbe would have us believe. In the monograph of the latter author it is stated that specimens of his *P. nanus*, Vigors, were in the Zoological Society's Museum (Vigors's type) and in the British Museum. This was written before the dispersal of the old collection of the Zoological Society; and at that time we know there were only two specimens of *I. peninsularis* in the British Museum; and yet, in his monograph, Malherbe gives figures of at least four different specimens (if not of five), though from his letterpress there is no evidence that he knew of more than three specimens. My contention, therefore, is that the text and the plates were most likely prepared at different times, and the figures drawn from other specimens than those seen in England, also that the author was wrong in considering the Malabar bird to be identical with the type of Vigors's *P. nanus*. As at the date in question the collections in England were separate, no actual comparison of the British-Museum skins with Vigors's actual type could be made; and an error from memory, or from comparing descriptions, may easily have arisen.

Picus pygmæus (Vigors), Malh. t. cit. p. 147, pl. xxxiv. figs. 5–7.

This is apparently rightly identified by Malherbe, who examined the type in the old Zoological Society's collection.

Picus semicoronatus (Malh.), t. cit. p. 148, pl. xxxiv. fig. 8.

This bird is the well-known *P. rubricatus* of Blyth, whose name, however, appears to be subsequent to that of Malherbe.

Picus auritus, Malh. t. cit. p. 150, pl. xxxv. fig. 1.

Malherbe apparently knew this species only from the type

in the British Museum; but where he got his figure from is more than I can venture to say. No *Iyngipicus* has the white side-face which he represents; and I call attention to his figure, presumably of the type in the British Museum, to show the careless way in which the plates of this monograph were supervised.

Picus meniscus (Malh.), t. cit. p. 151, pl. xxxv. fig. 2.

This is a bird which sorely puzzles me; it is closely allied to *I. semicoronatus*, but has all the tail-feathers spotted.

Picus otarius (Malh.), t. cit. p. 152, pl. xxxv. figs. 5–7.

I cannot see how this differs from *I. auritus* (Eyton), judging from Malherbe's plate of the former; but this, I regret to say, like most of that author's illustrations of the present genus, is not of much use in distinguishing the species.

Picus gymnophthalmus (Blyth), Malh. t. cit. p. 153.

Picus kizuki, Malh. t. cit. p. 154, pl. xxxvi. figs. 1, 2.

Picus temminckii (Malh.), t. cit. p. 155, pl. xxxvi. fig. 3.

These three species are well defined, and call for no particular remark.

Prof. Sundevall, in 1866, wrote a very able Conspectus of the Woodpeckers, as a synopsis of the family and as a critique on Malherbe. His arrangement calls for but few remarks.

Picus canifrons, of Sundevall, from Peking, in the Paris Museum, I consider to be only a variety of *I. scintilliceps* (vide infrà).

Sundevall further follows Malherbe in his identification of *P. nanus*, and adds, as synonyms, *P. otarius*, Malh., and *P. freniger*, Reichenb. The former identification I believe to be wrong. The latter may be right; but I cannot say.

Clavis specierum.

a. dorso nigro, albo maculato vel fasciato, vel fere albo.	
a'. occipite fascia lata rubra circumcincto.	
a''. rectricibus 4 centralibus cum supracaudalibus nigris	*semicoronatus.*
b''. rectricibus centralibus albo maculatis	*meniscus.*
b'. occipite fascia longitudinali utrinque scarlatina ornato.	
c''. gutture imo et pectore nigro conspicue maculatis.	

a'''. cauda nigra, albo maculatim fasciata; fascia occipitali utrinque parva; uropygio albo, brunneo, vel nigro fasciato ..... *maculatus.*

b'''. cauda fulvescente, nigro late transfasciata; uropygio fulvescenti vix maculato; occipite macula utrinque lata notato ..... *fulvifasciatus.*

d'. pectore et gutture vel concoloribus, vel nigro aut fusco-brunneo striolatis.

c'''. rectricibus 4 centralibus nigris, haud albo maculatis.

a^4. supracaudalibus albis, nigro striatis; subtus late aurantiaco lavatus ..... *aurantiiventris.*

b^4. supracaudalibus nigris.

a^5. dorso summo nigro; dorso imo albo, nigro transfasciato; fascia superciliari cum collo laterali albo conjuncta .... *pygmæus. kaleensis. scintilliceps. doerriesi.*

b^5. dorso summo fuscescenti-brunneo; dorso imo albo fasciato; fascia superciliari cum collo laterali albo haud conjuncta *kizuki.*

c^4. supracaudalibus nigris, albo transfasciatis *pumilus.*

d'''. rectricibus centralibus albo notatis.

d^4. subtus striolatus.

c^5. capite brunneo vel cinerascente; tectricibus alarum nigris albo maculatis: pilei lateribus nigro fasciatis: occipite nuchaque nigris ..... *nanus. canicapillus. picatus. auritus. grandis.*

d^5. capite pallide umbrino vel fulvo-brunneo; occipite nuchaque pileo concoloribus; pilei lateribus haud nigro fasciatis; tectricibus alarum umbrinis.. *hardwickii.*

e^4. subtus concolor, vel vix fusco striatus.

e^5. pileo summo occipiteque nigris ..... *gymnophthalmus.*

f^5. pileo summo brunneo, occipite paullo saturatius brunneo..... *peninsularis.*

b. dorso olivascenti-brunneo, albo striolatim vel fasciatim maculato.

c'. major; fascia scarlatina occipitali lata, haud interrupta; uropygio albo, brunneo vix striolato; remigibus rectricibusque concoloribus ..... *ramsayi.*

d'. minor; fascia scarlatina lata occipitali interrupta; macula nuchali albida; uropygio fulvescente; rectricibus aureo-brunneis, brunneo late transfasciatis ..... *temminckii.*

1. Iyngipicus semicoronatus.

Picus pygmæus (old bird), Blyth, J. A. S. Beng. xiv. p. 197 (1845, nec Vigors).

Picus semicoronatus, Malherbe, Bull. Soc. d'Hist. Nat. Metz, 1848, p. 21; id. Monogr. Picid. i. p. 148, pl. xxxiv. fig. 8 (1861); Sundev. Consp. Av. Picin. p. 27. no. 76 (1866); Gray, List Picidæ Brit. Mus. p. 40 (1868); id. Hand-l. B. ii. p. 184. no. 8584 (1870).

Picus rubricatus, Blyth, J. A. S. Beng. xviii. p. 804 (1849); id. Cat. B. Mus. Beng. p. 63. no. 299 (1849); Reichenbach, Handb. Picinæ, p. 373 (1854).

Yungipicus semicoronatus, Bp. Consp. Volucr. Zygod. p. 8 (1854).

Yungipicus rubricatus, Jerd. B. Ind. i. p. 276 (1862); Brüger, [illegible] 1869, p. 156; [illegible] 1872, p. 3; Hume & [illegible] 1875, [illegible] Hume, [illegible] p. 87.

Iyngipicus semicoronatus, [illegible], Mus. Hein. p. 54 (1865).

I. fascia occipitali rubra; rectricibus 4 centralibus et tectricibus supracaudalibus nigris.

Hab. in regione Himalayanâ orientali.

There can be no doubt that Malherbe's name for this species is the older one, and that Blyth's name comes second. The last-named naturalist first described the bird as the fully adult of *I. pygmæus*, and found out his mistake four years later; in the meantime, however, the species had been named by Malherbe. Mr. Hume, in his review of the Indian Pygmy Woodpeckers, states that he has only seen the present species from Sikkim; but it also occurs in the Khasia and Naga hills, and in Capt. Wardlaw-Ramsay's collection is a specimen from Jeypore. According to Dr. Jerdon this species is found in Nepal and Sikkim, where it is not very rare (B. Ind. i. p. 277). The same author states that it extends to North Cachar (Ibis, 1872, p. 8). There are no examples from Nepal among Mr. Hodgson's skins in the British Museum. The following is a list of all the specimens examined by me :—

E Mus. Brit.

a, *b*. ♂ ♀ ad. Himalayas (*Gould coll.*).

E Mus. R. G. Wardlaw-Ramsay.

a. ♂ ad. Jeypore.

b, *c*. ♂ ad. N.-Khasia hills (*A. W. Chennell*).

d. ♀ ad. Khasia hills (*A. W. Chennell*).

e. ♀ ad. Naga hills (*H. H. Godwin-Austen*).

f. ♂ ad., *g*, *h*, *i*. ♀ ad., *j*. ♀ imm. Darjeeling.

E Mus. H. Seebohm.

a, *b*. ♂ ad. Sikkim (*L. Mandelli*).

E Mus. E. Hargitt.

a, *b*. ♀ ad. Darjeeling (*L. Mandelli*).

c. ♂ ad. Sikkim (*coll. E. W. Oates*).

2. Iyngipicus meniscus.

Picus meniscus, Malh. Monogr. Picid. 1861, p. 151, pl. xxxv. figs. 2, 3, 4; Gray, List Picid. Brit. Mus. 1868, p. 41; id. Hand-l. B. ii. p. 184. no. 8586 (1870); Sundev. Consp. Av. Picin. p. 28 (1866).

Bæopipo menisca, Cab. & Heine, Mus. Hein. Th. iv. p. 55 (1863). Similis *I. semicoronato* et fascia occipitali rubra ornatus, sed rectricibus omnibus albo maculatis distinguendus.

This is a species I have not seen; and yet it appears to be a distinct one, if Malherbe's description and plates are to be trusted, though at the same time the habitat "Inde" is indefinite enough. I can only leave to Mr. Hume to search for this unknown bird. Like *I. semicoronatus*, this species has a red occipital band, but differs in having all the tail-feathers spotted with white.

3. Iyngipicus maculatus.

Petit Pic d'Antigue, Sonn. Voy. Nouv. Guin. p. 118, pl. 77 (1776).

Le petit Epeiche (pt.), Buff. Hist. Nat. Ois. vii. p. 64 (1780, ex Sonn.).

Picus maculatus, Scop. Del. Faun. et Flor. Insubr. p. 89 (1786, ex Sonn.); Jerd. B. Ind. i. p. 279 (1863).

Picus minor, var. *b*, Lath. Ind. Orn. i. p. 230 (1790).

Picus moluccensis, Less. Traité, p. 221 (1831, nec Gm.); Malherbe, Monogr. Picid. i. p. 143, pl. xxxii. (1861).

Picus nanus, Blyth, J. A. S. Beng. xiv. p. 197 (1845, nec Vigors).

Picus validirostris, Blyth, Cat. B. Mus. As. Soc. p. 64 (1849); id. J. A. S. Beng. xviii. p. 805 (1849); Reichenbach, Handb. Picinæ, p. 373 (1854); Malherbe, Monogr. Picid. i. p. 144; Sundev. Consp. Av. Picin. p. 29 (1866); Gray, List Picid. Brit. Mus. p. 43 (1868); id. Hand-l. B. ii. p. 184. no. 8582 (1870).

Picus flavinotus, Malh. Monogr. Picid. i. p. 144 (1861, ex spec. in Mus. Brit.).

Bæopipo validirostris, Cab. & Heine, Mus. Hein. Th. iv. p. 60 (1863).

Picus (*Yungipicus*) *validirostris*, Martens, J. f. O. 1866, p. 20.

Yungipicus maculatus, Walden, Tr. Z. S. ix. p. 148 (1875); Sharpe, Tr. Linn. Soc. new ser. Zool. i. p. 350 (1877).

I. rectricibus centralibus albo maculatis; fascia utrinque occipitali longitudinali rubra; pectore nigro distincte maculato, nec striolato.

Hab. in insulis Philippinis.

This is a very distinct species, distinguished by its spotted breast, a character so well marked that it renders the old figure of Sonnerat's clearly referable to this species. The synonymy has been well rendered by the late Marquis of Tweeddale; and his remarks should be studied by any one working at the genus. The British-Museum specimens are from Manila. I think that, as Sonnerat's figure and description agree with the Luzon bird, we have a right to assume that the bird which inhabits that island is the same as the Panay species, which served as Sonnerat's type, and which, as the Marquis of Tweeddale (P. Z. S. 1877, p. 689) suggests, was probably a female. The specimens examined have been the following :—

E Mus. Brit.

a, b. ♂ ♀. Philippines (*Cuming*).

c, d, e. ♂ ♂ ♀ ad. Manila (*Gould coll.*).

E Mus. R. G. Wardlaw-Ramsay.

a. ♂ ad. *b, c.* ♀ ad. Monte Alban, Luzon (*A. H. Everett*).

4. Iyngipicus fulvifasciatus.

Iyngipicus fulvifasciatus, Hargitt, Ibis, 1881, p. 598.

I. similis *I. maculato*, Gm., ex insula Luzonica, sed cauda fulvescente, nigro late transfasciata, uropygio fulvescente, vix maculato, occipite macula utrinque lata notato distinguendus.

Hab. in insulis Philippinis "Basilan" et "Mindanao" dictis. Typus in Mus. R. G. Wardlaw-Ramsay.

With regard to this species, the Marquis of Tweeddale (P. Z. S. 1878, p. 943) says:—"When writing on *Picus maculatus*, Scopoli (Tr. Z. S. ix. p. 148), I stated that the titles I then brought together were treated as synonyms, on the assumption that the islands of Luzon, Panay, and Mindanao possessed but one and the same species of *Yungipicus*. I had had no opportunity of examining an example from any one of the Philippine Islands. Since then Mr. Everett has sent me examples of a species of the genus from Luzon; and these I identified (P. Z. S. 1877, p. 689) with *P. maculatus*, rather than create a new title, while their dimensions were too small for *P. validirostris* (Blyth). The birds from Zamboanga differ specifically from the Luzon species: they are larger; the uropygium and upper tail-coverts are unspotted tawny white; and the rectrices are tawny buff, banded with dark brown, and not dark brown for the most part, as in the Luzon birds, with narrow albescent bands or marks. In both, the lower throat and upper breast are spotted, and not streaked as in *Y. fusco-albidus* of the Sunda Islands and Malacca. Until typical examples of *P. maculatus* from Panay are compared, it cannot be affirmed whether the type of *P. maculatus* belongs to the Luzon or Mindanao species, or whether it may not be a species distinct from either. In the meantime I adopt Blyth's title, the dimensions he gives being exactly those of the Zamboanga species—bill to forehead 0·75, wing 3·25."

These measurements and particulars exactly coincide with my own observations. Although we cannot be satisfied until we have seen the Panay bird, still, if it is to correspond with Sonnerat's figure and description, I do not see how it can differ from the Luzon specimens which answer that description.

The only examples of this species which I have seen are in the collection of Capt. Wardlaw-Ramsay, and were obtained at Zamboanga and in Basilan by Mr. A. H. Everett, who, with his usual care, has noted the soft parts. These are the identical birds referred to by the Marquis of Tweeddale in P. Z. S. 1878, p. 943; and that learned author has very properly separated them from the Luzon species. I cannot, however, agree with Lord Tweeddale in considering the Zamboanga and Basilan bird to be Blyth's *P. validirostris*, as it does not correspond with the latter author's description.

E Mus. G. R. Wardlaw-Ramsay.

a, b. ♂ ad. Basilan (*A. H. Everett*).
c. ♂ ad. Zamboanga (*A. H. Everett*).
d. ♀ ad. Zamboanga (*A. H. Everett*).

5. Iyngipicus aurantiiventris.

Picus (*Bæopipo*) *aurantiiventris*, Salvad. Atti R. Accad. Sci. Torino, iii. p. 524 (1868).

Iyngipicus aurantiiventris, Salvad. Uccelli di Borneo, p. 41, tav. iv. fig. 2 (1874).

Yungipicus aurantiiventris, Sharpe, [illegible].

I. fascia utrinque occipitali rubra, [illegible] nigris; supracaudalibus albis [illegible] subtus læte aurantiaco suffuso.

Hab. in insulâ Borneensi.

My experience of the present bird leads me to consider it a thoroughly distinct species. Lord Tweeddale also recognized it as specifically distinct; but I am not sure that he was acquainted with the bird, because in his collection, kindly lent me by Capt. R. G. Wardlaw-Ramsay, I find two birds named *Yungipicus aurantiiventris* (Salvad.) which are quite distinct from the real *I. aurantiiventris*, and in general coloration rather resemble *I. temminckii*. But they differ from the latter in many specific characters, as is shown under the heading *I. ramsayi*, which name I have given to this hitherto undescribed bird. *I. aurantiiventris* would appear to be by no means rare in the Sarawak district, where it was first discovered by the Marquis Doria and Dr. Beccari; for Mr. Everett has

sent a good many specimens to the British Museum from the same province, as will be seen by the list given below. A single specimen was collected in Lumbidan by Mr. Low; and there the late Governor Ussher and Mr. Treacher also obtained it. Mr. W. B. Pryer has also found it in the Sandakan district.

E Mus. Brit.

a, b. ♂ ♀ ad. Paku (*H. Everett*).
c. ♂ ad. Sarawak (*H. Everett*).
d. ♀ ad. Lumbidan (*Ussher*).
e. ♀ ad. N.W. Borneo (*H. Low*).
f. ♀ ad. Mateng (*Gould coll.*).

E Mus. E. Hargitt.

a. ♀ ad. Sandakan (*W. B. Pryer*).

6. Iyngipicus pygmæus.

Picus pygmæus, Vigors, P. Z. S. 1831, p. 44; Blyth, J. A. S. Beng. xiv. p. 197 (1845); id. op. cit. xvi. p. 466 (1847); id. Ann. & Mag. Nat. Hist. xx. p. 321 (1847); id. Cat. B. Mus. As. Soc. p. 63 (1849); Bp. Consp. i. p. 135 (1850); Horsf. & Moore, Cat. B. E.I. Co. Mus. ii. p. 676 (1854); Reichenbach, Handb. Scansoriæ, Picinæ, p. 369, taf. dcxxxvi. figs. 4232–33 (1854); Malh. Monogr. Picid. i. p. 147, pl. xxxiv. figs. 5–7 (1861); Gray, List Picid. Brit. Mus. p. 41 (1868); id. Hand-l. B. ii. p. 183. no. 8576 (1870).

Dendrocopus moluccensis, Hodgs. Icon. ined. in Brit. Mus. Passeres, pl. 334. figs. 159, 160; id. in Gray's Zool. Misc. p. 85 (1844).

Picus moluccensis, Gray, Gen. B. i. p. 435 (1845, nec Gm.).

Picus zizuki, Gray, Cat. Mamm. &c. Nepal pres. Hodgs. p. 116 (1846).

Picus mitchelli, Malh. Rev. et Mag. de Zool. 1849, p. 530; Bp. Consp. i. p. 136 (1850); Reichenb. Handb. Scansoriæ, Picinæ, p. 173 (1854); Malh. Monogr. Picid. i. p. 142, pl. xxxii. figs. 1, 2 (1861); Sundev. Consp. Av. Picin. p. 27 (1866); Gray, List Picid. Brit. Mus. p. 40 (1868); id. Hand-l. B. ii. p. 183. no. 8574 (1870).

Picus trisulensis, Licht. in Mus. Berol.

Picus nepalensis, Licht. in Mus. Berol.

Yungipicus trisulensis, Bp. Consp. Volucr. Zygod. p. 8 (1854).

Yungipicus mitchelli, Bp. tom. cit. p. 8 (1854).

Yungipicus scintilla, Bp. tom. cit. p. 8 (1854, ex Natt. MSS. in Mus. Vindob.).

Yungipicus pygmæus, Bp. tom. cit. p. 8 (1854); Jerd. B. Ind. i. p. 277 (1863); Gray, Cat. Mamm. &c. Nepal pres. Hodgs. p. 63 (1863); Brooks, Str. F. 1875, p. 232; Hume, op. cit. 1879, p. 87; Scully, tom. cit. 1879, p. 247.

Bæopipo pygmæus, Cab. & Heine, Mus. Hein. Th. iv. p. 56 (1863).

Bæopipo mitchelli, Cab. & Heine, tom. cit. p. 55 (1863).

I. fascia utrinque occipitali rubra; rectricibus 4 centralibus nigris, immaculatis; supracaudalibus nigris; dorso summo nigro, dorso imo et uropygio nigro fasciatis; tectricibus alarum medianis albo maculatis; regione parotica sepiaria.

Hab. in montibus Himalayanis.

Jerdon says that this little Woodpecker is found in the Himalayas from the north-west as far as Nepal, but does not extend to Sikkim, where its place is apparently taken by *I. semicoronatus*. Mr. Hume has obtained this species from Kumaon, Gurhwal, the Dhoon, and the Mussoorie hills (Str. F. 1875, p. 60).

Malherbe appears to me to have created a good deal of confusion by separating *I. mitchelli* as a species; for I cannot see the smallest reason for so doing. The specimens in the India Museum are now in the British Museum, and were considered to be the actual types by Mr. Moore, who had doubtless the assurance of Malherbe himself for this identification. On his return to France, however, he appears to have made a specimen in his own collection the type of *P. mitchelli*; but the India Museum skins show us the bird intended by Malherbe, and there is no doubt of their identity with *P. pygmæus*.

E Mus. Brit.

a. ♀ ad. Himalayas.
b, *c*, *d*, *e*, *f*, *g*, *h*, *i*. ♂ ad. Nepal (*B. H. Hodgson*).
j, *k*, *l*. ♀ ad. Nepal (*B. H. Hodgson*).
m. ♀ imm. Nepal (*B. H. Hodgson*).
n, *o*. ♂ ♀ ad. India (*Blagrave*). [India Museum.]

7. Iyngipicus kaleensis.

Picus kaleensis, Swinhoe, Ibis, 1863, p. 390; Sundev. Consp. Av. Picin. p. 26 (1866); Gray, List Picid. Brit. Mus. p. 38 (1868); id. Hand-l. B. ii. p. 183. no. 8565 (1870).

Dendrotypes nesiotis, Cab. & Heine, Mus. Hein. Th. iv. p. 49 (1863).

Yungipicus kaleensis, Swinh. P. Z. S. 1871, p. 392; David & Oustalet, Ois. Chine, p. 50 (1877).

I. similis *I. pygmæo*, sed paullo major, tectricibus alarum medianis et majoribus clarius albo maculatis, regione parotica pallide umbrino-brunnea.

Hab. in regione Chinensi.

This bird is really only a race of *I. pygmæus*, distinguished merely by its larger size and having a greater amount of white on the wing-coverts, and by the ear-coverts being of a paler brown. It was first described by Swinhoe in 'The Ibis' for 1863, p. 390, from a specimen obtained in the island of Formosa. Abbé David and M. Oustalet, in their admirable work, 'Oiseaux de la Chine,' p. 50, do not admit any specific difference between *I. kaleensis* and *I. scintilliceps*; they state that *I. kaleensis* is found in Southern China, but that birds killed at Kiangsi and Pekin are identical; they further add that they find, amongst birds from North China, individuals as dark as those of the south, and are able to prove that the birds which have the white rump entirely deprived of transverse barring are very old birds. I have examined a large series of *I. kaleensis* in the collection of Mr. Seebohm, bearing Swinhoe's labels; and amongst them I find several skins from China, marked *kaleensis*; but upon a very close inspection, I think these may all safely be referred to *I. scintilliceps*, except one marked Foochow (but with a query after the locality), which I cannot separate from the Formosan bird.

In Capt. Wardlaw-Ramsay's collection are two birds from Hainan which are unquestionably *I. kaleensis*; so that both races would appear to be found on that island. I have recently visited the Paris Museum, for the purpose of examining the specimens of *Iyngipicus* collected by the Abbé David in China; and I found amongst them one (from Kiu-Kiung) which possesses the characteristics of both *I. scintilliceps* and *I. kaleensis*. This specimen mainly induced the above author and M. Oustalet, in their 'Oiseaux de la Chine,' to regard these these two birds as one and the same species; but these exceptional individuals do not, I think, alter the fact of their being two well-recognized and distinct races, though they tend to confirm my opinion (expressed in the key) that, after all, they are merely races of *I. pygmæus*, and that absolute gradations between one and the other can be found.

E Mus. H. Seebohm.

a. ♂ ad. Tamsuy (*Swinhoe*).
b, c, d, e, f. ♂ ad. Formosa (*Swinhoe*).
g, h, i, j, k. ♀ ad. Formosa (*Swinhoe*).
l. ♂ ad. Foochow? (*Swinhoe*).

E Mus. E. Hargitt.

a. ♂. Formosa (*Swinhoe*).
b. ♂. Formosa (*Swinhoe*).

E Mus. Brit.

a, b. ♂ ♀ ad. N. Formosa.

E Mus. R. G. Wardlaw-Ramsay.

a. ♂ ad. Hainan (*Swinhoe*).
b. ♀ ad. Hainan (*Swinhoe*).
c. ♀ ad. Tamsuy.

E Mus. Paris.

a, b. ♂ ♀ ad. Formosa (*Swinhoe*).

8. Iyngipicus scintilliceps.

Picus sp., Swinhoe, Ibis, 1861, p. 340.

Picus scintilliceps, Swinhoe, Ibis, 1863, p. 96; Sundev. Consp. Av. Picin. p. 27 (1866); Gray, List Picid. Brit. Mus. p. 41 (1868); id Hand-l. B. ii. p. 183. no. 8577 (1870).

Bæopipo scintilliceps, Cab. & Heine, Mus. Hein. Th. iv. p. 55 (1863).

Picus canifrons, Sundev. Consp. Av. Picin. p. 26 (1866).

Yungipicus scintilliceps, Swinhoe, P. Z. S. 1871, p. 392; David & Oust. Ois. Chine, p. 50 (1878).

I. similis *I. kaleensi*, sed dorso medio albo, dorso imo et uropygio nigris albo fasciatis, tectricibus magis albo maculatis.

Hab. in Chinâ septentrionali.

This species closely resembles *I. kaleensis*, but may be distinguished by the larger amount of white upon the back and wing-coverts, the underparts being also paler and the striations not so broad; it is, in fact, a link between *I. kaleensis* and *I. doerriesi*. The first description of this bird was given by Swinhoe in this Journal for 1863 (p. 96), although it had been previously noted by him in the same work (*vide* Ibis, 1861, p. 340). The home of this race is North China; but how far south it extends may be seen by reference to the localities whence Swinhoe's specimens were obtained.

Sundevall, in his Conspectus (p. 26) describes an *Iyngipicus*, which he names *Picus canifrons*, from Pekin, and which is to be found in the Paris Museum. I have lately seen the three specimens described by this author, and which were collected by the Abbé David near Pekin in 1863. The male, which served as the type of the species, has the entire undersurface uniform; while the female and young male have the underparts streaked. I have examined these three birds very carefully, and feel convinced that the adult male is only a variety, exhibiting a tendency to albinism in its upper tail-coverts being spotted with buffy white (not clear and distinct markings), and in this respect differing from the female from the same locality, which has the upper tail-coverts uniform black. The measurements of this bird are greater than in *I. scintilliceps*, but less than in *I. doerriesi*, which it very much resembles; but the plumage has not the intense black of the latter. The bird called a young male by Sundevall appears to me to be a typical *I. scintilliceps*; and although it formed part of the same collection, sent by the

Abbé David in 1863, I have no doubt it came from a more southerly locality than the adult male and female *P. canifrons* of Sundevall. As in *I. scintilliceps* and *I. kaleensis* specimens occur possessing characteristics of both these races, so it is to be expected that intermediate forms of *I. scintilliceps* and *I. doerriesi* will occasionally be found. I therefore consider *Picus canifrons* of Sundevall to be only a northerly form of *I. scintilliceps*, and that the supposed adult male is a variety of the species.

E Mus. H. Seebohm.

a, b. ♂ ♀ ad. Pekin (*Swinhoe*). Types of species.
c, d. ♂ ♀ ad. Pekin (*Swinhoe*).
e, f, g. ♂ ♀ ♀. Ningpo (*Swinhoe*).
h. ♂ ad., *i.* ♂ imm. Hoopih (*Swinhoe*).
j. ♂ ad. Ming Tombs (*Swinhoe*).
k, l. ♂ ♀ ad. Hainan (*Swinhoe*).

E Mus. Brit.

a, b. ♂ ad. Fokien (*Gould coll.*).

E Mus. E. Hargitt.

a. ♂ ad. Pekin (*Swinhoe*).

E Mus. R. G. Wardlaw-Ramsay.

a. ♀ ad. Pekin (*Abbé David*).

E Mus. Paris.

a, b. ♂ ad. Pekin (*Abbé David*).
c. ♀ ad. Pekin (*Abbé David*).
d, e. ♂ ad. S. Chensi (*Abbé David*).
f. S. Chensi (*Abbé David*).

9. Iyngipicus doerriesi.

? *Picus mitschelli*, Radde, Reis. Ost-Sibir. p. 140; Tacz. Bull. Soc. Zool. France, 1876, p. 240.

Picus scintilliceps, Tacz. Bull. Soc. Zool. France, 1878, p. 139; Bolau, Journ. f. Orn. 1880, p. 131.

Iyngipicus doerriesi, Hargitt, Ibis, 1881, p. 398.

I. affinis *I. scintillicipiti*, Swinh., sed conspicue major, et facici et colli lateribus clarius et purius albis, et plaga humerali (e tectricibus alarum medianis et majoribus formata) magna alba distinguendus.

Hab. in Siberiâ orientali.

This race was described by me in 'The Ibis,' 1881, p. 398, from specimens obtained in the island of Askold, as well as upon the mainland of Eastern Siberia, by Herr Dörries. It is considerably larger than either *I. kaleensis* or *I. scintilliceps*, and has the dark portion of the plumage of an intense black; there is also a much greater amount of white upon the back, as well as upon the wing-coverts, than in either of these races; the underparts are also lighter, and the chin, throat, and fore neck whiter. In a male in my collection the rump is strongly barred with black; but this evidently disappears with age, the specimen with the barred rump having the underparts darker, the chin, throat, and fore neck less white, and the under wing-coverts spotted with black; it is probably not a very old bird. The only localities whence I have seen or obtained specimens are Baranowsky and the island of Askold, Eastern Siberia.

E Mus. H. Seebohm.

a. ♂ ad. Island of Askold, Eastern Siberia (*Dörries*).

E Mus. E. Hargitt.

a, *b*. ♂ ad. Baranowsky, Eastern Siberia (*Dörries*).
c, *d*. ♀ ad. Baranowsky, Eastern Siberia (*Dörries*).

10. Iyngipicus kizuki.

Picus kizuki, Temm. Pl. Col. iv., text to livr. 99 (1835); Bp. Consp. i. p. 135 (1850); Reichenb. Handb. Scansoriæ, Picinæ, p. 370, taf. dcxxxvi. figs. 4236–38 (1854); Gray, List Picidæ Brit. Mus. p. 41 (1868); id. Hand-l. B. ii. p. 184. no. 8585 (1870); Swinhoe, Ibis, 1875, p. 451; Blakiston & Pryer, Ibis, 1878, p. 229; Seebohm, Ibis, 1879, p. 29.

Picus kisuki, Temm. Tabl. Méth. p. 64 (1836); id. & Schl. Faun. Japon. p. 74, taf. 37 (1850); Malh. Monogr. Picid. p. 154, pl. 36. figs. 1, 2 (1861); Blakist. Ibis, 1862, p. 325; Sundev. Consp. Av. Picin. p. 28 (1866).

Picus zizuki, Gray, Gen. B. ii. p. 435 (1845); Jerd. B. Ind. i. p. 279 (1862).

Yungipicus kisuki, Bp. Consp. Volucr. Zygod. p. 8 (1854).

Picus koyera, Malh. Monogr. Picid. i. p. 154 (1861, MSS. ex spec. olim in Mus. Zool. Soc.).

Bæopipo kisuki, Cab. & Heine, Mus. Hein. Th. iv. p. 60 (1863).

I. rectricibus 4 centralibus nigris, haud maculatis; supracaudalibus nigris; dorso summo fuscescenti-brunneo; dorso imo albo fasciato; fascia superciliari cum collo laterali albo haud conjuncta.

Hab. in insulis Japonicis.

This bird has only been obtained in the islands of Japan, and is unmistakable as a species.

E Mus. H. Seebohm.

a. ♂ ad. South Yezo.
b. ♂ juv. Yokohama (*H. Jones*).
c. ♀ ad. Yokohama (*H. Pryer*).

E Mus. E Hargitt.

a, b, c, d. ♂ ad. Yokohama (*H. Pryer*).
e, f, g, h. ♀ ad. Yokohama (*H. Pryer*).
i. ♀ juv. Yokohama (*H. Pryer*).

E Mus. Brit.

a, b. ♂ ad. Japan (*Gould coll.*).
c. ♀ ad. Japan (*Gould coll.*).

E Mus. R. G. Wardlaw-Ramsay.

a. ♂ ad. Hakodaté.
b. ♀ ad. Japan.

11. Iyngipicus pumilus.

Iyngipicus pumilus, Hargitt, Ibis, 1881, p. 599.

I. similis *I. canicapillo*, sed valde minor et rectricibus 4 centralibus nigris concoloribus distinguendus. Long. tot. 4·85; culm. 0·52; alæ 2·78; caudæ 1·3; tarsi 0·55.

Hab. in terrâ Tenasserimensi meridionali. Typus in Mus. nostr. (*coll. E. W. Oates*).

Mr. Oates drew my particular attention to this bird from South Tenasserim, which is certainly a distinct and well-marked race of *I. canicapillus*. As I agreed with him that it should bear a name, I described it as *I. pumilus* in 'The Ibis,' 1881, p. 599, which will clearly

distinguish it from *I. canicapillus*. It differs in being a very much smaller bird, and in having the four central tail-feathers unspotted, and also in having a remarkably short bill. Mr. Oates informs me that specimens have occasionally a white spot upon the central tail-feathers. This is probably the bird referred to by Capt. Feilden as occurring in the dense jungles around Thayetmyo (*cf.* Hume, Str. F. 1875, p. 59), and which, no doubt, extends into South Tenasserim. In true *I. canicapillus* from the latter locality, I have found the four central tail-feathers uniform, and at other times with only one white spot upon each feather; but the birds are clearly separable by their much larger size in every way. The measurements, for comparison, I give below.

I. canicapillus.

♂. Wing 3·2, tail 1·65, bill 0·67.
♀. Wing 3·2, tail 1·6, bill 0·65.

I. pumilus.

♂. Wing 2·78, tail 1·3, bill 0·52.
♀. Wing 2·78, tail 1·25, bill 0·55.

E Mus. E Hargitt.

a, b. ♂ ♀ ad. South Tenasserim (*E. W. Oates*). Types of species.

12. Iyngipicus nanus.

Picus nanus, Vigors, P. Z. S. 1831, p. 172; Gray, Gen. B. ii. p. 435 (1845).

Yungipicus nanus, Bp. Consp. Volucr. Zygod. p. 6 (1854).

Bæopipo nana, Cab. & Heine, Mus. Hein. Th. iv. p. 57 (1863, note).

I. similis *I. aurito* ex Malaisia, sed subtus late et pallide brunneo striatus.

Hab. In regione Himalayanâ septentrionali occidentali.

The type of this species was formerly in the Zoological Society's Museum; and it is to be regretted that the British Museum, which had the opportunity of securing all the types in that collection, failed to obtain that of *P. nanus* of Vigors. Malherbe appears to have seen the actual specimen described by Vigors;

but, most unaccountably, he has figured in his 'Monograph' a plain-breasted species, or one that has at most a few markings upon the sides of the breast and upon the under tail-coverts, whereas Vigors, in his description, has given the underparts as "whitish, broadly streaked with dusky brown." Malherbe's bird evidently belongs to the Malabar form of *I. gymnophthalmus*. Gray appears to have shared Malherbe's views, as he gives in his 'Hand-list' Madras as the habitat of this species. I find a difficulty in following Mr. Hume in uniting *I. hardwickii* of Jerdon to *P. nanus* of Vigors, for the reason that the latter author distinctly mentions the character of a black occiput, which is not possessed by *I. hardwickii* of Jerdon. In the British Museum are three specimens of an *Iyngipicus* from the North-west Himalayas, collected by Capt. Pinwill, which agree with Vigors's description of *I. nanus*; and I cannot see any reason to doubt that they belong to that species. It is a matter of surprise that Mr. Hume, with his immense collection, does not appear to have procured this North-west Himalayan bird; it is closely allied to *I. auritus*, but differs in having the underparts very broadly but indistinctly streaked with dusky brown.

E Mus. Brit.

a. ♂. Dhurmsala (*Capt. Pinwill*).
b. ♂. N.W. Provinces (*Capt. Pinwill*).
c. ♂. N.W. Himalayas (*Capt. Pinwill*).

13. Iyngipicus canicapillus.

Picus canicapillus, Blyth, J. A. S. Beng. xiv. p. 197 (1845), xv. p. 14 (1846), xvi. p. 467 (1847), xviii. p. 805 (1849); id. Cat. B. Mus. As. Soc. p. 64 (1849); Gray, Gen. B. iii., App. p. 21 (1849); Reichenb. Handb. Scansoriæ, Picin. p. 373 (1854); Malh. Monogr. Picid. i. p. 141 (1861); Sundev. Consp. Av. Picin. p. 29 (1866); Gray, List Picid. Brit. Mus. p. 43 (1868); id. Hand-l. B. ii. p. 184. no. 8581 (1870).

Yungipicus trisulensis, Bp. Consp. Volucr. Zygod. p. 8 (1854, nec Licht).

Yungipicus canicapillus, Horsf. & Moore, Cat. B. Mus. E. I. Co. ii. pp. 677, 992 (1856); Jerd. B. Ind. i. p. 279 (1862);

Blyth, Ibis, 1870, p. 163; Hume, Str. F. 1874, p. 471; Blyth & Wald. B. Burm. p. 78 (1875); Hume, Str. F. 1875, pp. 14, 59; Armstrong, Str. F. 1876, p. 309; Hume, op. cit. 1877, pp. 25, 113; Hume & Davison, op. cit. 1878, p. 125; id. t. cit. App. p. 500; Hume, op. cit. 1879, p. 87.

Bœopipo canicapilla, Cab. & Heine, Mus. Hein. Th. iv. p. 58 (1863).

Picus, sp., Beavan, Ibis, 1869, p. 413.

I. pileo cinereo, nigro circumcincto; regione parotica umbrina; fascia mystacali fusca vix indicata; supracaudalibus albis, nigro fasciatis vel variegatis; rectricibus 4 centralibus nigris albo maculatis.

Hab. In regione Indo-Burmanicâ per peninsulam Malayanam usque ad Sumatram septentrionalem.

The types of this species were from Arracan (As. Soc. Beng.). According to Mr. Oates it is universally distributed between Thayetmyo and Tonghoo, in British Burma; but still it is not very common; it creeps about the smaller branches of trees. Mr. J. Armstrong records it from the Rangoon district of the Irrawaddy delta; and Mr. Inglis has obtained specimens from North-eastern Cachar (Str. F. v. p. 25). Messrs. Hume and Davison state that it is generally distributed throughout the Tenasserim province at an elevation not exceeding 5000 feet; and it extends quite to the south of the Malayan peninsula, Mr. Davison having shot it in Johore and seen it in Singapore. Other localities from which this species has been obtained will be seen by reference to the list of specimens examined. In Mr. Hume's review of the genus *Iyngipicus* (Str. F. 1875, p. 60), he states that this species occurs throughout Eastern Bengal, Assam, Pegu, Tenasserim, the Malay peninsula, and North-west Sumatra. Amongst those which I have examined I have never yet seen it from the latter island; but it is very probable that it does occur there. In this species there is a great tendency to variety in the spotting of the tail-feathers, in Tenasserim the birds frequently having the four central feathers uniform or with only one spot of white. Captain Feilden has already noted two races of this species; and these

have been referred to by Mr. Hume (Str. Feath. 1875, p. 59)—one a small race inhabiting the dense jungle around Thayetmyo, and a larger bird (true *canicapillus*) found on the borders of cultivation. The smaller race (which is clearly distinct) I have named *Iyngipicus pumilus*.

E Mus. Brit.

a. ♂ ad. Tenasserim (*J. D. C. Packman*).
b, c. ♂ ♀ ad. Tenasserim.

E Mus. R. G. Wardlaw-Ramsay.

a, b. ♂ ad. Tonghoo (*R. G. W.-R.*).
c, d, e. ♂ ad., ♂ ♂ imm. Tonghoo.
f, g, h, i. ♀ ad. Tonghoo (*R. G. W.-R.*).
j. ♀ ad. Tonghoo.
k, l. ♂ ♀ imm. Thayetmyo.
m, n. ♂ ♀ ad. Kyouk Kyee, B. Burma (*R. G. W.-R.*).
o. ♂ ad. Schoway Goon, Salween R. (*R. C. Beavan*).
p, q. ♂ ♀ ad. Karen Nee (*R. G. W.-R*).
r, s, t. ♂ imm., ♀ ♀ ad. imm. Karen hills (*R. G. W.-R.*).
u. ♂ ad. Burma (*R. G. W.-R.*).
v. ♂ ad. S. Tenasserim (*E. W. Oates*).
w. ♂ ad. Tenasserim.
x. ♂ ad. Malacca (*Maingay*).
y. ♂ ad. Straits of Malacca.

E Mus. E Hargitt.

a. ♂ ad. Near Tavoy, B. Burma (*W. Davison*).
b, c, d. ♀ ad. Tonghoo (*E. W. Oates*).
e, f. ♀ ad. Pegu (*E. W. Oates*).
g, h. ♂ ♀ imm. Pegu (*E. W. Oates*).
i, j. ♂ ad. S. Tenasserim (*E. W. Oates*).
k. ♀ ad. S. Tenasserim (*E. W. Oates*).

14. Iyngipicus picatus, sp. nov.

I. similis *I. canicapillo*, sed intense niger, fascia mystacali nigricante lata et valde distincta distinguendus, et subtus latius striolatus.

Hab. In parte septentrionali occidentali insulæ Borneensis.

This new species is allied to *I. canicapillus*, but may be

distinguished by its intensely black plumage, which contrasts strongly with the white bearing and other markings, and also by its broad and dark moustachial stripe, as well as the auricular one; the striations on the underparts are also broader. The type is in the British Museum, and was obtained by Mr. Hugh Low in N.W. Borneo.

E Mus. Brit.

a. ♂ ad. N.W. Borneo (*Hugh Low*).

15. Iyngipicus auritus.

Petit Pic des Moluques, Daubent. Pl. Enl. pl. 748. fig. 2.

Le petit Épeiche brun des Moluques, Buff. Hist. Nat. Ois. vii. p. 68.

Picus moluccensis, Gm. Syst. Nat. i. p. 439 (1788, ex Buff.); Steph. Gen. Zool. ix. p. 178 (1815); Vieill. N. Dict. d'Hist. Nat. xxvi. p. 86 (1818); Horsf. Trans. Linn. Soc. xiii. p. 177 (1822); Bonn. et Vieill. Enc. Méth. iii. p. 1314 (1823); Vigors, Mem. Raffl. p. 669 (1830); Gray, Gen. B. ii. p. 435 (1845, exclus. syn.); Blyth, Cat. B. Mus. As. Soc. p. 63 (1849); Bp. Consp. i. p. 137 (1850); Temm. & Schl. Faun. Japon. p. 74 (1850); Cab. & Heine, Mus. Hein. Th. iv. p. 61 (1863); Gray, List Picid. Brit. Mus. p. 42 (1868); id. Hand-l. B. ii. p. 184, no. 8588 (1870).

Picus minor, Raffl. Trans. Linn. Soc. xiii. p. 290 (1822, nec L.).

Picus variegatus, Wagl. Syst. Av. *Picus*, no. 27 (1827, nec Lath.); Malh. Monogr. Picid. i. p. 139, pl. xxxiii. figs. 8–10 (1861); Sundev. Consp. Av. Picin. p. 28 (1866); Gray, List Picid. Brit. Mus. p. 43 (1868); id. Hand-l. B. ii. p. 184. no. 8580 (1870).

Tripsurus auritus, Eyton, Ann. & Mag. Nat. Hist. xvi. p. 229 (1845).

Yungipicus moluccensis, Horsf. & Moore, Cat. B. Mus. E.I. Co. ii. p. 675 (1854); Bp. Consp. Volucr. Zygod. p. 8 (1854).

Yungipicus auritus, Bp. Consp. Volucr. Zygod. p. 8 (1854).

Bæopipo variegata, Cab. & Heine, Mus. Hein. Th. iv. p. 54 (1863).

Bæopipo aurita, Cab. & Heine, t. cit. p. 59 (1863).

Picus auritus, Gray, List Picid. Brit. Mus. p. 41 (1868); id. Hand-l. B. ii. p. 183. no. 8575 (1870).

Picus sondaicus, Wall. MSS.; Gray, Hand-l. B. ii. p. 184. no. 8589 (1870); Wall. in Salvad. Ucc. Born. p. 43, note (1874).

Iyngipicus fusco-albidus, Salvad. Ucc. Born. p. 42 (1874); Nicholson, Ibis, 1879, p. 165; Sharpe, Ibis, 1879, p. 240.

I. similis *I. canicapillo*, sed paullo minor et supra brunnescentior; pileo sepiario-brunneo, nucha nigricante.

Hab. In regione Indo-Malayanâ.

The first notice of this little bird appears to have been by Daubenton, who gave a figure of it under the name of the "Petit Pic des Moluques;" and Buffon subsequently referred to it as "Le petit Épeiche brun des Moluques." Daubenton's plate must have been published first, though the date on the title-page is subsequent to the work of Buffon, who, however, settles this question by referring, in the latter volume, to Daubenton's figure. A great deal of controversy has arisen over this figure, which I am pretty sure was taken from a bird of the Javan race. I think it is going a little too far to trust to the measurements of one of these ancient plates in order to fix the dimensions of a species. Yet this is what Mr. Wallace has done, and has proposed to attach the name of *I. moluccensis* (Gm.), founded on Daubenton's plate, to the Pygmy Woodpecker inhabiting Lombock and Flores, while he has given a new name to the Javan bird. I cannot follow Mr. Wallace in this matter; for I have never heard of any collector but himself having visited Lombock and Flores; and it is most improbable that the ancient writers ever received any birds from these islands. The name of *moluccensis*, I think, ought to be rejected, as it gives an entirely erroneous idea of the habitat of the bird, no species of Woodpecker being found in the Moluccas. The name *P. variegatus* of Wagler, though it is founded on a Javan specimen, as shown by Drs. Cabanis and Heine, cannot be employed; for there is already a *Picus varigatus* of Latham (Ind. Orn. i. p. 233), which is *Picus bicolor* of Gmelin, and the name is therefore preoccupied.

The type of Eyton's *Tripsurus auritus*, from Malacca, is in the British Museum; and on comparing it with a series from Java, Sumatra, and Borneo, I believe the bird to be of the same species from all these localities, and therefore I have called it *Iyngipicus auritus* (Eyton).

Average measurements of six specimens from Malacca, Sumatra, and Java—bill 0·6, wing. 2·92.

Average measurements of four Bornean specimens—bill 0·65, wing 2·87.

E Mus. Brit.

a. ♂ ad. Malacca, type (*A. Charlton*).
b. ♂ ad. Malacca (*Dr. Cantor*).
c. ♀ ad. Malacca (*Dr. Cantor*).
d. ♂ ad. Pulo Penang.
e. ♂ ad. Sumatra (*A. R. Wallace*).
f. ♀ ad. Sumatra.
g. ♂ ad. E. Java (*A. R. Wallace*).
h, i. ♂. W. Java (*E. C. Buxton*).
j. ♂. Java (*Leyden Mus.*).
k. ♀ ad. Java (*Horsfield*).
l. ♀ ad. Java.
m. ♀ ad. Java (*Gould's coll.*).
o, p. ♀ juv., ♀ ad. Labuan (*Hugh Low*).

E Mus. H. Seebohm.

a. ♀ ad. Java.
b. ♀ ad. Sumatra.

E Mus. E. Hargitt.

a. ♂ ad. Java.
b. ♀ ad. Java.
c, d, e. ♀. Java (*E. C. Buxton*).
f. ♂ ad. Borneo.
g, h, i. ♂ ad., ♀ ad., ♀ juv. Labuan (*Hugh Low*).

E Mus. R. G. Wardlaw-Ramsay.

a, b. ♂ ♀. Malacca.
c, d. ♂ ♀ ad. Lampong, S.E. Sumatra.
e, f. ♂ imm. Lampong, S.E. Sumatra.

g. ♂ ad. E. Java (*A. R. Wallace*).
h, *i*, *j*, *k*. ♂ ad. Java.
l, *m*. ♂ imm., ♀ ad. Java.
n. ♂ ad. N.E. Borneo.
o. ♂ ad. N.E. Borneo (*H. Low*).
p. ♀. N.E. Borneo.

16. Iyngipicus grandis, sp. nov.

Picus moluccensis, Wall. (nec Gm.) in Salvad. Ucc. Born. p. 43, note (1874).

I. similis *I. aurito*, sed multo major et rectricibus maculis quatuor nec tribus albis notatis.

Hab. In insulis Malayanis "Lombock" et "Flores" dictis.

Average measurements of four males and two females in the British Museum :—

♂. Length 5·62, bill 0·77, wing 3·22, tail 0·57, tarsus 1·7;
♀. „ 5·9, „ 0·77, „ 3·23, „ 0·6, „ 1·7.

E Mus. Brit.

a, *b*. ♂ ♀ ad. Lombock (*A. R. Wallace*).
c, *d*, *e*. ♂ ♂ ♀. Lombok (*A. R. W.*), *Gould coll.*
f. ♂ imm. Flores (*A. R. W.*).

E Mus. R. G. Wardlaw-Ramsay.

a, *b*. ♂ ♀ ad. Flores (*A. R. Wallace*).

17. Iyngipicus hardwickii.

Picus moluccensis, Gray (nec Gm.) in Hardw. Ill. Ind. Zool. i. pl. 33. figs. *a*, *b* (1830–32); Blyth, J. A. S. Beng. xiv. p. 197 (1845).

Picus (*Dendrocopus*) *hardwickii*, Jerd. Madr. Journ. xiii. p. 138 (1844).

Picus hardwickii, Blyth, J. A. S. Beng. xv. p. 15 (1846); Gray, Gen. B. iii. App. p. 21 (1849); Bp. Consp. i. p. 136 (1850).

Picus cinereigula, Malh. Rev. et Mag. de Zool. 1849, p. 531; Bp. Consp. i. p. 136 (1850); Reichenb. Handb. Scansoriæ, Picinæ, p. 373 (1854).

Picus variegatus, Blyth (nec Wagl.), Cat. B. Mus. As. Soc. p. 64 (1849).

Yungipicus variegatus, Horsf. & Moore (nec Wagl.), Cat. B. E.I. Co. Mus. ii. p. 675 (1854).

Yungipicus hardwickii, Bp. Consp. Volucr. Zygod. p. 8 (1854); Jerd. B. Ind. i. p. 278 (1862); Blyth, Ibis, 1866, p. 354; Jerd. Ibis, 1872, p. 8; Butler, Str. F. 1876, p. 36; Fairb. t. cit. p. 255.

Yungipicus nanus, Ball (nec Vigors), Str. F. 1874, p. 390; Hume, Str. F. 1875, p. 60; Butler, Cat. B. Scinde &c. p. 18 (1879); Hume, Str. F. 1879, p. 87; Butler, Cat. B. of the S. Portion of Bombay Presidency, 1880, p. 22.

I. pileo toto pallide umbrino vel fulvo-brunneo, occipite nuchaque pileo concoloribus.

Hab. in peninsulâ Indicâ.

This is a very distinct species, and may be known by its light ochreous brown crown and nape. Jerdon (B. of India, i. p. 278) states that it is generally spread throughout the plains of India from the extreme south to the north-west provinces. Capt. E. A. Butler in his 'Catalogue of Birds of the Southern Portion of the Bombay Presidency,' 1880, p. 22, says that it occurs sparingly along the Sahyadri range as far north as Khandāla, and that it has been obtained at Mahābaleshvar, Savant-vadi, Ratnāgiri, in the Goa forests, and on the hills west of Belgaum.

E Mus. Brit.

a. ♂ ad. India.
b. ♂ ad. India (*Gould coll.*).
c. ♂ imm. Godavery valley (*W. T. Blanford*).
d, e. ♂ ad., ♀ imm. Kamptee (*Dr. R. B. Hinde*).
f. ♀ ad. India.
g. ♀ ad. India (*Gould coll.*).
h. ♂. Behar (*B. H. Hodgson*).

E Mus. E. Hargitt.

a, b, c. ♂ ad. N.W. Punjaub (*A. Anderson*).
d. ♂ ad. Muddunpore (*A. Anderson*).
e. ♂ ad. Puttee (*A. Anderson*).
f. ♂ ad. (*A. Anderson*).
g. ad. Raipoor district (*coll. E. W. Oates*).

E Mus. R. G. Wardlaw-Ramsay.

a, b. ♂ ad. Gondah (*Capt. Pinwill*).
c. ♂ ad. West Coast, India.
d, e. ♀ imm., ♂. Candeish.
f. ♀ ad. Oudh? (*Col. Sharpe*).
g. ♀ ad. N. E. India.

18. Iyngipicus gymnophthalmus.

Little Brown Woodpecker, Lath. Gen. Syn. Suppl. p. 109 (1787).

Picus moluccensis, var. *β*, Lath. Ind. Orn. i. p. 234 (1790).

Picus minor, var. *γ*, Lath. t. cit. p. 230 (1790).

Picus gymnophthalmos, Blyth, J. A. S. Beng. xviii. p. 804 (1849); id. Cat. B. Mus. As. Soc. p. 64 (1849); Layard, Ann. & Mag. Nat. Hist. xiii. p. 448 (1854); Reichenb. Handb. Scansoriæ, Picinæ, p. 373 (1854); Gray, Hand-l. B. ii. p. 184. no. 8578 (1870).

Yungipicus gymnophthalmos, Kelaart, Prodr. Cat. p. 128 (1852); Jerd. B. Ind. i. p. 279 (1862); Holdsw. P. Z. S. 1872, p. 427; Legge, Str. F. 1873, p. 433; id. Ibis, 1874, p. 15; id. Str. F. 1875, p. 365; id. Birds of Ceylon, p. 186 (1879).

Yungipicus gymnophthalmus, Bp. Consp. Volucr. Zygod. p. 8 (1854); Jerd. Ibis, 1872, p. 8.

Picus nanus, Malh. (nec Vigors), Monogr. Picid. i. p. 145, pl. 33. figs. 1–7 (1861).

Picus gymnophthalmus, Malh. Monogr. Picid. i. p. 153 (1861); Sundev. Consp. Av. Picin. p. 28 (1866); Gray, List Picid. Brit. Mus. p. 42 (1868).

Bæopipo gymnophthalma, Cab. & Heine, Mus. Hein. Th. iv. p. 59 (1863).

I. subtus concolor, in avibus junioribus vix fusco striolatus; pileo summo occipiteque nigris.

Hab. in insulâ Ceylonensi.

Ceylon is the true "habitat" of this species. The bird from the "extreme south of Malabar and Travancore" (Jerdon, Supp. B. of India, Ibis, 1872, p. 8) is, no doubt, the same as the species obtained by Mr. F. W. Bourdillon in

Travancore, and recorded as occurring on the Palani hills by Mr. S. B. Fairbank, and, I think, may be referred to the race of the above species which I have named *Iyngipicus peninsularis*. I have never seen a typical specimen of *I. gymnophthalmus* from any other locality than Ceylon.

Neither this species nor *I. peninsularis* have any moustachial stripe.

E Mus. Brit.

a. ♂ ad. Colombo, Ceylon (*I. P. Green*).
b. ♂ ad. Ceylon (*W. V. Legge*).
c. ♂ ad. Ceylon (*Cuming*).
d. ♂ ad. (*Cuming*).
e, f. ♂, ♀ ad. Ceylon (*Gould coll.*).

E Mus. E. Hargitt.

a. ♂ ad. Ceylon.
b. ♂ juv. Ceylon (*W. V. Legge*).
c, d. ♀ ad. Ceylon.
e. ♀ ad. Ceylon (*W. V. Legge*).

E Mus. R. G. Wardlaw-Ramsay.

a, b. ♂, ♀ ad. Ceylon.
c, d. ♂, ♀ ad. Ceylon (*Nevill*).
e. ♂ ad. Ceylon (*D. H. P.*).
f. ♀. Dumabra.

19. Iyngipicus peninsularis, sp. nov.

Picus nanus, Malherbe (nec Vigors), Monogr. Picid. p. 145, pl. xxxiii. figs. 1–5 (1861); Sundevall, Consp. Av. Picin. p. 28 (1866); Gray, Cat. Picidæ Brit. Mus. p. 42 (1868); id. Hand-l. B. ii. p. 184. no. 8579 (1870).

Picus gymnophthalmus, auct. ex Indiâ (nec Blyth); Bourd. Str. F. 1876, p. 389.

I. similis *I. gymnophthalmo*, sed pileo summo brunneo nec nigro, et occipite tantum saturatiore brunneo distinguendus.

Hab. in peninsulâ Indicâ meridionali.

This race of *I. gymnophthalmus* may be distinguished from the Ceylon bird by having the crown, nape, and ear-coverts brown, and the upper parts, as well as the stripe behind the

ear-coverts, of a browner shade, all these in *I. gymnophthalmus* being nearly black; and although very adult specimens of *I. peninsularis* become uniform on the under surface, as in its ally, it has, as a rule, the underparts narrowly and faintly streaked with rufous brown. This species resembles *I. hardwickii* in its striations, but may easily be distinguished by its dark brown crown. *I. peninsularis* is found in the extreme south of India, and, so far as I know, is not recorded from any locality north of Madras.

E Mus. Brit.

a. ♀ ad. (*Warwick*).
b. ♀ ad. Madras (*Gould coll.*).
c. ♂ ad. Madras (*Rev. H. Baber*).

E Mus. R. G. Wardlaw-Ramsay.

a, b. ♂ ad., ♀ imm. West Coast.
c, d. ♂ ad., ♀ imm.

20. Iyngipicus ramsayi.

Iyngipicus ramsayi, Hargitt, Ibis, 1881, p. 598.

I. similis *I. temmincki*, sed paullo major, subtus flavo clare lavatus, præcipue remigibus rectricibusque concoloribus et fascia occipitali lata scarlatina, haud interrupta, et dorso haud fasciato, fascia quoque superciliari alba ad latera colli producta distinguendus.

Hab. in Borneo septentrionali-orientali. Typus in Mus. R. G. Wardlaw-Ramsay.

Of this new species I have only seen two specimens, both males, which are in the collection of Capt. Wardlaw-Ramsay. They were obtained in N.E. Borneo.

E Mus. R. G. Wardlaw-Ramsay.

a, b. ♂ ad. N.E. Borneo.

21. Iyngipicus temmincki.

Picus temmincki, Malherbe, Rev. et Mag. de Zool. 1849, p. 529; Bp. Consp. i. p. 137 (1850); Malh. Monogr. Picid. i. p. 155, pl. xxxvi. fig. 3 (1861); Sundev. Consp. Av. Picin. p. 29 (1866); Gray, List Picid. Brit. Mus. p. 43 (1868); id. Hand-l. B. ii. p. 184. no. 8583 (1870).

Yungipicus temmincki, Bonap. Consp. Volucr. Zygod. p. 8 (1854); Walden, Tr. Z. S. viii. pp. 41, 111 (1872); Salvad. Ann. Mus. Civic. Genov. vii. p. 647 (1875); Meyer, Ibis, 1879, p. 57.

Bæopipo temmincki, Cab. & Heine, Mus. Hein. Th. iv. p. 60 (1863).

Yungiceps temmincki, Meyer, J. f. O. 1873, p. 405 (laps. cal.).

I. fascia occipitali rubra, medialiter paullo interrupta; dorso et supracaudalibus olivascenti-brunneis pallide fulvescenti transfasciatis; rectricibus obscure umbrino transfasciatis.

Hab. in insulâ Celebensi.

A female in the Leiden Museum served for Malherbe's type. During the last few years the species has frequently been sent in collections from Celebes; and we are now perfectly acquainted with both sexes. The British Museum contains a series; and in the males examined I find that the scarlet occipital band does spread onto the side of the neck, as described by Lord Tweeddale; and the specimen which no doubt served that author for his description (which bird I have before me while I write) has this red patch on the side of the neck, and as such is conspicuous; this arises from the occipital band not being fully developed. As far as I am aware, no mention has been made of this extension of the scarlet band onto the side of the neck, except by Lord Tweeddale, although Salvadori notices the way in which the scarlet nape is interrupted in the middle. The latter author duly criticises Malherbe's plate, and points out the inaccuracies. It must not be forgotten that the presence of an *Iyngipicus* in Celebes is of the greatest interest, as affording an illustration of a purely Indian genus occurring in the island. It is, however, of a somewhat peculiar coloration, and by no means, as suggested by Bonaparte and others, resembling *I. kizuki*. This species probably ranges throughout the whole of Celebes. It has been obtained at Macassar by Mr. Wallace and Dr. Meyer as well. Bruijn procured it at Menado; while in Capt. Wardlaw-Ramsay's collection there are two specimens labelled N. Celebes.

E Mus. Brit.

a. ♂ ad. Celebes (*A. R. Wallace*).
b, c. ♂ ♀ ad. Macassar (*A. R. Wallace*).
d, e. ♂ ♀ ad. Celebes (*Gould coll.*).
f. ♂ ad. Menado (*Gould coll.*).

E Mus. R. G. Wardlaw-Ramsay.

a, b. ♂ ♀ ad. N. Celebes.

III.—*On Collections of Birds made by Mr. H. O. Forbes in South-eastern Sumatra.* By Francis Nicholson, F.Z.S.

The present collection of Mr. Forbes's does not contain many species which are not recorded by the late Marquis of Tweeddale, in his paper on Mr. Buxton's Lampong collection (Ibis, 1877, pp. 283–323). It is indeed to be regretted that Mr. Forbes, who is an excellent collector, has not penetrated further into the islands he has visited; for at present the specimens obtained by him have nearly all belonged to well-known species, and I have published lists of them chiefly on account of the notes attached by Mr. Forbes concerning the soft parts &c.

The birds here enumerated have been obtained by Mr. Forbes chiefly in the Lampong district of S.E. Sumatra; and I have referred throughout to Lord Tweeddale's excellent memoir*, as well as to Count Salvadori's paper† on Dr. Beccari's collection.

1. Microhierax fringillarius (Drap.); Tweedd. *t. cit.* p. 286; Salvad. *t. cit.* p. 172.

No. 283, ♀. Kitta Djawa, Sumatra. Irides brown; bill, legs, and feet black.

This bird seems to me rather large, when compared with

* Tweeddale, Marquis of, "On a Collection of Birds made by Mr. E. C. Buxton in the district of Lampong, S.E. Sumatra" (Ibis, 1877, pp. 283–323).

† Salvadori, T., "Catalogo di una collezione di Uccelli fatta nella parte occidentale di Sumatra dal Prof. Odoardo Beccari" (Ann. Mus. Civic. Genov. xiv. pp. 169–253).

Malaccan specimens; but the wing only measures 3·85, which is less than the measurements given by Mr. Sharpe, who, however, does not state the locality whence the specimen described by him in the 'Catalogue' came (vol. i. p. 368).

2. Astur trivirgatus (Temm.); Tweedd. *t. cit.* p. 286.

No. 287. Kitta Djawa, Sumatra. Irides golden-orange; bill bluish black; gape yellow; legs and feet bright yellow.

A beautiful adult specimen, with grey head and prominent crest. It agrees in the main with the description of the male given by Mr. Sharpe (Cat. B. i. p. 105), but has the chest rufous-brown, broadly streaked with black; it has, however, only three instead of four bands on the tail as described by Mr. Sharpe.

3. Spilornis pallidus, Walden; Sharpe, Cat. B. Brit. Mus. i. p. 290, pl. ix.

Spilornis bacha ?, Salvad. t. cit. p. 173.

No. 306, ♀. Gounong Trang. Irides rich golden yellow; cheeks (sides of face) yellow; bill light blue; legs and feet yellow.

It is rather remarkable that Mr. Forbes should have met with this species, which is new to the avifauna of Sumatra, in the same locality as undoubted *S. bacha*; but there seems to be no doubt as to the identification of *S. pallidus*, of which the small size and pale coloration render it easily recognizable. The specimen sent is a female; and the wing only measures 14·5 inches, taken with a tape from carpal joint to end of primaries, which was the way Mr. Sharpe measured all his birds of prey. It will be seen that this length of wing is the limit given by Mr. Sharpe for the species; but then he had only a young female to go upon, whereas Mr. Forbes's example is quite adult.

4. Spilornis bacha (Daud.); Sharpe, Cat. B. Brit. Mus. i. p. 290.

No. 309 *a*, ♀. Gounong Trang, Sumatra. Irides rich golden-yellow; cheeks (sides of face) yellow; bill light blue; legs and feet yellow.

An adult bird. Wing 15 inches.

The above length of wing is very small when compared with the 16·5 inches attributed to the female of this species by Mr. Sharpe, who, however, does not seem to have examined a Sumatran example. The small difference in size of wing between the two female birds collected by Mr. Forbes is scarcely sufficient to make one believe in the existence of two species in Sumatra; but the colour is very different, and Mr. Sharpe tells me that, as far as his experience goes, the female of *S. pallidus* is always as light-coloured as the male, and he has seen plenty of specimens from Borneo, and never yet saw one approaching the dark brown of *S. bacha*. To any one working at this difficult genus of Eagles, I shall be glad to lend these two Sumatran skins collected by Mr. Forbes.

5. Ketupa javanensis (Less.); Sharpe, Cat. B. ii. p. 8; Salvad. *t. cit.* p. 176.

No. 338*a*, ♀. Irides light orange; bill black; legs and feet pale grey.

No. 309, ♀. Gounong Trang. Irides bright yellow; bill greyish black; legs and feet dirty white.

The measurements of No. 338*a*, which seems to me to be an old bird, slightly exceed those of the one described by Mr. Sharpe (*l. c.*), the wing measuring 14·2 and the tarsus 2·8 inches.

6. Scops lempigi (Horsf.); Sharpe, Cat. B. ii. p. 91; Salvad. *t. cit.* p. 175.

No. 308, ♀ ad. Gounong Trang. Irides dark yellow; bill, legs, and feet dark grey.

No. 318*a*, ♀ juv. Penang-goengan, Lampong. Irides dark orange; bill, legs, and feet dirty whitish grey.

7. Rhopodytes diardi (Less.); Tweedd. *t. cit.* p. 287; Salvad. *t. cit.* p. 186.

No. 257, ♂. Goenoeng Tetahan, S. Sumatra. Irides dark brown; bill light green; legs and feet bluish black; round eyes, bright scarlet.

8. Centropus eurycercus (A. Hay); Tweedd. *t. cit.* p. 288; Salvad. *t. cit.* p. 188.

No. 299 *a*. Irides dark lake-red at centre, getting light red towards margin of bill; legs and feet black.

9. Zanclostomus javanicus (Horsf.); Tweedd. *t. cit.* p. 287.

No. 277, ♀. Kitta Djawa, S. Sumatra. Irides light brown; upper and lower mandibles light red; legs and feet dirty blue.

No. 281, ♀. Kitta Djawa. Lake-red irides (no red on face of bird); skin round eyes blue; legs &c. as in No. 277.

No. 336, ♀. Tarratas. Irides light red; bill scarlet; legs and feet black.

10. Rhinortha chlorophæa (Raffl.); Tweedd. *t. cit.* p. 287; Salvad. *t. cit.* p. 186.

No. 272 *a*, ♀. Kitta Djawa. Irides dark grey; bill bluish green; skin round eyes pale greenish blue; legs and feet black: insect feeder.

No. 272, ♂. Kitta Djawa. Soft parts as in No. 272 *a*.

No. 313, ♀. Gounong Trang. Irides dark grey; upper mandible green, with sooty-coloured streaks through it; lower mandible greenish grey; legs and feet dirty blue.

11. Penthoceryx pravatus (Horsf.); Salvad. Ucc. di Born. p. 63.

No. 300, ♀. Gounong Trang. Irides greyish brown; upper mandible black, lower yellowish grey; feet light yellow.

12. Thriponax javensis (Horsf.); Tweedd. *t. cit.* p. 288.

No. 314, ♂. Gounong Trang. Irides yellowish grey or very light gamboge; bill black; legs and feet dirty black.

13. Xylolepes validus (Raffl.); Salvad. *t. cit.* p. 181.

No. 312, ♂. Gounong Trang, Lampong. Irides light yellow or yellow-ochre-colour; legs and feet faded yellow-ochre.

No. 329 *a*. Pinang-goengan, Lampong.

No. 273, ♀. Kitta Djawa. Irides reddish brown; upper

mandible darker dirty grey than the lower, which is pale dirty white; legs slate-blue.

14. Callolophus mentalis (Temm.); Tweedd. *t. cit.* p. 288; Salvad. *t. cit.* p. 181.

No. 301, ♀. Gounong Trang. Irides dark red; upper mandible black, the lower one green; bill along margins to tip black; legs and feet green.

15. Callolophus puniceus (Horsf.); Tweedd. *t. cit.* p. 288.

No. 263, ♀. Gounong Tetahan. Irides bluish brown; blue legs and bill.

No. 255. Gounong Tetahan. Feet and legs black; upper mandible black, lower yellow.

No. 307 *a*. Gounong Trang. Irides dark red; upper mandible greyish black, lower yellow; legs dirty green.

16. Micropternus badius (Raffl.); Tweedd. *t. cit.* p. 289; Salvad. *t. cit.* p. 184.

Nos. 259 & 260, ♂. Gounong Tetahan. Feet, legs, and bill black.

No. 303 *c*. Gounong Trang.

No. 330*c*, ♂. Tarratas, S. Sumatra. Irides reddish brown; upper mandible black, lower black at tip, and behind dirty white; legs and feet grey.

17. Meiglyptes tukki (Less.); Tweedd. *t. cit.* p. 290.

No. 336, ♂. Tarratas, S. Sumatra. Irides dark brown.

18. Meiglyptes tristis (Horsf.); Tweedd. *t. cit.* p. 290; Salvad. *t. cit.* p. 184.

No. 290, ♂. Kitta Djawa. Irides reddish brown; bill black; legs and feet dirty greenish white.

No. 306 *a*. Gounong Trang. Irides reddish brown; bill black; legs and feet bright green.

19. Iyngipicus fusco-albidus, Salvad.; Tweedd. *t. cit.* p. 290; Salvad. *t. cit.* p. 180.

No. 262, ♀. Gounong Tetahan. Irides dark brown; bill black; feet the same, but less black.

20. Hydrocissa albirostris (Shaw) ; Salvad. *t. cit.* p. 80.

No. 338, ♀. Tarratas, S. Sumatra. Irides reddish brown; crest on the upper mandible marbled with yellowish grey and with a broad black bar along the anterior end laterally on both sides, posterior end laterally black, apex bluish; lower mandible margined behind with a black band, which comes down in front of the eye to angle of the mandible; skin round eye pale whitish blue; legs and feet bluish black.

21. Hydrocissa malayana (Raffl.); Salvad. *t. cit.* p. 83.

No. 303, ♂. Gounong Trang. Reddish-brown irides; eyelids black; legs and feet black; bill white, with a crescent-shaped elevation.

No. 303 *a*, ♀. Gounong Trang. Irides reddish brown; eyelids yellow; both upper and under mandibles greenish; feet and legs black.

22. Pelargopsis fraseri, Sharpe; Tweedd. *t. cit.* p. 296; Salvad. *t. cit.* p. 194.

No. 266, ♀. Gounong Tetahan. Irides dark brown; legs and feet bright scarlet; bill scarlet, tip black.

The specimen now sent by Mr. Forbes bears out the observation of Lord Tweeddale that this form is nearest to *P. fraseri* of Sharpe, but has too much cap to be absolutely identical with that species as described. The Stork-billed Kingfishers need revision.

23. Merops sumatranus, Raffl.; Tweedd. *t. cit.* p. 297; Salvad. *t. cit.* p. 192.

No. 342, ♂. Tarratas, S. Sumatra. Irides light red; bill, legs, and feet black.

No. 317, ♀ juv. Gounong Trang. Irides dark brown; bill black.

24. Nyctiornis amicta (Temm.); Tweedd. *t. cit.* p. 298; Salvad. *t. cit.* p. 192.

No. 258, ♀. Gounong Tetahan. Irides light orange; legs and feet dirty green; bill black.

No. 323 *a*. Pinang-goenyan. Irides orange; bill black; legs and feet green.

25. Rhopodytes erythrognathus (Hartl.); Tweedd. *t. cit.* p. 287; Salvad. *t. cit.* p. 186.

No. 276, ♀. Kitta Djawa. Irides orange; skin round eye bright scarlet; upper mandible light green, lower one at posterior part dark red, at anterior part light green; legs and feet bluish black: insect feeder.

No. 284 *a*. Kitta Djawa. Iris orange; upper mandible bluish green, lower one at posterior part red, but the point bluish grey; feet black: otherwise as in No. 276.

No. 278, ♂. Kitta Djawa. Irides light blue; other soft parts as in female: insect feeder—grasshoppers and Mantidæ.

The difference found by Capt. Legge in the iris of the male and female of the Ceylonese *Phœnicophaes* is apparently repeated in the case of the Sumatran bird.

26. Psittinus incertus (Shaw); Tweedd. *t. cit.* p. 292.

No. 289, ♂. Kitta Djawa. Irides pale straw-colour; upper mandible scarlet, lower yellowish grey; feet and legs greenish.

27. Harpactes duvauceli (Temm.); Tweedd. *t. cit.* p. 298. *Pyrotrogon duvauceli*, Salvad. t. cit. p. 177.

No. 286, ♂. Kitta Djawa. Irides dark brown (seen three hours after death); bill black at tip, along angle on both mandibles a broad band of rich blue (ultramarine); skin above eye bright blue; legs and feet black.

28. Megalæma mystacophanus (Temm.); Tweedd. *t. cit.* p. 299.

Chotorhea mystacophanes, Salvad. t. cit. p. 179.

No. 336 *a*. Tarratas, S. Sumatra. Irides dark brown; bill black; legs and feet pale dirty green.

No. 339 *a*. Tarratas.

No. 285, ♀ juv. Kitta Djawa. Bill black; lower mandible behind dirty pale; feet pale bluish black; irides dark brown.

29. Megalæma chrysopogon (Temm.); Tweedd. *t. cit.* p. 299.

Chotorhea chrysopogon, Salvad. t. cit. p. 179.

No. 271, ♂. Kitta Djawa. Irides brown; bill black; legs and feet dirty green.

No. 298, ♀. Gounong Trang. Irides dark brown; bill, legs, and feet black.

30. Macropteryx comatus (Temm.); Tweedd. *t. cit.* p. 298.

Macropteryx comata, Salvad. t. cit. p. 196.

No. 330, ♂. Penang-goenyan. Irides dark brown; bill, legs, and feet black.

31. Lyncornis temminckı, Gould; Tweedd. *t. cit.* p. 298; Salvad. *t. cit.* p. 195.

No. 319*a*. Penang goenjan. Irides sooty brown; bill at tip black, behind light purplish white; legs and feet light purplish white.

No. 315, ♀. Gounong Trang. Irides dark brown; legs and feet dirty pale yellow; bill black at tip.

32. Dendrocitta occipitalis (Müll.); Sharpe, Cat. B. iii. p. 81, pl. iii.; Salvad. *t. cit.* p. 239.

No. 336, ♂. Tarratas. Irides dark brown; legs and feet black.

33. Platylophus coronatus (Raffl.); Sharpe, Cat. B. iii. p. 318; Salvad. *t. cit.* p. 229.

Nos. 305 & 305*a*, ♀. Gounong Trang. Irides blue; bill grey; feet light blue.

No. 327*b*, ♂. Penang goenyan. Soft parts the same.

The male and one of the females appear to be somewhat immature. The throat and belly are rather grey, and the tips to the greater and primary wing-coverts light rufous.

34. Platysmurus leucopterus (Temm.); Sharpe, Cat. B. iii. p. 90; Tweedd. *t. cit.* p. 318; Salvad. *t. cit.* p. 240.

Nos. 303*b*, 303*c*, ♀, & 303*f*, ♂. Gounong Trang. Bill, feet, and legs black.

No. 284, ♀. Kitta Djawa. Irides lake-red.

One of the females from Gounong Trang has the upper mandible broken near the base; and the under one has grown to an abnormal length and is quite straight.

35. Dissemurus platurus (V.); Tweedd. *t. cit.* p. 313; Salvad. *t. cit.* p. 208.

No. 338 *b*. Tarratas. Irides light red; bill, legs, and feet black.

No. 321, ♂ imm. Penang goenyan. Brownish-red irides (almost light red).

36. Hemipus obscurus (Horsf.); Tweedd. *t. cit.* p. 313; Salvad. *t. cit.* p. 209.

No. 293, ♀. Kitta Djawa. Irides brown; bill and feet black.

37. Rhipidura perlata, Müll.; Sharpe, Cat. B. iv. p. 328.

Leucocerca perlata (Müll.); Salvad. Ucc. di Born. p. 136.

No. 319, ♂. Penang goenyan. Irides dark brown; bill, legs, and feet black.

38. Ægithina viridissima (Bp.); Tweedd. *t. cit.* p. 304, pl. v. figs. 1 & 2; Salvad. *t. cit.* p. 216.

No. 325, ♀. Legs and feet bright blue.

Said by Mr. Forbes to be a female, but undoubtedly a male.

39. Chloropsis icterocephala.

Phyllornis icterocephala, Less.; Tweed. t. cit. p. 305; Salvad. t. cit. p. 217.

No. 329 *a*, ♂. Pinang goenyan, Lampong. Irides dark brown; bill black; legs and feet dirty blue.

40. Chloropsis zosterops, Vigors.

Phyllornis viridis (Horsf.); Tweedd. t. cit. p. 305.

P. sonnerati, Salvad. t. cit. p. 217.

No. 270, ♀. Kitta Djawa. Irides dark brown; legs black; feet the same; bill black.

41. Iole olivacea, Blyth; Tweedd. *t. cit.* p. 307.

No label on this specimen.

42. Pycnonotus simplex (Less. Rev. Zool. 1839, p. 107).

No. 337, ♀. Tarratas, S. Sumatra. Yellowish-red irides; bill dirty greenish black; legs and feet dirty flesh-colour.

This bird, Mr. Sharpe informs me, is the species named *P. brunneus* by Mr. Blyth (J. A. S. Beng. xiv. p. 568), and *Microtarsus olivaceus* by Mr. Moore (Cat. B. E.I. Co. Mus. i. p. 249); but he considers it to be the true *P. simplex* of Lesson.

43. Irena crinigera, Sharpe, Cat. B. iii. p. 267.

Irena cyanea, Salvad. t. cit. p. 207 (nec Begbie).

No. 307, ♂. Gounong Trang. Irides dark red; legs and feet black.

No. 320, ♀. Penang goenyan. Dark-red irides.

No. 326 *a*, ♀. Penang goenyan. Irides light red.

Count Salvadori does not allow this species of Mr. Sharpe's; but I find the character of the tail-coverts quite pronounced in the male bird above noted, and I think it is easily distinguishable, as a race at least.

44. Cittocincla macrura (Gm.); Tweedd. *t. cit.* p. 309; Salvad. *t. cit.* p. 236.

No. 327, ♀. Penang goenyan, Lampong. Irides dark blue; bill black; legs and feet pale flesh-colour.

45. Henicurus ruficapillus (Temm.); Elwes, Ibis, 1872, p. 257; Salvad. *t. cit.* p. 234.

Nos. 326, 327 *d*, ♂, & 327 *c*, ♀. Penang goenyan, Lampong. Irides dark brown; bill black; legs sickly white, feet the same. Frequents streams.

The female differs from the male in having the whole back chestnut like the head, not the "upper back" as stated by Temminck. There is no difference in the sexes as regards the colour of the throat (*cf.* Elwes, *l. c.*).

46. Copsychus musicus (Raffl.); Tweedd. *t. cit.* p. 309; Salvad. *t. cit.* p. 236.

No. 265, ♂. Gounong Tetahan, S. Sumatra.

47. Arrenga melanura, Salvad. *t. cit.* p. 227.

No. 340, ♀. Tarratas, S. Sumatra. Irides dark brown; legs, bill, and feet black.

This is an interesting species, allied, as Count Salvadori has pointed out, to *A. cyanea*, Horsf., of Java, but to my mind much more distinct than his description would imply. In *A. cyanea* the whole upper surface is blue, brighter on the forehead; whereas in *A. melanura* the crown is black, and the dorsal feathers are black margined with blue, the rump again being black; underneath, too, the general colour is black, with blue-margined feathers on the throat and breast.

48. Garrulax palliatus, S. Müll.; Gray, Hand-l. B. i. p. 282, no. 4162.

Garrulax frenatus, Salvad. t. cit. p. 230.

Nos. 334 & 341, ♀. Tarratas. Irides dark grey; bill, legs, and feet black.

Count Salvadori has suggested the name of *G. frenatus*, if it should turn out that Bonaparte's *G. palliatus* should prove to be different from the bird collected by Dr. Beccari in Mount Singalan. Bonaparte has omitted to mention the black streak under the eye; but this is so little pronounced in some specimens that I do not think for a moment that there is more than one species.

49. Ianthocincla mitrata (S. Müll.).

Garrulax mitratus, Gray, Hand-l. B. i. p. 282, no. 4173.

Leiothrix mitrata, Salvad. t. cit. p. 230.

No. 335, ♀. Tarratas. Irides dark brown; legs and feet yellow.

50. Malacopteron magnum, Eyton; Salvad. Ucc. di Born. p. 226.

No 329, ♀. Penang goenyan, Lampong. Irides reddish brown; upper mandible black, the tip brown; lower mandible pale flesh-colour.

51. Prinia familiaris, Horsf.; Tweedd. *t. cit.* p. 311; Salvad. *t. cit.* p. 235.

No. 331, ♀. Tarratas. Irides dark brown; upper mandible black, the lower one light yellow, black at tip; legs and feet flesh-colour.

As far as I can see (the specimen not being very well preserved), the bird sent by Mr. Forbes has white lores, as was the case with one of the birds mentioned by Lord Tweeddale (*l. c.*). In the British Museum a Sumatran specimen has the lores grey. Can it be that the white lores are a mark of the hen bird?

52. Orthotomus ruficeps, Less.; Sharpe, Ibis, 1877, p. 114.

No. 309 *c*. Irides dark red, almost the colour of the top of the head.

53. Orthotomus cineraceus, Blyth; Tweedd. *t. cit.* p. 312. *Orthotomus borneoensis*, Salvad. t. cit. p. 235.

No. 303 *b*, ♂. Gounong Trang. Irides almost colour of top of head, but somewhat lighter; feet and legs pale greyish yellow; upper mandible grey, lower same colour as legs.

54. Orthotomus atrigularis, Temm.; Sharpe, Ibis, 1877, p. 113.

No. 267, ♂. Gounong Tetahan. Irides reddish straw-colour, approaching the colour of the top of the head; under mandible pale flesh-colour; upper mandible black; legs and feet pale flesh-colour.

55. Dendrophila frontalis (Horsf.); Salvad. Ucc. di Born. p. 161.

Nos. 292 & 292 *a*, ♀. Kitta Djawa. Irides gamboge-green; upper mandible black, except at nostrils and back part of culmen, where it is red; lower mandible light red, but the point black; feet and legs black.

56. Calobates melanope (Pall.); Tweedd. *t. cit.* p. 310; Salvad. *t. cit.* p. 236.

No. 332, ♂. Tarratas, S. Sumatra. Irides dark brown; bill black; legs and feet reddish grey.

No. 343 *a*, ♀. Tarratas. Upper mandible black, lower one grey underneath; legs and feet pale yellow.

57. Calornis chalybea (Horsf.); Tweedd. *t. cit.* p. 318; Salvad. *t. cit.* p. 238.

Nos. 302 & 302 *c*, ♀ ad. Gounong Trang. Irides bright red; bill, feet, and legs black.

No. 299, ♀ juv. Gounong Trang. Irides red; feet and bill black,

No. 393, ♂ juv. Tarratas. Irides light orange.

58. Gracula javanensis (Osb.); Tweedd. *t. cit.* p. 319; Salvad. *t. cit.* p. 238.

Nos. 304, ♀, & 304 *a*, ♀? Gounong Trang. Irides dark brown; both mandibles orange-red, tipped with orange; legs and feet yellow.

59. Erythrura prasina (Sparrm.); Salvad. Ucc. di Born. p. 268.

No. 333, ♂. Tarratas, S. Sumatra. Irides black; bill black; legs and feet pale yellow.

60. Pitta boschii, Müll. & Schl.; Tweedd. *t. cit.* p. 309. *Eucichla boschii*, Gould, Monogr. Pittidæ, part i.

No. 264, ♂. Gounong Tetahan. Irides dark brown; bill black; legs in front dirty blue, behind pale straw-colour.

No. 309, ♀. Gounong Trang. Same soft parts as in male.

No. 322 *a*. Penang goenyan, Lampong.

61. Pitta muelleri (Bp.); Salvad. Ucc. di Born. p. 240.

No. 256, ♀. Gounong Tetahan. Irides dark brown; legs pale; feet dirty blue; bill black.

62. Eurylæmus javanicus, Horsf.; Salvad. Ucc. di Born. p. 107.

Nos. 330 *a*, ♂, & 330 *b*, ♀. Penang goenjan. Irides cobalt-blue; upper mandible cobalt-blue with a belt of green below it, followed by a marginal line of black; lower mandible also margined with black; legs and feet sooty blue.

No. 329 *b*, ♂. Penang goenjan. Same as No. 330, lower mandible paler blue margined with black; legs and feet dirty blue.

No. 322, ♀. Upper mandible cobalt-blue with green

margin, lower greenish blue; legs and feet purplish flesh-colour.

63. Eurylæmus ochromelas, Raffl.; Tweedd. *t. cit.* p. 317; Salvad. *t. cit.* p. 198.

No. 305 *b*, ♀. Gounong Trang. Irides light orange; back part of upper mandible cobalt-blue, fore part light green; under mandible cobalt; both mandibles with black margin; feet and legs flesh-colour.

64. Cymborhynchus macrorhynchus (Gm.); Tweedd. *t. cit.* p. 317; Salvad. *t. cit.* p. 199.

No. 282, ♀. Kitta Djawa. Irides bronzy green; upper mandible beautiful deep sky-blue, ridge down culmen cream-colour, becoming rufous; two white lines from nostrils, and one all round the margin of the upper mandible; lower mandible green, with blue line along the margin.

No. 275, ♂? Kitta Djawa. Irides bronzy green; upper mandible green, with two lines of blue from nostrils to head, the blue lines continued halfway along the margin of mandible towards the tip; the blue ridge of the upper mandible is darker than the rest; lower mandible greenish yellow, the edges somewhat blue; legs light blue.

The second specimen seems younger, with white-spotted wing-coverts; hence the difference in the colour of the soft parts noted by Mr. Forbes.

65. Corydon sumatranus (Raffl.); Tweedd. *t. cit.* p. 317; Salvad. *t. cit.* p. 200.

No. 279, ♀. Kitta Djawa. Irides dark brown; bill bluish purple; feet black; skin round eye raw flesh-colour.

The dorsal spot is not nearly so red as in Bornean examples.

66. Calyptomena viridis, Raffl.; Tweedd. *t. cit.* p. 317; Salvad. *t. cit.* p. 197.

No. 313, ♂. Gounong Trang. Irides black; upper mandible blue with white tip; legs and feet black.

67. Osmotreron olax (Temm.); Tweedd. *t. cit.* p. 321.

No. 279, ♀. Kitta Djawa. Irides pale straw-colour; bill bluish green; legs red.

68. Osmotreron vernans (L.); Tweedd. *t. cit.* p. 321; Salvad. *t. cit.* p. 242.

No. 268, ♂. Gounong Tetahan. Legs and feet scarlet; nostrils gamboge-yellow; bill pale blue; irides pinkish purple.

69. Butreron capellei (Temm.); Tweedd. *t. cit.* p. 321; Salvad. *t. cit.* p. 242.

No. 269, ♂. Kitta Djawa. Irides dark brown; bill pale green; legs and feet yellow. Feeds on *Urostigma sumatranum*.

70. Carpophaga badia (Raffl.); Salvad. *t. cit.* p. 246.

Nos. 341 & 341*a*, ♂. Tarratas. Irides pale grey; bill pale faded white, but at tip dull purple; legs and feet purple.

71. Carpophaga ænea (L.); Salvad. Ucc. di Born. p. 290.

Nos. 303*i*, ♂, & 303*d*, ♀. Gounong Trang. Irides blue; eyelids red; bill purple on culmen, otherwise light green; legs pink.

72. Gallus ferrugineus, Gm.; Salvad. *t. cit.* p. 309.

No. 313, ♂. Gounong Trang. Irides light red; upper mandible black, lower one dirty white; legs and feet dirty blue.

No. 291, ♂. Kitta Djawa. Irides light red; upper mandible black, but two light lines running from gape to meet at tip; lower mandible dirty white; legs and feet dirty blue; large white ear-lappets.

73. Rollulus roulroul (Scop.); Tweedd. *t. cit.* p. 322; Salvad. *t. cit.* p. 252.

No. 296, ♂. Gounong Trang. Irides brown-grey; crest dark red; eyelids scarlet, broadly serrated, running to behind eye; bill black; gape on both mandibles scarlet; legs and feet polished scarlet.

No. 237*c*, ♂. Penang goenyan. Soft parts as in preceding specimen.

74. Erythra phœnicura (Forst.); Tweedd. *t. cit.* p. 323; Salvad. *t. cit.* p. 340.

a. Gounong Trang.

IV.—*Supplementary Notes to the List of Birds collected by Mr. H. O. Forbes in the Island of Java.* By Francis Nicholson, F.Z.S.

A few species were accidentally omitted from my record of Mr. Forbes's Bantam collection (Ibis, 1881, p. 139). I have also received a few skins from him which were obtained in the Preanger Regencies, Java, amongst which are some interesting birds; while a small series was collected by him during his trip to the Keeling Islands, of the ornithology of which I believe nothing was previously known. Mr. Forbes, however, found only sea-birds there, and nothing of striking interest. Too much praise cannot be rendered to him for the careful way in which the colours of the soft parts have been noted.

I have referred to my previous paper (Ibis, 1881, p. 139) on Javan birds collected by Mr. Forbes; but otherwise the references are taken from Mr. Moore's 'Catalogue' and Count Salvadori's 'Uccelli di Borneo,' unless otherwise stated.

From Bantam.

1. Zosterops javanica (Horsf.); Horsf. & Moore, Cat. B. E.I. Co. Mus. i. p. 263.

Zosterops montana, Gray, Hand-l. B. i. p. 164. no. 2172 (nec Bp.).

No. 221, ♂. Kosala, Bantam, 3100 feet above sea, March 5, 1879. Sooty-brown irides.

Compared with some of the typical skins in the British Museum. Mr. G. R. Gray has named a Sumatran specimen in the above-named collection *Z. montana* (Bp. ex Müll. MSS.); but I cannot think that this identification is right, as Bonaparte compares his bird to *Z. flava* of Horsfield, a totally different species from the present one.

2. Turtur bitorquata, Temm.; Wall. Ibis, 1875, p. 391.

No. 122, ♀. Genteng Lebak, April 30, 1871. Irides orange. "Putar."

3. Treron pulverulenta, Wallace, Ibis, 1863, p. 319, 1865, p. 376.

No. 74, ♂. March 27, 1879. Irides reddish yellow. Seeds in stomach. "Walik."

No. 71, ♂. Genting, Bantam, March 24, 1879. Stomach full of seeds of "Waringin." "Walik."

This species is named in the Leiden Museum *Treron griseicauda*, Gray. Mr. Wallace (*l. c.*) has pointed out the slight differences of the Javan bird from the Celebean; and I have adopted his name for the former species.

From the Preanger Regencies.

1. Elanus hypoleucus, Gould; Nicholson, Ibis, 1881, p. 140.

No. 240, ♀. Mount Malawar, March 1880; 6000 feet. Irides blood-red; feet and legs orange-yellow; bill black.

2. Eurystomus orientalis (L.); Salvad. Ucc. Borneo, p. 105.

No. 252. Goenoeng, Waringin, April 5, 1880. Dark brown irides; scarlet bill and feet; tip of bill black.

3. Centrococcyx eurycercus (A. Hay); Salvad. Ucc. Born. p. 78.

No. 249, pull. Pengelinjan, April 1880. "Doedoet."

4. Corone enca (Horsf.); Sharpe, Cat. B. iii. p. 43.

No. 246*a*. Preanger, 4400 feet, March 1880. Irides dark brown; bill and feet black.

5. Cissa thalassina (Temm.); Sharpe, Cat. B. iii. p. 86.

No. 250. Sex unknown. Pengelinjan, April 8, 1880. Irides red; feet and bill red. 4500 feet.

6. Dissemurus platurus (V.); Tweedd. Ibis, 1877, p. 313.

No. 247, ♂. Goenoeng, Waringin, April 4, 1880; 4700 feet. Irides dark brown; bill and feet black.

7. Pericrocotus miniatus (Temm.); Sharpe, Cat. B. iv. p. 80; Nicholson, Ibis, 1881, p. 146.

No. 245, ♀. Near Tjenyroean, 4500 feet, March 1880. Feet and bill jet-black.

8. Cryptolopha trivirgata (Strickl.); Sharpe, Cat. B. iv. p. 396; Nicholson, Ibis, 1881, p. 146.

Nos. 244, ♂, 243, ♀. Pengelinjan, 4400 feet, March 1880. Irides black; bill black; feet and legs bluish black.

9. Siphia banyumas (Horsf.); Sharpe, Cat. B. iv. p. 449.

No. 246. Tjenyrocan, March 1880; 4500 feet. Feet and bill black.

10. Pycnonotus bimaculatus (Horsf.); Horsf. & Moore, Cat. B. E.I. Co. Mus. i. p. 244.

No. 232, ♂. Pengelinjan, Feb. 1880. Irides dark grey; bill and feet black.

No. 242, pull. Pengelinjan. Irides dark sepia-brown; bill black, the lower mandible grey; legs and feet bluish grey.

No. 234, ♂ jun. Irides dark brown; legs and bill black.

11. Pomatorhinus montanus, Horsf.; Nicholson, Ibis, 1881, p. 149.

No. 241, ♂. Malawar, 5400 feet. Irides pale straw-colour; ridge of upper mandible black, tip of upper mandible and margin yellow; lower mandible yellow; legs and feet black.

12. Lanius bentet, Horsf.; Nicholson, Ibis, 1881, p. 151.

No. 237. Pengelinjan, March 1880. Irides dark brown; legs, feet, and bill black.

13. Laniellus leucogrammicus (Temm.).

Collyrio leucogrammicus, Gray, Hand-l. B. i. p. 391. no. 5948.

No. 236, ♀. Pengelinjan, March 1880; 4000 feet. Irides dark red; bill black; legs dirty green, almost grey; soles yellow.

14. Parus atriceps, Horsf.; Nicholson, Ibis, 1881, p. 151.

No. 233, ♂. Pengelinjan, February 1880; 4400 feet. Irides dark brown; bill and feet black.

15. Psaltria exilis, Temm.

Parus exilis, Gray, Hand-l. B. i. p. 234. no. 3390.

No. 235, ♂. Pengelinjan, February 1880. Irides straw-colour; bill black; legs straw-colour.

16. Prilopus porphyreus (Temm.); Nicholson, Ibis, 1881, p. 154.

No. 238, ♀. On Mount Malawar, near Pengelinjan. Irides red; bill black, grey at tip; feet and legs red.

17. Carpophaga lacernulata (Temm.); Schlegel, Mus. Pays-Pas, *Columbæ*, p. 95.

No. 239, ♀. Mount Malawar, 6000 feet. Irides dark red; feet and legs red; bill black, grey at tip.

18. Arborophila javanica (Gm.).

Perdix javanica, Gray, Hand-l. B. ii. p. 268. no. 9702.

No. 253, ♂. Goenoening Waringin, 4700 feet. Irides dark grey; feet red; bill black. "Poeyon gong, gong."

From the Cocos Keeling Islands.

1. Rallus philippensis, L.; Schlegel, Mus. Pays-Bas, *Ralli*, p. 23.

Hypotænidia philippensis (L.), Walden, Tr. Z. S. ix. p. 232.

No. 17. Cocos Keeling Islands, Horsburg Island, January 18, 1879. Reddish irides. Cocoa-nut and crab-shell in stomach. "Ayam-utan."

No. 20. West Island, January 24, 1879.

No. 38. West Island, February 4, 1879.

No. 33, young. West Island, January 30, 1879. Irides dark slate-grey, with tinge of reddish.

2. Nycticorax caledonicus (Lath.); Gould, Handb. B. Austr. ii. p. 311.

Ardea caledonica, Gm.; Schlegel, Mus. Pays-Bas, *Ardeæ*, p. 59.

No. 39, ♂. Cocos, West Island, February 6, 1879. Irides yellow; food, small crabs. "Blatok mereh."

This Australian species has been traced through the Moluccas to Timor; but Mr. Forbes has here somewhat extended its known range.

3. Demiegretta sacra (Gm.); Salvad. Ucc. di Born. p. 346.

Ardea jugularis, Forster; Schlegel, Mus. Pays-Bas, *Ardeæ*, p. 25.

No. 26. West Island, Cocos Islands, January 30, 1879. Irides orange. From nest. "Changah Puteh."

Nearly all white, with a few blackish streaks on the back, rump, and tips of secondaries.

No. 28. West Island. From nest, January 30, 1879. Irides orange.

In full grey plumage, with white throat.

No. 41, ♀. Irides yellow. Small fish, small shrimps, and small eels in stomach. "Changah blau."

Also in full grey plumage, with long dorsal plumes.

No. 27. West Island, January 30, 1879. From nest. Irides orange. "Changah blau."

A nestling bird, the tail not being half grown, and tufts of down still adhering to the head. It is apparently the offspring of Nos. 26 and 28, and is in grey plumage, with white throat perfectly developed.

4. Herodias nigripes (Temm.); Salvad. Ucc. di Borneo, p. 349.

No. 40, ♀. West Island, February 6, 1879. Small fish and shrimps in stomach. Irides yellow. "Changah puteh."

5. Totanus canescens, Gm.

Totanus glottis, L.; Salvad. Ucc. di Borneo, p. 328.

No. 44, ♂. Cocos, West Island, February 6, 1879. Irides black. "Chereenel."

6. Sula piscatrix (L.); Salvad. Ucc. di Borneo, p. 368.

No. 23. Lagoon, Cocos Keeling Islands, January 25, 1879. Irides like the feathers. Fourth year's bird, "Burung buree."

A specimen emerging from the brown into the white stage.

7. Phaeton candidus, Gray; Schlegel, Mus. Pays-Bas, *Pelecani*, p. 43.

No. 25. West Island, January 29, 1879. Irides dark brown. "Burung buntet Satee."

8. Tachypedes minor (Gm.); Salvad. *t. c.* p. 364.

Nos. 21, 22, ♂ ♀. In lagoon, Cocos Keeling Islands, January 29, 1879. "Burung itam" or "Bangoo cicir." Irides brown.

Neither of the above is quite adult.

V.—*A Second List of Birds from Mombasa, East Africa.*

By J. H. Gurney.

My late valued friend and relative the Rev. F. A. Buxton was so good as to allow me to examine a second collection of birds sent to him from Mombasa by Mr. J. W. Handford, amongst which I find the following species that were not in the former collection, recorded in 'The Ibis,' 1881, p. 124. I have numbered the birds in the present list consecutively with those in the previous one, and have marked with an asterisk the species which I do not find to have been previously recorded from Mombasa or its immediate vicinity.

*41. Caprimulgus mosambicus, Peters. Mosambique Nightjar.

The specimen sent, which is probably a female, differs from the description given in Sharpe's 'Layard,' p. 88, in having no white on the tail, the outer webs and the tips of the external pair of rectrices being fawn-coloured, and the upper part of the web for about one fourth of its total length being variegated with dark blackish-brown markings resembling those which extend over the whole length of the corresponding web in the female of the nearly allied South-African *C. rufigena*; a narrow line of the same dark colour (also on the outer web) adjoins the shaft of the feathers throughout, except at the tip, on which latter part, however, the fawn tint is suffused with a decided tinge of darker brown; the secondaries are also tipped with pale fawn, instead of with white, as described by Mr. Sharpe.

The present specimen greatly resembles in its general aspect the female of *C. rufigena*; but, besides the differences

of coloration above referred to, it has the wing nearly half an inch (·45) shorter.

42. Halcyon senegaloides, Smith. Mangrove Kingfisher.

43. Merops pusillus (Müll.). Rufous-winged Bee-eater.

*44. Merops nubicus, Gmel. Nubian Bee-eater.

*45. Cossypha natalensis, Smith. Natal Chat-Thrush.

The specimen sent, which appears to be adult, does not show the "external border of pale orange" to the secondaries mentioned in the description of this species given in Sharpe's Layard, p. 224.

46. Craterops rubiginosus, Rüpp. Rufous-breasted Babbler.

47. Oriolus larvatus, Licht. Masked Oriole.

The sex of the specimen sent is doubtful, as in this species the sexes, when fully adult, differ very slightly, if at all, in plumage (*vide* Ibis, 1879, p. 399); but it is smaller than either of two dissected females from Transvaal, with which I have compared it; the following are the comparative measurements:—

	Culmen. in.	Wing. in.	Tarsus. in.
Mombasa	0·90	5·00	0·90
Transvaal, ♀	0·95	5·00	1·00
Transvaal, ♀	1·00	5·70	1·05

The observations of M. Barboza du Bocage as to the variations of size in this species, in his 'Ornithologie d'Angola,' vol. i. p. 329, may be consulted with advantage.

48. Pomatorhynchus erythropterus (Shaw). Rufous-winged Bush-Shrike.

*49. Dryoscopus sublacteus, Cassin. Cassin's Bush-Shrike.

50. Buchanga assimilis (Bechst.). Musical Drongo.

51. Bradyornis pallidus (Müll.). Pallid Flycatcher.

52. Crithagra chrysopyga, Swains. Golden-rumped Grosbeak.

*53. Urobrachya zanzibarica, Shelley. Zanzibar Widow-bird.

(*Cf.* P. Z. S. 1881, p. 586, on Dr. Kirk's collection, No. 115.)

54. Centropus superciliosus, Hempr. et Ehr. White-browed Lark-heel.

*55. Coccystes albonotatus, Shelley. East-African Crested Cuckoo.

(*Cf.* P. Z. S. 1881, p. 594, on Dr. Kirk's collection, No. 151.)

The specimen sent from Mombasa by Mr. Handford was presented by Mr. Buxton to the British Museum; it had the basal portion of the bill thickly coated with dried mud, apparently indicating that the bird had been seeking its food in moist soil.

56. Dendropicus zanzibari, Malh. Zanzibar Woodpecker.

The specimen, a male, which was sent from Mombasa by Mr. Handford appeared to me to be somewhat different from the South-African *D. cardinalis*; and I therefore submitted it to Mr. E. Hargitt, who has given much attention to the Woodpeckers, and who has kindly informed me that it is identical with specimens from Zanzibar, respecting which he has also been good enough to furnish me with the following particulars:—"Malherbe regarded the Zanzibar bird as distinct and named it *D. zanzibari*, but later on considered it to be the same species as his *D. hartlaubi*†, which came from Port Natal. Although Malherbe states the differences

† Mr. Hargitt informs me that he considers *D. hartlaubi* and *D. cardinalis* not to be specifically distinct from each other, and adds, "I cannot regard *D. hartlaubi* as a species; I think the amount of red upon the upper tail-coverts is to be attributed to age."

in plumage, which, however, he does not think sufficient to constitute a species, he omits the measurements, which to me seem worthy of note; but as he points out the variations in terms sufficient to form a scientific description, if, as I think, the Zanzibar race is worthy of a separate title, Malherbe's name should be reinstated, although *zanzibaricus* would be a more correct form of writing it."

On comparing the male of *Dendropicus zanzibari* sent from Mombasa with a male of *D. cardinalis* from Rustenburg, in Transvaal, I observe the following differences of coloration between them:—

1st. In the Mombasa bird the brown patch on the forehead is less extended, the distance from the junction of the forehead with the upper mandible to the commencement of the scarlet crown being ·45 inch, whilst in the Transvaal Woodpecker it is ·75.

2nd. The blackish-brown moustache running downward from the angle of the mouth is much less conspicuous in the Mombasa bird, being both shorter and narrower than in that from Transvaal.

3rd. The dark shaft-marks on the upper breast are also narrower in the Mombasa specimen.

4th. In the Mombasa bird the shaft-marks on the abdomen are even narrower than on the breast, and there are no traces on the abdomen of the regular transverse blackish bars alternating with dull white, which are conspicuous in the Transvaal male*.

5th. In the Mombasa Woodpecker the under tail-coverts are white, with one or two small brown circular spots on each feather; in the Transvaal bird these coverts are transversely barred like the abdomen, except that the dark bars are brown instead of blackish.

The following are measurements of two males of each species, taken in two instances by Mr. Hargitt and in two by myself. I do not give the total length, as, when merely taken from a skin, I do not think it can be relied on.

* In a female of *D. cardinalis* from Rustenburg these transverse bars are less regular and conspicuous than in the male.

	Culmen. in.	Wing. in.	Tail. in.	Tarsus. in.
D. zanzibari, from Zanzibar, measured by Mr. Hargitt	0·80	3·60	1·80	0·65
D. zanzibari from Mombasa . .	0·70	3·40	1·80	0·60
D. cardinalis, from Eland's Post, measured by Mr. Hargitt	0·85	3·70	1·95	0·63
D. cardinalis, from Rustenburg	0·77	4·00	2·10	0·60

57. Numenius phæopus, Linn. European Whimbrel.

In conclusion I am desirous of adding a few remarks on some of the birds mentioned in my former list (Ibis, 1880, p. 124).

Trogon (Hapaloderma) narina.

Through the kindness of Captain Shelley I have had the opportunity of comparing the Trogon sent from Mombasa with specimens from Natal, the Usambara Mountains, and Fahtee; and I cannot avoid the conclusion that the *Hapaloderma constantia*, Sharpe and Usher, Ibis, 1872, p. 181, is not in reality specifically distinct from the South-African *H. narina*; the peculiarities relied on in the original description of *H. constantia* are not, in my opinion, of a stable character, as the specimens from different localities which I have examined closely resemble each other, passing from one shade of coloration and marking to another by almost imperceptible gradations.

Merops superciliosus.

I find that I was in error in marking this species as not having been previously recorded from Mombasa.

Meristes olivaceus.

This bird should stand as *M. icterus* (Cuv.). *Vide* Captain Shelley's list of Dr. Kirk's collection in P. Z. S. 1881, p. 581.

Dryoscopus affinis.

In referring to Finsch and Hartlaub's figure of *D. orientalis* (Vög. Ost-Afr. pl. 5. fig. 2) as representing this species, I omitted to explain that *D. orientalis* appears to be the female of *D. affinis*. I am indebted for the knowledge of this fact to Capt. Shelley, who has recorded it in the list above referred to (P. Z. S. 1881, p. 580).

VI.—*Notes on Birds from British Guiana.*

By Osbert Salvin and F. D. Godman.

(Plate I.)

Mr. Henry Whitely, who for some time past has been sending us collections of birds from the neighbourhood of Bartica Grove, in British Guiana, has lately made an excursion further into the interior of the country, and, ascending the Mazaruni river, has penetrated as far as the Merume Mountains, which lie on the south bank of that river, under the 60th degree of west longitude. Here and at a place called Camacûsa, lower down on the Mazaruni river, he made a large collection of birds, which reached us in excellent condition a few weeks ago.

Amongst the specimens sent we find several that appear to us to belong to undescribed species. These we now make known, adding some notes on other species which have occurred to us in determining the names of the birds of the whole collection.

The present collection was made at an elevation of about 2000 feet above the sea; and in it we get several forms usually found at similar elevations in the Andes, and of high interest on this account.

Mr. Whitely has again proceeded into the interior, with the intention of working in the neighbourhood of the Roraima Mountains, so well known not only for their peculiar physical features, but as the ground where Schomburgk, some thirty-five years ago, made many remarkable discoveries and procured several birds that to this day have remained unique in the Berlin Museum, where they were originally deposited.

We hope at some future day, when Mr. Whitely has finished his labours in that country, to give a general *résumé* of the results of his expedition. In the meantime the following descriptions and notes contain an account of his chief discoveries.

Cichlopsis gularis, sp. n.

Supra saturate brunnea, cauda paulo rufescentiore; subtus

dilutior, gula rufescente, abdomine medio griseo tincto; subalaribus, remigibus intus et crisso fulvis; rostri maxilla fusca, mandibula flava; pedibus fuscis: long. tota 7·7, alæ 4·15, caudæ 3·9, rostri a rictu 0·8, tarsi 0·85.

♀ mari omnino similis.

Hab. Guiana Brit. in montibus "Merume" dictis.

Mus. nostr.

Obs. *C. leucogonydi* affinis, sed colore suprà magis brunneo nec cinnamomeo et gulâ distincte rufâ distinguenda.

Of this species Mr. Whitely sends us three specimens, a male and two females, noting that the iris of one of the females was dark hazel, the legs and toes greenish brown, and the claws yellowish horn-colour. Two of these specimens were shot on June 22nd and one on July 5th, 1881, all in the Merume Mountains.

The species is evidently closely allied to *C. leucogonys*, the patria of which is supposed to be Brazil, and of which a figure will be found in 'Exotic Ornithology,' p. 37, pl. 19. It differs in the points indicated above, the clearly defined rufous patch on the throat being a conspicuous feature.

VIREOLANIUS LEUCOTIS.

In 'The Ibis' for 1878 (p. 443, pl. ii.) Salvin published a note on this species, identifying it with *V. icterophrys* of Bonaparte and other more recent writers. He, however, separated it from *V. chlorogaster*, Bp., which he considered peculiar to Guiana, *V. leucotis* being from the upper portion of the Amazons valley.

Mr. Whitely's collections contain two beautiful specimens of the Guianan bird, which, if the above determination were correct, should be called *V. chlorogaster*; but on comparing them with the true *V. leucotis*, from Ecuador, we now see no valid grounds for separating these birds, and propose to unite *V. chlorogaster* as well as *V. icterophrys* under Swainson's old title *V. leucotis*. It is true that some variation can be traced in the amount of white on the cheeks; but this is not of specific value, as the extent varies in specimens from the same locality.

By uniting all these supposed species under one name all

the difficulties as to their distribution vanish, and *V. leucotis* is traced over a wide tract of country, embracing the Guianas and the valleys of the upper part of the great basin of the Amazons. We are thus left with three species of green *Vireolanius*:—*V. leucotis*, with the range already indicated; *V. eximius*, of which skins occur in trade-collections sent from Bogota and which probably comes from the valleys which trend into that of the Magdalena; and *V. pulchellus*, of Central America.

Platyrhynchus saturatus, sp. n.

Supra saturate brunneus, alis et cauda extus lætioribus, pileo paulo obscuriore, capitis lateribus et torque pectorali indistincto dilutioribus, crista verticali ferruginea, superciliis a naribus incipientibus indistincte albis; gula alba, abdomine flavido tincto, rostro nigro, pedibus plumbescenti-carneis: long. tota 3·5, alæ 2·3, caudæ 1·2, rostri a rictu 0·6, tarsi 0·7.

Hab. Guiana Brit. in montibus "Merume" dictis (*Whitely*).

Mus. nostr.

Obs. P. mystaceo et *P. cancromino* affinis, sed colore saturatiore brunneo et cristâ verticali ferrugineâ nec flava distinguendus.

A single male specimen of this species is in Mr. Whitely's collection. We are unable to discover a name for it. It clearly belongs to the *P. mystaceus* section of the genus, in which the crown of the male is either yellow or rusty red. There are no strongly defined black marks about the head, as in *P. coronatus* and its allies.

Piprites chlorion.

Dr. Cabanis's description of this species (Arch. f. Naturg. 1847, i. p. 234) was based upon a specimen from Cayenne. Mr. Whitely now sends us birds which must doubtless be referred to this species. These differ from the species of Colombia and Ecuador, which we have hitherto supposed to be the same as the Guianan bird, in having the whole of the under plumage except the throat grey, instead of uniform yellowish olive. It is evident, therefore, that the more

J.G. Keulemans lith.

Hanhart imp.

PIPRA SUAVISSIMA

western bird should have a separate name; and we suppose it to be *Hemipipo tschudii*, Cabanis (J. f. Orn. 1874, p. 99), although it does not altogether agree with the description of that species, which was drawn up from a bird that had been preserved in spirits.

Pipra suavissima, sp. n. (Plate I.)

Pipra serena, Cab. in Schomb. Reise n. Guiana, iii. p. 697 (nec Linnæus)?

Nigerrima, fronte cretaceo-alba, uropygio cæruleo, abdomine læte aurantiaco; rostro et pedibus nigris: long. tota 2·6, alæ 2·3, caudæ 1·1, rostri a rictu 0·5, tarsi 0·7.

♀ olivacea, pileo cæruleo vix induto; subtus pallidior, abdomine medio flavicante.

Hab. Guiana Brit. in montibus "Merume" dictis, et Bartica Grove (*Whitely*).

Obs. P. serenæ valde affinis, sed fronte latiùs albâ, abdomine magis aurantiaco et plagâ pectorali aurantiacâ absente dignoscenda.

This pretty species evidently takes the place in British Guiana of the Cayenne *Pipra serena*; but its points of difference are well defined. As Mr. Whitely has sent a good series of specimens, we conclude that it is not an uncommon species in the district he visited.

We have little doubt that it was this species, and not the true *P. serena*, that Schomburgk met with near the Roraima Mountains.

Chamæza fulvescens, sp. n.

Supra saturate cinnamomeo-brunnea, capite summo obscuriore; subtus alba, gutture et crisso fulvo tinctis; pectoris et hypochondriorum plumis nigro utrinque marginatis, illis omnino saturate fulvis torquem pectoralem formantibus; subalaribus albis nigro variegatis; cauda dorso concolori, fascia subapicali nigra, rectricum apicibus fusco-albidis; rostro corneo, mandibulæ basi albicante; pedibus carneis: long. tota 7·3, alæ 3·9, caudæ 2·2, rostri a rictu 1·1, tarsi 1·55.

♀ mari similis sed minor.

Hab. Guiana Brit. in montibus "Merume" dictis.

Mus. nostr.

Obs. C. olivaceæ (ex Boliviâ) similis, sed colore suprà, præcipuè in pileo, saturatiùs fulvâ, subtùs gulâ fulvo tinctâ et pectore saturatè fulvo notato distinguenda.

Mr. Whitely's collection contains six specimens of this species, all from the Merume Mountains, and the first examples of any *Chamæza* we have yet seen from Guiana. In its colour above the present bird closely resembles *C. nobilis* of Gould, of which we have specimens from Ecuador; but the fulvous throat and breast distinguish it from this species, as well as from all others of the genus.

Hemistephania johannæ.

This species appears to be quite common in the Merume Mountains, as Mr. Whitely sends many specimens in his collection from that district. The adult males agree so closely with Colombian examples of the true *H. johannæ* that we are unable to separate them. The only difference we can trace is that the shining forehead of the Guiana bird is of a very slightly bluer shade of purple than that of the Colombian one, but not enough to justify the birds being separated. Besides adult males, we find in Mr. Whitely's series two forms of female—one with a pale greenish blue forehead, the other without any bright colouring. The former of these exactly corresponds with the Colombian bird described by Mulsant as *Doryphora euphrosynæ*, and we are driven to the conclusion that the bird so called is nothing but the female of *D. johannæ*. It is most probable that birds with the bright forehead are old females, and those not so adorned younger birds; but the latter may still be adult.

Heliodoxa xanthogonys, sp. n.

Supra nitenti-viridis, alis et cauda chalybeo-nigris, fronte media nitidissima viridi, pilei lateribus et loris nigerrimis; subtus nitenti-viridis, abdomine obscuriore dorso fere concolori; plaga gutturali cærulea; rostro nigro, mandibula, præter trientem apicalem, aurantiaco-flava: long. tota 4·0, alæ 2·55, caudæ rect. med. 1·4, rect. ext. 1·6, rostri a rictu 1·0.

♀ inornata; subtus albida, viridi dense maculata; rostro sicut in mari, sed paulo longiore; cauda magis rotundata, rectricibus lateralibus albido terminatis.

Hab. Guiana Brit. in montibus "Merume" dictis (*Whitely*).

Mus. nostr.

Obs. H. jamesoni (ex Æquatoriâ) affinis, sed minor, caudâ minus furcatâ, rostro breviore et colore mandibulæ aurantiaco distinguenda.

Mr. Whitely sends us a male and several females of this species, which is obviously allied to the Ecuadorian *H. jamesoni*, but at the same time quite specifically distinct. This is the first evidence we have received of the fact of a member of this Andean genus being found in Guiana.

LOPHORNIS PAVONINUS, sp. n.

Supra obscure viridescens, uropygio cuprescenti-rufo, dorso postico fascia transversa albida notato; alis purpureo-nigris; cauda furcata cupreo-nigra; capite summo medialiter nigro striga utrinque nitente viridi marginato; subtus niger, abdomine viridi lavato; cervicis laterum plumis latis viridibus, singulatim macula subapicali nigra notatis; rostro omnino nigro: long. tota 3·4, alæ 1·9, caudæ rectr. med. 1·0, rect. lat. 1·3, rostri a rictu 0·7.

Hab. Guiana Brit. in montibus "Merume" dictis (*Whitely*).

Mus. nostr.

Obs. L. verreauxi proximus, sed certè distinctus.

Of this beautiful and distinct species Mr. Whitely's collection contains a single male specimen in fair condition, but somewhat stained on the throat. It belongs, with *L. verreauxi* and *L. chalybea*, to the little section of *Lophornis* which Dr. Cabanis has distinguished by the generic title of *Polemistria*. From *L. verreauxi* it differs in many particulars: the head, instead of having the forehead green and the occiput black, has a black central streak running from the base of the bill to the nape, on each side of which is a broad green streak. The elongated green feathers on each side of the neck are broad, and have a conspicuous black spot near the apex of each feather, this spot in the longest feathers being quite large. The feathers of the front extend much further

along the culmen of the bill than in *L. verreauxi*, and in this respect recall this peculiarity in the genus *Orthorhynchus*.

Chætura rutila.

Two specimens of a Swift from the Merume Mountains, though closely resembling Guatemalan examples of the bird we have been in the practice of calling *Chætura rutila*, present differences which are doubtless specific.

The rufous collar which distinguishes these Swifts is of a brighter colour in the Guiana bird, and extends quite over the chin, the feathers of this part in the Colombian bird being sooty black like the rest of the plumage. The tail of the former is much longer and distinctly forked, that of the latter being nearly square and the feathers more spinous. We do not, however, attach much importance to this latter character, as the difference may be due to the extent to which the tail-feathers have been abraded by contact with the rocks &c. which these birds frequent.

There can be little doubt that the species described as *Hirundo rutila* by Vieillot was the Guiana bird, though the origin of the specimens was unknown. To this bird the name *Hirundo robini* also applies, judging from Lesson's description and also from that of Léotaud, the bird being an inhabitant of the island of Trinidad. Equally certain is it that Lafresnaye's name *Chætura brunneitorques* is applicable to the Colombian form, which we trace southwards to Ecuador and northwards through Central America as far as Southern Mexico.

The references to these Swifts may be thus apportioned:—

Chætura rutila.

Hirundo rutila, Vieill. N. Dict. d'Hist. Nat. xiv. p. 528; id. Enc. Méth. p. 584; Léotaud, Ois. Trinidad, p. 85.

Chætura rutila, Scl. P. Z. S. 1863, p. 100, et 1865, p. 613 (partim).

Hirundo robini, Less. Traité d'Orn. p. 270.

Hab. Guiana, Merume Mountains (*Whitely*); Trinidad (*Robin, Léotaud*).

CHÆTURA BRUNNEITORQUES.

Chætura brunneitorques, Lafr. Rev. Zool. 1844, p. 81; Bp. Consp. i. p. 64 (partim?).

Acanthylis rutila, Scl. P. Z. S. 1855, p. 135.

Chætura rutila, Scl. & Salv. Ibis, 1860, p. 37, pl. 3; iid. P. Z. S. 1869, p. 363; Scl. P. Z. S. 1863, p. 100, et 1865, p. 613 (partim) (nec Vieillot).

Hab. Mexico (*Le Strange*); Guatemala (*S. & G.*); Panama (*Arcé, Mus. S. & G.*); Colombia; Ecuador.

ATLACORHAMPHUS WHITELIANUS.

Prasinus, subtus pallidior, macula postoculari indistincta cærulea; gula sordide alba; regione infra oculos et genis prasinis; caudæ rectricibus duabus mediis castaneo anguste terminatis; rostro nigricante, basi linea lata albicante notata; culmine et mandibulæ basi rubescentibus: long. tota 11·5, alæ 4·6, caudæ rectr. med. 4·4, rectr. lat. 2·0.

Hab. Guiana Brit. in montibus "Merume" dictis (*Whitely*).

Mus. nostr.

Obs. A. derbiano proximus, sed staturâ minore, maculâ nuchali et plagâ suboculari cæruleis absentibus distinguendus.

This is the first species of this upland genus we have seen from Guiana. Mr. Whitely has sent us a single specimen of it, marked as a male. It is most like *A. derbianus*, but seems certainly distinct from that species. The bill is coloured much as in *A. derbianus*; but the white basal line is not so prominent or so clearly defined. The tail, as in the allied species, has the two central feathers alone tipped with chestnut; but the blue nuchal patch is absent, as well as that beneath the eye.

CONURUS EGREGIUS, Sclater.

In 'The Ibis' for last year (1881, p. 130, pl. 4) Mr. Sclater described and figured a species of *Conurus* from specimens the locality of which was doubtfully stated to be Demerara. All doubt on this point is now removed by the occurrence in Mr. Whitely's collection of four specimens of it obtained by him in the Merume Mountains. Some slight variation is to

be traced in these specimens, both as to the colour of the head (which is green in some, faded brown in others) and also in the amount of yellow on the under wing-coverts and bastard wing. But in all cases these differences seem due to the age of the bird rather than to any other cause. Mr. Whitely sends examples of both sexes, which present no material differences.

VII.—*Notes on Birds found near Dacca and in the surrounding District of Eastern Bengal.* By Frank B. Simson.

In April 1863 I observed, for the first time, that a great number of Swallows flying about the low marshy land to the east of Dacca and near the river Lukya, which flows southward from Mymensing to Naraingunge, where it mingles with the numerous streams from Sylhet and the eastern outlets of the Ganges, had red bellies. No such bird was described in the first volume of Jerdon's 'Birds of India,' at that time the only work on Indian birds published. I wrote to Jerdon about it; and he told me that the bird had been observed before by Tytler, and that he would enter it in an appendix, which he accordingly did, under the name of *Hirundo tytleri*. I do not know if this was the first time the bird was named. It seems to be a Swallow which is still far from well known, a species closely allied to *H. savignii*, and also to *H. horreorum* of America.

Jerdon knew every thing about it. He visited me afterwards, and one evening we shot some eight or nine. Subsequently I sent a good series to Hume; whether he has mentioned the bird in any of his writings I do not know. Blyth states (Ibis, 1866, p. 336) that *H. tytleri* comes near *H. cahirica*, but is smaller and has less black on the gorget. Jerdon says they were abundant at Dacca in June, but were absent in October. I have, however, seen them near Dacca towards the end of October. I saw them in their greatest numbers in November 1867.

These birds were closely looked for by me for eight years

in various parts of Eastern Bengal. I never found that they bred there; and it was very seldom that I observed them far from Dacca, and there only in very scanty numbers. I saw them at Mymensing, the next district to Dacca, once, but only for one day.

They visited Dacca regularly, certainly twice every year, from the end of April to June, and again after the rains. They seemed only to stay a few weeks, and then to disappear. For months I had been looking out for them in vain; of a sudden they would appear in considerable numbers, and then disappear as suddenly.

I would ask if such short visits of flocks of Swallows from time to time to particular localities is a fact that has been remarked by ornithologists, and, if so, how it is to be accounted for. So far as I can tell from my own observations for many years, and from questioning all persons I met who observed birds, and from Jerdon's ignorance of the bird at first, these birds have only been noticed in considerable numbers in the neighbourhood of Dacca, where they are not known to breed. Their absence from the rest of Eastern Bengal seems remarkable.

There is another small white-bellied Swallow which is to be met with not very far from Dacca. This bird I took to be *Hirundo domicola*, which Jerdon calls the Neilgherry Swallow. I saw this bird several years running at Sylhet in the summer, and also in other districts bordering the Megna in Eastern Bengal. Jerdon does not mention these countries as its habitat; but I have remarked it now and then at all seasons of the year.

A few miles below Dacca, on the left bank of the river, stand, or rather stood (for they have lately been carried away by the encroachments of the river and by cyclones), two picturesque old Hindoo temples or muths, of squat ugly shape, covered with those parasitical trees which plant themselves on ruined walls; there is a bridge close by called Pagla pool, or the "madman's bridge." In the early rains it was a most interesting sight for an ornithologist to stand on this bridge and observe the birds which made use of these ruined towers as

breeding-places. Sturnidæ, Psittaci, Anatidæ, three classes of birds widely differing from each other, resorted to these towers for nesting-purposes, and made up a most noisy community. The lovely little Pygmy Goose, *Nettapus coromandelianus*, called Cotton-Teal by most Europeans, had its nests in the holes in the brickwork. This little bird, usually to be found only in deep water covered with the lotus and other water-weed, came in numbers to these muths. I have seen four pairs breeding there; and there may have been others. They, in their way, made nearly as much noise as the Parrots and Mynas. Persons unacquainted with the habits of these birds would scarcely believe that Ducks could use high ruined walls for nesting-places. I once saw a female *Nettapus* not far from Dacca, swimming about with a brood of ten newly hatched young ones, by far the smallest creatures in the way of webfooted birds I ever saw. The female must have had some trouble in taking her numerous progeny from these towers to the neighbouring jheels.

Parrots very constantly make their nests in houses and walls. In these muths their nests were very numerous. In spite of the noise, I did not perceive that the Parrots quarrelled either with the Pygmy Geese or the Mynas. Of these latter birds two species nest in the muths in great numbers, *Acridotheres tristis* and *A. fuscus*.

The Bank-Myna (*Acridotheres ginginianus*) was often to be seen in this neighbourhood; but though there were many suitable banks on all the rivers near, I never found this bird nesting till I reached the Pubna shores of the larger branch of the Ganges, where they nest exactly as the Sand-Martin does in England.

Close to this bridge nested another bird worthy of observation, the diminutive Palm-Swift (*Cypselus batassiensis*), very common in all places where the broad-leaved palm-trees grow.

In this neighbourhood also, and round the gardens and hedges of the many deserted houses in the environs of Dacca, is found the beautiful *Calliope kamtchatkensis*. This lovely Ruby-throat excited much admiration. I had very little difficulty in procuring specimens whenever I was asked for them.

Cuckoos are very numerous at Dacca and in the surrounding districts. I obtained twelve species of the family:—1. *Cuculus micropterus* was abundant and noisy. 2. *Hierococcyx varius* (The Hawk-Cuckoo): these birds vary greatly in plumage. 3. *Polyphasia nigra* is common everywhere. 4. *Coccystes melanoleucos* is very conspicuous at the end of the rains. 5. *Eudynamis orientalis* is a perfect nuisance, and will hardly permit a person to sleep after 2 A.M. in the early spring. 6. *Centropus rufipennis* is common all over Eastern Bengal. 7. *Centropus viridis* is to be found in great numbers on the sandy uncultivated spots near the rivers where the tamarisk grows and grass is high and thick after the early rains. The following Cuckoos are rare near Dacca. I twice obtained 8. *C. canorus*; but I never heard its note, so common in Upper India. 9. *Polyphasia tenuirostris*, the rufous bellied Cuckoo, was also twice sent to me; one was got close to Dacca, and the other in Tippera. 10. The lovely Emerald Cuckoo did not appear to be very rare; I had several; and in October 1871 one was brought to me alive and uninjured. 11. *Coccystes coromandus* was sent to me from Tippera; and I obtained it also in Cachar. 12. *Zanclostomus tristis* is not uncommon in certain places. I always saw it when shooting to the north-west of Dacca in the bushy jungles, where was found also that rare hare *Lepus hispidus*.

Dacca is situated on the left bank of the navigable river the Boorigunga, which flows into larger rivers at Naraingunge. Here it meets the Luckya, a river of singularly pure water from Mymensing, and the streams known as the Sylhet rivers, from the north-east. The Goomter, or Tippera river has its mouth a little to the south-east of Naraingunge; and all these smaller streams meet the large and most easterly of the outlets of the Ganges flowing past Pubna, and the streams from Assam, generally known as the Brahmaputra rivers; all these join south of Naraingunge, where the districts of Dacca, Furreedpore, Tippera, Burrisaul, and Novakholly near each other. The large tidal river is there known as the Megna, and flows into the Bay of Bengal not far from Chit-

tagong. In the rains the country where these numerous rivers conjoin is covered with a wide expanse of swift-flowing water. In the dry season the streams flow in restricted channels, and sandbanks, muddy quicksands, and sandy islets covered with very high grass and tamarisk bushes appear. The dryer parts of this country are now nearly all under cultivation. When I first knew them they were wild and neglected, and tigers, wild buffaloes, alligators, and several kinds of deer abounded. They still form a wonderful country for ornithological investigation.

About there to north-east, east, and south-east we go beyond the limits of Jerdon's 'Birds of India.' He describes no birds east of the Teesta river and its junction with the Brahmapootra, and considers that the faunas of the countries south of Cherrapoonjee and the districts of Sylhet, Tippera, Noakholly, and Chittagong appertain to the Burmese territory. I hope I may be excused therefore if I diverge a little to describe these places, from an ornithological point of view, before I revert to a few species of birds more immediately near Dacca, of which I am chiefly treating in this article.

Less than one hundred miles, as the crow flies, north-east of Dacca, the bold mountain-face of the Cherrapoonjee rock rears its abrupt cliff for nearly four thousand feet, ascending direct from the low marshy swamps of Sylhet. From the base of this mountain, or near it, there is nothing in the shape of hill or mound till you reach the shores of the Bay of Bengal in a south-westerly direction. This extraordinary alteration in the geographical character of the country is accompanied by a corresponding change of climate and temperature. Cherrapoonjee is, I believe, the second rainiest place in the world. The steep mountain suddenly meets the clouds and moist winds coming up from the Bay of Bengal, and immediately distils the moisture contained in them and pours it down over a very limited area around its summit. The rainfall at Cherra is said to average more than 600 inches a year. But at Shillong, a sanitarium not forty miles from Cherra, there is a climate which might almost be called European, and an

annual rainfall not exceeding 70 inches. The damp atmosphere of Cherrapoonjee and the coolness of Shillong form great contrasts with the temperature of the swampy marshes of Lower Sylhet, which can be seen from Cherra steaming and sweltering below; and from these waters the dwellers and passengers in boats look up to the lofty hills, gleaming with magnificent foaming cascades after every heavy shower, with longing eyes. Naturally there is a wonderful change in the ornis of Eastern Bengal reaching to the foot of the Cherrapoonjee mountain and that found in the tableland at its summit; but this country has been carefully examined by many a competent ornithologist.

From the foot of this high range to the Goomtee or Tippera river lies a low marshy country, interspersed with fine rice-bearing land, in places very thinly inhabited and regularly overflowed every summer, when the inhabitants live in boats and on mounds made by themselves and crowded thickly with huts. In this country every little child can row, even with his feet, and swim like an otter. Wildfowl are not so abundant here as might be expected; but Eagles and Paridæ and Gallinules abound. In places, and as you approach Tippera, the country is better, and bears splendid crops of rice and jute, and is very thickly inhabited. In the north of Tippera, towards Sylhet, are found vast plains, which for half the year show most beautiful green grass and support vast numbers of tame buffaloes; and formerly these plains swarmed with deer (*Cervus duvaucelli*), the numbers of which are very mournfully reduced.

Between the Goomtee and the Fenny rivers lies the district of Tippera. The western face of this district consists of low alluvial land; but near Comilla (the sudder station of the district) low forest-clad hills begin; and these stretch away eastward to China. Independent Tippera, Cachar, Munipore, and the Looshye territory are situated in these hilly tracts; and our knowledge goes a very little way beyond there. The Tippera country has not been thoroughly investigated ornithologically, and would form rare ground for an ardent student of the science. The late Mr. Irwin, of the Bengal

Civil Service, worked it well while stationed there; but he did not exhaust the ornithology of Tippera, and was removed too soon. There are native shikarees in this district who will procure almost any bird that exists there. The difficulty in these parts is to obtain a competent taxidermist.

Having now alluded to the country north-east, east, and south-east of Dacca, which was not included by Jerdon in his 'Birds of India,' I will return to remark on some of the species found in the low-lying alluvial lands below Dacca.

Haliaëtus leucogaster (the Grey-backed Sea-Eagle). This bird regularly nested in two places in the Dacca country. One nest was in an old "peepul" tree on the right bank of the river, nearly opposite Naraingunge; the other was between Naraingunge and Burrisaul. This Eagle is found in very small numbers. It is a fine bold handsome bird; and I have often watched it for a long time with admiration.

On a voyage in the steamer from Dacca to Sylhet one cannot fail to be struck with the large number of Eagles seen near the fishing-villages. I never had an opportunity to stop and examine them; but I studied them with a binocular. *Haliaëtus fulviventer* was the most common; and associated with it were *Polioaëtus ichthyaëtus*, *Aquila nævia*, and a white-shouldered Eagle which I took to be *A. imperialis*. I have seen as many as twenty of these Eagles close to one fishing-village; and the different species seemed to consort amicably. But the Grey-backed Sea-Eagle was never seen with the crowd; I always observed it alone, or a pair at the breeding-season. *Pandion haliaëtus* is not uncommon. I have generally observed this bird by itself, fishing in the smaller rivers, the Luckya and the Bunsee. The only other raptorial bird I shall notice as belonging to this country, where nearly all the common Eagles, Falcons, Hawks, and Kites are to be found, is *Hypotriorchis chicquera*, the Turrumti, or Red-headed Merlin, which is not uncommon about Tippera, Noakholly, and Backergunge, nesting often in the *Casuarina* trees near the houses of the European officials.

Between the mouth of the Boorigunga and the station of Furreedpore I regularly observed the Avocet (*Recurvirostra*

avocetta). This is a shy and wary bird; when roused (generally in small flocks), it flies a long way, and very often goes from one side of the large rivers to the other, so that pursuit is impracticable.

Sarcidiornis melanonotus is to be found nearly every spring in the same ground as the Avocet. Jerdon says it is very rare in Lower Bengal; but I found it and shot it often. The resemblance of this large bird to the Pygmy *Nettapus* in colouring is remarkable.

Here also come flocks of Geese. *Anser indicus* is the commonest; but I have shot in Tippera, and seen here and also in the neighbourhood of Furreedpore, another Goose: I never killed it of late years; and when I shot it in earlier days, Jerdon's book was not published. It might have been *Anser brachyrhynchus* or *Anser cinereus*. Geese, Ducks, and various Wildfowl are caught in the churs of the Ganges near Furreedpore in great numbers in the end of February and beginning of March by fishermen, who sell them in the bazars at very low prices. I have bought *Anser indicus* for half a rupee, and a brace of fat Pintail Ducks for the same price. The mode of capture was, I was told, as follows:—A certain chur or sandbank is fixed upon by the fishermen generally as the trapping-ground; and this islet is left in absolute repose. All the other churs for miles round are disturbed, and the Geese and Ducks, Cranes and Pelicans, are hunted off and not allowed to rest, sleep, or remain quiet, day or night; for much fishing goes on at night. The birds then resort to the one undisturbed chur. After a few days this chur is covered with snares, nooses, nets, and traps, both in the green grass, in the muddy shore, and even in the shallow water; and thus hundreds of birds are captured. I have had brilliant sport shooting among these sandbanks. My last day was on the 7th of February 1872. It was cool and windy. I had two small fishing-boats; the weapons were one duck-gun, carrying only six drachms of powder and two ounces of BB shot in each barrel, and two ordinary No. 12 breech-loaders. I killed forty-seven couple of Ducks, chiefly Pintails and Blue-winged Teal, with a few Spotted-bill Ducks. I also got two

Grus cinerea and two Pelicans. The Ducks were in enormous flocks. We approached as quietly as we could; and when it appeared that the body of the flock was about to rise I fired two barrels of one breech-loader, and then, while the flock was rising with a rushing noise like a tempest, I stood up and delivered the two barrels of the duck-gun. The next half hour was always taken up by the cripple-chase; and I made it a rule to shoot again every wounded bird that looked at all lively; my men picked up the dead and wounded with two landing-nets. By the time this was all done, a man, separately employed, had watched where the largest flock of wildfowl had again settled, and a new attack was arranged.

Tadorna vulpanser was often observed by me on the quicksands at the mouth of the Noakholly river and in the Megna. I could not get at it: no boat could approach; and the quicksands were too deep and treacherous to be trusted. Jerdon informed Hume that I had observed *Anas leucoptera* to the east of Dacca; but I never saw it, nor have I ever seen a skin of it yet. I told Jerdon that I had *heard of* a large flock of dark Ducks in these waters, but had never met them myself. Jerdon himself only observed it from the deck of a steamer.

Haplopterus ventralis is occasionally seen in the churs and sandbanks of the eastern outlets of the Ganges; and twice I met with *Glareola lactea* resorting in very large numbers to islets covered with tamarisk jungle. On one of these occasions the birds appeared to be hawking after insects in the moonlight till quite a late hour.

The pretty little bird *Terekia cinerea* is often to be found about Backergunge and between that district and Novakholly. I have seen small parties seated on drift-wood and running about catching aquatic insects on it.

Every autumn the jheels near the mouth of the Booriguanga river, on the right bank, are visited by large flocks of Godwits (*Limosa ægocephala*). When shooting Snipe in these small jheels I often used to make a large bag of Godwits in a double discharge of barrels. The natives call them Little Curlews.

I will conclude this article with a notice of one more place.

To the north-west of Dacca is a large jheel, not far from the right bank of the Bunser river; it is surrounded with high rushes, well known to the hog-hunter: many and many a fine boar have I speared in this country; and when first I knew it wild buffaloes used to resort to it. The riding-down of a wild Arnee with gun or pistols, before breech-loaders were introduced, was grand fun. In this jheel I at times got Spoonbills, *Platalea leucorodia*. These birds were very shy; I only obtained them, after many failures, by going early in the morning and, regardless of pigs, ducks, and snipe, sneaking very quietly through the reedy covert till I got within range with a duck-gun. The birds are rare in these parts; and I looked on them as valuable acquisitions. Here, and all down the Megna nearly to the sea, in autumn, the Pelican Ibis (*Tantalus leucocephalus*) is rather common; it breeds in the neighbourhood, as its young are often offered for sale—noisy insatiable animals; but the delicate rosy plumes of the adult male birds are prettier than any feathers I see exposed for sale in the windows of London shops. In this jheel I have seen *Mycteria australis*. It is occasionally visited by *Grus antigone*, the Sarus Crane, which is not uncommon throughout Dacca and Mymensing. This bird, so graceful in appearance and harmless in habits, is preserved by the natives. There is a superstition that great misfortune will happen to to any person who kills one.

The common Crane (*Grus cinerea*) visits all this neighbourhood yearly. This is a very hard bird to shoot with a common gun; but there is no better bird on the table, and about Christmas time a young Crane is better than a Turkey.

This jheel is often full of Ducks of various species. *Anas pœcilorhyncha* breeds in the grass of the indigo-lands which used to be found here before indigo-cultivation was stopped. Pintails (*Dafila acuta*) come here regularly in the spring. Blue-winged Teal (*Querquedula circia*) and Common Teal (*Q. crecca*) are both here occasionally; and the Whistling Teal (*Dendrocygna awsuree*) is exceedingly common, so much so as to be generally despised and left alone by the sportsman, who slays all other Anatidæ.

In the warmer season, just before the earliest rains set in, *Sypheotides bengalensis* (the Bengal Florikin) is always to be found here; possibly it breeds here; at any rate, from about this neighbourhood northwards towards Rungpore and Assam the bird becomes common, and from this place southwards it seems to be hardly known.

The Partridge tribe are feebly represented at this jheel: an occasional Francolin or Black Partridge strays from the bush jungles on the left bank of the Bunser; and the Kyat Partridge (*Ortygornis gularis*) was once seen by me here. These birds are common a little higher up the Bunser, in the Mymensing district, and are exceedingly numerous in the rose-bush jungles at the foot of the Mymensing and Sylhet hills, in the rains. The pretty little *Excalfactoria chinensis* (the Blue-breasted Quail) was common in the indigo-fields. The Common Quail appears only in what are known as Quail-years.

Rallidæ of numerous species abound in this jheel; and, indeed, so they do in every jheel in Eastern Bengal, more especially in Tippera, where *Porphyrio poliocephalus*, called by Jerdon the Purple Coot, is so common and destructive that in places the rate of rent of rice-lands at the foot of the hills has at times to be lessened on account of their ravages. In Tippera, in the height of the rains, I have, in company with one other man, out of canoes pushed among the rice crops by men with poles, shot fifty couple of these birds in two hours. The sport was varied by the slaughter of *Gallicrex cristatus* (the Khora of Eastern Bengal) and several pairs of the beautiful Pheasant-tailed Jacana (*Hydrophasianus chirurgus*) and of *Nettapus*: both these birds, being at that time in lovely plumage, were shot in the same fields.

The Khora is much valued in Eastern Bengal; it is kept in cages, is very tame, and used for catching wild Khoras, which it entices by its notes and then fights. I once knew a small elephant exchanged for a famous Khora. In parts of Tippera the natives place the eggs of this bird in half a cocoa-nut shell filled with soft cotton; the half shell is then bound over a man's navel; and in this manner the eggs are hatched.

The common Bald Coot is to be found in the jheels between Jessore and Backergunge.

The list of birds in the foregoing remarks is not intended to be in any way complete: they merely refer to some species which are interesting to the ornithologist and sportsman, and in the pursuit and observation of which I spent many happy days during a long sojourn in the Dacca and neighbouring districts.

VIII.—*On the Birds of Southern Afghanistan.* By Lieut.-Col. C. Swinhoe, F.L.S., F.Z.S., M.B.O.U.

The following notes refer to the birds which I collected, and to some which I observed but failed to get specimens of, during the few months I was in South Afghanistan.

I reached Kandahar on the 6th October, 1880; but the siege of Kandahar, the death of my predecessor from wounds received at the battle of Dekoja, and the movements of the large bodies of troops taking place at the time gave me, as chief administrative commissariat officer in the field, such very heavy work that I could not find time either to collect birds or to take notes, until matters settled down a little. All I profess, therefore, to do in this paper is to give a list of the birds collected, which Dr. Scully has very kindly assisted me in identifying and working out, and of those observed at Kandahar from December 1880 until the middle of April 1881, and during the march to India, which I reached at the end of May following—with the addition of a few shot by Dr. Duke in North Beloochistan and by Col. St. John in the neighbourhood of Kandahar. The distance from Sibi to Kandahar may be roughly calculated at about 250 miles. Our direct line of communications starts from Pirchowky, which is the terminus of the railway and is at the mouth of the Bolan Pass, 20 miles from Sibi, through the Bolan to Quetta (80 miles), passing the military posts of Koondalain, South Kirta, North Kirta, Bibi Nani, Mach, Dozan, Durwaza, and Siriab, then from Quetta through the Pisheen valley to the Kojak Pass, passing Metazai, Dinakarez, Saiji, Goolistan, and Killa Abdula, then down the Kojak into the

plains, commencing with Chaman at the foot, past Gatai, Dubrai, Mundi Hissar, Abdul Rahman, Melkarez, into Kandahar.

During our march back, however, I had the opportunity of accompanying the general commanding through (to me) a new line of country from the Kojak into Quetta, going from Killa Abdula to Gungazai round by Kushdil Khan and Syed Yarroo, at all of which places I obtained good specimens.

The country to the east of Pirchowky is a vast sandy desert; about Pirchowky itself is a little cultivation. The Bolan river, which runs through nearly the whole pass, comes out into the plains here; and consequently here and there one finds a little tamarisk jungle and some Cruciferæ and Capparidæ. After passing Pirchowky you get at once into the Bolan, and find little but barren mountains to look at, no trees and scarcely any vegetation of any kind whatever, beyond the tamarisk that grows on the river-side here and there, and a little coarse elephant-grass, and some wild thyme, and a species of *Euphorbia* on the mountain-sides.

The heat in the Bolan up to Mach is always very great; when I came down at the end of last May we registered at Kirta 121° F. in a soldier's tent at noon; but the climate gets better at Mach, and you are fairly out of the heat at Durwaza, which is, I believe, 6000 feet above sea-level and 1000 feet higher than Quetta.

There is no cultivation whatever in the Bolan; the only good thing in it is its river, which contains a ceaseless rapid flow of most excellent water, always cool in the hottest weather. The hills are close on each side of you in many places; and some of the passes look very beautiful, on account of the different ranges you see standing as it were on each other, pile upon pile; but all through the pass the chief characteristics are flies and dust; and, indeed, this may be said of the whole line right up to Kandahar, dust-storms being almost of daily occurrence.

About Quetta there are a good many orchards, and a little cultivation, wheat, barley, maize, and lucern being the chief crops. At Kandahar you have the same kind of cultivation,

only to a far larger extent, and a greater extent of gardens; but the whole tract of land between is little more or less than a barren desert. In the Pisheen on the Kushdil Khan side there is a little cultivation; but the so-called fertility of the rest of the valley of the Pisheen only exists in the imagination of its describers. During the ten months of my commissariat administration it produced next to nothing; and to feed the army retiring to India from Kandahar last April and May I had to bring every thing required as far as the Kojak all the way up from India, even down to the grain and forage for the animals. The soil is chiefly clay full of gypsum, and might be made fertile enough; but the country has hardly any population; and as it is in a rainless zone, away from the orchards which fringe the river-banks at Kandahar and Quetta there are no trees. If you go up any of the hills and look around you, the same feature presents itself everywhere—a riband of orchards and cultivation along the river-banks, a barren treeless waste everywhere else.

That the whole country could be well cultivated if there were sufficient population, there can be no doubt. Though it seldom rains, water can be obtained by boring at the foot of nearly every hill; perennial springs they appear to be; and all the cultivation round and about Kandahar and Quetta is by irrigation by artificial streams carried down from the foot of the different hills. There are a few stunted trees, *Pistacia khinjuk*, on the Kojak, the top of which is 7000 feet above sea-level; and the only other trees I saw in the country were the fruit-trees in the orchards, such as apples, pears, plums, &c., and many poplars (*Populus alba*), mulberries, pomegranates, figs, and vines of many different kinds, and tamarisk clumps in most of the river-beds.

The whole line of country between Quetta and Kandahar may be roughly described as consisting of barren hills and sandy plains, with fringes of cultivation on the watercourses found here and there; and though you drop down some two thousand feet after crossing the Kojak, the nature of the country is the same, except that the dust-storms are made considerably worse by the great desert along which the road

runs within a few miles of the entire distance between Chaman and Kandahar. The climate of the country, however, apart from the dust-storms, is every thing that man could desire. At Quetta the thermometer in the winter sometimes for a few days falls below zero; otherwise it is never very cold nor very hot. At Kandahar, where it is hotter, you get about six weeks' heat during summer; but the nights are always cool; and the rest of the year is very pleasant, the winter especially so, the thermometer in the open air ranging from 40° to 60°, and very seldom falling to freezing-point.

1. Vultur monachus, Linn.

Common at Sibi and some parts of the Bolan; did not see this Vulture further west. Col. St. John, however, had a tame young one at Kandahar, supposed to have been taken in the Girisk district.

2. Gyps fulvescens, Hume.

To be found everywhere between Sibi and Kandahar. In March and April at Kandahar in large numbers in company with another Vulture, which I did not identify. In ordinary times Vultures are said to be scarce in South Afghanistan; and when our troops first entered the country the carcasses of transport animals used to lie about for days with scarcely a Vulture near them; but latterly they gathered all along the line of communication, and, especially at Kandahar, in very large numbers.

3. Neophron percnopterus (Linn.).

Kandahar, 1 ♀, 11,4,81; Do., 1 ♀, 12,4,81.

Common everywhere.

4. Gypaetus barbatus (Linn.).

To be found on all the mountains throughout the country.

5. Falco jugger, J. E. Gr.

One shot by Dr. Duke at Nal, 2,5,77. One seen near Chaman in the beginning of May 1881.

6. Falco babylonicus, Gurn.

Shot by Col. St. John in the neighbourhood of Kandahar.

7. Falco æsalon, Tunst.

Kandahar, (young bird) 1 ♂, 13,12,80; Do., (adult) 1 ♂, 11,2,81.

Common throughout the winter.

8. Tinnunnculus alaudarius (Linn.).

Kandahar, 1 ♀, 2,2,81; Do., 1 ♀, 2,3,81; Do., 1 ♂, 25,3,81; Do., 1 ♀, 20,3,81; Do., 1 ♂, 30,3,81.

Common about Kandahar, as it is, I understand, throughout the country. I found a nest with young in it on the ramparts of the city in the beginning of April.

9. Astur badius (Gm.).

Kandahar, 1 ♀, 14,4,81.

The only example procured, shot in company with *Accipiter nisus*.

10. Accipiter nisus (Linn.).

Kandahar, 1 ♀, 14,4,81; Killa Abdula, 1 ♀, 30,4,81.

Common during the spring.

11. Aquila imperialis, Bechst.

Kandahar, 1 ♂, 12,1,87; Do., 1 ♀, 20,1,81.

Common all through the winter. Two or three generally to be found on the ground in the neighbourhood of the race-course, looking for offal.

12. Hieraetus pennatus (Gm.).

A female shot by Dr. Duke at Nal, 18,5,77.

13. Buteo ferox (S. G. Gm.).

Kandahar, 1 ♀, 21,12,80; Do., 1 ♀, 12,1,81.

Also shot at Quetta by Dr. Duke, one on 20th and another on 24th October. Is also to be found occasionally in the Bolan.

14. Circus macrurus (Gmel.).

Kandahar, 1 ♂, 3,4,87.

Appeared to be passing through the country in the early part of April; were only observed about Kandahar for about ten days.

15. Circus æruginosus (Linn.).

Kandahar, 1 ♂, 14,2,81; Do., 1 ♀, 17,2,81; Do., 1 ♂, 18,2,81; Do., 1 ♂, 18,2,81; Do., 1 ♂, 23,2,81.

Arrived at Kandahar early in February, and were in some numbers sporting about the big marsh close to the city up to the date of our leaving, 22nd April.

16. Milvus govinda, Sykes.

Common at Sibi, Quetta, and Kandahar; some observed at the large camp we formed at Killa Abdula. This Kite seemed to follow our camp. Never observed in the villages between Chaman and Kandahar, though common at Kandahar itself.

17. Milvus migrans (Bodd.).

Kandahar, 1 ♂, 14,2,81.

Common at Kandahar.

18. Bubo ignavus (Forst.).

Obtained by Col. St. John in the Kandahar district.

19. Scops pennatus, Hodgs.

Kandahar, 1 ♀, 12,4,81.

The only specimen obtained was shot in an orchard near Kandahar.

20. Carine brama (Temm.).

Pirchowky, 1 ♂, 1 ♀, 19,5,81.

Common in the lower parts of the Bolan, was not observed west of Mach.

21. Carine bactriana, Hutt.

Kandahar, 1 ♀, 24,12,80; Do., 1 ♂, 26,12,80; Do., 1 ♂, 10,2,81; Do., 1 ♂, 10,2,81.

Also shot by Dr. Duke at Quetta in October. Common at Kandahar; commenced breeding about the middle of March; there were ten nests with young in the fort-walls in the early part of April.

22. Hirundo rustica, Linn.

Kandahar, 1 ♂, 3,2,81; Do., 2 ♂, 1 ♀, 7,12,81.

Common everywhere during summer. I saw the first

Swallow in Kandahar on the 29th January; and five days afterwards one flew into my room, which proved to be a male with testes enormously swollen. In another week they were with us in thousands, making nests in every convenient spot available; one pair built and reared their young inside one of the mess tents, which was in constant use. The number of these little birds in the city was very remarkable.

23. Hirundo filifera, Steph.
Obtained by Col. St. John in the Kandahar district.

24. Cotile riparia (Linn.).
Kandahar, 1 ♂, 5,4,81.
Arrived in the latter part of March, but not in any quantity. I observed also in the beginning of April another species of Martin, but failed in securing one.

25. Cypselus melba (Linn.).
Obtained by Col. St. John at Kandahar.

26. Cypselus pekinensis, Swinh.
Kandahar, 1 ♂, 17,2,81; Do., 1 ♀, 8,3,81.
The first Swifts of this species were observed on the 6th February; there were only three together. I picked one up from the ground outside the courtyard in which my office was situated; how it got there I cannot say; it was dying. Neither in this male nor in the female I secured on the 8th of the following month was there any sign of breeding. They were common in April.

27. Cypselus affinis, J. E. Gr.
Obtained by Col. St. John in the Kandahar district.

28. Caprimulgus unwini, Hume.
I saw a Nightjar when in company with Col. St. John at Dubrai on the 25th April, and another at Gatai on the following evening; he said it was probably *C. unwini*, as he had only obtained that species of Nightjar in the country.

29. Merops viridis, Linn.
Was observed at Pirchowky and at the one or two small patches of cultivation in the lower portion of the Bolan. Observed nowhere west of Mach.

30. Merops apiaster, Linn.

Kandahar, 1 ♂, 1 ♀, 14,4,81; Do., 2 ♂, 1 ♀, 17,4,81.

I heard the cry of these birds on the 14th April for the first time, while sitting at my office-desk. I followed the cry in the afternoon as soon as I could get away, and found a large flock flying round and round some large trees in a garden outside the Herat gate. I saw some of these birds also at Chaman on the 28th April, and again at Quetta in the middle of May, and got several specimens. The testes of all the males I examined were very greatly swollen.

31. Coracias indicus, Linn.

Observed near Sibi, at Pirchowky, and in the lower part of the Bolan. It is, I am given to understand, also sometimes found at Quetta, but has not been observed further west.

32. Coracias garrulus, Linn.

Kandahar, 1 ♂, 17,4,81; Do., 1 ♂, 18,4,81; Melkarez, 21,4,81; Abdul Rahman, 1 ♂, 23,4,81.

Also obtained several specimens at Quetta in May. These birds commenced arriving in the country in the early part of April; the first was observed at Kandahar on the 4th.

33. Alcedo bengalensis, Gm.

One obtained by Dr. Duke at Quetta in November.

34. Alcedo ispida, Linn.

Kandahar, 1 ♂, 20,12,80; Do., 1 ♂, 22,12,80; Do., 1 ♂, 9,1,81; Do., 1 ♀, 24,1,81; Gungazai, 1 ♀, 1,5,81; Kushdil Khan, 1 ♀, 2,5,81; Quetta, 1 ♂, 6,5,81.

The common Kingfisher of the country.

35. Ceryle rudis (Linn.).

One shot by Dr. Duke at Quetta in November.

36. Picus sindianus, Gould.

Kojuk, 1 ♀, 4,3,81.

Shot by Lieut. Rutherford, and sent me in the flesh by post.

37. Gecinus squamatus, Vig.

One shot by Dr. Duke in December at Quetta.

38. Iynx torquilla, Linn.

Kandahar, 1 ♀, 17,4,81; Quetta, 1 ♀, 10,5,81.

Evidently passing through the country; the only Wryneck observed.

39. Cuculus canorus, Linn.

Quetta, 1 ♀, 6,5,81; Do., (hepatic plumage) 1 ♀, 6,5,81; Do., 1 ♀, 8,5,81.

Had not arrived at Kandahar when we left on 22nd April. Of the many Cuckoos the sex of which I examined at Quetta between the 5th and 15th May, all were females; if any males had arrived, they had not commenced calling.

40. Cinnyris brevirostris (Blanf.).

Pirchowky, 1 ♂, 19,5,81.

Not uncommon in cultivated parts of the plains below the Bolan. Not met with in the pass or westwards.

41. Tichodroma muraria (Linn.).

Kandahar, 2 ♂, 18,12,80; Do., 1 ♂, 22,12,80; Do., 1 ♀, 24,12,80; Do., 1 ♂, 30,1,81.

Very common at Kandahar throughout the winter, and apparently only a winter visitant. The last was seen by me on the 9th February.

42. Sitta syriaca, Ehr.

Kandahar, 1 ♂, 1 ♀, 18,4,81; Kojak, 2 ♂, 28,4,81.

Common in the Bolan, on the Kojak, and on the hills near Kandahar, where numbers can be seen creeping on the face of the smooth rocks and flying from rock to rock uttering a sharp loud note.

43. Upupa epops, Linn.

Kandahar, 12,80; Do., 1 ♂, 1,2,81; Do., 1 ♂, 16,4,81.

Common everywhere, and, I believe, a permanent resident in the country.

44. Lanius aucheri, Bp. Rev. Zool. 1853, p. 294.

Kandahar, 1 ♀, 9,1,81.

The only specimen obtained. I observed three in the General's garden on the 9th January when returning from an

official meeting, and sent my shikaree after them, with the above result. Did not meet with this bird again.

45. Lanius minor, Gmel.
Kandahar, 1 ♂, 14,4,81.
The only specimen obtained.

46. Lanius erythronotus, Vig.
Kandahar, 1 ♂, 2,1,81; Do., 1 ♂, 1 ♀, 6,4,81; Quetta, 1 ♀, 5,5,81.
Common everywhere. I believe it to be a resident in the country.

47. Lanius vittatus, Valenc.
Kandahar, 1 ♂, 1 ♀, 6,4,81; Do., 1 ♂, 10,4,81; Do., 1 ♀, 17,4,81; Chaman, 1 ♂, 28,4,81.
Observed also at Quetta and in the Bolan in May. Two specimens of this Shrike were also obtained by Dr. Duke at Tekree Gutt, in North Beloochistan, in the month of July.

48. Lanius isabellinus, Hempr. et Ehr.
Kandahar, 1 ♀, 12,12,80; Do., 1 ♀, 30,12,80; Do., 1 ♂, 18,1,81; Kokeran, 1 ♀, 28,2,81; Kandahar, 1 ♂, 1,4,81; Do., 1 ♀, 2,4,81.
Common also at Chaman, at Quetta, and in the Bolan.

49. Lanius phœnicuroides, Severtzoff.
Kandahar, 1 ♀, 12,4,81; Do., 1 ♀, 14,4,81.
The only specimens obtained.

50. Muscipeta paradisi (Linn.).
Kandahar, 1 ♂, 17,4,81; Do., 1 ♀, 20,4,81.
Both in chestnut plumage, evidently stragglers. Col. St. John informed me that he had never come across any during his stay in the country.

51. Muscicapa grisola, Linn.
Kandahar, 1 ♀, 20,4,81; Killa Abdula, 1 ♀, 30,4,81; Quetta, 1 ♂, 8,5,81.
One was also shot by Dr. Duke in October at Quetta.

52. Erythrosterna parva (Bechst.).

Kandahar, 1 ♀, 1,4,81; Do., 1 ♂, 31,3,81; Do., 1 ♀, 6,4,81; Kojak, 1 ♀, 29,4,81.

One was also shot by Dr. Duke at Quetta in October. Also observed by me in the Bolan, at Mach, in May.

53. Myiophoneus temminckii, Vig.

Kandahar, 1 ♀, 20,12,80.

I only observed two pairs in the gardens near Kandahar during the winter. They were very difficult to get near. Observed nowhere else.

54. Monticola cyanus (Linn.).

Kandahar, 1 ♂, 24,12,80; Do., 1 ♂, 24,1,81; Do., 1 ♂, 1,2,81; Do., 1 ♂, 3,2,81.

Quite common near Kandahar during the winter.

55. Merula maxima, Seebohm.

Kandahar, 1 ♂, 1 ♀, 10,12,80; Do., 1 ♂, 8,1,81; Do., 1 ♂, 14,1,81; Do., 1 ♀, 25,1,81; Do., 2 ♀, 5,2,81.

The common Blackbird of Kandahar during the winter.

56. Turdus atrogularis, Temm.

Shot by Dr. Duke:—One on 9th November, one on 27th November, and one in February at Quetta, and one in December at Kelat in North Beloochistan.

57. Turdus viscivorus, Linn.

One shot by Dr. Duke at Quetta in February.

58. Chatarrhœa huttoni, Blyth.

Kandahar, 1 ♂, 18,12,80; Do., 1 ♂, 30,12,80.

Not very common about Kandahar; did not observe it eastwards.

59. Chatarrhœa caudata, Dum.

Common at Sibi. Not observed in or beyond the Bolan.

60. Otocompsa leucotis, Gould.

Kandahar, 1 ♂, 8,12,80; Do., 1 ♂, 19,12,80; Do., 1 ♀, 18,12,80; Do., 1 ♂, 1 ♀, 19,2,81.

Common everywhere in suitable localities. Very common

in the city of Kandahar, where it commences breeding very early. I caught a half-fledged young one in the courtyard of my office on the 11th March.

61. Oriolus kundoo, Sykes.
Quetta, 1 ♀, 5,5,81.
Had not arrived at Kandahar when we left.

62. Pratincola caprata, Linn.
Kandahar, 1 ♀, 17,3,81; Do., 1 ♂, 20,3,81; Do., 1 ♂, 29,3,81; Do., 1 ♂, 30,3,81; Do., 1 ♀, 1,4,81; Do., 1 ♀, 3,4,81; Do., 1 ♀, 9,4,81; Do., 1 ♂, 16,4,81; Do., 1 ♂, 18,4,81.
Common at Kandahar.

63. Pratincola maura (Pallas).
Kandahar, 1 ♀, 16,1,81; Do., 1 ♂, 21,2,81; Do., 1 ♂, 2,2,81; Do., 1 ♀, 16,4,81.
Common during the winter.

64. Pratincola macrorhyncha, Stol.
Kandahar, 1 ♂, 19,4,81; Dubrai, 1 ♀, 24,4,81.
Not very common.

65. Saxicola picata, Blyth.
Kojak, 1 ♂, 23,3,81; Killa Abdula, 1 ♂, 29,4,81.
The first was shot by Lieut. Rutherford, and sent me in the flesh by post; the other I obtained myself on my road to India. I observed this bird also in the month of May at Quetta, in the garden of the Superintendent of Telegraphs, and also on two occasions in the Bolan. Col. St. John told me it was to be found about Kandahar; but I did not get any specimens while there. It is probably a summer visitor, as it is said to be in Gilgit.

66. Saxicola albonigra, Hume.
Kandahar, 1 ♂, 28,11,80; Do., –,12,80; Do., 1 ♂, 26,12,80; Do., 1 ♂, 22,1,81.
Common at Kandahar throughout the winter. I missed it, however, after the middle of February. Did not observe it east of Kandahar at all.

67. Saxicola morio, Hempr. et Ehr.

Obtained in the neighbourhood of Kandahar by Col. St. John, who told me it was common during the summer months. Had not arrived, however, when we left on 22nd April.

68. Saxicola finschi, Heugl.

Kandahar, 1 ♂, 3,2,81.

Two also shot by Dr. Duke at Quetta—one in February; the date of the other is lost.

69. Saxicola isabellina, Rüpp.

Kandahar, 1 ♀, 3,1,81; Do., 1 ♂, 17,3,81; Do., 1 ♂, 10,4,81; Dubrai, 1 ♀, 25,4,81; Killa Abdula, 1 ♀, 29,4,81.

I also observed it in May at Quetta and in the Bolan.

70. Saxicola chrysopygia, de Fil.

Kandahar, 1 ♂, 26,12,80; Do., 1 ♂, 8,1,81; Do., 1 ♂, 18,1,81; Do., 1 ♀, 22,1,81.

Also observed at Quetta and in the Bolan.

71. Saxicola deserti, Rüpp.

Kandahar, 1 ♂, 13,3,81.

Generally met with in desert places.

72. Saxicola montana, Gould.

Gatai, 1 ♂, 26,4,81.

The only specimen obtained.

73. Saxicola melanoleuca (Güld.).

Shot by Col. St. John at Kandahar.

74. Aedon familiaris, Ménétr.

Mel Karez, 1 ♂, 24,4,81; Chaman, 1 ♀, 28,4,81.

Evidently just arriving.

75. Ruticilla rufiventris, Vieill.

Kandahar, 1 ♂, 9,1,81; Kojak, 1 ♂, 23,3,81.

A winter visitor.

76. Ruticilla erythronota, Eversm.

Kandahar, 1 ♂, –,12,80; Do., 1 ♂, 24,12,80; Do., 1 ♀, 2,1,81; Do., 1 ♂, 9,1,81; Do., 1 ♀, 18,1,81; Do., 1 ♂, 22,1,81; Do., 1 ♂, 2,2,81.

Also two shot at Quetta by Dr. Duke in February. A winter visitor.

77. Cyanecula suecica (Linn.).
Kandahar, 1 ♂, 19,3,81.
Is common, I understand, later on; but the above-noted specimen is the only one I saw.

78. Acrocephalus stentorius, Hempr. et Ehr.
Obtained by Col. St. John in the Kandahar district.

79. Lusciniola melanopogon (Temm.).
Obtained by Col. St. John in the Kandahar district.

80. Cettia cetti (Marm.).
Kandahar, 1 ♂, 13,1,81.
The only specimen procured was shot in the ditch full of rank growth just outside the city wall.

81. Scotocerca inquieta, Rüpp.
Shot by Dr. Duke in April at Iskulko, in North Beloochistan.

82. Hypolais rama, Sykes.
Gungazai, 1 ♂, 1,5,81.
A pair of these birds was found breeding on the 1st of May in the river-bank near our camp at Gungazai. The nest taken was made of dry grass, and was not quite completed; it was situated in a tamarisk bush, about three feet from the ground, close to the waterside.

83. Hypolais languida, Hempr. et Ehr.
Chaman, 1 ♀, 28,4,81.
The only pair of this species obtained was seen at Chaman just as the worst sandstorm I ever saw was coming on. The female fell dead; the male flew into the face of the sandstorm, and was lost.

84. Phylloscopus tristis, Blyth.
Kandahar, 1 ♂, 2,4,81; Do., 1 ♂, 3,1,81.
A winter visitor.

85. Phylloscopus nitidus, Blyth.
One shot by Dr. Duke at Quetta in November.

86. Sylvia jerdoni, Blyth.
Kojak, 1 ♂, 29,4,81.
The only specimen secured. Not observed at Kandahar during the winter.

87. Sylvia minuscula, Hume.
Kandahar, 1 ♀, 16,4,81.
The only specimen secured.

88. Motacilla personata, Gould.
Kandahar, 1 ♂, –,12,80; Do., 1 ♀, 2,1,81; Do., 1 ♂, 1,2,81; Do., 1 ♂, 16,4,81.
Common everywhere throughout the winter.

89. Motacilla alba, Linn.
Kandahar, 1 ♀, –,12,80; Do., 1 ♀, 30,1,81; Do., 1 ♀, 22,3,81.
Common everywhere throughout the winter.

90. Calobates melanope, Pall.
Kandahar, 1 ♀, 24,12,80; Do., 1 ♀, 16,1,81.
Also one shot by Dr. Duke in December at Khelat. A winter visitor.

91. Budytes rayi, Bp.
Dubrai, 1 ♀, 24,4,81.
A very large number of Yellow Wagtails arrived at Kandahar after the end of February, probably passing through; but although I got numbers of every other kind, I never met with a Ray's Wagtail until we arrived at Dubrai, where Col. St. John saw one and very kindly shot it for me.

92. Budytes cinereocapillus (Savi).
Kandahar, 1 ♀, 22,3,81; Do., 1 ♂, 26,3,81; Do., 1 ♂, 1 ♀, 27,3,81; Do., 1 ♀, 3,4,81.
Quite common at Kandahar in spring.

93. Budytes melanocephalus (Licht.).
Kandahar, 1 ♂, 1 ♀, 26,2,81; Do., 2 ♂, 1 ♀, 8,3,81; Do.,

1 ♂, 1 ♀, 13,3,81; Do., 1 ♂, 1 ♀, 17,3,81; Do., 1 ♂, 19,3,81; Do., 1 ♀, 23,3,81.

Common everywhere during the spring.

94. Budytes flavus (Linn.).

Kandahar, 1 ♂, 23,3,81; Do., 1 ♂, 31,3,81; Do., 2 ♂, 5,4,81.

Common during the spring.

95. Budytes calcaratus, Hodgs.

Kandahar, 1 ♂, 20,3,81; Do., 1 ♂, 26,3,81.

Common during spring.

96. Budytes citreola (Pall.).

Kandahar, 1 ♂, 17,3,81; Do., 2 ♂, 22,3,81; Do., 1 ♂, 2 ♀, 26,3,81; Do., 1 ♀, 8,4,81; Gungazai, 1 ♀, 1,5,81.

Common during spring.

97. Anthus trivialis (Linn.).

Kandahar, 1 ♂, 2,4,81.

Common throughout the winter.

98. Anthus rufulus, Vieill.

Gatai, 1 ♀, 26,4,81; Chaman, 1 ♀, 28,4,81.

The only specimens obtained.

99. Anthus campestris (Linn.).

Kandahar, 1 ♂, 23,3,81; Do., 1 ♀, 3,4,81; Dubrai, 1 ♀, 25,4,81; Gatai, 1 ♀, 25,4,81.

Common throughout the winter.

100. Anthus blakistoni, Swinh.

Kandahar, 2 ♂, 12,12,80; Do., 1 ♀, 18,12,80; Do., 1 ♂, 8,1,81; Do., 1 ♂, 13,1,81; Do., 1 ♂, 18,1,81; Do., 1 ♀, 12,3,81; Do., 1 ♂, 13,3,81.

Very common everywhere throughout the winter.

101. Parus cinereus, Vieill.

Kandahar, 1 ♀, 5,1,81; Do., 1 ♀, 9,1,81; Kojak, 1 ♂, 27,4,81.

Common, and a permanent resident.

102. Accentor atrogularis, Brandt.

One shot by Dr. Duke at Quetta in November.

103. Corvus lawrencii, Hume.
Kandahar, 1 ♀, 8,12,80; Do., 1 ♀, 22,1,81.
Common all the year round everywhere.

104. Corvus cornix, Linn.
I often saw this Crow on the banks of the Argendab river, near Kandahar, but never succeeded in securing one.

105. Corvus umbrinus, Hedenb.
Very common everywhere.

106. Corvus frugilegus, Linn.
Kandahar, 1 ♂, 17,1,81; Do., 1 ♂, 19,1,81; Do., 1 ♀, 22,1,81; Do., 1 ♀, 23,1,81.
Appeared to me to arrive about the middle of January. There were plenty afterwards up to the date of our departure. Did not, however, observe one east of Kandahar.

107. Corvus monedula, Linn.
Kandahar, 1 ♀, 19,1,81; Do., 1 ♂, 23,1,81; Do., 1 ♂, 29,1,81.
The above remarks apply also to the Jackdaw.

108. Pica rustica (Scop.).
Kandahar, 1 ♂, 1 ♀, 12,80; Do., 1 ♀, 5,2,81.
Common everywhere from the Kojak westwards.

109. Fregilus graculus (Linn.).
Kandahar, 2 ♀, 24,11,80; Do., 1 ♂, 4,1,81; Do., 1 ♀, 19,1,81.
In large flocks throughout the winter in the neighbourhood of Kandahar.

110. Sturnus vulgaris, Linn.
Kandahar, 1 ♀, 8,12,80; 1 ♂, 15,2,81.

111. Sturnus purpurascens, Gould.
Kandahar, 1 unsexed, 1 ♂, 1 ♀, 8,12,80.
Always found together in flocks throughout the winter; out of the numbers I examined there would be always at least ten of the latter to one of the former.

112. Pastor roseus (Linn.).
Kojuk, 1 ♂ 1 ♀, 27,4,81; Killa Abdula, 2 ♂, 30,4,81.

Never observed any during the winter; a few flocks of them were seen by me in the neighbourhood of Kandahar towards the end of March. There were plenty at the Kojak and Quetta in April and May. On dissection the female above referred to was found to have eggs nearly ready for laying; and the testes of all three males were fully developed.

113. Amadina malabarica (Linn.).

Two shot by Dr. Duke at Bapin, 5700 feet above the sea-level in North Beloochistan in the month of July.

114. Passer domesticus (Linn.).

Kandahar, 2 ♂, 6,4,81; 2 ♂, 8,4,81; 1 ♂, 9,4,81; 4 ♂ 3 ♀, 16,4,81.

A summer visitor; commences breeding immediately after arrival, and goes away again in August. I most carefully looked for this Sparrow on first entering the country, being anxious to note the differences in comparison with the Indian bird; but from the date of my arrival at Quetta on the 26th August until the 6th April following, when I got the first bird, I never saw one, the only Sparrow I met with between those dates being *P. montanus*, which is the common House-Sparrow of South Afghanistan. I never saw a Domestic Sparrow in the city of Kandahar; but when we left they had only lately arrived, and were still in large flocks in the fields and had not commenced pairing. When I returned to Quetta in May there were several pairs nesting in the verandah of my house in company with *P. montanus*. But *P. domesticus*, in South Afghanistan at all events, although it builds in the same roof with *P. montanus*, does not associate with the latter. It always keeps out of the way of the Tree-Sparrow, who never loses an opportunity of attacking it, whereas with the Willow-Sparrow it is quite friendly, and when feeding they are often found in company. In the flocks the Tree-Sparrows were always by themselves, I never observed a Domestic Sparrow feeding in their company, nor a Tree-Sparrow in a flock of Domestic Sparrows, whereas, if you fired into a flock of the latter when feeding in the fields, you always found a number of Willow-Sparrows with them. I once saw an Afghan boy

catch a flock of Sparrows in a clap-net, and brought the whole lot home; on examination I found 162 Domestic and 64 Willow-Sparrows, but not a single Tree-Sparrow, although the birds were caught in a field close by an old building full of Tree-Sparrows.

115. Passer hispaniolensis, Temm.

Kandahar, 1 ♂, 6,4,81; 4 ♂, 5 ♀, 16,4,81.

A summer visitor. Arrived in large flocks with *P. domesticus* in the early part of April. The testes of the several males I examined were not, however, nearly so well developed as those of *P. domesticus*.

116. Passer montanus (Linn.).

Kandahar, 1 ♂, 1 ♀, 18,1,81; 1 ♀, 2,2,81.

Common everywhere. The common House-Sparrow of the country.

117. Petronia stulta (Gmel.).

Kandahar, 1 not sexed, 1 ♀, 12,80; 1 ♀, 13,1,81; 1 ♀, 22,1,81; 1 ♀, 15,2,81.

Evidently a winter visitor. Not observed after the end of February.

118. Emberiza leucocephala, S. G. Gm.

Kandahar, 2 ♂, 2,1,81; ♀, 29,1,81.

Also one shot at Quetta by Dr. Duke in February. A winter visitor.

119. Emberiza huttoni, Blyth.

Kandahar, 1 ♂, 8,4,81; Gatai, 1 ♂, 28,4,81; Kojuk, 1 ♂, 29,4,81.

Arrived in the first week in April. Numbers were found resting on the city walls at Kandahar on the 8th April; and great numbers were to be seen feeding on the road all the way to the Kojuk.

120. Emberiza stewarti, Blyth.

Chaman, 1 ♂, 27,4,81.

First and only specimen obtained at Chaman as above; had not arrived when we left Kandahar.

121. Emberiza schœnicola, Linn.

Kandahar, 1 ♀, 8,2,81.

A winter visitor.

122. Euspiza melanocephala (Scop.).

Melkarez, 1 ♀, 24,4,81.

Also one male, marked Quetta, one female, marked Nal, shot by Dr. Duke; date not given.

123. Euspiza luteola (Sparrm.).

Mundi Hissar, 1 ♂, 2 ♀, 22,4,81; Abdul Rahum, 1 ♀, 23,4,81; Chaman, 1 ♂, 28,4,81; Kush die Khan, 1 ♂, 2,5,81.

Numbers found feeding in the wood in the early morning, and perched during the day on the mud walls of the forts at the halting-posts; had evidently only lately arrived.

124. Bucanetes githaginea (Licht.).

Kandahar, 1 ♀, 3,2,81.

The only specimen obtained.

125. Erythrospiza obsoleta (Licht.).

Kandahar, 1 ♂, –,12,80; Do., 1 ♂, 23,1,81; Do., 1 ♂, 2,2,81; Do., 1 ♂, 30,3,81; Do., 1 ♂, 31,3,81; Do., 1 ♂, 1,4,81.

Common in the gardens in the neighbourhood of Kandahar throughout the year. I tried to bring home two males and a female alive; but the great heat in the Bolan in the month of May killed them. Not observed later than 1st April. Seen nowhere east of Kandahar.

126. Carpodacus erythrinus (Pall.).

Kandahar, 2 ♂, 1 ♀, 9,4,81; Do., 1 ♂, 12,4,81; Do., 1 ♂, 14,4,81; Syed Yarroo, 1 ♀, 3,5,81.

I saw two of these birds at Quetta at the latter end of August, in the garden of my house. First flock was seen in a garden near Kandahar on the 9th April. The last bird noted above was caught alive in a most extraordinary manner by one of my native escort, who crept up to and caught it in his naked hand while it was feeding in some long grass where we were resting on our march to Syed Yarroo.

127. Carduelis caniceps, Vig.

Kandahar, 1 ♂, 1,1,81.

Observed at Quetta, and at Chaman also, though I never got near enough to shoot any. The above bird I procured alive. A very favourite cage-bird with the Afghans. Sings well, a far superior note to that of *C. elegans*. I succeeded in bringing three male birds alive to India.

128. Metoponia pusilla (Pall.).

Kandahar, 1 ♂, 10,4,81.

This was also a caged bird; it must have been fresh caught, its ovary being well developed. I was informed by the bird-catchers that it arrives in flocks in the middle of April and leaves again in the middle of September.

129. Fringilla montifringilla, Linn.

Col. St. John informed me he had obtained this bird in the Kandahar district towards the Helmund.

130. Ammomanes deserti (Licht.).

Dubrai, 1 ♀, 25,4,81; Melkarez, 1 ♀, 24,4,81; Quetta, 1 ♂, 19,5,81; Pirchowky, 1 ♂, 19,5,81; Kandahar, 1 ♂, 1 ♀, 5,1,81.

Common everywhere in suitable localities. When shooting Sesse Partridges on the hills near the Moorcha Pass in the early morning, I heard a peculiar low but shrill call from thousands of birds on a low hill on the other side, being a note I never heard before. I got down the hill and went over to see what birds they were, and got a shot into a flock of these Larks as they went away.

131. Calandrella brachydactyla (Leisl.).

Kandahar, 1 not sexed, 1 ♂, 1 ♀, 7,3,81; Do., 1 ♀, 9,3,81; Do., 1 ♀, 12,3,81; Do., 1 ♂, 30,3,81.

Passed through in enormous flocks in the month of March, but did not remain. The Afghans, who are very clever bird-catchers, caught them in large numbers in nets, and used to hawk them for food in the city of Kandahar.

132. Melanocorypha bimaculata (Ménétr.).

Kandahar, 2 ♂, 6,2,81; Do., 1 ♂, 8,2,81.

Common about Kandahar during winter. A very favourite cage-bird with the Afghans. I succeeded in bringing two male birds to India. They sing very continuously; but the note is harsh and not to be compared with that of *Alauda arvensis* or *A. gulgula*. Dr. Duke shot two of these birds at Khelat in March. I was told by the bird-catchers that they were only winter visitors, arriving in October and leaving at the latter end of March.

133. Otocorys penicillata, Gould.
Kandahar, 1 ♂, 1 ♀, 25,1,81.
A winter visitor.

134. Alauda arvensis, Linn.
Kandahar, 1 ♂, 2,2,81; Do., 1 ♂, 8,2,81.
I am inclined to believe it is only a bird of passage at Kandahar. I have no note of having seen one earlier than February; and certainly later on, when Larks commenced singing, it was not in the country at all. Many times, seeing what I believed was an *A. arvensis* singing, I have shot it, and it turned out to be *A. gulgula*; and I also note that Mr. Murray did not meet with this bird during the three months, March, April, and May, spent between Sibi and Chaman.

135. Alauda gulgula, Frankl.
Kandahar, 1 ♂, 20,3,81; Do., 1 ♀, 30,3,81; Do., 1 ♂, 31,3,81; Dubrai, 1 ♀, 26,4,81; Quetta, 1 ♂, 10,5,81.
A summer visitor; the first I observed was singing in the air on the 20th March, and I shot him while descending; all examined had the testes and ovaries well developed. I heard and saw this Lark singing at every stage in our journey to India in April and May until we entered the mountain-pass of the Bolan at Durwaza.

136. Galerita cristata (Linn.).
Kandahar, 1 ♀, 15,12,80; Do., 1 ♂, 1,2,81; Do., 1 ♂, 2,2,81; Do. 1 ♂, 2 ♀, 21,2,81; Do., 1 ♀, 6,4,81; Melkarez, 2 ♂, 24,4,81; Killa Abdula, 1 ♀, 30,4,81.
The common Lark of the country. Common everywhere all the year round.

137. Certhilauda desertorum, Stanl.

Obtained by Col. St. John in the neighbourhood of Kandahar.

138. Columba casiotis, Bp.

Kojuk, 1 ♀, 29,4,81; Quetta, 1 ♂, 6,5,81.

Common at Kandahar, the Kojuk, and at Quetta.

139. Columba intermedia, Strickl.

Kandahar, 1 ♀, 30,12,80; Do., 1 ♂, 20,3,81.

140. Columba livia, Bp.

Kandahar, 1 ♀, 4,1,81.

In enormous flocks everywhere throughout the winter. Always to be found together, and breeding together in the summer in the holes of old walls in the cities and in the different villages, also in wells and in the rocks of all the hill-sides throughout the country. Commence nesting early in March. I have fired into flocks, and shot them in pairs, and usually got as many with white rumps as without; even with pairs I have got one blue rump and one white; and frequently the white is so limited as to be hardly distinguishable. They were such good food, and we were generally so badly off for a change of food, that I find I have brought home only three skins; but from the frequent examinations I have made of numbers of these birds of both kinds, and from my observations of their habits, I am inclined to believe they are one and the same species, breeding together; and I think it is worthy of consideration whether all these Pigeons found in such enormous numbers in South Afghanistan are not all feral.

141. Turtur auritus, Gray.

Quetta, 1 ♀, 7,5,81.

Said to be a summer visitor, but is a rare bird in these parts.

142. Turtur cambayensis (Gmel.).

Kandahar, 1 ♂, 1 ♀, 19,3,81.

Common throughout the year. Commences breeding in the latter end of February; I took two eggs on the 22nd;

and I caught one half-fledged young one on the 20th March. Is very common in the city of Kandahar, and makes its nest in the holes in mud walls.

143. Turtur risorius (Linn.).

Kandahar, 1 ♀, 15,12,80; Do., 1 ♀, 14,4,81; Gungazai, 2 ♂, 1,5,81.

This Dove is also common throughout the year; I never, however, found it in the city of Kandahar; but it was common enough in the adjacent gardens. They were building in the trees in Col. St. John's new garden when we came away in April.

144. Pterocles arenarius, Pall.

Kandahar, 1 ♀, 2,1,81; Do., 1 ♂, 19,1,81; Do., 1 ♂, 20,1,81.

Common in the plains on the west of the Khojak throughout the year. Commenced pairing early in March. The bird-catchers said their eggs could be got about the middle of April; but I failed to get any up to the date of our departure.

145. Pterocles alchata (Linn.).

I knocked five out of a passing flock on the plains about half a mile in front of the Eadgar Gate of the city of Kandahar. Two or three days before Christmas several flocks were seen here for about a week or ten days. I met with no others during my stay in the country.

146. Pterocles coronatus, Licht.

Maiwand, –,2,81.

I found this bird in the collection of Captain Cuthill, of the 13th Hussars, among some pretty-plumaged birds he had collected at Maiwand in the month of February; and he kindly gave it to me. He said it was shot out of a large flock at Maiwand. I never met with it in any part of the country; but Col. St. John informed me that in some winters it was quite common to the west of Kandahar; it does not, however, as I understand, remain to breed.

147. Pterocles senegallus (Linn.).

Pirchowky, 1 ♀, 19,5,81.

I never met with this bird above the Bolan Pass. It is common at Pirchowky, as it is in all that part of the country below the range of mountains.

148. Francolinus vulgaris, Steph.

A few to be found in the gardens in the neighbourhood of Kandahar. I shot five one day over an Irish setter bitch. I once heard one crowing at Kokeran, on the river Argundab. They are, I believe, not to be found anywhere between Sibi and Kandahar.

149. Caccabis chukar, J. E. Gray.

Common on the Amran range. Never met with on the hills near Kandahar; but there were plenty of caged birds in the city; and I imagine this bird will be found common on the mountain-ranges throughout the country. Dr. Duke told me he had shot them in Khelat, in North Beloochistan.

150. Ammoperdix bonhami, G. R. Gray.

Kandahar, 1 ♀, 5,1,81.

Common in the Bolan, on the Kojak, and on the hills near Kandahar.

151. Ortygornis pondicerianus (Gm.).

I observed this bird at Pirchowky, outside the pass; but it is not to be found in or beyond the Bolan.

152. Coturnix communis, Bonn.

I saw one Quail in my garden at Quetta early in September; and I heard of another being seen a few days afterwards. At Kandahar Quails arrived about the middle of March. The bird-catchers brought in many cages full for about a week. I imagine they merely pass through.

153. Otis tetrax (Linn.).

Kandahar, 1 ♀, –,11,80.

The only specimen procured. No other specimen of this Bustard was shot during our stay in the country.

154. Otis macqueeni, J. E. Gray.

Abdul Rahmun, 1 ♀, 12,2,81.

One also shot by Captain Cuthill at Maiwand in February.

Observed occasionally at different places west of Quetta during the winter, but is a rare bird in these parts.

155. Glareola pratincola (Linn.).
Bibi Nani, 1 ♂, 18,5,81.
The only specimen procured.

156. Ægialitis cantiana (Lath.).
Kandahar, 1 ♂, 9,2,81; Do., 1 ♂, 27,2,81.
Common in winter.

157. Ægialitis curonica (Gmel.).
Kandahar, 1 ♀, 27,2,81; Chaman, 1 ♀, 7,4,81; Quetta, 1 ♂, 10,5,81.
Common everywhere during winter. Found in company with *Æ. cantiana*.

158. Vanellus cristatus, Meyer.
Kandahar, 1 ♂, 1 ♀, 24,11,80; Do., 1 ♂, 1 ♀, 26,12,80; Do., 1 ♂, 11,2,81.
Commom throughout the country all the winter. Only a winter visitor.

159. Chettusia leucura (Licht.).
Kandahar, 1 ♂, 19,12.80; Do., 1 ♀, 15,3,81; Do., 1 ♂, 28,3,81; Do., 1 ♀, 31,3,81.
Very common all the winter.

160. Lobivanellus indicus (Bodd.).
Kandahar, 1 ♀, 21,2,81; Do., 1 ♂, 1 ♀, 25,2,81; Do., 1 ♂, 15,3,81; Pirchowky, 1 ♂, 19,5,81.
Common throughout the Bolan and all through the country to Kandahar.

161. Scolopax rusticula, Linn.
A winter visitor. The first I noted was shot by Lieut. Francis near Kandahar early in November; but I have lost the note of the date. Woodcocks did not, however, really come in until the cold weather had fairly set in, about Christmas time; and there were never many. I think the largest number shot in any one day was five. I don't recollect any being

seen after the 1st February. One or two, I was informed, are also occasionally found in the orchards in the Pisheen.

162. Gallinago solitaria, Hodgs.

One shot by Dr. Duke at Khelat in December.

163. Gallinago gallinaria (Gm.).

Common in suitable places everywhere throughout the winter.

164. Gallinago gallinula (Linn.).

Came in with the very cold weather about Christmas, and were fairly plentiful all through January, after which they disappeared again.

165. Limosa ægocephala (Linn.).

Kandahar, 1 ♀, 2,3,81.

Shot out of a number on the march near Kandahar on the 2nd March. Appeared to be passing through the country. Ovary fairly developed.

166. Machetes pugnax (Linn.).

Kandahar, 2 ♂, 4,3,81; Do., 1 ♂, 9,3,81; Do., 1 ♀, 11,3,81; Do., 1 ♀, 15,3,81; Do., 1 ♀, 22,3,81.

Arrived in large flocks in the beginning of March, passing through; remained about three weeks. Testes and ovary of the eleven specimens I examined all small and contracted.

167. Tringa minuta, Leisl.

Kandahar, 1 ♀, 5,4,81; Chaman, 1 ♂, 7,4,81.

A summer visitor. I saw several at Kandahar just before we left; and I again saw it at Gungazai, Syed Yarroo, and Kushdil Khan in the beginning of May. The ovary of the female above noted was full of eggs just beginning to develop. Against the male I have no note.

168. Totanus glareola (Linn.).

Gungazai, 1 ♀, 1,5,81; Kushdil Khan, 1 ♂, 2,5,81; Quetta, 1 ♂, 2,5,81.

I obtained no specimens of this bird in the Kandahar district; but I imagine it had not arrived when we left. There were plenty of them on the streams in the Pisheen; and all

the above specimens proved on dissection to be in breeding-condition.

169. Totanus ochropus (Linn.).

Kandahar, 1 ♂, 30,12,80; Do., 1 ♀, 6,1,81; Do., 1 ♂, 1,2,81; Do., 1 ♂, 9,2,81; Kushdil Khan, 1 ♀, 2,5,81.

Common everywhere throughout the winter.

170. Totanus hypoleucus (Linn.).

Quetta, 1 ♀, 7,5,81.

I did not procure any specimen of this bird in the neighbourhood of Kandahar; it had probably not come in when we left. It is, however, I understand, a summer visitor, and is common everywhere throughout the summer.

171. Totanus glottis (Linn.).

Kandahar, 1 ♂, 6,1,81; Do., 2 ♀, 8,2,81.

A winter visitor. Fairly common on the banks of the Argendab river throughout the winter. Appeared to leave the country early in March.

172. Totanus calidris (Linn.).

Kandahar, 1 ♀, 9,1,81; Do., 1 ♀, 11,1,81; Do., 1 ♀, 24,1,81; Do., 1 ♂, 1 ♀, 9,2,81; Do., 1 ♂, 30,3,81.

Also a winter visitor. Common throughout the winter on the banks of the Argendab river.

173. Himantopus candidus, Bonn.

Kandahar, 1 ♂, 27,3,81; Do., 1 ♂, 5,4,81.

Arrived in some numbers in the middle of March.

174. Porphyrio poliocephalus (Lath.).

Kandahar, 1 ♀, 13,3,81.

Besides the above I only met with two during my stay in the country—one bought at Quetta alive on the 30th August, and a tame one that lived in the transport square at Kandahar throughout the winter.

175. Fulica atra, Linn.

Kandahar, 1 ♀, 17,2,81; Do., 1 ♀, 22,2,81; Do., 2 ♀, 23,2,81; Do., 1 ♀, 25,2,81; Do., 1 ♂, 26,2,81.

Also shot at Quetta by Dr. Duke in November. These

Coots arrived at Kandahar in enormous numbers in February, but only remained about a month. None of the many specimens examined showed any signs of breeding.

176. Porzana bailloni (Vieill.).
Kandahar, 1 ♀, 10,2,81; Do., 1 ♀, 17,2,81.
The only two specimens procured.

177. Porzana parva (Scop.).
Kandahar, 1 ♀, 7,2,81; Do., 1 ♀, 17,2,81; Do., 1 ♂, 18,2,81.
Rails were rather common in the wheat-fields on the borders of the big Kandahar marsh in the month of July. I did not meet with any during any other month.

178. Ardea cinerea, Linn.
Kandahar, 1 ♂, 12,12,80; Do., 1 ♀, 17,12,80; Do., 1 ♂, 2,1,81; Do., 1 ♂, 26,2,81.
One also shot by Dr. Duke near Quetta in November. A winter visitor. Quite common in the Kandahar district throughout the winter.

179. Ardea alba, Linn.
Kandahar, 1 ♂, 24,2,81.
Seen occasionally throughout the winter in the Kandahar district; left us about the end of March.

180. Botaurus stellaris (Linn.).
Kandahar, 1 ♀, 18,3,81.
I believe, merely a bird of passage; two or three were seen between the middle of February and the middle of March.

181. Falcinellus igneus, S. G. Gm.
Kushdil Khan, 1 ♂, 2,5,81.
One also shot by Dr. Duke at Quetta, date not noted.

182. Anser, sp.
I noticed two (and, I believe, three) different species of Geese on the Argendab river during the winter; but neither I nor my shikaree ever succeeded in getting near enough to secure a specimen. I heard of one being shot by an officer near Kandahar, and rode over at once to try and secure it, but,

to my sorrow, found the bird plucked, and was unable to identify it.

183. Casarca rutila (Pall.).
Kandahar, 1 ♀, 25,2,81; Do., 1 ♂, 1,3,81.
A winter visitor.

184. Spatula clypeata (Linn.).
Kandahar, 1 ♂, 15,2,81; Do., 1 ♀, 27,2,81; Do., 1 ♂, 21,3,81.
Also shot by Dr. Duke at Khelat in December. Very common at Kandahar during February and March, when it left us.

185. Anas boschas, Linn.
Common in January and February about Kandahar, but began to leave in the beginning of March, had all gone about the middle of that month.

186. Anas strepera, Linn.
Kandahar, 1 ♂, 14,2,81; Do., 1 ♂, 18,2,81; Do., 1 ♀, 20,2,81; Do., 1 ♂, 20,3,81.
In great quantities throughout the months of January, February, and March; left about the end of that month.

187. Querquedula angustirostris, Ménétr.
Kandahar, 1 ♀, 7,3,81.
The only specimen obtained.

188. Dafila acuta (Linn.).
Kandahar, 1 ♀, 18,2,81; Do., 1 ♂, 20,2,81.
Common about Kandahar during February, left us altogether about the middle of March.

189. Mareca penelope (Linn.).
Kandahar, 1 ♂, 14,1,81; Do., 1 ♂, 1 ♀, 20,2,81.
A few occasionally shot in January and February, not noticed earlier or later; was scarce.

190. Querquedula crecca (Linn.).
Kandahar, 2 ♂, 17,12,80; Do., 1 ♀, 23,12,80; Do., 1 ♀, 25,12,80.
Common everywhere between Sibi and Kandahar. I

understand this Teal remains in certain parts of the country to breed. I flushed two or three pairs at Syed Yarroo and Gungazai from the reeds in the watercourses in the beginning of May, and again in the Bolan as far down as Kirta on the 9th May.

191. Querquedula circia (Linn.).
Kandahar, 1 ♂, 28,3,81.
The only specimen obtained.

192. Fuligula rufina (Pall.).
Kandahar, 1 ♂, 28,3,81.
I know of five that were shot at Kandahar during March. Not noted in any other month.

193. Fuligula ferina (Linn.).
Kandahar, 1 ♂, 9,3,81; Do., 1 ♀, 11,3,81.
Not common. A few were shot during this month only.

194. Fuligula nyroca, Gould.
Kandahar, 1 ♂, 14,2,81; Do., 1 ♂, 17,2,81; Do., 1 ♂, 19,2,81; Mach, 1 ♀, 16,5,81.
Next to the Gadwall, the commonest Duck in the country. Arrived beginning of February; and some appear to remain to breed in the country. I flushed many pairs of White-eyed Pochards out of reeds and tamarisk on the banks of the watercourses in the Pisheen and right down the Bolan as far as Kirta in May.

195. Fuligula cristata (Linn.).
Kandahar, 1 ♂, 19,2,81; Kokeran, 2 ♂, 1 ♀, 5,3,81.
Also very common. The above remarks also apply to this bird.

196. Mergellus albellus (Linn.).
Kokeran, 2 ♀, 30,1,81; Kandahar, 1 ♀, 2,3,81.
The only three specimens obtained—two on the Argendab river near Kokeran, shot by Lieut. Orr, and one on the Kandahar marsh by Lieut. Noble.

197. Podiceps fluviatilis, Tunst.
Kandahar, 1 ♂, 4,3,81; Do., 2 ♀, 8,3,81.
Arrived in the beginning of March; there were a good

many for about a fortnight. I think they were only on passage.

198. Larus ridibundus, Linn.

Kandahar, 1 ♂, 30,12,80; Argendab river, 2 ♂, 13,2,81; Kandahar, 1 ♂, 24,2,81; Do., 1 ♂, 26,2,81; Do., 1 ♀, 11,3,81; Do., 1 ♀, 17,3,81.

Commenced arriving about Christmas, were in large packs on the Kandahar marsh up to date of our departure.

199. Phalacrocorax carbo (Linn.).

Argendab river, 1 ♀ immature, 14,3,81; Do., 1 ♀ adult, 16,3,81.

The only two observed.

IX.—*Notes on the Raptorial Birds collected in New Britain by Lieut. G. E. Richards, R.N.* By J. H. Gurney.

(Plate II.)

Canon Tristram having submitted to my examination the series of raptorial birds collected by Lieut. G. E. Richards in New Britain, I have great pleasure in offering the subjoined notes on them.

1. Urospizias etorques, Salvad.

I have followed Dr. Sclater (*vide* P. Z. S. 1877, p. 109, and 1879, p. 447) in supposing the New-Britain Hawk, which closely resembles *U. etorques* of New Guinea, to be identical with that species; but never having had an opportunity of examining an adult New-Guinea specimen, I feel by no means certain that such is the case.

In the present collection there are three adult specimens, all shot at Blanche Bay in the month of June, and all ticketed by Lieut. Richards as follows:—"Female: iris brown; feet orange; bill black, yellow at base."

Dr. Sclater describes the specimen (presumably the adult) from the New-Britain group which he examined, and recorded in the P. Z. S. for 1877, as having the tail-feathers "nearly uniform plumbeous, with but very faint indications of any

cross markings." This description applies in a great measure to the three specimens obtained by Lieut. Richards. In these the cross bars are absent from the central pair of rectrices, and in two birds out of the three from the external pair also; on the remaining rectrices they are perceptible, though not strongly marked and for the most part confined to the inner webs.

Count T. Salvadori, in the article on *U. etorques* contained in his work 'Ornitologia della Papuasia e delle Molucche,' vol. i. pp. 49–54, refers to the absence of transverse bands on the "lower parts" as a character distinguishing *U. etorques* from most specimens of *U. griseigularis*; but two of Capt. Richards's specimens show distinctly perceptible alternate transverse bars of two shades of vinous brown, a darker and a paler, on the flanks, breast, abdomen, tibiæ, and under tail-coverts; in the third specimen these bars are much more indistinct, being barely perceptible, which is also the case in an adult New-Britain male preserved in the British Museum.

Count Salvadori speaks of the vinous colour of the under-parts being more intense in *U. etorques* than in *U. griseigularis*; but the New-Britain specimens I have examined hardly differ at all from *U. griseigularis* in this respect. He also describes examples of *U. etorques* as exhibiting traces of cinereous transverse markings on the throat; but none of Lieut. Richards's three females from Blanche Bay now before me, exhibit this peculiarity, the throat in each of them being a whole-coloured but rather pale vinous.

The only other point in which the New-Britain birds appear to differ from New-Guinea examples of *U. etorques* is a remarkable one, viz. the colour of the iris. All Capt. Richards's three adult females are marked as having the "iris brown," whereas, according to D'Albertis's notes, quoted by Salvadori, an adult male from Sorong had the eyes "yellow," another adult male from Naiabui had them a "lively yellow," while two females, from Sorong and Arfak respectively, also had the irides "yellow."

I have made the following notes of the measurements of the New-Britain specimens which I have examined:—

	Wing. in.	Tarsus. in.	Middle toe *s. u.* in.
♂. In British Museum	8·25	2	1·35
♀. Collected by Capt. Richards ..	9·15	2·50	1·60
♀. Ditto.	9·30	2·50	1·60
♀. Ditto.	9·40	2·50	1·50

2. Accipiter rubricollis, Wall.

One adult specimen, thus labelled by Lieut. Richards:—"Female: iris scarlet; legs and feet yellow; bill black. New Britain, August 15th, 1879."

This fine Hawk has not, so far as I know, been previously met with in the New-Britain group; and its occurrence there is very curious, the localities quoted for it on p. 69 of Count Salvadori's work already referred to being the islands of Buru and Ceram only.

Lieut. Richards's specimen agrees with a female obtained by Mr. Wallace in Ceram, which is preserved in the Norwich Museum, except that the latter has a slight vinous tint on the upper breast, whilst the New-Britain specimen has this part pale grey, the throat being greyish white; the transverse barring on the primaries is also rather less indistinct in the New-Britain specimen than in that from Ceram.

The following are comparative measurements of these two individuals:—

	Wing. in.	Tarsus. in.	Middle toe *s. u.* in.
♀. Ceram	8·40	2·50	1·70
♀. New Britain.....	8·25	2·30	1·60

3. Henicopernis infuscata, sp. nov.

Lieut. Richards has thus ticketed this specimen:—"Male: iris bright orange; bill and feet greenish ash. Blanche Bay, New Britain, 9th July, 1879." It closely agrees with an example sent from New Britain by the Rev. G. Brown, and now preserved in the British Museum, which was recorded by Dr. Sclater in the P. Z. S. for 1879, p. 450, in the following terms:—"Mr. Gurney, who has kindly examined this specimen, states that although Mr. Sharpe agrees with him in believing it to be *H. longicauda* in immature dress, they have

neither of them seen an example previously in similar plumage."

Both specimens are of nearly the same dimensions, and also agree generally in size with the male of *H. longicauda*, but differ from that species materially in their coloration, which is very much darker, and in the absence of the major portion of the markings which are conspicuous in *H. longicauda*. This peculiarity of plumage occurring in the only two specimens from New Britain which we have seen, and in none that have come under our notice from any other locality, now induces Mr. Sharpe and myself to believe that the two specimens of *Henicopernis* sent from New Britain belong to an undescribed species, and are not, as we at first supposed, referable to *H. longicauda* in its immature dress—a view which is confirmed by the circumstance of Captain Richards having noted the colour of the iris in his specimen as "bright orange," that being a hue indicative of adult age rather than of immaturity.

Before describing the peculiarities of the plumage of the New-Britain bird, for which, from its generally dark tints, I would propose the specific name of "*infuscata*," it may be convenient to give some comparative measurements of the two New-Britain specimens and of three of *H. longicauda*:—

H. infuscata.

	Wing. in.	Tarsus. in.	Middle toe *s. u.* in.
Specimen from New Britain, in British Museum, marked ♀ by Mr. Brown, but, I think, probably a ♂	14·20	1·70	1·50
Specimen from New Britain, marked ♂ by Lieut. Richards	14·00	1·75	1·40

H. longicauda.

Specimen from Waigiou, in British Museum, marked ♂ by Mr. Wallace	14·50	1·75	1·35
Specimen from Mysol, in Norwich Museum, marked ♂ by Mr. Wallace	14·20	1·60	1·30
Specimen from Dorey, in Norwich Museum, marked ♀ by Mr. Wallace	17·30	2·00	1·40

I have carefully compared the two specimens of *Henicopernis* from New Britain with the male from Waigiou of *H. longicauda* which is in the British Museum; and a note of the differences between the two species may serve as a description of *H. infuscata*. In both the New-Britain specimens the feathers on the crown of the head, occiput, and nape are broader than in the Waigiou bird. The development of the nuchal feathers is greatest in Lieut. Richards's New-Britain specimen. In this about six feathers apparently form a nuchal crest, of which the central are an inch and a half in length and an inch in breadth, and the others nearly as large. In both the New-Britain specimens the markings on the feathers of the crown of the head, occiput, and nape are different from those on the corresponding feathers of *H. longicauda*—the white portion of these feathers, instead of forming an edging as in *H. longicauda*, being limited to the base of the feather and to a white bar crossing the feather, sometimes entirely and in other cases imperfectly, rather more than halfway from its root; but in the feathers composing the nuchal crest this white bar does not exist. In *H. longicauda* the scapulars, interscapulars, and wing-coverts are crossed by alternate bands of light and dark brown; but in *H. infuscata* all these parts, except the lower scapulars, are a whole-coloured dark brown, corresponding in tint with the dark bars on the mantle of *H. longicauda*. In *H. infuscata* the lower scapulars are dark brown, with the base and two narrow transverse bars (the latter imperfect in the centre) whitish; in *H. longicauda* these feathers show a white base, with eight alternate transverse bars, four of dark and four of light brown, one of the latter forming the tip of the feather and being narrower than the other seven bars, which are of equal dimensions. Both specimens of *H. infuscata* have three imperfect white transverse bars on the tertials, and two whitish-brown perfect ones on the primaries; the secondaries have two such bars in one specimen, and three in the other. The effect of these markings is to produce two conspicuous brownish-white bars across the closed wing, those portions of all the remiges which are not crossed by pale bars being dark

brown. In *H. longicauda* the arrangement of the bars is similar, but the light ones are broader and the dark narrower than in *H. infuscata*. In the New-Britain birds the feathers of the upper tail-coverts are dark brown, with the exception of a white base and a pair of white spots, one on each web; in *H. longicauda* these feathers have a white base, beyond which are alternate transverse bands, three dark and three light, with one of the latter forming the tip. In both specimens of *H. infuscata* the tail shows four dark-brown bars, with a light base and three transverse light bars; in the two males of *H. longicauda* which I have examined, the number of transverse dark bars is five; and in the female specimen at the Norwich Museum it is six.

In *H. longicauda* the sides of the head, the throat, upper and lower breast, abdomen, flanks, and under wing-coverts are all of a pale luteous, with narrow dark shaft-marks to each feather; in *H. infuscata* all these feathers are blackish brown, but with pale edgings, which incline to a luteous tint on the breast and abdomen, where they are broader than elsewhere. The under wing-coverts, axillaries, thighs, and crissum are also decidedly darker in *H. infuscata* than in *H. longicauda*; and such is eminently the general complexion of the New-Britain bird, for which the specific name of *infuscata* appears, as I have already indicated, to be very appropriate.

4. Hypotriorchis lunulatus (Lath.).

Adult, ticketed "Male: iris brown; feet yellow; bill ash. Blanche Bay, New Britain; 17th June, 1879." This species has been recorded by Dr. Sclater from the "Duke-of-York group," in the P. Z. S. for 1879, p. 417.

5. Ninox odiosa, Sclat.

Two males and a female, all ticketed "Iris yellow; feet drab; bill ash. New Britain; July 1879."

As the type specimen from which this species was described in the P. Z. S. for 1877, p. 108, had the wings imperfect, it may be well to add the following measurements, taken from Lieut. Richards's three specimens:—

	Wing. in.	Tarsus. in.	Middle toe *s. u.* in.
♂.	7·40	1·30	0·90
♂.	7·40	1·40	1·10
♀.	7·60	1·40	1·10

6. Strix aurantiaca. (Plate II.)

Strix aurantia, Salvad. Atti R. Accad. Sc. Torino, vol. xvi. (May 20, 1881).

The specimen sent of this curious Owl is thus ticketed by Lieut. Richards:—"Male: iris brown; feet blackish; bill ash. Blanche Bay, New Britain." Its principal measurements are:—Wing 8·85 inches, tail 3·90, tarsus 2·45, middle toe *s. u.* 1·45, claw of middle toe 0·9, claw of inner toe 0·95, culmen without the cere 1·05. Count Salvadori, who has recently described this species, writes:—"Fœm. mari simillima, sed valde major;" he also gives particulars of its markings and coloration, which will be further illustrated by the accompanying figure of Lieut. Richards's specimen.

Whether this beautiful species has been rightly referred to the genus *Strix*, cannot be decided with certainty until an opportunity occurs for examining its osteological characters; but even if these agree with those of *Strix*, it must still, I think, be considered an aberrant form of that genus, and probably entitled to subgeneric distinction.

The position of the eyes is near to the upper edge of the disk, as in *Phodilus*; the bill, feet, and claws are powerful, and the latter much more developed in proportion to the size of the bird than in either *Strix*, *Phodilus*, or *Heliodilus*; the tarsi are remarkable, being feathered all over at the back, whilst the front is bare for an inch above the foot, except some sparsely scattered hairs like those on the toes.

The wing resembles that of *Heliodilus* in its general shortness, and that of *Phodilus* in the fact of the first primary being the shortest. The order of the primaries in the New-Britain bird is:—the first is shortest, then the sixth, next the second and fifth nearly equal, lastly the third and fourth nearly equal, but the fourth a little the larger and the longest of the series.

STRIX AURANTIACA.

X.—*Notes on a Collection of Birds from the Solomon Islands, with Descriptions of new Species.* By H. B. Tristram, F.R.S.

(Plates III., IV., V.)

I have lately received a very interesting collection of birds made by Lieut. Richards, R.N., when surveying last year in the Solomon Archipelago. The collection contains examples of 35 species, most of them collected in the hitherto unexplored islands of Rendova, or Hammond Island, and Ugi. On first examination of the skins I pronounced twelve of them to belong to new species. But I soon afterwards received from Mr. E. P. Ramsay a separate copy of his paper in the Journal of the Linnean Society of New South Wales for February last, in which that gentleman has described five of these species*, collected, I believe, by the Rev. G. Brown; and in a paper read at a Meeting of the Linnean Society (of London) on the 3rd of November last, Mr. Ramsay has described from the same source two more of these species†. Of the twelve species, therefore, which have now reached England for the first time, there remain five to be described.

I now proceed to give the complete list of the collection, which adds much to our knowledge of the avifauna of these almost virgin islands.

1. Baza reinwardti, Müll.

Two adult specimens in the collection are thus determined by Mr. Gurney. Mr. E. P. Ramsay, however, in his paper read before the Linnean Society, discriminates the Solomon-Island bird as a distinct species, to which he gives the name of *Baza gurneyi*.

Hab. Russell Island, Solomons.

2. Urospizias albigularis, G. R. Gr.

One immature male specimen taken at Makira Harbour, San Christoval. The adult is figured in Brenchley's 'Voyage of the Curaçoa.'

This is the same species as my *Astur* sp.? (Ibis, 1879, p. 437).

[* See below, p. 172.—Edd.]

† See Journ. Proc. Linn. Soc. Zool. xvi. p. 128.

3. Caprimulgus nobilis, sp. nov. (Plate III.)

C. atro-fuscus, nigro minute vermiculatus; capite et occipite striis nigris elongatis insignibus, gula cinnamomeo maculata; fascia gulari alba interrupta; pectore fusco lineis nigris striato; humeris et tectricibus alaribus brunneo-umbrinis, quaque pluma insigni annulo albicante terminata; alarum primariis nigris, tertia maculam albam, quarta vittam interruptam in secunda vix videndam ostendente; secundariis nigris rufo maculatis; tectricibus subalaribus et abdomine castaneis, brunneo transversim striatis; cauda nigra, fasciis latis fuscis vermiculatis interrupta; rectricibus duabus externis castaneo fasciatis, eodemque modo omnibus rectricibus subtus rufo fasciatis. Long tot. 12, alæ 8·75, caudæ 6·2.

Hab. Rendova Island, Solomons, 18th August, 1880.

This splendid Goatsucker comes nearest to *C. macrūrus*, from which, however, it may be at once distinguished by its very much larger size and its rich dark coloration. The annular spotting of the shoulders is very conspicuous and beautiful. Unfortunately only a single specimen (female) is contained in the collection.

4. Dendrochelidon mystacea, Less.

Hab. Rendova and San Christoval islands.

There is a young bird in an interesting stage of plumage. It is full-grown; but the forehead and scapulars are dappled with chestnut, the feathers of the white wing-patch tipped with rufous, the throat and breast rufous with white terminal patches on each feather, and the abdomen white faintly barred with rufous. The black rectrices are narrowly tipped with rufous.

5. Halcyon albicilla, Cuv.

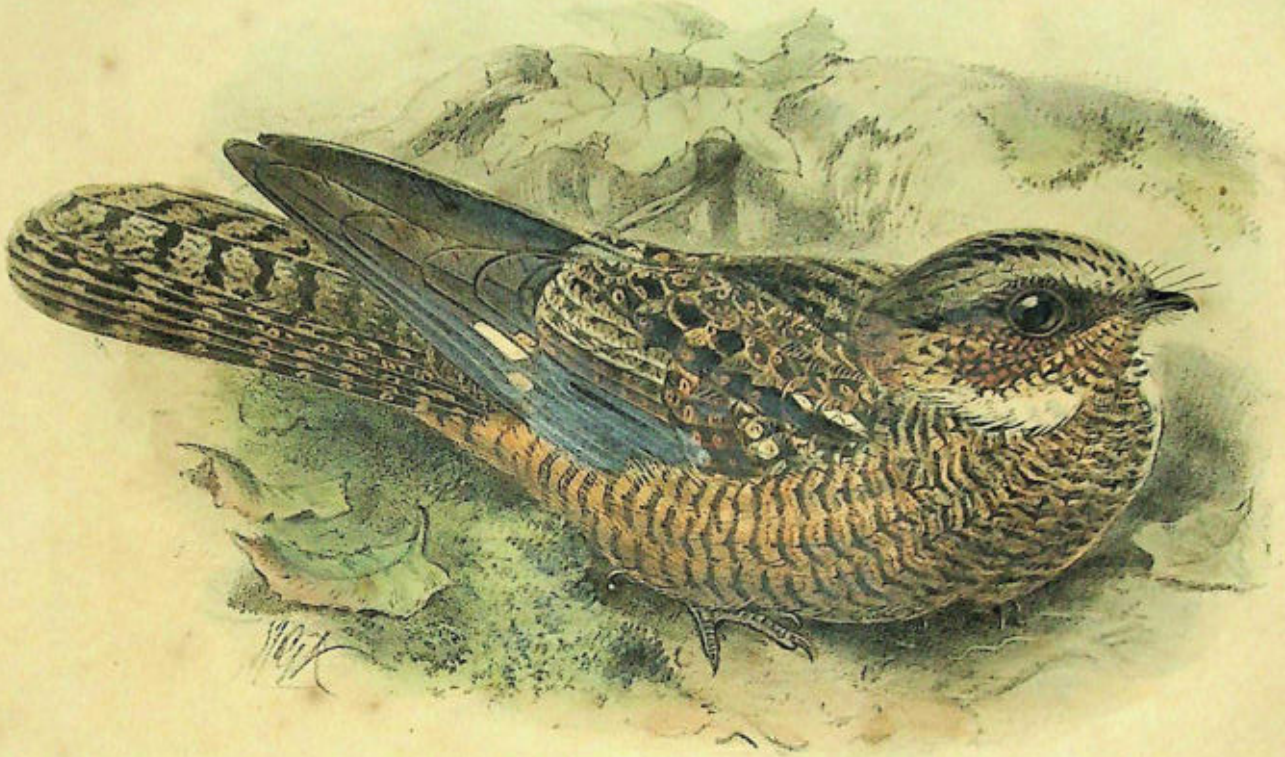
Hab. Rendova Island.

6. Halcyon sancta, Vig. & Horsf.

Hab. Rendova and Ugi islands.

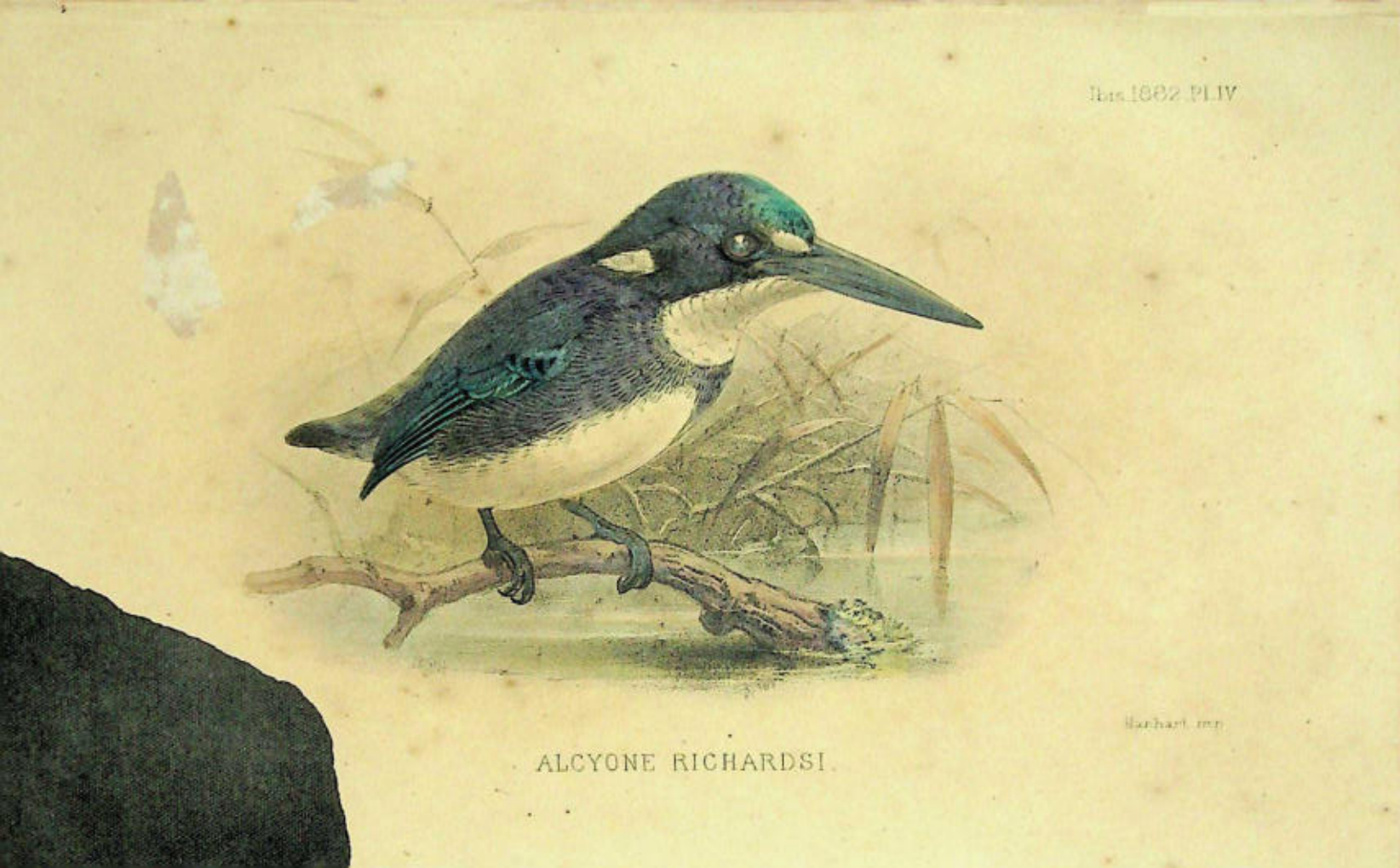
7. Alcyone richardsi, sp. nov. (Plate IV.)

A. rostro nigro, capite cæruleo, fronte nigricantiore; macula inter rostrum et oculos et macula postoculari albis; dorso et cauda ultramarinis; secundariis superioribus cæruleo lavatis; remigibus nigris; gula et thorace albis; torque



J.G. Keulemans lith. Hanhart imp.

CAPRIMULGUS NOBILIS.



Hanhart imp.

ALCYONE RICHARDSI.

pectorali et lateribus ultramarinis; abdomine albo, crisso cæruleo, pedibus nigris. Long. tot. 4·9, alæ 2·15, caudæ 1·2, rostri a rictu 1·15.

Hab. Rendova Island, Solomons.

This species may be at once distinguished from *A. pusilla* by its smaller size, much larger bill, the richer and lighter hue of its coloration, and the broad pectoral band. In size and proportions it closely resembles *A. beryllina*, but is indigo instead of sky-blue.

8. Cinnyris frenata, Mull.

Hab. Ugi Island.

9. Myzomela pulcherrima, Ramsay.

Myzomela pulcherrima, Ramsay, Journ. Linn. Soc. N. S. Wales, Feb. 1881.

Hab. Ugi Island.

This fine and distinct species may be distinguished from all others, and especially from its nearest congener, *M. nigriventris*, by the scarlet of the breast descending to the lower flanks and abdomen.

10. Zosterops rendovæ, sp. nov.

This bird has been already described by Mr. Ramsay (Proc. Linn. Soc. N. S. W. Feb. 1881) as *Tephras olivaceus*, sp. nov. Whether the characteristics of the genus *Tephras*, as laid down by Hartlaub, are sufficient to separate it from *Zosterops* may be open to doubt; but this bird agrees with *Zosterops* and not with *Tephras* in the chief point of distinction, having a square and not a rounded tail, while the absence of the white ring feathers and the shape of the bill are common to many species of *Zosterops*. There being already a *Z. olivacea*, I have felt it necessary to substitute another name for this very interesting species, which is of a rich uniform olive-colour above on the back and flanks, with olive-brown cheeks, and lemon-yellow underparts and lower tail-coverts.

Hab. Rendova Island, Solomons.

11. Pomarea castaneiventris (Verr.).

The habitat of this bird, previously known only by the type specimen in the British Museum, without locality,

remained unascertained until a single specimen was sent home last year by Lieut. Richards. The present collection contains several specimens, one of them a female, now in the British Museum. The general colour of the female is dull, not glossy, black, as in the male, and the chestnut of the underparts is not so bright.

Hab. San Christoval.

12. Pomarea ugiensis, Ramsay.

Pomarea ugiensis, Ramsay, Journ. Proc. Linn. Soc. Nov. 1881.

Hab. Ugi Island.

This fine species, apparently the representative of the genus in Ugi, as *P. castaneiventris* is in the neighbouring island of San Christoval, is the largest of the group, and of a uniform glossy resplendent black. There is no distinction between the sexes in plumage, a striking contrast to the extraordinary difference of the sexes in the third species of the genus, *P. nigra*, of the Society and Marquesas Islands.

13. Pomarea richardsi.

Piezorhynchus richardsii, Ramsay, Journ. Linn. Soc. N. S. Wales, Feb. 1881.

Hab. Rendova Island.

This brilliant bird is certainly a typical *Pomarea*, and in measurements and general form comes extremely close to *P. castaneiventris*. It has the same chestnut lower parts; but the occiput, nape, hind neck, and ring round the eye are of a pure white, in strong contrast with the rest of its plumage.

14. Piezorhynchus squamulatus, sp. nov.

♂. *P.* capite nigro resplendente, fascia alba circum collum a latere thoracis; dorso nigro; uropygio late albo; cauda nigra, rectricibus tribus externis albo terminatis; tectricibus superioribus medialiter nigris, macula alba ad apicem nigro marginata instructis; tectricibus majoribus albis, nigro marginatis in pogonio externo, duas fascias albas ostendentibus; remigibus nigris, duabus maculis albis ad extremum secundariorum; mento et thorace nigris, fascia pectorali quasi squamosa, plumis ad basin nigris macula alba tetragona nigro marginata; pectore,

abdomine, subalaribus et crisso albis; tarsis et pedibus plumbeis, rostro nigro. Long. tot. 6·15, alæ 3·12, caudæ 2·9, tarsi ·8, rostri a rictu ·75.

Hab. Ugi Island.

This species belongs to the same group as *P. verticalis*, but is still closer to *P. vidua* of San Christoval, from which it may be at once distinguished by its larger size and the spangled diamond cincture on its throat.

15. Myiagra cervinicauda, Tristr.
Hab. San Christoval.

16. Rhipidura russata, Tristr.
Hab. San Christoval.

17. Edoliosoma salomonis, Tristr.
Hab. San Christoval.

18. Symmorphus affinis, Tristr.
Hab. San Christoval.

19. Pachycephala astrolabi, Bp.
Hab. Russell Island.

Of this rare bird there are five specimens in the collection —three mature males, one male in change, and one female.

20. Pachycephala christophori, Tristr.
Hab. San Christoval.

Of this species there are one adult male, one male in change, and one female in the series.

21. Calornis metallica, Temm.
Hab. San Christoval.

22. Calornis cantoroides, G. R. Gr.
Hab. San Christoval, Ugi Island.

23. Calornis fulvipennis, Hombr. & Jacq.
Hab. San Christoval.

This bird does not appear to have been obtained since the 'Voyage au Pôle Sud' until collected by Lieut. Richards. It is a very well marked species, exactly intermediate in coloration between *Calornis* and *Aplonis*, having a lustrous

plumage on its body, with brown lustreless wings and tail. There are two specimens.

24. Lorius chlorocercus, Gould.

Hab. Ugi Island.

The type specimen was from San Christoval.

25. Lorius cardinalis, Hombr. & Jacq.

Hab. Guadalcanar.

26. Geoffroyus heteroclitus, Hombr. & Jacq.

Hab. San Christoval.

27. Geoffroyus agrestis, sp. nov.

G. capite, tergo, uropygio et cauda viridibus, spatio inter oculos et nares pallidiore; thorace, pectore, abdomine et crisso viridibus; rectricibus nigris, harum pogoniis externis viridi lavatis, internis flavo arcte marginatis; subalaribus cæruleis; cauda subtus flavida. Long. tot. 8·45, alæ 4·8, caudæ 2·25, tarsi ·5, dig. med. 1·2.

Hab. San Christoval.

One specimen, male adult. A plain and inconspicuous bird, apparently close to *G. simplex* (Meyer) from Mount Arfak. It differs, however, in the absence of the bluish collar and in its very much smaller dimensions, the wing being nearly 2 inches shorter, and the other measurements in proportion.

28. Nasiterna finschi.

Nasiterna finschi, Ramsay, Journ. Linn. Soc. N.S.W. Feb. 1881.

Hab. San Christoval.

This bird, recently described by Mr. Ramsay, is a very distinct species, wholly grass-green on the upper parts and flanks, with a tinge of yellow on the forehead and abdomen, and the under tail-coverts bright yellow. There is a little pink patch on either side of the lower mandible—a very marked characteristic, which has been overlooked by Mr. Ramsay in his description. The tail-feathers have a conspicuous yellow spot on the inner web.

29. Chalcites plagosus, Lath.

Hab. Russell Island.

J.G.Keulemans Lith.

Bernhard imp.

PTILOPUS RHODOSTICTUS

30. Ptilopus eugeniæ, Gould.

Hab. Ugi Island.

Of this superb Fruit-pigeon, to my eye by far the finest of the whole of this gorgeous genus, and hitherto known only by the type in the British Museum (mutilated, tailless, and with only one wing), there are three specimens. Although marked as of different sexes, they are identical in plumage; and from Mr. Ramsay's remarks, he having seen what he considers to be the female, I cannot but suspect there has been some mistake and that all our specimens are adult males. This bird has never yet been figured; and I trust that an opportunity will soon be afforded for an illustration of so remarkable and beautiful a species.

31. Ptilopus cerasipectus, Tristram.

Hab. San Christoval.

Two specimens, both female.

32. Ptilopus rhodostictus, sp. nov. (Plate V.)

P. pileo pallidissime vinaceo, post oculos cingula flava arcte cincto; mento delicatissime flavo; occipite, collo toto, gutture, pectore et lateribus sulphurescenti-viridibus; abdomine, ventre et subcaudalibus intense rubro-aurantiacis; dorso, tergo et uropygio flavo-virescentibus, medio cujusque plumæ scapularis rosaceo picto; pogonio interno remigis externi item rosaceo; remigibus in externo pogonio viridi metallico resplendentibus, in pogonio interno nigris; remige primo attenuato, secundariis anguste flavo marginatis; cauda viridi, apice late flava. Long. tot. 8·8, alæ 5·1, caudæ 3·25, rostri a rictu ·57.

Hab. Ugi Island, Solomons. ♂. 14th Sept. 1880.

There are two specimens, both males (one immature), of this lovely Pigeon. The younger bird is almost without the rose spots on the wing-coverts. I have long been looking for this bird. Four years ago I received from Mr. Layard a solitary wing, with the remarkable rose spots, which he had obtained from the skipper of a coasting trader, who could not inform him from which of the Solomon Islands the bird came. While certain it was new, we could scarcely describe a bird from a solitary wing, though the feat has been performed from an *egg* by more than one ornithologist!

33. Esacus magnirostris, Geoffr.
Hab. Rendova Island.

34. Rallus pectoralis (pullus ?).
Hab. San Christoval.

35. Sterna bergii, Licht.
Hab. Rendova Island.

This may be a good opportunity of summarizing our existing knowledge of the avifauna of the Solomon Islands.

When Mr. Sclater wrote his first paper on the birds of the Solomon Islands (P. Z. S. 1869, pp. 118, seq.) there were known the ten species mentioned in the 'Voyage au Pôle Sud,' which must be reduced to eight by the rejection of *Myzomela solitaria*, and *Pionias cyaniceps*, which is female of *P. heteroclitus*. Four more species had been described by Mr. Gould from the voyage of the 'Rattlesnake;' and to these seven more were added by Mr. G. R. Gray in his Catalogue of the Birds of the Tropical Islands, one of which, *Halcyon cinnamomina*, requires confirmation. Mr. Sclater had subsequently (P. Z. S. 1865, p. 620) added *Nasiterna pusio*, a new species; about the habitat of this species, however, I cannot but suspect some mistake, as it has since been received repeatedly from Duke-of-York Island, but never from the Solomons*. Mr. Sclater, in the paper referred to above, brought up the known species of the Solomon Islands to 34, rejecting three, *Halcyon cinnamomina*, *H. sancta*, and *Nycticorax manillensis* (the two latter of which must now be admitted), and admitting three, *Myzomela solitaria*, *Todiramphus chloris*, and *Nasiterna pusio* (which I would reject).

In 1870 Mr. G. R. Gray described (Ann. & Mag. N. H. ser. 4, vol. v. p. 328) *Ptilopus solomonensis*, *Carpophaga brenchleyi*, and three others.

In Brenchley's 'Cruise of the Curaçoa,' A.D. 1873, the same author corrected *Philemon vulturinus* to *P. sclateri*, sp. nov.

In 1876 Mr. R. B. Sharpe described (P. Z. S. p. 673) *Ninox*

[* I quite agree with Canon Tristram that the supposed habitat of *Nasiterna pusio*, which I gave on the authority of the late Mr. Krefft, is, in all probability, wrong.—P. L. S.]

solomonis, from these Islands, which, however, Mr. Sclater subsequently showed (P. Z. S. 1878, p. 290) to be the same as *Athene variegata*, Q. & G.

From this date I cannot find any additional contribution to our ornithological knowledge of the Solomons till, in 1879, Mr. E. P. Ramsay (Proc. Linn. Soc. N. S. W. iv. p. 65) recorded from Cockerell's collection 45 species, of which he described eight as new.

In the same year I reported in 'The Ibis' (p. 437) on a collection made by Lieut. Richards, R.N., of 33 species, of which I described 12 as new. One of these, *Carpophaga richardsi*, had already been described by Count Salvadori as *C. rufigula*.

In 'The Ibis,' 1880, pp. 126, et seq. Prof. Salvadori criticised the papers of Mr. Ramsay and myself, and made some valuable suggestions, to which I replied (Ibis, 1880, p. 246), supporting several of the new species.

In the Proceedings of the Linnean Society of New South Wales, Feb. 1881, Mr. E. P. Ramsay described six new species from Lieut. Richards's collection; and at the Linnean Society's Meeting, Nov. 3, 1881, he has described five more, two of which I have not seen.

In the present paper I have added six species to the list. After erasing those species which have been confounded with others or subsequently withdrawn, the following table gives a *résumé* of our present knowledge of the avifauna of the Solomon Islands :—

ACCIPITRES.

1. *Urospizias albigularis.* San Christoval.

2. *Astur pulchellus*, E. P. Ramsey; olim *A. soloensis*, sed fide Salvadori = *Urospizias etorques.* Cape Pitt.

3. *Baza reinwardti*, fide E. P. Ramsay = *B. gurneyi*, sp. nov.

4. *Haliastur girrenera.* San Christoval.

5. *Athene tæniata.* St. George.

6. *A. variegata.*

7. *N. punctulata* (fide E. P. Ramsay; sed qu. Salvadori?). Guadalcanar.

PASSERES.

8. *Myzomela tafargei.*
9. *M. pulcherrima.* Ugi Island.
10. *M. pammelæna.* San Christoval.
11. *M. tristrami* (?).
12. *Philemon sclateri.* San Christoval.
13. *Zosterops rendovæ.* Rendova Island.
14. *Cinnyris frenata.* Guadalcanar.
15. *Dicæum æneum.* San Christoval, St. George.
(? *D. erythrothorax.* Guadalcanar.)
16. *Hirundo tahitica.* San Christoval, Guadalcanar.
17. *Rhipidura russata* (=*rufofrontata*, Ramsay). San Christoval, Guadalcanar.
18. *R. tricolor.* San Christoval, Guadalcanar.
19. *R. cockerelli* (? spec.; cf. Salvadori). Guadalcanar.
20. *Myiagra cervinicauda.* San Christoval.
21. *M. ferro-cyanea.* Guadalcanar.
(*M. pallida.* Guadalcanar. ?)
22. *Monarcha brodei.* Guadalcanar.
23. *Piezorhynchus vidua.* San Christoval.
24. *P. squamulatus.* Ugi Island.
25. *Pomarea richardsi.* Rendova Island.
26. *P. castaneiventris.* San Christoval.
27. *P. ugiensis.* Ugi Island.
28. *Graucalus sublineatus.* San Christoval.
29. *G. monotonus.* San Christoval.
30. *G. hypoleucus* (?, Salvadori). Guadalcanar.
31. *G. dussumieri* (?, Salvadori). Guadalcanar.
32. *G. pusillus.* Guadalcanar.
33. *G. elegans.* Guadalcanar.
34. *Edoliosoma marescoti.*
35. *E. salomonis.* San Christoval.
36. *Symmorphus affinis.* San Christoval.
37. *Dicrurus megarhynchus.*
38. *Pachycephala astrolabi.* Russell Island, Guadalcanar, St. George.
39. *P. christophori.* San Christoval.
40. *Gracula krefftii.* San Christoval, Guadalcanar.

41. *Calornis metallica.* San Christoval.
42. *C. cantoroides.* Savo.
43. *C. fulvipennis.* Guadalcanar, Isabel.

PICARIÆ.

44. *Caprimulgus nobilis.* Rendova Island.
45. *Collocalia fuciphaga.* San Christoval.
46. *C. hypoleuca.* Ugi Island.
47. *Dendrochelidon mystacea.* San Christoval, Ugi.
48. *Eurystomus crassirostris.* San Christoval, Ugi Island, Guadalcanar, Savo.
49. *Halcyon albicilla.* Ugi Island.
50. *H. sanctus.* San Christoval, Guadalcanar, Savo.
51. *H. juliæ.* San Christoval.
52. *H. leucopygia.* Guadalcanar.
53. *Alcyon richardsii.* Rendova Island.
54. *Ceyx gentiana.* San Christoval.
55. *Buceros ruficollis.*
56. *Chalcites plagosus.* Russell Island, Savo.
57. *Eudynamis taitensis,* Savo.
58. *Centropus milo.* Guadalcanar.
59. *C. ater-albus.*

PSITTACI.

60. *Cacatua ducorpsii.* Guadalcanar, Savo.
61. *C. goffini.*
62. *Nasiterna finschi.* San Christoval.
63. *N. pusio.* (? locality.)
64. *Eclectus polychlorus.* San Christoval, Savo.
65. *Lorius chlorocercus.* Ugi Island, San Christoval, Savo.
66. *L. hypœnochrous.*
67. *L. cardinalis.* Guadalcanar, Russell Island, Savo.
68. *Geoffroyus heteroclitus.* San Christoval, St. George, Isabel, Savo.
69. *G. agrestis.* San Christoval.
70. *Trichoglossus massenæ.* San Christoval.
71. *Charmosyne margarethæ.* San Christoval.

COLUMBÆ.

72. *Ptilopus eugeniæ.* Ugi Island.
73. *P. ceraseipectus.* San Christoval.
74. *P. rhodostictus.* Ugi Island.
75. *P. superbus.* Guadalcanar.
76. *P. viridis?*

(? *P. solomonensis,* G. R. Gr.)

77. *Carpophaga pistrinaria.* Guadalcanar, San Christoval.
78. *C. rufigula.* San Christoval, Savo.
79. *C. rubricera.* San Christoval.
80. *C. finschii.*
81. *C. brenchleyi.* San Christoval.
82. *Macropygia crassirostris.* Guadalcanar.
83. *M. crossi.* San Christoval.
84. *Phlegœnas johannæ* (?). San Christoval.
85. *Chalcophaps chrysochlora* (?). Guadalcanar.

GALLINÆ.

86. *Megapodius brenchleyi.* Savo.

STEGANOPODES.

87. *Sula fusca.* Savo.
88. *Phaethon flavirostris,* Savo.

GRALLÆ.

89. *Esacus magnirostris.* San Christoval, Ugi, Russell Island.
90. *Limosa baueri.* San Christoval.
91. *Tringoides hypoleucus.* In all the islands.
92. *Rallus intactus.*
93. *R. pectoralis.* San Christoval, Guadalcanar.

HERODIONES.

94. *Ardea sacra.* San Christoval.
95. *Butorides javanica,* Savo.

GAVIÆ.

96. *Sterna bergii.* Rendova and Ugi Islands.
97. *S. lunata.*
98. *S. gracilis.* Savo.

I have not included in the above list specimens only recorded from Banks's Island.

I have omitted species which seem to have been mistaken for others already enumerated; and I have put a point of doubt after the names of those species the identification of which does not appear to me to be satisfactory. I think it probable, so far as one can form an opinion without having seen the type, that *Ninox punctulata* is represented by the species which precedes it.

I have not seen the type of *Myzomela tristrami*, which Mr. Ramsay has done me the honour to name after me; but I can assure him that my specimen of *M. pammelæna*, still in my cabinet, has the bill glossy black, and is evidently an adult bird.

Rhipidura cockerelli has been questioned by Prof. Salvadori as being only an accidental variety of *R. tricolor*. I have not seen the type.

Graucalus hypoleucus is questioned by Prof. Salvadori, who considers that the species must be *G. sclateri*. He also demurs to the Philippine species *G. dussumieri* being found here, and suggests, with much probability, that the species, the name of which Mr. Ramsay subsequently (Pr. Linn. Soc. N.S.W. 1879, p. 314) changed from *G. pusillus* to *G. salomonensis*, is really the bird intended. Prof. Salvadori believes it to be identical with *G. sublineatus*. As I have not seen Mr. Ramsay's types, I can offer no opinion.

As stated above, the locality of *Nasiterna pusio* seems to me to require confirmation.

Ptilopus viridis.—The description given by Mr. Ramsay scarcely corresponds with the New-Guinea bird, though not far from it. It is probably a distinct species, and may be so described by Mr. Ramsay when he has had an opportunity of comparing his bird with specimens of *P. geelvinkianus* and *P. viridis*. I can conceive an immature male of *P. eugeniæ* meeting his description.

Ptilopus solomonensis, G. R. Gr., cannot stand as a species. It rests on a female which may belong to any one of three

species in which there are no differentiating characteristics in the corresponding females.

Phlegœnas johannæ rests on a female collected by Lieut. Richards. On examining the specimens in the British Museum and in the collection of Capt. Wardlaw-Ramsay, I find that a mistake has been made with some of the British-Museum specimens, and that a bird labelled *P. johannæ* must belong to *P. margarethæ*. Possibly, therefore, the *Phlegœnas* of the Solomons may be another species of which we have not yet obtained the male.

Though Mr. Ramsay gives *Chalcophaps chrysochlora* as from the Solomons, based on a female specimen, yet I have ventured to doubt the identification, believing that it will be found to be *C. stephani*, which is the indigenous species of the neighbouring islands.

XI.—*Notes on a 'Catalogue of the* Accipitres *in the British Museum' by* R. Bowdler Sharpe (1874). By J. H. Gurney.

[Continued from 'The Ibis,' 1881, p. 567.]

I have now to refer to the two species which constitute the subgenus *Erythropus*, and which seem to me to form a distinct natural group intermediate between the true Kestrels and the Hobbies.

The two species of *Erythropus* are both of them gregarious and migratory; but their ordinary geographical ranges, except perhaps in South-west Africa, are very distinct.

The western species, *E. vespertinus*, is an inhabitant, during the summer months, of Europe and Western Asia, arriving in the spring, and migrating in the autumn to Africa; it has, however, been recorded as also nesting in Algeria*.

Mr. Sharpe, in his summary of the habitat of this species, does not refer to its occurrence either in Northern Europe or in Asia; but examples from Archangel are preserved in the British Museum (as noted by Mr. Sharpe in his list of the

* Loche, Expl. de l'Algérie, Ois., vol. i. p. 70.

specimens in that collection), and its appearance as a summer visitant in Finland was recorded by Malmgren in 'The Ibis' for 1870, p. 149. In Asia it has been obtained in Siberia as far to the north-east as Krasnoyarsk, in the valley of the Yenesay*; whilst further to the south the most easterly locality for it with which I am acquainted is North-western Turkestan, where it has been recorded by Severtzoff as occurring "during passage"†.

The southward autumnal migration of this species extends in Eastern Africa to Sennaar, where it was observed by Heuglin‡, and on the western side of the continent to a much more southern latitude, as, according to Andersson, "it usually arrives in Damara Land and Great Namaqua Land about the rainy season, and again retires northward upon the approach of the dry season"§.

I may here mention, in passing, that I have found amongst Mr. Andersson's papers the following interesting memorandum of measurements of this species, in inches and lines, taken by him (in all cases, I believe) from birds in the flesh :—

	Entire length.	Wing.	Tail.	Tarsus.
	in. lin.	in. lin.	in. lin.	in. lin.
17 males	11 2 to 11 11	8 10 to 9 9	5 1½ to 5 7	1 1½ to 1 3
5 females	11 4 to 12 4	8 11 to 10 0	5 5 to 5 8½	1 2 to 1 3

In 'The Ibis' for 1876, p. 132, Mr. Buckley records having seen, in November, "an enormous quantity of Hobbies, apparently of this species, at Holtfontein, in the west of the Transvaal;" but as all the specimens of *Erythropus* which I have seen from Transvaal are referable to the eastern species, *E. amurensis*, and as Mr. Buckley does

* Ibis, 1880, p. 179. † Ibis, 1875, p. 109.

‡ Ibis, 1861, p. 72, and Orn. Nordost-Afr. vol. i. p. 39.

§ 'Birds of Damara Land,' p. 15. Mr. Andersson considered that the "rainy season" in Damara Land commences towards the end of October.

not speak of having obtained one of those which he saw, it is possible that the flock which he met with may have belonged to the eastern form.

There appears to be some doubt as to whether Radde's name of "*amurensis*," which is in use to designate the eastern *Erythropus*, is in reality the oldest specific title for this species. Prof. Newton has kindly called my attention to a rare work by J. P. Falk, who was Professor of Botany at St. Petersburg in the latter half of the last century*, in which the name of "*Falco vespertinoides*" is given to a Falcon the description of which may be intended to represent a nearly adult male of *E. amurensis*, more particularly as the underside of the wings is described as "nearly white;" but, on the other hand, the habitat which Falk gives for his *Falco vespertinoides*—"Bashkiria, Perm, and the Province of Isett"—is very far to the west of any locality, except in South Africa, where *E. amurensis* has been met with by subsequent observers; and I may add that I have seen a nearly adult male of *E. vespertinus*, killed at Malta in May, and now in the collection of Mr. Dresser, in which a considerable proportion of white is apparent on the under wing-coverts, mingled with the brown of the immature and the slate-colour of the adult plumage†.

Japan must be added to the localities for *E. amurensis* quoted by Mr. Sharpe. Conf. Ibis, 1875, p. 448, where a specimen obtained there in August is recorded; also Ibis, 1878, p. 249.

With regard to the distribution of this species in Eastern Asia, Radde records its occurrence in the month of June near the source of the Osega river‡; and a more recent notice of its distribution in Siberia has been given by

* Falk's work, which was published posthumously in St. Petersburg in 1786, is entitled 'Beytrage zur topographischen Kenntniss des Russischen Reichs;' and the description of his "*Falco vespertinoides*" will be found in vol. iii. p. 329.

† Some mingling of white, though not quite so much as in the specimen referred to, is usually perceptible on the under wing-coverts of immature males of *E. vespertinus*.

‡ Reis. Sibir. vol. ii. p. 102.

M. Taczanowski in the Bull. Soc. Zool. de France for 1876, p. 126, in a paragraph of which the following is a translation:—"Dybowski, in furnishing an adult male from Akscha, in Dauria, and subsequently several females from Old-Tsuruchaitui, on the Argun, has considerably extended the westward limit of the habitat of this bird." Col. Prjevalsky includes it among the birds of Mongolia, where, he states, it arrives about the end of March, and breeds, but is less abundant than it is in China*. M. David states that it arrives on the plains of China and Mongolia in April, and leaves in a south-easterly direction in autumn†; he records meeting with specimens near Sin-siang-chién, between lat. 35° and 36°, as late as the 18th of October‡; but he did not observe it in Southern China. The readers of 'The Ibis' will remember that the late Mr. Swinhoe found this species nesting near the coast of Northern China, at Talien Bay and Chefoo§, the fledged nestling figured in 'The Ibis' for 1868, pl. ii., having been taken in the month of July.

From the observations of Mr. Inglis we learn that in North-eastern Cachar "these little Falcons appear regularly about the middle of October in hundreds," but mostly disappear "about the middle of December." It would seem, however, that they again visit Cachar during their northward vernal migration, as Mr. Inglis obtained an adult male in February and a young male (which appears, by the description given of it, to have been a bird about a year old) as late as May‖.

Further south this species has occurred in Upper Pegu, where Captain Feilden met with four of these birds in January and a fifth early in February¶.

With regard to its occurrence in India, I may mention

* Rowley's 'Ornithological Miscellany,' vol. ii. p. 151.
† David & Oustalet, 'Oiseaux de la Chine,' p. 35.
‡ David, 'Troisième Voyage,' vol. i. p. 75.
§ Ibis, 1861, p. 253, 1868, p. 43, and 1874, p. 428.
‖ 'Stray Feathers,' 1877, p. 6, and 1880, p. 243.
¶ Ibid. 1875, p. 22.

that the British Museum possesses an example from Nepal, and the Norwich Museum one from Madras; the late Mr. Jerdon, referring to this species under the title of *E. vespertinus*, speaks of having found it on the Nilghiris, in the Carnatic, in Central India, along the Himalayan range, and at Darjeeling. He adds that "it is not very unfrequent in Lower Bengal and in the neighbourhood of Calcutta during the rainy season only" *.

But one specimen of *E. amurensis* has been recorded from Ceylon—an immature bird, obtained at Trincomalie in the month of December †.

The winter migration of *E. amurensis* to South Africa is very curious and interesting. The Norwich Museum possesses a specimen obtained by Sir John Kirk on the river Zambesi ‡; and there can be little doubt that this is the species which he met with on the Shiré, apparently on its return northward journey, in February and March, and recorded, under the name of *E. vespertinus*, in 'The Ibis' for 1864, p. 316. Mr. Ayres speaks of meeting with numbers of these birds about Maritzburg, in Natal, during the "summer months" of the southern hemisphere, which of course correspond to the northern winter §. He has also obtained this species in Transvaal in December and January ‖; and Mr. Layard has recorded a specimen obtained further inland in the Matabili country ¶. This, however, is not the most westerly extent of its migration, as Mr. Andersson obtained certainly one, and probably three examples, in Damara Land **; he also procured one as far south as the Knysna, which, with one of his Damara specimens, is preserved in the Norwich Museum.

I have had the opportunity of examining several specimens, in different stages, of both species of *Erythropus*; and, judging

* 'Birds of India,' vol. i. p. 41.

† Legge's 'Birds of Ceylon,' p. 120.

‡ The ticket attached to this specimen is not very legible; but the date noted upon it appears to be "1st February."

§ Ibis, 1868, p. 41.

‖ Ibid. 1873, p. 280, and 1877, p. 341.

¶ Ibid. 1871, p. 237.

** 'Birds of Damara Land,' p. 17.

from these, I believe that in the first or nestling plumage the two species cannot be distinguished from each other; and I also feel persuaded that this plumage is common to both sexes, though I have not been able to obtain actual proof from dissected specimens of such being the fact.

In the case of *E. vespertinus*, the first plumage is not alluded to in Mr. Sharpe's volume; but a detailed description of it, taken from a young male obtained by the late Mr. Andersson in Damara Land on the 14th of November, will be found in Messrs. Sharpe and Dresser's article on this species in the 'Birds of Europe,' under the head of "specimen no. 4." This stage of plumage is figured as that of the young male by Naumann, in his 'Vögel Deutschlands,' vol. i. pl. 28. fig. 3.

The second plumage, considerably resembling that of the adult female, is described in Mr. Sharpe's volume under the title of "young." It is also represented in the lowest figure of the plate of this species given by Messrs. Sharpe and Dresser in the 'Birds of Europe,' the original of this figure being a young female killed at Malta on the 9th of May, which, in my opinion, was a bird hatched in the spring of the preceding year. As the young females advance in age they lose the dark shaft-marks on the head and underparts which are characteristic of this stage; but even after these marks have left the breast and adjacent parts, the rufous of the undersurface remains for a time decidedly paler than it is in the old females. The second plumage is undoubtedly common to both sexes, as male birds which have been killed whilst in course of change from this to the adult male dress are frequent in collections: one such is preserved in the Norwich Museum, in which a few feathers of even the first plumage still remain near the centre of the breast, thus exhibiting the first, second, and third plumages simultaneously existing, but with the third largely predominating, and with more remains of the second than of the first.

The adult plumages of the male and female in both species of *Erythropus* are fully described in Mr. Sharpe's volume;

and I therefore need not allude further to this stage in either species, except to mention that the last number of the late Mr. Gould's work on the Birds of Asia contains life-sized figures of both sexes of *E. amurensis* in adult dress.

Mr. Sharpe describes the first plumage of *E. amurensis* under the head of "young." A nestling emerging from the down into this dress, which was taken in the month of July, and is preserved in the Norwich Museum, was figured in 'The Ibis' for 1868, pl. 2.

On losing this plumage the young birds assume a dress assimilating even more closely to that of the adult female than is the case in *E. vespertinus*, the only difference being, so far as I have observed, that in this second stage the shape of the dark markings on the sides of the abdomen partake less of the character of transverse bars and more of that of broadened lanceolate shaft-marks than is the case in fully adult females. I entertain no doubt that both sexes pass through this intermediate stage, though I have no absolute proof of it as regards the females; with respect to the males I can speak with some confidence, as the Norwich Museum possesses two that were changing from this stage into that of the adult male plumage.

The remainder of the Falcons are arranged by Mr. Sharpe under two genera—*Falco* and *Hierofalco*; but it seems to me that they may be more naturally assorted into the following generic or subgeneric groups, viz. *Hypotriorchis*, *Æsalon*, *Chicquera*, *Falco*, *Gennaia*, and *Hierofalco*.

With respect to the typical species of *Hypotriorchis*, *H. subbuteo*, I can add nothing to Mr. Sharpe's account, except to refer to its occurrence in Japan, as recorded in 'The Ibis' for 1879, p. 42; but I may mention as regards its near ally, *H. cuvieri*, that this very scarce southern Hobby, besides occurring in South and West Africa, as stated by Mr. Sharpe, has also been obtained in East Africa. Capt. Shelley has received it from the Zambesi country, and, still further northward, from Lambo near Formosa Bay. On the west coast it has occurred as far north as Bissao, a specimen from thence being preserved in the Norwich Museum.

Mr. Sharpe's articles on *H. severus*, *H. religiosus*, and *H. lunulatus* have recently been commented on and supplemented in considerable detail by Count T. Salvadori, in his 'Ornitologia della Papuasia e delle Molucche,' vol. i. pp. 33–37; and I have no additional information to record with respect to these Hobbies, except to mention the curious fact that both *H. severus* and *H. lunulatus* occur in the islands of the New-Britain group. Dr. Sclater received from the Rev. G. Brown an adult specimen of *H. severus* obtained at Kabakadai, on the coast of New Britain, as recorded in the P.Z.S. for 1880, p. 65; and he also received from Mr. Brown, and recorded in the P.Z.S. for 1879, p. 447, a specimen of *H. lunulatus* from the "Duke-of-York group." A second specimen of the latter species has been subsequently obtained at Blanche Bay, New Britain, by Lieut. Richards, by whom it was transmitted to Canon Tristram.

Two less important insular localities for *H. lunulatus* may also here be mentioned. The Norwich Museum possesses a specimen from Night Island, off the N.E. coast of Australia; and another from Murray Island, off the south coast of New Guinea, is preserved in the British Museum.

The supposed occurrence of *H. lunulatus* in the Feejee group, recorded in 'The Ibis' for 1876, p. 391, proves to have been founded on a misapprehension, as Mr. Sharpe informs me that the specimen in question, when withdrawn from the spirits in which it was immersed for transmission to this country, proved not to be *H. lunulatus*, but a small male of *Falco melanogenys*.

I propose now to refer to *Hypotriorchis eleanoræ*, the largest of the Old-World Hobbies, and by far the most remarkable as regards its mutations and variations of plumage, which are independent of sex, and are due partly to differences of age, and partly, as it would seem, to a tendency towards melanistic coloration developed more strongly in some individuals than in others.

The first or nestling plumage, in its medium and most frequent phase, is figured in 'The Ibis' for 1869, pl. xvi. A similar specimen is represented by the lowest figure in

the plate of this species given in the 'Richesses Ornithologiques du Midi de la France,' by Jaubert and Barthélemy-Lapommeraye.

A somewhat paler specimen, but of similar age, is figured at p. 232 of the 'Naumannia' for 1856, under the name of *Falco gracilis* of A. and L. Brehm*. A figure, very like the last named, is associated with an adult *H. concolor*, as the young of that species, in the frontispiece to Finsch and Hartlaub's 'Vögel Ost-Afrika's;' this, in my opinion, also represents a pale-coloured young specimen of *H. eleanoræ*.

Some nestlings of the latter species, however, are darker than the specimen figured in 'The Ibis' for 1869; and such a one is represented in Fritsch's 'Vögel Europa's,' pl. 3. fig. 6, but is there inscribed, erroneously as I consider, "mas ad."

In a letter which Lord Lilford was good enough to send me respecting some dark-coloured young birds of this species which came into his possession, he writes thus:—"The specimens figured in 'The Ibis' for 1869 are very decidedly lighter in general coloration than the young birds received by me, with some down still adhering to them, as mentioned in Dresser's 'Birds of Europe;' in fact, they were precisely like young Hobbies, if any thing rather darker than than an average nestling of that species, the rufous edgings of the feathers very narrow, and the ground-colour of the breast certainly darker than in the figure above mentioned."

The next plumage assumed by this species appears to be that which resembles, more or less closely, the adult plumage of *H. subbuteo*, from which some specimens only differ in the margins of the feathers on the breast, abdomen, and flanks being rufescent instead of white, and in the presence of more or less of a rufous tinge on the throat and cheeks. A male in this plumage is figured in

* Mr. Sharpe quotes this reference, but, I venture to think, incorrectly, amongst the synonyms of *H. concolor*. Lord Lilford had previously pointed out the correct identification of *Falco gracilis* in 'The Ibis' for 1865, p. 175.

the second edition of Bree's 'Birds of Europe,' vol. i. p. 46, and a female in Dresser's 'Birds of Europe,' vol. vi. pl. 383; a male and female, differing but very slightly from the above, are represented in Schlegel and Susemihl's 'Vögel Europa's,' pl. 54. figs. 1 & 2, and a somewhat similar female in Fritsch's work already referred to, pl. 3. fig. 5.

Other examples, though probably referable to the same stage of plumage, or nearly so, as those last mentioned, have the rufous on the lower parts duller and less conspicuous, and also have the cheeks and throat more or less dark-coloured, and sometimes entirely so. Are these duskily-tinted individuals birds which have previously worn the bright and well-defined hobby-like plumage (represented in the figures to which I have last referred), and which are now passing from that stage to the entirely fuliginous plumage? or are they birds which were dark-coloured as nestlings, and in which the hobby-like plumage has never been more than partially assumed, having been modified by melanistic tendencies in the constitution of the individual? Dr. Krüper appears to be of the latter opinion (*vide* Journ. für Orn. 1864, p. 11) *; and such is also the opinion of Dr. Louis Bureau, of Nantes, who has paid much attention to this species, and has favoured me with valuable communications on the subject of its variations of plumage.

A further question arises—do the bright-coloured hobby-like individuals continue to wear that plumage to the end of their days, or do they ultimately assume the fuliginous dress, though perhaps not so rapidly as others which have from the beginning developed a more melanistic tendency? So far as I am aware, this question has not yet been satisfac-

* Dr. Krüper's paper above referred to is a very interesting one, and especially important as containing the results of his observations on the Eleanora Hobby in some of the islands of the Greek archipelago. Valuable portions of this paper are quoted in the article on this species in Dresser's 'Birds of Europe;' and a much fuller extract, translated into French, will be found in the 'Bulletin de la Société Ornithologique Suisse,' vol. i. p. 132, for an acquaintance with which I am indebted to the kind attention of Dr. Bureau.

torily settled; but in connexion with it I may mention that a bright-coloured hobby-like male which I kept in confinement between six and seven years, as recorded in 'The Ibis' for 1867, p. 380, certainly showed some, though but a very slight, tendency towards the assumption of fuliginous tints, in the extension both in length and breadth of the dark centres to the feathers on the underparts, especially on the flanks, and in the edges of these dark centres becoming less sharply defined. I think also that the colouring of the rufous plumage of the lower parts became a little duller.

Whether the next (that is, the fuliginous) stage is ultimately attained by every individual, or only by those possessing a melanistic tendency, is therefore a point which I think is still doubtful; but it seems tolerably certain that such individuals as attain it do so gradually, the fuliginous colour becoming more uniform and probably also more deeply tinted as the age of the bird increases. A figure of the earlier fuliginous stage, copied from that in Bonaparte's 'Fauna Italica,' is given in the first edition of Bree's 'Birds of Europe,' vol. i. p. 44; and the second edition of that work, vol. i. p. 47, contains the representation of a slightly more advanced specimen, a female from Sardinia. A less satisfactory figure of an individual apparently in similar plumage is given on plate 53 of Schlegel and Susemihl's volume already referred to. Lastly, the most uniform and deeply tinted plumage of this variable species is represented in the same work, pl. 54. fig. 3, also in Dresser's 'Birds of Europe,' pl. 383, from a Sardinian male, and in the second edition of Bree's 'Birds of Europe,' vol. i. p. 43, from a male and female also killed in Sardinia, respecting which Dr. Bree remarks that the plate "shows a very old male and female quite black; there are no traces of bars on the under surface of the tail of the male, and very slight ones on that of the female." I must, however, add that I have never seen a specimen which I should myself call absolutely black, but only dark brown, and that with sometimes a decided shade of grey on the concealed portions of the scapulars: this grey tint would probably, when the bird had newly moulted, be apparent also on the exposed portions

of these feathers, and perhaps on the mantle generally, giving the appearance described as that of an old male in Dresser's 'Birds of Europe,' vol. vi. p. 103.

Figure 4 on pl. 54 of Schlegel and Susemihl's 'Vögel Europa's' represents a specimen so grey and so closely resembling in colour the adult plumage of *H. concolor* that I should not hesitate to refer it to that species were it not that the wings, as there represented, are scarcely so long as those of *H. concolor*; and the plate, being taken from a drawing by Mr. Wolf, is not likely to be inaccurate in that respect. Dr. Bureau has been so good as to inform me that the original of this figure is the specimen thus described by Professor Schlegel in his 'Museum des Pays-Bas,' vol. i. *Falcones*, p. 25: "*Falco eleanoræ*, femelle adulte, Grèce, par M. Schulze en 1843. Variété à teinte couleur de schiste." The authors of 'Les Richesses Ornithologiques du Midi de la France,' at p. 523 of that work, quote a description furnished to them by the late Jules Verreaux of a very similar specimen; but as that ornithologist held the erroneous opinion that *H. concolor* is not specifically distinct from *H. eleanoræ*, it is possible that the bird he described was in reality an example of *H. concolor*.

Mr. Sharpe's volume does not contain any reference to the geographical distribution of *H. eleanoræ*; but a summary of what is known on this head will be found in Dresser's 'Birds of Europe,' vol. vi. p. 104. It is, however, there stated that this species does not occur in North-eastern Africa, which is not quite correct, as the plate of "*Falco gracilis*" of Brehm, to which I have already referred, and which unquestionably represents the first plumage of *H. eleanoræ*, is inscribed "In deserto prope Cairo, Sept. 1851" *. I may also mention as an addition to the localities given for *H. eleanoræ* in Mr. Dresser's work, that Mr. Edward Newton obtained a specimen in immature plumage in the island of Mauritius, after stormy weather in the month of December.

There remains but one Old-World species of the genus

* This fact has been already referred to in the 'Rambles of a Naturalist,' by J. H. Gurney, Jun., p. 122.

Hypotriorchis to be referred to, the remarkably long-winged and elegant *H. concolor*. In regard to this I may mention that in Mr. Sharpe's list of its synonyms he omits "*Falco schistaceus*" of Hemprich and Ehrenberg's 'Symbolæ Physicæ,' pl. 19, under which name good figures are given of the male, female, and egg of this species; also that since the publication of Mr. Sharpe's volume, *H. concolor* has been described and figured in adult and immature dress and with osteological details in Milne-Edwards and Grandidier's work on the birds of Madagascar, vol. i. p. 37, and plates 11, 12, and 12 *a*.

Mr. Sharpe, in his article on *H. concolor*, states that "very old examples become leaden black;" but no specimens answering to this description have ever come under my observation.

Mr. Sharpe has included amongst the synonyms of *H. concolor* "*Æsalon tibialis*, Kaup," which seems to me not to be based upon this species, but to be compounded of Le Vaillant's "Faucon à culotte noire" (a bird which I cannot identify) and *Dissodectes ardesiacus*.

It may be worth mentioning, in conclusion, that an apparently authentic record of the occurrence of a specimen of *H. concolor* near Gaillac, in the south of France, on the 3rd October 1873, will be found in the 'Bulletin de la Société Zoologique de France' for 1876, p. 91.

Of the three American species of the genus *Hypotriorchis*, *H. fusco-cæruleus*, *H. rufigularis*, and *H. deiroleucus*, the first has been erected by Mr. Ridgway into a separate subgenus, under the name of "*Rhynchofalco*"*; but I confess that I do not find sufficient grounds for removing it from its accustomed position in the genus *Hypotriorchis*.

Mr. Sharpe does not mention the colour of the iris in this species, which is recorded as "dark hazel" in the P. Z. S. for 1869, p. 155.

The geographical range of *H. fusco-cæruleus* is given by Mr. Sharpe as extending from Mexico to Peru and the Argentine Republic; but it is found further to the northward

* *Vide* Land Birds of North America, vol. iii. p. 154.

and also further south; 'The Ibis' for 1878 contains a record of its nesting in Patagonia at p. 398, and in Texas at p. 487.

Mr. Sharpe has adopted for the next species the specific name of "*albigularis*;" but that of "*rufigularis*," which is also referable to it, and which is to be found on the same page of Daudin's work, has been much more generally used, and I therefore think it better to retain it. The colour of the iris in this Hobby is not referred to by Mr. Sharpe; and I may therefore mention that in a specimen which was living some years since in the gardens of the Zoological Society the irides were dark brown. This beautiful species is remarkable for the disparity in size between the sexes, and also for the slightness of the difference in coloration between the adult and immature plumage. The latter feature is not alluded to by Mr. Sharpe; but a description of it by Mr. Ridgway will be found in a footnote to page 131 of the third volume of the 'Land Birds of North America.'

The remaining American species of the genus *Hypotriorchis*, *H. deiroleucus*, has been referred by Mr. Sharpe to the "Orange-breasted Hobby" of Latham, of which "*Falco aurantius*" of Gmelin is the equivalent; but while it seems to me doubtful what species it was which Latham intended to describe under this name, it is, I think, evident that his description by no means accords with the characters of that now under consideration, for which I would therefore retain Temminck's specific name of "*deiroleucus*."

This is the most robustly formed and probably the most powerful of the Hobbies, as is especially apparent in the female bird, which, as in *H. rufigularis*, is considerably larger than the male; and it may be considered as approaching the most nearly of any of the species of *Hypotriorchis* to the genus *Falco*, in the restricted acceptation of the latter term.

In the P. Z. S. for 1874, p. 550, M. Taczanowski has recorded this species from Central Peru, which extends its known geographical range towards the south-west beyond the limits given for it by Mr. Sharpe.

Mr. Sharpe uses for the European Merlin, to which I next propose to allude, the designation of "*Falco regulus*;" but the list of synonyms of this species in Dresser's 'Birds of Europe,' vol. vi. p. 83, shows that Tunstall's specific name of "*Æsalon*" has priority. If, however, we follow Kaup, as I am disposed to do, and adopt "*Æsalon*" as a subgeneric appellation, I think we ought in that case to fall back upon "*regulus*" as the specific name, and call the present species *Æsalon regulus*.

With reference to Mr. Scully's interesting remarks on the dress ultimately assumed by the female of this species (*vide* Ibis, 1881, p. 418), I may mention that he was so good as to show me his Cashmere female there described, and that I should without hesitation have taken it to be an adult though very pale-tinted male, had not its female sex been ascertained beyond question by dissection, Mr. Scully having not only anatomically examined it, but having also attached to the skin a sketch of the ova *in situ*, as brought to light by his dissection.

Mr. Sharpe's summary of the geographical range of this species does not include Northern Africa and the more southern countries of Central Asia; but detailed information on this head will be found in the article on this species in Dresser's 'Birds of Europe,' to which I have already referred; and to this I may add that the Norwich Museum possesses a specimen from Japan and another from Formosa*, two localities more eastern than any recorded by Mr. Dresser.

I have never seen an example of the small race of this species recorded by Severtzoff from Turkestan (*vide* Ibis, 1875, p. 107), and can therefore offer no opinion as to its specific distinctness.

Referring next to the ordinary Merlin of the American continent, *Æsalon columbarius*, I may mention that the Norwich Museum possesses a specimen from Quito and another from Cuença, both these localities being somewhat more to the southward than that given by Mr. Sharpe as the southern limit of this species.

* *Conf.* Ibis, 1872, p. 327, 1877, p. 144, and 1878, p. 249.

Mr. Sharpe does not refer to the occurrence of this Merlin in the West Indies; but the Norwich Museum contains specimens from Jamaica, and it has also been recorded from Cuba*, Guadeloupe†, Martinique ‡, Tobago §, and Trinidad ‖.

An ample account of this species will be found in the 'Land Birds of North America,' vol. iii. pp. 144 to 154, including two subspecific races, neither of which has come under my own observation; one of these is a dark race, separated by Mr. Ridgway as "var. *suckleyi*," and found in "Northern California, Oregon, and Washington Territory," the other, a pale race, called by Mr. Ridgway "var. *richardsoni*," inhabiting the "interior regions of North America between the Mississippi valley and the Rocky Mountains from Texas to the Arctic Regions."

Mr. Ridgway considers that the figure of a female Merlin from the plains of the Saskatchewan, given in the 'Fauna Boreali-Americana,' part 2, pl. 25, represents a specimen of the latter subspecies.

I feel no hesitation in adopting Bonaparte's subgenus *Chiquera* for the Indian Toorumtee Falcon, which on this footing must stand as *C. typus*, while its African congener will be *C. ruficollis*.

Mr. Sharpe expresses a doubt as to the distinctness of these two species, which I by no means share. In the adults of *C. ruficollis* the whole upper surface, except the head, nape, and quill-feathers of the wings, is conspicuously cross-barred with black, whilst in those of *C. typus* these transverse dark bars are absent from the scapulars, interscapulars, and back, and where present are decidedly fainter and less conspicuous. *C. ruficollis* has also a black mark behind the eye and another below it, both of which are wanting in *C. typus*; it has also a

* Finsch in P. Z. S. 1870, p. 556; also Gundlach, quoted by Ridgway, Land Birds of N. America, vol. iii. p. 145.

† Proc. of the U.S. Nat. Mus. vol. i. p. 450.

‡ Jardine, quoted by Ridgway, Land Birds of N. America, vol. iii. p. 145.

§ Jardine, Ann. & Mag. Nat. Hist. xviii. p. 118 (1846).

‖ Léotaud, Ois. de la Trinidad, p. 26; see also Finsch in P. Z. S. 1870, p. 556.

pale salmon-coloured tint on the upper breast, which I do not recollect to have met with in *C. typus*. The immature specimens of *C. typus*, however, approach more closely than the adults to the adult plumage of *C. ruficollis*, the cross-barring on the upper surface of the immature *C. typus* being as extensively distributed as in the adult of *C. ruficollis*, though, except on the tertials and rectrices, it is paler and less strongly marked. I may also mention that the young birds of *C. typus* have the lesser wing-coverts edged with brown, and short dark shaft-marks on the feathers of the upper breast.

In *C. ruficollis* the young bird has the plumage throughout of a darker hue than the adult; this is especially the case on the crown of the head, where the rufous tint is deeper than in the adult, and, in addition, each feather has a somewhat broad black shaft-mark; all the feathers of the upper part of the mantle are more or less edged with rufous brown, this edging being broadest on the lesser wing-coverts; the transverse bands on the lower surface are less regular than in the adult, and all the intermediate spaces are a rich fulvous instead of being white as in the old bird. I have here noted these details, as Mr. Sharpe does not refer to the immature plumage of either species.

Mr. Sharpe gives "the whole of Africa" as the habitat of *C. ruficollis*; but it is absent from the northern portion of that continent, not extending further northward, so far as I am aware, than Senegambia towards the north-west, and Nubia towards the north-east; and I must add that the only evidence I have of its extending to Nubia is a specimen in the Norwich Museum, which was stated to be Nubian by the late Jules Verreaux, through whose hands it passed into that collection. It appears, however, to be a common species in Sennaar, and also to occur, though less abundantly, in Abyssinia.

XII.—*Second Note on the Species of the Tyrannine Genus* Hirundinea. By P. L. Sclater.

In an article on the Tyrannine genus *Hirundinea*, published

in this Journal for 1869 (p. 196 *et seqq.*), I pointed out the distinctions between the three well-marked species of this group, and described their geographical ranges so far as they were known to me. Retaining the term *ferruginea* of Gmelin for the Guianan form with uniform dark back and tail, I referred Vieillot's term *bellicosa* to the Colombian and Peruvian form (which differs from the preceding in having the inner webs of the tail-feathers ferruginous red), and applied to the South-east Brazilian bird, which is at once distinguished by its ferruginous rump, the name *rupestris* of Prince Maximilian. Prof. Reinhardt, however, from whom I had obtained the loan of the skin upon which my diagnosis and figure of the so-called *H. bellicosa* were based, did not quite agree with my views as to the synonymy of this species. He was of opinion that the term *bellicosa* of Vieillot, founded upon Azara's description of his "*Suiriri roxo obscuro*" (Apunt. ii. p. 129), was more likely to be referable to the Brazilian bird (my *H. rupestris*), and has stated his reasons for this view in his excellent memoir on the avifauna of the Campos of Brazil*. So persuaded was he that the term "*bellicosa*" was not applicable to the Peruvian species to which I had applied it, that he proposed a new designation for the latter—*Hirundinea sclateri*—as being the "*H. bellicosa*, Scl. nec Vieill."

Although Mr. Salvin and I were sufficiently convinced by Prof. Reinhardt's argument to refer Vieillot's term *bellicosa* to the Brazilian species, and to employ the name *sclateri* for the Peruvian form in our 'Nomenclator' (p. 51), it was with great satisfaction that a short time ago I received a skin of *Hirundinea* which set any lingering doubts I might have had on the subject at rest. Amongst the birds collected by Mr. E. W. White, F.Z.S., during his recent expedition to the upper provinces of the Argentine Republic†, was a skin of *Hirundinea* obtained at Puente de Andalgala, Catamarca, in September 1880, which completely agrees with Brazilian

* Bidrag til Kundskab om Fuglefaunaen i Brasiliens Campos, in Vid. Medd. Kjöbenhavn, 1870.

† *Cf.* Ibis, 1881, p. 509.

specimens. It necessarily follows that Azara's *Suiriri roxo obscuro* (undè *Tyrannus bellicosus* of Vieillot) must be referred to the same species, and not to the Peruvian bird. The three species should therefore stand as follows :—

a. Uropygio dorsoque concoloribus, fusco-nigricantibus.
a'. Caudâ unicolori.

1. Hirundinea ferruginea (Gm.), ex Guianâ et Amazoniâ inf. (*vide* Ibis, 1869, p. 196, t. v. fig. 2).

b'. Caudæ rectricibus in pogonio interno ferrugineis.

2. Hirundinea sclateri, Reinh., ex Peruviâ et Colombiâ (=*H. bellicosa*, Ibis, 1869, p. 196, t. v. fig. 1).

b. Uropygio ferrugineo.

3. Hirundinea bellicosa (Vieill.), ex Brasiliâ, Paraguay, et rep. Argent. (=*H. rupestris*, Ibis, 1869, p. 198, t. v. fig. 3).

XIII.—*Notices of recent Ornithological Publications.*

1. *Bennett on the Habits of the Black-breasted Buzzard.*

[Notes on the Habits of the Black-breasted Buzzard, *Gypoictinia melanosternon*, Gould. By K. H. Bennett. Proc. Linn. Soc. N. S. W. vi. p. 146.]

Mr. Bennett believes this rare Australian bird to be confined to the plains of the Murrumbidgee and Lachlan rivers, where it feeds on reptiles' and birds' eggs. The nest and eggs are described.

2. *Bocage on West-African Birds.*

[Aves das possessões portuguezas d'Africa occidental. Vigesima primeira lista. Por J. V. Barboza du Bocage. Jorn. Sci. Lisboa, no. xxx. 1881.]

Prof. J. V. Barboza du Bocage's *twenty-first* list gives 34 species, of which examples were collected at Caconda by Sr. Anchieta at the end of 1880 and in January 1881. All are known species. One example of *Coracias spatulatus* was in the collection.

3. *Bolau on the Birds of the Suifun District.*

[Ueber Vögel aus dem Suifun-Gebiet, gesammelt von Friedrich und Heinrich Dörries. Von Dr. Heinrich Bolau. J. f. O. 1881.]

Dr. Bolau gives an account of the collection made by the brothers Frederick and Henry Dörries on the Suifun river, in Russian Mantchuria. Sixty-six species are enumerated, of which 30 are identical with species obtained by F. Dörries on the island of Askold (*Cf.* Ibis, 1881, p. 474). *Muscicapa luteola* of Pallas is shown *not* to be the female of *M. mugimaki*. *Picus scintilliceps* of Bolau is the species recently described by Mr. Hargitt as *Iyngipicus doerriesi* (Ibis, 1881, p. 398).

4. *Brazier on* Megapodius brazieri.

[Remarks on *Megapodius brazieri*. By J. Brazier, C.M.Z.S. &c. Proc. Linn. Soc. N. S. W. vi. p. 150.]

Mr. Brazier corrects Mr. Ramsay's statement (P. L. S. N. S. W. 1879, p. 75) that this Megapode is from Savo, in the Solomon group, the island where the eggs to which this name was applied were taken being Vanua Lavu, in the Banks group. He also points out that *Megapodius brenchleyi*, which Mr. Ramsay regarded as probably identical, is from Gulf Island, in the Solomon group, a very different locality.

5. *Clarke and Roebuck on the Vertebrate Fauna of Yorkshire.*

[A Handbook of the Vertebrate Fauna of Yorkshire, being a Catalogue of British Animals, Birds, Reptiles, Amphibians, and Fish, showing what species are or have, within historical periods, been found in the County. By William Eagle Clarke and William Denison Roebuck. 8vo. London: 1881.]

The object of this work is the enumeration of the vertebrated animals now or formerly found in Yorkshire, and the "careful definition of their faunistic position and geographical distribution." The number of British vertebrates which have not occurred in Yorkshire being comparatively small, all recognized British species have been inserted in the catalogue, which thus gives us a complete list of British Vertebrates. The physical aspect of Yorkshire is well described in the pre-

liminary remarks; and the whole volume is carefully compiled from the most recent authorities.

6. *Garrod's collected Papers.*

[In Memoriam. The collected Scientific Papers of the late Alfred Henry Garrod, M.A., F.R.S. Edited, with a Biographical Memoir of the Author, by W. A. Forbes, B.A. 8vo. London: 1881.]

No more appropriate memorial, we believe, could have been made of our much-lamented fellow-worker than the republication of his writings in a collected form. Their value to the working ornithologist can scarcely be exaggerated; and it is most convenient to have them ready for reference in a handy volume. The biographical notice and Mr. Herkomer's etching will make the work still more acceptable to Garrod's numerous friends. The volume seems to have been most carefully prepared and edited by his successor in the Zoological Society's prosectorship.

7. *Giglioli on Italian Birds.*

[Elenco delle specie di Uccelli che trovansi in Italia stazionarie o di passaggio, colle indicazioni delle epoche della nidificazione e della migrazione, compilato dal dottor Enrico Hillyer Giglioli. Annali di Agricoltura, Roma 1881, Num. 26.]

This is a catalogue of Italian birds, with notes on their times of nidification and migration, drawn up at the request of the Minister of Agriculture. The summary shows a total of 418, as follows:—

I. Resident species.		
1. Sedentary	193	
2. Summer visitors	71	
3. Winter visitors	40	
		— 304
II. Birds of passage.		
1. Regular	2	
2. Irregular	37	
3. Accidental	75	
		— 114

8. *Glanville's Report on the Albany Museum.*

[Report of the Curator of the Albany Museum for the Year ended 31st December 1880. Cape of Good Hope: 1881. Parliamentary Paper.]

Several notes on the birds received in 1880 are given, which may be useful to those who are working at South-African ornithology. The Report is signed "B. J. Glanville, Curator."

9. *Gould's 'Supplement to the Trochilidæ.'*

[Supplement to the Trochilidæ or Humming-Birds. By John Gould, F.R.S. &c. Part II. Folio. London: 1881.]

We are glad to be assured by the issue of a new part that this great work will be brought to a completion. Messrs. Sotheran have inserted the following address to the subscribers in the present part:—

"Mr. Gould left a large number of plates drawn on stone for the present work, with the patterns for colouring approved by him, so that the task of completing the 'Supplement to the Monograph of the Trochilidæ' seemed at first sight to be an easy one. We have, however, received from Mr. Osbert Salvin, F.R.S., who has most kindly interested himself in making this monograph perfect, a list of the species left unfigured at the time of Mr. Gould's decease, and we find that there are more than one hundred Humming-birds not represented in the original monograph.

"Some of these it will be impossible to figure, as the type specimens are unique in foreign collections; but Mr. Salvin has lent us a large number of specimens from his private collection, which will enable us to give illustrations of the majority of the species.

"Under these circumstances it is impossible to complete the Supplement in *four* parts, as intended by Mr. Gould, who, as we have pointed out above, had quite underestimated the number of additional species; and we believe that he must have contemplated publishing a further supplemental volume at some future date. We can promise, however, that the volume shall be completed in *five* parts; and of those

that remain to be done the text will be written by Mr. Bowdler Sharpe of the British Museum, who edited for the author the letterpress of the two parts already published by Mr. Gould; and the whole of the work will be under the supervision of Mr. Osbert Salvin, who has generously promised his cooperation.

"It should be stated that the second part, containing ten plates, is issued as intended by Mr. Gould; but the three remaining numbers of the work will contain descriptions of at least thirty species, with a larger number of plates than has hitherto been published. This will entail considerable pecuniary loss to us; but we trust that it will be received by the subscribers as evidence that we are prepared to sustain, at any cost, the high reputation of Mr. Gould's publications; and we may further add that the plates will be drawn, as heretofore, by Mr. Hart, and coloured by the same staff as in Mr. Gould's lifetime."

The following is a list of the species figured in Part II.:—

Eustephanus leyboldi.
—— fernandensis.
Androdon æquatorialis.
Eupherusa poliocerca.
Spathura solstitialis.
Doricha lyrura.
—— bryantæ.
Hypuroptila melanorrhoa.
Helianthea dichroura.
Chætocercus bombus.

10. *Gould's 'Birds of New Guinea.'*

[The Birds of New Guinea and the adjacent Papuan Islands, including any new Species that may be discovered in Australia. By John Gould, F.R.S. &c. Part XII. Folio. London: 1881.]

The 'Birds of New Guinea' is likewise to be continued by Mr. Bowdler Sharpe, Mr. Gould having left at his death a large number of drawings prepared for the purpose. Of these we have a fine selection in the present number, illustrating the following species:—

Seleucides nigricans.
Rectes uropygialis.
—— jobiensis.
Cinclosoma ajax.
Clytoceyx rex.
Munia forbesi.
Donacicola spectabilis.
—— nigriceps.
Myzomela sclateri.
—— cineracea.
Æluræedus stonii.
Casuarius bicarunculatus.

11. *Hutton on a Cormorant from Campbell Island.*

[On a Species of Cormorant from Campbell Island. By F. W. Hutton, Professor of Zoology, Otago University. Proc. Linn. Soc. N. S. W. iv. p. 356.]

Prof. Hutton now identifies the Cormorant of Campbell Island (which he had previously recognized, in Trans. N.Z. Inst. xi. p. 339, as *Phalacrocorax magellanicus*) with *Ph. nycthemerus*, Cab. A synoptic table of the species of Cormorants of the subgenus *Leucocarbo* is added.

12. *Newtons' 'List of the Birds of Jamaica.'*

[List of the Birds of Jamaica. By Alfred and Edward Newton. Extracted from the Handbook of Jamaica for 1881. 8vo. Jamaica: 1881.]

"This list," say the authors, "is intended to show as briefly, and at the same time as accurately as possible, the present state of knowledge in regard to the species of birds found in the island." It is a very useful compilation, references to the principal authorities on each species being concisely given. Of 189 species mentioned, 43 are designated as peculiar to Jamaica.

13. *Oates's 'Matabele Land.'*

[Matabele Land and the Victoria Falls: a Naturalist's Wanderings in the Interior of South Africa. From the Letters and Journals of the late Frank Oates, F.R.G.S. Edited by C. G. Oates, B.A. London: 1881. 1 vol. 8vo.]

Mr. C. G. Oates gives us an account of his brother's travels through Matabele Land to the Victoria Falls in 1873–1875, based upon his brother's letters and diaries. The late Mr. Frank Oates was an ardent naturalist, and made extensive collections in many branches of natural history. He died on the 5th of February 1875, in Matabele Land, north of Tati, of fever contracted on the Zambesi. His collections were saved by Dr. Bradshaw (the discoverer of *Coracias spatulatus*), who fortunately happened to be in his company, and are partly described in the appendix to the present volume. Mr. Sharpe writes on the birds, which, "in nearly

every case," have been determined by Captain Shelley. The collection, Mr. Sharpe tells us, "was formed with the greatest care, and it is seldom that it falls to the lot of the naturalist to examine a series of birds in which the particulars of capture are so carefully noted on each specimen as in the present instance. For this reason alone therefore the collection is of great importance; but, besides this, it represents, without doubt, a very fair idea of the avifauna of the parts of the Transvaal and Matabele countries through which Mr. Oates travelled."

The species enumerated are 213 in number. *Bradyornis oatesi* is described as new, and figured, as is also *Saxicola shelleyi*, Sharpe, a "fine species, hitherto only known from a pair of birds in the British Museum, stated to have come from the Victoria Falls."

On the Inkwesi (20° 55′ S. lat.), in February 1874, a Hornbill's nest was found. "The boys" says Frank Oates, "brought me a young Hornbill, and I was taken to the nest. A hollow tree, with a hole in it high up, was where the bird had come from. They poked out and pulled the wing-feathers off the old hen when I was not looking. I kept both birds."

"Karl says the old hen never leaves the young, the cock feeding them all, and that she gets quite bare of feathers. The number of young is two. The natives, he says, are very fond of them to eat, roasted." This is an interesting confirmation of the now well-known, but not less extraordinary, nesting-habits of the Bucerotidæ.

14. *Oustalet on the Megapodes.*

[Monographie des Oiseaux de la Famille des Megapodiidés. Par M. E. Oustalet. Part I. Ann. Sc. Nat. sér. 6, t. x. art. no. 5. Part II. ibid. xi. art. 2.]

M. Oustalet gives us a most complete essay on the Megapodes. After discussing the skeleton, muscular system, digestive and other internal organs and tegumentary structure at full length, he proceeds to consider the systematic relations of the family, and concludes to follow nearly the views of A. Milne-Edwards and Huxley on this point, except in separating

rather more definitely the Numididæ from the Phasianidæ, to bring them nearer to the Megapodes. M. Oustalet's "Alectoromorphæ" thus consists of six families—namely, Cracidæ, Megapodiidæ, Numididæ, Meleagridæ, Phasianidæ, and Tetraonidæ.

The Megapodiidæ are then divided into four genera, as follows:—

1. *Megacephalon,*	with	1	species.
2. *Leipoa,*	„	1	„
3. *Talegallus,*	„	7	„
4. *Megapodius,*	„	19	„
		28	

Full details are given of each of these species and of the facts of their extraordinary modes of reproduction, so far as they are known. General observations on the geographical distribution of the family conclude this excellent and instructive memoir. Coloured figures are given of *Talegallus bruijnii* and of the heads of three species of the same genus.

15. *Pelzeln on Birds from Borneo.*

[Herr Custos A. von Pelzeln berichtet über Dr. Breitenstein's zweite Sendung von Säugethieren und Vögeln aus Borneo. Verh. der k.k. zool.-bot. Gesell. Wien, 1880.]

Only two birds are mentioned, *Arachnothera longirostris* and *Polyplectron schleiermacheri*: the female of the latter is now first described. The collection was made at Teweh, in Central Borneo.

16. *Pelzeln on Birds from Central Africa.*

[Ueber eine Sendung von Vögeln aus Central-Afrika. Von August von Pelzeln. Verh. der k.k. zool.-bot. Gesell. Wien, 1881, p. 141.]

Herr v. Pelzeln gives us an account of a collection of 150 skins sent by Dr. Emin Bey from the country between Lado and the Albert Nyanza. *Eremomela hypoxantha* is described as new; a new genus (*Icteropsis*) is proposed for *Hyphantornis crocata,* Hartlaub; and various notes are given.

17. *Ramsay on Birds from the Solomon Islands and Australia.*

[Notes on some recently described Birds from the Solomon Islands, with Remarks on some Australian Birds mentioned in Mr. R. B. Sharpe's Cat. of Birds, vol. iv. By E. P. Ramsay, F.L.S. &c. Proc. Linn. Soc. N. S. W. ix. p. 313.]

Macropygia rufocastanea, from the "Solomon Islands," is described as new; and *Rhipidura saturata* Sharpe, nec Salvad., is proposed to be called *R. sharpei*. Notes are given on various Australian Muscicapidæ and Campophagidæ in relation to Mr. Sharpe's Catalogue.

18. *Ramsay on a Species of* Lalage.

[Note on an undetermined Species of *Lalage*. By E. P. Ramsay, F.L.S. &c. Proc. Linn. Soc. N. S. W. iv. p. 396.]

A description is given, but no name, and no locality! The specimen "agrees neither with Mr. Sharpe's description of *Symmorphus nævia* nor *S. leucopygialis*;" but Mr. Ramsay is "inclined to the belief that all three belong to one and the same species." We confess that we do not quite understand the object of this "note."

19. *Ramsay's Contributions to the Zoology of New Guinea.*

[Contributions to the Zoology of New Guinea.—Part. IV. On some new and rare Birds from South-East Coast of New Guinea &c. By E. P. Ramsay, F.L.S. &c. Proc. Linn. Soc. N. S. W. iv. p. 404.]

The birds here mentioned are from Mr. Goldie's "large and interesting collections" made in the latter half of 1878, which were "placed at Mr. Ramsay's disposal," and from Lieut. Richards's collection made at the Solomon Islands and Duke-of-York group, which the owner "kindly allowed" Mr. Ramsay "to examine." The following species are described as new:—*Astur brachyurus* (*Hab.* "Thirty miles inland"!); *Ninox terricolor*, from Goldie river; *Pitzorhynchus melanocephalus*, from San Christoval (*Richards*); *Sericornis? fulvipectoris* [sic!], from Goldie river; *Myzomela forbesi*, from Woodlark Island; and *Otidiphaps nobilis*, var.

cervicalis, from Goldie river. In the *errata* to the volume in which the paper is published we find that *Astur brachyurus* is from New Britain (*Lieut. Richards*), and that the *Otidiphaps* is referred to as "*Otidiphaps cervicalis*, spec. nov." (*cf.* our note, Ibis, 1881, p. 178).

We have to apologize for so long deferring a notice of this and the two preceding papers; but, as already mentioned, the author does not send us separate copies, and we have had to wait until the numbers of the journal in which they appear are received. These are always much behindhand, the last part received by the Zoological Society at this date (Dec. 1st, 1881) being part 1 of vol. vi., containing papers read on Jan. 27th, 1881.

20. *Ramsay on Birds from the Solomon Islands.*

[Notes on the Zoology of the Solomon Islands, with Descriptions of some New Birds.—Part II. By E. P. Ramsay, F.L.S. &c. Proc. Linn. Soc. N. S. W. vi. 1881.]

In this paper (stated in MS. to have been read Feb. 23, 1881, and for sight of which we are indebted to Canon Tristram) Mr. Ramsay describes as new *Graucalus elegans* from Guadalcanar, *Piezorhynchus richardsii* from Ugi, *Myzomela tristrami* (no locality given), *Myzomela pulcherrima* from Ugi, *Tephras olivaceus* from the "Solomon Islands," and *Nasiterna finschii* from San Christoval, and gives remarks upon other species.

21. *Rathbun's 'Bright Feathers.'*

[Bright Feathers, or some North-American Birds of Beauty. By Frank R Rathbun. Illustrated with Drawings made from Nature, and carefully coloured by hand. Parts I., II. 4to. Auburn, N.Y.: 1881.]

Mr. Rathbun kindly sends us the first two numbers of his new work, which will, we trust, help in carrying out his wish of assisting those of his countrymen who are not well acquainted with their native birds. It is intended to be completed in twelve parts, each part being devoted to some brightly coloured bird indigenous to the State of New York.

The plates are engraved and coloured by the author himself. Part 1 is devoted to *Carpodacus purpureus*, part 2 to *Goniaphea* ludoviciana*.

22. *Ridgway on the Birds of Illinois.*

[Illinois State Laboratory of Natural History.—Bulletin No. 4. A Revised Catalogue of the Birds ascertained to occur in Illinois. By Robert Ridgway. 8vo. Bloomington, Ill.: 1881.]

Mr. Ridgway records the occurrence of 341 species of birds in the State of Illinois, adding about 30 to his last catalogue of the same avifauna, published in 1874. Mr. Ridgway observes that "probably no inland state or territory not traversed by lofty mountain-ranges is equal to Illinois as regards the richness and variety of its avian fauna."

23. *Ridgway on the Desiderata of the U.S. National Museum.*

[List of Species of Middle and South-American Birds not contained in the United States National Museum. By Robert Ridgway. Proc. U.S. Nat. Mus. 1881, p. 165.]

Mr. Ridgway's title explains itself. Such of the deficiencies as can be supplied by correspondents of the Museum or of the Smithsonian Institution "will be very thankfully received."

24. *Ridgway on the Genus* Centurus.

[A Review of the Genus *Centurus*, Swainson. By Robert Ridgway. Proc. U.S. Nat. Mus. 1881, p. 93.]

Fourteen forms of *Centurus* are treated of in this paper as "sufficiently distinct for definition," but "not more than six can be said to be perfectly isolated, or to possess the requirements of perfectly distinct species." These six are the three West-Indian species, *C. radiolatus*, *C. superciliaris*, and *C. striatus*, and three continental ones, *C. uropygialis*, *C. hypopolius*, and *C. elegans*. Those which "certainly intergrade" are *C. aurifrons*, *C. santacruzi*, *C. dubius*, and *C. hoffmanni*, all of which, however, are "strongly characterized geogra-

* On this generic term *cf. infra*, p. 183.

phical races or subspecies." Five are "of doubtful relationship." The various species and subspecies are worked out in the habitually elaborate and exact method of the distinguished author. The U.S. National Museum contains examples of all the species except *C. hypopolius*, *C. rufiventris*, and *C. tricolor* ("the two latter being of somewhat doubtful status"), and fine series of most of them.

25. *Salvadori on the Ornithology of Papua and the Moluccas.*

[Ornitologia della Papuasia e delle Molucche, di Tommaso Salvadori. Parte seconda. 4to. Torino: 1881.]

In our notice of the issue of the first volume of Prof. Salvadori's work (Ibis, 1880, p. 255) we gave a short account of this great undertaking, and of the extensive materials upon which the author had based it. It is with great pleasure that we now chronicle the issue of the second volume, and are able to announce that the third, which will complete the work, is far advanced in preparation.

In the present volume the numerous Passeres come under consideration, and swell its size to 706 pages, which treat of about 470 species. The plan pursued is exactly the same as that of the first volume. Every species is fully and fairly described; its complete synonymy is given; and a detailed list of the specimens examined from various localities over which the species is spread is added.

As many of our readers are already aware, the Royal Academy of Sciences of Turin, which published Prof. Salvadori's first volume as one of their 'Memorie,' have unfortunately not found it convenient to adopt the same course as regards the second. The author is therefore compelled to appeal to his brother ornithologists to subscribe for copies of the second and third volumes of his most meritorious work, in which, we are sure, he will receive every possible support. Few special works of the present day have been so well planned or so thoroughly carried into execution as Salvadori's 'Ornitologia della Papuasia.'

The Papuan Passeres, according to our author, consist of 471 species, belonging to 22 families :—

Hirundinidæ	4	Brachypodidæ	3
Muscicapidæ	115	Pittidæ	11
Campophagidæ	30	Timeliidæ	15
Artamidæ	3	Saxicolidæ	1
Dicruridæ	10	Sylviidæ	10
Laniidæ	49	Motacillidæ	3
Menuridæ	1	Ploceidæ	12
Certhiidæ	2	Sturnidæ	14
Nectariniidæ	17	Oriolidæ	7
Dicæidæ	23	Corvidæ	6
Meliphagidæ	89	Paradiseidæ	37

26. *Salvadori on Birds from New Britain and New Guinea.*

[Descrizione di alcune Specie Nuove o poco conosciute di Uccelli della Nuova Britannia, della Nuova Guinea e delle Isole del Duca di York. Di Tommaso Salvadori. Atti d. R. Accad. d. Scienze di Torino, vol. xvi. Maggio 1881.]

The specimens described were recently received by the late Count Turati of Milan from the Museum Godeffroy. *Strix aurantia, Zosterops hypoxantha,* and *Myzomela erythromelas,* all from New Britain, and *Sauromarptis cyanophrys,* allied to *S. tyro,* from New Guinea, are described as new. Other rarities are remarked upon.

27. *Tiraut on the Birds of Lower Cochin-China.*

[Les Oiseaux de la Basse-Cochinchine par M. le Dr. Gilbert Tiraut. Bull. Com. Agricole de la Cochinchine, sér. 3, i. p. 73.]

Dr. Tiraut gives a list of the birds met with during his sojourn in Cochin-China in the years 1875–1877, when he collected more than a thousand specimens, now in the Museum of Lyons. Dr. Tiraut enumerates 353 species, and adds the principal references, native names, and observations on exact localities and habits as noticed, making altogether a very useful account of an avifauna of which we previously knew but little.

28. *Tweeddale's Ornithological Works.*

[The Ornithological Works of Arthur, Ninth Marquis of Tweeddale. Reprinted from the Originals by the desire of his Widow. Edited and Revised by his Nephew, Robert G. Wardlaw Ramsay, F.L.S., F.Z.S., &c., together with a Biographical Sketch of the Author by William Howard Russell, LL.D. 4to. London: 1881.]

To the readers of 'The Ibis,' at least, it is not necessary to say much in explanation of the present volume, which is dedicated by the widow of our fellow-worker to the dear memory of the author. That the reprint of the late Marquis of Tweeddale's writings will be most acceptable and most useful to all who are interested in ornithology need hardly be stated in these pages. It is rendered more valuable to us who knew him so well by the portrait and memoir which accompany it.

It is an additional satisfaction to us to be able to point out that Capt. Wardlaw Ramsay has accomplished his editorial task in a most exact and accurate manner. In order to facilitate the quotation of the original from the reprint exact references are introduced in the form of marginal notes. The only alterations introduced are in the case of obvious misprints, orthographical errors, and corrections made in the author's own handwriting; but many footnotes are appended, marked as editorial.

The editor has likewise contributed a very useful piece of original work to the Appendix. This consists of a "revised list of the birds known to occur in the Philippine Islands, showing their geographical distribution," compiled from Lord Tweeddale's numerous papers, and from two on the same subject from Mr. Sharpe. The Philippine avifauna proper is thus shown to comprehend 336 species, besides 43 others belonging to Palawan, Balabac, and the Sulu Archipelago. But 19 of these may be reckoned as doubtful from various causes; so that 317 is the proper total for the restricted, and 360 for the more extended area.

29. *White's 'Cameos from the Silver-Land.'*

[Cameos from the Silver-Land, or the Experiences of a Young Naturalist in the Argentine Republic. By Ernest William White. Vol. I. 8vo. London: 1881.]

This work, by a naturalist well known to many of us, commences with several chapters of general remarks upon the Argentine Republic, in which a variety of useful information is given. The author then gives an account of his visit to Cordova and Mendoza, in which several passing allusions will be found to birds, to the study of which Mr. White is specially devoted*. At San Juan, under the Andes, in the home of a medical gentleman, Mr. White "was grieved to be the witness of a literary sacrilege" such as he never before beheld. "The floor of the drawing-room was strewn with the wreck of Gould's magnificent work on the Toucans; and I trembled lest that on the Trochilidæ, which was at hand in a book-case, should share the same fate: these splendid tomes, the gift of well-known English ornithologists from the West Indies on their visit to San Juan, leaving their natural use, had degenerated into nursery playthings."

XIV.—*Letters, Announcements, &c.*

We have received the following letters addressed to the Editors of 'The Ibis':—

Dresden, 16th July, 1881.
R. Zoölogical Museum.

Sirs,—Perhaps the news would interest the readers of 'The Ibis' that a *Sarcorhamphus gryphus* in the Dresden Zoological Gardens has lately hatched two young ones in eight weeks and four days. This happened in the Zoological Society of London's Gardens, if I am rightly informed, in six weeks two days, a hen hatching the eggs in the latter case.

Yours &c.,
A. B. Meyer.

---

* *Cf.* Ibis, 1881, p. 599.

Dunipace House, Larbert,
Oct. 10th, 1881.

Sirs,—I wish to record in a few words the occurrence in Scotland for the first time of the white-spotted form of *Cyanecula*, viz. *C. wolfi* (C. L. Brehm). It was obtained at the lantern of the lighthouse on the Isle of May on the 22nd of September 1881, and was sent to me for identification by our reporter there, Mr. Agnew, along with an adult male Redstart and a Goatsucker, the latter being the first occurrence of that species also at Isle of May. According to Mr. Agnew's schedule, returned at the same time, the wind was light westerly on the 17th, with haze. The next record occurs on the 22nd, the date of the capture of this specimen and of numerous arrivals of Redstarts, Mavises, Swallows, Golden Plovers, Ring-Plovers, Curlews, &c.—indeed, the record of a "*rush*" of migrants. On that day the wind was strong S.E.; and it continued all day. The present specimen, now in our collection here, was caught or killed after midday. Mr. Agnew writes, "weather very thick haze, approaching to fog, with a continuous downpour of rain." "All the birds," adds Mr. Agnew, "seen today seemed perfectly bewildered." The bird is a specimen in that "peculiar autumn plumage" figured by Dresser ('Birds of Europe,' vol. i. pl. 50, see also p. 350). I should have liked to have given you a more extended notice of this occurrence, with some remarks upon a subject which I consider of some importance, viz. the distribution of the occurrences of rare European species in Britain; but I fear to occupy too much space; I propose therefore to send these longer remarks to the 'Zoologist.'

Yours &c.,
J. A. Harvie Brown, F.R.S.E. &c.

Northrepps, November 26, 1881.

Sirs,—In 'The Ibis' for 1881, p. 606, Count Salvadori suggests that the specimen of *Urospizias albigularis* figured on pl. viii. of the same volume is too young to "have the dimensions of a fully adult male." I am desirous of stating

two reasons which induce me to differ from this opinion. In the first place, the bird, as mentioned in my description of it, had already assumed more or less of the adult plumage on the forehead, nape, mantle, chin, throat, and breast; and secondly, this specimen was thus ticketed by Lieut. Richards, who obtained it, "♂. Iris bright yellow, feet orange; 27th August, 1878;" whereas a specimen, probably, from the date when it was killed, about eight months younger, and in which the bases of the primaries were still in their sheaths, subsequently procured by Lieut. Richards in the same locality, was marked by him thus, "♂, young. Iris drab, feet yellowish; food lizards &c.; 16th December, 1880." The fact of the changes of colour accomplished in the eyes and feet of the first specimen, and commenced in its plumage also, seem to me to indicate that it had advanced sufficiently towards maturity to be already full-grown.

I may add the following measurements, taken from the second and younger male:—wing 7·9 inches, tarsus 2·2, middle toe *s. u.* 1·5.

Yours &c.,

J. H. Gurney.

Durham, Dec. 1, 1881.

Sirs,—I have been much interested by Dr. Sclater's very interesting addition to the known species of the restricted genus *Erythrura*; and while unhesitatingly admitting both his species (though *E. regia* comes extremely close to *E. pealii*, which, judging from the five specimens before me, is a rather variable species), I must demur to his attempt to unite *E. cyanifrons* of Layard with *E. trichroa*. By an error reference is made to "Ibis, 1879, p. 280," instead of "p. 191." There I have pointed out the distinction between these two species, viz. that the bill of *E. cyanifrons* is scarcely half the size of that of its congener. In fact, the difference is as great as between the bills of a Linnet and a Greenfinch. When writing, I had before me seven examples of the one and eight of the other (a fair series for comparison), and the distinction was constant and uniform.

I grant that the bills of the Fringillidæ are often a variable quantity; but here we have the case of a genus which, like *Myiagra* and *Ptilopus*, seems to vary in every Pacific group; and it would be, *à priori*, most improbable and contrary to analogy that identical species should be found so far apart as Batchian &c. on the one side and New Caledonia on the other, though we should expect a blue-masked species there, just as we now find a red-masked species in New Hebrides, nearer to the red-masked types of Fiji and Samoa. I trust therefore that *E. cyanifrons* may not be so pitilessly put out of existence.

Yours &c.,
H. B. Tristram.

Newcastle, Natal,
3rd November, 1881.

Sirs,—I am happy to be able to tell you that, though prevented by political motives from prosecuting any further operations against the Boers, some of us are hard at work in these parts in a campaign against the birds, and have, I hope, collected between us a respectable amount of specimens and information concerning them.

Capt. E. A. Butler, Royal Irish Rifles, Capt. H. W. Feilden, 6th Dragoons, and myself are all quartered here, and are working together with a view to the compilation of a joint "Contribution to the Ornithology of Natal," which we hope will see the light in a future number of 'The Ibis.'

Newcastle is not a good station for the collector, there being but little bush and but few scattered "vleys" or marshes; but we have now somewhere about 180 species on record, and hope to make this up to 200 before we leave, with the additional kinds we may meet with on the march down to Durban.

Yours &c.,
Savile G. Reid, Capt. R.E.

---

5 East View, Hyde Park, Leeds,
December 3rd, 1881.

Sirs,—The second occurrence in the British Isles of

Emberiza rustica, Pall., may be deemed worthy of a record in the pages of 'The Ibis,' to which the late Mr. Gould communicated the news of the bird's first appearance in Britain, in 1867 ('The Ibis," 1869, p. 128).

On the 17th of September last, after a lapse of fourteen years, a bird of this species was shot on the sandhills of the Yorkshire coast, near to the village of Easington, in Holderness, by Mr. Townend, the schoolmaster. The specimen, supposed by those who have examined it to be a female, was given to Mr. P. W. Lawton, a local ornithologist, in whose possession it remained unidentified until I visited Easington on the 7th of October.

I sent the bird to Professor Newton; and it was exhibited by him at the Meeting of the Zoological Society on the 15th of November.

Yours &c.,

WM. EAGLE CLARKE.

The Generic Term Goniaphea.—Dr. Coues (Bull. Nutt. Orn. Club, v. p. 98) says that he has carefully examined Bowditch's 'Excursions in Madeira'* without finding any reference to the generic term "*Goniaphea*"—a name often applied (as first suggested by G. R. Gray, Gen. B. ii. p. 357) to the Rose-breasted Grosbeak of North America. Having lately had occasion to investigate this subject, I have succeeded in discovering the passage in Bowditch's work; and, in order to try and set this vexed question at rest, I transcribe it. Speaking of an excursion from Funchal, in Madeira, Bowditch says (p. 29), "I saw another and more curious bird, but I doubt if it is a native of the island. The outline of the beak most resembles that of the Widow-bird (*Vidua*, Cuv.); but the commissure is situated like that of the Grakle (*Gracula*, Cuv.), immediately beneath the nostril, and forms a much deeper angle; it evidently belongs to the Conirostres

* The full title of this work is 'Excursions in Madeira and Porto Santo during the Autumn of 1823, while on his Third Voyage to Africa,' by the late T. Edward Bowditch. 4to. London: 1825.

of Cuvier; and I should place it under the name of *Goniaphea*, between *Fringilla* and *Corythus*."

In a footnote Bowditch adds, "The upper mandible closes over the lower, and the middle toe is longer than the others; the whole bird is black, with the exception of the head, which is azure in *G. leucocephala*." A woodcut of the bill is given at the end of the work.

Now it is quite evident that the bird here spoken of is not *Hedymeles ludovicianus* (a species, moreover, very unlikely to have turned up in Madeira); for the description and figure do not in the least agree with it. Further, no such bird as is here described being found in Madeira, we may, I think, consider the name *Goniaphea* as void for uncertainty. If I were to make a guess as to what bird Bowditch had in view when writing the passage in question, I should say that it might have been one of the African Weaver-birds (*Pyrenestes capitalbus*). It is quite possible that he might have obtained a skin of the latter bird during his mission to Ashantee, and afterwards confounded it with specimens procured in Madeira.

While, however, I quite agree with Dr. Coues that *Goniaphea* cannot be employed for the Rose-breasted Grosbeak, I do not think it necessary to reject *Hedymeles*, Cab. (1851), because Sundevall (Kongl. Vet. Ak. Förh. 1846) proposed to apply "*Hedymela*" to *Muscicapa atricapilla*, for which it is never used. Our excellent fellow-worker will forgive us, I trust, if we prefer Dr. Cabanis's "*Hedymeles*" to Dr. Coues's more recently proposed term "*Zamelodia*."—P. L. S.

Œstrelata jamaicensis (Bancroft).—Of this Petrel Mr. D. Morris, of the Botanical Department, Jamaica, writes as follows to 'Nature' (Dec. 15, 1881, vol. xxv. p. 151):—"During certain seasons of the year it is remarkable that this sea-bird should be found in holes under trees and in burrows on the Cinchona plantations and in the unfrequented woods of the Blue Mountain range, at elevations from 6000 feet to 7000 feet.

"The natural inference was that the birds make their

nests on these places. But, although careful search has been made during the last two years, and a reward offered for nests, eggs, or any signs of nidification, nothing whatever has been found in that direction. It is therefore very probable that the birds use these holes and burrows simply as resting-places during the day, whence they sally forth at night to their feeding-grounds at sea. The latter is distant only, as the Crow flies, about twelve or fourteen miles. The birds are found in their burrows chiefly during the months of November, December, January, and March. Sometimes two lie in one hole, and the dogs easily find them; but it has been noticed that the birds are always full-grown, and with no apparent nest. I have been led to send you these remarks in the hope that possibly some of your readers with a wider knowledge of the habits of Petrels might be able to give some clue as to the locality and general character of their nesting-places."

Loddigesia mirabilis.—At the Zoological Society's Meeting on the 15th of November last, Messrs. Taczanowski and Stolzmann's memoir on this most wonderful of Humming-birds was read, and a series of skins showing the different plumages of the adult male and female and young male was exhibited. The adult male of *Loddigesia* is stated by the authors to possess only four rectrices, the two conspicuous external feathers and a diminutive median pair. The long middle tail-feathers represented in Gould's figure of this species are, in reality, the middle pair of *under* tail-coverts. This tail-structure is quite unique in the class of Birds.

In 'The Times' of the 9th of July 1881 was announced the death of Dr. Hildebrandt, who has added so much to our ornithological knowledge of Eastern Africa. He had been driven back by the rains in an attempt to penetrate into the southern part of Madagascar; and his name must be added to the long list of those explorers who have fallen victims to their zeal in that unhealthy island. He died on the 29th of May 1881.

NOW READY.

SECOND ANNUAL REPORT

ON

THE MIGRATION OF BIRDS

ON

OUR BRITISH COASTS,

FOR

1880.

By Messrs.

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XV.—*Ornithological Notes made in the Straits Settlements and in the Western States of the Malay Peninsula.* By Lieut. H. R. Kelham, 74th Highlanders.

[Continued from p. 18, and concluded.]

Parra sinensis, Gm. The Pheasant-tailed Jacana.

Late one evening in the first week in May, while shooting near Saiyong Jheel, on the Perak river, I was stalking a flock of Teal which had gone down on some swampy ground bordering the water, when something white darted past, which, in the dark, I took to be a Goose Teal, so fired, but found that instead of a Teal I had killed a most beautiful specimen of this handsome bird, the only one I came across in the peninsula, though in India I believe it is far from rare.

It was a male in summer plumage; length 17½ inches, of which the tail of four long tapering black feathers measures 5½; irides brown; beak, legs, and toes plumbeous, the toes are very long and slender, and set like the spokes of a wheel, hind claw 1⅛ inch; underparts white, barred irregularly with black; a peculiar golden mane passes along the back of the neck; the back and scapulars are brown with a bright purple gloss; wings pure white, excepting the first primary, outer

webs of second and third, and borders round the ends of the secondaries, which are black; wing-feathers very lanceolate, the first primary has at its tip a peculiar filament, the fourth is very attenuated and pointed; wing-coverts barred with grey.

Porphyrio calvus, Vieill. The Purple Coot.

One afternoon, while Teal-shooting in Perak, I was wading about a jheel overgrown with weeds and aquatic plants, among which I shot a specimen, my only one, of this Coot.

Its plumage reminded me much of *Porphyrio cæruleus* of Europe; but it is smaller than that bird, also its beak and legs are not of such a bright red. It feeds principally on weeds and other green substances. The stomach of the one I shot was very muscular, and contained vegetable matter and a quantity of sand; but possibly they occasionally prey on the young of other birds, as their relation, *P. cæruleus*, which I shot in Sicily, had there the reputation of killing young wildfowl; also, when visiting Mr. Whampoa, a Chinese gentleman residing in Singapore, he showed me a very handsome pair of these Coots in his garden, but said he was obliged to confine them in a cage, as, when let loose, they killed his chickens.

My Perak specimen, a male, shot on 9th May 1877, was 17 inches in length; neck, throat, and upper parts of the breast pale greenish blue; back of neck and the abdomen deep purple; vent freckled with grey; under tail-coverts white; wing-coverts light blue; legs, beak, and frontal plate dull red; back and scapulars dark brown tinged with green and blue. Soon after death the beautiful blue of its plumage faded.

There were two of these Purple Coots in the Botanical Gardens, Singapore, also specimens in Raffles's Museum.

Gallicrex cristata (Lath.). The Crested Water-cock.

This Water-fowl is very plentiful, breeding among the jheels and reedy swamps of Western Malayana. Personally I never found a nest, but in Perak, during April, have shot males with the red frontal plate, assumed only during the breeding-

season, fully developed. The following is from my note-book:—

"Kwala Kangsar, Perak, 31st March, 1877. This evening, in a very wet paddy-swamp, I shot a bird uncommonly like a Coot (*Fulica atra*), except that its toes were very long, and without lobe, web, or any other aid to swimming; it flew with a heavy flapping flight close over the tops of the reeds. It was of black plumage, but a good deal marked with rusty brown; also it had a little white on its shoulders; irides dark brown; length 15 inches; claws long, very curved and sharp; legs yellowish green, as was the beak, which extended up the forehead in the form of a reddish frontal plate; so I take the bird to be a young male in breeding-plumage; in the adult the iris is crimson."

Again, in my notes I find:—

"Singapore, 22nd December, 1877. Today I got four couple of Snipe in the valley near Cluny, also shot a female specimen of the Water-cock (*G. cristata*), which Drake flushed out of a thick patch of reeds standing in water nearly two feet deep. Though at different times I have shot dozens of these birds, I never remember finding them anywhere but in very wet places; in Perak they were exceedingly plentiful on all the jheels, but kept to the thick reed-beds. During last spring I shot a great many on the jheels near Saiyong and Kota Lama, and found them very good eating, though in that respect not equal to the little Goose Teal.

"The great difference in size of the sexes of this bird is very noticeable: the female I shot today is 13 inches in length; irides dark brown; legs and beak dull green, the latter reddish at its base; head and the upper parts dark brown; the feathers of the back, also the tertiaries, broadly edged with pale brown; chin, throat, supercilia, outer web of first primary, and the shoulder white; underparts pale rufous brown, narrowly barred with dusky brown, particularly on the flanks."

The male is a larger bird, about 16 inches in length, and, when mature, has red irides and its plumage very dark.

In Singapore I once put up a Water-cock which flew a

short distance, then settled on the top of some bushes eight or ten feet above the ground, a most unusual thing for one of these birds to do. It looked most strangely out of place; so I shot it in order to be sure of its identity.

Erythra phœnicura (Penn.).

The White-breasted Water-hen, though by no means rare, is not very often seen, owing to its extreme shyness; it frequents thick covert near water. At Singapore I occasionally saw it in the hedge-rows near the lake in the Botanical Gardens.

During November 1879 I shot several specimens on Pulo-Battam; also during 1877 I got many in Perak and Larut. One of the Pulo-Battam birds was 12 inches in length; beak yellowish green, reddish on the ridge; legs dull green; tarsus 2¼; upper plumage dull bluish black with a slight green tinge; face, throat, and breast pure white; vent and under tail-coverts chestnut. This specimen, being immature, had the irides brown; in the adult they are deep crimson. I once saw one of these birds settle on the upper branches of some trees; but they were of no height, about ten or twelve feet at the outside.

Porzana cinerea, Vieill. The Small Water-Rail.

I never came across this Rail on the mainland; but on Singapore, in certain localities, notably the Mount-Echo valley, they were very plentiful, particularly during September and October; but perhaps being out Snipe-shooting a great deal during those months I noticed them more than at other times, when I did not pass so much time in their resorts.

My notes are as follows:—

"Singapore, 7th October, 1879. Passed the afternoon Snipe-shooting in the Mount-Echo valley, wading through the swampy grass-fields knee-deep in most horrible filth—the sewage of Singapore, which is carried out from the town in large wooden tubs by the Chinese coolies and emptied over the fields as manure. The smell is most disgusting; but the valley being capital collecting-ground, in spite of the deep wading and unsavoury odours, I frequently pay it a visit.

"Today I got some Snipe (*Gallinago stenura*), Bitterns (*Ardetta cinnamomea*), Golden Plover (*Charadrius fulvus*), and several small Rails (*Porzana cinerea*); these last were very plentiful in the deepest parts of the swamp, and nearly every bush held one. When flushed they flew with a weak flight, with their long legs trailing behind them, for about fifty yards, then dropped and ran for the nearest covert, from which it was not easy to get them up a second time.

"A female I dissected had the ovaries much developed, stomach very muscular, full of grass-seeds, a fine thread-like weed, and a quantity of sand.

"Length 7½ inches, tarsus 1½; irides red, orbits scarlet; legs yellowish green, soles yellow; beak yellowish green, orange at its base; upper parts, the wings, and tail dull brown, with a plumbeous tinge on the head and neck; under-parts, also a streak under and over the eyes, white; sides of the neck and breast bluish grey. Another I shot had the irides a reddish brown colour."

At sunset on any fine evening during September dozens of them were to be seen feeding out in the open on the swamps below Mount Echo, scuttling off in all directions directly they were disturbed.

Hypotænidia striata (Linn.).

This common Water-Rail is apparently more abundant in the south than in the north of the peninsula, as I did not meet with it in Perak, while in Singapore I found it, at all seasons, the most common of all the Rails. I got specimens every day I went Snipe-shooting, their favourite resorts being very wet swamps covered with low bushes.

A female I shot on Pulo Battam, on 30th September 1879, was 10 inches in length, tarsus 1¾; irides dark brown; beak fleshy red, dusky on culmen and tip; legs dull green. Its stomach contained a quantity of dark-green substance, among which I detected the fragments of insects and the shelly covering of a chrysalis of some sort.

Another female, shot in Singapore 30th September 1877, was slightly smaller than the above, in other respects similar.

Top of head, the nape, and a streak down each side of the neck chestnut, marked with black on the crown; the wings and upper parts olive-brown, covered with narrow wavy bars of white, edged with black; the chin and throat dull white; a streak below the eye, the sides of the neck, and the breast lead-grey; abdomen dull brownish grey, barred, particularly on the flanks, with white.

Rallina fasciata (Raffles).

This handsome Banded Rail is decidedly rare; I never shot one, and saw very few in the Malaccan collections. It can easily be identified by its richly banded plumage. It is smaller, also has the olive of the back more rufous than *Porzana ceylonica*.

Leptoptilus argala (Lath.).

The well-known Adjutant bird of Anglo-Indians is found along the Malayan coasts, but, I think, not so plentifully as the rather smaller and more darkly plumaged *L. javanicus*.

In August 1877 I saw several Adjutants on the mud at the mouth of the Moar river.

Leptoptilus javanicus (Horsf.). The Malay Adjutant.

Much more common in the Straits than the last-named species; both, however, there go by the name of "Adjutant bird." I found it plentiful on the mud-flats at the mouths of most of the rivers on the west coast, particularly about the bar at the entrance to the Larut river; but I never shot one, as on every occasion my baggage was much too limited to allow room for stowing away so bulky a bird.

It is easily tamed, and invaluable as a scavenger, particularly in a hot climate, where things do not improve by being kept. When quartered at Tanglin, every time I drove into Singapore I passed a pair of these Adjutants, which lived on the grass-plot at the roadside close to the town. They seemed very contented with their lot, never straying far away from one place, and were usually to be seen either perched on a railing, apparently buried in thought, or else gravely stalking along the edge of a tidal ditch bordering the road, on

the look-out for frogs, fish, or pieces of offal that might come drifting down the stream. My dog frequently used to rush and bark at them, when they put themselves into the most absurd attitudes, if very closely assailed bending forwards with their wings upraised, necks extended, and enormous bills wide open, presenting a most grotesque appearance.

The detachment of my regiment stationed at Penang bought a pair of these Adjutants from a Malay, and kept them on the race-course just outside the Mess. The following account of the birds, their manners and customs, is given me by an officer of the detachment, who watched them daily:—

"In June 1877, when at Penang, S. S., B—— purchased, for the sum of three or four dollars, two Adjutant birds of a black and white colour; head and bill of a yellowish colour, as was also the neck; their bills were nearly a foot in length; they possessed but very few feathers on the head and neck—in fact, only a few sprouting hairs; their backs and wings were of a greenish black, and their breasts of a dirty white colour. The birds stood about three feet in height.

"They were never kept in confinement, and from the very first were allowed to roam over a large open expanse of ground [illegible] inclined to stray far, and very seldom even [illegible] to fly; and when they did it was rather a failure, and consisted of a succession [illegible] for about fifty yards, after which they appeared to be [illegible].

"They were very curious birds to watch, [illegible] gave one the idea that the surroundings had but little attraction for them, as they would spend more than half the day standing motionless opposite each other, bill to bill, and with both wings outspread, forming a most ludicrous picture; sometimes they would stand like this for an hour or more; but occasionally one of them raised and stretched out one of its legs as if it were stiff; otherwise they would scarcely move a muscle. I do not remember ever hearing either of them utter a sound, though we often listened.

"They were very coarse feeders, and did not consider much before they fed, either as regards quality or quantity. On

one occasion I threw to one of them, as fast as I could, one by one, several small fish about six inches in length; these he gulped down to the number of thirty-two, and even then did not appear satisfied.

"After they had been with us about a month, one morning one of them looked rather sorry for itself, and basked in the sun with outspread wings for several hours; but later in the day he lay down on the grass with his eyes closed, evidently very sick; by him stood his brother, quite unconcerned, and, as it seemed to us (for we watched him closely), unaware of any thing unusual being the matter. They remained like this till late in the afternoon, when we saw the healthy bird put his head on one side, and, looking inquisitively at his sick comrade, proceed to stir him up with his beak, but without making him move; and on going out we found him to be dead. To discover the cause of death a post-mortem was decided on; and B—— and myself set to work at once, and found in the bird's stomach, which was much inflamed, the legs and claws of a large Fowl, quite undigested, and probably the cause of its decease.

"The amusing part of the post-mortem was that the surviving bird stood close by to see us cut up his brother, and evidently with much pleasure; for he eagerly watched us slice off great lumps of meat, and was delighted when they were thrown to him, gobbling them up in no time; after a good meal he stalked away, very well satisfied with the afternoon's performance, apparently thinking what a pity it was he had not a brother dying every day."

ARDEA SUMATRANA. The Malay Purple Heron.

Plentiful in the jheels and paddy-swamps in Perak, particularly during April, when I found them in great numbers among the reeds of the large jheel near Saiyong; as I waded about I used to see them, with their long necks stretched out and heads raised above the reeds, most intently watching my movements.

They were rather wary, though when flushed they generally flew but a short distance, and settled on the upper branches

of some large trees bordering the jheel; then, under cover of the jungle, they were easily stalked. They reminded me much of *A. purpurea*, the European Purple Heron, except that they were not nearly so richly coloured as that bird. An immature female, which I shot at Kota Lama jheel, Perak, on 5th April 1877, measured about thirty-six inches in length, bill at front $4\frac{3}{4}$, tarsus 5; crown of head dull bluish grey; chin and throat white; face and neck rufous brown, the latter spotted longitudinally with dark brown; upper parts dull brown, the feathers edged with rufous brown and slightly glossed with purple and green; tail and wings slate-grey; wing-coverts ashy, with pale rufous edges to the feathers; abdomen yellowish white. It had been feeding on small fishes.

Herodias garzetta (Linn.).

I frequently met with this Egret among the swamps in Singapore, generally in flocks of from fifteen to thirty.

My notes record:—

"Singapore, 21st October, 1880. Today, while shooting Snipe in the swamp behind the barracks, I put up a party of twenty white Egrets, and, as they passed overhead, brought down one of them, a fine specimen of *H. garzetta*, in pure white plumage, but of course, at this time of the year, without the crest and the dorsal and pectoral plumes of the breeding-season.

"In length it is 24 inches, bill at front $3\frac{1}{6}$, tarsus 4; legs black, blotched with green; toes green; soles yellow."

Buphus coromandus (Bodd.).

The Cattle-Egret is very plentiful throughout the Malay peninsula; the following are some of the many references to it in my note-book:—

"Kwala Kangsar, Perak, 17th February, 1877. Buff-backed Herons are very common here; wherever there are many buffaloes large flocks of them are always to be seen, either walking about among the animals' legs, or else perched on their backs picking out ticks and other vermin. This afternoon, close to Kota Lama, I shot a female specimen:

length 19½ inches, beak at front 2¼, tarsus 3½; plumage white, with the exception of a faint buff tinge on the head and nape; irides yellow; legs black; beak reddish yellow; in short, the bird was in almost perfect non-breeding plumage, though another, which I shot out of the same flock, shows traces of the buff back. Every evening at dusk a large flock of these Egrets fly across the river and roost in a clump of trees exactly opposite our camp."

"Singapore, 4th November, 1880. Leaving Tanglin directly after tiffin, I followed a jungle-path for a mile or two till it brought me out on an open swamp, a branch of the Mount-Echo valley. Quietly parting the bushes, I looked out into the open, and found myself quite close to a large flock of Cattle-Egrets, which, unaware of my presence, were stalking about the swamp picking up larvæ and aquatic insects. After watching them for several minutes, I stepped out from my hiding-place and, as they rose, brought down a couple. The birds were so confused at my suddenly and so unexpectedly appearing almost in their midst, that they flapped about in all directions, not knowing which way to go, and gave me easy shots. One, struck by a single pellet, which grazed the top of its head, seemed to be completely dazed, and, though in other respects untouched, made no attempt to fly away, nor even to walk, but stood bolt upright, quite motionless, and stared vacantly at me in a most idiotic manner; I suppose it was suffering from concussion of the brain.

"Both of the birds I shot were in pure white plumage, except a slight tinge of buff on the head; the beak was orange, at front 2¼ inches; orbital skin greenish yellow; irides yellow; legs black tinged with green, soles green; tarsus 3 5/12 inches. Their stomachs contained large spiders, several grasshoppers, dragonflies, and small insects."

"Kwala Kangsar, Perak, 8th April, 1877. Today I shot in the country round Saiyong, and on the large jheel saw several Herons (*Ardea sumatrana*), a few Teal, and literally hundreds of Cattle-Egrets; the last are becoming of a ruddy brown colour on the head, neck, and breast, a sure sign of the approach of the breeding-season."

Butorides javanicus, Horsf.

Common, I got several in Perak. For many weeks one resorted daily to the river-bank just below our camp at Kwala Kangsar, and I often watched it fishing; at length, doubtless thinking itself in a dangerous neighbourhood, it took itself off to other grounds.

I also found this species plentiful among the islands of the Singapore archipelago; in my notes, in a description of a trip to Pulo Mongsa, is the following:—

"23rd September, 1880. . . . . I found Pulo Mongsa to be about half a mile long by less than a hundred yards wide, thickly wooded, but fringed with a broad coral reef, at low tide of considerable width. Near its shores were long rows of fishing-stakes projecting some feet out of the water, on which sat hundreds of small green Herons (*Butorides javanicus*). On our approach they rose in regular flocks; and, so as to be certain what they were, I shot three or four. They flew very close to the surface of the water."

Ardetta flavicollis (Lath.). The Black Bittern.

Personally I never shot this handsome Bittern in the Malay States; but I saw skins in Malaccan collections. I killed one or two in the neighbourhood of the Canton river, South China, where I found them in thick reeds and not easily flushed.

Ardetta cinnamomea (Gm.). The Chestnut Bittern.

I found this small Chestnut Bittern plentiful in Singapore, and also on the mainland, and shot many specimens in Perak, Larut, Province Wellesley, and Malacca, generally flushing them in paddy-fields.

A female, which I shot at Singapore on 30th September 1877, was about 14 inches in length, bill at front $1\frac{1}{2}$, tarsus $1\frac{1}{4}$; irides yellow; bill pale greenish yellow, dusky on the ridge; soles pale yellow; upper parts and the tail ruddy chestnut, but much variegated, many of the feathers of the wing-coverts and back being brown with pale yellowish margins; top of head dusky; chin whitish; pectoral gorget of ruddy yellowish-brown feathers with dark-

brown central streaks; under surface of the wings ash-grey with a delicate pink tinge.

Undoubtedly this was a young bird, being of such mottled plumage; moreover it was of much smaller dimensions than an adult, at least according to Jerdon's description.

Another specimen, which I shot during May in the neighbourhood of Kwala Kangsar, Perak, was of an almost uniform chestnut-colour as regards its upper parts, but brightest on the wings and tail, and becoming brown on the back; the top of the head had a dusky tinge; underparts yellowish white; pectoral gorget boldly marked with longitudinal reddish-brown streaks; under surface of the wings delicate pink-grey; bill at front 2 inches, in colour yellow, the ridge dusky; legs greenish yellow; irides bright yellow, orbital region green.

Ardetta sinensis (Gm.).

Certainly not so common as *A. cinnamomea*, still by no means rare in reedy swamps and wet paddy-fields. It is easily distinguished from *A. cinnamomea* by its wing-quills and tail being deep blue-black instead of chestnut.

One which I shot at Singapore on 12th November, 1880, measured 15 inches in length, tarsus $1\frac{3}{4}$; irides yellow; legs and beak pale yellowish green, the latter dusky on its ridge; beak at front $2\frac{1}{8}$ inches.

Another, from Kota Lama, Perak, 22nd March, 1877, was of similar dimensions; top of head, the wing-quills, and tail black; face and the upper parts cinnamon-red, brightest on the back of the neck; wing-coverts pale yellowish brown; underparts pale yellowish white.

Goisakius melanolophus (Raffles). The Tiger Bittern.

I only once met with this magnificent Bittern, getting a single specimen, a female, near Changie, Singapore.

Length about 20 inches, beak at front 2, tarsus $2\frac{7}{12}$; top of head and pointed crest, passing over the nape, bluish black; tail brownish black; rest of the plumage chestnut, brightest on the face and sides of neck; the back and wing-coverts freckled with wavy black lines; pectoral plumes creamy

brown, dashed with black and chestnut streaks; the abdomen and vent chestnut, richly marked with irregular black and white bars; under tail-coverts white, irregularly marked with dark brown; wing-quills bluish black, the terminal portions chestnut, and the extreme tips whitish.

Dendrocygna javanica (Sykes). The Whistling Teal.

This bird may be called the Duck of the Malayan peninsula. Though a migrant, it is found at certain seasons throughout all the Malay States; and I do not believe its breeding-grounds can be far north of lat. 5° N., as the migration from the lower or southern half of the peninsula does not take place until late in June, and a few months later the birds are back again. During the winter months, or, to speak more correctly, during the north-east monsoon, these Ducks collect in large flocks on the jheels and flooded paddy-fields. In Perak I found them particularly partial to small weedy lakes surrounded by thick jungle; and at one of these, near Saiyong, I used to see them literally in hundreds from February to April; but towards the end of the following month they got very restless, and by the middle of June most of them had disappeared, probably having gone north to breed.

I think there is little doubt that some few remain to nest near the banks of the Perak river, in the vicinity of Kwala Kangsar, as at the end of June, after the main body had left, I occasionally came across stragglers in the ruddy breeding-plumage. Moreover Mr. Hugh Low, H.B.M.'s Resident at Perak, told me that the natives brought into Kwala Kangsar young birds but a few weeks old, assuring him that they had been caught in the neighbourhood. This happened in January or February; so I suppose the birds breed from August or September till early in the year—that is, during the rainy season.

One cannot base conclusions on the habits of semidomesticated individuals; but it is worthy of notice that several of these Whistling Teal which, a few years ago, were turned out with clipped wings on the artificial lake in the Botanical Gardens at Singapore, though, having perfectly recovered the

their wings, they daily fly about the island in search of food, still do not migrate, but remain and breed, and during September I saw several young ones swimming about with their parents. There is but little, if any, difference in the plumage of the sexes, and very slight seasonal change, though towards July specimens I shot were certainly more ruddy than earlier in the year.

During the heat of the day the Whistling Teal keep principally on the jheels, among thick reeds, and seem particularly fond of the small open pieces of water shut in by high rushes which are found in all large reed-beds. This makes them fairly easy to get at; and on several occasions, by wading quietly through the water, waist deep, the reeds concealing my head and shoulders, I came on them unawares and killed several at a shot—a great addition to one's larder in a country where fresh meat was not to be got every day.

When on open water I found them by no means easy to stalk; and even in places where I much doubt if a gun had ever been fired and they were but little disturbed, after one or two afternoons' shooting they became exceedingly wild and difficult to get near. The Malay bird can be easily distinguished from the other species of *Dendrocygna* by its small size; out of the dozens which I shot at different times I do not think one ever exceeded 17 inches in length.

A male shot at Kota Lama, Perak, on 17th February 1877, was 16 inches in length; irides dark brown, orbits bright yellow; legs and beak bluish black; head and neck dull brown, the former dark on the crown; chin whitish; underparts ruddy brown, except the vent and under tail-coverts, which were whitish; wings black; lesser coverts and the upper tail-coverts rich chestnut; back dusky black, each feather terminating with a broad band of rusty brown.

Nettapus coromandelianus (Gm.). The White-bodied Goose Teal.

The beautiful, and most appropriately named, little Goose-Teal is exceedingly plentiful among the jheels and swamps of the mainland; but I never met with it on Singapore or any of

the islands along the coast. In many respects it is very Anserine, whence its name, having the short high bill, pure white colouring, and hoarse cry of the Goose tribe.

The Goose Teal is generally found in small parties of from four to ten, often associating with the Whistling Teal; and I have on several occasions got specimens of both species at one shot.

They seem to prefer open sheets of shallow water to thick cover, but on being disturbed become very shy and retire to quiet creeks or back waters surrounded by jungle. Though I often found them on flooded meadows, I rarely (in fact do not think I ever) saw them actually on dry land. Their legs are so short and set so far back that probably they seldon attempt to walk, but on the water are quite at home, swimming and diving exceedingly well, and when slightly wounded are very hard to secure.

I remember once trying for nearly half an hour to catch a Goose Teal which fell winged into a shallow pool. It stayed under water a marvellous length of time at each dive, and when it did rise to the surface showed only its head, disappearing again the instant I moved; but at length I tired it out and consigned it to the bag. These birds also have the power of sinking their bodies below the water till nothing but their head is visible, hoping thus to escape notice.

One evening in Perak, while out bird-hunting, I came upon a small pool completely excluded from the outer world by the most luxuriantly growing jungle. From the overhanging trees long slender creepers hung down in tangled masses to the surface of the water, which was almost covered with aquatic plants. To complete this beautiful piece of jungle-scenery, in the centre of the pool was a Goose Teal, perfectly motionless; for, quietly as I had approached, it had heard me, and, thinking it was unobserved, did not rise, but, all the time intently watching my movements, slowly and noiselessly sank under the water till nothing but its head remained above the surface.

When on the wing, the flight of these birds is very rapid.

Skimming close over the reeds, they dodge along at use of a great pace, and are far from easy to shoot.

They breed in holes in trees, laying several white eggs. I was unable to find a nest, but think they breed in the north of the Malay peninsula, as near Kwala Kangsar I noticed that during June they paired and, leaving the open water, retired to out-of-the-way places in the jungle, often selecting the narrow creeks or inlets from a large jheel.

Concerning the mode in which these birds, Cotton-Teal as they are called in India, carry their young down from their nests to the water, I had the following related to me by an eye-witness, an officer in the Indian Civil Service. He was stationed on the Madras coast; but I forget the exact name of the place. Anyhow, one afternoon, late in June, while out riding he saw a Cotton-Teal leave a tree and fly down to a pool of water which was near; the bird's peculiar flight, slow and steady, so different from their usual rapid mode of progression, attracted his attention; and riding closer, he saw it had something resting on its back, which, on its reaching the water, proved to be three or four young Teal.

My informant then sent his native servant up the tree from which the bird flew; and at about twenty feet from the ground he found the nest, containing several more young birds, which he brought down; and my friend took them home, hoping to rear them in his poultry-yard; but in a short time they sickened and died.

Specimens shot in Perak during May had their legs black, but much tinged with yellowish green, which is the case, I believe, only during the breeding-season. The difference between the plumages of the sexes is very marked, the female being of much duller colours than the male.

The following specimens I shot in Perak during April 1877:—

Male. Length 12½ to 13 inches; irides crimson; legs and feet greenish yellow tinged with black, webs black; face, neck, and whole of the underparts pure glossy white; a deep-black ring encircles the neck; top of head dark brown; back and wings beautiful metallic green with a rich purple tinge;

primaries barred, and the secondaries tipped with white, thus forming a band across the wing; flanks and tail-coverts vermiculated with grey lines, like a Wigeon's back; tail greenish brown; vent black.

The *female* is of the same size as the male, but not nearly so boldly marked; its irides are dark brown; bill yellowish black; the secondaries only are marked with white; face and neck grey; breast barred with narrow black lines; underparts dirty white; top of head dull brown, with a purple gloss.

I dissected both these birds: their stomachs were exceedingly muscular, contained weed and vegetable matter, also a quantity of sand and particles of quartz.

STERNA BERGII, Licht.

I shot several of these Terns in the Straits of Johore and off the south coast of Singapore. During September, while steaming to Pulo Mongsa, several flocks passed close to our launch. They flew close to the surface of the sea and in extended order, like a line of skirmishers; all the flocks were making in the same direction; and it was about three in the afternoon: so perhaps they were on their way to some place in which to pass the night.

One shot near Johore on 13th April was from 17 to 18 inches in length, bill at front $2\frac{1}{4}$, tarsus $1\frac{1}{2}$; irides dark brown; bill pale yellowish green; legs black; upper parts mottled all over with French grey and dusky brown; head and nape black, the feathers of the crown edged with white; forehead, underparts, inner portions of the inner webs of the primaries, and tail-feathers white.

I think this must have been an immature bird; others I shot had the legs green blotched with black.

STERNA SEENA, Sykes.

During May 1879 I got one of these Terns alive, it having been caught by a fisherman on the shore near Malacca. It was a female, length 16 to 17 inches, bill at front $2\frac{1}{2}$, tarsus 1, bill from gape 3, in colour bright yellow; irides dark brown; head and pointed crest over the nape deep blue-black; the

the breast and back; belly pure white; wings and tail black tinged with green; wing-coverts brown, the feathers having whitish margins; middle claw pectinated. The bird had a very rank fishy smell.

Graculus carbo, Linn. The Common Cormorant.

On 29th May, 1877, while returning down stream to Kwala Kangsar, after a few days' shooting on the upper reaches of the Perak river, I shot what I believe to be a specimen of the Common Cormorant.

In my notes I have written:—

"Soon after daylight, as we were drifting with the stream past the village of Enggar, loud exclamations from my Malay boatmen drew my attention to two large birds which were walking about side by side on a sandbank in the middle of the river. Steering within shot, I fired from beneath the attap roof covering the canoe and killed one of them, and, wading to the bank, found I had got a fine Cormorant, the first I have seen in this part of the country. It was not quite dead when I reached it, and whilst flapping about on the sand disgorged four or five small fishes. It was a female, length 34 inches, tarsus $2\frac{1}{4}$, middle toe with claw $3\frac{1}{2}$; irides pale green; beak at front $2\frac{7}{16}$, in colour dirty white, black on the ridge; gular pouch bright yellow; head, back of neck, wings, back, and tail rich bronze slightly tinged with green, and having the feathers of the upper part of the back, also the scapulars and the wing-coverts, edged with black; lower back and sides of abdomen uniform dark greenish-bronze colour; face, front of neck, breast, and middle of the abdomen white, much mottled and streaked with brownish black.

Plotus melanogaster (Gm.). The Indian Snake-bird.

I got one of these curious birds, looking like a cross between a Heron and a Cormorant, at Malacca; it was shot in April, out of a party of ten or fifteen, on some pools at Kassang, a marshy district in the neighbourhood of the settlement. The local bird-collectors did not seem to be familiar with it; so probably it is rare in that part of the country; but further north, in Perak, I met with it on several occasions,

cheeks, a band across the upper part of the back, and all the underparts white, slightly dusky on the breast; upper parts delicate French grey, very silvery on the wings; inner portions of the inner webs of wing-quills white; tail very deeply forked.

I got other specimens near Singapore during September and October.

Sterna sumatrana, Raffl. The Black-naped Tern.

Common among the islands at the south of the peninsula. A specimen shot in the Johore Strait late in September was a male, length 13½ inches, beak at front 1½; irides dark brown; beak and legs black; tail very long and forked, the two outer feathers projecting 1½ inch beyond the others; top of head, also the face, silvery white; a black streak passes from the beak through the eye, and enlarges into a broad patch on the nape; upper parts, tail, and wings pale French grey; outer web of first primary black; underparts glossy white delicately tinged with a most beautiful rosy hue. Its stomach contained small fishes.

Sula australis (?).

In June 1877 I saw several Gannets sitting on some drifting tree-trunks a few miles out to sea off the mouth of the Perak river.

Attagen minor (Gm.). The Frigate-bird.

On 23rd September, 1880, I got an immature Frigate-bird on Pulo Nongso, about ten miles off the south coast of Singapore; I believe it to be the only specimen recorded as having been obtained in the Straits.

With some friends I was shooting green Pigeons as they came at dusk to roost on the island. Shortly after sunset, while waiting for the Pigeons, we saw a large bird flying towards the shore, and sailing along close over the surface of the sea. As it passed near one of our party, he brought it down. Length about 30 inches; beak and gullet pale bluish white; feet webbed and of a dull fleshy white; head, neck, and throat white, mottled with umber-brown, becoming dark brown on

the breast and back; belly pure white; wings and tail black tinged with green; wing-coverts brown, the feathers having whitish margins; middle claw pectinated. The bird had a very rank fishy smell.

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though I never saw more than two or three of them together. Its chief characteristics are the long snake-like neck and the beautifully marked black and silver scapulars.

XVI.—*Notes on the Birds of Astrakhan.*

By Henry Seebohm.

When I was in Dresden in the summer of 1881, with Dr. Sclater and Mr. Forbes, I made a great ornithological discovery. Herr Hofrath Dr. Meyer, with his accustomed felicity in pointing out to each visitor of the Museum whatever is of special individual interest, introduced me to Herr K. G. Henke, the ornithologist who accompanied Baron Hoffmannsegg to the valley of the Petchora about twenty to twenty-five years ago. When I told him what trouble Harvie-Brown and I took to find him out in 1875, he accounted for our failure by explaining that he was then living in Astrakhan, where he had resided for eight years. He devoted the whole of his time to collecting objects of natural history, principally ornithological, and disposed of many of his duplicates through the well-known dealer Herr Schlüter of Halle, from whom many very interesting skins and eggs of birds have been received by ornithologists in England and elsewhere, labelled "Untere Volga" and "Kirgische Steppen." Most, if not all, of these were collected by Henke, those from the former locality having been obtained in the delta of the Volga south of Astrakhan, and those from the latter locality on the great salt marshes lying between the Volga and the Ural rivers.

Henke's collection ought to be visited by every ornithologist interested in the birds of the Palæarctic Region. Two or three hours' railway journey from Dresden, through some of the finest scenery of "Saxon Switzerland," brings you to the little town of Sebnitz, whence you can walk (or, if you are lazy, drive in a cab) four miles to Saupsdorf, where Henke lives. Sixpence will admit you to a most charming little museum, full of birds and other objects of interest, principally from Astrakhan and Archangel.

The following particulars respecting the birds of Astrakhan were given me by Henke. Many of the facts have been already published, having been furnished by Henke to M. Jacobleff, who wrote a paper (unfortunately in the Russian language) for the 'Proceedings' of the Moscow Natural-History Society in 1873. But many of Henke's later discoveries are new; and all of them will doubtless be of great interest to English ornithologists.

VULTUR PERCNOPTERUS.

Henke never saw the Egyptian Vultur near Astrakhan; but an example was obtained at Sarepta in 1868.

VULTUR FULVUS.

Henke never met with the Griffon Vulture near Astrakhan; but, according to Evêrsmann, sixteen examples were seen below Sarepta in 1867. This species breeds in the Caucasus (*fide* Bogdanoff) and in the Ural Mountains (*fide* Sabanäeff), but appears to be only an accidental visitor to the steppes.

AQUILA CHRYSAETUS.

The Golden Eagle is occasionally found near Astrakhan, both in summer and winter.

AQUILA IMPERIALIS.

The western form of the Imperial Eagle is somewhat rare near Astrakhan. On the delta it breeds on the willow trees; but in the steppes it makes its nest on the ground. It is occasionally seen in winter.

AQUILA NÆVIA.

The Lesser Spotted Eagle passes through the valley of the Lower Volga on migration in spring and autumn.

AQUILA CLANGA.

The Greater Spotted Eagle is somewhat rare on the Kirghiz steppes east of the Volga, but is commoner on the Kalmuk steppes to the west of that river.

AQUILA BIFASCIATA.

The Steppe-Eagle is very common on the Kirghiz steppes, especially on the banks of the salt marshes, where it builds a

nest two feet high on the hilly banks of the rivers, on forsaken earth huts and on haycocks and hayricks.

AQUILA RAPAX.

Henke obtained an example of the Tawny Eagle near Astrakhan; and several have occurred at Sarepta.

AQUILA BONELLII.

Henke did not see Bonelli's Eagle; but an example has been obtained near Sarepta.

AQUILA LAGOPUS.

The Rough-legged Buzzard is very common in winter near Astrakhan. This bird is undoubtedly an Eagle, and not a Buzzard.

HALIAETUS ALBICILLA.

The White-tailed Eagle is very common all the year round. It builds on very high willow trees, and lays from one to three eggs, frequently slightly spotted.

HALIAETUS LEUCORYPHUS.

Pallas's Sea-Eagle is occasionally found on the steppes, where it breeds on the ground. On the banks of the Volga it builds on the willows.

CIRCAETUS GALLICUS.

Henke did not observe the Short-toed Eagle near the Volga, but occasionally saw it on the steppes.

PANDION HALIAETUS.

The Osprey is very common in summer on the delta of the Volga.

BUTEO VULGARIS.

Henke never met with the Common Buzzard near Astrakhan; but it is occasionally observed on migration at Sarepta in spring and autumn.

BUTEO DESERTORUM.

The African Buzzard occasionally breeds near Astrakhan.

BUTEO FEROX.

The Long-tailed Buzzard is rare in the Kirghiz steppes, but is commoner west of the Volga.

MILVUS MIGRANS.

The Black Kite is extremely common in the valley of the Lower Volga in summer.

MILVUS REGALIS.

Henke did not meet with the Common Kite, though Eversmann records it from the Lower Volga.

PERNIS APIVORUS.

Henke did not meet with the Honey-Buzzard; but it has been seen on migration at Sarepta.

ACCIPITER PALUMBARIUS.

The Goshawk passes Astrakhan on the spring and autumn migration, and is occasionally seen there during winter.

ACCIPITER NISUS.

The Sparrow-hawk is never seen near Astrakhan in summer, but is very common on the autumn migration.

ACCIPITER BREVIPES.

The Levant Sparrow-hawk is occasionally found breeding in the poplars in the vineyards near Astrakhan, but does not remain in the winter.

FALCO LANARIUS.

The Lanner builds its nest on high trees in the valley of the Lower Volga. It is most common north of Astrakhan. Not seen in winter.

FALCO PEREGRINUS.

The Peregrine Falcon passes through the valley of the Lower Volga on migration in spring and autumn; and a few remain during the winter.

FALCO SUBBUTEO.

The Hobby is not uncommon near Astrakhan. It is a late breeder, frequently having eggs in June. It leaves in autumn.

FALCO ÆSALON.

The Merlin is only seen during winter.

Falco vespertinus.

The Orange-legged Hobby is rare; but Henke occasionally found it breeding above Astrakhan.

Falco tinnunculus.

The Kestrel is very common near Astrakhan; and a few remain through the winter.

Falco cenchris.

The Lesser Kestrel breeds in the Kirghiz steppes on the mosques and tombstones, and in the rush-covered graves of the Kirghiz; but it is not seen during the short sharp winter.

Circus cyaneus.

The Hen-Harrier breeds in the steppes, and is very common in Astrakhan in winter.

Circus pallidus.

The Pallid Harrier is not so common as the preceding; but a few are found all the year round.

Circus cinerascens.

Montagu's Harrier breeds in the steppes, but is rare at all seasons of the year, especially in winter.

Circus rufus.

The Marsh-Harrier is very common, but does not winter.

Nyctea scandiaca.

The Snowy Owl only appears occasionally in hard winters.

Asio tengmalmi.

Henke did not meet with Tengmalm's Owl; but an example was once obtained near Sarepta.

Asio aluco.

The Tawny Owl is a very common resident.

Asio brachyotus.

The Short-eared Owl is very common in summer; and a few may be seen in winter.

Asio otus.

The Long-eared Owl is a very common resident.

Bubo maximus.

The Great Horned Owl is a very common resident. In the steppes it breeds in holes in banks.

Scops giu.

The Scops Owl is a very rare resident.

Picus martius.

The Black Woodpecker is occasionally found in winter in the neighbourhood of Astrakhan.

Picus viridis.

Henke did not meet with the Green Woodpecker; but it occasionally occurs near Sarepta.

Picus canus.

The Grey-headed Green Woodpecker has been found near Sarepta; but Henke did not meet with it near Astrakhan.

Picus major.

The Greater Spotted Woodpecker is a very common resident near Astrakhan.

Picus leuconotus.

The White-backed Woodpecker is found at Sarepta, but was not met with by Henke.

Iynx torquilla.

The Wryneck is occasionally found near Astrakhan in spring.

Cuculus canorus.

The Cuckoo is very common in summer; but Henke never found its eggs on the steppes.

Alcedo ispida.

The Kingfisher is a not uncommon resident near Astrakhan.

Ceryle rudis.

The Pied Kingfisher has twice been obtained in winter near Sarepta.

Merops apiaster.

The Bee-eater is very common in summer.

Merops persica.

Six examples of the Persian Bee-eater were once obtained at the mouth of the Volga late in May.

Coracias garrulus.

The Roller is a very common summer visitor.

Upupa epops.

The Hoopoe is a very common summer visitor, especially on the Kirghiz steppes.

Caprimulgus europæus.

The Goatsucker is very common on migration in spring and autumn, and is occasionally found breeding in the Kirghiz steppes.

Cypselus apus.

The Swift is not found in Astrakhan. Henke once met with it during the breeding-season at Bogde, in the Kirghiz steppes, and occasionally on migration at the mouth of the Volga.

Cotile riparia.

The Sand-Martin is a very common summer visitor.

Hirundo urbica.

The House-Martin is not so common as the preceding, and is not seen in the steppes.

Hirundo rustica.

The Barn-Swallow is a very common summer visitor, especially in the steppes.

Butalis grisola.

The Spotted Flycatcher is a very rare summer visitor.

Lanius excubitor.

The Great Grey Shrike is a winter visitor.

Lanius minor.

The Lesser Grey Shrike is a very common summer visitor.

Lanius collurio.

The Red-backed Shrike is very common during the periods of migration. A few remain to breed.

SAXICOLA ŒNANTHE.

The Wheatear occasionally breeds near Astrakhan, and in great numbers on the steppes.

SAXICOLA ISABELLINA.

The Isabelline Chat is a very common summer visitor.

SAXICOLA MORIO.

The Siberian Pied Chat is a very rare summer visitor in the neighbourhood of Astrakhan, but is much commoner on the steppes.

PRATINCOLA RUBICOLA.

The Stonechat breeds near Astrakhan, but is not very common.

PRATINCOLA RUBETRA.

The Whinchat is a rare visitor on the spring and autumn migration.

ERITHACUS PHILOMELA.

The Eastern Nightingale is very common on the spring migration, and is said to breed north of Astrakhan.

ERITHACUS LUSCINIA.

The Western Nightingale was only once obtained by Henke.

ERITHACUS RUBECULA.

The Robin is a somewhat rare visitor on the spring and autumn migrations, and is occasionally found in winter.

ERITHACUS CÆRULECULA.

The Arctic Blue-throated Robin passes through Astrakhan on migration, and breeds in great numbers on the Kirghiz steppes.

RUTICILLA PHŒNICURUS.

The Common Redstart passes through in great numbers on migration; and a few remain to breed in the Kirghiz steppes.

SYLVIA NISORIA.

The Barred Warbler is occasionally shot in spring on the Kirghiz steppes.

Sylvia hortensis.

The Garden Warbler is frequently shot in spring on the Kirghiz steppes.

Sylvia cinerea.

The Whitethroat is a rare summer visitor to the Kirghiz steppes.

Sylvia curruca.

The European form of the Lesser Whitethroat passes through on migration.

Sylvia affinis.

The Siberian form of the Lesser Whitethroat breeds in great numbers on the Kirghiz steppes. The nest is often placed on the ground, seldom more than a foot above it. A favourite situation is in brambles. Henke says that the song is quite different from that of our Lesser Whitethroat, and remarks that when alarmed it makes a nasal note, like a Tit.

Acrocephalus turdoides.

The Great Reed-Warbler is a common summer visitor, breeding in numbers among the reeds on the delta of the Volga.

Acrocephalus streperus.

The Reed-Warbler is common in summer wherever reeds are found.

Acrocephalus palustris.

The Marsh-Warbler is a not uncommon summer visitor, and generally builds its nest in brambles.

Acrocephalus agricola.

Jerdon's Reed-Warbler is very abundant near Astrakhan, and especially so in the Kirghiz steppes in summer. It breeds in the reeds, and makes a nest very similar to that of our Reed-Warbler. Henke gave me a clutch of five eggs, taken in the Kirghiz steppes in July 1876. In size they come nearest to eggs of the Dartford Warbler; but the ground-colour is pale brown, spotted almost all over with both large

bold blotches and very small spots of dark brown, and also with underlying paler brown blotches and spots, which are scarcely darker than the ground-colour. In full breeding-plumage the birds are very neutral brown (neither russet nor olive) above, and very white below.

ACROCEPHALUS PHRAGMITIS.

The Sedge-Warbler is a very common summer visitor, and generally builds in brambles.

LOCUSTELLA FLUVIATILIS.

The River Grasshopper Warbler is very common near Astrakhan on migration, especially in spring.

LOCUSTELLA LUSCINIOIDES.

Savi's Grasshopper Warbler is stated by Henke to be rare near Astrakhan, but very common in summer in the delta of the Volga. The only example in his collection is in the plumage described by Severtzoff as *Cettia fulva*, in which the upper parts are more olive-brown than russet-brown, and which I take to be the plumage of birds of the year.

LUSCINIOLA MELANOPOGON.

The Moustached Grass-Warbler is a very common resident in the delta of the Volga, though somewhat local. It breeds early in April. A very beautiful nest in Henke's collection is admirably concealed amongst the roots of the reeds. It is composed of flat grasses and roots. The eggs resemble those of the Sedge-Warbler, but have a somewhat greener ground-colour. They are minutely spotted all over with brown.

CETTIA SERICEA.

Cetti's Bush-Warbler is not found on the steppes, but is exceedingly common near Astrakhan. Its favourite nesting-place is in brambles. It is occasionally seen during winter. Henke's examples belong to the large pale form, to which Severtzoff gave the name of *Cettia albiventris*, and Hume the name of *Cettia stoliczkæ*. This may only be a local race; but it is possible that further researches may prove its right to stand as a good species.

Hypolais caligata.

The Booted Tree-Warbler is a very common summer visitor to the Kirghiz steppes. Its favourite breeding-place is in sedges; but in localities where water-plants are not found it builds in willow bushes, in brambles, and even in dry hedges of sticks and fences, also in reeds near the ground, and is especially fond of wild-rose bushes. The song of the male is sometimes like that of a Grasshopper Warbler and sometimes like that of a Willow-Warbler. The eggs are smaller than those of the Grecian bird, and more spotted, sometimes also streaked. In ground-colour some are French grey, like the Grecian bird; but others are more salmon-coloured, like the eggs of *H. polyglotta*.

Hypolais icterina.

The Icterine Tree-Warbler is occasionally found on the Kirghiz steppes in summer.

Phylloscopus trochilus.

The Willow-Warbler passes through Astrakhan on migration in spring and autumn.

Phylloscopus rufus.

The Chiffchaff also passes through on migration.

Regulus cristatus.

The Goldcrest is a winter visitor.

Regulus ignicapillus.

Henke did not meet with the Firecrest, but states that it has been obtained in winter near Sarepta.

Turdus viscivorus.

The Missel-Thrush passes through Astrakhan on migration, but has been known to breed near Sarepta.

Turdus musicus.

The Song-Thrush is occasionally observed at Astrakhan during the spring migration.

Turdus iliacus.

Henke did not meet with the Redwing, but states that it has been found at Sarepta.

TURDUS PILARIS.

The Fieldfare is principally seen near Astrakhan on migration, especially in autumn. Very few stop the winter.

MERULA MERULA.

The Blackbird is also principally seen on migration, very rarely in winter.

STURNUS VULGARIS.

The Starling is exceedingly common near Astrakhan in summer, and makes its nest in holes in trees, holes in the banks, and in the thatched roofs. Unfortunately Henke did not bring any skins of this species from Astrakhan, so that it is doubtful which of the various forms of coloration to which this bird is subject is found there.

PASTOR ROSEUS.

The Rose-coloured Pastor is not very frequently met with near Astrakhan, but is commoner on the Kirghiz steppes. Never seen in winter.

ORIOLUS GALBULA.

The Golden Oriole is a very common summer visitor.

CERTHIA FAMILIARIS.

Henke did not meet with the Tree-creeper, but states that it passes through Sarepta on migration.

TROGLODYTES EUROPÆUS.

The Wren breeds near Astrakhan, but is not common. A few remain during winter.

PARUS MAJOR.

The Great Tit is a resident near Astrakhan.

PARUS CÆRULEUS.

The Blue Tit is a common resident.

PARUS ATER.

The Cole Tit is rare, and has only been seen in winter.

PARUS PALUSTRIS.

The Marsh-Tit has been observed on migration late in autumn.

ACREDULA CAUDATA.

The Long-tailed Tit is a rare resident. Henke only once found its nest.

CALAMOPHILUS BIARMICUS.

The Bearded Tit is a very common resident. It prefers to build in the nests of the various species of Herons when they are placed in the reeds. When the country is flooded it often takes possession of the nests of Cetti's Warbler.

ÆGITHALUS CASPIUS.

The Pendulous Tit is an extremely abundant resident. So far as is known, only the Caspian form is found at Astrakhan.

MOTACILLA ALBA.

The White Wagtail is a not very common summer visitor.

MOTACILLA CITREOLA.

Henke never observed the Yellow-headed Wagtail; but Eversmann records it from the Lower Volga.

MOTACILLA FLAVA.

The Blue-headed Wagtail is a very common summer visitor.

MOTACILLA MELANOCEPHALA.

The Black-headed Wagtail is a very rare summer visitor.

ANTHUS ARBOREUS.

The Tree-Pipit is occasionally met with on migration.

ANTHUS CAMPESTRIS.

The Tawny Pipit is a very common bird in summer on the Kirghiz steppes.

ANTHUS CERVINUS.

The Red-throated Pipit was not observed by Henke; but it has been seen on migration at Sarepta.

ALAUDA ARVENSIS.

The Sky-Lark is not a common bird. Not seen in winter.

MELANOCORYPHA CALANDRA.

The Calandra Lark is very local, and not common in the Kirghiz steppes during the breeding-season. It is occasionally seen during the winter near Astrakhan.

MELANOCORYPHA TATARICA.

Is extremely common in winter. It breeds on the Kirghiz steppes, especially in the neighbourhood of the salt marshes, but is not found in the steppes when there is no water.

MELANOCORYPHA LEUCOPTERA.

The White-winged Lark is a very common resident.

MELANOCORYPHA BRACHYDACTYLA.

The Short-toed Lark is a very common resident, but is rarer in winter.

MELANOCORYPHA PISPOLETTA.

Pallas's Short-toed Lark is not so common as the preceding, but may always be detected by its "schnarrenden" voice.

ALAUDA CRISTATA.

The Crested Lark is rare in the steppes, and is only found near human dwellings. It is a resident.

ALAUDA ARBOREA.

The Wood-Lark is a rare visitor near Astrakhan on migration.

OTOCORYS ALPESTRIS.

The Shore-Lark is only found in winter.

OTOCORYS PENICILLATA.

The Eastern Shore-Lark is a resident in the Kirghiz steppes.

EMBERIZA NIVALIS.

The Snow-Bunting is a winter visitor.

EMBERIZA MELANOCEPHALA.

Henke did not meet with the Black-headed Bunting, but states that it is common on the Kalmuk steppes.

EMBERIZA CITRINELLA.

The Yellowhammer is a rare visitor on migration.

EMBERIZA HORTULANA.

The Ortolan Bunting is a very common visitor on migration, especially in spring. A few remain to breed.

Emberiza miliaria.

Henke did not meet with the Common Bunting, though Eversmann records it from the Lower Volga.

Emberiza schœniclus.

The Reed-Bunting is a not very common visitor on migration, principally in autumn. A few are seen in winter.

Emberiza pyrrhuloides.

The Thick-billed Reed-Bunting is a common resident in the neighbourhood of Astrakhan, though very local. It is rare on the steppes.

Passer montanus.

The Tree-Sparrow is very common on the steppes. It prefers to breed in both the occupied and forsaken nests of the Black Kite, sometimes two or three pairs in one nest. It is a resident.

Passer domesticus.

The House-Sparrow is a very common resident.

Fringilla montifringilla.

The Brambling passes through Astrakhan on migration, and a few remain during winter.

Fringilla cœlebs.

The Chaffinch is a regular visitor on migration, especially in autumn.

Fringilla spinus.

The Siskin passes through on migration, and is observed in greater numbers in autumn than in spring.

Fringilla chloris.

The Greenfinch is only seen on migration, especially in autumn.

Linota linaria.

The Brown Linnet is a spring and autumn migrant, and is most abundant at the latter season. A few remain during winter.

Linota flavirostris.

The Twite is only seen in winter.

CARDUELIS ELEGANS.

A few Goldfinches breed near Astrakhan. In winter the species is more numerous, but most so during the autumn migration.

COCCOTHRAUSTES VULGARIS.

Henke once obtained a Hawfinch near Astrakhan in spring.

PYRRHULA MAJOR.

The Eastern Bullfinch is occasionally seen in winter in small flocks.

CARPODACUS ERYTHRINUS.

The Scarlet Bullfinch is very common on migration, and is sometimes seen so late in the spring as to lead to the suspicion that a few remain to breed.

LOXIA CURVIROSTRA.

The Crossbill is occasionally seen in winter near Astrakhan. A small flock was met with in a wood on the Kirghiz steppes in July 1876.

BOMBYCILLA GARRULA.

The Waxwing is more or less common throughout the winter in Astrakhan, and feeds upon the seeds of the acacia, which it swallows with the pods.

NUCIFRAGA CARYOCATACTES.

Henke did not meet with the Nutcracker, but states that it occasionally occurs in winter at Sarepta.

GARRULUS GLANDARIUS.

Henke did not meet with the Jay, but states that it occasionally occurs in winter near Sarepta.

PICA CAUDATA.

The Magpie is a very common resident.

CORVUS CORNIX.

The Hooded Crow is an exceedingly common resident.

CORVUS FRUGILEGUS.

The Rook is a common summer visitor.

CORVUS MONEDULA.

The Jackdaw is everywhere a common resident.

Columba palumbus.

The Wood-Pigeon is a very common resident.

Columba œnas.

The Stock-Dove is only seen on migration, especially in autumn.

Columba turtur.

The Turtle-Dove is a very common summer visitor.

Pterocles arenarius.

The Black-bellied Sand-Grouse breeds on the Kirghiz steppes, especially in the neighbourhood of Achtuba, a tributary of the Volga. In autumn it is very abundant near Astrakhan, and remains during the winter.

Syrrhaptes paradoxus.

Pallas's Sand-Grouse is occasionally found in winter near Astrakhan. In 1876 great numbers bred on the Kirghiz steppes. The Kirghiz told Henke that they had not observed them before.

Tetrao tetrix.

The Black Grouse is a rare winter visitor to Sarepta.

Perdix cinerea.

The Partridge is very common, especially in winter. It breeds on the steppes wherever there is any wood.

Coturnix communis.

The Quail is a very common summer visitor.

Phasianus colchicus.

The Pheasant is very common in the marshy lowlands below Astrakhan. Henke says that a small race is found in the valley of the Terak.

Otis tarda.

The Great Bustard is very common, especially in the steppes. A few are seen during winter near Astrakhan.

Otis tetrax.

The Little Bustard is somewhat rare during the breeding-season, but is common on the autumn migration.

Otis houbara.

The Houbara Bustard is not common, and is principally confined to the steppes. It is very rare in the Kalmuk steppes, but it breeds in the Kirghiz steppes, though somewhat locally.

Glareola melanoptera.

The Eastern Pratincole is very abundant in the steppes, but Henke did not meet with the western species. It does not remain during winter.

Œdicnemus crepitans.

The Stone-Curlew is a very common summer visitor.

Chettusia gregaria.

The Sociable Plover is a very rare summer visitor near the river, and is only found on the barren steppes.

Eudromias morinellus.

The Dotterel passes through Astrakhan in spring and autumn on migration. Henke maintains that a few remain to breed on the Kirghiz steppes, that he has shot birds with the feathers abraded on the underparts by incubation, and that he once obtained a sitting of eggs.

Eudromias asiaticus.

The Caspian Dotterel is rarely seen near Astrakhan. Henke got a pair in the spring of 1871. In 1875 he found it breeding in a colony of about thirty pairs on a piece of ground covered with blackish lichen near a salt marsh on the Kirghiz steppes. He never found more than three eggs in one nest, if the slight depression in the ground may be called a nest, and had great difficulty in finding them, the birds leaving them while he was still a long way off. The birds are very local, and evidently often change their breeding-stations, as Henke visited this locality in the two succeeding years without finding them.

Ægialitis hiaticula.

The Ringed Plover is frequently met with both near the river and on the steppes in summer.

ÆGIALITIS CANTIANA.

The Kentish Plover is a very common summer visitor to the Kirghiz steppes, especially near the salt lakes. It never lays more than three eggs.

ÆGIALITIS CURONICA.

The Little Ringed Plover is very common on the delta of the Volga and on the Seal-Islands in the Caspian in summer.

CHARADRIUS VANELLUS.

The Lapwing is a very common summer visitor.

CHARADRIUS PLUVIALIS.

The Golden Plover is only found on migration, principally in autumn.

CHARADRIUS FULVUS.

The Eastern Golden Plover is occasionally seen in autumn.

CHARADRIUS HELVETICUS.

The Grey Plover is very common near Astrakhan in autumn, and in spring is sometimes seen as late as July.

RECURVIROSTRA AVOCETTA.

The Avocet is everywhere very common in summer. It breeds in colonies.

HÆMATOPUS OSTRALEGUS.

The Oyster-catcher is common everywhere in summer.

HYPSIBATES HIMANTOPUS.

The Long-legged Plover is common in the marshes of the Kirghiz steppes, but is rarer in the delta. Not seen in winter.

TOTANUS FUSCUS.

The Dusky Redshank is common on migration, especially in autumn. It probably breeds on the steppes.

TOTANUS STAGNATILIS.

The Marsh-Sandpiper is a very common summer visitor to the steppes.

TOTANUS CALIDRIS.

The Redshank is a very common summer visitor to the steppes.

TOTANUS GLOTTIS.

The Greenshank is very common on the autumn migration.

TOTANUS GLAREOLA.

The Wood-Sandpiper passes through Astrakhan in spring and autumn, and occasionally a few are found breeding on the steppes.

TOTANUS OCHROPUS.

The Green Sandpiper is a very common summer visitor.

ACTITIS HYPOLEUCA.

The Common Sandpiper is only found in spring and autumn.

PHALAROPUS HYPERBOREUS.

The Red-necked Phalarope passes through on migration, and is especially common in spring. In the Kirghiz steppes it is often seen in June, and sometimes in July.

LIMICOLA PLATYRHYNCHA.

Henke says that the Broad-billed Sandpiper is occasionally seen on the Kirghiz steppes, and that he once killed six at a shot.

CALIDRIS ARENARIA.

Henke did not meet with the Sanderling, but it has been obtained at Sarepta.

TEREKIA CINEREA.

Henke did not meet with the Terek Sandpiper, but it has been obtained at Sarepta.

LIMOSA MELANURA.

The Black-tailed Godwit passes through Astrakhan in spring and autumn, being very common at the latter season. It breeds in considerable numbers on the Kirghiz steppes.

LIMOSA LAPPONICA.

The Bar-tailed Godwit is very rare, and has only been obtained in autumn.

MACHETES PUGNAX.

The Ruff breeds in the Kirghiz steppes, and is very common in autumn near Astrakhan.

Tringa subarquata.

The Curlew Sandpiper is only seen in spring and autumn.

Tringa alpina.

The Dunlin is only seen in spring and autumn.

Tringa temminckii.

Temminck's Sandpiper passes through in spring and autumn.

Tringa minuta.

The Little Stint is only seen on migration.

Scolopax rusticula.

The Woodcock is very common in autumn, especially in the vineyards.

Scolopax major.

The Great Snipe is very common on the autumn migration.

Scolopax gallinago.

The Common Snipe is very common on the autumn migration.

Scolopax gallinula.

The Jack Snipe is very common on the autumn migration.

Numenius arquata.

The Curlew passes through Astrakhan in some numbers in spring and autumn. It breeds in the Kirghiz steppes.

Numenius phæopus.

The Whimbrel is common on the autumn migration.

Numenius tenuirostris.

The Slender-billed Curlew is not rare on the autumn migration.

Plegadis falcinellus.

The Glossy Ibis is a very common summer visitor, and breeds in large colonies in company with Herons. The nest is often built under that of a Heron.

Ardea cinerea.

The Heron is a very common summer visitor.

ARDEA PURPUREA.

The Purple Heron is not a very common summer visitor.

ARDEA ALBA.

The Great White Egret is a very common summer visitor. It breeds on willows and, where there are no trees, on the bent-down reeds.

ARDEA COMATA.

The Squacco Heron is an equally common summer visitor. It breeds only on high willows.

ARDEA COMATA × GARZETTA.

Henke has in his collection a Heron from Astrakhan, which he believes to be a hybrid between the Little Egret and the Squacco Heron.

ARDEA GARZETTA.

The Little Egret is a common summer visitor, breeding only on the high willows.

ARDEA GARZETTA × NYCTICORAX.

Henke has in his collection from Astrakhan a Heron which he believes to be a hybrid between the Little Egret and the Night-Heron.

ARDEA NYCTICORAX.

The Night-Heron is a very common summer visitor.

BOTAURUS STELLARIS.

The Bittern is a very common summer visitor. It breeds wherever there are reeds, but singly, not in colonies. The nest is very difficult to find.

ARDETTA MINUTA.

The Little Bittern is a very common summer visitor. Its favourite breeding-place is in the hollow under the nest of a Heron or Egret which has been built on the bent-down reeds.

CICONIA NIGRA.

The Black Stork is said to breed near Astrakhan, but Henke never found the nest. It is not uncommon late in summer and in autumn.

Grus leucogeranus.

The Siberian Crane is unknown to the Kirghiz, but is very common on migration, especially in spring, when flocks of some hundreds are seen near Astrakhan. These birds are very wary and difficult to shoot.

Grus cinerea.

The Common Crane is frequently met with on the Kirghiz steppes in summer.

Grus virgo.

The Demoiselle Crane is not uncommon in summer on the dry steppes, and feeds principally upon beetles.

Platalea leucorodia.

The Spoonbill is a very common summer visitor. It breeds sometimes amongst the Herons, and sometimes in colonies alone.

Crex pratensis.

The Corn-Crake is found in spring and autumn on migration. It is said to breed near Sarepta.

Crex porzana.

The Spotted Crake breeds in some numbers on the Kirghiz steppes, but is not found in winter.

Crex minuta.

The Little Crake is found near Astrakhan on migration, especially in autumn. A few remain to breed, but most pass on to the steppes.

Rallus aquaticus.

The Water-Rail breeds frequently near Astrakhan, and sometimes remains very late in the autumn. It is occasionally seen in winter.

Gallinula chloropus.

The Waterhen is a very common summer visitor near the river.

Fulica atra.

The Coot is exceedingly abundant wherever permanent water is found. It is not seen in winter.

PORPHYRIO CÆRULEUS.

The Purple Gallinule apparently breeds on the delta of the Volga, as many are caught at the moulting-season. It is not seen in winter.

PHŒNICOPTERUS ROSEUS.

On the 20th of July, 1876, Henke found a colony of four hundred and nineteen nests of the Flamingo on a sandbank in the middle of a salt lake on the Kirghiz steppes, so far from the shore as not to be visible from it. The nests were conical heaps of mud, very close together, and some of them as high as two feet. The birds had broken through the hard salt crust with their bills in order to take from underneath it the black salt mud of which their nests were built. The top was dished out to a hollow, in which one, two, or three eggs were laid. Half the eggs were hatched, and the young in down were very shy and difficult to catch. When Henke was there the ground was dry and white with salt; but with a different wind he calculated that the water was sometimes a foot high near the nests. At night the Flamingoes go in hundreds to a freshwater lake to get the young of a large kind of frog to feed their young—a distance of five and twenty miles.

CYGNUS OLOR.

The Mute Swan is a common summer visitor, and breeds on the delta.

CYGNUS MUSICUS.

The Wild Swan is only seen in spring and autumn on migration.

CYGNUS MINOR.

Bewicke's Swan is only seen on migration, and is not so common as the larger species.

ANSER CINEREUS.

The Grey Lag Goose is a very common summer visitor, and breeds on the delta.

ANSER ALBIFRONS.

The Great White-fronted Goose is only seen in autumn.

ANSER ERYTHROPUS.

The Little White-fronted Goose is only seen in autumn, and is more plentiful than the preceding.

ANSER RUFICOLLIS.

The Red-necked Goose is not uncommon on migration in spring and autumn.

TADORNA CORNUTA.

The Shieldrake is a very common summer visitor, and breeds by preference in a fox-hole, sometimes in the graves of the Kirghiz.

TADORNA CASARCA.

The Ruddy Shieldrake is not so common as the preceding. It generally breeds in hollow trees, sometimes at a considerable height from the ground.

ANAS BOSCAS.

The Mallard is an exceedingly common summer visitor.

ANAS BOSCAS × ACUTA.

Henke has in his collection two examples of hybrids between the Mallard and the Pintail.

ANAS ACUTA.

The Pintail breeds in the Kirghiz steppes. It is not so common as the Mallard.

ANAS CRECCA.

The Teal breeds in the Kirghiz steppes and comes to the river to moult. Very common.

ANAS QUERQUEDULA.

The Garganey breeds in the Kirghiz steppes and seeks the river-district during the moulting-season. Very common.

ANAS STREPERA.

The Gadwall breeds on the dry land of the Kirghiz steppes.

ANAS PENELOPE.

The Wigeon is very common on migration, but leaves the district in summer to breed further north.

ANAS CLYPEATA.

The Shoveller is also common on migration, but migrates north to breed.

ANAS MARMORATA.

The Marbled Duck is a late summer visitor, and breeds in hollow trees and in old Crows' nests.

ANAS CLANGULA.

The Golden-eye breeds near Astrakhan, but is not common.

HARELDA GLACIALIS.

The Long-tailed Duck is an occasional straggler during winter.

ŒDEMIA NIGRA.

Henke never met with the Black Scoter, but near Sarepta it is occasionally seen during migration.

ŒDEMIA FUSCA.

The only example of the Velvet Scoter which came under Henke's notice was a dead bird which was found on the salt lake of Baskundschak, on the Kirghiz steppes.

ERISMATURA MERSA.

The White-headed Duck breeds in the steppes in considerable numbers.

FULIGULA RUFINA.

The Red-crested Pochard is not very common.

FULIGULA FERINA.

The Pochard is exceedingly common on the Kirghiz steppes in summer.

FULIGULA LEUCOPHTHALMA.

The White-eyed Duck is a not very common summer visitor.

FULIGULA CRISTATA.

The Tufted Duck breeds in the Kirghiz steppes, but is not very common.

MERGUS MERGANSER.

The Goosander is common in winter and in autumn, but in spring it is rarely seen, and in summer not at all.

Mergus serrator.

The Red-breasted Merganser is a very rare visitor.

Mergus albellus.

The Smew is a common summer visitor, and breeds in hollow willow trees.

Larus ichthyaetus.

The Great Black-headed Gull breeds in great numbers on the Seal Islands and on other islands in the Caspian Sea.

Larus ridibundus.

The Black-headed Gull is very common, and breeds in the Kirghiz steppes.

Larus tenuirostris.

The Slender-billed Gull is very common. It breeds on a salt lake on the Kirghiz steppes, and also on the Seal Islands.

Larus cachinnans.

The Mediterranean Herring-Gull is common, but is not seen on the steppes.

Larus canus.

The Common Gull breeds in great numbers on the salt lakes in the Kirghiz steppes.

Larus fuscus.

The Lesser Black-backed Gull is very rare.

Larus glaucus.

The Glaucous Gull is only seen in immature plumage.

Sterna caspia.

The Caspian Tern breeds sparingly on the Seal Islands. It is occasionally found in the river-district.

Sterna anglica.

The Gull-billed Tern breeds in considerable numbers on the Kirghiz steppes.

Sterna cantiaca.

The Sandwich Tern breeds on the Seal Islands.

Sterna hirundo.

The Common Tern is very abundant.

STERNA MINUTA.

The Little Tern is rather rare. It breeds on the Seal Islands in considerable numbers.

STERNA NIGRA.

The Black Tern is very common both in the river-district and on the Kirghiz steppes.

STERNA HYBRIDA.

The Whiskered Tern is very common in the river-district, but is not found on the steppes.

STERNA LEUCOPTERA.

The White-winged Black Tern is very common, both in the river-district and on the Kirghiz steppes.

PHALACROCORAX CARBO.

The Cormorant breeds in hundreds of thousands, principally on the willows.

PHALACROCORAX PYGMÆUS.

The Pygmy Cormorant breeds in small colonies of about a dozen pairs. It is not very common.

PELECANUS CRISPUS.

The Dalmatian Pelican is common near the sea.

PELECANUS ONOCROTALUS.

The Roseate Pelican is also common near the sea. Neither species is found on the steppes, in consequence of the entire absence of fish.

PODICEPS CRISTATUS.

The Crested Grebe is very common.

PODICEPS RUBRICOLLIS.

The Red-necked Grebe is very common.

PODICEPS NIGRICOLLIS.

The Eared Grebe breeds in great numbers on the Kirghis steppes.

PODICEPS CORNUTUS.

Henke only met with one example of the Sclavonian Grebe.

Podiceps minor.

The Little Grebe is found breeding, but is rare.

Colymbus septentrionalis.

Henke once obtained an example of the Red-throated Diver in autumn.

Colymbus arcticus.

The Black-throated Diver is a very rare winter visitor.

XVII.—*On* Ninox rudolfi, *a new Species of Hawk-Owl from the Malay Archipelago.* By A. B. Meyer, M.D., F.M.B.O.U.

(Plate VI.)

Ninox rudolfi.

Supra griseo-brunnea, albo variegata; capite et nucha nigrescentibus vel fusco-brunneis, maculis vel fasciis albis ornatis; fronte, loris, superciliis, facie anteriore, mento, gula et collo antico albis, plumarum pilosarum rhachibus nigris, plumis suborbitalibus et auricularibus fusco-brunneis; *pectore, abdomine et subcaudalibus rufescenti et albo fasciatis,* fasciis rufescentibus anguste nigricanti vel fusco marginatis; subalaribus rufescentibus, striis transversis plus minusve fulvescentibus; alis dorso concoloribus; remigibus supra et subtus fasciis pallidioribus, albidis et albis notatis; *cauda supra remigibus et dorso concolori, subtus pallidiore, rectricibus fasciis* 9–11 *transversis pallidioribus et albidis ornatis;* tibiis et tarsis totis plumosis, rufescentibus, striis obscurioribus et pallidioribus parum conspicuis; rostro nigro, culmine flavescente; digitis pallidis setosis.

Long. tot. circa 350 mm., al. 243, caud. 145, rostr. hiat. circa 30, tars. circa 40.

Hab. Ins. Sumba (*Riedel coll.*).

Above greyish brown, spotted or streaked with white, darker from the hind neck to the head, which is blackish; each feather of the head bears two white spots or streaks; most of the feathers of the hind neck and mantle with a white coherent spot on their apical third, and another one or two, not coherent, subterminal ones; on the middle of some of the feathers, besides, a third lengthened white spot. On

J.G.Keulemans lith. Hanhart imp.

NINOX RUDOLPHI.

the back and rump the white spots and streaks are less frequent, more numerous again on the upper tail-coverts. The concealed part of the feathers dark grey. Forehead, lores, fore part of the cheeks, chin, throat, and neck in front white, the feathers partly with black shafts, especially the bristly ones of the loral region. Subocular region and ear-spot blackish brown; sides of the neck spotted with white, like the hind neck.

Under-surface of the body reddish brown, barred with white; each feather with several (mostly three or four) brown and the same number of white bars, the brown ones bordered with blackish. The breadth of the white bars measures from 4 to 7 millimetres, that of the brown ones from 2 to 5. The total impression, however, is not that of a white under surface barred with brown, but of a reddish brown one barred with white. Under tail-coverts marked in the same way. The concealed part of the feathers blackish grey.

Wings above uniform with the back; upper wing-coverts partly streaked with pale reddish brown, similar to the coloration of the under surface of the body, besides being spotted or banded with white. Quills with lighter bands, ending in white spots on the primaries, generally more whitish on the secondaries and tertiaries. Under wing-coverts reddish brown, similar to the colour of the breast, irregularly streaked. Under surface of the wings blackish grey, with more distinct transversal bands, which are partly lighter and pure white, especially on the middle and basal thirds of the quills.

Tail above uniform with the wings, with nine lighter cross bars on the middle rectrices and eleven on the outer ones; tail below lighter, with whitish cross bars.

Leg-feathers of a light buff colour, very indistinctly streaked.

The most obvious character of this new species is the spotted head; but, besides, it is so very distinct that it cannot be confounded with any other one. From localities adjoining Sumba or Sandlewood Island, the following species of *Ninox* are at present known:—

Ninox fusca (V.), from Timor, which species Mr. Riedel, the well-known resident and explorer of the Malay archipelago, also procured on Sumba. It is barred with smaller longitudinal but transverse bars on the under surface, and is without white spots on the head. *Cf.* Sharpe, Cat. ii. 1875, pl. xii. fig. 1.

Ninox florensis (Wall.), from Flores, which Mr. Sharpe identifies with *Ninox scutulata* (Raffl.), loc. cit. pp. 157, 165. This species has no spots on the head, and only five cross bars on the tail.

Ninox punctulata (Q. & G.), from Celebes, reminds one somewhat of *Ninox rudolfi* as regards its spotted upper surface; but, besides other characters, is much smaller; the wings, for instance, measuring only 160 millimetres in specimens collected by myself near Gorontalo, against 243 millimetres in *N. rudolfi*.

This new species would require a special division in Mr. Sharpe's "Key" (loc. cit. p. 152), which runs as follows:—

c. Breast spotted or transversally barred.
c'. Head spotted or barred.
e''. Size large, wing 10·5–18·5 inches.
f''. Size smaller, wings not exceeding 8·5 inches in length.

The length of the wings in *N. rudolfi* is 9·5 inches; it therefore ranges between the divisions *e''* and *f''*, and seems to be rather isolated among the various known species of the genus *Ninox*—a view shared by my friend Mr. Sharpe, who has kindly inspected one of the specimens, the types of which are now preserved in the Dresden Zoological Museum.

I have great pleasure in naming this new species *Ninox rudolfi*, in honour of the illustrious patron of ornithology, His Imperial & Royal Highness Archduke Rudolph, Crown Prince of Austria, as a slight token of respect for his personal virtues and scientific attainments.

Dresden, December 1881.

XVIII.—*List of a Collection of Raptorial Birds from the Neighbourhood of Saigon in Cochin China.* By J. H. Gurney.

I am indebted to the kindness of Mons. A. Boucard of Paris for the opportunity of examining the Raptorial portion of a collection of Cochin-Chinese birds made in the vicinity of the town of Saigon by Mons. Moreau; and I think that the names of these Raptores may be worth recording.

1. Pseudogyps bengalensis (Gmel.).
2. Circus melanoleucus (Forst.).
3. Circus æruginosus (Linn.).

*4. Scelospizias poliopsis (Hume).

5. Butastur indicus (Gmel.).
6. Spilornis rutherfordi, Swinh.

*7. Limnaëtus [illegible] (Raffl.).

8. Halia[illegible] (Gmel.).
9. Halia[illegible]
10. Baza [illegible]
11. Falco peregrinus, Gmel.
12. Ketupa ceylonensis (Gmel.).

*13. Scops stictonotus, Sharpe.

In bright rufous plumage.

*14. Carine brama (Temm.).

This specimen appears to agree with Indian examples; the following are its principal measurements:—wing 6·20 inches, tarsus 1·20, middle toe *s. u.* ·90.

*15. Ninox scutulata (Raffles).

This specimen measures:—wing 8·60 inches, tarsus 1·10, middle toe *s. u.* 1·20.

*16. Strix javanica, Gmel.

The following are the principal measurements of this spe-

cimen:—wing 12·60 inches, tarsus 3, middle toe *s. u.* 1·80, culmen *s. c.* 1·30.

Specimens of the species in the above list marked with an asterisk have been secured for the Norwich Museum.

XIX.—*On a Collection of Birds made by Mr. J. S. Jameson in South-eastern Africa, with Notes by Mr. T. Ayres.* By Captain G. E. Shelley.

(Plate VII.)

Mr. Jameson has asked me to describe this fine collection, and has also lent me a most interesting book of notes made by Mr. T. Ayres, so well known to readers of 'The Ibis' as an accurate observer of birds, who accompanied the expedition. From them I have made many extracts.

As regards the classification, I shall follow that adopted by Mr. R. B. Sharpe in his new edition of Layard's 'Birds of South Africa.'

Mr. Ayres gives the following list of localities mentioned in his notes, which I fancy will prove of some service to the readers of this communication:—

		°	′		°	′
Ganyani river, Mashoona land	lat.	17	35	long.	30	30
Umvuli river, „	„	18	15	„	30	55
Umswezwie river, „	„	18	30	„	30	50
Umgesi river, „	„	18	20	„	30	45
Umnyati river, „	„	18	45	„	30	40
Bembesi river, „	„	19	0	„	30	20
Quae Quae river, „	„	19	10	„	30	10
Shongo river, Matabele land	„	19	30	„	29	30
Inshlangeen river, „	„	19	40	„	29	15
Matje Umschlope (residence of King Lo Bengoola)	„	20	10	„	28	45
Ramaquabane river, Matabele land ..	„	21	15	„	28	0
Tatin river „ ..	„	21	25	„	27	55
Macloutsi river, Bamangwato	„	21	45	„	28	0
Gokwe river, „	„	22	5	„	28	0
Seruli Pan, „	„	22	25	„	27	56
Palatswie Pan, „	„	22	35	„	27	40

		°	′		°	′
Limowie Pan, Bamangwato	lat.	22	38	long.	27	30
Chakanie Pan, „	„	22	45	„	27	25
Metle river, „	„	22	50	„	27	15
Mahalapsie river „	„	22	55	„	27	10
Shoshong (Mangwato) „	„	23	2	„	26	50
Selenia Pan, Sechele's country	„	23	20	„	25	55
Boatlanami Pan, „	„	23	30	„	25	50
Bommingani Pan „	„	23	50	„	25	50
Kooroomoorooi Pan „	„	24	15	„	25	50
Kanye (village), „	„	24	50	„	25	40
Malope river, Montsui's country	„	25	45	„	25	35
Sikogolo river, „	„	26	10	„	25	25
Great Chine Pan „	„	26	26	„	25	10
Makara river, Mantkorane's country..	„	27	25	„	25	30
Dry Hart river, „ ..	„	27	30	„	25	25
Spalding's, Hart river „ ..	„	27	55	„	25	30

Mooi river, Potchefstroom district, Transvaal.
Elands river, Rustenburg district, Transvaal.
Hol Fontein, near Crocodile river, Transvaal.
Klaas's Kraal, near Pilansberg, Rustenburg district, Transvaal.

1. Gyps kolbi (Daud.).
2. Gyps rueppelli (Brehm).
3. Otogyps auricularis (Daud.).
4. Lophogyps occipitalis (Burch.).
5. Neophron pileatus (Burch.).
6. Serpentarius secretarius (Scop.).

Mashoona, September and October. All these were identified, but not preserved.

7. Circus pygargus (Linn.).

(178) ♂, Spalding's, Hart river, 3rd February. Crop contained nothing but grasshoppers.

The Harriers have a very wide range, and are generally found singly, skimming quietly over the open grass-country.

[I cannot understand for what reason some ornithologists refuse to refer *Falco pygargus*, Linn., to this species.—G. E. S.]

8. Astur polyzonoides (Smith).

(63) ♀, Umvuli river, 23rd August; and ♀, Ganiani river, 18th September. Iris reddish orange; bill black; cere pale

yellow; legs gamboge-yellow. Total length in the flesh 12·5 inches.

This bird I shot amongst the high trees not far from the river.

♀, Ganyani river, 18th September. Iris crimson.

The eggs in the ovary of the latter bird were large; she would probably have begun to lay in about a week's time. The crop contained a good-sized lizard.

9. Buteo desertorum (Daud.).

(168) ♂, Sikogolo river, 17th January.

The crop was filled with white ants. The bird seems to be rather local. We saw several on the Hart river, at Spalding's; and I have shot them about Potchefstroom in the Transvaal.

10. Aquila wahlbergi, Sundev.

(84) ♂, Ganyani river, 17th September. Iris hazel; bill horny black, with the basal part bluish ash; cere and gape very pale greenish yellow; claws black. Total length in the flesh 21·5 inches. Crop contained a whole Swallow (*Hirundo dimidiata*) and a locust.

It is rather a scarce species in this part of the country. A pair of these birds commenced to build their nest on an upper bough of a large tree on the banks of the Umvuli, just before we left our camp to return southward, in the beginning of October.

11. Haliaetus vocifer (Daud.).

Mashoona, September and October. Seen, but not procured.

12. Helotarsus ecaudatus (Daud.).

(136) ♂, Tatin river, 5th December.

Tolerably common all along our route from the Transvaal to the Umvuli river. Generally seen sailing along easily overhead far out of shot.

13. Milvus ægyptius (Gm.).

Mashoona, September and October. Seen, but not procured.

14. Elanus cæruleus (Desf.).

15. Falco biarmicus, Temm.
Mashoona, December. Seen, but not procured.

16. Tinnunculus rupicola (Daud.).
(179) Spalding's, Hart river, 3rd February.
Scarce in this part of the country.

17. Tinnunculus tinnunculoides (Temm.).
(110) ♂, Inshlangeen river, 4th November.
This was a very windy day; and about half a dozen of these Kestrels were beating up against the gale, and feeding upon grasshoppers.

18. Erythropus amurensis (Gurney).
♀, immature, Boatlanami Pan, 31st December.

19. Bubo maculosus (Vieill.).
Mashoona, December. Seen, but not procured.

20. Glaucidium capense (Smith).
(61) ♂, Umvuli river, 20th August. Iris bright yellow; bill pale greenish yellow; feet dingy pale yellow. Total length in the flesh 8·75 inches. The crop contained locusts.
A common bird throughout Mashoona land, not often seen by daylight, though frequently heard at night. Near the river Ganyani it was so plentiful that one might hear half a dozen of them calling at the same time during the first two or three hours of the night; but even by moonlight they are exceedingly difficult to see amongst the branches of the trees. Mr. Jameson and myself tried on several occasions to get a shot without success. After carefully looking up for a length of time, with the bird calling within a few yards of our heads, a tiny speck is seen but for a moment to dart across the light, and all is silent, when perhaps in a few minutes he recommences his monotonous *kroo! kroo! kroo!* from some distant tree, when we repeat the search with no better success.

21. Glaucidium perlatum (Vieill.).
(62) Umvuli river, 20th August. Matabele name "Mandoogooloo." The crop contained remains of insects.

By no means uncommon near our camp at Umvuli, one or two might generally be heard every evening soon after dark amongst the surrounding trees.

22. Asio capensis (Smith).

Mashoona, December. Seen, but not procured.

23. Strix flammea, Linn.

(106) ♂, Shongo river, 1st November.

Pretty generally distributed over the country. We met with a number at the Tatin, occupying the crevices in the sides of the workings of the gold-fields, which are now deserted; and I heard one near the Hart river.

24. Caprimulgus mossambicus, Peters.

(66) Umvuli river, 27th August, and Ganyani river, 18th September. Male: iris umber-brown; bill pale, with the culmen and tip dusky; tarsi and feet light dusky brown.

They were not very common on the Umvuli on the 27th of August, when we first met with them; but towards the end of September we found them very abundant near the Ganyani, where their incessant chirring note might be heard, more or less, throughout the night. I never detected the female in the act. The male perches himself crosswise on a bough, while the female sits on the ground beneath, silently rising every now and again to catch some passing insect. The breeding commences in September. On the 19th of October an egg was taken at the Bembesi river. They are very quick on the wing, and glide through the branches of the trees with great dexterity.

25. Cosmetornis vexillarius (Gould).

(74) Ganyani river, Umvuli river, Umgesi river, and Umnyati river, September and October. Mashoona name "Amadamba," Matabele name "Manooella." Iris dark brown; bill dingy and pale, becoming dusky towards the tip; tarsi and feet light dusky brown: the same in both sexes.

We first met with this Goatsucker late in August in Mashoona land. The first male was seen by our driver on the 30th of August, and the first specimen shot, a female, on the 13th

of September. After this they gradually became plentiful. The hen bird glides amongst the boughs of the trees with wonderful ease and rapidity, and is decidedly not so plentiful as and much more difficult to procure than the male. I never saw the female settle on trees; but the male, when flushed, frequently does so, and perches lengthwise on the branch, with the long wing-feathers hanging to one side. Sometimes they hawk high in the air, especially on calm evenings. At other times in well-wooded parts they sweep round and round swiftly and gracefully; but when disturbed they fly as if their wings were an incumbrance to them. The long wing-feathers, even in September, are more or less worn, leading one to suppose that they would be in full plumage about July; and where do they come from? In October they begin to shed the long feathers. Several males are often seen together. The last place we saw them on our way out was just on the northern side of the Changáni river, on the 30th of October, when I put up eight or ten, all cock birds, from the ground amongst some high trees clear of underwood. In the evenings, just at dark and afterwards, the cock birds call frequently, uttering a curious strident note, much like the squeak of a mouse—*tswee, tswee, tswee,* often repeated.

We took the first clutch of two eggs on the 28th of September, and another of two next day. The bird lays on the ground, sometimes under the trees in the open woods, and sometimes on more open ground. The eggs taken on the 29th were placed behind and sheltered by a large stone close to the bank of a small dry gully; these eggs were of a light ruddy brown of various shades, with some milky or ashy places here and there; one measured 1·1 inch by 0·8, and the other 1·25 by 0·8. The eggs taken on the 28th measure 1 inch by 0·75, and are not so rich in colouring, all the colours being less distinct. Soon after the shells get dry the colours fade. On no occasion where the hen was sitting did we find the male anywhere near; so I suppose that the cares of the family are entirely left to the hen bird.

26. Cypselus apus (Linn.).

(181) Matje Umschlope, 22nd November, and Dry Hart river, 25th January.

About 11 o'clock this morning we saw a large number of Swifts on their migration towards the south-east. We also saw a few at the Umvuli in September and October, and at Dry Hart river in December and January.

27. Cypselus caffer, Licht.

Mashoona, September and October. Seen, but not procured.

28. Merops nubicoides, Des Murs.

(78) Umvuli river, 14th September. Matabele name "Inconjani."

Appear in considerable numbers about this date. I am told they breed in some of the banks of the rivers in Mashoona land. In the Rustenburg district of the Transvaal they are not uncommon.

29. Melittophagus bullockoides (Smith).

(79) Ganyani river, 18th September.

This Bee-eater apparently makes its appearance here about this time and pairs off for breeding, but not in any great numbers.

30. Melittophagus pusillus (P. L. S. Müll.).

(40) Umvuli river, 11th August.

Not uncommon about the Umvuli, and now commencing to pair. On our return journey, at the Quae Quae river, we found a nest and eggs on the 20th of October, in the perpendicular banks of a small gully, where the birds had pierced a horizontal hole about 18 inches deep, terminating in a small domed chamber with a flat floor, which was only covered with soft sand and the débris of insects. The eggs, four in number, are roundish in shape and of a pure glossy white, measuring 0·75 inch by 0·6.

31. Coracias garrulus, Linn.

(133) ♀, Palatswie Pan, 18th December.

We here met with the only pair we saw during our trip.

32. Coracias nævius, Daud.

(16) Bamangwato, 28th May. Matabele name "Chegala."

This species is met with singly or in pairs, and, although by no means common up country, is very generally distributed. There were several around our camp at the Umvuli river, mostly in pairs, while those we met with on the road were single.

33. Coracias caudatus, Linn.

(5 & 6) Hol Fontein, near Crocodile river, Transvaal, 15th May; Palatswie Pan, 4th June; and Umvuli river, 4th September.

This species is plentiful throughout the Transvaal, Matabele, and Mashoona countries.

34. Coracias spatulatus, Trimen.

Coracias spatulatus, Trimen, P. Z. S. 1880, p. 30.

Coracias dispar, Bocage, Jorn. Sci. Lisboa, 1880, p. 227.

(25) Umvuli river, 2nd August. Bill black; tarsi and feet greenish yellow.

This beautiful Roller much resembles *C. caudatus* in appearance and habits. On our arrival at the Umvuli, and in no other locality, did we meet with this species. Ronksly observed a party of them one day close by; and the birds, he says, "were chasing each other about, and uttering loud harsh cries, some of the notes much resembling the yelping of puppies." Mr. G. A. Phillips at the Tatin told me that Dr. Bradshaw met with this species on the Zambesi.

35. Eurystomus afer (Lath.).

(94) ♀, Umvuli river, 8th October. The crop was filled with a large species of *Cicada*, which is very plentiful at this time.

I found a pair of these noisy birds in a patch of high trees, where they were so shy that for some time I could not get a shot. By hiding myself I excited their curiosity, and they approached to see what had become of me; but on shooting one of them I found it impossible to get the other to allow me within range. About this part of Mashoona land this Roller is very scarce.

36. Alcedo semitorquata, Swains.

Mashoona, September and October.

Seen, but not procured. This species was common on the Umvuli river.

37. Corythornis cyanostigma (Rüpp.).

(2) Mooi river, 3rd May, and Quae Quae river, 23rd October. Matabele name "Intangaza."

Numerous on the Mooi river, and not uncommon on all the streams we passed up to the Umvuli.

38. Ceryle rudis (Linn.).

(97) Umswezwie river, 14th October.

Often seen on the Umvuli, in fact common on all the rivers of Mashoona land.

39. Ceryle maxima (Pall.).

Mashoona, September and October.

Although we occasionally saw this species, it was by no means common in any part of the country.

40. Halcyon semicærulea (Forsk.).

(91) ♀ 2nd, ♂ 6th October, Umvuli river; ♂, Tatin river, 13th December. Iris umber-brown.

A very scarce bird near the Umvuli. On the 2nd of October a pair were met with among the trees on the banks of a small tributary. On the 6th I met with a fine solitary cock bird perched on the dead bough of a tree close to the river. The only other specimen we saw was the young bird we shot on the Tatin river.

41. Halcyon chelicutensis (Stanley).

(5) ♀, Umvuli river, 14th August. Iris umber-brown; bill scarlet, with the culmen and the tip more or less dusky brown; tarsi and feet light red.

Not at all uncommon about the trees in the neighbourhood of the river and in the adjacent rocky hills, where its loud chattering note soon attracts attention. I have seen as many as four or five together; but the bird is generally a more solitary one.

42. Bucorvus caffer (Schleg.).

43. Toccus flavirostris (Rüpp.).

44. Upupa africana, Bechst.

Mashoona, September and October. Seen, but not preserved.

45. Irrisor erythrorhynchus (Lath.).

(59) Umvuli river, 18th August. Matabele name "Inshlaza."

This is not at all an uncommon bird in the parts of Mashoona land we visited, and appears to be widely distributed throughout the wooded parts of South Africa.

46. Schizorhis concolor (Swains.).

(14) Limpopo river, Transvaal, 20th May. Iris dark slate-colour; bill black; tarsi and feet purplish black.

These Plantain-eaters are common in the Rustenburg district and along the Limpopo, and are by no means uncommon in Mashoona land, in August, September, and October, when they feed upon the various berries and fruits, and are by no means bad eating.

47. Cuculus gularis, Steph.

(90) Umvuli river, 2nd October.

These Cuckoos arrive here about the middle of September in considerable numbers, when their motonous *koo, koo,* is to be heard all over the country. From there being no difference in the cadence of the two notes, the song may be readily distinguished from that of *Cuculus canorus.* I at first took it for that of the Hoopoe, until I saw the bird in the act of calling. In October the birds were often in threes or fours, chasing each other about, and frequently came within range; but when solitary the bird is difficult to approach. They seem to be liberally distributed through South Central Africa; and at Kanye, in Sechele's country, they were plentiful in January.

48. Chrysococcyx cupreus (Bodd.).

(93) ♂, Umvuli river, 6th October.

The peculiar note of this Cuckoo I heard for the first time today, and secured the bird. I subsequently heard them

now and again in different parts of the country; but they do not appear to be nearly so numerous as further south.

I see Mr. Sharpe thinks I am mistaken as to the identification of the eggs of this species; but I am perfectly certain that I am not. Perhaps the bird sometimes lays white eggs; but I have never found such to be the case.

49. Coccystes jacobinus (Bodd.).

(145) ♂, Mangwato, 28th December. Iris dark umber; bill black; tarsi and feet dark dusky ash-colour.

Not uncommon at this time of the year in many parts of the country.

50. Centropus natalensis, n. sp.

[*Adult*. Upper half of the head and neck, including the cheeks, brownish black with a green gloss, and a partial white eyebrow commencing at the nostril; back and wings rufous brown, with the mantle, inner secondaries, and ends of the quills of a dark and more olive-brown shade, with narrow pale shaft-stripes to the feathers of the hind neck and mantle, some of which stripes fade into buff; rump, upper tail-coverts, and basal portion of the tail narrowly barred with buff; tail-feathers narrowly tipped with white; underparts buff, with broad glossy buff shafts to the feathers of the throat and chest; on the lower throat the feathers are partially barred from the edges with brown, deepening into black towards the sides of the neck, where the feathers have their outer margins black, causing these parts to be distinctly striped with black and buff; the sides of the body and the under tail-coverts are narrowly barred with dusky black; bill black, with a pale portion towards the base of the lower mandible; legs black; iris red. Total length 17 inches, culmen 1·5, wing 6·7, tail 8·6, tarsus 1·75.

Hab. Natal and Transvaal, where it is very abundant.

This species is, in some respects, intermediate between *C. senegalensis* and *C. superciliosus*. From the former it differs, and assimilates to the latter, in having the rump, upper tail-coverts, and basal portions of the tail barred, and in the white tips to the tail-feathers, which I fancy would be always a

character, unless worn off, as is apparently the case in one of my specimens. From *C. superciliosus* it is distinguished by the partial white eyebrow, which never in adults extends behind the eye, in the hind neck, mantle, and sides of the throat being with or without stripes, but never so much striped as in *C. superciliosus*.

The species of the genus *Centropus* often show considerable variation; and in that respect *C. natalensis* appears to me to surpass them all, as the following tabular arrangement of my eight type specimens will show, specimen *d* being the one I have above described in full:—

Rump, upper tail-coverts, and base of tail always barred.

1. With no white on the sides of the head. Neck not striped. Mantle and wing-coverts very indistinctly striped.
   1'. Tail worn, not tipped with white. Sides of the body not barred ..... *a*.
   2'. Tail tipped with white. Sides of the body more or less barred.
      2''. Flanks slightly barred. Secondaries partially barred.... *b*.
      3''. Sides of the body fully barred. A few distinct white stripes on the back of the neck and mantle. Sides of the crop partially striped ..... *c*.
2. With the white eyebrow confined to a small spot in front of the eye. Tail tipped with white. Sides of the neck striped. Sides of the body barred.
   2'. Mantle and hind neck thinly striped.
      2''. With no bars on the wing ..... *d*.
      3''. Some of the secondaries barred ..... *e*.
   3'. Mantle and hind neck strongly striped. No bars on wing .. *f*.
3. With the white eyebrow extending over the eye, but not well marked. White stripes confined to a few of the feathers on the sides of the hind neck and the mantle. No bars on wing *g*.
4. With the white eyebrow extending back to above the ear-coverts, but barely indicated over the eye. White stripes on the back of the neck and mantle strongly marked. All the secondaries barred. Tail barred for three quarters of its length ..... *h*. juv.

In *C. senegalensis* I have met with the following variations. In the young bird the rump, upper tail-coverts, and tail are barred, but these bars disappear before the bars leave the secondaries. In four specimens collected by Dr. Bradshaw

in the Matabele or Zambesi region, there is a distinct partial white eyebrow extending from the nostril to above the eye; and one of them is without bars on the wing, and appears fully adult. I have also the fully adult bird without any white on the sides of the head, from Bamangwato, collected by Mr. T. E. Buckley.

Towards the northern portion of its range there is a slightly larger and duller race, *Centropus ægyptiacus* (Gm.), with the mantle more olive-brown, found in Egypt, and, according to the labels in the British Museum, also extending into the northern portion of the West-African region.

In *C. superciliosus*, Hempr. & Ehr., I have not met with any variations worthy of remark.

With regard to the range of the three species, *C. senegalensis* (Linn.) inhabits the whole of South and West Africa and North-east Africa from the mouth of the Nile to Abyssinia; *C. natalensis* = *C. superciliosus*, Sharpe (nec Hempr. & Ehr.), new ed. Layard B. S. Afr. p. 163, part, inhabits the eastern portion of South Africa: but I do not feel certain of its occurrence in Benguela; for two specimens in the British Museum collected by Mr. Sala on the Rio Dande belong to the next species. *C. superciliosus*, Hempr. & Ehr., inhabits North-Eastern Africa as far south as Dar-es-Salaam, and crosses the continent to Rio Dande in Angola.—G. E. S.]

51. Pogonorhynchus torquatus (Dum.).

(38) Umvuli river, 10th August. Matabele name "Tsimacope."

Somewhat scarce in this part of the country, frequenting the larger trees along the banks of the river.

52. Barbatula extoni, Layard.

(156) ♂, Kanye, 7th January. Iris dark umber; bill black; tarsi and feet dusky brown.

Sparsely distributed throughout the country from the Umvuli southward, where their loud notes betray their presence. In the Rustenburg district it is plentiful.

53. Trachyphonus caffer (Vieill.).

(149) ♂, Boatlanami Pan, 30th December. Iris dark lake; bill pale green, with a dusky tip; tarsi and feet dusky ash.

We neither saw nor heard any of these birds in the Mashoona country. The first met with on our return journey was calling amongst some trees in the Matabele country near the Tatin river. After this we occasionally heard them in various parts of the country; they are, however, more common in the Rustenburg district of the Transvaal than in any other part of South Africa I have yet visited.

54. Campothera smithi (Malh.).

(68) ♀, Umvuli river, 28th August. Iris ashy pink; bill dark horny ash-colour; tarsi and feet light dingy green. Total length in the flesh 9 inches.

Not very scarce, but difficult to procure.

55. Dendropicus namaquus (Licht.).

(44) ♀, Umvuli river, 14th August, and ♂, Quae Quae river, 22nd October. Female: iris brownish red; bill dusky ash; tarsi and feet pale olive-green. Male: iris bright garnet-red; bill dark ash; tarsi and feet light dingy olive-green.

The loud harsh cry [illegible] heard, especially in the early [illegible], amongst the woods, but it is not always easy to get within shot.

56. Psittacus meyeri (Rüpp.).

(15) Limpopo river, Transvaal, 18th May, and Umvuli river, 4th September. Matabele name "Zignonene." In an adult male shot in September the iris was reddish orange; in a male of the year, also shot in September, the iris was light olive-brown; bill light ash, darker at the tip; tarsi and feet light ash.

Common throughout the bush-country, plentiful in Mashoona land, at the Umvuli river, and in other parts. There is also a much larger Parrot, which we failed to obtain, in the Mashoona country: green, with some yellow about the head, possibly *P. robustus*. This species we found feeding on a wild fruit called by the Mashoonas "Incona," which was ripe in

quantities in September and October, and grows on large dark-leaved trees in the forest.

57. Turdus litsitsirupa, Smith.

(166) ♀, Sikogolo river, 17th January.

Scantily scattered throughout the country.

58. Turdus libonyanus, Smith.

(32) ♂, Umvuli river, 7th August. Matabele name "Inshlava."

Occasionally a pair is to be found here and there about the country of the Mashoonas; but near Rustenburg, in Transvaal, it is the commonest of the true Thrushes.

59. Pycnonotus layardi, Gurney.

(26) Umvuli river, 2nd August. Matabele name "Ipoti." Iris dark brown; bill, tarsi, and feet black.

Rather scarce in these parts, but very abundant in the Rustenburg district of the Transvaal.

60. Crateropus bicolor (Jard.).

(122) ♂, Tatin river, 8th December. Iris light yellow; bill black; tarsi and feet ashy black.

These birds go in small parties and are very noisy.

61. Crateropus plebeius (Rüpp.).

(57) Umvuli river, 17th August. Matabele name "Imvanana."

Not at all uncommon along the banks of the river, where their noisy and lively notes are frequently heard. They feed amongst the brushwood on the ground, both on fruit and insects, often scratching the dead leaves over after the manner of the true Thrushes.

62. Cossypha heuglini, Hartl.

(65) Umvuli river, 25th August. Iris umber; bill black; tarsi and feet dingy ashy brown.

This species was exceedingly scarce. It frequents dense thickets lining the small rivulets that run into the Umvuli, and from its retiring habits is not often seen.

63. Thamnobia cinnamomeiventris (Lafr.).

(104) ♂, hills near Shongo river, 1st November. Iris dark umber; bill, tarsi, and feet black. Total length in the flesh 9·25 inches. The crop contained beetles and other insects.

We met for the first time a pair here among the rocks; subsequently I saw a third specimen among the rocks at Kanye.

64. Thamnobia shelleyi (Sharpe).

(37) Umvuli river, 10th August. Matabele name "Inquelechaine." In both sexes iris dusky; bill, tarsi, and feet black.

This is an arboreal Chat, frequenting the woods on the banks of rivers. Although generally near the ground, on being disturbed it immediately flies to the higher branches of the trees. We only met with it on the Umvuli, and with but few representatives of the species even there. They were feeding entirely upon ants, which they take from the ground as well as the trees, and are shy and difficult to approach. Mr. Sharpe has rightly identified the female; she has the crown black and throat white, while the male has the crown white and throat black.

65. Pinarornis plumosus, Sharpe.

(33) Umvuli river, 7th August and 9th October. Iris bright umber; bill, tarsi, and feet black.

I found a pair of these curious birds on a rocky spur of a low range of mountains, well wooded with high trees. They are the only two of this species that I have ever seen. Their habits are decidedly those of a Chat; and although shy and retiring they are at once conspicuous by their large size and the peculiar graceful movements imparted to them by their lax soft plumage and ample wings and tail, as they hop and flit about the large boulders and rocks, alighting on them as softly as a falling snow-flake. The male is darker and brighter in plumage than the female, which gives the latter a somewhat faded appearance.

66. Myrmecocichla formicivora (Vieill.).

(173) Spalding's, Hart river, 27th January.

Common in this locality. There was a fine old cock bird that used to come and perch on a particular bush, not thirty yards from our waggons, and remain there nearly all day. He would, in the mornings and evenings, if the weather was favourable, indulge us with a short but very pleasant loud and clear song.

67. Saxicola galtoni (Strickl.).

(105) ♀, Rocky Kopjes near Shongo river, 1st November; and ♀, Mangwato, 27th December.

A pair of these birds were breeding in the rocks near the Shongo. They are much less plentiful in these parts than about Rustenburg and other spots in the Transvaal.

68. Saxicola pileata (Gm.).

Mashoona, September and October; seen, but not procured. Mangwato, 26th December.

69. Pratincola torquata (Linn.).

Mashoona, December. Seen, but not procured.

70. Aedon leucophrys (Vieill.).

(111) ♂, Matje Umschlope, 14th November; and ♂, Kanye, 7th January. Iris light dusky brown; bill dusky brown, with the basal part of the lower mandible yellow; tarsi and feet pale dingy ash-colour.

We found the bird by no means plentiful.

71. Aedon pœna (Smith).

(137) ♂, Mangwato, 26th December. Iris dark brown; bill horny black; tarsi and feet light ash-colour.

A common species here and breeding at this time. I found a nest on the 23rd placed in a low bush about a foot from the ground; it was cup-shaped, composed of rough, dry, coarse, half-rotten stalks and blades of grass, and lined with fine fibrous roots; internal diameter about 2 inches. The eggs, three in number, are white, spotted with reddish brown, more especially at the obtuse end, where the spots are inclined to run into each other and form blotches. Measurements 0·8 inch by 0·6.

72. Drymœca flavicans (Vieill.).

(138) Mangwato, 26th December.

These birds inhabit the low thorn-bushes which are plentiful in this part of the country.

73. Drymœca ocularia, Smith.

(165) ♂, Malope river, 13th January; and ♂, Hart river, 1st February. One male measured 6 inches in the flesh, the other 5·5.

These birds are abundant in the neighbourhood of the Malope river, where I have seen six or eight together. They are very tame, and frequent the low scrub. We also met with them at Spalding's.

74. Drymœca affinis, Smith.

(52) ♂, Umvuli river, 16th August. Iris light hazel; bill dark ash-colour; tarsi and feet light reddish brown; claws dusky brown.

Scarce, frequenting the low bushes &c. on the banks of the river.

75. Cisticola natalensis (Smith).

(69) ♀, Umvuli river, 31st August. Matabele name "Umkuwelo." Iris tawny yellow; bill pale, with the culmen light dusky brown; tarsi and feet pale.

Not plentiful; it frequents the rough stuff along the banks of the river.

76. Cisticola cheniana (Smith).

(123, 131, 140) Tatin river, 8th December, Seruli Pan, 17th December, Mangwato, 27th December. Iris hazel; bill light dusky brown; tarsi and feet pale ruddy brown.

The commonest Warbler in this part of the country. It is an active bird, and enlivens its abode with its many loud and varied notes. When sitting on the top of some bush, which it often does, it has a curious habit of holding on fast with its feet, and then attempting to fly up, giving it the appearance of having its feet fast with bird-lime, and as if the bird was making strenuous and ineffectual efforts to be off.

77. Cisticola aberrans (Smith).

(28) Umvuli river, 2nd August, Matje Umschlope, 17th November, and Kanye, 7th January. Matabele name "Imnyati."

A specimen shot at Kanye, 7th January, had the iris hazel; bill pale, with the culmen light dusky brown; tarsi and feet pale.

This species is generally distributed over the country, nearly always in pairs, generally frequenting low mimosa bushes and other shrubs, but when disturbed flies up to the topmost branches of the high trees.

78. Cisticola fasciolata (Smith).

(128) Tatin river, 13th December.

This I have always found to be a scarce bird. We met with a pair at the Tatin in the thick bush on a hillside.

79. Cisticola cursitans (Frankl.).

(162) ♂, Kanye, 11th January. Iris hazel; bill light dusky brown; tarsi and feet pale.

I have often noticed the power of ventriloquism in this bird, which I see has previously been remarked by others.

80. Phylloscopus trochilus (Linn.).

(113) Matje Umschlope, 17th November.

A small company of about a dozen Willow-Warblers were restlessly moving about in the trees this morning near Lo Bengoola's Kraals. The first I have seen on this journey.

81. Eremomela flaviventris (Burch.).

(60) Umvuli river, 19th August. Iris dark brown; bill dark horn-colour, yellow at the angle of the mouth, and livid flesh-colour on the basal part of the lower mandible; tarsi and feet dark ash-colour.

Here the birds were generally in small family parties busily engaged hunting for their insect-food amongst the young foliage near the tops of the trees.

82. Eremomela hemixantha, Seebohm.

(31) ♂, Umvuli river, 23rd August. Iris yellowish white; bill black; tarsi and feet light ruddy brown, tinged with ash.

Total length in the flesh 5 inches. In a male shot 7th August, iris pale yellow; eyelids ruddy brown; tarsi ash-colour; feet light yellowish brown.

This species is active and restless, hunting in flocks for insects among the young leaves and buds. In the early morning some of the trees seem alive with them; and every now and again the whole flock simultaneously set up a loud chirring note, and a general chasing of each other ensues, after which they soon straggle off to another tree, and renew their business and pleasure.

83. Sylvietta rufescens (Vieill.).

(92) ♀, Umvuli river, 6th October; and ♀, Chakanie Pan, 19th December.

Very scarce near the Umvuli, where, I think, I only saw the bird on one occasion during our stay of two months and a half. It displayed the usual restless habits of the species. On the 19th of December, at Chakanie Pan, Mr. Jameson found a nest and eggs. The nest, a very pretty pendent structure, was hung from the outer twigs of a "wait-a-bit" thorn, was open at the top, and composed of dry leaves and stalks, neatly woven together with cobwebs, giving it a greyish-white appearance, and was lined with fine grass. The eggs, two in number, are exactly as described by Mr. Sharpe in his new edition of Layard's 'Birds of South Africa.'

84. Hylypsornis salvadorii, Bocage.

Hylypsornis salvadorii, Bocage, Jorn. Lisboa, vi. 1878, pp. 198, 211.

(83) ♀, Ganyani river, 17th September. Bill dusky brown; tarsi and feet ashy brown. Total length in the flesh 5·75 inches. The crop contained caterpillars.

A pair were seen creeping about the trunks and branches of the large trees. From the state of the ovary it was evidently about to lay.

[This rare species has hitherto only been collected in Benguela.—G. E. S.]

85. Cinnyris gutturalis (Linn.).

(51) Umvuli river, 16th August, and Quae Quae river, 25th October. Matabele name "Icomo mazadoona." Iris dusky; bill, tarsi, and feet black.

This species suddenly made its appearance in great numbers about this time, and remained plentiful for somewhat less than a month, and then became scarce again, a pair here and there only remaining to breed. This was not for want of food, for the "German-sausage trees," on which they had been feeding, were still loaded with blossoms long after the Sun-birds had left; so I presume they must have been passing to some more favourite locality.

86. Cinnyris chalybæus (Linn.).

(1) Rustenburg, Transvaal, 6th May, and Umvuli river, September. Iris dusky; bill, tarsi, and feet black.

At the Umvuli river they were scarce, and had probably just arrived; for we did not see any in August.

87. Cinnyris kirki, Shelley.

(75) ♂, Umvuli river, 9th September. Iris dusky; bill, tarsi, and feet black.

These birds made their appearance much about the same time as *C. gutturalis*, but by no means so plentifully, feeding together with them on the flowers of the "German-sausage tree."

[This is the most southern limit yet recorded for *C. kirki*; and as the collection contains four adult males, we may presume that it visits the Umvuli regularly.—G. E. S.]

88. Cinnyris talatala (Smith).

(20) Pelatswie Pan, Bamangwato, 4th June.

Found feeding about the same parasitic plant as *C. mariquensis*, and in about equal numbers. A widely distributed species.

89. Cinnyris mariquensis, Smith.

(19) Palatswie Pan, Bamangwato, 4th June.

Here we met with this species and *C. talatala* in tolerable abundance assembled round a very pretty parasitic plant, the

blossoms of which much resemble the honeysuckle. The cock birds we watched chased each other about the trees with their usual liveliness. We also got a specimen of this bird at Matje Umschlope, in Matabele, in November, and a pair at Mangwato on the 27th December.

90. Anthoscopus caroli (Sharpe).

(81) ♀, Ganyani river, 19th September. Iris bright ashy blue; bill blue, with the culmen and gonys black; tarsi and feet dark bluish ash. Matabele name "N'kilo."

It was shot whilst hunting among the buds and young leaves of the forest-trees in company with others of the same species.

[New to the eastern portion of South Africa.—G. E. S.]

91. Anthoscopus capensis (Gmel.).

(176) ♂ ♀, Spalding's, Hart river, 29th January.

We met with several small family parties of these tiny birds hunting actively for their food amongst the low "Vaal bosch," a grey bush which is very common all over this part of the country. In June I found a couple of deserted nests in Bamangwato, but did not see the birds. On our way out of the country, at Boatlanami Pan, on the 29th of December, Mr. Jameson found a nest, with one beautiful little pure white egg.

92. Parus afer, Gmel.

(47) Umvuli river, 14th August.

Not uncommon in Mashoona land.

93. Parus niger, Vieill.

(10) Limpopo river, Transvaal, 19th May.

A tolerably common bird throughout the bush-country. We found it equally plentiful on the Umvuli river, Mashoona land, in September and October.

94. Parisoma subcæruleum (Vieill.).

(143) Mangwato, 26th December.

Now and again to be seen in Matabele land, but decidedly more plentiful to the southward of that country.

95. Pachyprora molitor (Hahn & Küst.).

(55) ♂, Umvuli river, 17th August. Matabele name "Mantilima." Iris bright yellow; bill, tarsi, and feet black.

Common on the Umvuli. They have peculiarly loud notes, considering the size of the bird, but they are not unpleasant.

[I have placed this species in the genus *Pachyprora*, instead of *Batis*, as the latter generic name was previously, and is still, in general use in botany.—G. E. S.]

96. Muscicapa grisola, Linn.

(98) Quae Quae river, 22nd October.

We met with a few of these birds towards the latter end of October; so I presume they migrate to Mashoona land about this time.

97. Hyliota australis, sp. n. (Plate VII. fig. 1.)

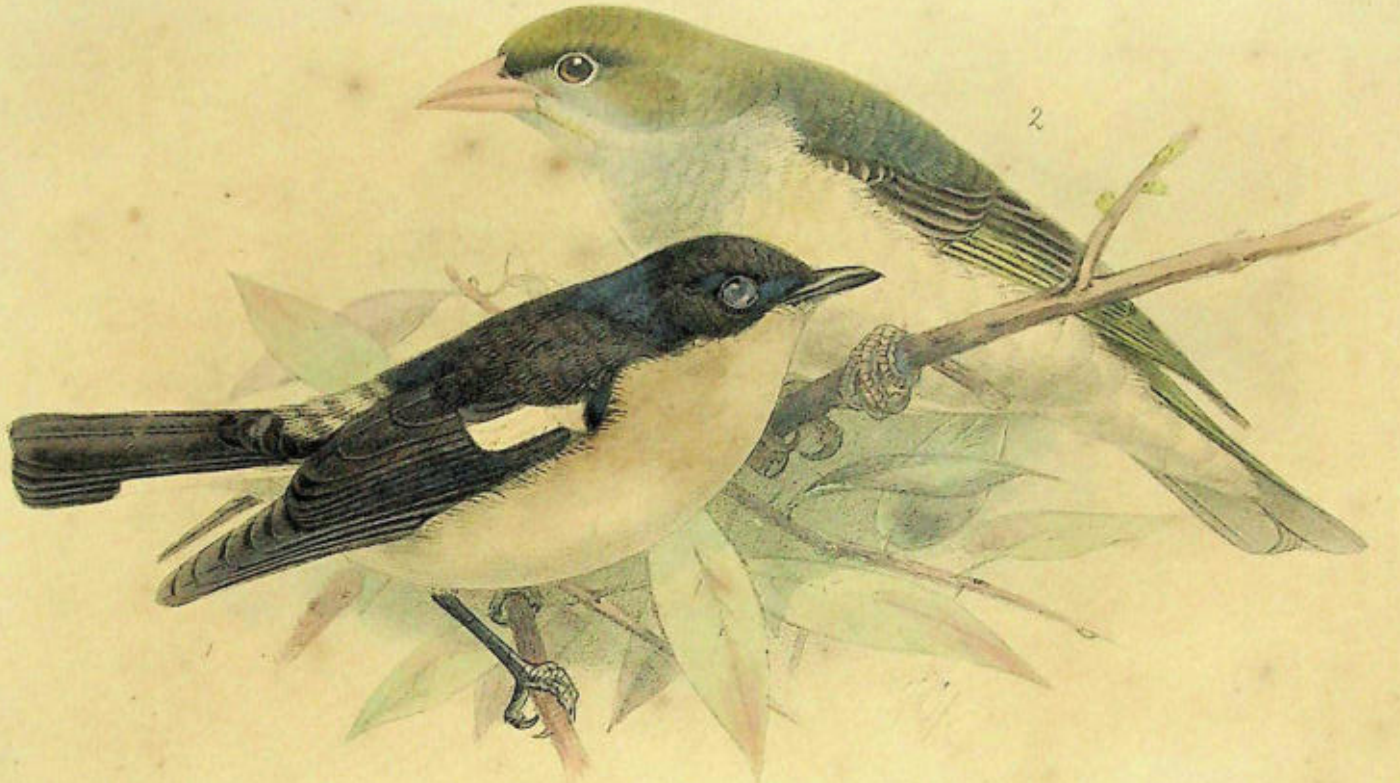
(48) Umvuli river, 14th August. Iris dusky; bill bluish ash, black at the tip; tarsi and feet dark ash-colour, nearly black. Total length in the flesh 4·75 inches. The crop contained a large spider.

Exceedingly scarce, frequenting the upper parts of high trees, amongst the buds and young leaves of which it actively searches for insects.

[The present species principally differs from any hitherto described *Hyliota* in the entire absence of any steel-blue shade on the upper parts.

The specimen before me is labelled male, and is apparently in full plumage. I have compared it with *H. flavigastra*, Swains., in the British Museum, but only know *H. violacea*, Verr. (which appears to me as doubtfully distinct from *H. flavigastra*), by the description.

H. australis: Upper parts and sides of the head dull black, slightly glossed with metallic lilac; across the lower back a broad band of white feathers tipped with black, much hidden by the overlapping of the black feathers, giving a mottled appearance to this part; median and greater wing-coverts entirely white, with the exception of a few of the outer ones; secondaries with a white base, increasing in breadth towards the innermost ones; inner webs of the quills with white edges;



J. G. Keulemans, lith.

Bernhard imp.

1. HYLIOTIS AUSTRALIS.
2. SHARPEA AYRESI.

under wing-coverts white; two centre tail-feathers entirely black, the others more or less narrowly and partially edged with white on both webs, the outer feather has the white extending over the entire basal portion of the external web for about three quarters of its length; under surface of the body ochraceous yellow, deeper on the breast and paler on the vent and under tail-coverts, the latter being almost white; thighs white in front and black behind. In the skin—total length 4·6 inches, culmen 0·4, wing 2·8, tail 2, tarsus 0·75.—G. E. S.]

98. Terpsiphone perspicillata (Swains.).

(88) ♂, Umvuli river, 2nd October. Iris dusky umber; bill and eyelids of the most lovely light cobalt or, rather, sky-blue; tarsi and feet ashy blue.

These Flycatchers must be scarce in this part of Mashoona land, for we only saw one small party, probably a family, which were shy, and flew right away after the first shot.

99. Chelidon urbica, Rüpp.

(99) ♀, Quae Quae river, 23rd October.

For two or three days, from about 9 to 10 A.M., considerable numbers of Martins were flying up the river in a south-easterly direction, at a great height, only now and then one coming within range. They were apparently migrating.

[This is the first time the House-Martin has been recorded from South Africa. The occurrence is most interesting in showing the full migration of this well-known European bird.—G. E. S.]

100. Cotile cincta (Bodd.).

101. Hirundo rustica, Linn.

Mashoona, September, October, and December. Seen, but not procured.

102. Hirundo dimidiata, Sundev.

(34) Umvuli, 9th August. Matabele name "N'konjane." Iris dark umber; bill, tarsi, and feet black.

Evidently building at this time, as there was mud on the bills of the pair we shot. They either remain here through-

out the winter, or are very early in their migration, as I saw them in the Matabele country in June, when no other Swallows were to be seen.

103. Hirundo griseopyga, Sundev.

(101) Quae Quae river, 25th October. Iris dusky; bill black; tarsi and feet dusky brown. Total length in the flesh 6·25 inches.

These Swallows were in pairs, hunting among the trees for their insect food; but were not plentiful.

104. Hirundo semirufa, Sundev.

Mashoona, September, October, and December. Seen, but not procured.

105. Hirundo cucullata, Bodd.

Mashoona, September, October, and December. Seen, but not procured.

106. Hirundo puella, Temm.

(86) ♀, Umvuli river, 1st October. Iris umber; bill, tarsi, and feet black.

These Swallows, which had just arrived in small parties, were immediately pairing off and commencing to build, but were by no means plentiful.

107. Lanius collaris, Linn.

(150) ♀ immature, Spalding's, Hart river, 8th February. Iris dark hazel; bill dark dusky brown, with the basal part of the lower mandible light bluish ash; tarsi and feet dark dusky brown.

The only one I have seen here.

108. Lanius collurio, Linn.

(120, 121) Tatin river, 7th and 8th December.

A common bird here; to be seen in pairs about the low scrub.

109. Urolestes cissoides (Licht.).

(9) Limpopo or Crocodile river, near Oliedrift, Transvaal, 16th May. Iris dusky brown; bill, tarsi, and feet dusky black.

A rather common species throughout the bush-veldt from Rustenburg into the Mashoona country, where, on the 8th of October, we found it breeding. The nest was placed amongst the outer boughs of a low thorn-tree some eight feet from the ground, and was cup-shaped, roughly constructed externally, principally of thorny twigs, and lined with fibrous roots and dry wiry bits of grass. It contained four somewhat incubated eggs, of a pale creamy-brown colour, with a finely speckled zone of rich brown of various shades, from nearly black to pale brown, the rest of the surface more or less dotted all over with brown. They measured $1\frac{1}{16}$ inch by $\frac{3}{4}$.

110. Laniarius poliocephalus (Licht.).

(70) Umvuli river, 31st August. Iris bright yellow; bill black; tarsi and feet light bluish ash. Total length in the flesh 10·5 inches. The crop contained a small mouse.

We only met with one pair of these Shrikes. Their notes are loud and harsh, though not often heard, as the bird is generally silently creeping about dense thickets.

111. Laniarius sulphureipectus (Less.).

(49) ♀, Umvuli river, 14th August. Iris ruddy brown; bill black; tarsi and feet ash-colour. Total length in the flesh 7·75 inches. The crop contained insects.

An exceedingly scarce bird, and retiring in habits, frequenting low bushy trees along the banks of the river.

112. Laniarius atrococcineus (Burch.).

(3) Eland's river, Rustenburg district, 11th May; Bamangwato, 24th May; Tatin river, Macloutsi river, Palatswie Pan, and Chakanie Pan, December. Matabele name "Billi-bonvu." Iris dark ashy blue; bill, tarsi, and feet black.

These handsome Shrikes generally frequent dense thorny mimosa-jungle, and are not uncommon in parts of the country where such bush is to be found. None were seen on the northern side of the Malope river, either in the Matabele or Mashoona countries, where the character of the bush gradually but totally changes.

113. Laniarius cubla (Shaw).

(67) Umvuli river, 27th August, and Ganyani river, 18th September. Female: iris bright reddish orange; bill bluish ash, with the culmen horny black; tarsi and feet bluish ash. Male: iris more crimson; bill black; tarsi and feet light ash-colour.

Pretty common in Mashoona land. The birds were mostly hunting for insects among the foliage in the tops of the trees.

114. Telephonus erythropterus (Shaw).

(56) ♂, Umvuli river, 17th August; and ♀, Kanye, 7th January. Male: iris ashy blue; bill black; tarsi and feet light ash-colour. The crop contained grasshoppers.

Generally distributed over the wooded parts of the country.

115. Telephonus trivirgatus, Smith.

(56 ♀, Tatin river, 9th December.

Common at the Tatin river, where I have seen several together in wet weather, each by turns rising high over the bush with a fluttering flight, and, uttering a loud *chirra, chirra, chirra,* dive into the bush again.

116. Nilaus brubru (Lath.).

(18) Palatswie Pan, 3rd June. Iris umber-brown; bill black, with the basal part of the lower mandible bluish ash; legs light ash.

This bird is apparently pretty evenly distributed throughout the bush-country of South Central Africa. We found it at the Umvuli river, Mashoona land, in September, solitary or in pairs.

117. Graucalus pectoralis (Jard. & Selby).

(30) Umvuli river, 7th August and 4th September. Iris umber; bill black; tarsi and feet in male dark ash, in female black. Total length in the flesh, male 10 inches, female 9·75.

This is decidedly a scarce bird. It is solitary in its habits, and frequents the high tree-tops, where it feeds upon caterpillars and various insects.

[This species is new to the eastern division of South Africa. —G. E. S.]

118. Eurycephalus anguitimens, Smith.

(129) ♂, Tatin, 13th December. Iris dusky; bill black; tarsi and feet ash-colour. Total length in the flesh 10 inches.

This species goes in small flocks in search of its insect-food amongst the trees, where its harsh loud notes may be heard.

119. Bradyornis mariquensis, Smith.

(130) ♂, Macloutsi river, 15th December. Iris dusky; bill, tarsi, and feet black. Total length in the flesh 7 inches.

Here we saw two or three flying about the mimosa trees. I do not remember to have previously met with this bird.

120. Bradyornis infuscatus (Smith).

Saxicola infuscata, Sharpe, new ed. Layard's B. S. Afr. p. 233; Seebohm, Cat. B. Brit. Mus. v. p. 406.

(117) ♂ adult, and ♂ immature, Spalding's, Hart river, 2nd February. Adult: iris umber; bill brownish black; tarsi and feet black. Total length in the flesh about 8 inches, immature bird 7·5. Their crops contained berries and insects.

I do not remember having met with this species before. It has a Shrike-like appearance, and frequents the low bushes near the river, and seems invariably to alight on the tops of them. I am told they breed in this locality.

[With regard to the genus *Bradyornis*, as summed up by Mr. Sharpe (Cat. B. Brit. Mus. iii. p. 308), I would suggest the following alterations:—Part *a*, section *b'*, should include *B. infuscatus* (Smith), *B. murinus*, Hartl. & Finsch, to which *B. oatesii*, Sharpe, should be referred, and *B. pallidus* (von Müller), to which *B. modestus*, Shelley, belongs.—G. E. S.]

121. Bradyornis silens (Shaw).

(158) Kanye, 17th January. In an immature male, iris dusky; bill, tarsi, and feet black.

These birds frequent the low bush in rocky places and feed upon insects.

122. Prionops talacoma, Smith.

(42) ♂, Umvuli river, 12th August; and ♂, Tatin river,

13th December. Iris pale gamboge-yellow; eyelids bright orange; bill black; tarsi and feet orange.

Not common about the Umvuli, where we only met with one small flock. At the Tatin river, in Matabele country, they were more plentiful, and are pretty common in some of the wooded parts of the Transvaal.

123. Sigmodus retzii (Wahlb.).

(41) ♀, Umvuli river, 12th August. Iris dark gamboge-yellow; eyelids blood-red; bill, basal part crimson, gradually changing to bright dark gamboge at the tip; tarsi and feet scarlet. Total length in the flesh 9·25 inches.

These are scarce birds; for we only met with them on three occasions, in small flocks amongst the woods of Umvuli, when they were so wary that we only succeeded in getting one hen bird. From what I could see, the male differs very materially in plumage. Their notes are loud, chattering, and harsh, and they feed upon insects. In flight, and apparently in habits, they much resemble *Prionops talacoma*. I have not seen them in any other locality.

124. Buchanga assimilis (Bechst.).

(127) ♀, Tatin river, 10th December. Iris beautiful lake-red; bill, tarsi, and feet black.

A common bird from the Umvuli river to the Transvaal. I found it breeding at Matje Umschlope.

125. Dicrurus ludwigii, Smith.

Mashoona, September and October. Seen, but not procured.

126. Oriolus larvatus, Licht.

(36) Umvûli river, 10th August. Iris bright crimson; bill light pinkish brown; tarsi and feet ash-colour.

Occasionally we saw a specimen and heard its loud call amongst the trees; but none, however, appear to remain.

127. Oriolus notatus, Peters.

(80) Ganyani river, 20th September.

Shy, but not uncommon in Mashoona land.

128. Corvus scapulatus, Daud.

Mashoona, September and October. Seen, but not procured.

129. Corvultur albicollis (Lath.).

Matabele, December. Seen, but not procured.

130. Lamprotornis australis (Smith).

(13) Limpopo river, 24th May, and Kooroomoorooi Pan, 2nd January. Iris dusky; bill, tarsi, and feet black. Sexes similar in plumage.

This is by no means a common bird in any part of the country that I have visited, and appears to be very local; it is generally found in small flocks. I saw a few in Bamangwato near Kama's town. Their crops contained nothing but insects.

131. Lamprocolius chalybeus (Hempr. & Ehr.).

Lamprotornis chalybeus, Hempr. & Ehr. Symb. Phys. pl. 10.

Lamprotornis chalcurus, Nordm. in Erm. Atl. p. 8.

Lamprotornis chloropterus, Swains. Anim. in Menag. p. 359.

Lamprocolius sycobius, Peters, J. f. O. 1859, p. 19.

Lamprocolius porphyrurus, Hartl. Abhandl. nat. Ver. Brem. iv. p. 60.

(43) Umvuli river, 12th August, 18th and 25th September. Matabele name "Iqueeze." Iris dark gamboge; bill, tarsi, and feet black.

This beautiful bird, though much resembling *L. phœnicopterus*, appears to me, from what I can remember, much brighter, but I have no Transvaal bird to compare it with. The note, too, differs, although it is just as harsh. They are found in Mashoona land in small flocks, generally frequenting high trees; and those which we procured had been feeding upon small insects, apparently black ants.

[I have given the above synonymy, as this species has, in my opinion incorrectly, been divided into five. The *L. phœnicopterus* above mentioned by Mr. Ayres should, I think, stand as *L. nitens* (Linn.).—G. E. S.]

132. Pholidauges verreauxi, Bocage.

Mashoona, September and October. Seen, but not procured.

[To be continued.]

XX.—*On the Birds of Gilgit.* By Major J. Biddulph.

(Plates VIII., IX.)

Since the publication of my former paper on the Birds of Gilgit I have been again resident, from May 1880 till March 1881, in that place, during which time I procured several species not previously obtained, either by Dr. Scully or myself. The summer of 1880 was marked by an unusual amount of bad weather—the monsoon, which, as a rule, is never felt so far from the plains of India, having made its influence apparent. The end of July and the beginning of August, which, in ordinary years, is the hottest season in Gilgit, was marked by ten days continuous rain and stormy weather. In consequence of this the autumn migration commenced a fortnight earlier than usual, and on the first two days in August a number of water-birds and waders, such as *Ibidorhynchus struthersi, Machetes pugnax, Tringa temmincki, Totanus glareola, Totanus calidris*, &c., appeared: amongst them a special prize, in *Tringa acuminata*, was secured. I also saw several Kites (*Milvus melanotis* or *M. govinda*).

In July and August I sent native collectors to the Darel valley, to the Deosai plain, and to the Shandur plateau, which divides the Gilgit-Yassin valley from the Chitral valley. The jealousy of the Darelis caused them to regard my men as spies who had come to study the nakedness of their land, for which purpose ornithology was but a transparent veil; and my men were obliged to return after four days' stay in the valley. They brought back forty-six specimens, representing eighteen species. Of these, three do not appear in the Gilgit list, viz. *Garrulus lanceolatus, Otocorys longirostris*, and *Hydrobata leucogaster*, the last-named being hitherto unrecorded south of the Himalayas. *Orœcetes cinclorhynchus*, which only appears as an occasional straggler in Gilgit, seems to be exceedingly common in Darel, together with *Garrulus lanceolatus*, which appears to be equally abundant. The vegetation of Darel, which valley has remained till now unvisited by any European, probably approaches in character more nearly to that of Cashmere than to that of the Gilgit and Astor valleys.

My collector who visited the bleak Deosai plain was also unfortunate in having encountered weather so bad as to make any prolonged stay impossible, even in July, at so great an elevation. He brought back fifty-seven specimens, representing twenty-four species, only one of which, *Otocorys longirostris*, does not appear in the Gilgit list.

The man who visited the Shandur plateau was more fortunate in being well received by the people of the country, and remained there for over a fortnight. During this he collected numerous specimens, which tend to show that the plateau is a favourite breeding-ground for many of our Gilgit birds that are forced to seek a considerable elevation for the purpose.

Further observation has tended to confirm my former conjecture, that the Indus valley forms the chief route by which migrants between Central Asia and Northern India pass and repass. This is also borne out by the appearance of several species of rare or previously unknown occurrence in India having been recorded at Attock in the pages of 'Stray Feathers' during the last few years. Punjab ornithologists will probably find themselves well repaid by a careful collection of species during the months of October, November, December, and January at Derbund, where the Indus emerges from the Himalayas into the plains of the Punjab.

The Indian Government having decided against the further retention of a British officer at Gilgit for the present, it will probably be some time before any further continuous ornithological observations at that spot can be made, though many sportsmen will, no doubt, find their way up to so good a sporting-locality. Up to the time of my departure I continued to add new species to the list, which now comprises 265 species. Of this number only one, the Owl named after me by Dr. Scully, is new to science. Five are of doubtful identification, no specimen having been secured, though in each instance there is no doubt that a species not otherwise recorded in the list was observed. These are *Vultur monachus*, *Neophron percnopterus*, *Corvus umbrinus*, *Branta rufina*, and

Mergus castor. The absolute identification of *Gyps fulvescens* must also remain undecided, for reasons hereafter stated. My identifications of *Corvus culminatus* and *Columba livia* may also be accepted with hesitation, as also the specific distinction of *Corvus collaris*. Without taking these into account, twenty-one species not previously recorded, or of doubtful occurrence, in India, according to Mr. Hume's list of 1st March, 1879, must now be added to the number of our Indian species. They are *Cerchneis vespertina, Lanius homeyeri, Lanius phœnicuroides, Turdus hyemalis*?, *Saxicola vittata, Saxicola œnanthe, Leptopœcile sophiæ, Accentor fulvescens, Sturnus purpurascens, Petronia stulta, Emberiza hortulana, Erythrospiza incarnata, Propasser blythi, Linaria cannabina, Fringilla montifringilla, Leucosticte brandti, Turtur aurita, Ægialitis hiaticula, Ægialitis jerdoni, Tringa acuminata*, and *Crex pratensis*. The occurrence of *Hydrobata leucogaster* within Indian limits, though not included in the Gilgit list, is also recorded for the first time.

1. Vultur monachus, Linn.

I may have been wrong in my identification of these birds; but they were certainly not the young of *Gyps himalayensis*. They were a pair of adult birds of a totally different species.

2. Gyps fulvescens, Hume.

I regret that I did not bring this specimen home for comparison. To the best of my recollection, however, it was an adult bird. Owing to the difficulty of transport, I left this and a fine specimen of *A. chrysaetos* behind me.

9*a*. Cerchneis vespertina (Linn.).

A single specimen, a young male in immature plumage, was obtained in October. Length 11·25 inches, wing 8·8, tail 5·1, tarsus 1·12; irides light brown; legs and cere orange; claws paler. I have compared this specimen with those of *C. amurensis* and *C. vespertina* in Mr. Seebohm's collection, and have no doubt of its identity with the latter species, though the immature specimens are difficult to discriminate.

12. Accipiter nisus (Linn.).

Out of twenty-one Sparrowhawks from Gilgit Mr. Sharpe identifies only thirteen as true *A. nisus*, the rest apparently belonging to the larger race which I have called *A. melaschistus* of Hume.

18. Buteo plumipes, Hodgs.

I obtained a male in the rufous stage of plumage from the Deosai plain.

29. Scops bruci, Hume.

A fine specimen was brought to me alive, but numbed with cold, after some bad weather in the beginning of July.

33. Chelidon cashmirensis, Gould.

33*a*. Chelidon urbica, Linn.

During the time of our being in Gilgit together, Dr. Scully and myself failed to notice that we had more than one House-Martin, and while he only obtained *C. urbica*, I only obtained *C. cashmirensis*.

In the beginning of July 1880 the weather, after being intensely hot, suddenly changed, and for four days rain fell on the neighbouring hills, ending in heavy snow during the night of the fourth day, when the thermometer in Gilgit fell to 45° Fahr.

The following morning a number of Martins were picked up, either dead or so numbed with cold as to be unable to move; and I then observed that there were two kinds. Of a dozen brought to me, five proved to be *C. urbica*, and the remaining seven *C. cashmirensis*, all adults.

A male of *C. urbica* measures—length 5·8 inches, wing 4·6, tail 2·75, tars. 0·4. A female measures—length 5·9, wing 4·36, tail 2·75, tars. 0·45.

A male of *C. cashmirensis* measures—length 5·36 inches, wing 4·05, tail 2·28, tars. 0·45. A female measures—length 5·5, wing 4·03, tail 2·4, tars. 0·5.

All the specimens of *C. cashmirensis* are dusky beneath, instead of pure white as in *C. urbica*, and have dusky mesial centres to the feathers of abdomen, flanks, and rump. The under wing-coverts are brown, instead of dirty white as in

C. urbica. My specimens are identical with Gould's type in the British Museum.

35. Caprimulgus unwini, Hume.

My collector brought me a female from the Deosai plain, where it appeared to be common.

46. Certhia hodgsoni, Brooks.

This species appears to be commoner in the Astor valley, where it probably breeds. I procured two immature specimens there in July at an elevation of 10,000 feet.

47. Tichodroma muraria (Linn.).

I saw one of this species in September at an elevation of 15,000 feet; and I fancied that I identified one at an elevation of 13,000 feet in July; so it probably breeds in the district. I have procured it in Ladakh at 13,000 feet, in the middle of September.

52. Lanius phœnicuroides, Severtz.

The Shrike referred to (Ibis, 1881, p. 51) under the name of *L. cristatus* proves to belong to this species. I obtained two immature specimens on 6th September and 16th October.

53. Pericrocotus brevirostris, Vigors.

I procured a single specimen on the 9th August in Gilgit, and a number in September and October, all females, or males in female plumage. This Minivet never appeared in Gilgit during the first two winters I spent there. I certainly never procured it; and it is so conspicuous, even in the grey and yellow plumage, that I could not have helped remarking it had it been there. I procured it in Chitral in November at 6000 feet elevation; and it is probably to be found in Darel, though I did not get it from there.

56. Hemichelidon sibirica (Gmel.).

None of the specimens I have from the North-west Himalayas appear of so dark a tone as a specimen sent me from Sikkim by the late Mr. Mandelli; this is especially noticeable in the colour of the wings and tail. Most specimens show a faint white streak extending from the nostrils to the

eye, and a faint circle of white round the eye. I procured this Flycatcher also from Darel.

58. Cyornis ruficauda, Swainson.

This Flycatcher extends into the Darel valley, whence my collector brought me several specimens.

59. Troglodytes neglectus, Brooks.

Birds killed at the same time of year are scarcely distinguishable from *T. nipalensis*, Hodgs.; but *T. neglectus* is a little smaller and paler underneath. The freshly moulted autumn birds and those killed in summer are more distinct, and paler than *T. nipalensis* in every way; but in the winter they are hardly distinguishable.

62. Hydrobata cashmirensis, Gould.

I procured an adult specimen of this Dipper from the Deosai plain, but did not meet with it in Gilgit. Dr. Scully's specimen was procured in a valley between Gilgit and Darel, where its occurrence is somewhat remarkable, as I received from Darel, which is still further to the south, an adult male of *H. leucogaster* in fine plumage—the first instance, I believe, of its occurrence on the Indian side of the Himalayas. Dr. Scully's specimen is undoubtedly *H. cashmirensis*.

64. Oreœcetes cinclorhynchus (Vigors).

I shot a young male of the year in Gilgit in August 1880, and later observed two adult males. The species appears to be common in the Darel valley, whence my man brought me back several specimens. Young males of the year are easily distinguishable from the females by the white wing-bar, which appears to be assumed in the earliest stage of plumage and before any trace of blue is apparent.

66. Turdus hyemalis, Dybowski.

The specimen which, in my former paper, I classed as *T. ruficollis* (Ibis, 1881, p. 53), I have compared with a large number of specimens in the British Museum and other collections; and I find that it cannot stand under that name. It is a fully adult male, shot in January. The markings are essentially the same as those of *T. ruficollis* and *T. atrogularis*,

with the exception of the colouring of the tail and breast. The tail is rufous, hardly so vivid as in typical specimens of *T. ruficollis*, but much more vivid than in any specimen of *T. atrogularis*. The breast is a fine deep vandyke-brown, much darker than in any specimen of *T. ruficollis*, and easily distinguishable from that of *T. atrogularis*.

It is apparently Dybowski's *T. hyemalis*; but I leave it for Mr. Seebohm to pronounce on its merits as a hybrid or a good species. Mr. Seebohm's collection contains a similar specimen from Lake Baikal; and I have also one shot in Yarkund.

67. Turdus atrogularis, Temm.

When I wrote concerning this species in a former paper (Ibis, 1881, p. 53), I did not observe that I had before me a specimen of an adult male in a melanistic form of plumage. The feathers of the head and hinder part of the neck are tinged with black; the tail is much darker than in other specimens; and the axillaries and under coverts are dull brown. All other specimens that I have seen have the axillaries and under wing-coverts dull rufous.

70. Trocalopteron lineatum, Vigors.

My Gilgit specimens of this Babbler are much paler than those I have from Cashmere, which, again, are paler than those sent me by Mandelli. The difference between Gilgit and Simla forms, however, is greater than between the Simla and Darjeeling forms. Specimens of *Sibia capistrata* from Murree and Sikkim show the same differences of coloration.

72. Pratincola indica, Blyth.
Pratincola maura, Pall.

73. Pratincola robusta, Tristram.

Dr. Scully has shown (Ibis, 1881, p. 441) that our large Gilgit Bush-Chat is not Canon Tristram's species; but I cannot allow that all the Chats of the *P. indica* (or *maura*) type are referable to a single species. My collection contains forty-eight adult specimens from different localities. These

show two races, more or less well marked, and differing in size and colour, but connected by intermediate forms, which may be hybrids, as the two races apparently exist side by side in Gilgit and in some other localities. As in some specimens the measurements slightly overlap, I have not taken difference of size as a point of diagnosis, but simply colour. The males show a constant difference in the amount of white on the back part of the neck. The race which I will call form A shows a white patch on the side of neck, but not extending round to the back of it. In no specimen is there any white discernible on the nape of the neck. The other race, which I will call form B, also has a white patch on each side of the neck, which extends round to the back, meeting the white from the other side, so as to form a complete demi-collar when viewed from above. This is most conspicuous in breeding-plumage; but specimens procured at all seasons show some trace of white on the nape. Separating the nineteen males in my collection with reference to this point alone, I find they measure as follows:—

Form A.

Wing-measurement. inches.	Locality.	Season.
3·0	Kumaon Terai	March.
3·0	Gilgit	April.
2·99	„	„
2·9	„	September.
2·85	„	April.
2·85	„	„
2·75	„	September.
2·7	Astor	„

Form B.

Wing-measurement. inches.	Locality.	Season.
2·75	Gilgit	September.
2·72	Wakhan	April.
2·7	Yassin	August.
2·7	„	„

Form B (*continued*).

Wing-measurement. inches.	Locality.	Season.
2·7	Yassin	September.
2·65	Gilgit	March.
2·65	Astor	September.
2·6	„	„
2·58	Gilgit	October.
2·55	Cashmere	May.
2·52	Simla	June.

N.B. The last two specimens are in full breeding-plumage.

The females also show well-marked differences in colour. Those which in general appearance much resemble the males of form A in non-breeding-plumage, have broad rufescent margins to the feathers of the back, the wing-coverts, and white secondaries, while the tail-feathers are broadly tipped and margined with the same, and there are narrow rufescent edgings to the feathers of the head and neck. These I have referred to form A. The others are altogether of a much darker tone, having the wing- and tail-feathers nearly uniform dull brown, with very faint inconspicuous pale edgings, and the striations of the head and back very broad and dark, with narrow margins, and the whole tone of coloration less rufescent. These I refer to form B. Separating twenty-four females solely by differences of colour, I find they measure as follows :—

Form A.

Wing-measurement. inches.	Locality.	Season.
2·7	Sikkim	March.
2·65	„	November.
2·65	Astor	September.
2·6	Sikkim	November.
2·6	Gilgit	September.
2·6	Yassin	August.
2·6	Cashmere	May.
2·55	Murree	Undated.
2·55	Astor	September.

Form B.

Wing-measurement. inches.	Locality.	Season.
2·6	Astor	July.
2·6	Cashmere	„
2·6	Deosai	„
2·55	Chenab valley	May.
2·55	Gilgit	April.
2·5	Cashmere	July.
2·5	„	May.
2·5	Gilgit	„
2·5	„	June.
2·45	„	April.
2·4	„	July.
2·4	Cashmere	Undated.
2·4	Simla	July.
2·4	Cashmere	May.
2·35	„	Undated.

Five specimens, which I am unable to separate by differences of colour, measure as follows:—

Wing-measurement. inches.	Locality.	Season.	Sex.
2·7	Gilgit	April	Unsexed.
2·6	Meerut	January	♀.
2·6	Wakhan	April	♀.
2·6	Meerut	January	Unsexed.
2·6	Gilgit	April	♀.

Now it cannot be denied that these measurements overlap considerably, especially among the females; but the fact remains, that, after separating forty-three specimens solely by colour and markings (omitting the last five undetermined), those of one form average considerably larger than those of the other, and that the greatest divergence in colour is shown between those which differ most in size. It may be that the specimens that overlap in measurement are to be accounted for by hybridism—an explanation that no ornithologist can affect totally to ignore when treating of two very closely allied species found in the same locality; or it may be that some of those classed as females would have been found by

more careful examination to be males that had not got rid of female plumage. Whatever may be the explanation of this, I believe that we have here two species.

The smaller species of Chat, which I have called form B, is evidently the *P. indica* of Blyth; but it is more difficult to say which is the *P. maura* of Pallas.

74. Saxicola opistholeuca, Strickland.

I find that I got four specimens of this Chat in Gilgit—three at the beginning of April, and one in December. The young bird previously referred to (Ibis, 1881, p. 55) turns out, on further comparison, to be a young specimen of *S. morio*. There is no reason to suppose that *S. opistholeuca* breeds in the district.

75. Saxicola picata, Blyth.

Dr. Scully and myself have brought away from Gilgit 181 specimens of this Chat. Of these there are 102 adult males, 46 adult females, the rest being of both sexes in different stages of immaturity. I can add little to what has already been said about this bird. The specimens of the males before me show every gradation, from the creamy-white head to jet-black; but those with pure black heads are the most numerous; next in number come those in different phases, while those that have entirely white heads are the scarcest.

The adult females are all of the same type, with the exception of a single specimen, which differs in having the lower throat nearly black. Dr. Scully tells me that he has also a precisely similar female specimen. There is no doubt as to the determination of the sexes of these two specimens; but the wing-formula is the same as in all other specimens of *S. picata*. Among the immature specimens females are undistinguishable from males.

77. Saxicola morio, Hempr. & Ehr.

Dr. Scully and I have brought away from Gilgit altogether 153 specimens of this Chat. Dr. Scully's assertion of the identity of this species with *S. hendersoni* must, I think, be accepted. The specimens of adult males show clearly the gradation of plumage from the black, with pure white cap, of

the breeding-stages, to the *S. hendersoni* type of autumn. Two specimens, of 27th April and 23rd May, show a few faint brown specks on the back and head. Four specimens, of 18th, 21st, and 25th July, have the freshly moulted secondaries and wing-coverts broadly margined with pale rufescent, and the head much infuscated. August specimens have nearly reached the *hendersoni* stage, but still retain a certain amount of black on the back. No specimen was procured after July of the accepted *morio* black-and-white type.

The females vary considerably in the colour of the lower throat, which, however, does not appear to be connected with the season; it may possibly be a question of age, birds of the second year becoming very dark.

I took a nest of this Chat in Astor on the 26th June, at an elevation of 7000 feet, containing five hard-set eggs. It was placed, about a foot deep, in a wall of loose stones supporting a built-up road on the mountain-side, over which was constant traffic. The eggs were very pale blue, with small dusky-red freckles thinly scattered over the surface, slightly tending towards a zone at the thicker end, and measured ·725 inch in length by ·565 in diameter.

78. Saxicola vittata, Hempr. & Ehr.

I procured one specimen, an adult male, in Gilgit on the 4th June. Three others were seen at the same time.

82. Ruticilla rufiventris, Vieill.

I procured a specimen as late as 27th November. It apparently breeds on the Shandur plateau, whence I received an immature specimen in August.

84. Ruticilla erythronota, Eversm.

A female of this bird was, by mistake, passed as *R. hodgsoni*, which it much resembles, in my former paper (Ibis, 1881, p. 62). After noting the specimen I mislaid it, and was unable to put my hand on it again. It has since turned up, and proves to belong to this species. It is to be distinguished from *R. hodgsoni* by the double wing-bar and conspicuous pale edgings to the secondaries. *R. hodgsoni*, which is

much whiter on the abdomen, must be expunged from the Gilgit list.

87 *a*. Ruticilla fuliginosa, Vigors.

I procured a single specimen, a young bird of the year in immature plumage, on the 8th of July. There is nothing remarkable in the occurrence of this species in Gilgit; but it is somewhat curious that, with the exception of this specimen, neither Dr. Scully nor I have observed any of this species during a period extending altogether over four years, either in or near the Gilgit district.

The Plumbeous Water-Robin is a true flycatcher; and I have often watched a pair hawking at insects on the wing, and returning to their post on a stone or tree-stump at the water's edge.

90. Calliope pectoralis, Gould.

I received specimens of this bird both from Darel and the Deosai plain. My largest specimen has a wing of exactly 3 inches. Through some mistake, in my former paper it was stated to measure 3·25 inches.

92. Cyanecula leucocyanea, Brehm.

It may be useful here to mention that in 1874 I found this species very common on both sides of the Digar pass, between the Nobra and Indus valleys, during the last week of June. With the exception of the specimen secured by Dr. Scully, I never saw another of the species in Gilgit.

93. Acrocephalus dumetorum, Blyth.

Out of twenty-four specimens brought away from Gilgit, I find that nineteen were procured in August (mostly in the latter half of the month), and the remaining five in the first half of September. In the summer of 1880 they first appeared in Gilgit on 22nd August.

93 *a*. Locustella straminea, Severtz.

I shot an adult female of this species on 1st September, and saw another on the following day. Length 5·75 inches, wing 2·2, tail 2·12, tars. 0·74; irides dark brown; legs fleshy red.

97. Phylloscopus lugubris, Blyth.

This species must be expunged from the Gilgit list.

99. Phylloscopus tytleri, Brooks.

I obtained altogether three specimens, in May, June, and August; so it no doubt breeds in the district. I also got it in Astor in May.

103*a*. Reguloides proregulus, Pallas.

I obtained three specimens, two females and one male, in Gilgit in January.

105. Regulus cristatus, Koch.

I procured three specimens in June at an elevation of 10,000 feet, in a valley leading towards Darel. I also procured specimens in the Astor valley, where it appears to be common, in July and October. A male measures—length 3·75 inches, wing 2·12, tail 1·3, tars. 0·62. The female is slightly smaller.

105*a*. Sylvia jerdoni, Blyth.

I somehow overlooked this species in my former list of the Gilgit birds. I procured two specimens—a male on 6th September in immature plumage, and a female on 11th June in full plumage with black cap. The irides of both were pale yellow.

106. Sylvia affinis, Blyth.

107. Sylvia althæa, Hume.

Out of thirty-two specimens six are of the *S. althæa* type, thirteen of the *S. affinis* type, and the rest are of intermediate forms. From Iskardo and Ladakh I have specimens of *S. althæa*, and from Darel of *S. affinis*.

109. Henicurus scouleri, Vigors.

Two young males, shot on 12th September at 11,000 feet elevation, have the throat and breast white sullied with dusky markings, and the forehead black. A female shot on the 23rd September, at 9000 feet, has the throat black, with a few white feathers showing on the chin, and the forehead partly white. The change of colour on the breast appears to

be due to a change in the colouring of the feathers, but on the forehead to a moult of feathers, as small white feathers can be discerned growing under the black feathers on the foreheads of the two younger specimens.

112. Motacilla alba, Linn.

I obtained two specimens in February, and two in December. Two young birds of the year, shot in September, show a considerable amount of yellow about the face and neck.

116. Budytes calcaratus, Hodgs.

I procured specimens from Darel and Deosai in July, and from the Shandur plateau in August.

117. Budytes citreolus, Pall.

I got two specimens in Gilgit on the 3rd and 4th August. I also got specimens from Darel and Deosai in July.

It is somewhat strange that, out of over 200 specimens of Green Wagtails, neither Dr. Scully nor myself procured a single specimen of *B. flavus* (Linn.), which species I obtained in Wahkan in April 1874.

120. Anthus rosaceus, Hodgs.

I procured two adult specimens in July from Darel.

121. Anthus cervinus, Pallas.

In addition to the specimens previously recorded, I procured two on 21st and 22nd October.

123. Cephalopyrus flammiceps (Burton).

I obtained specimens in June and September. The general coloration is paler than in specimens sent me by Mandelli. Birds in full adult plumage appear to lose the yellowish-green margins of wing- and tail-feathers.

124. Leptopœcile sophiæ, Severtzoff.

I was mistaken in supposing this to be a winter visitor only. In June I procured a number of specimens of both sexes at an elevation of 10,000 feet in a secluded valley close to the Indus, where they were doubtless breeding. The males at this season have the whole abdomen vinous purple, with-

Ibis 1882 Pl. VIII

J. G. Keulemans lith. Hanhart imp.

ASCENTOR FULVESCENS

out the buff space in the centre that all winter specimens show; the colouring of the head is also more vivid.

125. Ægithaliscus leucogenys, Moore.

I obtained several specimens from the Darel valley.

127. Lophophanes rufonuchalis, Blyth.

The amount of rufous in the nuchal spot appears in some degree seasonal. Two winter-killed specimens show much more rufous than any procured in summer. I procured this Tit also from Darel.

129. Accentor nipalensis, Hodgson.

Captain Wardlaw Ramsay has shown me specimens of M. Severtzoff's *A. rufilatus*, which are identical with Gilgit specimens of *A. nipalensis*. It would appear as if *A. alpinus* and *A. nipalensis* were only the two extremes of one species, which are bridged over by intermediate forms, in the same way as the eastern and western forms of *Trocalopteron lineatum*.

131. Accentor jerdoni, Brooks.

I procured this species both from the Deosai plain and the Shandur plateau.

A. rubeculoides does not appear to extend further westward than the Astor valley, where I have procured it.

133. Accentor fulvescens, Severtzoff. (Plate VIII.)

Through the kindness of the Editors a male of this species, which, as yet, has not been figured, is shown in the accompanying Plate.

139. Corvus frugilegus, Linn.

Earliest autumn appearance in Gilgit on the 19th October.

147. Temenuchus pagodarum (Gmel.).

I got altogether five specimens during four summers I spent in Gilgit—three in May and two in June.

149. Passer indicus, Jard. & Selby.

During the winter of 1880–81, which was not a severe one, I procured a few specimens, all males. They were, however, scarce.

152. Emberiza leucocephala, S. G. Gmel.

The earliest specimens were observed on the 11th November, and the latest on the 3rd March, but it was only in December that any quantity was obtained.

154. Emberiza stewarti, Blyth.

I procured a single specimen, a female, in December in Gilgit. With this exception, no other specimen was observed later than 4th October.

155. Emberiza buchanani, Blyth.

I received specimens of this Bunting from the upper part of the Yassin valley, near the foot of the Shandur plateau, in August. In the Gilgit district I never saw it except in September.

158. Euspiza luteola (Sparrm.).

I procured a male in adult plumage on the 19th May; no others were seen at the time. In August I procured a male and female, and in September two males, all four in immature plumage. I also procured a male and female in August from Yassin, at an elevation of over 10,000 feet.

I have examined the *Euspiza* mentioned by Dr. Scully (Ibis, 1881, pp. 575, 576), as appearing to belong to this species. Several of my immature specimens show the same difference in measurement between the longest secondaries and longest primaries, and three specimens also show slight spots on the breast, though in none are the spots so large and conspicuous as in Dr. Scully's specimen. The bird is, however, so like *E. luteola* in every other particular, that I cannot believe it to belong to another species.

162. Erythrospiza mongolica, Swinh.

I obtained a male in breeding-plumage in June, at an elevation of 9000 feet. The two wing-patches, which in other specimens are dusky white, in this are pure white, while the tips of the larger coverts, which are of a faint rose-colour at other times, are bright carmine. The underparts are washed with bright carmine instead of faint rosy, as at other seasons, and the rump and supercilium are bright rosy. Out of a

J.G.Keulemans lith. Hanhart imp.

PROPASSER BLYTHI.

large number of specimens obtained by Dr. Scully and myself, this is the only one in this stage of plumage, when it differs so greatly from those obtained at other times of the year, that it might almost pass muster as a different species. Mr. Seebohm's collection contains several similar specimens from Central Asia. As my collection contains a number of specimens shot within a few days of this one, and which, though much brighter than ordinary winter specimens, do not show any thing like such bright markings as this one, I am inclined to think that this plumage is not assumed by adult males till after the second moult, that is, in the third year of their existence. The males of the *Propasser* and *Carpodacus* group, as far as is known, all breed in female plumage the first year, and there is no reason why some such delay in assuming full breeding-plumage should not similarly occur in the *Erythrospiza* group. The colouring of *E. githaginea* appears to undergo a somewhat similar change.

Gould's plate in pt. xxix. of the 'Birds of Asia' shows a male in the plumage I have described, and a female in winter plumage. The figure in David and Oustalet's 'Oiseaux de la Chine' is of a specimen in winter plumage.

166. Propasser blythi, sp. nov. (Plate IX.)

I obtained altogether two males and five females of this species in a secluded valley close to the Indus. The males agree with Blyth's type of *Propasser frontalis* in the Calcutta Museum. Blyth first described this species in the 'Journal of the Asiatic Society' for 1863; but, in his Appendix to the 'Birds of India,' Jerdon writes that Blyth had ceased to regard it as specifically distinct from *P. thura*. It is, however, certainly distinct, and has a wing averaging from ·10 to ·25 inch longer, both in the male and female. The whole coloration is fainter and softer, and the general ground-colour of the upper parts is dull earthy brown, unmixed with rosy, instead of dark rufous brown, as in *P. thura*, or dark crimson-brown, as in *P. rhodopeplus*, while the bill is finer and less Pyrrhuline. The female has the underparts and rump tinged with pale yellowish chestnut, which in

P. thura are deep reddish chestnut, and the upper parts and wings are free from any tinge of rufous.

Blyth's specific name has, unfortunately, been given to a Rose-Finch in North America. The generic distinctness of the *Carpodacus* and *Propasser* groups does not appear well marked in all species, and a different classification must some day be found necessary. Under the circumstances I would suggest the name of *Propasser blythi* for this species.

In the Rose-Finch group there is extremely little variation between individuals of a species; but written descriptions of the three species *P. thura*, *P. blythi*, and *P. rhodopeplus* are necessarily so similar that, without comparison, a collector must find it difficult to discriminate any single one of the three. Some guidance appears to be furnished by the wing-measurements of the males, which are as follows:—*P. blythi* 3·25 to 3·4 inches, *P. thura* 3·15 to 3·3, *P. rhodopeplus* 3 to 3·1. The feet and tarsi of *P. blythi* are also more slender than in the other two species. Still greater difficulty exists in discriminating the females; nor are their measurements so sure a guide as in the males, by reason of males of the first year being classed as females when not sexed by dissection.

169. Metoponia pusilla (Pallas).

I procured a number of specimens from the Shandur plateau between Yassin and Chitral. Having now a large number of immature specimens, I see that my former assumption of the adoption of the red feathers in the poll during the first year was incorrect. The black breast and golden markings to the wing-coverts are assumed in the first year during the autumn; but the red head is not complete till after the first breeding-season. I have a specimen shot on the 7th June which barely shows any trace of red on the head, though in other respects the adult plumage is complete.

170. Linaria brevirostris, Gould.

As before mentioned (Ibis, 1881, pp. 86, 578), I did not meet with this Linnet anywhere in the district during 1876, 1877, 1878, and the first eight months of 1879. It suddenly

appeared in the autumn of the last-mentioned year, when Dr. Scully procured a large number of specimens. I subsequently procured adult examples in Gilgit in June and September, and my collector brought back twenty-two specimens from the Shandur plateau in August.

171. Linaria cannabina (Linn.).

Both our Gilgit Linnets appear to be capricious and uncertain in their movements. During the four winters through which birds were collected by Dr. Scully and myself, this species was only seen in the winters of 1877–78 and 1879–80, but was not seen during the winters of 1878–79 or 1880–81.

175. Calandrella brachydactyla (Leisl.).

I procured numerous specimens from the Deosai plain in July and from the Shandur plateau in August. It appears to breed in both places. Five specimens procured in Astor and higher up the Indus near Iskardo appear paler than others.

176. Melanocorypha bimaculata, Ménétr.

During the last winter I was at Gilgit this species was common from the 10th November to 21st December.

179. Otocorys penicillata, Gould.

I obtained three adult specimens and a number of young birds from the Shandur plateau in August, which is, no doubt, a breeding-ground of the species. The young are spotted, like the young of other species of *Otocorys*. They appeared in Gilgit for the first time on 14th October, and in considerable numbers. My specimens of *O. longirostris* completely bear out Dr. Scully's remarks (Ibis, 1881, p. 580). I first procured the species in the Pangong district in 1873, and later on the Burzil pass in 1876 and succeeding years. I have six males and two females from the latter place, three males and four females from the Deosai plain, and three males and three females from the high ground between Gilgit and Darel, but from the Darel side of the watershed, so it cannot be counted among the Gilgit species. None of these speci-

mens could possibly be mistaken for *O. penicillata*. The Horned Larks are excellent eating.

189. Turtur ferrago, Eversm.

I obtained young birds of this species in Gilgit as late as 19th October.

191. Turtur cambayensis (Gmel.).

I procured altogether four specimens of this Dove, two in January, one in March, and one in October. In all, the rump and upper tail-coverts are brown, like the back.

192. Turtur suratensis (Gmel.).

I procured specimens of this Dove from the 7th October to 18th April.

192*a*. Turtur humilis, Temm.

A single specimen, a male, was brought to me on 23rd June by a native, who shot it in the middle of Gilgit, and said that he had seen a pair of them. The measurements were as follows—Length 9·95 inches, wing 5·7, tail 4·1, tarsus 0·9. Legs blackish purple; irides dark brown.

This bird is the true *T. humilis* of Temminck, as is shown by Lord Walden in his paper on the "Birds of the Philippine Islands" (Trans. Zool. Soc. ix. pp. 219, 220). It is darker and richer in colouring than the Indian Red Dove, which stands as *T. tranquebaricus* (Herm.) and has the under wing-coverts dark ashy. The most distinctive point is in the size, *T. tranquebaricus* averaging 9·25 inches in length, with a wing 5·2 ('Stray Feathers,' vol. iv. p. 292).

I have examined the series in the British Museum, and the difference between the two species holds good throughout, a specimen from Amoy being undistinguishable from the Gilgit specimen. In the Museum series are several of this species obtained in Nepal by Mr. B. H. Hodgson. One of them is labelled "*Æ. murmensis*, Hodgs.," printed by mistake *Æ. murwensis* in the 'Zoological Miscellany,' p. 85, and corrected by Mr. Hodgson in his own handwriting in the British Museum copy. Giebel, in his 'Thesaurus Ornithologiæ'

(sub voc. *Turtur humilis*), and Bonaparte, in 'Comptes Rendus,' xli. p. 659, misprint this specific term "*murocnsis*.

192*b*. Pterocles arenarius, Pallas.

I secured a single specimen, a female, in the Sai valley on the 19th December. No others were seen.

198. Ægialitis cantiana (Latham).

I procured a male in adult plumage on 13th August.

199. Ægialitis philippensis (Scop.).

Ægialitis curonica (Gmel.).

I shot a number of specimens of this Plover in the first half of August.

200*a*. Ægialitis jerdoni, Legge.

I procured two specimens of this Plover, both females, one on the 11th May and the other on the 27th September. It differs from *Æ. curonica* in the basal half of the lower mandible being yellow, in the absence of a black frontal band next to the bill, and in having a fleshy-yellow ring to the eyelids. It is also slightly smaller, and the female is smaller than the male; whereas in *Æ. curonica* the female is the larger.

208*a*. Ibidorhynchus struthersi (Vigors).

On the 6th August I procured a young female in immature plumage in Gilgit.

209. Machetes pugnax (Linn.).

I obtained four specimens in the beginning of August, and observed others. They all show dark markings on the breast and flanks.

209*a*. Tringa acuminata, Horsf.

I shot a single specimen, a male in adult plumage, in Gilgit on the 1st August. It was flying about with a number of *Machetes pugnax*. It measured—length 8·75 inches, wing 5·25, tail 2·5, tarsi 1·3, culmen 1·05. This is, I believe, the first notice of the occurrence of this species so far to the westward, or within Indian limits. It was first described by Horsfield from Java in 1821 in the following terms:—"Supra

fuscus, plumis dorsalibus ferrugineo tectricibus griseo marginatis; subtus albidus, pectore sublutescente, rectricibus acuminatis." It was afterwards figured by Gould in his 'Birds of Australia' under the name of *Schœniclus australis*. Swinhoe met with it in North China, where it was very abundant in August (Ibis, 1863, p. 412). He states that at the end of August it goes southward along the coast and returns in May. The measurements he gives are smaller than those of my specimen, viz. length 8·4 inches, wing 4·9, tail 2·3, tarsi 1·2, culmen 1.

In breeding-plumage this species is easily distinguishable from *T. alpina* by the abdomen being pure white, sparingly spotted with light brown, whereas *T. alpina* has the whole abdomen dull black. *T. acuminata* also has the ground-colour of the upper breast rufous, with large dark-brown spots, while *T. alpina* has a faint rufous tinge in some specimens only, with small streaks. The best point of distinction is in the tail-feathers, all of which are pointed in *T. acuminata* (whence the name), while in *T. alpina* only the central ones are pointed.

210. Tringa subarquata, Güld.

I shot three adult specimens, all females, on the 2nd and 9th August. The entire underparts are rufous, with black markings in two out of the three specimens. One shot on the 4th September has completely assumed the winter plumage.

211. Tringa minuta, Leisl.

I obtained two specimens in Gilgit in the middle of August.

212. Tringa temminckii, Leisl.

I obtained one specimen in July and a great number in August.

213. Totanus glareola (Gmel.).

This Sandpiper was extremely plentiful in Gilgit for ten days in the beginning of August, when, I secured several specimens. With one exception, they are much spotted beneath.

215. Tringoides hypoleucus (Linn.).

I obtained an adult male from the Deosai plain in July, and two immature birds and one adult in Gilgit on 7th, 17th, and 25th August. The young birds are almost entirely white on the underparts of the neck and breast, and have the wing-coverts completely covered with fine banded markings of black and reddish brown.

216. Totanus glottis (Linn.).

I procured three specimens in Gilgit on the 10th, 14th, and 17th August.

218. Totanus calidris (Linn.)

I procured three specimens, all males in summer plumage, in the beginning of August.

219. Himantopus candidus, Bonn.

A specimen shot in Gilgit 10th August.

229. Ardetta minuta (Linn.).

During the summer of 1880 I procured two specimens in Gilgit—one, a male in full plumage, in July, the other, a female in immature plumage, on 29th August.

230*a*. Falcinellus igneus (S. G. Gmel.).

I procured a young male in nearly full plumage on the 16th September.

245. Larus ichthyaetus, Pallas.

In my former paper on the birds of Gilgit (Ibis, 1881, p. 101), under the name of *L. affinis* (Reinh.), I noticed a specimen obtained 26th August, 1876, which has since been pronounced to belong to *L. ichthyaetus* by Mr. Howard Saunders, who has favoured me with the following note:—

"This specimen is a bird of the first year, just going to moult; that is to say, it was hatched about June 1875; its plumage is therefore rather more than a year old, and is consequently considerably worn and abraded. All immature Gulls of the same size are somewhat alike at the first glance; but *L. ichthyaetus*, jr., may be distinguished by the following characteristics:—In *L. affinis*, *L. fuscus*, *L. argentatus*, &c. the tips of the secondaries are edged with white, forming a

band, but in *L. ichthyaetus* not only the tips, but *both edges* of the secondaries are *distinctly margined with white for a long way up each feather*. Again, in *L. ichthyaetus* the *tail* presents a *broad uniform dark band* (only the outer feathers being edged with white), whereas in *L. affinis* &c. the tail is *mottled* with dark markings, and the *band* is completely *broken up*. Other points of difference exist, but to describe them would only be confusing, as the above are ample for recognition.

"I have not, as yet, been able to examine a young bird of the same year as that in which it was hatched, when the plumage is fresh. Another 'link' which is missing is the stage between the following April, when the mantle is mainly grey, but the wings and tail are brown, and the *spring after* that, when the mantle is wholly grey, but there are still some brown mottlings on the carpals and primary coverts and a little dark on the tail; the black hood is then assumed for the first time."

L. ichthyaetus must therefore be substituted for *L. affinis* in the list of Gilgit birds.

246. Gelochelidon anglica (Mont.).

I secured an adult male passing through on 1st August: the black of the head is changing to the winter stage of plumage. Two days later I secured a young bird of the year: the head is white, marked with brown streaks, and the whole back is smeared with brown.

XXI.—*Notes on a 'Catalogue of the* Accipitres *in the British Museum' by* R. Bowdler Sharpe (1874). By J. H. Gurney.

(Plate X.)

[Continued from p. 162.]

I now propose to consider the genus *Falco* in the restricted sense of that term; but before doing so, I am desirous of inserting two corrections, for one of which I am indebted to the kindness of Mr. Ridgway, who writes to me as follows:—

"I think you are mistaken in believing that 'the first dress

of the young males [of *Tinnunculus sparverius*], as stated by Mr. Sharpe, resembles the old female'*. So far as the true *T. sparverius* of North America is concerned, this is, most certainly, not the case: I have examined a very large number of young birds of this species, and have always found the sexes distinguished in their first plumage, just as they are in their fully adult dress; in fact there is no essential difference in either sex between very young and fully adult birds, the chief difference consisting in sharper definition of the markings in the latter, the same being in young birds more indistinct or somewhat suffused with the ground-colour†. So far as I have been able to judge from an examination of specimens, this same rule holds good with all other American *Tinnunculi*, except *T. sparvérioides*, in which young males have more or less rufous on the dorsal surface, the same being wholly absent in fully mature birds."

I also find that I was wrong in the same article (p. 556) in assenting to Mr. Ridgway's suggestion that the Kestrel of the Antilles ought to bear the subspecific appellation of "*antillarum*, Gmel." as its correct designation is "*caribbæarum*‡, Gmel." "*Falco antillarum*" of Gmelin is founded on the "Mansfeny" of Du Tertre, a species which it is, I think, impossible to identify with certainty, but which is evidently some bird much larger and more powerful than a Kestrel.

In examining the restricted genus *Falco*, it may be well to commence with *F. peregrinator* as the species approaching most nearly to the genus *Hypotriorchis*, and at the same time to refer to a closely allied race, *F. atriceps*.

Mr. Sharpe has included the latter, though with some

* *Vide* Ibis, 1881, p. 549.

† A very young male and female of *Tinnunculus sparverius*, taken in the United States, with the sheaths still remaining on the base of the primaries, have recently been presented by the Smithsonian Institution to the Norwich Museum, and entirely agree with Mr. Ridgway's description, thus exhibiting a very curious deviation from the usual rule of the male in its first plumage resembling the adult female, in cases where the adult plumage of the sexes differs.

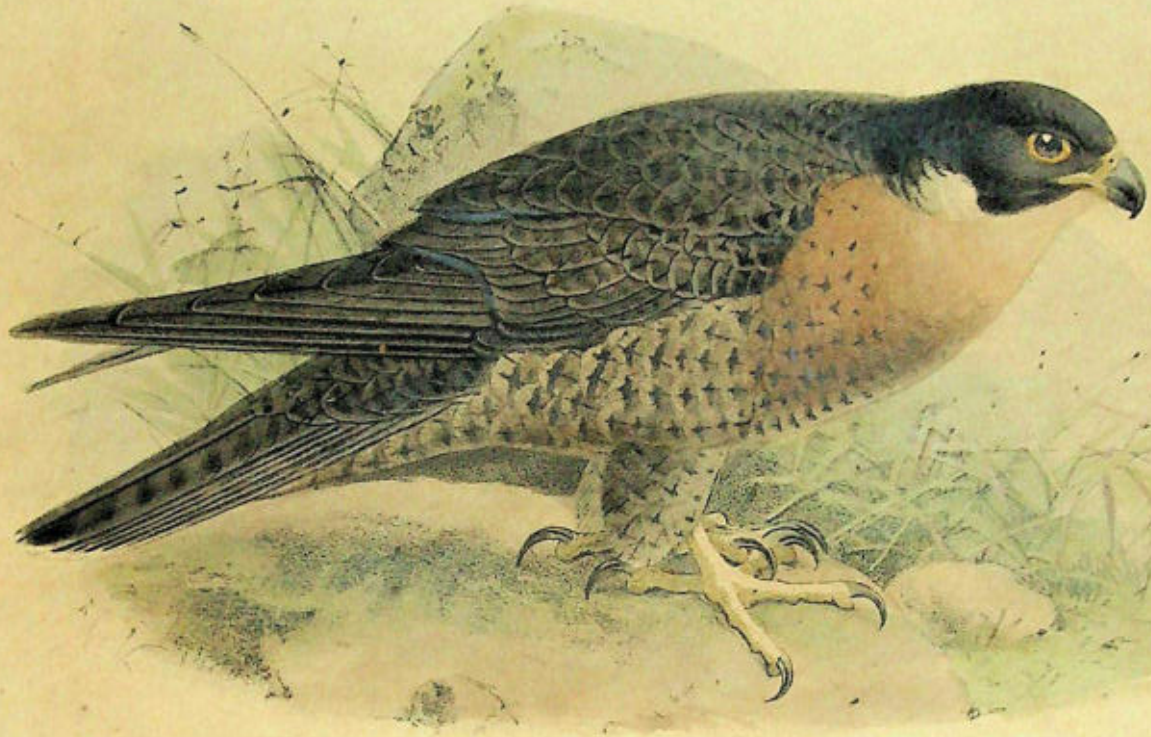
‡ *Vide* 'Systema Naturæ' (1788), vol. i. p. 284, "No. 118γ."

expression of doubt, amongst the synonyms of *F. peregrinus*; but having had an opportunity, through the kindness of Mr. Hume, of examining the type specimen of *F. atriceps*, I am enabled to state that it is quite distinct from *F. peregrinus*, and that it should, as it seems to me, be considered a geographical race (probably entitled to subspecific rank) of *F. peregrinator*.

Having contributed detailed notes on *F. peregrinator* and *F. atriceps* to vol. viii. of 'Stray Feathers' (pp. 423–437), I would refer my readers to what I have there written, only quoting from p. 429 of that article the following expression of my opinion, as the result of the examination of sundry specimens there described, viz.:—"that *F. atriceps* is a geographical race of *F. peregrinus*, chiefly distinguishable by its abundant transverse markings, lack of rufous colouring, and prevalent grey tints on the abdominal and tibial plumage; and thus differing considerably from specimens (of *F. peregrinator*) like those I have examined from Ceylon, in which these parts are decidedly rufous and almost immaculate; but that the two phases of plumage are so much connected by the occurrence of individuals of intermediate and ambiguous coloration, that they do not admit of the races being defined with sufficient precision to merit the position of separate and distinct species. I may add that Sundevall's type specimen of *F. peregrinator* appears to me, from his description, to have been a specimen of this intermediate character as to markings and coloration. The typical *F. atriceps* appears to be limited to North-western and Northern India, and towards its eastern limit to inosculate with the race which has the underparts more rufous and more nearly immaculate, and of which the range extends from Nepal to Ceylon."

It is to this latter race that the specific title of "*peregrinator*" has been customarily (and, I think, justifiably) applied; and it is probably this race which is found in Tenasserim, judging from an unpublished figure of an adult bird by the late Col. Tickell, presumably taken from a Tenasserim specimen, and now in the library of the Zoological Society.

Some years since an adult male of *F. atriceps*, from the



J.C Keulemans lith.

FALCO ATRICEPS.

Jullunder district of the Punjab, was presented by Dr. Sclater to the Norwich Museum, which I found, on comparison, agreed closely with the type specimen lent to me by Mr. Hume; the very slight differences that exist between them (and which are detailed in 'Stray Feathers,' vol. viii. p. 121) are apparently due to the Norwich specimen being more entirely adult than the type. This Punjab specimen is represented in the accompanying figure (Plate X.), which may therefore be regarded as being an authentic representation of a typical *F. atriceps*, and, so far as I know, the only one hitherto published.

Passing on to the most widely diffused species of the genus *Falco*, I may observe that the Peregrine Falcon appears to have been designated by Gmelin under two specific names, "*communis*" and "*peregrinus*." Mr. Sharpe adopts the former in his Catalogue, but has subsequently (*vide* Ibis, 1879, p. 237) rightly reverted to the latter, which has precedence, having been used by Tunstall prior to the publication of Gmelin's book, as shown in the list of synonyms of this species given in Dresser's 'Birds of Europe,' vol. vi. p. 31.

Mr. Sharpe, although giving some valuable information as to the geographical distribution of *F. peregrinus* and its near allies, does not supply a summary of the countries in which the former has been met with; most of these will be found particularized in the articles upon this species in Newton's 'Yarrell' (vol. i. pp. 53–64) and in Dresser's 'Birds of Europe' (vol. vi. 31–42)*; but I may here mention a few additional localities. A very dark young bird of this species from San Domingo was living, in 1876, in the Gardens of the Zoological Society, and it has also been recorded by Mr. Lawrence from the islands of Barbuda and Antigua†; it is included by Léotaud amongst the birds of Trinidad‡, and by Messrs. A. and E. Newton in their recently published list of the birds

* Mr. Dresser gives a list, with localities, of a considerable series of Peregrine Falcons preserved in the Norwich Museum, to which some interesting additions have subsequently been made.

† Proc. of U.S. Nat. Mus. 1879, p. 487.

‡ Ois. de Trinidad, pp. 22–24.

of Jamaica (p. 110). Passing to another quarter of the globe, the British Museum has recently acquired an adult specimen from Axim, on the Gold Coast of Western Africa; and further to the south, M. Barboza du Bocage, in his excellent work on the ornithology of Angola, records, at p. 46, a pair of true Peregrines obtained on the Rio Coroca, in Mossamedes. A young female killed, after high winds, in the island of Mauritius, in December 1870, is in the possession of Messrs. A. and E. Newton; a specimen recorded in 'The Ibis' was taken between Socotra and the Arabian coast on 27th October, 1876*; Mr. Hume has recorded the occurrence of *F. peregrinus* at Muscat†, on the Laccadive Islands‡, in Upper Pegu§, and at Malacca‖; an adult male from the Nicobar Islands, an adult female from Manilla, and a nearly adult male from Sandalwood Island are preserved in the Norwich Museum; this species is also an inhabitant of Cochin China, and an adult from Saigon is in the British Museum.

The Leyden Museum contains a specimen of the true *F. peregrinus* from Bangka and three from Java, also one from Ternate and another from Ceram; and Count Salvadori states that the same museum also contains "specimina nonnulla Australiana a speciminibus Europæis non distinguenda" (*vide* 'Prodromus,' Accipitres, p. 5). This remark may perhaps imply that the true Peregrine sometimes visits Australia; but I have never myself seen a typical *F. peregrinus* from that country.

The same learned author, in his larger work on the Ornithology of Papuasia and the Moluccas (pt. 1, p. 33), mentions that he has not had an opportunity of inspecting a Peregrine from Borneo. I have examined two typical examples of *F. peregrinus* from Borneo¶, both adults, and one of them preserved in the Norwich Museum; a third Bornean Falcon which has come under my notice, and to which I shall have

* Ibis, 1877, p. 149, and 1878, p. 380.

† Stray Feathers, 1873, p. 48.

‡ Stray Feathers, 1875, p. 19.

§ Ibid. 1876, p. 460.

‖ Ibid. 1879, p. 43.

¶ Three other Bornean specimens of *Falco peregrinus* are recorded by Mr. Sharpe in 'The Ibis' for 1879, p. 237.

occasion subsequently to allude, is, I think, referable to *F. melanogenys*.

Both in the Old World and in the New, some specimens of *F. peregrinus* exhibit, when immature, a much darker tint on the brown portions of their plumage than is the case with others; and these two phases of coloration in the immature dress pass, when the bird matures, into corresponding darker and paler hues of the slate-coloured portions of the adult plumage*, the darker birds also becoming more rufous on the breast than those whose slate-colour on the upper surface is of a paler cast.

When this species first attains its adult plumage, which it does early in its second year, the crop is, in most instances, more conspicuously streaked with dark shaft-marks, the upper breast spotted more profusely and with larger spots, and the lower breast more completely crossed by transverse bars than is the case subsequently, when the blackish spots on the upper breast decrease in number and size, and the dark bars on the central portions of the lower breast break up into spots, the ultimate number, size, and shape of which vary considerably in different individuals. It would seem, however, that this breaking up of the transverse bars into spots sometimes, though, I think, but rarely, occurs as early as the second year. Captain Legge showed me a female from Ceylon in nearly full adult plumage, but still retaining some slight vestiges of the first year's dress, in which the breast and abdomen were entirely spotted, only the flanks, thighs, and under tail-coverts being cross-barred; and the nearly adult male from Sandalwood Island, which, as I have already mentioned, is preserved in the Norwich Museum, presents a very similar phase of plumage, the first adult breast-feathers being simply spotted with black, and not transversely barred.

This peculiarity of the extended prevalence of spots, rather than bars, on the breast and the abdomen seems to obtain more decidedly in some Indian and Ceylonese Peregrines than in any I have seen from other localities, as instances of which I may mention an Indian female presented by Capt.

* *Conf.* Newton's 'Yarrell,' vol. i. p. 63.

Pinwell to the British Museum, another Indian female in the collection of the late Lord Tweeddale, and a male from Ceylon in the Norwich Museum, in all of which this feature is especially conspicuous*.

I agree with Mr. Sharpe in considering that the ordinary Peregrine of America is not distinct from that of Europe and Asia. Mr. Ridgway, in discussing this question, writes thus:—"Slight as are the characters which separate the Peregrines of the New and Old World, *i. e.* the immaculate jugulum of the former and the streaked one of the latter, they are yet sufficiently constant to warrant their separation as geographical races of one species"†. But, in point of fact, neither of these characters is constant: Mr. Ridgway himself mentions exceptions to the first; and with regard to the second, instances of the immaculate jugulum exist among the Peregrines of the Old World, though in Europe they are not so frequent as amongst those of North America, including Greenland.

The Norwich Museum possesses adult specimens, with the jugulum exhibiting dark shaft-marks quite as conspicuous as in ordinary European examples, from the Saskatchewan river, from Fort Churchill, from the State of New York, and from Yucatan; whilst, on the other hand, the same collection contains an adult French and a nearly adult English specimen in which the jugulum is almost immaculate, merely bearing a single row of about eight very slight and inconspicuous shaft-marks at the bottom of the crop, and also the adult Ceylon male, to which I have already referred, and in which the jugulum is absolutely immaculate, as is also the case in an adult Chinese male from Chefoo, which is now before me, and for the loan of which I am indebted to the kindness of Mr. Seebohm‡.

* *Conf.* Mr. Hume's remarks quoted in a subsequent footnote.

† 'Land-Birds of North America,' vol. iii. p. 135.

‡ Mr. Hume writes that a "fair proportion" of Indian Peregrines have "the whole chin, throat, and upper breast spotless white; the spots on the thigh-coverts reduced to mere triangular dots, the abdomen with only a few scattered dots here and there, the sides, axillaries, and under wing-

Mr. Ridgway ('Land-Birds of North America,' vol. iii. p. 137) describes, under the title of "*Falco communis*, var. *pealei*," two very dark young females, one from Oregon and the other from Alaska, which he considers to be examples of a "curious race" belonging to the "north-west coast region" of America, and exhibiting "the same melanistic tendency" which is "apparent in birds of other species from the same region." Whether this race is sufficiently distinct to merit subspecific separation I am unable to say*. I have examined

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coverts with the markings reduced to narrow arrow-head bars, rarely extending quite to the margins of the webs, and with the lower tail-coverts spotless, with only, perhaps, here and there a faint trace of where a bar has been." Mr. Hume attributes this phase of plumage to advanced age; his valuable remarks on this subject, from which the above is an extract, will be found in his 'Rough Notes,' pp. 50–52.

* Since writing the above I have received further particulars from Mr. Ridgway (*in epistolâ*) respecting "*Falco peregrinus pealei*;" he informs me that he has only seen three specimens of this Falcon, "two young and one adult;" of the latter Mr. Ridgway has been good enough to send me an interesting description, which I subjoin. Mr. Ridgway adds, "I am now almost inclined to consider it a distinct species, so different is it in all stages from *F. peregrinus*; however, it may be only a darker race, and so I shall call it until we know more about it."

Description of "Falco peregrinus pealei.

"*Adult* ♀ (No. 63413, U.S. Nat. Mus.; Kyska Harbour, Aleutian Chain, June 30, 1873, W. H. Dall). Prevailing colour above dull slate-black, this quite uniform on the head, nape, and anterior portion of the back; posterior feathers of back, anterior scapulars, and wing-coverts bordered terminally with plumbeous, the larger scapulars and greater wing-coverts marked also with bars of this colour; the more anterior lesser wing-coverts uniform blackish, very indistinctly and narrowly margined with paler; secondaries banded with plumbeous and dusky black, the bands of the latter colour about ·30 to ·40 of an inch wide, the plumbeous bands averaging somewhat narrower; primary coverts similarly, but much more indistinctly, marked; primaries blackish, with indistinct indications of plumbeous spots towards the base. Rump and upper tail-coverts plumbeous, marked with very distinct blackish bars, which, on the posterior part of the rump, measure about ·25 to ·30 of an inch in width. Tail blackish, narrowly, but distinctly, tipped with white, and indistinctly barred with plumbeous, but these bars well defined only on about the basal half, except on inner webs. Lower parts buffy white, more dis-

in the British Museum two Peregrines, an adult male and a nearly adult female, obtained on the North-west American coast during the arctic voyage of Captain Collinson, which are certainly very darkly plumaged birds about the head and shoulders, but, I think, not more so than some that I have seen from other localities; and the male is certainly not darker than one from Hudson's Bay, which is also preserved in the British Museum, and with which I have compared it.

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tinctly tinged with buff on the jugulum and belly; chin and throat immaculate; whole jugulum marked with heavy tear-shaped spots of black, these narrower or more streak-like towards the throat; breast, sides, and flanks heavily barred with black, the bars averaging ·25 of an inch in width (broader on flanks); lower breast and belly marked with transverse, somewhat cordate, spots of the same; tibiæ, anal region, and crissum more narrowly and very regularly barred with slaty black, the bars about ·15 of an inch in breadth, the interspaces decidedly wider; axillaries and lining of the wing marked with very sharply defined bars of dusky slate and nearly pure white, of nearly equal width (about ·20 to ·25 of an inch), the dusky bars on the axillaries connected along the shaft. A distinct dusky malar patch, or "moustache," occupying the whole of the suborbital and malar regions (except the anterior apex of the latter), and extending 1·25 inch or more below and behind the eye; behind this a whitish space, streaked with dusky, extending from the fore neck upward towards the ears. Bill dusky, bluish towards the base, the base of the mandible yellowish; 'iris brown;' legs and feet yellow. Wing 14·75 inches, tail 8, culmen (chord) ·95, tarsus 2·15, middle toe 2·15. Second quill longest, first and third equal; only the first with inner web emarginated.

"*Remarks.* The coloration of this specimen agrees in the minutest particulars with Wolf's figures of *Falco gyrfalco* in 'Ootheca Wolleyana,' and is altogether distinct from that of any specimen of *F. peregrinus* proper or any of its alleged races with which I have been able to compare it. This is the reason why, after a somewhat hurried examination, I referred it to the Norwegian Gyrfalcon. It is a very singular fact that the young plumage (upon which *F. pealei* was based) is so very much like the corresponding plumage of *F. obsoletus* (*F. labradora*, Aud.) as to be distinguishable only by the generic characters, the latter being a true Gyrfalcon (*Hierofalco*). It should be remarked that the type specimen of *F. pealei* is the supposed 'younger female' of *Falco polyagrus*, as described by Mr. Cassin on p. 123 of 'Illustrations of the Birds of California, Texas,' &c., and is also the original of the darker-coloured of the two specimens figured in the plate accompanying the description in question."

The Peregrine of Japan, if distinct, would be entitled to the specific name of "*orientalis*," Gmelin, ex Latham; but that it is not distinct from the ordinary *F. peregrinus* appears to me to be certain. Mr. Ridgway, in his summary of subspecific races of *F. peregrinus**, speaks of "var. *orientalis*" as being "beneath pure white, the breast and middle of abdomen without markings," basing his description on "two specimens examined from Japan;" but in Japan, as in India, these characters are not constant. An adult specimen from Japan and another from Formosa, both preserved in the Norwich Museum, have the breast and the middle of the abdomen abundantly sprinkled with numerous, though not large, spots, which, on the abdomen, are mingled, especially in the Japanese example, with imperfect, but very perceptible transverse bars, the general aspect of both specimens corresponding closely with some European and West-Asiatic specimens in adult, and probably rather aged, plumage of the paler type.

Mr. Ridgway gives some interesting measurements of twenty-nine male and twenty-eight female American Peregrines†, from which I extract the following, given in inches and tenths:—

	Wing.	Tarsus.	Middle toe *s. u.*
Males	11·30 to 13·00	1·60 to 1·90	1·78 to 2·05
Females ..	13·00 to 14·75	1·95 to 2 10	1·95 to 2·20

The following measurements of Peregrines of a typical character, taken by myself from various Old-World specimens, will serve to show that these correspond generally in size with those of America, but apparently are, on an average of specimens, slightly larger:—

Males.

	Wing	Tarsus.	Middle toe *s. u.*
Norfolk, collection of Mr. J. H. Gurney, Jun.....	12·60	1·90	2·00
Beyrout, Nor. Mus.	12·65	1·70	1·90

* *Vide* 'Land-Birds of North America,' vol. iii. p. 128.

† Ibid. vol. iii. p. 137

Males (*continued*).

	Wing.	Tarsus.	Middle toe s. u.
Valley of the Yenesei, Eastern Siberia, Nor. Mus.	12·70	1·70	2·00
Ceylon, Nor. Mus.	12·50	1·85	1·80
Chefoo, China, collection of Mr. Seebohm	12·50	1·90	1·95
Japan, Nor. Mus.	12·90	1·85	2·00
Formosa, Nor. Mus.	12·50	1·70	1·90
Borneo, Nor. Mus.	12·75	1·75	1·90
Sandalwood Island, Nor. Mus.	12·30	1·70	1·75

Females.

Hebrides, collection of Mr. J. H. Gurney, Jun.	14·10	2·20	2·20
Lapland, Nor. Mus.	14·30	2·10	2·25
Seville, collection of Lord Lilford	14·75	2·10	2·20
Egypt, Nor. Mus.	14·20	2·00	2·20
Natal, Nor. Mus.	14·50	2·10	2·25
India, Nor. Mus.	14·30	2·00	2·20
Chefoo, China, collection of Mr. Seebohm	14·50	2·00	2·30

It seems to me that subspecific rank may fairly be accorded to the Peregrine of the extreme south of South America, for which Mr. Sharpe has proposed the specific name of *cassini*. I must admit that only a few specimens of this Falcon have come under my notice; but, judging from these, I should say that *Falco cassini* occupies a position intermediate between *F. peregrinus* and *F. melanogenys*, differing from the first in the more abundant and complete dark transverse barring on its underparts, and from the second in the greater depth of these dark bars, as measured from the upper to the lower edge of each bar, as well as in the slightly larger average size of the bird in its general measurements. The above observations as to markings are intended to apply only to the adult plumage. An immature female of *F. cassini* from the Falkland Islands, in the collection of Messrs. Salvin and Godman, much resembles in coloration the corresponding stage of *F. melanogenys*, the blackish-brown tints throughout being as dark as those of the young of that species and of the darkest

immature specimens of *F. peregrinus*, and the rufous tints on the under surface being much richer than in any young specimens that I have seen of the typical Peregrine, a peculiarity which is also very noticeable in the immature *F. melanogenys*.

Mr. Ridgway* mentions two female Peregrines from Connecticut which, after living three years in confinement, were preserved in the National Museum at Washington, and of which he remarks that they "are remarkable for their very deep colours, in which they differ from all other North-American examples which I have seen, and answer in every particular to the description of *F. cassini*, Sharpe." I infer from this remark that these Connecticut specimens had not, when Mr. Ridgway wrote, been actually compared with a veritable southern *F. cassini*, and, until this has been done, I think that their absolute identity with that southern race can hardly be admitted as fully established.

The geographical range of *F. cassini* in South America appears to be, comparatively, very limited; it inosculates in Chili with the southern limit of *F. peregrinus*, both races being found in that country. The British Museum contains an immature Falcon from Santiago, which I have not examined, but which Mr. Sharpe refers to this species; and if that identification be correct, this is the most northern locality for *F. cassini* with which I am acquainted on the western side of South America, whilst on the eastern coast the most northern specimen I know of is an adult from Port Desire, in Patagonia, which is preserved in the Museum at Norwich. The British Museum possesses a typical adult of *F. cassini* from the Straits of Magellan, and an equally typical immature specimen from the Falkland Islands is, as I have already mentioned, in the collection of Messrs. Salvin and Godman; I annex measurements taken from the last-named specimen and from a Chilian adult male in the same collection, also from the adult specimen preserved at Norwich:—

* *Vide* 'Land-Birds of North America,' vol. iii. p. 136.

	Wing.	Tarsus.	Middle toe s. u.
♂ adult, Chili	13·00	1·90	1·90
♀ adult, Port Desire	13·55	2·10	2·20
♀ immature, Falkland Islands .	14·10	2·00	2·10

The nearly allied *F. melanogenys* is a race much more widely distributed than *F. cassini*; it inhabits Tasmania and South-eastern Australia. The Norwich Museum possesses a specimen from Port Curtis, in Queensland, which is the most northerly Australian example I am acquainted with. Mr. E. P. Ramsay has recorded it from as far west as Port Lincoln, in South Australia*; but I am not aware that its occurrence has been put on record either in Western or Northern Australia, or in New Guinea.

Specimens have, however, been obtained in various localities to the east and to the north of the Australian continent, of which the following have been already recorded in the pages of 'The Ibis,'—New Britain†, New Caledonia‡, New Hebrides§, and the Fijian Islands‖.

Two females from Java are preserved in the Leyden Museum, one of which is represented in Schlegel's 'Valk-Vogel,' pl. 1. fig. 2.

Count Salvadori has recorded a Sumatran example in his 'Ornitologia della Papuasia e delle Molucche,' vol. i. p. 33.

The Norwich Museum possesses an immature female, which was stated by the late Jules Verreaux to have been obtained in the Philippine Islands.

Lastly, I must mention a most remarkable Falcon, apparently an individual of this species, but abnormal in the intensity of its coloration, both schistaceous and rufous. This was obtained near the Lawas river, in Borneo, by Mr. W. Prettyman, and left for identification at the British Museum, where, by the kindness of Mr. Sharpe, I was permitted to examine it and make the following notes respecting it. I must not omit to say that the bird appeared to be

* *Vide* 'Catalogue of the Australian Accipitres,' p. 49.

† Ibis, 1881, p. 535. ‡ Ibis, 1878, p. 251. § Ibis, 1881, p. 134.

‖ Ibis, 1882, p. 153; another Fijian specimen is in the collection of Canon Tristram.

fully adult, and, from its size, a female, the sex, however, not having been recorded by the collector.

The crown and sides of the head black, with the moustache large and confluent; the upper interscapulars, and also the lesser and median wing-coverts, black, with very inconspicuous dark slaty-blue edgings; the greater wing-coverts, the scapulars, and the lower part of the back transversely barred with alternate slate-colour and blackish, the tints on all these parts being darker than in an ordinary darkly coloured example of *Falco melanogenys*; on the scapular feathers the blackish bars are six in number, with the intermediate spaces and the tips slate-coloured; the upper tail-coverts are of a paler slate-colour, with four dark transverse bars on each feather, not darker than in a dark *F. melanogenys*; the tail with six black transverse bars and a broad subterminal black band, between the black bars six paler interspaces, slate-coloured on the outer, but brownish on the inner, web; the primaries black, with very narrow brownish edgings, and with ill-defined black transverse bars on the inner webs; the under wing-coverts and axillaries transversely barred with black and fulvous white, the latter more inclined to rufous than in an ordinary *F. melanogenys*; the throat tinged with rufous; the region of the crop a very deep and rich rufous, with black shaft-marks, terminating in a guttate form at their lower extremity; the breast and flanks as fully and regularly cross-barred as in a typical *F. melanogenys*, but with the dark bars on a few feathers at the centre of the breast broken into spots, the dark transverse bars on these parts black, and the paler interspaces rufous, of the same hue as the crop, but slightly tinged with grey, especially on the flanks; the abdomen, tibiæ, and the under tail-coverts regularly crossed with alternate bars of black and grey, a few of the grey bars being, however, very slightly tinged with rufous.

In adult Australian examples of *F. melanogenys* there is a great diversity as regards the degree of rufous colouring on the underparts; in some individuals it is altogether absent, whilst in others it is largely developed, but never, so far as I have seen, to the same extent as in this remarkable and very

beautiful specimen from Borneo. Perhaps the nearest approach to this Bornean specimen, of any that I have examined, both as regards its dark upper surface and its rich rufous tints below, is an adult female from New Caledonia in the collection of Canon Tristram.

F. melanogenys is always more or less characterized, when adult, by the great regularity of the transverse barring of the under surface, combined with a conspicuous narrowness of the dark transverse bars, which are, nevertheless, strongly marked and deeply coloured, and usually rather closer together than in *F. peregrinus*; these characteristics are, however, more decidedly developed in some individuals than in others.

F. melanogenys is a somewhat smaller Falcon than *F. peregrinus*, in illustration of which I may here insert some measurements, all taken, with the exception of those of the Bornean example, from specimens preserved in the Norwich Museum.

	Wing.	Tarsus.	Middle toe s. u.
Males.			
One adult and one immature, both from Australia	11·65	1·55	1·90
Adult, Sydney	12·00	1·50	1·80
Immature, Port Curtis, Queensland	11·75	1·70	1·90
Females.			
Adult, Australia	13·25	2·00	2·20
Do., Sydney	13·40	1·90	2·20
Do., Moreton Bay, Queensland	13·50	1·80	2·10
Do., Lawas River, Borneo	13·20	2·00	2·20
Immature, Philippines	13·70	2·00	2·20

There are, as it appears to me, three races of small Falcons existing on the continent of Africa, though not entirely limited to it, closely related to *Falco peregrinus*, and still more closely so to each other. To these Falcons I propose now to refer; and as they somewhat differ from each other in size, and especially in the dimensions of the female sex, I propose to consider them seriatim in that respect, beginning with the species in which the females are the

smallest, and which is that figured in the Pl. Col. pl. 479, from a Dongola specimen preserved in the Museum at Leyden* under the name of *Falco pelegrinoides*. The more correct spelling of the specific name, *peregrinoides*, is adopted by Schlegel and Susemihl for their figures of this species in their Vög. Eur. pl. 9. fig. 1, also by Fritsch in pl. 2 of his work of the same name, where fig. 3 of this plate appears, though not very distinctly, to represent an individual of this species.

This Falcon is figured under the designation of *F. barbarus* by Mr. Salvin in 'The Ibis' for 1859, pl. vi., by Dr. Bree in the second edition of his 'Birds of Europe,' vol. i. p. 39, and by Mr. Dresser in his work on the same subject, vol. vi. pl. 374,—these three figures having all been taken from the same specimen, which was shot by Mr. Salvin at Kef Boudjato, in the Eastern Atlas, and by him presented to the Norwich Museum, where it is still preserved.

A somewhat abnormal specimen of this species, shot in the Etawah district of Northern India by the late Mr. A. Anderson, was figured in the P. Z. S. for 1876, pl. 23, under the name of *F. babylonicus*, which was subsequently corrected in the volume for 1878, p. 2. This example is also preserved in the Norwich Museum.

All the above figures represent the adult plumage of *Falco barbarus*—an ancient title which has been revived in favour of this Falcon, and at which I am not disposed to cavil, though I confess that its claim to the title seems to me to be somewhat clouded by the mistiness with which antique pedigrees are usually surrounded.

Mr. Dresser, in his article on *F. barbarus* in the 'Birds of Europe,' gives a detailed account of the localities where this species has been met with, to which I would add that an adult specimen, obtained by Dr. Baikie on the river Niger, is recorded by Dr. Finsch in the 'Transactions' of the Zoological Society, vol. vii. p. 205, this being, so far as I am aware, the most southern locality hitherto ascertained for this Falcon; also that the Museum at Leyden contains, in

* *Vide* Schlegel's Mus. des Pays-Bas, Falcons, p. 6. When at Leyden, in 1869, I saw this specimen, and carefully examined and identified it.

addition to the type of *F. peregrinoides* from Dongola, to which I have already referred, three examples from Khartum, according to the list given by Prof. Schlegel in his work on the Museum des Pays-Bas, vol. i. Falcones, p. 6. I may likewise mention, as Mr. Dresser speaks doubtfully of the occurrence of *F. barbarus* at Tangier, that a Falcon from thence, which I consider to be referable to this species, is preserved in the Norwich Museum*.

The ordinary adult plumage of *F. barbarus* may be easily recognized by a reference to the figures which I have already mentioned in 'The Ibis' for 1859 and in Dresser's 'Birds of Europe.' The phase of plumage, evidently also adult, which is represented in the P. Z. S. for 1876, pl. 23, from Mr. Anderson's Etawah specimen, with the rufous tint extending over the crown of the head, where, however, it is mingled with black, and also bordering the interscapular feathers broadly and the scapulars slightly, is much scarcer, if, indeed, it be not specifically distinct; and I have only seen two specimens, besides that obtained by Mr. Anderson, which exhibit a similar appearance: one of these was procured in Nubia, and is preserved in the British Museum; the other was shot at Hyderabad, in Sind, on the 12th of March, 1878, by Captain E. A. Butler†, and was for some time in the care of Mr. Howard Saunders, to whose kindness I was indebted for an opportunity of seeing it. These three specimens are all adult males.

I now propose to refer to the South-African Falcon, upon which Bonaparte conferred the specific name of "*minor*." Mr. Sharpe, in his article on this species, only describes a young specimen, and does not allude to its adult plumage; but at pl. 12 of his volume he gives good figures of both the adult and the immature dress, taken, as he has been good enough to inform me, from South-African examples, which,

* This specimen is in change from the first to the second year's plumage; but the rufous nuchal collar is already largely developed and richly coloured, which, I consider, stamps it as *F. barbarus*. The new feathers on the breast are, however, spotted, whilst in older individuals these spots are absent.

† Captain Butler's interesting notes on *F. barbarus*, as observed in Sind, will be found in 'Stray Feathers' for 1878, pt. 2, p. 174.

in the case of the adult, may serve as a substitute for the omitted description.

In the adult specimens which I have examined, the regularity of the dark transverse bars on the lower breast, abdomen, and tibiæ resembles that portion of the plumage of *F. melanogenys*; but the black bars on the breast are somewhat less narrow than is usual in that species, and there is often a slight tendency to spots on the centre of the breast, in which points *F. minor* more nearly resembles *F. peregrinus*; the coloration of the upper parts is similar to that of *F. melanogenys* and of the more darkly-coloured individuals of *F. peregrinus*, and the nape, so far as I have observed, shows no trace of rufous.

This absence from the nape of the adult South-African *F. minor* of any trace of rufous is important, as its frequent presence is noticeable in the North-African race, which Mr. Dresser, in his 'Birds of Europe,' has identified with *F. minor*; and the probability of its being always absent from South-African adult specimens is increased by the descriptions of this Falcon given by Sir A. Smith and Mr. Layard, as observed by them in South Africa.

Sir A. Smith, writing of this species under the title of *F. peregrinoides* (which may be considered erroneous, being founded on the misspelt specific name of "*pelegrinoides*" previously proposed by Temminck for *F. barbarus*) in the 'South-African Quarterly Journal,' vol. i. p. 235, describes the adult as having the "front, crown, and nape dark greyish blue, with each feather marked by a narrow longitudinal black streak towards its centre; back of neck blackish, with the feathers tipt by dark bluish grey, with transverse dusky-black bands."

Mr. Layard writes thus respecting this species in the first edition of his 'Birds of South Africa,' p. 19:—"The description given of *F. peregrinus* will suffice equally well for this species, with the exception that all the specimens which have fallen under my observation seem to be duller coloured," his description of the parts in question in *F. peregrinus* being as follows:—"General colour above deep bluish

lead-colour, barred with black; crown of the head and upper part of neck nearly black."

The South-African range of *F. minor* extends from the Cape colony in a north-westerly direction to Ovampo Land*, and to the north-east to the district of the Zambesi, whence was procured a specimen now in the Norwich Museum, which also contains an example from Anjouan Island in the Comoro group. This Falcon is also an inhabitant of Madagascar†.

Whether the true *F. minor* occurs to the north of the equator is, I think, doubtful. A female Falcon, in change from the immature to the adult dress, which was shot by Mr. Blanford in the Anseba valley in Abyssinia, and recorded in his 'Geology and Zoology of Abyssinia,' p. 288, under the name of *F. barbarus*, but with considerable doubt as to its really belonging to that species, is now in the British Museum, and is included by Mr. Sharpe in his list of the Museum specimens of *F. minor*. I have not recently re-examined this specimen, and regret that I omitted to do so when last in London; but from the circumstance of its having, to use Mr. Blanford's words, "a tendency to a rufous collar at the back of the neck," I think it probable that it should not be referred to the southern *F.* "*minor*," but to the more northern race, which will next require our attention‡.

It may be right here to quote a remark contained in Mr. Dresser's work relating to another specimen in the British Museum, which I also omitted to examine when I last had the opportunity of doing so; Mr. Dresser, in his article on *F. minor*, writes thus:—"A specimen, in immature plumage, from the river Gambia, now in the British Museum, catalogued by Mr. Sharpe as *Falco barbarus*, in my opinion

* *Vide* Andersson's 'Birds of Damara Land,' p. 12.

† *Vide* Milne-Edwards and Grandidier's 'Oiseaux de Madagascar,' vol. i. p. 32.

‡ Mr. Blanford states that, in both wings of this specimen, "the longest feather is slightly imperfect, the absolute length being 12½ inches," and he considers that "the wing measures nearly 13 inches." The tarsus, according to a memorandum of my own, measures 2 inches, and the middle toe *s.u.* 2·20; at the time that I made this memorandum I also noted the length of the wing as 12·80.

decidedly belongs to the present species; but it is, so far as I can ascertain, almost impossible to distinguish *F. barbarus* and *F. minor* in immature dress." I regret that, not having the measurements of the specimen, I am unable to offer an opinion as to the species to which it belongs; in the first year's plumage this can only be done with any certainty in the case of specimens the sex of which has been ascertained by dissection, and in these the measurement is usually a trustworthy guide. On the subject of measurement I may observe that Mr. Blanford, in his article on the Anseba-valley Falcon, speaks of the difference in the length of the tail between *F. barbarus* and *F. minor*, basing his remarks on measurements of the latter given by Mr. Layard in his work on the 'Birds of South Africa.' I find it very difficult to obtain an accurate measurement of the length of the tail in mounted specimens, and even in those in the skin, as it is almost impossible in such cases to examine the root of the tail without injuriously disturbing the tail-coverts: so far as I can judge from the examples which I have examined, there is no appreciable difference in the length of the tail between the males of *F. barbarus* and *F. minor*; but in the females the difference is apparent, the female of *F. minor* being altogether a larger bird than that of *F. barbarus*, and in consequence having a tail fully half an inch longer.

I have already referred to a North-African Falcon which Mr. Dresser, in his 'Birds of Europe,' has treated as identical with the South-African *Falco minor*, but which I think should rank as a distinct subspecies, being somewhat larger than *F. minor* and much more variable in the coloration of its adult plumage.

The greater number of the specimens which have come under my notice have been sent to this country either from Mogador or from Tangier; but it inhabits Algeria, as well as Barbary, and has been obtained in Spain and the Balearic Islands. It has also probably been met with in Northern Italy*; in Asia Minor it is resident, and is no doubt the

* Mr. Dresser writes thus, in his article on *Falco minor* in the 'Birds of Europe':—"It has been obtained near Milan, whence M. Jules Vian

bird thus alluded to by Mr. W. B. Barker in his work on Cilicia:—"The Peregrine of the cliffs of Mount Taurus is smaller than the English Peregrine, but more beautifully variegated in plumage; it is known as the 'Barbary Falcon'"*. It seems probable that this Falcon also occurs in Persia, and that a Persian specimen described by Mr. Blanford in his 'Eastern Persia,' vol. ii. p. 102, under the title of *F. barbarus* is a female of *F. punicus*. I have been indebted to the kindness of Mr. Seebohm for the loan of two males collected by Mr. G. C. Danford in Mount Taurus, to which I purpose to allude more particularly later on; and I may take this opportunity of mentioning that, besides the specimens which have been lent to me by Mr. Dresser and Mr. Seebohm, I have had equally kind loans of skins of this Falcon from Lord Lilford, Mr. Dalgleish, and Captain Wardlaw Ramsay, and of the allied species from Canon Tristram and Captain Shelley.

It is this northern subspecies of *F. minor* which, as it appears to me, is figured by the younger Le Vaillant on pl. i. of the 'Exploration de l'Algérie' under the title of *Falco punicus*; and this is the name which I think it ought to have.

Mr. Sharpe, Mr. Dresser, and other authorities have referred this plate (but, I venture to think, erroneously) to *F. barbarus*, and this was also the view of M. Loche, the author of the ornithological letterpress to the 'Exploration de l'Algérie;' but it is evident from his remarks (at pp. 55 and 56 of that work) that he had never examined the original specimen from which Le Vaillant's drawing and plate were taken.

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obtained a specimen shot late in the month of April;" but as I have never seen an Italian specimen, I feel that the identification of the Milan example with the subspecies now under consideration must be left an open question. Mr. Dresser possesses an immature Falcon obtained at Rhodes by Mr. Danford, who has marked it as a female, and has cited this as also an example of *F. minor*: but it appears to me that this specimen, which Mr. Dresser has kindly lent me, with others, is, if rightly sexed, proved by its measurements to be female of *F. barbarus*—an inference which is strengthened by the appearance on the nape of the commenced assumption of a nuchal collar.

* *Vide* 'Lares and Penates,' p. 297.

I now propose to give some particulars of the adult specimens of *Falco punicus* which have come under my notice; but before doing so, I think it may be serviceable to give the particulars of some measurements, all taken by myself, except where otherwise described, of *F. barbarus*, *F. minor*, and *F. punicus*.

Falco barbarus.

Adult or nearly Adult Males, as ascertained by dissection.

	Wing. in.	Tarsus. in.	Middle toe *s. u.* in.
Tangier: Norwich Museum (*Favier*)	10·95	1·70	1·90
Sakkara, Egypt: Norwich Museum (*Parzudaki*)	11·00	1·70	1·80
El Kab, Egypt: shot by Capt. Shelley, and in his collection	11·30	1·60	1·80
Etawah, N. India: Norwich Museum (*Anderson*)	*11·40	1·60	1·80
Hyderabad, Sind: shot by Capt. E. A. Butler, and in his possession	11·25	1·70	

Males, as recorded in 'Stray Feathers.'

Vol. i. p. 21:—			
Cutch (*Mr. Hume*)	10·89	1·60	1·63
Vol. iv. p. 118:—			
Gulgan-Shah, Eastern Turkestan (*Dr. Scully*)	10·70	1·60	
Vol. vii. p. 174:—			
Three, from Sind (*Capt. E. A. Butler*)	10·87		

* Mr. A. Anderson, in his description of this specimen given in the P.Z.S. for 1876, p. 311, gives the wing, "carefully measured in the flesh," as 10·7. The discrepancy between this measurement and mine probably arises from the mode of measuring. I have used a flexible measure, and have followed the convexity of the outer surface of the wing (which, I think, is sometimes greater in skins than in the flesh) in taking an otherwise straight line from the carpal joint to the tip of the longest primary. Some few others of my wing-measurements here given are slightly in excess of those which have been elsewhere published, taken from the same specimens, which probably arises from a similar cause.

MALES, as recorded in Sharpe's Catalogue, p. 387.

	Wing. in.	Tarsus. in.	Middle toe *s. u.* in.
Two in British Museum	11	1·60	

FEMALES, as ascertained by dissection.

Adult. Kef Boudjato, Eastern Atlas (*vide* Ibis, 1859, p. 187): collected and presented to the Norwich Museum by Mr. Salvin	11·20	1·60	1·80
Adult. Egypt: collected by Mr. W. C. B. Medlycott; in collection of Canon Tristram	11·10	1·50	1·70
Immature, in change. Sierra Alfacar, near Granada, Spain: recorded by Mr. Howard Saunders in P. Z. S. 1872, p. 356, and now in British Museum	*12·00	1·80	2·00
Immature. In collection of Lord Lilford, and obtained by him at Isola Rossa, on S. coast of Sardinia.....	11·40	1·80	1·80
Immature. Trianda, Rhodes: collected by Mr. Danford; now in collection of Mr. Dresser. See footnote on p. 310	11·60	1·75	1·80

PRESUMED FEMALE.

Adult. Nepal: in British Museum	11·50	1·60	1·80

FEMALES, as recorded in 'Stray Feathers.'

Vol. i. p. 21:—			
Nursingpore District, Central Provinces of India (*Mr. Hume*).....	11·40	1·80	1·80
Vol. iv. p. 118:—			
Kashgar (*Dr. Scully*).....	11·55	1·65	
Yarkand (*Dr. Scully*)	11·00	1·70	

* I examined this specimen a few years since, but am now indebted to Mr. Edward Hargitt for kindly testing the measurements I then took, and slightly correcting them.

Falco minor.

MALE, as ascertained by dissection.

	Wing. in.	Tarsus. in.	Middle toe & n. in.
Immature, in change. Natal, collected by Mr. Ayres: Norwich Museum	11·00	1·70	1·90

PRESUMED MALES.

Adult. Cape Colony: Norwich Museum	11·00	1·70	1·80
Immature. Natal: Norwich Museum	10·80	1·70	1·75
Immature, in change. River Tugela: in Capt. Shelley's collection. (Marked ♀ by the collector, Mr. Gordge, but apparently in error)	11·25	1·70	2·05

FEMALE, ascertained by dissection.

Adult. Natal; collected by Mr. Guenzius: Norwich Museum	12·95	1·80	2·00

PRESUMED FEMALES.

Adult. South Africa: British Museum	12·85	2·00	2·10
Adult. Zambesi district: Norwich Museum	12·80	1·80	1·90
Immature, in change. Anjouan Island: Norwich Museum	12·70	1·80	1·90

Falco punicus.

ADULT MALES, ascertained by dissection.

A. Tangier: in Mr. Dresser's collection; collected by Mr. Olcese	11·35	1·65	2·00
B. Tangier: in Norwich Museum; collected by Mr. Olcese	11·25	1·60	1·90
C. Tangier: in Norwich Museum	11·40	1·50	2·00
D. Djebel Dekma, Eastern Atlas: collected and presented to the Norwich Museum by Mr. Salvin	11·50	1·60	1·90

	Wing. in.	Tarsus. in.	Middle toe *s. u.* in.
E. Viorna Liebana, Province of Santander, N.W. Spain: collection of Lord Lilford	11·50	1·60	1·80
F. Island of Iviza: collection of Lord Lilford	11·35	1·70	1·90
G. Anascha, Mount Taurus: collected by Mr. Danford; in collection of Mr. Seebohm..	11·55	1·70	1·90
H. Gozna, Mount Taurus: collected by Mr. Danford; in collection of Mr. Seebohm..	11·60	1·70	1·80
PRESUMED MALES.			
I. Mogador: Norwich Museum	11·35	1·50	1·90
J. „ „ „	11·55	1·60	1·90
K. Mogador: British Museum	11·50	1·70	1·90
L. Tangier: collection of Mr. Dresser.....	11·60	1·70	1·80
M. Tangier: collection of Capt. Wardlaw Ramsay	*11·00	1·60	1·90
N. Morocco: collection of Capt. Wardlaw Ramsay	11·60	1·60	1·90
O. Smyrna: Norwich Museum†	11·60	1·80	1·90
FEMALES, ascertained by dissection.			
P. Morocco: collection of Lord Lilford, by whom it was kept alive. Immature, in change	imperfect	1·90	2·00
Q. Mogador: collection of Lord Lilford, by whom it was kept alive. Nearly adult	13·10	1·90	2·00
R. Cape Spartel: collected by Mr. Olcese: in Mr. Dalgleish's collection. Adult	13·20	1·90	2·00
S. Tangier: collected by Mr. Favier: collection of Mr. Hancock. Immature	13·00	1·80	2·10

* In specimen M the second primary, which is the longest, appears to have not quite attained its full proportionate development.

† It is possible that the sex of specimen O may have been ascertained by dissection, as it is labelled by the collector, Mr. J. G. Gonzenbach, "*Falco peregrinus* ♂.

	Wing. in.	Tarsus. in.	Middle toe *c. u.* in.
T. Tangier: collected by Col. Irby; in collection of Lord Lilford. Adult	13·30	1·90	2·00
U. Eastern Atlas: Norwich Museum; kept alive by J. H. Gurney	13·00	1·90	2·00
W. Algeria: skeleton in Norwich Museum; kept alive by Mr. J. H. Gurney	....	1·85	2·00
PRESUMED FEMALE.			
X. Tangier: British Museum.	13·20	2·00	2·10

The following results may be deduced from the above measurements, excluding those specimens which I have not personally examined, and also excluding *F. punicus*, specimen M., for the reason which I have mentioned in the footnote relating to it:—

	Wing.	Tarsus.	Middle toe *c. u.*
	in. in.	in. in.	in. in.
F. barbarus, males	10·95 to 11·40	1·60 to 1·70	1·80 to 1·90
„ females ..	11·10 to 11·60	1·50 to 1·80	1·70 to 2·00
F. minor, males	10·80 to 11·25	1·70	1·75 to 2·05
„ females	12·70 to 12·95	1·80 to 2·00	1·90 to 2·10
F. punicus, males . ..	11·25 to 11·60	1·50 to 1·80	1·80 to 2·00
„ females ..	13·00 to 13·30	1·80 to 2·00	2·00 to 2·10

It will be seen by this summary that, as regards the females, *F. barbarus* is the smallest species of the three, *F. punicus* the largest, and *F. minor* intermediate in size between the other two; whilst as regards the male sex, the dimensions of *F. barbarus* and *F. minor* are nearly identical, *F. punicus* being slightly larger than either.

Mr. Dresser, in his article on *Falco minor*, to which I have already referred, mentions the female Falcons referred by him to that species—one, from Rhodes, with a wing according to his measument of 11 inches (but according to mine 11·5 on one wing and 11·6 on the other), and a specimen from Tangiers, in Lord Lilford's collection with a wing-measurement of 11·1. I have already expressed my belief

that the Rhodes Falcon is referable to *F. barbarus*. With regard to that from Tangier, Lord Lilford informs me that it has been unfortunataly mislaid, but that it was in immature plumage; and I feel no doubt that this also is a young *F. barbarus*. I do not think that the series of Falcons examined by Mr. Dresser contained any specimen of what I believe to be the true female of *F. punicus*.

I now propose briefly to describe the principal variations of plumage which I have observed in adult specimens of *F. punicus*; and these are not a little remarkable, some specimens being almost undistinguishable in markings and coloration from *F. minor*, others approaching exceedingly near in these respects to *F. barbarus*, whilst the majority exhibit a plumage more or less intermediate between these two extremes.

The following notes refer to the distinguishing letters in the foregoing list of measurements; they are limited to specimens which are adult, or nearly so, and deal first with the males and subsequently with the females.

Amongst the Falcons which I have examined, and which I consider must be referred to *F. punicus*, are two males that seem to me only to differ from *F. minor* in their longer wing-measurement. One of these is specimen O, from Smyrna, which has been figured as an adult *F. minor* by Mr. Dresser in his 'Birds of Europe,' pl. 373; the other is E, from North-western Spain, which, as regards coloration, only differs from O in having the dark transverse bars on the breast and abdomen somewhat narrower. Both these specimens are very dark on the upper parts, especially on the head, interscapulars, and lesser wing-coverts, which are slaty black; their crops show a black guttate spot in the centre of nearly every feather; and the breast, abdomen, tibiæ, and flanks are throughout very regularly cross-barred with black; the spots on the crop, and the regularity and profusion of dark transverse bars on the breast, are, I believe, due to the birds not having moulted subsequently to their assumption of adult dress; and this view is confirmed by the circumstance that O shows two brown feathers of the immature plumage, one in the coverts of each wing, still remaining.

A very similar specimen to O is N, from Morocco: but this is probably an older bird, as it has only faint and very narrow shaft-marks on the crop-feathers, and the bars on the centre of the breast are more broken up into spots than is the case in O. J, from Mogador, resembles N; but the dark transverse bars have disappeared from the centre of the breast and of the lower abdomen, and have been replaced by black spots smaller than those on the breast of N.

M, from Tangier, is of a paler slate-colour on the head, nape, scapulars, and interscapulars than any of the preceding specimens; and the transverse bars on the under surface are also somewhat paler and very narrow, even narrower than in E; they are interrupted in the centre of the breast, and are there replaced by a few minute dark spots, which is a phase of plumage that I have never seen in the southern *F. minor*; the lower crop-feathers have narrow dark shaft-marks*.

Every one of the above-named specimens is entirely destitute of rufous on the nape; but those to which I am about to refer all show more or less of it.

In B and L, both from Tangier, the trace of rufous on the back of the neck is exceedingly slight and inconspicuous, as the few feathers which are so coloured all have slaty tips. L is an average dark bird as regards the upper parts; but these in B are almost as pale as in M, to which B bears considerable resemblance, but with a larger space on the breast in which the cross bars are replaced by small and scattered dark spots. In L these spots are larger, and on the abdomen they partially assume the form of bars.

F, from Iviza, much resembles L; but the rufous tinge is more apparent on both sides of the nape.

B, L, and F are all entirely destitute of black shaft-marks on the crop, except a few very small ones next the breast. A similar almost immaculate condition of the crop-feathers exists in A, from Tangier, and in I, from Mogador; the latter has two feathers of the immature dress remaining on the coverts of each wing: this is remarkable, as an immaculate crop might

* I have a memorandum to the effect that specimen K (in the British Museum) closely resembles J; but I have not recently examined it.

otherwise be considered as indicating advanced age, which I believe that it usually does. The rufous on the nape of A and I much resembles that on F; in other respects A and I come nearest to N.

Both in A and in I the dark cross bars on the undersurface are strongly marked, but in the centre of the breast are replaced by conspicuous black spots, this being more particularly the case in I.

C, from Tangier, resembles I, but has distinct black shaft-marks on the feathers of the crop.

G, from Anascha, Mount Taurus, much resembles F, but has rather more rufous on the nape, and the cross-barring on the thighs and lower abdomen is more distinct; the grey of the lower scapulars is also rather paler.

H, from Gozna, Mount Taurus, is similar to G, but is darker on the interscapular feathers, and the rufous which is mingled with the slaty black on the sides of the nape is brighter and somewhat more extended; many feathers of the crop show small black shaft-marks, none of which appear on that part of the plumage in G.

In 'The Ibis' for 1859, p. 187, Mr. Salvin recorded the capture of two breeding specimens of "*Falco barbarus*" in the Eastern Atlas—one at Djebel Dekma, which he marked as a male, the other at Kef Boudjato, which he marked as a female, the latter being the bird figured in the plate of *F. barbarus* which accompanied Mr. Salvin's paper above referred to. In this article Mr. Salvin, speaking of these two specimens, both of which he very liberally presented to the Norwich Museum, suggests that he was probably mistaken as to the sex of one of them, as that marked male is rather larger than that which is marked female*. My belief is that the sex of both birds was correctly determined, and that the fact of the male being a little the larger is due to the circumstance that the female bird only (*i. e.* the specimen obtained at Kef Boudjato) really belongs to *F. barbarus*, and that the male from Djebel

* My wing-measurements of both these birds are slightly in excess of those given by Mr. Salvin, probably from some little difference in the mode of measuring.

Dekma should be referred to *F. punicus*. I however make this suggestion with some diffidence, as the Djebel-Dekma Falcon (which stands as D in my list of specimens of *F. punicus*) certainly approaches nearer in coloration to *F. barbarus* than does any other male of *F. punicus* that I have examined, and I do not remember having ever seen a specimen of either species exactly like it. On comparing it with the Kef-Boudjato Falcon, and with three other adult examples of *F. barbarus*, I find that in D the rufous on the nape is paler and duller, and that, instead of forming a complete nuchal collar, it is limited to two vertically oblong patches, one on either side of the centre of the nape and partially and obscurely continued towards the outer edge of the crown of the head; the rest of the upper surface in D resembles *F. barbarus* and also the paler examples of *F. punicus*; the feathers of the crop, except those of the central portion, show narrow black shaft-marks; the flanks, thighs, and under tail-coverts are cross-barred with black, the former more distinctly than the two latter; the entire breast and abdomen is sprinkled with distinct black spots, which, except very slightly on the abdomen, do not assume the form of bars. I may add that somewhat similar spots on the breast are observable in A, I, and C, as also on the new breast-feathers of the young male *F. barbarus*, in change, collected by Mr. Favier at Tangier, and now in the Norwich Museum, which I have already mentioned.

I proceed to refer to the female specimens of *F. punicus* which I have examined, and which I have found to be less numerous in collections than the males.

Mr. Salvin, in the same passage in which he speaks of the two adult Falcons which he obtained in the Eastern Atlas, also mentions two nestlings which he procured from a rock near the northern boundary of the Lake of Guerah El Tharf, respecting which he observes that "between these two birds there subsisted a marked difference in size"—a peculiarity which accords very well with the disparity in the dimensions of the sexes in *F. punicus*; in fact, the larger bird of these two, which I kept alive till it was about seven years old, and which is now preserved in the Norwich Museum, proved on

dissection to be a female, and is in my opinion an undoubted specimen of *F. punicus*. It is marked U in my list of examples of that species. The coloration of the upper surface in this female much resembles that of the medium-coloured males as regards intensity of tint; the position of the rufous on the nape is very much as in D, but it is less extended upwards and is more mingled with slaty black; the ground-colour of the underparts is richly tinged with rufous, and more so on the cheeks, throat, crop, breast, and flanks than in any of the males that I have examined; the feathers of the crop exhibit conspicuous black shaft-marks, broadest on those feathers which are nearest to the chest; the underparts below the crop are strongly cross-barred with black, except on the under tail-coverts, where the transverse bars are faint, and on the centre of the breast, where they are broken up into bar-shaped spots.

Mr. Salvin (*l. c.*) also mentions two Algerian Falcons which were brought to England as nestlings by Canon Tristram, and which I had for some time alive. One of these unfortunately escaped. The other died in bad plumage; but its skeleton is preserved in the Norwich Museum. On dissection it proved to be a female; and the measurements of the tarsus and middle toe indicate that the specimen was likewise referable to *F. punicus*.

R, from Cape Spartel, much resembles U; but it has more rufous on the nape, where this colour may almost be said to form a nuchal collar, though less regular and complete than in *F. barbarus*.

P, from Morocco (probably Mogador), died whilst changing from immature to adult dress. It has to a considerable extent attained the latter; and so far as it has done so it much resembles R.

T, from Tangier, is very similar to R as regards the upper surface and the amount of rufous on the nape; but on the underparts the rufous tints, though conspicuous, are paler, and on the abdomen the cross bars are replaced by small and somewhat faintly marked dark spots; the crop is also entirely destitute of dark shaft-marks.

Q, from Mogador, had nearly, but not entirely, assumed the adult dress when it died; except for its much larger size, it is hardly distinguishable from *F. barbarus*, as the rufous on the nape is similar in extent and disposition to the nuchal collar of that species, but is not quite so bright and is rather more intermingled with slaty black; most of the feathers on the crop have somewhat indistinct dark shaft-marks: the breast and abdomen are spotted as in T; but the spots are a little larger.

I have not had a recent opportunity of examining X, from Tangier; but I have a note, made some time since, to the effect that it much resembles specimen R.

Before leaving the subject of *F. peregrinus* and its allies, it will be right that I should mention the two Sardinian Falcons for which Mr. Sharpe, in the 'Annals and Magazine of Natural History' for January 1873, proposed the specific name of *brookei* (subsequently withdrawn in his 'Catalogue'); but as I have not recently examined these specimens, which are preserved in the British Museum, I defer my remarks upon them till my next paper, hoping, in the interim, to be able to visit the Museum and to see them there.

[To be continued.]

XXII.—*On the Remains of an extinct gigantic Bird supposed to be allied to* Cariama, *from the Ossiferous Caves of Brazil**. By J. Reinhardt.

It has long been known that the caves in the limestone mountains of Brazil contain bones of other vertebrate classes besides the very numerous mammalian remains which are buried in them. The former certainly are but few in number as compared with the latter; but bones of birds more particularly are found in some caves in no small quantity; and though a part of them may be of doubtful antiquity, others possess those characteristics which are found in those bones which are usually described as *fossil*.

As yet, however, but very little has been made known con-

* Translated from the Vid. Meddelelser fra den Naturhistoriske Forening i Kjöbenhavn, 1881 (pp. 141–153).

cerning the fossil bones of birds from the Brazilian limestone caves; and for this we are indebted, as we shall see, almost exclusively to the late Dr. P. W. Lund. His collection of animal-remains from these caves contains bones of birds by hundreds, which he procured in the course of his long-continued investigations. He was also for some time occupied in carefully examining them, and more than once has mentioned in print these studies and their results, though certainly with great brevity. At the conclusion of the last of the letters which he addressed to the editors of the 'Annales des Sciences Naturelles' concerning his discoveries in the caves, which is dated the 1st of April 1840, and is printed in the May number of that periodical for the same year, he stated that he possessed remains of a not inconsiderable number of species of birds. But he did not convey any more precise information respecting them, beyond saying that amongst them were two *Rheas*, of which one had been considerably larger than the now-existing *Rhea americana* (*l. c.* p. 219).

Early in 1841 Lund addressed to our Royal Society of Sciences an account of the remains of birds which he had at that time found and worked out. This paper was only of moderate extent, filling twenty quarto pages in manuscript, with thirteen coloured drawings of six bones supposed to belong to five different birds. It was intended to form the concluding part of the fourth treatise (dated January 30, 1841, and forwarded at the same time to the Society) of the series which was then being published under the common title of 'Blik paa Brasiliens Dyreverden för sidste Jordomvæltning' (Observations on the Animal World of Brazil before the last Geological Revolution). This paper was not, however, printed along with the remaining portion of the treatise; nor did he ever decide to have it published afterwards. But he made an abstract of the section concerning the birds, as well as of the rest of the fourth treatise; and this abstract, of which the original manuscript is still in existence, was printed entire and unaltered in the 'Proceedings' of the Danish Royal Society for 1840–41 (p. lxiii). From this we gather that at that time

Lund had determined more or less accurately 33 fossil species of birds, belonging to 26 genera, mostly such as are still represented in the same region, and of which some are peculiar to America, as, for instance, *Furnarius*, *Anabates*, *Dendrocolaptes*, *Crypturus*, and *Rhea*. We gather, moreover, that several species agree in a remarkable degree with those now existing, and, finally, that only one of those discovered was wholly different, in other words, unquestionably generically distinct from all birds of the present age, being most likely an extinct species of Illiger's family Alectorides, allied to the Seriema (*Cariama*), but of the size of the *Rhea*. As it appears from the unpublished treatise that Lund at that time did not consider that he possessed remains of more than one species of *Rhea*, we may conclude, though nothing is said about it directly, that this gigantic "Alectoride" is identical with one of those species of *Rhea* which he had shortly before alluded to in the 'Annales des Sciences Naturelles.'

The principal result which Lund considers himself justified in deducing is this, that all the laws which he had established concerning the relation between the present mammalian fauna of Brazil and that which had last preceded it, held good for the class of birds as well. These two notices are all that Lund published on the subject; but he continued to direct his attention to the remains of birds in the caves, and when he at last, a few years later, abandoned all further researches in caves, he possessed not only more bones of birds, but also bones of more species, than in 1841. It is not, however, probable that he entered on a thorough investigation of his new finds: the great majority of the bones of birds in his collection are not determined in his autograph catalogue of them; in many cases even the indication of the caves where they were found is wanting; and a portion of them have not even been registered.

Besides Lund, the late Professor P. Gervais also published a contribution to the knowledge of the fossil birds of Brazil, which, however, is not considerable. In 1844 he placed before the Société Philomatique of Paris a *résumé* of a work entitled "Remarques sur les oiseaux fossiles," which

was at once published in the 'Institut'*. After having discussed the fossil birds from other geological formations, he briefly mentions in this *résumé* the remains of birds from the Brazilian caves, and the scientific results of Lund's researches, at the same time increasing the number of species indicated by Lund, by some more discovered in a collection of Brazilian cave-bones which the Paris Museum at that time purchased from the late P. Claussen. The number of new species indicated by him, however, is only five; but he does not further describe them, and some of them had been most likely found by Lund without Gervais being aware of it. A species of *Cathartes*, however, larger than those now existing †, and an Owl were, if the determinations may be trusted, really new.

In the short section on extinct birds in Mr. Wallace's celebrated 'Geographical Distribution of Animals' there is, lastly, what we might think was a small addition to the fossil birds already known from the Brazilian bone-caves, because, in the few lines which the author has bestowed on this subject, we meet with the somewhat startling announcement that amongst the birds found in these caves there is also an extinct species of "the very isolated South-American genus *Opisthocomus*" (i. p. 164). On closer consideration, however, this statement can scarcely appear otherwise than doubtful ‡. Wallace does not seem to have himself seen or studied the bird-bones to which he refers; and, judging from the tenor of his words, it

* Vol. xii. (1844), pp. 294, 295. I am not aware that any more of this memoir than the *résumé* has been published.

† In Lund's palæontological collection I have not observed remains of any *Cathartes* or *Catharistes* "larger than the existing species;" but amongst the bones of birds collected by him during the last years of his cave-diggings there are the upper mandible and some more bones of a *Gypagus* nearly allied to or even identical with the now living *G. papa*. Perhaps this is the bird which Gervais denominates a *Cathartes*, to which genus Illiger, by whom it was established, referred *G. papa*, which is furnished with a crest, as well as those American Vultures which have no excrescences on the beak.

[‡ That this statement seems to have originated in a mistake has been already noticed (Encycl. Brit. ed. 9, xii. p. 29).—Ed.]

was his intention merely to give a very short extract of what others already had communicated. At the same time it seems that he had before him only Gervais's article in the 'Institut' and the few words which occur in Lund's letter in the 'Annales des Sciences Naturelles,' but that he did not know, or did not use, the latter's communication in the 'Proceedings of the Danish Royal Society of Sciences,' 1840–1841. However this may be, no remains of any *Opisthocomus* are mentioned in either of these places; and it must doubtless be struck out from the list of fossil birds found in the Brazilian caves, as we can scarcely doubt that it has found a place in Wallace's work only by some misunderstanding or slip of memory.

So far as I am aware, no further information concerning the fossil birds of Brazil than what I have mentioned has been published *; and we shall now return to a closer consideration of the principal result which Lund deduced from his studies in this department. To a certain extent this result is no doubt true; there can be no question that the bird-fauna of which the remains exist in the caves, whatever be the proportion of undoubtedly extinct species, had a thoroughly American character, just as fully as the mammalian fauna which lies buried there; and we are also certainly justified in maintaining that it contained at any rate some species which nowadays occur regularly in other parts of South America only, even if it should happen now and then at intervals of several years that specimens stray into the valley of Velhas †.

So far it may be said truly that the laws established "concerning the relation" between the extinct and the extant mammalian fauna "also hold good as regards the class

* Of course the short statements of Lund and Gervais on the fossil birds of Brazil were soon reproduced in several of the more important contemporory manuals and catalogues; but to these we need not refer.

† Lund's collection contains, for instance, several unregistered bones of a *Chauna* or *Palamedea*, birds which at present do not occur in the valley of the Velhas, but, at the most, now and then at intervals of several years stray thither (*Palamedea cornuta* see Nat. For. Vid. Medd. 1870, p. 22).

of birds"*. But there is, at any rate, one point with regard to which it may be doubtful whether the relation between the bird-fauna discovered in the caves and that now existing can fairly be said to agree with what is known concerning the corresponding mammalian faunæ. The most remarkable characteristic of the extinct mammalian world is, as is well known, this, that it contained not only several entirely extinct very large species of genera which are still in existence and peculiar to America—for instance, large species of *Hydrochœrus*, *Cercolabes*, and *Dasypus*—but besides these a series of most remarkable gigantic forms which certainly exhibit an American character, but represent peculiar genera and families that have disappeared from the modern fauna, such as *Macrauchenia*, *Toxodon*, the gigantic Sloths, and the Glyptodons. Nothing similar appears to have been observed with regard to the remains of birds found in the caves; at any rate nothing approaching to it could probably be mentioned except in the case of the very large Alectorid of which Lund believed he had found remains; and even if these have been rightly interpreted by him, this one species would scarcely afford a sufficient foundation for so important a conclusion as he founded on it. So much the more occasion is there for rendering an accurate account of the number and a description of the bones referred to this bird, and for submitting them to a renewed and careful examination.

They are but very few in number, strictly speaking only two, viz.:—the upper third or a little more of the right metatarse, from which, however, the articular surface had been broken off from above, and which, more especially on the posterior face, was beset with incrustations; and, secondly, a digital phalanx which had lost the proximal articular surface, and also exhibited some incrustations. According to Lund's own words in his unpublished treatise, both these bones were found in the side of the same cave, and bore all the marks of belonging to one and the same individual; both moreover were figured, each from two sides, in the coloured drawings accom-

* Overs. over d. Kgl. d. Vid. Selsk. Forhandlinger og d. Medl. Arb. 1840–41, p. lxiii.

panying the treatise sent to Copenhagen in 1841. More than these two specimens are not mentioned in it; and consequently the above-mentioned large Alectorid bird was founded only on them. But after having sent home his treatise, Lund must have become aware that he possessed a third bone of this bird, since in his collection there is, marked with the number 8, the middle portion of a tibia*, about five inches long, covered with incrustations, which, according to the statement in his own catalogue, was found in the same cave as the two other Alectorid bones, and is described as belonging to a gigantic Wader (*Styltegænger*), the name under which Lund also entered the tarso-metatarsal included in the catalogue as No. 9, immediately after the fragment of the tibia; and both these bones agree so completely in form, appearance, and condition that one is quite naturally led to the conclusion that they are remains of one and the same individual. But Lund does not appear to have thought he had found more than these three fragments of this bird, as the name "gigantic Wader" does not occur again in his catalogue, and the denomination "gigantic Alectorid" does not occur at all.

One of the above-named three bones—the toe-joint—no longer exists; at any rate I have not been able to find it in Lund's collection. On the one hand, it seems to me improbable that it can have been overlooked, owing to the circumstance that I possess two carefully executed drawings of it, which would greatly facilitate its recognition if I had really met with it; on the other hand, there seem to be good reasons for believing that it was not in the collection when sent home. There has been no difficulty in finding not only the originals of the other figures accompanying the treatise on the fossil birds, but also the other remains mentioned, though not figured, in that paper; they are all there, as well as those which were figured—all numbered and entered in

* By some clerical error or mistake, "femur," not "tibia," stands in the catalogue; but there can be no doubt that the bone is a tibia; and the number on the bone shows that it really is what the catalogue describes as "the middle portion of a femur."

his catalogue by the same names as they are described in the treatise. The toe-bone alone was not entered in the catalogue nor found in the collection. But it does not, so far as I can judge, seem probable that Lund should have numbered and registered all the other remains of birds mentioned in the treatise, and in some cases less important, while at the same time he omitted to do this with regard to one of the most important, if he had really possessed it when writing the catalogue of his collection. I think, therefore, that this brittle and fragile bone (to judge from the existing drawings) must have disappeared while Lund was in Brazil, whether he lost it or whether, perhaps more probably, it fell to pieces. This loss is of course to be regretted; but in my opinion it is not of very great importance, as the two above-mentioned drawings, which are preserved, are sufficient to give a fairly good idea of it.

Illiger himself saw and examined only two out of the six genera of birds which he placed together in his family *Alectorides* *; he knew the rest only from the not very satisfactory descriptions and illustrations of that time; and it is therefore easy to understand that his *Alectorides* became a somewhat promiscuous assemblage of dissimilar birds. Nor was Temminck's knowledge of them extensive; and even after removing from them the very divergent *Cereopsis*, the family did not become a natural group, and it has accordingly now been wholly abandoned. Nor did Lund himself know much of it. Of the three forms which were left longest in the group *Alectorides*, two—*Palamedea* and the Trumpeters—have not their home in those parts of South America in which he lived and worked; and the skeleton and internal structure of the former in particular were, at the time he wrote, very insufficiently or not at all known. The only one, therefore, which he knew accurately, and with the bones of which he could compare the few fossil remains which he thought belonged to a gigantic Alectorid, was the *Cariama*, which occurs in great numbers in the Brazilian campos—nay,

* That some ornithologists still use the name *Alectorides*, but in a different sense from Illiger's, need not be further mentioned.

even in the immediate vicinity of his own house at Lagoa Santa. His opinion that the fossil bird was generically different from *Cariama*, and formed a lost link between it and *Palamedea*, was founded not only on the difference which he perceived between the tibia of the former and that of the supposed gigantic Alectorid, but also, and perhaps mainly, on the consideration that, if the before-mentioned toe-bone also belonged to that bird, it must have had much longer toes than *Cariama*, of which the short toes had occasioned the generic name *Microdactylus*, bestowed upon it by Geoffroy St.-Hilaire.

The fossil bone-fragment agrees so accurately with the metatarsus of *Rhea* in size and proportion, that Lund began his examination of it by comparing it with this last bone; but he did not observe any further similarity between them. In *Rhea* the anterior upper end of the metatarsal exhibits a deep, rather elongated, elliptical groove, which at its bottom branches off into two smaller fissures opening on the posterior surface of the bone. Both these fissures are remains of the original division between the three coalescent metatarsals; and the groove in front is caused by the middle metatarsal being situated a little behind its two neighbours at the upper end, while at the distal extremity it advances forwards, so as to be not only on a level with the lateral bones but even a little in front of them. The fragment of the fossil metatarsus seems at first sight different, as may be observed in the annexed illustration (fig. 1, p. 330). The groove on the front surface is less deep and less sharply defined; the two fissures at the bottom appear like small holes, each scarcely larger than a pin's head, and open on the posterior surface of the bone a little more distant from each other. Besides this, the front surface of the bone exhibits a swelling or knob nearly an inch long, pointed at the lower end, and situated in the groove on the front side of the bone below the fossa above mentioned.

The preceding description of the appearance of this bone in *Rhea*, however, is made from that of a young bird. The bone is certainly 370 millim. long, and is quite as large as that of many a full-grown bird; but that portion of the tarsus which

is incorporated into the metatarsal has not yet quite coalesced with them, these parts being still separated by a thin layer of cartilage. If, instead, we examine the terminations of a not

Fig. 1.

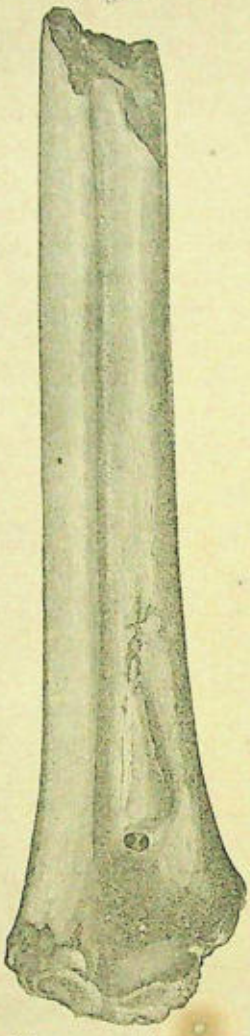

Fig. 2.

Fig. 3.

Fig. 1.—Fragment of the tarso-metatarsus: natural size.

Figs. 2 and 3.—Copies of the drawings sent by Lund of the toe-bone (from the side and front) taken by him to be that of an extinct Alectorid.

merely full-grown but old *Rhea*, we shall find that it looks somewhat different, and that it presents the very same appearances as are above described in the fossil fragment. In other words, this fragment no doubt belonged to an adult *Rhea*, and certainly not to a bird more or less allied to *Cariama*; it does not exhibit any striking similarity to the tarso-metatarse of the latter in any particular. The same holds good with regard to the middle portion of a right tibia, marked No. 8 in Lund's collection, and in his catalogue stated to be of the same bird (gigantic Wader) as the tarso-metatarse (No. 9). As this bone lacks the most characteristic parts (the two extremities), its agreement with the *Rhea*'s tibia would not perhaps be very clearly apparent from a description; but on placing the two tibiæ side by side, the similarity appears at once, in spite of the serious injuries which the cave-bone has suffered. It is a fragment of the bone, rather nearer to its distal than to its proximal end; and the striking flatness of its posterior surface compared with the high transverse convexity of the front, the slight indication of a ridge on this side along the interior margin; and, lastly, the just perceptible longitudinal curve inwards exhibited by the fragment, are all details found exactly reproduced in *Rhea*; so that, in my opinion, there can be no doubt that it belonged to that bird. Finally, as regards the digital phalanx, which Lund also ascribed to his gigantic Alectorid, thinking it belonged to the same individual as the fragmentary tarso-metatarse, we have already said that we have only drawings to go by; and of these we give copies (figs. 2 & 3, p. 330). They show that this bone had been injured at the proximal end, but that only very little, scarcely more than the articular surface itself, was wanting. It is, moreover, easily perceived that even before being thus damaged this phalanx was at most but three times as long as it is thick, and that it by no means presented any similarity to the rather slender and very elongated digital phalanx of *Palamedea*. On the contrary, the drawings of this bone point no less clearly than the fragments actually preserved of other bones to *Rhea*; and it can scarcely be doubted that it was thefirst phalanx of the middle toe of that bird.

It is not easy to decide whether the species of *Rhea* to which these bones belong was identical with the existing *R. americana*. I have observed nothing in the few remains at my disposal that would contradict that view; and I consequently think that the ancient and the modern *Rhea* are of one and the same species; at the same time it must be admitted that additional discoveries of the bones of the ancient bird may possibly bring to light differences which could not be inferred from the insufficient fragments of bones now before us.

But if the interpretation here offered of the bones which have hitherto been looked upon as remains of an extinct gigantic Alectorid be true, at any rate in the main—that is to say, so far as the generic determination goes,—then it will be readily perceived that it must to a very considerable extent modify the opinion hitherto prevailing, that all the laws which hold good for the relation between the existing and the next preceding mammalian fauna of South America are equally valid in respect of the class of birds. On the contrary, there is an essential and fundamental difference. There is no indication whatever of the class of birds having possessed large extinct representatives, which could be said to exhibit a somewhat similar relation to the birds now living as that which the gigantic extinct Brazilian mammals present as regards the existing fauna.

I do not mean wholly to deny that the remains of birds found in Brazilian caves may in some cases belong to really extinct species; on the contrary, I consider this very probable. But it is only through a renewed careful examination of the bones that it can be ascertained how many really extinct species have been discovered—or in other words, the exact proportion between really extinct and still living species in the cave-finds. Under all circumstances it may even now be asserted, with all confidence, that the extinct bird-fauna of which the remains are found in the caves of Brazil differs from the existing fauna *in a much less degree* than the mammalian fauna which is buried there.

XXIII.—*Notices of recent Ornithological Publications.*

(Continued from p. 178.)

30. *Agassiz's Report on the Museum of Comparative Zoology.*

From Mr. Alexander Agassiz's report on the Museum of Comparative Zoology at Harvard College for 1880, we extract the following passage concerning the Birds:—

"The number of skins added is 1744, and includes about 600 mounted specimens. Among them are various species of Pheasants, Birds of Paradise, Pittas, Humming-birds, Manucodias, &c., as well as many less showy species of considerable rarity.

"There have been added also 25 mounted skeletons, besides nearly as many unmounted, and fifty sets of eggs, representing as many species. These are especially noteworthy, as being nearly all from the Argentine Republic, thoroughly identified, and beautifully prepared.

"The principal additions are from the West Indies and South America, including 300 skins from Santa Lucia, British West Indies, 370 from Trinidad and the island of Grenada, and 500 from the Argentine Uruguay, which represent over 200 species, forming an excellent suite of the birds of that immediate vicinity."

31. *Barboza Du Bocage's 'Ornithology of Angola.'*

[Ornithologie d'Angola, ouvrage publié sous les auspices du Ministère de la Marine et des Colonies. Par J. V. Barboza du Bocage. Deuxième Partie. Royal 8vo. Lisbonne: 1881.]

We are much pleased to receive the second part of Prof. Barboza du Bocage's 'Ornithologie d'Angola,' completing a most useful work. We could wish that Mr. Sharpe's edition of Layard's 'Birds of South Africa' (commenced in 1875) were also finished. With these, and Gurney's 'Birds of Damara Land,' we should then have a fine series of works of reference on the birds of the southern half of the African continent.

The avifauna of Angola, according to our author, is now known to comprehend 698 species. Of each of these the synonyms, characters, and localities are concisely given in the present work, besides other remarks where necessary. Coloured illustrations are given of the following species :—

Pl. V. Pholidauges verreauxii.
VI. Lamprocolius acuticaudus.
VII. Lamprotornis purpureus.
VIII. fig. 1. Mirafra nigricans.
„ „ 2. Anthus pallescens.
Pl. X. fig. 1. Parus rufiventris.
„ „ 2. Hypsilornis salvadori.
II. fig. 1. Cossypha bocagei.
„ „ 2. —— barbata.

32. *Blasius and Nehrkorn on Bornean Birds.*

[Beiträge zur Kenntniss der Vogelfauna von Borneo (nach den Sammlungen des Herrn Dr. Platen) von W. Blasius und A. Nehrkorn. Jahresb. d. Vereins für Naturwiss. zu Braunschweig, 1880-81.]

A list of 83 species, represented in two collections of birds from Borneo made by Dr. Platen in 1880, arranged in accordance with Count Salvadori's well-known memoir on Bornean birds. The exact dates, localities, and colours of the soft parts are given from notes of the collector. Remarks of the authors are added in many cases. Amongst the rarer species mentioned are *Lepocestes porphyromelas* and *Pityriasis gymnocephala*.

33. *'Bulletin of the Nuttall Ornithological Club.'*

[Bulletin of the Nuttall Ornithological Club: a Quarterly Journal of Ornithology, vol. vi. October 1881, no. 4, and vol. vii. January 1882, no. 1. Cambridge, Mass.]

Both these numbers of our excellent contemporary contain much of interest to the general ornithologist. Besides Mr. Ridgway's articles noticed under his name below, the same author describes a supposed new Heron (*Ardea wardi*) from Florida, and gives us some very curious speculations concerning this form and its allies, *A. occidentalis*, *A. würdemanni*, and *A. herodias*. An important discovery by Mr. Brewster is that the lately described *Helminthophagæ* (*leucobronchialis* and *lawrencii*) are hybrids between *H. pinus* and *H. chrysoptera*! Mr. Brewster also describes a new local

form of *Scops asio* from the coast-region of California as *Scops asio bendorei*, and Mr. N. C. Brown a new race of *Peucæa ruficeps* from Texas as *Peucæa ruficeps eremæca*. Besides this novelty, Mr. Brown, during his successful reconnaisance in South-western Texas, managed to obtain no less than *seven* examples of the rare *Dendræca chrysoparia*.

34. *Dubois on certain Thrushes.*

[Remarques au sujet de quelques Grives. Par Alph. Dubois. Bull. Soc. Zool. d. France, 1881, p. 142.]

M. Dubois's remarks are specially in reference to M. Vian's paper in a former number of this Bulletin (1880, p. 210) on the Thrushes of the *Oreocincla* group. M. Vian correctly vindicates the distinctness of *Turdus horsfieldi* of Java from *T. lunulatus* of Australia, and states that *Turdus hodgsoni*, Homeyer, = *Turdus mollissimus*, Blyth, nec *T. viscivorus* vel *bonapartei*. Notes on other species of *Turdus* are added.

35. *Ewart on the Nostrils of the Cormorant.*

[On the Nostrils of the Cormorant (*Thalacrocorax carbo*). By Professor J. C. Ewart, M.D. Journ. Linn. Soc. Zool. xv. p. 455.]

A short description of the external nares and nasal passage in the Cormorant—the aperture of the former being very minute, as usual in the Steganopodes, in some of which it is, at least in the adult, entirely absent (e. g. *Plotus*).

36. *Hamonville on African Birds in Europe.*

[Observations sur quelques Oiseaux africains captures dans l'Europe méridionale. Par C. Baron d'Hamonville. Bull. Soc. Zool. de France, 1881, p. 16.]

The author, in this paper, treats of *Alauda reboudia* of the Algerian Sahara, and comes to the conclusion that the supposed new Spanish Lark, *Calandrella bætica* of Dresser, is identical with it. Here, therefore, if the Baron is correct, is another African bird in Europe; but a great authority on Spanish birds assures us the Baron is not correct, and that the two species are not identical.

37. *Hoffmann's List of the Birds of Nevada.*

[Annotated List of the Birds of Nevada. By W. J. Hoffmann, M.D. Bull. U.S. Geol. and Geogr. Survey, vol. vi. no. 2 (1881).]

Dr. Hoffmann's list is based upon notes and observations made in Nevada by several parties during the field-season of 1871, completed by references to the reports of several prominent authorities who have likewise visited the district. Some interesting remarks on the distribution of the vegetation as affecting the avifauna of Nevada are prefixed. No other area of like extent within the United States is believed to present a greater variety of physical features. Amongst the less-known species in the list we may note *Campylorhynchus brunneicapillus*, "met with in the sandy deserts north-west of Fort Mogave, amongst the cactus and yucca;" *Spizella breweri*, "quite common in the northern and middle areas;" and *Icterus bullocki*, a regular summer visitant. In the appendix an accurate account of previous authorities on the birds of Nevada is given. An outline map of Nevada, showing the localities mentioned, concludes this useful memoir.

38. *Krukenberg on the Colouring-matter of Feathers.*

[Die Farbstoffe der Federn. Von Dr. C. Fr. W. Krukenberg, zweite Mitth. Vergl.-physiol. Studien, ii. Reihe, Abth. 1, p. 151.]

A continuation of the author's investigations already noticed (Ibis, 1881, p. 602) on the colouring-matter of birds' feathers. The present part deals with the consideration of turacoverdin (found in the green feathers of the Musophagidæ), zoarubin (from the red feathers of *Cicinnurus*), "araroth" (from the red feathers of Parrots), zoonerythrin, and corionilphurin (a yellow pigment detected in the yellow scales of the legs of *Milvus*). Turacoverdin is the first green feather-pigment that the author has been able to isolate. It contains a fair quantity of iron, but little copper or manganese. Its spectrum resembles that of turacin, from which latter pigment turacoverdin may be produced by long exposure to air or moisture, or by boiling.

39. *Lawrence on a new Subspecies of* Loxigilla.

[Description of a new Subspecies of *Loxigilla* from the Island of St. Christopher, West Indies. By George N. Lawrence. Proc. U.S. Nat. Mus. 1881, p. 204.]

Mr. Lawrence describes the form of *Loxigilla portoricensis* which occurs on St. Kitts as "var. *grandis*." It differs from the Portorican bird in its rather larger size, and in the colour of its under wing-coverts.

40. *Marschall and Pelzeln's 'Ornis Vindobonensis.'*

[Ornis Vindobonensis. Die Vogelwelt Wiens und seiner Umgebungen mit einem Anhang: die Vögel des Neusiedler See's. Von August Friedrich, Grafen Marschall, und August von Pelzeln. 8vo. Wien: 1882.]

The names of the authors of the present memoir on the birds of the environs of Vienna are a sufficient guarantee that the work has been carefully and elaborately prepared. The "ornis vindobonensis," according to Count Marschall and Herr von Pelzeln, comprehends 287 species. Amongst those which would be of special interest to western ornithologists we notice *Upupa epops*, *Calamodyta fluviatilis*, and *Erythrosterna parva* in the category of breeding species. A list of the birds of the Neusiedler See is appended, amongst which there are 25 species that have not yet occurred in the district of Vienna.

41. *Nordenskiöld's 'Voyage of the 'Vega'.'*

[The Voyage of the 'Vega' round Asia and Europe, with a Historical Review of previous Journeys along the North Coast of the Old World. By A. E. Nordenskiöld. Translated by Alexander Leslie. 2 vols. Royal 8vo. London: 1881.]

The scientific work of the voyage of the 'Vega' will be hereafter published in a more elaborate form. But few naturalists will omit to read Baron Nordenskiöld's most interesting narrative, in which will be found a special chapter (vol. i. ch. iii.) devoted to the birds and mammals of Novaya Zemlya, and an account of the birds of the Chukch peninsula (vol. ii. p. 42), where *Eurynorhynchus pygmæus* was "served

at the gun-room table," besides numerous other references to Polar bird-life. We extract a few sentences on the birds of "Gooseland," which appear to be also of special interest:—

"Gooseland is a low stretch of coast, occupied by grassy flats and innumerable small lakes, which projects from the mainland of Novaya Zemlya between 72° 10′ and 71° 30′ N. lat. The name is a translation of the Russian Gusinnaja Semlja, and arises from the large number of Geese and Swans (*Cygnus bewickii*, Yarr.) which breed in that region. The Geese commonly place their exceedingly inconsiderable nests on little hillocks near the small lakes which are scattered over the whole of Gooseland; the powerful Swans, which are very difficult of approach by the hunter, on the other hand, breed on the open plain. The Swans' nests are so large that they may be seen at a great distance. The building-material is moss, which is plucked from the ground within a distance of two metres from the nest, which, by the excavation which is thus produced, is surrounded by a sort of moat. The nest itself forms a truncated cone, 0·6 metre high and 2·4 metres in diameter at the bottom. In its upper part there is a cavity, 0·2 metre deep and 0·6 metre broad, in which the four large greyish-white eggs of the birds are laid. The female hatches the eggs; but the male also remains in the neighbourhood of the nest. Along with the Swans and Geese, a large number of Waders, a couple of species of *Lestris*, an Owl, and other birds breed on the plains of Gooseland, and a few Guillemots or Gulls upon the summits of the strand-cliffs. The avifauna along the coast here is besides rather poor."

42. *Oates on the Birds of British Burma.*

[The Ornithology of British Burma. By Eugene W. Oates. British Burma Gazetteer. Vol. i. p. 569.]

The first volume of the new Gazeteer of British Burma contains some excellent general remarks on the rich avifauna of that region by Mr. E. W. Oates, to which is added a nominal list of the species (771 in all). Mr. Oates very appositely observes:—

"With a considerable portion of the country situated within

the tropics, with its immense seacoast-line, and with a land-frontier bordering on such interesting countries as China, Siam, and Malayana, Burma offers attractions to the ornithologist which few other countries can hold out. The number of known Burmese species of birds exceeds that of the whole of Europe by more than a hundred, while the number is more than half that found in the whole continent of India from the Himalayas to Ceylon, and from Scinde to Assam. And yet the list is very far from complete. With an increased number of observers the list would, undoubtedly, be increased to one thousand species."

43. *Ramsay on new Birds from the Solomon Islands and New Britain.*

[Descriptions of some new Birds from the Solomon Islands and New Britain. By Edward P. Ramsay, F.L.S., C.M.Z.S., &c., Curator of the Australian Museum, Sydney. Journ. Proc. Linn. Soc. Zool. xvi. p. 128.]

This is the paper spoken of by Canon Tristram (*anteà*, p. 133). It gives descriptions of *Ceyx sacerdotis* from New Britain, *Pomarea* (*Monarcha*) *ugiensis* from Ugi, *Calornis* (*Aplonis*) *feadensis* from "Fead" Island, *Carpophaga finschi* (no locality given), and *Baza gurneyi* from Ugi (*v. s.* p. 133). *Astur pulchellus* is a name given to *Astur soloensis*, Ramsay, ex inss. Salomonis; and *Ptilopus viridis*, Ramsay (P. L. S. N. S. W. iv. p. 73), is stated to be the female of *P. eugeniæ*.

44. *Rathbun's 'List of the Birds of Central New York.'*

[A Revised List of Birds of Central New York.—Based on the Observations of Frank R. Rathbun, H. Gilbert Fowler, Frank S. Wright, Samuel F. Rathbun, in the Counties of Cayuga, Onondaga, Seneca, Wayne, and Yates.—Collated and prepared for publication by Frank R. Rathbun. 8vo. Auburn, N. Y.]

This list is the result of ten years' observations, notes, and field-work of the four gentlemen whose names are given on the title-page. Its reliability is vouched for by Dr. Elliott Coues, who regards it as the leading authority upon the birds of Central New York, the avifauna of which is thus shown to embrace 236 species.

45. *Ridgway on a new North-American Hawk.*

[On a Tropical American Hawk to be added the North-American Fauna. By Robert Ridgway. Bull. Nuttall Ornith. Club. vi. p. 207.]

The species is *Buteola brachyura*, of which an adult male was obtained in Florida by Mr. G. A. Boardman in February 1882. The question of the relationship of *Buteo fuliginosus*, Sclater, to this bird is carefully discussed. Mr. J. H. Gurney and Mr. Salvin now agree in considering *Buteo fuliginosus* to be merely a black phase of *B. brachyura*; but Mr. Ridgway is, apparently, not quite convinced that such is the case.

46. *Ridgway on the Desiderata of the U.S. National Collection.*

[List of special Desiderata among North-American Birds. By Robert Ridgway. Proc. U.S. Nat. Mus. 1881, p. 207.]

The list is a long one, but is chiefly made up of species of which the young plumages are required. The North-American species actually unrepresented in the U.S. National Collection, as may be well supposed, are very few in number.

47. *Shufeldt on the Osteology of the North-American Tetraonidæ.*

[Osteology of the North-American Tetraonidæ. By Dr. R. W. Shufeldt, U.S.A. Bull. U.S. Geol. & Geogr. Survey, vi. p. 319.]

This is an elaborate account of the osteology of the North-American Grouse, illustrated by eight plates, principally devoted to the various bones of *Centrocercus* and *Cupidonia*. Of the former of these genera the bones of the chick and immature form (two months old) are likewise figured. It would have been very convenient for classification-purposes if the author had stated the osteological differences between the six genera (as usually allowed) in a concise form. He does, however, inform us that, from an osteological point of view, he can see no reason why *Pediœcetes* and *Cupidonia* should not be united.

48. *Shufeldt on the Osteology of* Lanius.

[Osteology of *Lanius ludovicianus excubitorides*. By Dr. R. W. Shufeldt. Bull. U.S. Geol. & Geogr. Survey, vol. vi. p. 351.]

Dr. Shufeldt gives us in this essay a complete description of the bones of *Lanius ludovicianus excubitorides* (as our American friends call the south-western form of *L. ludovicianus*), drawn up in his usual exact style, and illustrated by a plate.

49. *Sharpe's Catalogue of the Timeliidæ.*

[Catalogue of the Passeriformes, or Perching Birds, in the Collection of the British Museum.—Cichlomorphæ: Part III. Containing the first portion of the Family Timeliidæ (Babbling-Thrushes). By R. Bowdler Sharpe. 8vo. London. Published by order of the Trustees, 1881.]

In the sixth volume of the 'Catalogue of the Birds of the British Museum' we have Mr. Sharpe's account of 407 species, referred to five subfamilies (Brachypodinæ, Troglodytinæ, Miminæ, Myiadectinæ, and Ptilonorhynchinæ). These seem to us to be five very natural groups, except as regards the inclusion of the Dippers in the subfamily Troglodytinæ*. But we can see no reasons whatever for placing any of these groups in the family "Timeliidæ;" nor has Mr. Sharpe attempted to give us any of the slightest importance. Indeed, judging by the "synopsis of subfamilies," given p. 1, the inclusion of the Miminæ, Myiadectinæ, and Ptilonorhynchinæ in the Timeliidæ cannot have been originally contemplated. Mr. Sharpe himself admits that this position of the Myiadectinæ is "not very satisfactory," but seems to have placed them here because Mr. Seebohm omitted them from his volume on the Sylviidæ! As for the Bower-birds, we are at a loss to imagine what can justify their association with the Timeliidæ. Surely it would have been better to have left them among the Sturnidæ, as they had not been already taken next to the Paradiseidæ.

* In spite of their "domed nests" the Dippers are, in our opinion, more nearly allied to the Thrushes than to the Wrens, though quite sufficiently distinct to constitute a family of themselves—that is, a family of the same rank as other ordinarily recognized families of Oscines.

We observe with regret another unnecessary change in the nomenclature of a familiar genus in the present volume. When Vieillot, in 1807, established the genus "*Troglodytes*," he certainly intended the *Motacilla troglodytes* to be its type. To ascertain this *positively*, it is only necessary to refer to his subsequently published 'Analyse.' Writing in 1807 only of American birds, he naturally did not mention the European type, but only the American form, which he included in the same genus. It seems to us, therefore, quite erroneous to assume that the latter was his type, and to remove the generic name "*Troglodytes*" to a group which does not now include the *Motacilla troglodytes*. Few will follow Mr. Sharpe in this matter, any more than they have in the similar course he has adopted as regards the generic term *Tinnunculus*.

The species provided with new names in this volume are eight—namely, *Tylas alfredi* and *T. fulviventris* from S.W. Madagascar, *Cinnicerthia olivascens* from Colombia, *Thryothorus melanogaster* from Veragua, *Thr. amazonicus* and *Thr. griseopectus* from the Upper Amazons, *Thr. paucimaculatus* from Ecuador, and *Mimus elegans* from the Bahamas. *Urocichla* is a new generic term proposed for *Pnoepyga longicaudata*, Moore. The following species are figured:—

Pl. I. Chloropsis viridinucha.
II. Hemixus cinereus.
III. Iole rufigularis.
IV. Criniger verreauxi.
V. —— frater.
VI. fig. 1. Criniger finschi.
„ „ 2. —— palawanensis.
VII. Xenocichla albigularis.
VIII. Chlorocichla occidentalis.
IX. Pycnonotus simplex.
X. —— pusillus.
XI. Cinnicerthia olivascens.
Pl. XII. fig. 1. Campylorhynchus pardus.
„ „ 2. —— gularis.
XIII. Thryothorus bairdi.
XIV. fig. 1. Thr. fasciativentris.
„ „ 2. —— melanogaster.
XV. „ 1. —— amazonicus.
„ „ 2. —— griseipectus.
XVI. „ 1. Anorthura fumigata.
„ „ 2. —— pacifica.
XVII. Uropsila leucogastra.
XVIII. fig. 1. Cyphorhinus salvini.
„ „ 2. —— modulator.

The woodcuts are most acceptable additions to this and preceding volumes of the Catalogue; but surely the tarsus and toes of a bird should not in these days be called its "*leg*"! (see pp. 120, 240, 268, &c.).

50. *Stearns and Coues's 'New-England Bird-Life.'*

[New-England Bird-Life, being a Manual of New-England Ornithology. Revised and edited from the Manuscript of Winfrid A. Stearns by Dr. Elliott Coues. Part I. Oscines. 8vo. Boston: 1881.]

This is a volume which will, without doubt, be highly appreciated by our transatlantic readers, though it may not, of course, present the same amount of interest to the general ornithologist. But a good local fauna is always acceptable; and in this case the name of the editor gives us an ample guarantee of the accuracy and completeness of the work. The introduction comprises "general definitions," a short treatise on the "preservation of specimens," and another upon "faunal areas," all of which will be useful to the student. A summary notice of previous writings on New-England ornithology follows, arranged in chronological order. In the main portion of the text short characters are given of each species, and full remarks as to occurrence, distribution, breeding-habits, and other particulars,—just enough, in our opinion, to render the work useful to the local naturalist, without overloading its pages. The woodcuts, some of which seem to our eyes to be old friends, are not, if we may presume to say so, quite on a par with the general execution of the work. Some of them are coarsely drawn, not to say ugly.

51. *Stone's 'Few Months in New Guinea.'*

[A few Months in New Guinea. By Octavius C. Stone, F.R.G.S. London: 1880. 1 vol. sm. 8vo, 258 pp.]

Mr. Stone passed about three months at Port Moresby and its vicinity in 1875–76, with Messrs. Petterd and Broadbent as collectors, and made a fine collection of birds, embracing examples of 116 species, of which the names are given in the appendix. The narrative of his residence in this strange land, though not exciting, will be read with interest by naturalists. Mr. Stone penetrated about 25 miles into the interior from Port Moresby, and claims to be the first Englishman, after Mr. Wallace, that had shot a Paradise-bird (*Paradisea raggiana*). We can fully sympathize with him as, on this occa-

sion, he stood on the Farunumo range, gazing eagerly towards the great Mount Owen-Stanley, and lamenting his ineffectual efforts to reach it.

52. '*Stray Feathers*,' vol. ix. pts. 5 and 6.

[Stray Feathers: a Journal of Ornithology for India and its Dependencies. Edited by Allan Hume. Vol. ix. nos. 5 & 6. Royal 8vo. Calcutta: 1880.]

In the double part of 'Stray Feathers' for 1880 (just received in this country), Mr. Hume has done us the honour to reprint Major Biddulph's article on the Birds of Gilgit, which appeared in 'The Ibis' for 1881! This may, in subsequent ages, raise a curious question of priority! Mr. Hume now describes at full length the new Pheasant, *Callophasis humiæ*, from Manipur (*cf.* Ibis, 1881, p. 608), and gives an amusing account of his adventures in relation to it. It is nearest to *Callophasis ellioti*. Mr. Hume also describes *Persicula manipurensis*, sp. nov., obtained during the same expedition.

XXIV.—*Letters, Announcements, &c.*

We have received the following letters addressed to the Editors of 'The Ibis:'—

Australian Museum, Sydney.

Sirs,—I strongly suspect that my *Ptilopus? corrici*, from the New Hebrides, may prove to be the *Columba tannensis* of Latham (Bp. Consp. Av. ii. p. 14). I am by no means even sure that it is a *Ptilopus*, and may not belong to a distinct genus. With respect to my *Macropygia rufa*, from the same group of islands, some ornithologists are of opinion that it is the *Columba ferruginea* of Forster; but this can only be ascertained by comparison with the type. If we go by Gray, Forster's bird is not a *Macropygia* at all, but a *Phlegœnas*, and Bonaparte places it under the genus *Columba* (op. cit. ii. p. 14, sp. 7). It would be of advantage if some of your readers could find time to look this matter up. I have given very

careful descriptions in the 'Proceedings of the Linnean Society of New South Wales' for 1878, iii. pp. 286, 287.

Yesterday, for the first time since I first wrote about them, I had an opportunity of reexamining the specimens of *Carpophaga* from Cape York which I had put down as *C. puella*. The under surface of the tail-feathers is of a dark blackish brown, but certainly not quite black. I believe this bird to be the young of *C. assimilis*; but there is indeed very little difference between Cape-York specimens and those from the south-east coast of New Guinea which Count Salvadori calls *C. poliura*, and it is quite possible they may be identical.

Ornithologists may be pleased to hear that I have lately received two collections of birds from the Solomon Islands, and a number of specimens in spirits, so that I have had an opportunity of myself ascertaining the sexes of some species that I had very grave doubts about. I regret to say the fine *Astur* which I have called *A. versicolor* will probably prove to be the male of *A. albogularis* of Gray. I have a fine series of ten examples of this bird now before me. Mr. Tristram's *Myiagra cervinicauda* is the female of a black-throated species which, being new, must retain his name. Our collection from these islands now includes all the species hitherto recorded from this group, except *Ceyx gentiana*, Tristram, which your readers may be glad to learn was shot at Kakiri harbour, on the island of St. Christoval (*Richards*).

In all there are about 100 species known from the Solomons, including several new species which I have recently described.

Yours &c.,

E. P. Ramsay.

Deepdale, Reigate,
26th January, 1882.

Sirs,—In the last number of 'The Ibis' (January 1882) Mr. F. B. Simson gives an account of the appearance of *Hirundo tytleri*, Jerdon, at Dacca, and some other interesting notes regarding the neighbouring districts, which recall a

very pleasant day after birds, passed in his society and that of the lamented Jerdon, at Cherra Poonjee.

The Swallow in question is well known to me; and I think I can answer a question put by Mr. Simson. It is recorded in my "List of Birds from the Hill-ranges of the N.E. Frontier" (Journ. Asiat. Soc. Bengal, 1874, p. 152), under the title of *H. cahirica*, Sav., with these remarks:—"My specimens from Munipur are evidently identical with Jerdon's bird observed at Dacca in June; it was the only form in Munipur in February and March, and very numerous at Imphal, the capital; it was then commencing to breed. Darjeeling specimens in the collection of Lord Walden are still more like *H. cahirica* from Egypt;" and I remember that, after comparing a number of the Indian with specimens from Egypt, we could not satisfactorily separate them.

It would appear that this species breeds in the neighbouring hilly districts, migrating soon after into the plain country. Jerdon ('Birds of India,' vol. iii. Append. p. 870) says they had evidently just finished breeding, for there were many young birds; and this was in June. I have specimens from the Munipur valley and hills near, and the Lhoto Naga hills, Assam.

In E. Blyth's 'Catalogue of Mammals and Birds of Burma,' *H. tytleri* is recorded from Thayet-myo and Tavoy; it thus has a very considerable range.

Yours &c.,

H. H. Godwin-Austen.

Natural-History Museum,
Dublin, February 9th, 1882.

Sirs,—In December last Mr. Tank, naturalist, of this city, brought me a Cape Pigeon (*Daption capensis*, Steph.), which he said had been shot near Dublin, and given to him by a friend of his.

On further inquiry I was referred to Mr. William Kelly, an assistant in the house of Messrs. Johnson, jewellers, of Suffolk Street.

Mr. Kelly tells me that he well remembers shooting the bird on the 30th of October last, a fine mild day, shortly after the three gales of the 14th, 19th, and 22nd of October. The bird was killed at a place called Crumlin, two and a half miles west of Dublin, and was flying near to some pools of water (old quarry-holes).

When first seen it was flying, and was supposed to be a a Gull. It fell on the water, and was brought home and roughly skinned by Mr. Kelly himself. Some three weeks afterwards he gave the skin to Mr. Tank, from whom I received it and secured it for this Museum.

This, I believe, is the first occurrence of this South-Oceanic species on our coasts, and appears, indeed, surprising; but it is well to remember that the "Cape Pigeon" has already occurred three times in France, according to Degland et Gerbe, vol. ii. p. 372. Still I do not, for a moment, think that the present solitary occurrence at all entitles it to rank as a British, or even much strengthens its claims as a European species.

Yours &c.,
A. G. More.

Note on Trichoglossus rubrigularis.—In Dr. Ant. Reichenow's "Conspectus Psittacorum" (Journ. f. Orn. 1881, p. 396) I observe it stated, in reference to my lately described *Trichoglossus rubrigularis*, that "the red chin-spot, just the most important character of this species, is omitted in the diagnosis." Such is certainly the case in *Dr. Reichenow's version* of my diagnosis (*l. s. c.*). But those who take the trouble to refer to the original diagnosis (P. Z. S. 1881, p. 451) will find there the words "gulâ summâ coccineo-rubrâ" (which have been omitted in the 'Journal für Ornithologie') duly given. It seems to be rather strange conduct on the part of Dr. Reichenow thus to mutilate an author's diagnosis, and then to accuse him of having made a serious blunder!

P. L. Sclater.

News of Mr. Blanford.—Mr. W. T. Blanford writes from Jacobabad (Dec. 29, 1881):—

"I have had so much hard marching that I have not had time to collect. Of course I failed to get at the Quetta Vole. It was quite the wrong season to obtain any thing there: it was very cold; one night the thermometer went down to 20° Fahr.; and all the trees were leafless. In spring and summer Quetta must be a very pretty place—very Persian, of course, in appearance.

"I have rarely seen Choughs so common anywhere—all *Pyrrhocorax graculus*, of course; but in general birds were rather scarce, and I had not time to look for them.

"The country is very quiet. I came down with a very small escort; and, but for the look of the thing, I believe, so far as I can learn, that escorts are unnecessary, both on the Bolan and Harnai. The Marri country is so quiet that I was very nearly going into the heart of it with a small party of Marris under one of the chiefs. I have just been through part of the Bhugti hills in the same way, and am now off to traverse the remainder of them. Then I go up the western frontier of the Punjab, west of the Indus, to the neighbourhood of Bunnoo; and that, I suppose, will occupy me until it begins to be warm, and it is time to go into station."

A more recent letter from Mr. Blanford (March 18th) announces his arrival at Dera Ghazi Khan, on the Punjab frontier, where he was unfortunately laid up by a bad attack of fever.—P. L. S.

Dr. Finsch's Explorations.—We have received a letter from Dr. Finsch dated Thursday Island, Torres Straits, on the 24th December last. Dr. Finsch had been for a short excursion on Cape York, and had collected examples of about seventy-five species of birds, amongst which were specimens of *Ptilorhis alberti* in different stages of plumage. At the date of his letter he was intending to leave for Port Moresby in the 'Alice Meade,' a small schooner of 14 tons, and was arranging to pass four months in New Guinea. A ninth ornithological letter (on New Zealand), which accompanies Dr. Finsch's communication, will be given in our next Number.

THE IBIS.

FOURTH SERIES.

No. XXIII. JULY 1882.

XXV.—*On a Collection of Birds made by Mr. J. S. Jameson in South-eastern Africa, with Notes by Mr. T. Ayres.* By Captain G. E. Shelley.

(Plate VII.)

[Continued from p. 265, and concluded.]

133. Motacilla vidua, Sundev.

(35) Umvuli river, 10th August. Matabele name "Umvemve." Iris dusky umber; bill, tarsi, and feet black.

The only species of Wagtail we saw on the Umvuli. They were in pairs and not uncommon.

134. Motacilla capensis, Linn.

Mashoona, December. Seen, but not procured.

135. Anthus pyrrhonotus, Vieill.

(58, 89) Umvuli river, 18th August and 2nd October. Iris dusky umber; bill dusky brown, with the basal half of the lower mandible yellow; tarsi and feet yellowish.

In pairs, both in August and October, but not common. They frequent the lower parts of the rocky hills, and on being

disturbed, at once fly onto the nearest tree, and when followed, continue from tree to tree. I was surprised at this habit, as also at the bird not preferring the more open grassy country; for those I saw were always in well-wooded parts.

136. Anthus caffer, Sund.

(126) Tatin river, 10th December.

Pretty generally distributed, but not common anywhere; almost always in pairs, frequenting the trees.

137. Macronyx capensis (Linn.).

(115) Matje Umschlope, 23rd November.

Common about this locality, where there is much short grass and springy ground. They appear to be always rather partial to wet ground, often being met with in boggy places. The Inshlangeen river was the furthest north that I noticed them.

138. Mirafra apiata (Vieill.).

(72) Umvuli river, 2nd September. Matabele name "Quatji." Iris hazel; bill pale, with the greater portion of the upper mandible dusky brown; tarsi and feet pale. Total length in the flesh 6·4 inches.

A few in this part of the country frequenting the more open grassy patches.

139. Mirafra nævia (Strickl.).

(118) ♂, Matje Umschlope, 23rd November. Iris hazel; bill pale, with the culmen dusky brown; tarsi and feet pale. Total length in the flesh 6·25 inches.

A single bird was all we met with.

140. Mirafra africana, Smith.

(159) Kanye, 8th January. Iris hazel; bill dusky brown; under mandible pale; tarsi and feet pale. Total length in the flesh 6·75 inches.

This Lark is by no means plentiful. The bird we procured was breeding. The nest was placed in a small hollow behind a tuft of grass, and was roughly composed of dry half-decayed grass, loosely put together. The eggs, three in number, are

white, almost entirely covered with umber-brown freckles or spots of various shades and milky-white blotches, the obtuse end being the most marked; they measure 0·9 inch by 0·6.

141. Pyrrhulauda leucotis (Stanley).

(139) ♀, Mangwato, 26th December. Iris hazel; bill ashy white; tarsi and feet light ash-colour.

This is the commonest of the Larks about here, where it may be seen in considerable numbers in small flocks, scattered all over the plains, and more especially about the caffre-corn fields. It appears to be a very local species.

142. Plocepasser mahali, Smith.

(144) Mangwato, 27th December. Iris bright reddish brown; bill, tarsi, and feet very pale brown.

This is a very common species in many parts of the Bamangwato country, and thence southward. There are many nests on the trees in a kloof near Mangwato; and on a still day their loud but not unpleasant notes resound amongst the rocks: occasionally two cock birds will fight with such eager ferocity that, clutching one another, they fall struggling to the ground; and even when thus picked up they will still continue to peck at each other. The nest is retort-shaped, with two necks, very rough outwardly, and composed of wiry grass stalks, inwardly lined with feathers. The eggs rest on a sort of platform between the two necks of the nest, and are three in number, of a pinkish white, much marked with indistinct stripes of pinkish brown, more especially at the obtuse end. The eggs measure 1 inch by 0·6.

143. Sporopipes squamifrons (Smith).

(132) ♂, Palatswie Pan, 18th December.

We found the birds breeding. The nest appears nearly white, is roughly shaped like a retort, and placed in a low thorny mimosa; it is composed of thin wiry ends of grass and fine fibrous stalks, and warmly lined with feathers. The eggs, five in number, are greenish grey, nearly covered with umber-brown markings of various shades, and measure 0·6 inch by 0·4.

144. Textor erythrorhynchus, Smith.

(154) ♂, Kooroomoorooi Pan, 2nd January. Iris dark umber; bill, tarsi, and feet bright blood-red. Total length in the flesh 10·5 inches.

These birds are exceedingly local; for I have only met with them at the present spot and on the Crocodile river, close to its junction with the Marico. The nest is placed high up in a large tree, and is composed of long twigs and coarse grass, and measures about 3 feet in diameter. It is so roughly put together that one can see through it, excepting close to the centre. The birds roost in these nests, which are probably used year after year. They feed upon seeds, berries, and insects.

145. Hyphantornis nigriceps, Layard.

(77) Umvuli river, 25th September and 6th October. Male—iris crimson; bill black; tarsi and feet pale brown. Female—iris hazel; upper mandible light dusky brown, under mandible delicate pale yellowish; tarsi and feet pale brown.

On the 1st of October we found a nest suspended over the water of one of the small rivers which run into the Umvuli on the north side; it contained two very pretty blue eggs. Subsequently a whole colony hung their nests over a pool of water close to our camp; but we left before the birds began to lay: this was in the middle of October. We later on found many nests hanging from the reeds on a small stream running into the Quae Quae river. These nests much resemble those of *H. mariquensis*, but are hung from the ends of the reeds, instead of being placed between two upright reeds, as is generally the case with *H. mariquensis*. The habits of the two species are precisely similar; and the eggs likewise vary much in colouring, some being blue while others are white speckled with brown.

146. Hyphantornis xanthops, Hartl.

(76) ♂, Umvuli river, 11th September. Iris light tawny yellow; bill black; tarsi and feet pale brown. Total length in the flesh 8 inches.

Not very common about the Umvuli. We found them feeding amongst the blossoms of the "Sausage tree."

[New to the eastern division of South Africa.—G. E. S.]

147. Hyphantornis mariquensis (Smith).

(109) Inshlangeen river, 4th November; Bootlanami Pan, 30th December; and Makara river, 22nd January.

Not uncommon about the Inshlangeen. Mr. Jameson found them breeding at Palatswie Pan in December; and subsequently I found nests with eggs on the banks of the Makara, a tributary of the Moloppo river, where their neatly constructed nests were hanging on the bushes fringing the stream.

148. Sharpia ayresi, sp. n. (Plate VII. fig. 2.)

(125) ♂, Tatin river, 10th December. Iris dark brown; bill bright dark gamboge-yellow; tarsi and feet light ash-colour. Total length in the flesh 6 inches.

This is by no means a common bird. We found it breeding at the Tatin; it makes a rough retort-shaped nest, which it hangs, mouth downwards, from the outer twigs of rather tall trees. Sometimes a new nest is hung on the tube of the last year's structure.

Mr. Jameson found a nest to the north of the Umvuli in October, with two blue eggs in it; and at the Tatin we pulled down one of the double nests, and Mr. Jameson, on trying to put his hand up the tube, very nearly got bitten by a snake, which was lying in the nest and had swallowed the old bird as well as her blue eggs. It is evident therefore that nests of this shape do not always keep out snakes.

[*Adult male.* Head, neck, and front of the chest yellow, or rather strongly washed with yellow, the ground-colour of the crown and back of the neck being ashy, and of the throat, ear-coverts, and chest white; the forehead is margined with blackish brown, gradually shading into yellow, this dark stripe extending backwards to above the centre of the eye; back uniform ashy brown, with the mantle slightly washed with yellow; wings and tail brown, the wing-coverts and inner secondaries edged with buffish yellow, the remainder of the

We saw several of these Finches chasing each other about near Selenia Pan; and they were also fairly abundant near Kanye. They affect well-wooded country, with open patches of grass-land.

152. Uræginthus granatinus (Linn.).

(11) Limpopo, near junction of Notuane river, Transvaal, 22nd May, and Selenia Pan, 29th December. Iris and eyelids bright brick-red, bill bright rose-red, with a beautiful pearly lustre; tarsi and feet dusky black.

Not uncommon along the Limpopo, frequenting low mimosa shrubs, generally found in pairs or small family parties, but, I think, not ranging northward of the Tatin river.

153. Uræginthus phœnicotis (Swains.).

(24) Umvuli river, 1st September, and Quae Quae river, 23rd October. Iris reddish orange; bill purplish pink, with the culmen, commissure, and tip darker; tarsi and feet pale.

One of the commonest of the small Finches, and very widely distributed.

154. Estrelda erythronota (Vieill.).

(8) Crocodile river, near Oliedrift, Transvaal, 16th May. Iris crimson; bill light ash, with the culmen and tip black; tarsi and feet black.

This is not at all a plentiful species along the river-bank, where we found them in pairs, feeding on the grass-seeds.

155. Estrelda astrild (Linn.).

Matabele, December. Seen, but not procured.

156. Estrelda polyzona (Temm.).

Matabele, December. Seen, but not procured.

157. Lagonosticta jamesoni, sp. n.

(54, 124) ♀, Umvuli river, 17th August; and ♂, Tatin river, 9th December. Matabele name "Tjuitjuitjui;" this is rather applied as a generic name to many of these Finches. Male—iris dusky brown; bill bright bluish ash, with the culmen and tip somewhat dusky; tarsi and feet pinkish ash. Female—iris dark brown; bill bluish ash, with the culmen and tip dusky; tarsi and feet dark ash.

We met with but very few of these Finches; near the Umvuli we found them amongst the rough cover on the banks of the river, feeding on grass-seeds; and at the Tatin they were always in pairs.

[Very closely allied to *L. rubricata*; the red portions of the plumage paler and of a pinker hue; the white spots on the sides of the chest scarcely visible; sides of the head rosy pink, like the chest; upper parts tinted with that colour, most strongly so on the sides of the crown and back of the neck.—G. E. S.]

158. Lagonosticta minima (Vieill.).

(119) ♀, Tatin river, 7th and 9th December. Bill violet-pink, with the culmen nearly black; tarsi and feet dusky brown. Male—iris red; bill rosy lilac, with the culmen and gonys nearly black.

We met with a small party of this species feeding amongst the short grass near the edge of some scrub, into which they immediately flew on being disturbed.

159. Pytelia melba (Linn.).

(12) Limpopo river, near the junction of the Notuani river, Transvaal, 22nd May, and Tatin river, 7th December. Iris light hazel; bill light brick-red, with the culmen dusky; tarsi and feet light ashy brown. Matabele name "Kovane."

They frequent the low mimosa bushes, mostly in pairs, and although not uncommon on the Crocodile river and in the Rustenburg district, we did not meet with them to the north of the Tatin river.

160. Quelea quelea (Linn.).

(155) Kooroomoorooi Pan, 2nd January.

A small flight of these Finches visited the Pan at midday.

[This bird is better known under the incorrect title of *Quelea sanguinirostris* (Linn.). Linnæus cites (as a synonym of his *Loxia sanguinirostris*) Edw. Av. ii. p. 128, t. 271. f. 2, but adds, "sed subtus maculata non mea," which shows that his *Loxia sanguinirostris* refers to the North-east African form, more generally known under Sundevall's name of *æthiopica*.

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Loxia lathami, Smith, Rep. Exp. Expl. Centr. Afr. p. 51 (1836), is described from a young bird, but, I have no doubt, refers to this species.

It is extremely inconvenient to have to alter names thus—*Quelea lathami* (Smith, 1836) in place of *Q. sanguinirostris*, auct. nec Linn., or *Quelea quelea* (Linn. 1766) for the South-African bird, and *Quelea sanguinirostris* (Linn. 1766, nec auct.) in place of *Quelea æthiopica* (Sundevall, 1850), for the North-east African bird.

I cannot help fancying that the day is not far off when the scientific ear will accustom itself to the repetition of the same name, as *Quelea quelea*, 1766, in preference to *Quelea lathami*, 1836. Justice, the very spirit of our rules for nomenclature, appears to me to cry out against the inconsistency of rejecting, on account of sound, the older specific name to give place to the upstart generic title based upon it.—G. E. S.]

161. Passer arcuatus, Gmel.

(46) ♂, Spalding's, Hart river, 1st February. Iris dark brown; bill black; tarsi and feet dusky brown.

Very plentiful in this locality, where many of the low thorny bushes hold one or two of their nests, which are made of sticks roughly put together and thickly lined with wool, which is the easiest soft material for them to procure.

162. Petronia flavigula (Sundev.).

(27) Umvuli, 2nd August and 4th September.

These Sparrows are not uncommon about the Umvuli, frequenting the high trees, and feeding much as the Tomtits do, hanging about the outer twigs and eating the young buds &c.; as, however, food of all kinds is scarce for birds, this may not be a usual habit. They are now mostly in pairs, and their loud Sparrow-like note, often repeated in the early morning, attracts one's attention to them.

[I have rejected the title *petronella*, Licht., for this bird, as *Pyrgita petronella*, Licht. Mus. Berol., appears to have remained a MS. name until Bonaparte (Consp. Gen. Av. p. 513) published the description.—G. E. S.]

163. Poliospiza gularis (Smith).

(117) Matje Umschlope, 23rd November. Iris hazel; bill light dusky brown, with the under mandible pale towards the tip; tarsi and feet dusky brown. Total length in the flesh 5·5 inches.

164. Crithagra butyracea (Linn.).

(175) ♂, Spalding's, Hart river, 28th January. In both sexes—iris dark brown; bill light brown, with the under mandible pale; tarsi and feet dusky ashy brown.

It is common here, frequenting the low mimosa bushes.

165. Cithagra chrysopyga (Swains.).

(87) ♂, Umvuli river, 1st October. Iris light brown; bill pale, with the culmen dusky; tarsi and feet ashy.

Occasionally met with in small flocks, which frequent the upper branches of the trees.

166. Fringillaria flaviventris (Vieill.).

(82) ♂, Ganyani river, 17th September; ♂, 15th November, Matje Umschlope. Matabele name "N'kilo."

By no means uncommon in the Mashoona country.

167. Fringillaria tahapisi (Smith).

(160) ♂, Kanye, 8th January. Iris dark umber; bill, upper mandible horny black, lower one gamboge-yellow; tarsi and feet dingy brownish yellow.

Found sparsely amongst the rocks.

168. Treron delalandii (Bp.).

(45) ♂, 14th August, ♀, 4th September, Umvuli river. Iris of a beautiful pale blue; bill very light bluish ash at the tip, with the basal portion bright orange. The female is less bright and rather smaller than the male.

It is plentiful at the Umvuli at this season, feeding on the wild fruit which the Boers call the "moople;" the tree is a handsome, dense, dark-foliaged one, and grows here and there all along the banks of the river. There is also a wild fig-tree in full bearing, with an insipid fruit of the size of a walnut, which the birds are very fond of. After leaving Rustenburg we did not meet with this bird until we arrived at the Umvuli.

169. Columba phæonota (Gray).

(172) ♀, Dry Hart river, 25th January.

These birds were passing over in flocks from east to west this evening. The crop of our specimen was crammed with the triangular sharp-pointed thorny seed of a plant which grows along the ground in great abundance all over the country near water. These seeds are very troublesome to those who try to walk barefoot; and dogs are continually temporarily crippled by them; but the natives, who are accustomed to go barefoot, do not appear to feel them.

170. Turtur semitorquatus (Rüpp.).

(95) ♀, Umvuli river, 8th October. Iris bright orange-red; bill black; tarsi and feet dark rose-red. The crop contained wild figs.

This was the only specimen we saw.

171. Turtur capicola (Sundev.).

172. Turtur senegalensis (Linn.).

Mashoona, September and October. Seen, but not procured.

173. Œna capensis (Linn.).

(141) ♂, Mangwato, 26th December; ♀, Spalding's Hart river, 29th January. Male—iris dark umber; bill with the basal half dark lake-red, the end half a fine dark gamboge; tarsi and feet dark rose-red.

Tolerably plentiful along our route as far as the Inshlangeen river, in Matabele; but we did not notice it to the north of that locality. Southward, again, on the Hart river in Griqualand it was very abundant.

174. Pterocles gutturalis, Smith.

(7) Klaas's Kraal, near Pilansberg, Transvaal, 13th May. Iris umber-brown; bill whitish ash; feet dingy ash.

We found large packs of this Grouse feeding on the caffre-corn, which, at this season, was hanging dead ripe on the stems. The birds were exceedingly tame, allowing one to walk up to within a few yards of them. Their note, being loud, harsh, and guttural, can be heard at a considerable dis-

tance, and, being only uttered during flight, betrays their approach to the sportsman. They are very plentiful from Crocodile river in the Transvaal to about Tati river, the southern boundary of Matabele land; but we did not meet with them to the north of that river. They are excellent eating, split open and grilled, with a little butter.

175. Pterocles variegatus, Burch.

(17) Limonie Pan, Bamangwato country, 2nd June. Iris very dark umber; eyelids light gamboge; bill black; tarsi and feet dusky yellow.

At about 11 o'clock hundreds of these birds came to the Limonie Pan, in small flocks of from about half a dozen to thirty. They did not remain more than a few minutes, but hastened back to their feeding-ground; and by midday all had quenched their thirst, and not one remained at the Pan. Along the Crocodile river we also found these birds, mostly in pairs, which showed that their breeding-season had then commenced. The crops of those we shot were crammed with seeds.

176. Numida coronata, Finsch & Hartl.

Mashoona, December. Seen, but not procured.

177. Francolinus swainsoni (Smith).

(23) Inshlangeen river, Matabele, 4th June. Iris brown; bill black, with the lower mandible and bare skin over the nostrils, round the eyes, chin, and throat bright dark rose-red; tarsi and feet black, with a ruddy tinge. On the 4th of June I found a nest with six eggs, slightly incubated. The nest was in rough high grass near the river, in a slight cavity, and was constructed of soft dry drass and a few breast-feathers of the old birds. The eggs are of a pinkish-cream colour, finely speckled all over with chalky white, and are roundish in shape, $1\frac{3}{8}$ inch by $1\frac{7}{16}$.

We found this species also at the Quae Quae river and in many other spots along our route.

178. Francolinus pileatus, Smith.

(22) Gokwe river, Bamangwato, 8th June.

Iris brown; bill ashy black; tarsi and feet ruddy.

Not uncommon in many localities in the bush-country, mostly frequenting the banks of the rivers and streams. Insects, fruit, berries, &c. were found in their crops.

179. Francolinus gariepensis, Smith.

(39) Umvuli river, 11th August, and in September. Iris hazel; bill dusky brown, with the basal half of the under mandible and portion of base of the upper one dingy yellow; tarsi and feet dingy pale yellow.

This is the commonest of the Francolins on the Umvuli, where it frequents the grassy and rocky slopes of the adjacent ranges. On the 7th of September a nest was found with three eggs: it was placed in a slight excavation in the ground amongst high dry grass, and was lined with soft half-decayed grass-bents, mixed with a few feathers. The eggs were slightly incubated.

180. Francolinus subtorquatus, Smith.

(116) Matje Umschlope, 23rd November.

Now in pairs: they may often be heard calling in the early morning. As soon as the sun has warmed the earth they love to scratch in dusty places and bask on the sheltered side of some bush, into which they immediately run when disturbed, and lie close.

181. Coturnix delegorguei, Deleg.

(170) Makara river, 22nd January.

Plentiful about here. They are now breeding.

182. Turnix lepurana (Smith).

(134) ♀, Palatswie Pan, 18th December. Iris very pale yellow; bill bluish horn-colour, with the tip black; tarsi and feet pale. Total length in the flesh 6 inches.

183. Eupodotis kori (Burch.).

Mashoona, June. Seen, but not procured.

184. Eupodotis ruficrista (Smith).

(21) Crocodile river, Transvaal, 15th May. Iris dusky tawny brown; bill yellowish ash, the culmen dusky; tarsi and feet nearly white.

Not uncommon from Rustenburg to the Umvuli river.

On the 14th of November a nest of these birds was found at Matje Umshlope, in the Matabele. The eggs, two in number, were laid on the ground, and partially hidden by a tuft of grass, and were very much incubated. They were much pointed, resembling in shape Plover's eggs. In colouring they were greyish creamy white, much spotted and blotched with dark umber; one measured 2·25 inches by 1·5, the other 2 by 1·5.

185. Eupodotis melanogastra (Rüpp.).

(85) ♂, Umvuli river, 29th September. Iris light brown, gradually darkening round the inner edge; bill pale yellowish, with the culmen dark brown; legs and feet yellowish brown. Total length in the flesh 25·5 inches.

This very scarce and solitary bird is only occasionally met with in the Mashoona country; and we did not see it in Matabele proper. I have shot them many years ago on the coast of Natal, but have not seen them since. In fact I saw in this part of Mashoona land many of the Natal coast-birds.

186. Eupodotis afra (Gmel.).

(151) ♂ ♀, Bommingani Pan, 1st January. Male—iris dusky tawny brown; bill horny ash at the tip, yellowish at base; tarsi and feet yellow. Female—iris light hazel; bill brownish horn-colour; tarsi and feet as in the male.

We did not meet with any of these birds to the north of Mangwato; but southward they gradually become more and more numerous, and on the Moloppo and Hart rivers they are very plentiful.

187. Œdicnemus vermiculatus, Cab.

(102) ♂ ♀, Quae Quae river, 25th October. Iris tawny yellow; bill black, with a patch round the nostrils and the base of the lower mandible yellow; tarsi and feet very pale ashy green. The crop contained beetles.

We saw them on several occasions in the sandy bed of some parts of the Umvuli. The female is rather smaller than the male, but similar in plumage. They appear to be partial to the dry sandy beds of rivers, but I have never met with

them out of Mashoona land, and did not see any after leaving the Quae Quae.

188. Œdicnemus capensis, Licht.

(112) ♂, Matje Umschlope, 14th November; and ♂, Spaldings, Hart river, 4th February.

This species is to be found throughout all the parts of South Africa I have visited.

189. Rhinoptilus bicinctus (Temm.).

(167) Siklogolo river, 17th January, and Spalding's, Hart river, 27th January and 2nd February. The crop contained white ants.

They are rather local birds. I have shot them about Potchefstroom, in the Transvaal.

190. Chettusia coronata (Gm.).

(180) Spalding's, Hart river, 4th February.

Plentiful about here in flocks of some twenty individuals.

191. Hoplopterus speciosus (Licht.).

(169) ♀, Great Chine Pan, 19th January.

It is not nearly so plentiful here as in some parts of the Transvaal, especially along the Mooi river.

192. Lobivanellus lateralis (Smith).

193. Balearica regulorum (Licht.).

194. Grus carunculatus (Gm.).

195. Grus paradisea (Licht.).

196. Ardea goliath, Temm.

Mashoona, September and October. Seen, but not procured.

197. Ardea intermedia, Wagl.

(64) Spalding's, Hart river, 1st February. Matabele name "Intarga." Iris pale yellow; bare skin round the eye and base of the bill pale greenish yellow; bill bright gamboge-yellow; legs and feet black.

A pair of these Egrets were met with on the swampy banks of the river, which was in flood, flying lazily up and down the stream to their favourite feeding-haunts,

198. Ardea bubulcus, Savign.

(103) ♂, Spalding's, Hart river, 7th February.

This was a solitary bird feeding amongst the high rushy grasses of a swamp. We now and again saw a flock feeding, as they often do, amongst the herds of cattle. At the Tati river in December we saw a small flock. About Potchefstroom, in the Transvaal, it is common.

199. Ardetta atricapilla (Afzel.).

(29) Umvuli river, 10th September, and Quae Quae river, 25th October. Adult female—iris yellow; darker towards the outer edge; bill, upper mandible horny black, under mandible greenish yellow; bare skin before and round the eye yellow; tarsi and feet yellow, with the upper surface light yellowish brown. Total length in the flesh 18 inches.

On the Umvuli we found the species solitary and rare, but met with a family party on the Quae Quae amongst dense reeds and low trees in the bed of a small stream.

200. Ardetta sturmi (Wagl.).

(153) ♂, Kooroomoorooi Pan, 2nd January. Iris brownish lake; bill black, with the bare skin at the base light green; the bare skin round the eye dusky blue; tarsi and feet chrome-yellow, suffused with dusky brown. Total length in the flesh 16 inches. The crop contained water-snails and frogs.

We saw three on the pan, which, on being disturbed, lighted on some of the low overhanging trees before taking their final departure.

201. Nycticorax griseus (Linn.).

(107) Inshlangeen river, 4th November.

We here shot an adult female and a young male, the only birds of the kind we saw during our journey. In the Transvaal they appear to be commoner than to the northward.

202. Scopus umbretta, Gm.

Mashoona, September and October. Seen, but not procured.

203. Ciconia abdimii, Licht.

(171) ♂, Makara river, 22nd January; and ♂, Spalding's

Hart river, 2nd February. Iris very light tawny brown; bill pale green, with the tip and just round the base crimson; chin and bare skin on the sides of the eyes and front crimson; bare skin on the sides of the head cobalt blue; shanks and tarsi dark reddish brown; knees and feet bright crimson.

From here all the way down the Hart river to Spalding's we found these birds by myriads in large flocks feeding on beetles, grasshoppers, and caterpillars. Although they were excessively fat, their flesh was not good eating. We saw this Stork also in some numbers in Matabele land in December. They frequent open grassy country in the neighbourhood of rivers and swamps. On hot days they often soar to an immense height, appearing as mere specks in the clear blue sky as they wheel slowly round and round.

204. Mycteria senegalensis, Shaw.

Mashoona, September and October. Seen, but not procured.

205. Leptoptilus crumeniferus (Cuv.).

(96) Umvuli river, 9th October.

Shot by Mr. Jameson while feeding on a dead rhinoceros in company with a flock of Vultures. I am told that this bird is able to cut a hole in a dead rhinoceros when the Vultures cannot do so. The Boers call it the King of the Vultures, and say that when it chooses it will keep the Vultures from carrion until it has satisfied itself; but this does not agree with the experience of Mr. Selous and other hunters. Although I have always met with it singly, Mr. Selous informs me that along the Chobe river and the Zambezi he has seen great numbers together; and my brother Walter, when living in Pretoria, saw a large flock of them one day assemble just outside the town to feed upon some mules that had died of horse-sickness. This is, I believe, the Marabout Stork, the beautiful white under tail-coverts of which ladies, in the olden times, wore in their hats and hair.

206. Totanus canescens (Gm.).

Scolopax totanus, Linn. S. N. i. p. 145.

Mashoona, September, October, and December. Seen, but not procured.

[In the naming of this species, as well as in that of two of the Rails, I have not adopted the oldest and, in my opinion, proper titles given to them by Linnæus, in order to agree with the more usual nomenclature adopted by Mr. Dresser in his work on the Birds of Europe.—G. E. S.]

207. Totanus glareola (Linn.).

(174) Spalding's, Hart river, 27th January and 9th February.

The river, which is now in flood, has near its banks many soft muddy spots, where these Sandpipers abound, feeding in small flocks; and a solitary bird may here and there be flushed from the grass at the edge of the water.

208. Gallinago nigripennis, Bp.

Mashoona, September and October. Seen, but not procured.

209. Rhynchæa capensis (Linn.).

(108) Inshlangeen river, 4th November, and Selenia Pan, 29th December.

We only met with these birds on two occasions. At Inshlangee we found several amongst the grassy shallows of the river.

210. Crex pratensis, Bechst.

Rallus crex, Linn. S. N. i. p. 261.

(135) Palatswie Pan, 18th December.

We only met with a single specimen.

211. Porzana maruetta (Leach).

Rallus porzana, Linn. S. N. i. p. 262.

(147) ♀, Selenia Pan, 29th December. Iris light brown; bill light olive-green, changing into yellow at the base of the lower mandible, and into red on the upper one.

This is a rare bird in all the parts of South Africa I have visited.

212. Gallinula angulata, Sundev.

(148) ♀ immature, Selenia Pan, 29th December, and ♀ adult, Spalding's, Hart river, 3rd February. Immature female—iris light greyish brown; bill pale greenish yellow,

with the culmen dusky brown; tarsi and feet pale greenish. Adult female—iris bright reddish brown; bill pale yellow, with the culmen and shield bright scarlet; tarsi and feet pale flesh-colour, with the upper surface suffused with pale yellowish green.

This bird is scarce, but widely distributed over South Africa. The pans, which are the resort of so many Waders during this portion of the year, are entirely dried up during the winter rainless months, and the surrounding country so parched that travelling becomes difficult. I took an apparently perfect egg out of the adult female; it was of a greenish-white colour, with a few very minute brown specks about the obtuse end, in shape very similar to that of a common hen's egg, and measured 1·4 inches by 1.

213. Parra africana, Gm.

(152) ♂, Kooroomoorooi Pan, 2nd January. Iris dark hazel; bill and frontal shield pale ashy blue; tarsi, feet, and claws pale ash-colour.

Although there were several on this pan, we only succeeded in shooting one, owing to their cleverness in hiding amongst the water-grasses thinly growing in the shallow water.

214. Podica petersi, Hartl.

(4) Elands river, Rustenburg district, Transvaal, 11th May. Irides light tawny brown; bill dull red, with the culmen dusky brown; tarsi and feet brilliant light vermilion. The crop contained insects. This is a very scarce bird, and exceedingly shy and retiring in its habits. We never met with them in any of the Matabele or Mashoona rivers.

215. Sarkidiornis melanotus (Penn.).

(164) ♂, Molopo river, 12th January.

Rather sparingly distributed over this part of the country. In February I saw several flying over the Hart river. They are also to be found occasionally in the Transvaal.

216. Chenalopex ægyptius (Linn.).

Mashoona, September and October. Seen, but not procured.

217. Anas xanthorhynchus, Forst.

Mashoona, December. Seen, but not procured.

218. Plotus levaillanti, Licht.

(100) ♂, Quae Quae river, 23rd October. Iris dingy orange; bill pale greenish ash, darker along the culmen; tarsi and feet dusky brown.

The Darter is found sparsely on most of the rivers of Mashoona land, but is more abundant in the Transvaal and Natal. Beware how you handle a wounded bird: this one made a sudden dart at my eye; and it was only by the merest instinct of self-preservation that I put my hand up in time to receive the thrust. The upper mandible pierced with great force to the bone of my thumb, and, the bill being serrated, stuck there amongst the muscles, giving considerable pain; and I had to pull hard to get it out.

219. Struthio camelus, Linn.

(73) Young ♂, Umvuli, 4th September. Iris light dusky brown; bill pale horn-colonr, rather dusky along the culmen; legs and feet yellowish ash.

The Ostrich is sparingly distributed throughout the Mashoona country, frequenting generally the more open shallow valleys. Only about a dozen birds were killed by all the hunters of our party, numbering about twenty. Two or three clutches of young birds were caught this month. In the Bamangwato country they are much more plentiful.

XXVI.—*Further Contributions to the Ornithology of Japan.*

By Henry Seebohm.

Through the kindness of Capt. Blakiston, who has forwarded me another box of skins from Hakodate, I am able to add a few species to the birds of Japan, and to clear up one or two doubtful points in the previous papers on this subject in 'The Ibis' (1878, pp. 209–250, and 1879, pp. 18–43).

Simorhynchus cristatellus (Ibis, 1879, p. 21).

The skin sent (No. 2605) is from the Kurile Islands.

Uria bruennichi (Ibis, 1878, p. 211).

The skin sent is correctly identified. There cannot be any reasonable doubt that the *Cepphus arra* of Pallas is this species. The description is very good; and I cannot understand why Dresser (B. of Eur. viii. p. 578) refuses to admit it.

Podiceps minutus (Ibis, 1878, p. 211).

I cannot detect any difference between an example from Japan (No. 1966) and our bird, so that the name *P. philippensis* will probably have to sink into a synonym of *P. minutus*.

Podiceps nigricollis (Ibis, 1878, p. 211).

A skin sent (No. 1724) represents Messrs. Blakiston and Pryer's No. 13, *P. auritus*, Lath. This species is the *Colymbus auritus* of Brisson, but not of Linnæus.

Podiceps cornutus (Ibis, 1878, p. 211, et 1879, p. 21).

A skin sent (No. 2595) is correctly identified. This is the *Colymbus auritus* of Linnæus; but as this name has been so often misapplied, it is better to ignore it in favour of Gmelin's name.

Podiceps cristatus (Ibis, 1878, p. 211).

A skin sent (No. 1431) is correctly identified.

Anser brachyrhynchus (Ibis, 1878, p. 212).

The sole evidence upon which the Pink-footed Goose has been admitted into the Japanese fauna is Swinhoe's statement in 'The Ibis' (1875, p. 456) that a specimen was sent him from Hakodadi. This, Mr. Blakiston says, is an error; and no skin answering the description is in the Swinhoe collection. A skin sent (No. 2084) proves to be that of a male of the year of *Anser erythropus*. *Anser brachyrhynchus* has never been recorded from Siberia or China, and it must be now erased from the Japanese list.

Bernicla hutchinsi (Ibis, 1878, p. 212).

A skin sent (No. 2621) proves to be of this species, and not of *B. leucoparia*. The former has sixteen tail-feathers, with the wing 16 inches long, whilst the latter is said to have eighteen

tail-feathers, with the wing 18 inches long. Both species are very nearly allied to *B. canadensis*.

Coturnix communis (Ibis, 1879, p. 28).

I am unable to distinguish the Japanese birds from our Common Quail. Mr. Blakiston has sent me a skin (No. 1618) which he calls *C. japonica*. This belongs to the dark-throated form, which I take to be the adult male of *C. communis*, with very few spots on the breast. Another skin (No. 2536), which he thinks distinct, has a pale throat, and is profusely spotted on the breast. This I take to be the adult female. Other skins in my collection have the pale throat of the female and the slightly spotted breast of the male. These I take to be males of the year.

Spizaetus nipalensis (Ibis, 1878, p. 201, et 1879, p. 41).

The identity of *S. orientalis* with *S. nipalensis* may now be considered satisfactorily proved, the former being the immature bird and the latter the adult. A bird in the plumage of *S. orientalis* was sent alive from Japan to our Zoological Gardens, where it has moulted into the adult plumage of the Indian bird.

Platalea leucorodia (Ibis, 1878, p. 223).

There can be little doubt that the two new species of Spoonbill from Japan described by Temminck and Schlegel, each from a single example, are referable to our Common Spoonbill, which was found by Pallas near the Selenga river, south of Lake Baical, by both Radde and Prjevalsky in the valley of the Ussuri, a southern tributary of the Amoor, and by Swinhoe on Formosa and in the neighbourhood of Canton. Immature birds of the Common Spoonbill have the beak pale and the upper mandible smooth, and the tips of the primaries dark brown. In this plumage they agree very closely with Temminck and Schlegel's original descriptions. By some oversight, Dresser, in his 'Birds of Europe,' has omitted any mention of this important stage of plumage, although it is both described and figured by Naumann.

PYRRHULA ROSACEA, sp. nov.

Among some skins sent by Pryer from Yokohama are three male Bullfinches, which differ from *P. orientalis* in having the slate-grey of the upper parts slightly suffused with vermilion and the slate-grey of the underparts very much so. Judging from the underparts alone, these birds might pass for intermediate forms between *P. orientalis* and *P. major*; but the fact that neither of these species has any trace of red on the back precludes the possibility of this being the case. Besides the three males of this form from Japan, I have two adult males, one male of the year, and one female from the island of Askold, and a male and female from the Kurile Islands. The females do not apparently differ from those of *P. orientalis*. I propose to call this species *P. rosacea*.

XXVII.—*Notes on the Birds of Archangel.*

By HENRY SEEBOHM.

(Plate XI.)

THE following notes on the birds of Archangel and the surrounding district were furnished to me by Mr. Henke*, who resided in that city for several years, and thus has had a better opportunity of making a complete list than any ornithologists who have previously written on the subject.

HALIAETUS ALBICILLA.

The White-tailed Eagle is not very common, and was not found breeding near Archangel by Henke. It is a resident.

AQUILA CHRYSAETOS.

The Golden Eagle is very common in March and April on the road to Pinega, and is said to breed in the forests south of Archangel.

AQUILA LAGOPUS.

The Rough-legged Buzzard passes on migration.

* *Vide suprà*, p. 204.

Buteo vulgaris.

The Common Buzzard is a common resident in the forests near Archangel.

Pernis apivorus.

The Honey-Buzzard is a tolerably common visitor to the forests.

Pandion haliaetus.

The Osprey breeds near Archangel, but is not very common.

Falco peregrinus.

The Peregrine Falcon is a common summer visitor, breeding on the ground.

Falco sacer.

The Saker Falcon has been once obtained near Archangel in winter, and is said to breed on the Kanin peninsula.

Falco subbuteo.

The Hobby is a very common summer visitor.

Falco æsalon.

The Merlin passes through on migration.

Falco vespertinus.

The Red-footed Falcon breeds in a colony on an island near Cholmogory, on lofty oaks.

Falco tinnunculus.

The Kestrel is only an accidental visitor.

Circus cyaneus.

The Hen-Harrier is rare. Henke never saw but one adult male; occasionally immature males were seen.

Astur palumbarius.

The Goshawk is common during the breeding-season, and is occasionally seen in winter.

Accipiter nisus.

The Sparrow-Hawk is common during the breeding-season, and is occasionally seen in winter.

Milvus niger.

The Black Kite is an accidental visitor.

Asio brachyotus.

The Short-eared Owl is very common; a few remain through the winter.

Asio otus.

The Long-eared Owl is only a rare visitor.

Asio lapponicus.

The Lapp Owl is not rare, especially in autumn.

Asio tengmalmi.

Tengmalm's Owl is very common.

Asio uralensis.

The Ural Owl is a tolerably common resident.

Scops passerina.

The Little Owl is not rare.

Bubo ulula.

The Hawk-Owl is very common.

Bubo nyctea.

The Snowy Owl appears in some winters in great numbers near Archangel.

Bubo maximus.

The Great Horned Owl is very common, and is frequently caught in winter in the traps set for hares.

Cuculus canorus.

The Cuckoo is a very common summer visitor. Henke found its eggs in the nests of the Fieldfare, Brambling, and Yellow-breasted Bunting.

Iynx torquilla.

The Wryneck is a local summer visitor.

Gecinus canus.

The Grey-headed Green Woodpecker is a somewhat rare resident.

Picus martius.

The Black Woodpecker is a very common resident.

Picus cissa.

The Siberian form of the Greater Spotted Woodpecker is a very common resident.

Picus pipra.

The Siberian form of the Lesser Spotted Woodpecker is a very common resident.

Picus leuconotus.

The White-backed Woodpecker, which is the Siberian form of Lilford's Woodpecker, is a rather rare resident.

Picus tridactylus.

The Three-toed Woodpecker is a common resident in the pine-forests. The Archangel form of this species resembles that from Scandinavia and the valley of the Petchora, and is intermediate between the Siberian form and that of the Alps.

Cypselus apus.

The Swift was once seen by Henke.

Hirundo urbica.

The House-Martin is a rare summer visitor.

Hirundo rustica.

The Barn-Swallow is a common summer visitor.

Hirundo riparia.

The Sand-Martin is a very common summer visitor.

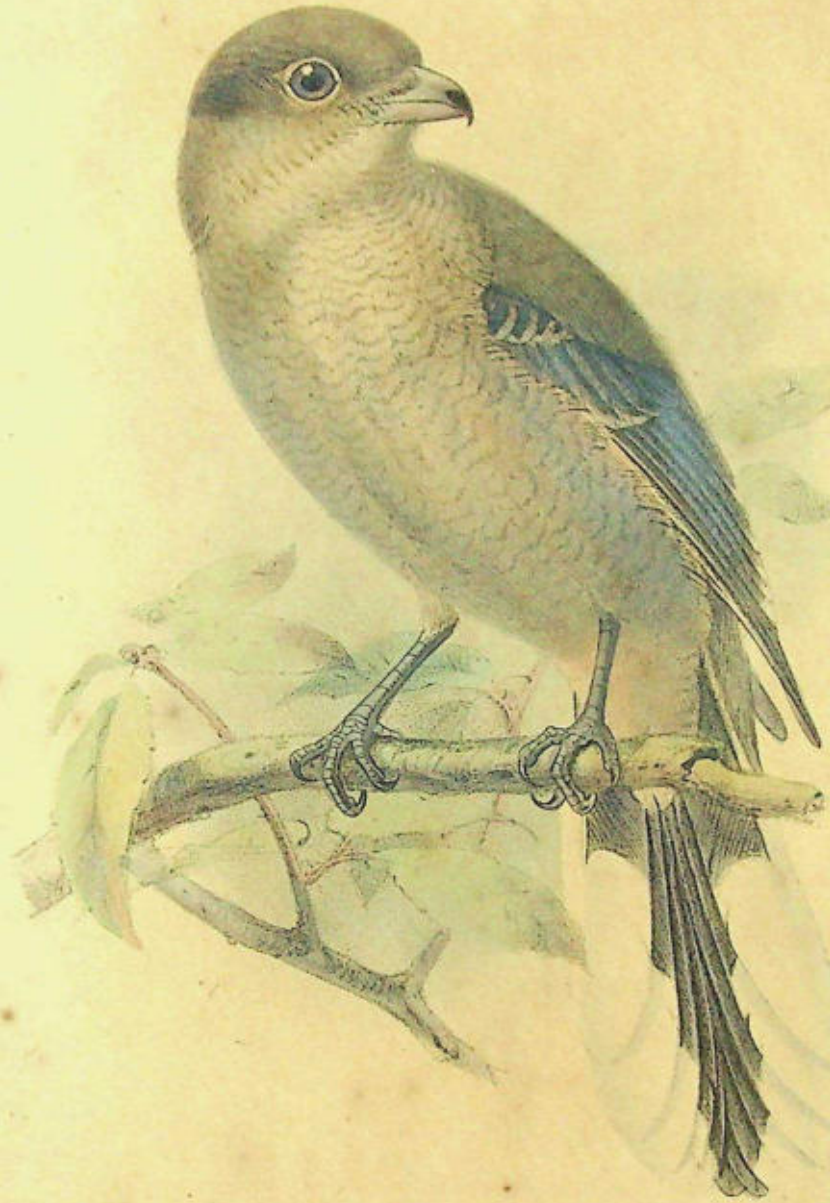
Lanius excubitor?

The Great Grey Shrike is recorded by Henke as an occasional visitor to Archangel in autumn. It will probably prove to be the bird known as Pallas's Great Grey Shrike, *L. major*.

Lanius mollis. (Plate XI.)

Lanius mollis, Eversmann, Bull. Soc. Nat. Moscou, xxvi. p. 498.

Eversmann's Shrike is represented in Henke's collection by a fine example from Archangel obtained in autumn. It is an excellent species, originally described by Eversmann from the Altai Mountains, and since obtained by Severtzoff in Turkestan. It can only be confounded with young examples of the American species *L. borealis*, which may be distin-



J.G.Keulemans lith. Hanhart imp.

LANIUS MOLLIS

guished by their barred upper tail-coverts. Eversmann described *L. mollis* in 1853. The figure (Plate XI.) is taken from one of the types of the species, now in the Museum of the Imperial Academy of Science and Art in St. Petersburg.

LANIUS COLLURIO.
The Red-backed Shrike is a rather rare summer visitor.

PRATINCOLA RUBETRA.
The Whinchat is a common summer visitor.

SAXICOLA ŒNANTHE.
The Wheatear is a common summer visitor.

ERITHACUS CÆRULECULA.
The Arctic Bluethroat passes through in great numbers on migration.

ERITHACUS RUBECULA.
The Robin is a common summer visitor.

RUTICILLA PHŒNICURUS.
The Redstart is a common summer visitor.

SYLVIA HORTENSIS.
The Garden-Warbler is a tolerably common summer visitor.

SYLVIA CINEREA.
The Whitethroat is a not uncommon summer visitor.

SYLVIA CURRUCA.
The Lesser Whitethroat is a rather rare summer visitor.

PHYLLOSCOPUS SIBILATRIX.
The Wood-Warbler is a rare summer visitor.

PHYLLOSCOPUS TROCHILUS.
The Willow-Warbler is a very common summer visitor.

PHYLLOSCOPUS RUFUS.
The Chiffchaff is a very common summer visitor.

PHYLLOSCOPUS BOREALIS.
The Arctic Willow-Warbler is a rare summer visitor.

HYPOLAIS ICTERINA.
The Icterine Warbler is a rare summer visitor.

Regulus cristatus.
The Goldbreast is a rare summer visitor.

Acrocephalus phragmitis.
The Sedge-Warbler is a somewhat rare summer visitor.

Accentor modularis.
The Hedge-Sparrow is a somewhat rare summer visitor.

Turdus iliacus.
The Redwing is a very common summer visitor.

Turdus pilaris.
The Fieldfare is a very common summer visitor.

Turdus musicus.
The Song-Thrush is a tolerably common summer visitor.

Turdus viscivorus.
The Missel-Thrush is a tolerably common summer visitor.

Oriolus galbula.
The Golden Oriole is only an accidental visitor.

Motacilla alba.
The White Wagtail is a common summer visitor.

Motacilla viridis.
The Green Wagtail is a very common summer visitor.

Anthus obscurus.
The Rock-Pipit is a frequent summer visitor.

Anthus pratensis.
The Meadow-Pipit is a frequent summer visitor.

Anthus cervinus.
The Red-throated Pipit is a frequent summer visitor.

Anthus arboreus.
The Tree-Pipit is a frequent summer visitor.

Cinclus melanogaster.
The Dipper is recorded by Henke as not common. It is of the black-bellied form.

TROGLODYTES PARVULUS.

The Wren is recorded by Henke from Archangel. It is probably a rare resident.

SITTA URALENSIS.

The Siberian form of the Nuthatch is an occasional winter visitor.

ACREDULA CAUDATA.

The Siberian form of the Long-tailed Tit, with a very long tail, measuring from 3·8 to 3·6 inches, is not rare; but Henke does not say if it be a resident.

PARUS CINCTUS.

The Archangel form of the Lapp Tit is intermediate between the Scandinavian and Siberian forms. It is a common resident.

PARUS BOREALIS.

The Archangel form of the Marsh-Tit is intermediate between the Scandinavian and the Siberian forms. It is a very common resident.

PARUS ATER.

The Cole Tit is a rare resident.

PARUS MAJOR.

The Great Tit is a common resident.

AMPELIS GARRULA.

The Waxwing is very common in some years.

GARRULUS INFAUSTUS.

The Siberian Jay is a common resident.

GARRULUS GLANDARIUS.

The Jay is a very rare resident.

NUCIFRAGA CARYOCATACTES.

The Nutcracker is a rare visitor.

PICA CAUDATA.

The Magpie is a very common resident.

CORVUS MONEDULA.

The Jackdaw is a very common resident.

Corvus cornix.
The Hooded Crow is the commonest resident.

Corvus corax.
The Raven is common, especially so in winter, on the island of Solovetsk.

Corvus frugilegus.
The Rook is a common summer visitor.

Loxia curvirostra.
The Crossbill is a very common resident.

Loxia bifasciata.
The White-winged Crossbill is a very common resident.

Loxia pytiopsittacus.
The Parrot-Crossbill is very rare.

Pyrrhula major.
The Eastern Bullfinch is a very common resident.

Pinicola enucleator.
The Pine-Grosbeak is very common in summer, but migrates somewhat more to the south in winter.

Carpodacus erythrinus.
The Scarlet Bullfinch is a very common summer visitor.

Passer domesticus.
The Common Sparrow is a very abundant resident.

Passer montanus.
The Tree-Sparrow is a common resident.

Fringilla spinus.
The Siskin is very common in summer.

Fringilla linaria.
The Mealy Redpole is very common in summer.

Fringilla cœlebs.
The Chaffinch is common in summer.

Fringilla montifringilla.
The Brambling is common in summer. Henke says he obtained a hybrid between the Chaffinch and the Brambling.

EMBERIZA AUREOLA.

The Yellow-breasted Bunting is a very common summer visitor.

EMBERIZA PUSILLA.

The Little Bunting is a very common summer visitor.

EMBERIZA RUSTICA.

The Rustic Bunting is a very common summer visitor to all the pine-forests, and often rears two broods in the year.

EMBERIZA CITRINELLA.

The Yellow-hammer is a not very common summer visitor.

EMBERIZA SCHŒNICLUS.

The Reed-Bunting is a very common summer visitor.

EMBERIZA NIVALIS.

The Snow-Bunting is a winter visitor, breeding on the north coast of the Kanin peninsula.

EMBERIZA LAPPONICA.

The Lapland Bunting passes through on migration, breeding above the limit of forest-growth.

OTOCORYS ALPESTRIS.

The Shore-Lark passes through on migration, breeding above the limit of forest-growth.

ALAUDA ARVENSIS.

The Sky-Lark is a rather rare summer visitor.

COLUMBA PALUMBUS.

The Ring-Dove is a not uncommon summer visitor.

LAGOPUS ALBUS.

The Willow-Grouse is a very common resident.

LAGOPUS ALPINUS.

The Ptarmigan breeds on the west coast of the Kola peninsula.

TETRAO UROGALLUS.

The Capercailzie is a resident, in some years exceedingly common.

Tetrao tetrix.

The Black Grouse is a resident, much commoner in some years than in others. Hybrids between the Capercailzie and the Black Grouse are frequent.

Tetrao bonasia.

The Hazel-Grouse is a resident, sometimes very numerous.

Coturnix communis.

The Quail is a rare summer visitor.

Charadrius pluvialis.

The Golden Plover passes through on migration, breeding in great numbers on the tundra.

Charadrius helveticus.

The Grey Plover is not rare on migration, and is said to breed in some numbers on the Kanin peninsula.

Charadrius fulvus.

The Asiatic Golden Plover has once or twice been obtained.

Charadrius morinellus.

The Dotterel is common in the tundra, and breeds near the mouth of the Dwina.

Charadrius cantiacus.

The Kentish Plover is a summer visitor on the coast.

Charadrius hiaticula.

The Ringed Plover is a common summer visitor to the banks of the Dwina.

Charadrius minor.

The Lesser Ringed Plover is a summer visitor to the banks of the Dwina.

Strepsilas interpres.

The Turnstone is a rather rare summer visitor.

Hæmantopus ostralegus.

The Oyster-catcher is common.

Totanus glottis.

The Greenshank is a common summer visitor.

Totanus fuscus.

The Spotted Redshank is a common summer visitor.

Totanus glareola.

The Wood-Sandpiper is a common summer visitor.

Totanus ochropus.

The Green Sandpiper is a common summer visitor.

Totanus calidris.

The Redshank is a rare summer visitor.

Totanus hypoleucus.

The Common Sandpiper is a very common summer visitor.

Phalaropus hyperboreus.

The Red-necked Phalarope is a summer visitor.

Machetes pugnax.

The Ruff is a very common summer visitor.

Calidris arenarius.

The Sanderling occasionally passes through on the autumn migration.

Tringa maritima.

The Purple Sandpiper was only once seen by Henke, when he obtained six examples early in winter.

Tringa canutus.

The Knot is recorded by Henke as having been seen in summer near the mouth of the Dwina, evidently breeding.

Tringa subarcuata.

The Curlew Sandpiper was obtained by Henke near the mouth of the Dwina in summer, and showing signs of having bred.

Tringa alpina.

The Dunlin is a very common summer visitor.

Tringa minuta.

The Little Stint is a rather rare summer visitor. Henke says he has taken the nest on the grassy sand on the river-bank, where it was overflowed when the ice broke up.

Tringa temminckii.

Temminck's Stint is a common summer visitor, breeding amongst the drift-wood on the river-banks.

Tringa cinerea.

The Terek Sandpiper is a very common summer visitor.

Limosa rufa.

The Bar-tailed Godwit is a rare summer visitor. Henke never obtained its eggs.

Scolopax rusticula.

The Woodcock is a very common summer visitor.

Scolopax gallinago.

The Common Snipe is a very common summer visitor.

Scolopax gallinula.

The Jack Snipe is only seen on migration.

Scolopax major.

The Great Snipe passes through on migration to breed on the Kanin peninsula.

Numenius arquata.

The Curlew is a very common summer visitor to the delta of the Dwina.

Numenius phæopus.

The Whimbrel is a rare summer visitor.

Grus cinerea.

The Crane passes through on migration to the tundra, where it is common.

Platalea leucorodia.

The Spoonbill has only once been found, when eight examples appeared in December.

Crex pratensis.

The Corn-Crake is a rare summer visitor.

Crex porzana.

The Spotted Crake is a very common summer visitor.

FULICA ATRA.

The Coot has once occurred, during the breaking-up of the ice.

PODICEPS RUBRICOLLIS.

The Red-necked Grebe is very common.

COLYMBUS ARCTICUS.

The Black-throated Diver is common on the lakes in the forests.

COLYMBUS SEPTENTRIONALIS.

The Red-throated Diver is very common.

COLYMBUS TORQUATUS.

The Great Northern Diver has not occurred; but Henke says he has received eggs of this species collected by the Samoyedes on the Kanin peninsula.

URIA BRUENNICHI.

Brünnich's Guillemot occasionally appears in winter.

URIA GRYLLE.

The Black Guillemot breeds on an island near Onega.

ALCA TORDA.

The Razorbill breeds on the same island as the preceding.

MERGULUS ALLE.

The Little Auk has been seen on the coast of the Kola peninsula.

MERGUS MERGANSER.

The Goosander is a rare summer visitor.

MERGUS SERRATOR.

The Red-necked Merganser is a very common summer visitor.

MERGUS ALBELLUS.

The Smew is a common summer visitor, breeding in hollow trees.

SOMATERIA MOLLISSIMA.

The Eider Duck breeds on the same island, near Onega,

where the Black Guillemot and Razorbill are found. It is occasionally seen near Archangel in winter.

SOMATERIA SPECTABILIS.
The King Eider breeds on the Kanin peninsula.

FULIGULA FUSCA.
The Velvet Scoter is a rare summer visitor.

FULIGULA NIGRA.
The Black Scoter is common on migration. A few remain to breed.

FULIGULA CLANGULA.
The Golden-eye is a common summer visitor.

FULIGULA GLACIALIS.
The Long-tailed Duck breeds commonly on the tundra.

FULIGULA CRISTATA.
The Tufted Duck is a common summer visitor.

FULIGULA MARILA.
The Scaup passes through on migration.

FULIGULA HISTRIONICA.
The Harlequin Duck is a rare summer visitor.

ANAS PENELOPE.
The Widgeon is a very common summer visitor.

ANAS QUERQUEDULA.
The Garganey is a very common summer visitor.

ANAS ACUTA.
The Pintail is a very common summer visitor.

ANAS BOSCAS.
The Mallard is a very common summer visitor.

ANAS CRECCA.
The Teal is a very common summer visitor.

ANAS CLYPEATA.
The Shoveller is a very common summer visitor.

ANSER BERNICLA.
The Barnacle Goose is rare on the autumn migration.

ANSER LEUCOPSIS.

The Brent Goose was once obtained in spring.

ANSER RUFICOLLIS.

The Red-breasted Goose is only seen in the spring. It is very rare.

ANSER ALBIFRONS.

The White-fronted Goose passes through on migration, and breeds on the Kanin peninsula.

ANSER MINUTUS.

The Little White-fronted Goose passes through on migration and breeds on the Kanin peninsula.

ANSER SEGETUM.

The Bean-Goose is a summer visitor.

ANSER ARVENSIS.

The Grey-lag Goose is a summer visitor.

CYGNUS MUSICUS.

The Mute Swan is a summer visitor.

CYGNUS MINOR.

Bewick's Swan is a summer visitor, and breeds near Archangel.

STERNA MACRURA.

The Arctic Tern is a very common summer visitor.

LARUS MINUTUS.

A small colony of the Little Gull visits the neighbourhood of Archangel to breed.

LARUS TRIDACTYLUS.

The Kittiwake is a rare summer visitor.

LARUS RIDIBUNDUS.

The Black-headed Gull is a rare summer visitor.

LARUS EBURNEUS.

The Ivory Gull is a rare winter visitor.

LARUS GLAUCUS.

The Glaucous Gull is occasionally seen. It breeds on the Kanin peninsula.

Larus marinus.

The Great Black-backed Gull is an occasional visitor. It breeds on the Kanin peninsula.

Larus canus.

The Common Gull is a very common summer visitor.

Larus borealis.

The Siberian Herring-Gull (the *L. affinis* of Reinhardt) is an occasional summer visitor. It breeds in great numbers in the monastery on the island of Solovetsk. Those that cannot find a suitable place outside the monastery breed on the walls and in the court-yard. In the latter alone Henke counted over 500 nests, though the monastery is visited annually by about eighty thousand pilgrims.

Stercorarius pomatorhinus.

The Pomarine Skua is an occasional visitor. It breeds on the Kanin peninsula.

Stercorarius crepidatus.

Richardson's Skua is a summer visitor, breeding at the mouth of the Dwina and on the Kanin peninsula.

Stercorarius buffoni.

Buffon's Skua is a summer visitor, breeding at the mouth of the Dwina and on the Kanin peninsula.

XXVIII.—*On the Variations from the Normal Structure of the Foot in Birds.* By W. A. Forbes, B.A., M.B.O.U., Prosector to the Zoological Society.

"In all birds, even in *Archæopteryx*, the fifth digit of the pes remains undeveloped . . . . Many birds have only three toes, by suppression of the hallux. In the Ostrich, not only the hallux, but the phalanges of the second digit are suppressed . . . . hence the Ostrich has only two toes."

"The normal number of the pedal phalanges in birds is (as in ordinary *Lacertilia*) 2, 3, 4, 5, reckoning from the hallux to the fourth digit. Among the few birds which constitute exceptions to the rule are the Swifts, in which the

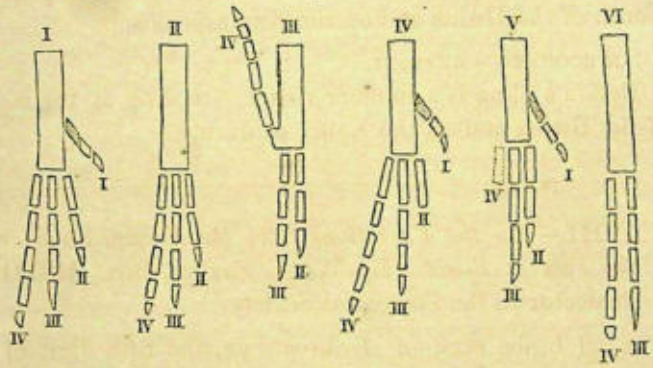
third and fourth toes have only three phalanges each (2, 3, 3, 3), and the Goatsuckers and the Sand-Grouse, in which the fourth toe only has the number thus reduced (2, 3, 4, 3)."

Prof. Huxley has described in these words* the nature of the variations from the normal structure of the Avian *pes*, as regards the number of digits and phalanges composing it, exhibited by various members of that group. As, however, the account here quoted is, in some points, incorrect, and in others incomplete, and as other errors occur in other authors' works on this subject, I have thought that it might be useful to draw up as complete a list as possible of the differences in these two points of structure now known to exist amongst birds.

I. *The Number of Digits.*

The ordinary number of toes in birds is four, representing the first, second, third, and fourth digits of the normal pen-

Fig. 1.



tadactyle foot (fig. 1, i). A number of birds, however, are three-toed, the reduction in nearly all cases being effected by the suppression of the hallux (fig. 1, ii). This may be the case even in birds belonging to zygodactyle groups (fig. 1, iii); so that we have three-toed Woodpeckers (e. g.

* 'A Manual of the Anatomy of Vertebrated Animals,' pp. 296, 297. London, 1871.

*Picoides**) and Jacamars (*Jacamaralcyon*)†. It is not always, however, the hallux that is thus absent in tridactyle birds. In the Kingfishers of the genera *Ceyx* and *Alcyone* the foot is three-toed, but the hallux is well developed; the *second* digit, on the other hand, is reduced to its basal phalanx (fig. 1, IV), thus appearing externally merely as a wart-like eminence on the side of the digit next to it, in a way very similar to that exhibited by some Edentata, in which the fifth digit of the manus is greatly reduced.

In the curious Passerine genus *Cholornis*, on the other hand, which is also said to be three-toed, the reduction is brought about by the absorption of the most external, or *fourth*, digit (fig. 1, V)‡.

In the Ostrich, finally (fig. 1, VI), only two digits are present, both the first and second having entirely disappeared.

List of Tridactyle Families and Genera of Birds.

A. By suppression of the hallux.

Rheidæ.	*Calodromas* § [Tinamidæ].
Casuariidæ.	*Tinamotis* § ,,

* By some error Nitzsch (Osteograph. Beitr. p. 102) describes *Picoides* as lacking the fourth ("letzte") toe. As I have lately shown, however (P. Z. S. June 1882), there is a rudimentary hallux, with its metatarsal, in these birds, though it is quite concealed under the skin, and has, in consequence, been overlooked by previous observers. The existence of a similarly concealed rudimentary hallux in many other birds apparently tridactyle is therefore rendered highly probable.

† The specific name of *Loxia tridactyla* (Gmel. Syst. Nat. i. p. 866; *Phytotoma tridactyla*, Daud. Tr. Orn. ii. p. 306) seems to be a mistake, founded on Bruce's drawing of a bird met with by him in Abyssinia, and mentioned by Buffon (Hist. Nat. Ois. iii. p. 471) under the name of "Le Guifso Balito." This is usually identified as a well-known Abyssinian Barbet (*Pogonorhynchus abyssinicus*, Marshall, Mon. Capit. pl. 9), with feet of the normal structure.

‡ I have not myself yet had an opportunity of examining *Cholornis paradoxa*; my authorities for the statement here made are MM. David and Oustalet (Oiseaux de la Chine, p. 205), who describe this bird as having the external digit reduced to a "simple moignon." It would be interesting to know how far the reduction here has progressed.

§ Sundevall places these two genera, with some doubt, amongst his

Pelecanoides [Procellariidæ]*.
Phœnicoparra [Phœnicopteridæ].
Otididæ.
Œdicnemididæ (incl. *Esacus*).
Cursorius.
Turnicidæ (exc. *Pedionomus*).
Syrrhaptes [Pteroclidæ].
Alcidæ.
Charadriidæ (many genera, e. g. *Charadrius*, *Hæmatopus*, *Hoplopterus*, *Calidris*).
Rissa (at least generally: *cf.* Saunders, P. Z. S. 1878, pp. 162, 163) [Laridæ].
Sasia, *Picoides*, *Tiga* [Picidæ].
Jacamaralcyon [Galbulidæ].

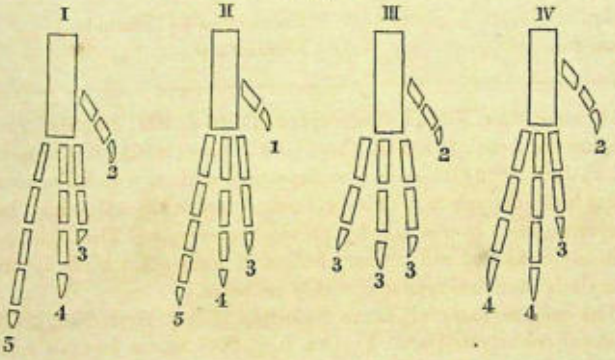
B. By suppression of the 2nd digit.
Ceyx, *Alcyone* [Alcedinidæ].

C. By suppression of the 4th digit.
Cholornis [Oscines].

II. *The Number of Phalanges.*

The normal number of phalanges in birds is, as already stated, 2, 3, 4, 5, in the respective digits, counting from

Fig. 2.



within outwards (fig. 2, 1). In all the Tubinares†, so far as I have seen, except *Pelecanoides* (where the hallux is quite

"Otidinæ" (Tentamen, p. 128). A skull extracted from a skin of *Calodromas* in my possession shows, however, that it, at least, is undoubtedly a Tinamou, the palate being perfectly "dromæognathous."

* The *Diomedeinæ*, often described as three-toed, have a very minute and rudimentary hallux (*cf.* P. Z. S. June 1882).

† *Cf.* Coues "On the Osteology of *Colymbus torquatus*" (Mem. Bost. Soc. Nat. Hist. i. p. 161, note).

absent), the number of joints in the hallux is reduced to one, which is quite short, and covered by the spur-like claw; the digital formula therefore becomes 1, 3, 4, 5 (fig. 2, II).

In the true Swifts (*i. e.* the genera *Cypselus* and *Panyptila*)*, though not in the rest of the Cypselidæ, the number of phalanges in each digit external to the hallux is three, the formula thus becoming 2, 3, 3, 3 (fig. 2, III). In the other genera of Swifts the normal number of phalanges obtains, as already correctly stated by Mr. Sclater†.

In the Pteroclidæ and true Caprimulgidæ, finally, the formula is 2, 3, 4, 4 (not 2, 3, 4, 3, as stated by Prof. Huxley‡), the fourth digit being one short of the normal number of phalanges (fig. 2, IV). The anomalous genera *Steatornis*, *Ægotheles*, *Nyctibius*, &c. are normal as regards the structure of their feet§, as also are *Thinocorus* and *Attagis*.

Nitzsch, who must have been misled by a badly articulated skeleton, ascribes *four* joints each to all the toes, both of *Struthio* and *Casuarius*‖. He was in doubt therefore as to which digits were represented in these forms. As a fact, I need scarcely remark, the normal number of phalanges (4, 5 and 3, 4, 5 respectively) is present in both these birds, though in museum specimens a joint or two is often missing. In many Ostriches, however, the *nail* of the outer toe is quite absent, and in others very small; so that their foot is evidently tending to become, like that of the Solipeds, reduced to a single toe, in this as in other cases the third.

* Nitzsch, so long ago as 1811, pointed out this fact, as well as the reduction in *Caprimulgus* ("Ueber die Gliederung der Fusszehen, besonders im Ziegenmelker und in der Mauerschwalbe," Osteogr. Beitr. pp. 101–105).

† P. Z. S. 1865, p. 596.

‡ Possibly misled by an error in the figure of the skeleton of *Syrrhaptes* in Prof. Parker's memoir "On the Osteology of the Gallinaceous Birds and Tinamous" (Tr. Z. S. v. pl. 38), where the outer toe is represented as consisting of *three* joints only, though in the text (p. 203) the correct number is accurately stated.

§ *Cf.* Sclater, P. Z. S. 1866, p. 124.

‖ Op. cit. p. 102.

XXIX.—*Ornithological Letters from the Pacific.*—IX.*
New Zealand. By O. Finsch, Ph.D., H.M.B.O.U., &c

My ornithological friends may be aware that some years ago I took considerable interest in the avifauna of New Zealand. They can imagine therefore how much pleased I felt in having an opportunity not only of studying the rich material in the various museums and collections of that colony, but also of seeing a considerable number of species of birds in their own homes, and thus getting at least a glance at the bird-life of New Zealand. I need not say that, besides this, I was also fortunate in making the personal acquaintance of all the leaders of science in the colony, with some of whom (such as Von Haast, Hutton, Hector, Buller, and Potts) I had been for some years in most friendly correspondence, and from all of whom I received the most cordial welcome. I shall not in this letter enter on the museums themselves, as I intend to reserve all my numerous notes on that subject for a special paper on the different museums of Australia and New Zealand; but I cannot forbear mentioning that I was much astonished at what has been done in this respect in a comparatively very short time. Above all Von Haast deserves the greatest credit, as being the actual organizer of these scientific institutions, while his special creation, the Christchurch Museum, takes not only the first place in the colony, but would rank among the better class of museums in the Old World, and would even excel those of many of our universities.

I arrived in New Zealand on the 23rd of May, and left the colony on the 12th of August. I stayed therefore only about eleven weeks, which time, of course, I could not devote solely to ornithology, as I had to look after and study many other things. Besides, it was winter, and, although I found this season exceedingly mild in comparison with ours, there was, of course, no opportunity of observing birds in the breeding-season. But I travelled a good deal about the country, making several excursions, which led me to the glaciers at the foot

* For No. VIII. see 'Ibis,' 1881, p. 532.

of Mount Cook (in the Southern Alps) in the South Island, to Parehaka in Taranaki, to Waikato at the frontiers of the "King's Country," and to the "pot-lakes district" in the North Island. So I had the pleasure of seeing bird-life in various localities—woods, swamps, plains, lakes, and the alpine region—and thus of obtaining a good general idea of the birds of New Zealand. Although I travelled along the whole east coast of New Zealand, I shall not refer in this letter to the marine birds, as I intend to publish the observations made on this subject during my various voyages in the Pacific, Atlantic, and North Polar Seas as a whole. Besides oceanic species, I succeeded in collecting examples of thirty species of birds during my stay in New Zealand, a number which, considering the poverty of birds in general in these islands, may be considered not unsatisfactory.

As a rule I found bird-life generally poor, both as regards variety of species and in numbers of specimens. During a day's travel over plains, along rivers, and through swamps, I seldom saw more than a dozen species; and even the Ratomahana, famed for its abundance of water-fowl, cannot be compared with what I have seen in the old countries of Europe and Asia, and in the United States. I observed many Ducks (*Anas superciliosa* and *Fuligula novæ-zealandiæ*) and Pukekas (*Porphyrio melanotus*), but never in such dense flocks as I have seen on our lakes in the corresponding season. Besides these were a few common Shags (*Graculus carbo*), some Gulls (*Larus pomareæ*), Stilts (*Himantopus leucocephalus*), and the pretty little Grebe of New Zealand (*Podiceps gularis*). That was nearly all; and yet the Ratomahana, with its pleasant still water, is a reserve of the Maoris, who do not allow one to shoot here at all, and during the breeding-season compel travellers to crawl over a hill to the Pink Terrace, instead of going by canoe, in order that the water-fowl may not be disturbed. The other lakes I found really poor: on the Tekapo I saw only two *Fuligulæ*, on the Rotorua a single *Carbo*, and on Lake Tarawera a few Gulls. The same may be said with regard to the bays and harbours on the coast, where two kinds of Gulls (*L. dominicanus* and *L. novæ-hollandiæ*)

are usually to be seen, along with some Shags, among which *Graculus carbo* is the most common. Terns I found everywhere, but sparingly and by no means in large flocks as in other countries is usually the case. In the dense forests birds are, of course, still more scarce than in varied country, as is the case everywhere. Indeed, even in the deepest woods, as in that between Tauranga and Ohinemutu (which is one of the finest in New Zealand, and, in fact, magnificent from the grandeur of its trees and the variety of dense undergrowth, chiefly ferns), one seldom observes any birds, except flocks of *Zosterops lateralis*, here and there a single Fantail (*Rhipidura*), or *Miomoira dieffenbachi*. But sometimes the ear is struck by the wonderful voice of the Bell-bird (*Prosthemadera*) or the harsh cry of the Kaka (*Nestor meridionalis*).

In speaking of the birds of New Zealand generally, as they come under the eyes of the travelling and hunting observer, one cannot allude only to those native to the country, but must also recognize the foreigners, which in some places already prevail, and will, in course of time, overpower and exterminate their feathered native brethren, like the white man does the Maori. In fact, our knowledge of the species introduced with more or less success into New Zealand is still more unsatisfactory than that of the native birds. Several "acclimatization" societies import birds from various countries, chiefly Australia, of which they do not know even the proper names, and still less whether they are likely to prove useful or may not rather become a nuisance, as have the Mainas in Honolulu. On the steamer in which I arrived from Melbourne was a large consignment of birds from Australia, such as *Plyctolophus roseicapillus, Platycercus eximius, Psephotus*, several kinds of Grass-Finches, "Magpies" (*Cracticus* and *Gymnorhina*), and others, which were imported by a society in Dunedin, and were to be liberated in the environs of that city. Among the European birds which I observed often in New Zealand were House-Sparrows, Skylarks, Greenfinches, Chaffinches, Goldfinches, Starlings, Blackbirds, and Rooks. The last-named species I found only in the environs of Christchurch, the foregoing species nearly

everywhere, *Fringilla carduelis* even in the alpine region near Mount Cook. *Emberiza citrinella* I met with in Waikato. Our Common Starling was common in Dunedin and Christchurch; but I did not see it in Wellington and Wanganui, where its place is taken by the noisy Indian Maina (*Acridotheres tristis*), which quarrelsome species will drive out the Starling everywhere, as it even ejects House-Pigeons from their homes. Of other foreign species I remember at this moment only to have seen (or, rather, heard the voice of) a species of *Gymnorhina* not far from Wanganui. The scarcity of native game in New Zealand has led the sportsman to take a great interest in the importation of foreign game-birds; and some of these are at present thoroughly acclimatized, and are now quite as plentiful as in their native countries. Above all, our Pheasant abounds, and takes a regular place in the poultry-market. What I shot near Wanganui was not the true *Phasianus colchicus*, but a hybrid between this species and *P. mongolicus*; so that apparently several different species of Pheasants have been introduced. The importation of our Partridge has been tried, but without much success; but Californian and Australian Quails (*Callipepla californica* and *Synœcus pectoralis*) thrive better. The latter, in many places, is considered to be the true native Quail by the settlers, who have lost all knowledge of the real native Quail (*Coturnix novæ-zealandiæ*), as this species is almost extinct and may be reckoned amongst the rarest of birds peculiar to the island—much more rare than the Kiwi or Huia (*Heteralocha*). The latter is confined to a very limited locality in the environs of Wellington. Here also *Pogonornis cincta* is to be found, but is far more rare than the Huia; in fact, next to the Quail, *Pogonornis* is the rarest bird of New Zealand, and, if I remember rightly, only two specimens are preserved in all the Museums in New Zealand. I mention this only to contradict the erroneous but prevailing idea, that the Kiwi and Kakapo (*Stringops*) are the rarest birds in this colony. I had not time to seek for Huias myself; but I got some by the kindness of Dr. Hector, through native hunters, who understand much better how to find and to shoot these birds than

a European. As I learn from those acquainted with the Huia, it is by no means a shy bird; but the great difficulty is to find them. It would therefore have been the greatest chance to go out for one day and to succeed in seeing Huias or *Pogonornis*. The same feeling held me back from executing a plan in regard to *Notornis mantelli* which I formed upon seeing the fine specimen in the Museum of Dunedin. This specimen, the third in existence, had been obtained by a shepherd near Lake Te Anau, or rather by his dog, and had been bought by a lady, to find its way to England, as Professor Parker told me. This gentleman was so kind as to show me the skeleton of this specimen, and to allow me to observe its interesting peculiarity in having only a rudimentary keel to the sternum, like *Stringops habroptilus*.

Having spoken of the rarest birds in New Zealand, I may now also mention the most common, and may unhesitatingly say that there are none more so than our Common Sparrow (*Passer domesticus*), our Sky-Lark (*Alauda arvensis*), and the native Pipit (*Anthus novæ-zealandiæ*). I saw the Sparrow in nearly every place during my travels in the Old and New Worlds, but nowhere so plentiful and of such general distribution as in New Zealand. Here it is not only seen in every city, village, and dwelling-place of man, as is usually the case, but also in the most remote localities, where no men live. I observed the Sparrow on the barren cliffs of the west coast of the North Island, in the flax-scrubs (*Phormium tenax*) of Taranaki, and in the centre of the woods of Ohinemutu, in all of which localities it was not merely a visitor, but a settler, and a settler which sticks to the place, and is not easily driven away. This will be well known to the societies which have been founded with the object of rooting out the Sparrow by all means, and which accordingly offer rewards for heads and eggs of the bird. I really do not know what is the reason for these cruel measures, except that I heard people say that the Sparrows were a nuisance and damaged the flowers and seeds in the garden, and so on. On my way to the Alps I observed Sparrows as high up as Burke's Pass (about 2500 feet); but a most reliable authority,

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Mr. Scaly, who knows the Alps well, assured me that he had found them breeding on Mount Cook.

The same that I have said of the distribution of the Sparrow is true also of the Sky-Lark, with the exception that the latter frequents only the open country. I found the Sky-Lark all over the Mackenzie plains, on the hot lakes, and even in the valley of the Tasman river, nearly as far as Mount Cook. Although it was winter-time, everywhere was heard its lovely song, which reminded me forcibly of the fact that it was then spring at home.

Anthus novæ-zealandiæ is to be found in the same localities as the Sky-Lark, and in some places, perhaps generally, more common than the latter. In habits this species reminds one most of our *Anthus pratensis*; and so does his call-note. Next to *Anthus novæ-zealandiæ* I found *Halcyon vagans* the most common species. This was the first bird I saw on the rocky shores when I first put my foot on New Zealand at the Bluffs, and the last land-bird I observed when I left the colony at the Bay of Islands. Except in the Alps, I found this Kingfisher nearly everywhere; in the plains, in the scrubs and woods, and even in the gardens of the villages it is frequently to be observed. Like its congeners, *Halcyon vagans* is not bound to waters, but keeps rather to an arboreal life, although it comes down to the sea-shore. Near Ohinitaki, on the Waitara section, the romantic and lovely residence of Mr. [illegible] *Halcyon vagans* more common than elsewhere; [illegible] half a dozen might be seen there, and Mr. Potts showed me, in a wall of clay or sand, numerous nest-holes made by this Kingfisher. In some places a dozen and more formed a sort of breeding-colony. In the same locality the lovely *Anthornis melanura* was very common, and its gay call-note resounded from the clusters of trees in the fine park. I did not see this species in the North Island; but in both islands *Rhipidura flabellifera* and *Miomoira toitoi* were plentiful, although only seen singly or in pairs. The Fantail is a most amiable little creature, and by no means shy; in the house of Mr. Potts it entered the rooms fearlessly, and caught flies just as it would do in the woods. *Gerygone*

igata is another bird which I often observed, and in very different localities—in the woods, in the scrub, in the plains, and nearly up to the foot of the glaciers. I may mention here, by the way, that only this one species of *Gerygone* is known in New Zealand, as of the second species described by Mr. Potts nothing more has been heard, the type itself, unfortunately, not having been preserved. In habits and manners *Gerygone igata* resembles altogether our *Phylloscopus*, whereas *Zosterops lateralis* reminds one of our Titmice. In the same way they go in flocks of from ten to twenty, chirping from tree to tree, inspecting leaves and branches from above and below for insects. I saw the *Zosterops* only in the North Island; in different places it was very plentiful, but only in the bush and in dense forest. Of other Passerine birds (besides *Heteralocha*, which I have mentioned already), I noticed or obtained *Glaucopis wilsoni* near Wellington, *Sphenœacus punctatus* and *Keropia* near Wanganui, and the Tui (*Prosthemadera novæ-zealandiæ*) in several localities on the North Island. This bird can scarcely escape the observer, as its wonderful and varied voice attracts the attention of everybody. It is by no means shy, although generally hidden in the foliage of trees and undergrowth. The Tui is much prized by the natives on account of its flesh, which I may state, from experience, is very good to eat. When staying at Parehaka (the home of the famed prophet Te Witti) I saw baskets full of prepared Tuis and Pigeons, as a great festival was in preparation, at which these birds were to make a chief dish.

The wonderful New-Zealand Pigeon (*Carpophaga novæ-zealandiæ*) is already very scarce in the South Island, but still numerous in the North Island. I heard of it in the valley of the Tasman river, near Mount Cook, and met with it in the wood of Ohinemutu and near Wanganui.

This Pigeon forms a prominent article in the poultry-markets of New Zealand, amongst which that of Wellington seemed to be the best provided with game. I found there *Anas superciliosa*, *A. chlorotis*, *A. gibberifrons*, *A. rhynchotis*, *Fuligula novæ-zealandiæ*, Pukekas (*Porphyrio*), Black and White Swans, and even *Nestor meridionalis*.

As it was winter time during my visit I did not see either of the Cuckoos; for both *Chrysococcyx lucidus* and *Eudynamis taitiensis* are migrants, which only visit New Zealand in the summer time. The latter of these species, however, I had previously met with in various islands of the South Seas as far north as the Carolines.

I have nearly forgotten my especial friends the Parrots, of which I met with three species in New Zealand—*Platycercus auriceps*, *Nestor meridionalis*, and *N. notabilis*. The first of these is a shy bird, and frequents the woods; the second is also met with in the same localities. But I found *Nestor meridionalis* likewise in the alpine region in company with *N. notabilis*, which may be considered, in a certain sense, the only alpine bird in New Zealand; for it never comes down to the plains, and its distribution seems confined to an altitude of not less than 2000 feet, an elevation at which, in New Zealand, the glaciers almost begin. When travelling in these regions on the Müller and Hooker glacier, along the foot of the majestic Mount Cook, I first heard the peculiar cry of the Kea (*Nestor notabilis*). It sounds like the mewing of a cat or the cry of a baby, and forms a most singular contrast to the grand wild scenery of rocks, ice, and snow. Such localities are the favoured dwelling-places of the Kea, where, in rocks and precipices, it rears its young. In contrast to its generic relation the Kaka (*Nestor meridionalis*), the Kea is by no means a shy bird, and it is said that these birds may be killed easily by a stone or by a snare thrown over their heads. There is now a war going on against the Keas, which in time will end with their total extermination. The reason is not only that the flesh of the Kea is very palatable, but that it is its strange custom to kill sheep. For eight years, or thereabouts, the Keas have taken to attack the sheep, bite holes in their sides, and eat the fat of the kidneys, which, of course, causes death. Mr. Potts has written an interesting paper on this subject, and of the fact there is not the slightest doubt. But what surprised me still more than this newly developed rapacious habit was the fact that in one valley Keas will attack sheep, and in another very close to it will not do so.

As Kakapos (*Stringops*) and Kiwis are found only on the west coast of the South Island, which I did not visit, they did not come under my notice; but I got *Apteryx australis* in King's Country, in the North Island; and this species is still numerous in some parts of Waikato, but only the natives with their dogs are able to get them. I may also mention that I was present when Dr. Hector held a conversation with two men who had just returned from a remote locality on the west coast, and both assured us that they had seen not only footprints of the Moa, but the famous bird itself. The future will prove whether they were right or not; but it is certain that there are still extensive portions of country on the west coast never yet penetrated by man.

Of rapacious birds, I met with *Hieracidea novæ-zealandiæ* a few times in the mountains and on the Mackenzie plains; but *Circus assimilis* I found nearly everywhere, except in the dense woods. The bird is seen mostly single, but also in pairs; and once, in the neighbourhood of Wanganui, I observed as many as fifteen together. It has exactly the same habits as our Marsh-Harrier. Of Owls I only got *Athene novæ-zealandiæ* near Wanganui.

Turning to the Grallæ, I tried in vain to get *Anarhynchus frontalis* along the banks of the Wanganui river and the sea-shore, where it is said that this bird may nearly always be found; but I only met with large flocks of *Charadrius bicinctus*, most of them in the garb of the young bird, but some in full plumage, although it was in winter. *Charadrius obscurus* (which lives in the alpine region) I did not see; the Black Oystercatcher (*Hæmatopus niger*) I only observed once, on the sea-shore near Wanganui. Of Stilts I saw both species, *Himantopus melas* in the valley of the Tasman river, and *H. leucocephalus* on the Rotomahana. Of Herons I only observed *Botaurus pœciloptilus* in the swamps of Waikato; and I may add that the so-called "White Crane" of the settlers (*Ardea alba*) is one of the rarest birds of the colony. Of *Rallus pectoralis* I got some specimens in Wanganui, through the kindness of my friend Mr. Drew, who, as a great admirer of natural science, especially ornithology, assisted me in the

most obliging way. A prominent feature in the avifauna of New Zealand is the "Weka" of the natives, or "Woodhen" of the colonists—a most difficult group, as regards its specific distinctions, of which our knowledge is still very imperfect. There have been, no doubt, too many so-called species established, and their numbers will diminish when we are better acquainted with these birds than at present. In the South Island *Ocydromus troglodytes* is in certain localities, chiefly on the Mackenzie plains near to the Alps, very common, and was met with by me frequently, running sometimes nearly under the hoofs of our horses. This bird is very tame indeed. It enters the houses and tents, and, not only that, but steals what it can get and transport, chiefly things of a shining nature, such as spoons, watches, and so forth. The Weka is very much esteemed by the natives on account of its flesh, and is hunted by them with dogs. On arriving one day at a Maori Weka-hunter's camp, I saw a heap of about fifteen hundred Wekas, prepared in their own fat, the result of scarcely more than a fortnight's hunting of seven men. They all belonged to what I call *Ocydromus troglodytes*. The other kind, *Ocydromus australis*, I got only a few times in the North Island, where this species is generally of a rare occurrence. The most common of all grallatorial birds is *Porphyrio melanonotus* (the Pukeko of the natives), which I met with nearly everywhere, except in the woods. Near Oamaru I saw about a hundred or more on an open prairie-like plain, not far from a farmhouse; they were plentiful even in the valley of the Tasman, near to the foot of Mount Cook, in the swamps of the Waikato, and on the Rotomahana. In contrast with many other birds in New Zealand the Pukeko is shy. It is a favourite object of pursuit, as its flesh is excellent, and by many preferred even to that of the Pheasant—an opinion, however, in which I by no means concur.

I have already mentioned most of the Natatorial birds, but I have forgotten two of the most characteristic species, namely, *Casarca variegata* and *Hymenolæmus malacorhynchus*, both of which I met with only in the alpine region. Search out a very rapid mountain-river, with whirlpools and rapids,

and you may be sure to find *Hymenolæmus*, or the "Blue Mountain-Duck" of the settlers. When I first observed a flock of these Ducks in such a locality as above described on the Tolli river, I hesitated to fire on them, so much was I struck by the wonderful sight of these birds swimming in a very rapid current with as great ease as if it were in smooth water. These Ducks are not at all shy: one may fire repeatedly at a flock and kill several before the rest take wing. *Casarca variegata* was not uncommon in the valley of the Tasman, and is, indeed, a most lovely species. There are no Geese in New Zealand, but both Black and White Swans (imported) thrive well in some localities. I met with both species, with young in down, in Waikato.

Of three species of Gulls observed, *Larus dominicanus* was the most common, and, to my astonishment, wanders up into the valley of the Tasman (a subalpine region), although it is chiefly a coast-bird, and follows the vessels from one port to another. Of *Larus novæ-zealandiæ* the same may be said, only that I did not see it so far inland. Of both species young birds were plentiful, distinguished easily by their black bills. *Larus pomareæ* is the true representative of our *L. ridibundus*. It must have been this species which I observed in hundreds in the plains near Oamaru, on fresh-ploughed ground, following the ploughmen, like our *L. ridibundus*.

Of Terns *Sterna frontalis* is the most common, and is usually seen in the bays and harbours; *Sterna caspia* I saw only once—two specimens, unmistakably belonging to this species, at the Spit of Napier. *Sterna nereis*, *S. antarctica*, and *S. fissipes* I met with only a few times; but all three species ascend as high up in the mountains as the valley of the Tasman river.

I have now only to refer to the Cormorants, of which a considerable number of species are to be found in New Zealand. Among them *Graculus carbo* is the most common. I found it along the coast from the Bluffs up to the Bay of Islands, and on the Tasman river, as well as at the Hot Lakes. Just as common was the small black Shag, often called *Graculus brevirostris*, which also goes far inland. The

splendid Spotted Shag, *G. punctatus*, keeps entirely to the sea-shores; I observed it only in the fjord of the Thames, and the White-vented Shag (*G. leucogaster*) I saw only in the Bay of Islands. The Gulf of Hauraki, I may add, was swarming with *Sula serrata* and the interesting little *Pelecanoides urinatrix*.

Hoping to be able to give, on another occasion, a more complete account of my observations on New-Zealand birds, I conclude by offering my best compliments and thanks to all my ornithological friends in the colony through the pages of 'The Ibis.' These I know they will get in due time, as the ornithologists of New Zealand are all devoted readers of 'The Ibis.' My next letter will, I trust, be again from the tropics, either from the islands of Torres Strait, whither I am now bound, or, perhaps, if I am able to carry out my plans, from New Guinea itself!

Between Sydney and Thursday Island,
October 1881.

XXX.—*Ornithological Notes of a Journey through Syria, Mesopotamia, and Southern Armenia in* 1881. By H. B. Tristram, F.R.S.

My expedition of last year was, as regards ornithology, the most barren I have yet made. My course lay, for the most part, over ground which has been again and again explored by naturalists. Palestine cannot now be expected to yield novelties: Northern Syria has few natural features which can differentiate its fauna from that of the Lebanon and Asia Minor. Scanty, indeed, must be the gleanings which Mr. Danford has left for any follower of his steps in Armenia; while the monotonous, treeless, and fertile plains of Mesopotamia afford no cover for any fugitives across the Tigris unnoticed by Mr. Blanford in Persia.

A few days of January spent in Egypt could not add much to our ornithological knowledge. One fact, however, forced itself most painfully on my notice—the startling absence of once familiar forms on the banks of the Nile. The Spoonbills, Avocets, and other Waders, of which I have, in days

past, made a goodly bag within a walk of Boulac, were no longer to be seen. I ascended the river by one of the new steamers, and from its deck, for a whole day, I saw scarce any thing better worth notice than a Hooded Crow or a Buff-backed Heron.

One piece of Egyptian antique art I must mention here, for it conveys a very interesting bit of ornithological history, which I have not seen noticed, though doubtless it is familiar to many readers of 'The Ibis.' In the museum at Boulac is a very fine fresco from a tomb of the Hyksos period, pronounced both by Loftus and by the late Marietta Bey to be the oldest existing painting in the world. This fresco represents six wild Geese in a line, life-size. The first, second, third, and sixth figures are those of a White-fronted Goose in different attitudes, most accurately painted; but the fourth and fifth figures are of the Red-breasted Goose of Siberia. How comes it here? We cannot help recalling how a like distinguished honour has been accorded to the Red-breasted Goose, depicted on the same canvas with the White Dodo of Bourbon in the painting now at Carisbrook Castle, reproduced by Prof. Newton in the Trans. Zool. Soc. (vol. vi. p. 373). But how does it happen that this bird is one of the earliest known subjects of Egyptian art, painted there more than 4000 years ago? Was it then a very rare straggler, which some fortunate fowler had caught, and which attracted notice by its rarity, or was it a bird then well known, but which has since become extinct in its whilom winter quarters? In the latter case, as it could never have been more than a winter visitor, this fresco may indicate a former westward extension of the summer range of this now exclusively Eastern Siberian bird.

From Cairo to Ismailia, and from Ismailia by the canal to Port Said, we saw nothing. But around the latter place, though itself the abomination of desolation, birds are still abundant, though my only souvenir is an Avocet; and the Ducks on the Damietta lakes seemed as numerous as ever, although they were very needlessly most anxious to avoid too close a recognition.

Arrived in Palestine, missions, antiquities, and topography elbowed out ornithology; for, save in rare instances, to be noticed hereafter, we saw none but old familiar forms. Some few additions to our lists we made, for the most part of species which it might be taken for granted were certain to be found.

Passing at once to the south, we found between Gaza and Beersheba the Crane (*Grus cinerea*), faithful to the same winter-quarters, and standing sentry on the same rocks on which I met him twenty years ago, returning towards evening in long wedge-shaped flocks, which, whooping and circling in indignation over our heads, declined to settle until they had watched and warned us at least a mile or two off their premises. Their warning-note seemed well understood by others; for I never saw more gazelles, jackals, and foxes started from unlikely coverts than these Cranes roused and scared as they swooped, Lapwing-like, provokingly in front of us. The Crane must be an early migrant, for I never noticed one after February.

It was not until the beginning of April that we noticed the vernal northward migration to any extent, although from the end of February seldom a day passed without our seeing some additional species in small numbers wending its way to the north. *Hirundo rustica* was to be seen occasionally every day in February on the lower plains, chiefly near the sea. The first Swifts (*Cypselus apus*) appeared over the heights of Moab at Medeba on 27th February; but they were few. Next the Alpine Swift (*C. melba*) arrived in flocks over the same plains. They were darting overhead till sunset. The following day they had all disappeared, and I never saw one again till we found them in their breeding-haunts further north. On the 7th March arrived the main body of the Common Swifts, overspreading the whole district, and remaining for nidification. They would seem to be nearly the most abundant of all the birds of the land during the period of their sojourn, and are content with meaner accommodation than they claim in England. A low ruined wall or the chinks of an old cistern are not despised by them. *Emberiza cæsia* over-

spread the hilly regions in scattered pairs, seldom many together, on 19th March. But we never noticed the Ortolan until the 5th April, when it covered the country, plain and hill alike, in small flocks, restless and wild, in numbers far exceeding those of its congener; nor did the Ortolans pair till a fortnight later, when *E. cæsia* was already sitting. Later still came the Meadow-Bunting (*E. cia*), which I noted for the first time on 28th April. But this bird I have never found breeding, except in the mountains, while the Ortolan haunts the oliveyards and cultivated lands, and *E. cæsia* affects only the scrubby and rocky hill-sides. Long after these arrived the black-headed *Euspiza melanocephala*, on the 7th May, when it, in its turn, appeared to be the most abundant of its genus, and to be making itself at home in any variety of terrain.

The Stork kept its appointed time, and stalked solemnly over the plains from the 10th April. I never saw one after the 22nd April. Up to that date there was a constant succession of arrivals from the south and departures for the north. The most wonderful flight of Storks was one which passed over us in the plain of the Upper Jordan on 19th April, steering due north, in the long V-like wedges with which we are so familiar in the flight of wild Geese. Party after party passed, perpetually changing their leader, and the hindmost of the longest limb frequently crossing over to take the rear of the other limb; but never, countless though their numbers were, did they fly in a mass, or in any other order than that of the wedge.

On the 16th April the House-Martin, a much later arrival than most of its congeners, passed northwards in flocks of many thousands; and the same day a vast cloud of Swifts (*C. apus*), quite apart from those which had already overspread the land, dashed in the same direction up the valleys between the Lebanon and Antilebanon. One or two birds which I have mentioned rather doubtfully in previous papers occurred to us very abundantly in this expedition. Among these I may mention *Lanius minor*, which I obtained once in 1858, but never saw in 1863, 1864, or 1872. This year it

was very common, though it did not return until the middle of May, while the pretty and lively little Nubian Shrike (*L. personatus*) made its appearance on the 11th April. I also satisfied myself of the identity of the Mountain-Finch, *Montifringilla nivalis*, with the western alpine species, and found it in the beginning of April on the lower grounds near the source of the Jordan. During my visit in 1863–64 we never secured a specimen of the Collared Flycatcher (*Muscicapa collaris*), though I felt sure I saw it on one occasion. This year I only once saw my familiar old friend *M. luctuosa*, while from the 16th April *M. collaris* attracted us everywhere, and on every different sort of ground. Its coming was sudden, its diffusion general. We had been riding across country for several days, up and down mountain-glens, taking a short cut from Tyre to Mount Hermon. Habitations were few, birds abundant. The Warblers had greeted us on all sides as we crossed the Galilæan hills; but not a Flycatcher did we see till, on the morning of the 16th April, crossing from the stupendous gorge of the Leontes to the head of the Jordan valley, and thence up the woodlands to the Banias, a bright little black-and-white bird, conspicuous among the foliage, started from almost every other tree, and often from the scanty scrub. We had been traversing similar ground the preceding day, and not one had we seen. But what struck me most was the general diffusion of the Flycatchers over a wide area without their being gregarious. I think I scarcely ever saw even a male and female together. Yet the whole land was overspread with them. And this continued as we travelled eastward and southward up to the 29th April. Everywhere the male bird was seen; but they certainly were not paired. Afterwards I only met with here and there an isolated couple engaged in domestic duties in Armenia. Now I had been over the very same ground during the same fortnight of the year in 1864, and never detected *M. collaris*; yet in the same country I did obtain *M. luctuosa*, both on migration at this date and afterwards breeding. Had the bird been in Palestine in 1864 I can hardly conceive how it could have escaped the notice of four keen and active naturalists. The Collared

Flycatcher must be somewhat fitful and uncertain in its migrations; and this is a point on which the observations of future travellers may throw some light.

I was much interested by coming across a large flock of Great Spotted Cuckoo on migration on 22nd April. Not for the first time, for I see I noted a large flock roosting one night close to my camp in the Jordan valley the 5th April, 1872. Unlike *Cuculus canorus*, *Oxylophus glandarius* migrates sociably in large bands. They travelled very leisurely, and while scattered along the whole length of the valley which they were crossing, kept up ceaseless conversation, some few jerking their tails on the edge of the cliffs, while the greater number pursued their course among the bushes, searching for food as they descended our side of the valley and climbed the opposite face. Their behaviour, but for their noisy tongues, was very like that of a well-ordered flock of Rooks, with their sentries on their feeding-ground. When they had reached the north ridge of the valley, they seemed to take stock of the situation, and very soon rose in the air, perhaps stimulated by our ineffective shots, and pursued their course till out of sight.

Another bird I was able to notice on its breeding-haunts more closely than I had hitherto done. This was my *Calandrella hermonensis*, which several critics have pronounced to be only a large form of *C. brachydactyla*. Apart from the fact that the haunts of the latter are invariably the plains, while the other is found only on the rocky heights, the flight is quite different, and it would be impossible for any one who had been once introduced to both species in their own homes to confuse them. *C. hermonensis* has a habit of perching on the edge of a rock or on the top of a small boulder, and uttering an oft-repeated, rather plaintive, but very clear note, utterly unlike that of the Short-toed Lark, and something like that of an exceptionally musical Yellowammer. It also is a solitary, and not a gregarious bird, and when it rises, though it has much of the soaring character of the Sky-Lark, it does not attempt a sustained song.

The only additions I have to make to my former Palestine lists are *Saxicola morio*, Hempr. & Ehr. (*S. leucomela*, Pall.),

which, curiously enough, I never saw, or overlooked, in former years, but which was found by Hemprich and Ehrenberg, and since their days in some plenty in Cyprus by Lord Lilford. I met with it frequently in the north of Palestine, but apparently on migration, though I think there can be no doubt that it breeds on the Syrian highlands. I also obtained near Beyrout the Golderest, *Regulus cristatus*, and the Great Snipe, *Gallinago major*. I saw also a specimen of the Bearded Tit (*Panurus biarmicus*), which had been shot in some reeds near Beyrout on November 18th by Dr. Van Dyck. These four are the only absolute additions I have to make to our fauna.

I may also note that the only specimen of the Cream-coloured Courser which I obtained is very different in hue from any others I have ever seen, being of a much deeper and richer colour. There is no other distinction which I can detect. In measurements it exactly corresponds with a dozen other specimens in my collection.

The Francolin appears to have now a wider range in Palestine than has hitherto been ascribed to it, and we several times put it up in places where, had it existed eighteen years ago, I could not have missed it. In the dry thickets of the Lower Jordan valley, on the east side, we often heard four or five males uttering their challenge soon after dawn, and succeeded in flushing them from the brushwood. They were also plentiful near the springs of the Jordan, at Tell Kadi, where, though one of our best nesting-grounds in 1864, we had never found them. In fact there were few patches of stunted scrub in the plains, wet or dry, where the Francolin was not heard. In Syria, north of the Lebanon, it is spread over the whole lowlands, affecting especially the myrtle-thickets. Though, alas! extinct in Europe, it would seem to be on the increase throughout Syria, while in Cyprus, according to common report, the annexation to England has sealed its doom.

When, in the early part of May, I crossed the Lebanon and journeyed up the coast, and then across the Ansairiyeh Mountains into the Syrian plain, I had a good opportunity of noticing how very sharp is the line of demarcation between several closely allied species. It is well known that deserts

and mountain-ranges form barriers far more definite than a much greater expanse of water; but it is remarkable that a range like Lebanon, rarely reaching an altitude of 10,000 feet, should prove a sharp dividing-line which certain species never cross, though the climatic and other conditions are identical on both sides of the line.

For instance, no Warbler is more conspicuous or abundant in the whole of Palestine than *Sylvia galactodes*, the Rufous Warbler. After the last week in April it is to be seen everywhere on upland and lowland alike, expanding, jerking, and fanning its tail, with its conspicuous white bar, on the bare fig-trees, among olives, on the top of any little shrub, or on the pathway in front of the horseman, hopping fearlessly on at his close approach. No specimen of its ally (*S. familiaris*) have I ever noticed among the thousands I have seen, though I was keenly on the look out for it. But when, after leaving Beyrout, I followed the coast-line northwards, so soon as we had passed the headlands of Lebanon and entered the rich plain of Tripolis, not a solitary *S. galactodes* was ever seen, while *S. familiaris* was as abundant everywhere as its congener had been in the south. During the whole of my journey through Syria, across the Euphrates, then up to the Tamid and through Armenia and Cilicia, I never for an hour lost sight of *S. familiaris*, most appropriately so-named. Never once did I see *S. galactodes*. North and east we have the one species; south and west, as far as Algeria, Spain, and Morocco we find the other. Yet *S. familiaris*, in returning from its winter-quarters, must pass through Palestine in order to reach its own summer retreats. If the respective ranges were as Mr. Seebohm puts them in his admirable Brit. Mus. Catalogue, there would be less difficulty; but he has omitted Palestine from the breeding-quarters of *S. galactodes*, though he enumerates my specimens taken while breeding, and he states that *S. familiaris* breeds in Palestine. This would certainly simplify matters if it only did so. But it does not.

Another curious proximity of closely allied species I noted in the case of the two Rock-Nuthatches. The larger form,

Sitta syriaca, has never been found in Syria; but under the red-tapeism of the commentators on the Brit. Assoc. Rules it retains the name ("lucus a non lucendo"), while the smaller form, *S. neumeyeri* is found throughout all the mountainous parts of Galilee and Syria. But when, after crossing the Syrian plains, we begin to ascend the southern spurs of the Tamid range, here and throughout Armenia we find the large species, *S. syriaca*, the specimens equalling the very largest from Turkestan. So far, however, from supplanting its lesser relative, *S. neumeyeri* appears to be, throughout Southern Armenia, more numerous than in Syria, and that side by side with the larger species. I have shot a pair of each on the same rock at the same time. I admit them to be distinct races, but grudge specific distinction to mere size, especially when, as here, I could detect no differences in the voice.

Another bird which seems to have its boundaries defined by a very sharp line is the Magpie (*Pica rustica*). Though abundant in Cyprus, it is never seen in Syria, either north or south of the Lebanon; but about a day's ride north of Aleppo, on the borders of Armenia, just as we begin to ascend the lower Tamid range, it appears haunting the white poplars which fringe the streams, and is spread in small numbers throughout Armenia. Why it should avoid the Syrian plains and decline to leave the southern slopes of the Tamid is difficult to understand. Russell gives it in his list of the birds of Aleppo; but as its range is still so close to that city that Dr. Russell may have often seen it, I do not see any ground for supposing that it has retreated north within the last century and a half.

But the most interesting ornithological sight I was privileged to enjoy in Syria was the Rose-coloured Pastor on migration. On May 26th I was on the ruins of Kelat Seijar, the ancient Larissa, a romantic and isolated fortress on the banks of the Orontes. The river flows due west towards it down a deep glen, with cliffs of great height on the south, but lower on the north. The country on both sides is a vast plain, but generally higher on the left than on the right bank of the Orontes. Just at this spot a bold spur of rock runs

from south to north, abruptly terminating in a bluff. For the last two miles the promontory is not over 200 yards wide. The river meets this wall of rock at right angles, and dashing against it, suddenly turns due north and flows through a magnificent fissure till it reaches the end of the bluff, when it turns as sharply again, rounds it, and pursues its westward course. Along this ridge was perched the citadel of Larissa. Strong and almost inaccessible as it is by nature, Seleucus still further strengthened it by cutting a huge fosse, 300 feet deep, exactly opposite the spot where the river strikes the cliff, but the bottom of the fosse is still several hundred feet above the stream. In fact one might imagine that the Syrian king had some idea of making a channel for the river at this point, the huge trench being exactly in a line with that worked out by the water. We were standing on the top of the massive battlements which overhang the fosse, enjoying such a variety of bird-life as one can seldom watch in such a narrow space. The battlement on which we lay was, perhaps, 60 feet above the gorge, and our presence was quite ignored by the busy throng below us. Some dozen pairs of Lesser Kestrel (*Tinnunculus cenchris*) were disporting themselves in front of their inaccessible nesting-places, or hovering, apparently motionless, in mid air a hundred feet beneath us. A busy flock of Bee-eaters (*Merops apiaster*), which had burrowed out their nests in a bank round the corner, poised themselves, rose and fell, suddenly perched on the cliff-side, and, after a moment's pause, darted out again, practising the evolutions of Kestrel, Swallow, and Flycatcher by turns. Softly and silently a few pairs of Rock-Swallows (*Hirundo rupestris*) stole backwards and forwards, skimming past the hovering Kestrel with perfect indifference. A pair of Wall-creepers were gliding along the opposite face of the fosse, zigzaging up and down with wings partially open and apparently motionless. Rollers by the dozen were screaming, tumbling, and darting up and down the narrow fissure, chasing with dissonant shrieks a few Jackdaws, who were evidently tabooed by every one else, but who resented their ostracism. On a sudden, with a whiz and a sound of wings almost deafening for a moment, a dark

cloud dashed from the river's channel through the opening, and immediately deployed in the plain to the west. At first, as they approached, they might have been taken for the Common Starling; but when we looked down on the rosy backs flashing beneath us, it was plain enough that we had come on a migration of the Pastor. Hardly had this flight passed, when, turning our eyes up the river, we saw another cloud gliding, like a balloon, just over the ravine of the Orontes towards us. About a quarter of a mile above us was a small islet in the centre of the stream, of perhaps a quarter of an acre in extent. It was covered with rich long grass. The balloon hovered over it for a moment, then rapidly expanded into the shape of an inverted parachute, then flattened out, then became a spiral column, then, like a water-spout, dropped on the islet, which, in less time than it takes to write it, was suddenly transformed from a green oasis to a black patch. Not a trace of green could be seen; the whole was simply a mass of birds, so closely packed that the rose-colour was invisible—the black of heads and wings had absorbed all else. After remaining here a few minutes, as if to take breath, the mass suddenly rose and dashed in a long line through the fosse. They took about a minute to pass. I fired once at random (there was no need to choose a thick place), and an hour afterwards I picked up five dead birds, all of them in full plumage. We waited for some time, as flight after flight, in rapid succession, passed down the river's channel, often in strange forms—wreaths, balloons, columns—deploying into long lines, never leaving the river's course, but generally high in the air above it. But all of them as they approached this cutting dropped from their aerial height, and leaving the tortuous stream, struck right through the cleft far below us. The plain westward is uninterrupted, and here they at once spread themselves out, and, after skimming very near the ground, at length alighted, probably in quest of locusts.

From Kelat Seijar we pursued for two days a north-easterly course over the Syrian plain, and through the whole journey flock after flock of Pastors passed us, all pursuing a due west route. At one place we came suddenly, after mounting a gentle

ascent, on the crater of an extinct volcano, full of water and surrounded with basalt boulders. As we came up, one of these flights, which had alighted to drink, rose in alarm and darkened the air overhead. About a dozen fell to a random shot, and every one I picked up was in full breeding-plumage. At another place a solitary tree over a well was so covered with them that the colour of the tree changed from black to green as we approached. Once we came on a patch of some acres which had recently been visited by locusts. The old locusts were gone, but the young, not more than a quarter of an inch long, made the ground literally alive. They rose at every step of our horses like sand-lice on the sea-shore from a piece of seaweed left by the tide. Just after we had passed through this patch of devastating flight, I turned my head and saw a great globe in the air. It suddenly turned, expanded, and like a vast fan descended to the ground. We waited a few minutes, and saw acres covered with a moving black mass, dappled with pink. In a short time the mass became restless, and we rode back. The birds rose quietly, but not till we were close on them, and only those within dangerous distance. But not a young locust could we see. The Pastor had well earned its name of the "Locust-bird," and one batch of foes to man and his labour had been promptly and for ever exterminated.

After these three days I never again saw a Pastor. The natives all declared their visits to be most uncertain and occasional. They assured me they had not seen one for three years, though they always look and hope for them in locust-years, which these last had been. They always come from the east and go to the west. They never saw them return, nor did they ever hear of their breeding here. Throughout Syria the bird is everywhere familiar by name, but nowhere is it known to sojourn; nor was I able to ascertain whether its migration is always at the same season. When and where do they breed? Among the hundreds of thousands which crossed our path I did not detect one in young plumage; and therefore they could not yet have bred, although it was near the end of May—unless, indeed, they had left their

broods in India, and taken their summer holiday free from family cares. As it is, their behaviour reminds one very much of the erratic customs of the Waxwing. I ought to have mentioned that these amazing flocks keep up an incessant chatter, a deafening babble, not so much overpowering by its volume of sound, as implying a myriad of voices, "the voice of many waters," not, so far as I could judge, to be distinguished from the notes of a great swarm of Starlings.

From Aintab I struck down to the Euphrates at Birejik, where Mr. Danford had promised me a rich treat in the opportunity of studying the Bald Ibis (*Comatibis comata*); nor was I disappointed. The shores of the Euphrates, so far as I have seen them, are, for the most part, bare and uninteresting. Trees and birds are alike scarce. Gulls flit up and down; but I never could identify the species, though among them the large *Larus ichthyaetus* must have been one. There are many Waders; but of course these are all of familiar species—Redshank, Green Sandpiper, Kentish Plover, and especially the Pratincole, being the most abundant. The neighbourhood of Birejik, however, is exceptionally good ground for the ornithologist. Though the right bank on the Syrian side slopes down almost insensibly from the plain, the river is fenced on the Mesopotamian side by a long range of bold and lofty cliffs. On them is perched the town of Birejik, where the cliffs leave but a narrow strip of low-lying land by the river-bank. Above and below the cliffs recede, and the little plain is well-wooded and carefully cultivated. Here, on both sides, is abundance of bird-life. The telegraph-line to Teheran here crosses the Euphrates, and the Bee-eaters prefer its wires to any other perch. I was delighted to find here, for the first time in any numbers, a colony of the Persian Bee-eater (*Merops persicus*), not so numerous as *M. apiaster*, but still plentiful. The habits of the two species are markedly different when seen together. *M. persicus* is by no means shy, and perches much more frequently than the other, settling on low trees, and frequently on the top of a thistle-tuft.

While waiting for the ferry-boat, as the shades of evening

were coming on, long lines of a large black bird, like Ravens in the distance, began to pass over us, flying low and heavily to the other side of the river. As they approached, frequently within a few feet of our heads, we recognized them at once as the great Bald Ibis, *Comatibis comata*, whose acquaintance I had only made once in my life before, in the Sahara. Noble fellows they looked, as their long red bills outstretched and their red legs and feet contrasted with their resplendent black plumage, lazily flapping their wings as they sailed, rather than flew, noislessly over us. We might have brought down as many as we pleased, but were warned by the by-standers that the birds were sacred, and that it would be a crime to kill one. I had no wish to get into trouble on my first entrance into Mesopotamia, and so bided my time. The birds congregated on the other side of the water, exactly after the manner of Rooks, some among the houses, many on the old castle, and more along the cliffs higher up.

Our quarters at Birejik were at a schoolmaster's house (a native Christian), high up in the town, and just under a cliff inhabited by a colony of Ibises. Next morning the birds all disappeared at daybreak, and the rookery was apparently deserted till sunset. Not really so, for I discovered that many young birds were still in their nests, though all were hatched, and we were too late (8th June) for eggs. The inhabitants of Birejik are chiefly Moslem, and believe that the Ibises contain the souls of the departed saints. It is consequently a crime to kill them, and their nests, though easily accessible, are never disturbed. My host, however, told me he could put me in the way of obtaining specimens. Accordingly, in the afternoon, a young man called to inform me he could take me a little before sunset to a spot where I could secure as many as I wished without being seen. We started forth, and armed with a permit to visit the ruined Saracenic castle, we were passed through the gate of the citadel, which is under the cliff on which the old fortress is perched; and passing through it, we stationed ourselves unobserved in a recess, away from the town, just under a ledge, which is one of the favourite roosting-places of the holy bird.

Here we could see them as they quietly sailed home at sunset. I secured five specimens, which dropped at my feet in quiet succession. The noise disturbed the young ones above, and seeing a head and neck projected over the cliff above, I was fortunate enough to hit it; but it fell back out of sight, and I gave up my prey as lost. In a minute or two, however, it must have rolled over in the death struggle, for it fell dead at my feet. The bird was fully fledged, and quite able to fly, having scarcely any trace of the nesting-plumage; but instead of the large bony protuberance at the back of the skull and the bare red skin, the base of the skull presented no peculiar development, and the whole head was covered to the base of the bill with thick short feathers, mottled black and white. I afterwards saw some younger nestlings looking out over the ledge, and others pacing backwards and forwards, as though preparing to try their pinions. The nests of the birds seemed to be a handful of twigs and straws placed close to the back of the rock, and the birds sit almost as close as sea-fowl on a ledge at Flambro' Head. Our discharges had had no effect in scaring away the rapid arrivals; and as I already had more on hand than I could accomplish, after waiting till it was nearly dark, we packed up our six prizes in a large Arab cloak, which my companion threw over his shoulder, so as to conceal the contents, and took our departure, I following my guide at a cautious distance, so as to avoid exciting the suspicion that my gun had any connexion with his burden. The heat was so intense, the thermometer 96° in the shade, that I had to work throughout the greater part of the night in the yard of the house in order to preserve the specimens; and I have no desire ever again to skin six Ibises after a hard day's work, by lamplight, in a temperature of near 100°.

The people assured me that these birds only come for the breeding-season, and are never seen during the rest of the year, not even a straggler remaining; and this is the only breeding-place I could hear of during my travels, nor did I ever see a Bald Ibis on the Euphrates or away from it, except in the environs of Birejik. Considering that it breeds only on the Mesopotamian side of the river, I am at a loss to under-

stand its claim to appear in Dresser's 'Birds of Europe,' except that my friend thought it a pity that it should be left any longer without a memoir.

Elsewhere on the Euphrates I frequently started the Black Stork, which seems a very solitary bird, as I never put up two together. I know few more attractive sights than a Black Stork suddenly rising from a mud-bank in front, and then working his legs behind him as a rudder, while he circles round you till he has got well overhead, so as to take stock of the intruder from a safe distance.

At Carchemish, in the great Hittite mound, the employés of the British Museum have been making sundry excavations. These have been only moderately prolific, the chief objects of interest, and the Hittite slabs, having been found, not in the mound, but under the Greek city of Hierapolis below. But their labours have not been lost on the Bee-eaters, who have found the sides of the shafts most convenient for nesting, the débris being soft and easily penetrated. Both species, *M. apiaster* and *M. persicus*, were breeding here in colonies in the same shafts. But the moment they quitted the mound they held no further intercourse. *M. apiaster* hunted high in mid air, or hovered over the river and took flights beyond it. Its congener at once betook himself less adventurously to the plain and ruins beneath, and there skimmed close to the surface, perching continually on the stones which strew the site of the ancient metropolis.

When from Mesopotamia we turned north and, crossing the Euphrates at Samosait, entered Southern Armenia, we were at once surrounded by a very different fauna and flora from that which we had left. Instead of the yellow rose of North Syria, or the powerfully scented white rose of the Euphrates, we were in the home of the sweetbriar. Instead of the Isabel Wheatear (*Saxicola isabellina*), which, with the Calandra and Short-toed Larks, was almost the only winged denizen of the plains, where it is in amazing numbers, every turn, every clump of trees now introduced to us some old or new feathered friend. Not that I saw one which has not been commented on or reported by Mr. Danford; but there

are few mentioned by him which I did not see. I have seldom come across a richer piece of collecting-ground than the wooded mountain-track between Beshni and Nadjar. In places where we followed the course of a little rocky stream in a winding woody dell, the variety of bird-life was bewildering. Here, and here alone, I obtained *Emberiza cinerea*, which must be a most local bird. I found it feeding in small companies, probably broods, in little patches of marshy grass, and then concealing itself in the thick scrub. Here, too, were the large and small forms of Rock-Nuthatch together. The charming Robin-Chat (*Cossypha gutturalis*) had not ceased to sing, and was most abundant, but only where trees and rocks intermingled. The cedars were everywhere tenanted with little bands of *Parus lugubris*, and *Picus medius* occasionally showed himself. Both Magpie and Jay could be seen and heard, the latter especially numerous. I cannot conceive a field better likely than this to reward an oologist earlier in the season. Every Warbler, Redstart, and Bunting of Eastern Europe seemed to abound; and I should have been well content, had time permitted, to have stayed some days on these mountain-sides. We were about 7000 feet above the sea-level.

I must not conclude without alluding to one discovery, which I have already brought before the Zoological Society*, viz. the breeding-colonies of *Plotus levaillanti* and *Phalacrocorax pygmæus* in the Lake of Antioch, in Northern Syria. The lake, which is many miles in extent, is very shallow, swarming with eels, which appear to form the staple of the diet of the inhabitants of Antioch. On the northern side of the lake are thousands of small islets, with only a few feet of water between them, so that one can wade easily from one to the other. Here the Snake-bird, Little Cormorant, and Common Tern (*Sterna hirundo*) have their common breeding-ground. The islets are covered with very coarse grass, not reeds, and a sort of low marsh-myrtle. For its nest the *Plotus* merely seems to tread down a tuft of coarse grass or rushes, or to settle down the centre of a little bush, much after the fashion of a Coot, but not so neatly. Wherever

* *Cf.* P. Z. S. 1881, p. 826.

there is a stick on which it can perch it may always be seen, looking, I presume, after the eels. It is a very late breeder, not hatching till the beginning of June. The nests are, for the most part, very close together; and as soon as the young can fly the whole colony suddenly disappears, and is not seen again till the next spring, arriving, so far as I could learn, a little later than the Cormorants, at the end of April. I was surprised to find the Common Tern breeding in these lakes, and no trace whatever of the White-winged Black Tern, so common on the coast, and of the Whiskered Tern, which would certainly be found in such localities in Algeria or Tunis.

I fear these notes must have exercised the patience of those readers who have got so far as this. But I crave their indulgence, reminding them that, however absorbing the interest, historical and archæological, of these regions, they are neither fresh fields nor pastures new to the naturalist, though even here the nesting-places of the Bald Ibis and the Darter may afford some inducement to younger and more energetic travellers to follow in our steps and make amends for our deficiencies.

XXXI.—*Further Notes on the Ornithology of Siberia.*

By Henry Seebohm.

Since my last notes on the ornithology of Siberia (Ibis, 1880, p. 179) I have received three small collections of birds from that country, two from my collector in Krasnoyarsk, Mr. Kibort, and one from Samarcand, the latter sent me by Dr. Staudinger, of Dresden. Among the examples contained in these collections are some of unusual interest.

Falco babylonicus.

A fine example of Gurney's Falcon from Samarcand is dated 5th March.

Falco subbuteo.

Mr. Kibort has sent me an adult male Hobby and bird of the year from Krasnoyarsk.

Buteo ferox.

An example of the Long-legged Buzzard from Samarcand is in the rufous phase described by Bogdanow from the Caucasus. Possibly this so-called "phase" of plumage may represent the eastern form.

Syrnium uralense.

Mr. Kibort has sent me a fine example of the arctic form of the Ural Owl from Krasnoyarsk. It is the greyest example I have ever seen. Examples from Hakodadi are slightly more rufous, those from the Amoor still more so, and those from Lapland are the most rufous of all. If Pallas's name be retained for the arctic form, we must call the Lapland bird *Syrnium lituratum*.

Asio ægolius.

Examples of the Short-eared Owl sent me from Krasnoyarsk are very interesting. The female does not differ from our bird; but the males are very much greyer, and are good specimens of the *Strix ægolius* of Pallas, the arctic form of *Asio brachyotus*. In China, as might be expected, our bird reappears.

Athene bactriana.

Three examples of the Little Owl from Samarcand belong undoubtedly to the species originally described by Capt. Hutton from Candahar, and afterwards redescribed by Swinhoe from near Shato, in North China, as *Athene plumipes* (P. Z. S. 1870, p. 448). This appears to be a good species. The toes are thickly feathered almost to the claw, whilst in *A. noctua* and its ally they have only a thin covering of hairy bristles. The tarsus is also much shorter, measuring 1·1 to 1 inch, whilst that of *A. noctua* measures 1·4 to 1·25. *Athene glaux* is conspecific with *A. noctua*. Examples of the former from the countries south of the Mediterranean are very distinct from those of the latter from the countries north of the Mediterranean; but examples from Greece are paler, approaching the southern form; and in Asia Minor both extremes occur together with intermediate forms.

LANIUS MAJOR.

Of two examples of Pallas's Grey Shrike from Krasnoyarsk, one appears to be thorough-bred, with no white at the base of the outer webs of the secondaries, the other shows distinct traces of white, though to a very small extent.

LANIUS LEUCOPTERUS × EXCUBITOR.

Another example of a Grey Shrike from Krasnoyarsk is the Siberian form of *L. homeyeri* with the white rump.

LANIUS LEUCOPTERUS.

Two examples from Krasnoyarsk are thorough-bred White-winged Grey Shrikes. This species has recently been renamed *Lanius prjevalskii* by Bogdanow.

SAXICOLA CAPISTRATA.

I have a male of this Indian Chat from Samarcand.

SAXICOLA OPISTHOLEUCA.

I have both male and female from Samarcand of Strickland's Chat.

ERITHACUS CYANEUS.

A fine adult male of the Siberian Blue Robin from Krasnoyarsk slightly extends the known geographical range of this species to the west.

RUTICILLA ERYTHRONOTA.

Six examples of Eversmann's Redstart from Samarcand are interesting. In my volume of the 'Catalogue of Birds in the British Museum' (p. 348) I erroneously included *Ruticilla alaschanica* of Prjevalsky as a synonym of this species. Prjevalski's bird is quite distinct, the black of the lores, ear-coverts, and sides of the neck being replaced by slate-grey.

TROGLODYTES PALLIDUS.

An example of the arctic form of the Common Wren from Samarcand is very distinct from our bird. Sharpe recognizes it as a subspecies only in his last volume of the Catalogue of Birds. It probably will prove to be so; but I am not aware that intermediate forms have yet been found. Sharpe

places it in the genus *Anorthura*. This is another instance of the folly of attempting to carry out the Stricklandian rules of nomenclature to the letter. There ought to be a rule that no author can raise a specific name into a generic name without making the species the name of which is thus stolen the type of the new genus. The common sense of ornithologists has hitherto preserved them from violating such a self-evident proposition. I venture to think that no ornithologist of any standing will follow Sharpe in this attempt to rob poor Jenny Wren of a name she has borne for three quarters of a century.

CERTHIA TÆNIURA.

Eight examples of this species from Samarcand, originally described by Severtzow from Turkestan, appear to be distinct from *Certhia himalayana*. They are somewhat larger and paler in colour than their Indian ally, with much longer bills. In length of wing they measure from 2·7 inches to 2·9 (*C. himalayana* 2·65 to 2·8), and the length of the culmen varies from ·85 to 1·05 (*C. himalayana* ·65 to ·75). It is not improbable that intermediate forms may exist in intermediate localities.

CERTHIA SCANDULACA, Pall. Zoogr. R.-A. i. p. 432.

This species, of which Mr. Kibort has sent me an example from Krasnoyarsk, was originally described by Pallas. It may be described as a pale or arctic form of our Creeper, and is probably identical with the northern form found on the American continent. Its southern limit in Central Asia appears to be Kashmir, where it has received the name of *C. mandellii*.

SITTA SYRIACA.

Six examples of this large pale Rock-Nuthatch from Samarcand measure respectively in length of wing 3·52 inches, 3·45, 3·35, 3·3, 3·25, and 3·25. Unfortunately they are not sexed. It is not known that intermediate forms between this species and *Sitta neumeyeri* occur, though both of them are found together in some localities*.

* *Cf. suprà*, p. 418.—EDD.

Cinclus asiaticus.

I have an example from Samarcand.

Henicurus scouleri.

An example of the Short-tailed Forktail from Samarcand is, so far as I know, obtained further west than has hitherto been recorded of this Himalayan bird.

Regulus himalayensis.

Three examples of this species from Samarcand belong to this race. It is intermediate between *R. japonicus* and *R. cristatus*, not quite so grey on the sides of the head and on the nape as the former, but not so green as the latter. The females are, however, greyer than those of either race. Examples from Asia Minor are intermediate between *R. himalayensis* and *R. cristatus*.

Accentor atrigularis.

I have two skins from Samarcand.

Acanthyllis caudacuta.

An adult female skin of the Spine-tailed Swift, obtained at Krasnoyarsk in July, extends the known breeding-range of this species more to the west.

Picus syriacus-leucopterus.

A series of thirty skins of this species from Samarcand exhibits considerable variation, and goes far to prove that *P. syriacus* and *P. leucopterus* are conspecific, and that *P. leptorhynchus* is one of the intermediate forms between them. *P. syriacus-leucopterus* vel *P. leptorhynchus* is found in Afghanistan, and was misnamed by Colonel Swinhoe "*P. sindianus*, Gould" (*anteà*, p. 102). These Woodpeckers are quite distinct from *P. major* and its allies.

Picus cissa.

Examples of the Great Spotted Woodpecker from Krasnoyarsk, as well as others from Archangel, are easily distinguishable from British and South-European skins, Sharpe and Dresser's assertion to the contrary notwithstanding. *Picus cissa* of Pallas may always be known by its pure white underparts. *P. major* reappears in China.

Caprimulgus ægyptius.

An example of this species from Samarcand may throw some light on the appearance of this bird on Heligoland.

Alcedo ispida-bengalensis.

I have an example of this species from Samarcand and another from Krasnoyarsk. The Indian bird is distinct from the European species, being constantly shorter in the wing, though having the bill quite as long. The difference between the two species is, however, completely bridged over by intermediate forms from South Siberia, China, and Japan. It was to one of the infinite series of these intermediate forms that Reichenbach gave the name of *Alcedo pallasi*.

Pyrrhula cineracea.

Mr. Kibort has sent me a skin of the Cinereous Bullfinch from Krasnoyarsk. I have in my collection skins from the island of Askold, near the harbour of Vladivostok, from the river Ouon, a little to the east of Lake Baical, from Turkestan, and from Asia Minor.

Carduelis major.

Carduelis major-caniceps.

Carduelis caniceps.

A series of eleven Goldfinches from Krasnoyarsk, all dating between 25th October and 2nd January, exhibit Taczanowsky's Goldfinch and Eversmann's Goldfinch, and a gradual series of intermediate forms between them, probably the result of the direct interbreeding of the two extreme forms with each other and with the hybrids of different degrees, as is the case with the Carrion and Hooded Crows in the same valley*.

Otocorys brandti, Dresser, B. Eur. iv. p. 401.

An example of Brandt's Shore-Lark from Samarcand is identical with the species known as *O. albigula*, Brandt. But "*Otocoris albigula*, Brandt," of Bonap. Consp. i. p. 246, which is the earliest publication of the name known to exist, refers to another bird, namely *O. penicillata*, a fact which puts the name *O. albigula* out of court.

* *Cf.* P. Z. S. 1882, p. 134.—Edd.

TETRAOGALLUS HIMALAYENSIS.

I have a fine example from Samarcand.

PTEROCLES ARENARIA.

I have two examples from Samarcand.

SYRRHAPTES PARADOXUS.

I have two examples from Samarcand.

CHARADRIUS VEREDUS.

I have an example from Samarcand. The axillaries are grey, but the tarsus only measures 1·65 inch, whilst in two examples from Shanghai it measures respectively 1·7 and 1·88.

CHARADRIUS VANELLUS.

I have an example of the Lapwing from Samarcand.

CHARADRIUS GREGARIUS.

I have four examples of the Sociable Plover from Samarcand.

PHALAROPUS HYPERBOREUS.

I have two skins of the Red-necked Phalarope in winter plumage from Samarcand.

It would seem that the more we know of Siberian birds the greater number of easily recognizable Siberian forms present themselves, and many of Pallas's names, which have been consigned for half a century to the limbo of synonyms, will have to be revived. Though the 'Zoographia Rosso-Asiatica' was published in 1811, the first edition was almost entirely destroyed by fire, and this valuable work remained practically unknown to European ornithologists until the reprint in 1831. Since then modern ornithologists have treated Pallas's names with scant courtesy. In some cases, where they have had an opportunity of comparing examples from Siberia with skins from Western Europe, they have admitted the validity of his species; but in other cases, where they have had access to East-European skins, the existence of intermediate forms has been alleged as a reason for ignoring them, and Siberian forms have too often been passed by with a contemptuous sneer, as beneath the notice

of science. In the majority of cases, however, the writers have never seen a Siberian skin, and Pallas's names have been enrolled in the list of synonyms without note or comment. A fertile cause of this neglect is to be found in a blind adherence to the binomial system of nomenclature. It is time that the study of ornithology should be freed from the red tape which the antiquated philosophers of the British Association have wound around it. With these writers a variation is either specific or it is nothing. They attempt to draw a line where nature has drawn none. Their dogmatic criticism of Pallas's species, "we consider this a good species," or "we cannot admit the validity of this species," reads, in the light which the theory of evolution has thrown upon these questions, like a satire upon their own ignorance. The fact that for more than a century a binomial system of nomenclature has been more or less rigidly adopted by ornithologists is an obscure circumstance of comparative small moment; but the fact that, for example, the Nuthatch of Western and Southern Europe is represented in Scandinavia by a semiarctic form modified by the influence of the Gulf-stream, and that eastwards a truly arctic form occurs, which, in the valley of the Amoor, again becomes semiarctic, but of a different type from the western semiarctic form, whilst in China the South-European form reoccurs on a somewhat smaller scale, and in the mountains of Assam the western semiarctic form is also reproduced on a slightly smaller scale, is a fact, or rather a series of facts, of the deepest interest to the student; and if the binomial system of nomenclature cannot be adapted so as to catalogue these facts in a proper manner, then the sooner the binomial system of nomenclature is cast to the dogs the better.

The fact remains that many Siberian birds which are common to Europe *do* present marked differences in colour, not only amongst resident birds, but also amongst migrants. The colours of the Siberian birds are more pronounced, the blacks are blacker and the whites are whiter. Darwin would doubtless explain these facts on two hypotheses. Where the change of colour resembled that of the surrounding objects,

the change would be said to be protective; and where it contrasted with them, it would be ascribed to sexual selection. No doubt in some instances the male Siberian bird does differ from his relation in Western Europe more than their respective females do; but I am not aware of any evidence to prove that the oriental taste for rich colour is shared by the bipeds with feathers with the bipeds without feathers. I am inclined to ascribe the differences under consideration rather to the direct influence of climate, which may have a chemical action on the colouring-matter of the feathers, in the absence of natural sexual relations to interfere with its operation. But whatever the cause may be, the effects are great ornithological facts, which can no longer be ignored by the student; and our system of nomenclature must be made to recognize them at any cost, even if its binomial character has to be modified for the purpose. Probably the simplest course will be to give binomial names to the two extreme forms, whether the difference between them be specific or subspecific, and to reserve the trinomial nomenclature for the intermediate forms which must exist in the latter case. No doubt such a system increases the number of names with which the memory has to be burdened, and fails to show the relationship of nearly allied species. It is high time, however, that ornithologists came to some mutual understanding on this question. Are we in the future going to discriminate between the two forms of the Great Spotted Woodpecker or not? And if we are, what system are we going to adopt? In this paper I have called them respectively

Picus major,
Picus cissa.

The American plan would be to call them

Picus major,
Picus major, var. *cissa*.

An improvement upon this would be

Picus major (*typicus*),
Picus major (*arcticus*).

At present we either do not discriminate them at all, like

Sharpe and Dresser; or we adopt an unscientific mixture of Latin and English, and speak of

The typical form of *Picus major*,
The arctic form of *Picus major*.

Perhaps, after all, the last is the best, as giving the greatest amount of information with the least strain on the memory, except in the case of intermediate forms. No one can deny that *Picus major-cissa* is a much better phrase than "an intermediate form between the typical and arctic forms of *Picus major*."

XXXII.—*On a new Species of Hemipode from New Britain.* By W. A. Forbes, B.A., M.B.O.U., Prosector to the Zoological Society.

(Plate XII.)

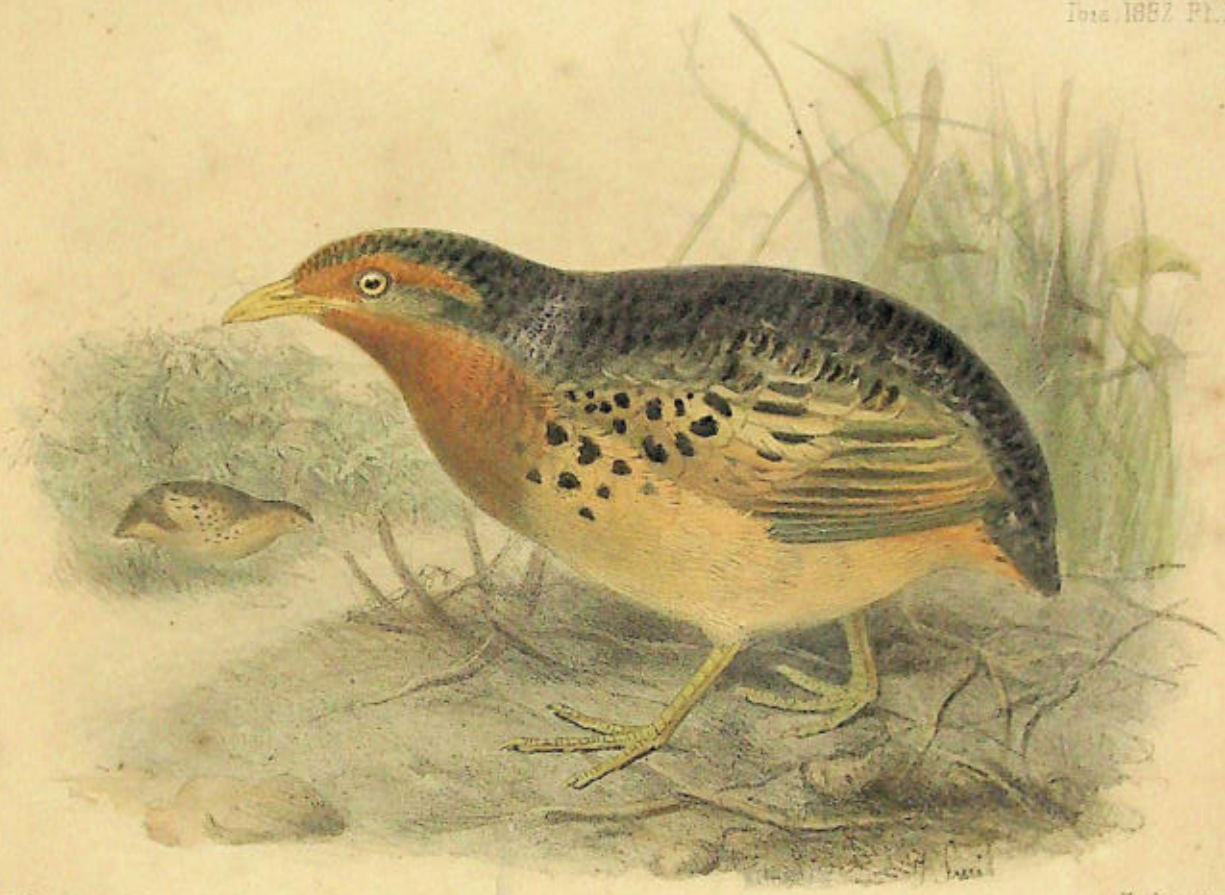
A few months ago I received, through Mr. Sclater, a small collection of birds in spirit from various parts of the world, which had been forwarded to him for identification by Herr J. D. E. Schmeltz, Curator of the Godeffroy Museum in Hamburg. Amongst these was a single specimen (which on dissection proved to be a female) of a small *Turnix* from New Britain, where it had been collected by the late Herr Kleinschmidt, who was murdered by the natives of that inhospitable island shortly afterwards.

I at first thought that this bird was referable to the Australian *Turnix melanonota* of Gould; but having compared it with Gould's types of that species, now in the collection of the Academy of Sciences in Philadelphia, as well as with a series of ten specimens in the British Museum, I am inclined to consider it specifically distinguishable from the Australian bird, and propose therefore to call it

Turnix saturata. (Plate XII.)

Affinis *T. melanonotæ*, sed rostro crassiore magisque curvato, superciliis magis rufescentibus, et colore subtus omnino (præsertim in mento, gula et pectore) intensiore distinguenda.

Long. al. 3·2, tars. ·85 poll. Angl.



J. Smit lith.

TURNIX SATURATA.

Hanhart imp.

Besides my specimen I have seen two quite similar ones, also females, one kindly lent me by Canon Tristram, the other in the collection of the British Museum. Both these were collected by Mr. Layard in Blanche Bay, New Britain.

Turnix saturata differs from the Australian *T. melanonota*, to which it is closely allied, in its generally darker colour above, as well as in the greater intensity of the rufous colouring of the underparts, this being not only of a much deeper hue, but extending quite onto the throat and chin, the latter being almost white in *Australian* examples of *T. melanonota*. The rufous eyebrows are also much more conspicuous, and, as so often happens in insular forms as compared with their continental representatives, the beak is much larger and thicker, besides being more curved and of a dirty yellow colour, as opposed to the generally horny colour of the beak of *T. melanonota*.

T. saturata as yet appears to have been only found in New Britain and the Duke-of-York group*, in which latter locality it was met with by Mr. Layard, Jun. ('Ibis,' 1880, p. 302). It is, I believe, the only species of the Turnicidæ yet known as inhabiting the Papuan Islands, eleven altogether of that group being found in the Australian region. Of these the following is a complete list. Of all of them, except *T. scintillans*, I have seen skins in the collections of the British Museum.

1. Turnix melanogaster.

Turnix melanogaster, Gould, B. A. v. pl. lxxxi.; Handb. ii. p. 178.

Eastern Australia (*Gould*).

2. Turnix varia (Lath.).

Turnix varia (Lath.), Gould, B. A. v. pl. lxxxii.; Handb. ii. p. 179.

New South Wales, Victoria, S. Australia, and (?) W. Australia (*Gould*); Rockingham Bay &c. (*Ramsay*).

* It remains to be seen what species it is which, according to Mr. Ramsay (*apud* Salvadori, "Prodromus," Ann. Mus. Civ. Gen. xviii. p. 9), occurs near Port Moresby.

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3. Turnix scintillans.

Turnix scintillans, Gould, B. A. v. pl. lxxxiii.; Handb. ii. p. 181.

Abrolhos Islands, W. Australia (*Gould*).

4. Turnix melanonota.

Turnix melanotus, Gould, B. A. v. pl. lxxxiv; Handb. ii. p. 182.

Moreton Bay (*Gould*); Cape York (*H.M.S. 'Challenger'*); Lizard Island (*Jukes* in *B.M.*); Wide Bay, Richmond and Clarence River districts, N. S. Wales, and interior (*Ramsay*).

5. Turnix saturata, mihi.

New Britain (*Layard, Kleinschmidt*); Duke-of-York group (*Layard*).

6. Turnix rufescens.

Turnix rufescens, Wallace, P. Z. S. 1863, p. 497.

Samao Island, Timor (*Wall.*).

This species I only know from a single specimen obtained by Mr. Wallace, and therefore probably the type of his description (*s. c.*), in the British Museum. This skin is in poor condition; but the species, though near to *T. melanonota*, is apparently a good one, distinguishable by the scapularies having no edging of creamy buff, as in the last-named bird. A further series of specimens will be necessary to decide the question. Mr. Wallace describes the irides as being brown, whilst in Jukes's specimen of *T. melanonota* from Lizard Island they are called "white," as also they are in Layard's skin of *T. saturata* from New Britain. According to Blyth ('Ibis,' 1867, p. 162) *T. rufescens* also occurs in Java; he compares it to the Indian *T. tanki* (=*T. dussumieri*, apud Jerdon, B. India, iii. p. 599).

7. Turnix castanonota.

Turnix castanonotus, Gould, B. A. v. pl. lxxxv.; Handb. ii. p. 183.

Northern and North-western Australia (*Gould*).

8. Turnix velox.

Turnix velox, Gould, B. A. v. pl. lxxxvii.; Handb. ii. p. 185.

Australia, from Swan river to New South Wales (*Gould*); Port Denison, Wide Bay, and Clarence River districts (*Ramsay*).

9. Turnix pyrrhothorax.

Turnix pyrrhothorax, Gould, B. A. v. pl. lxxxvi.; Handb. ii. p. 186.

East Australia (*Gould*).

10. Turnix rufilatus.

Turnix rufilatus, Wall. P. Z. S. 1865, p. 480.

Celebes: Macassar (*Wall.*).

11. Pedionomus torquatus.

Pedionomus torquatus, Gould, B. A. v. pl. lxxx.; Handb. ii. p. 187.

Plains of Central Australia (*Gould*).

XXXIII.—*Notes on a Collection of Birds made on the River Yang-tse-kiang.* By Rev. H. H. Slater, F.Z.S.

The collection contains seventy-one skins belonging to forty-three species, and was formed in the months of September, October, and November 1880, on the Yang-tse-kiang, between Hankow and Quaichow-foo, by Mrs. W. G. Greig and Dr. Reid, of Hankow.

Hypotriorchis subbuteo (L.).

One adult male, in very brilliant plumage; shot at Hankow.

Athene whitelyi (Bl.).

One specimen, apparently a female from the size. The length of the wing less than that given by Père David ('Oiseaux de la Chine'), being only 15 centim. (5·9 inches), instead of 17·5 centim. Killed at Hankow.

Asio accipitrinus (Pall.).

One specimen, male, Woochung.

Alcedo bengalensis, Gm.

Three examples. Very common on the Yangtse, especially on the upper reaches.

Phylloscopus superciliosus (Gm.).

One specimen from Hankow.

Ruticilla aurorea (Pall.).

Three specimens—♂ in full summer plumage, ♂ assuming winter plumage, ♀.

Very common by the Yangtse in Szechuen province.

Ruticilla fuliginosa (Vig.).

Three males. This Himalayan species seems to be found in all the western provinces of China, north as well as south, on the courses of mountain-streams. Swinhoe apparently considered it confined to South China and Formosa. It is very common on the Yangtse in Szechuen, from Ichang upwards.

Chimarrornis leucocephala (Vig.).

Four examples. Very abundant on streams in Szechuen and west of Ichang in Hoopih.

Nemura cyanura (Pall.).

One mutilated female from Szechuen.

Parus monticola, Vig.

One specimen, obtained on the river somewhere in Szechuen; usually a bird confined to high altitudes.

From the description of this bird in Père David's 'Oïseaux de la Chine' I should imagine that the tertiaries only were tipped with white; but in my specimen both secondaries and tertiaries are so. All the remiges, moreover, are bordered with white on their inner web, which border is broadest where primaries end and secondaries begin. Lastly, the measurements given by David are—tarsus ·8 inch and beak ·35 inch; in my specimen they are ·7 inch and ·4 inch respectively.

The species is very like *P. major*, from which it differs in having slenderer toes and tarsus, a slenderer bill, and the middle as well as greater wing-coverts edged with white,

which make it appear to have two white bars across the wing instead of one.

Parus minor, Temm. & Schl.

Three specimens from Szechuen, where it seems to be common.

Motacilla baikalensis, Swinhoe.

Swinhoe conjectured that a bird seen, but not shot, by him on the Upper Yangtse was of this species; and doubtless he was right. I have three specimens from thence; and my sister, Mrs. Greig, tells me that it is very common by that river in the province of Szechuen. It is very like *M. alba*, but has more white on the wing-coverts, and the colours are generally more distinct, the pectoral band being broader and darker (*vide* Swinhoe, P. Z. S. 1871, p. 363).

Motacilla (Calobates) melanope (Pall.).

One specimen of the short-tailed form, a male in autumn plumage. It is curious as having a tail shorter by $\frac{2}{10}$ inch than any of the large series Mr. Dresser examined while engaged on the 'Birds of Europe,' viz. 3·3 inches. Szechuen province.

Anthus agilis, Sykes.

One example. Abundant in China in summer.

Monticola saxatilis (Linn.).

Three examples. Two are males in winter plumage, and have only some half-dozen feathers between them to substantiate their claim to this name (a few rusty feathers about the anus), their plumage otherwise being exactly like the winter plumage of *Monticola cyanus*. I believe it was this plumage which gained its wearer the name *M. affinis* (Blyth). The third is a female in spotted dress.

Common by the Yangtse in Szechuen and Hoopih provinces wherever there are rocks.

Hemixus xanthorrhous (Anders.).

Three examples from Szechuen and Hoopih provinces, where it is pretty abundant.

Garrulax perspicillatus (Gm.).

One specimen from Szechuen. What does Père David mean by stating that this bird is peculiar to South China, and then remarking a few lines further on ('Oiseaux de la Chine,' p. 192) that he found it commonly in Southern Chensi and on the banks of the Hoang-Ho, "où elle réside toute l'année"?

Dicrurus leucophæus (V.).

One specimen from Woochung, in Hoopih.

Lanius schach, L.

Three specimens from Hoopih province.

Garrulus sinensis, Gould.

Three examples from Hoopih province, where it is common.

Urocissa sinensis (L.).

One specimen from Hoopih province.

Cyanopolius cyaneus (Pall.).

One specimen from Hoopih, the almost exact counterpart in all but its larger size of *C. cooki* of Spain.

Corvus torquatus, Less.

One specimen from Western Hoopih. The young, according to the description of David and others, must be very like our *C. cornix*, being hooded with ashy grey in the same manner, though this colour keeps to the shoulders and does not proceed down the back.

Acridotheres cristatellus (L.).

One specimen from the Yangtse, which seems to be its northern boundary, Woochung, opposite to Hankow, in Hoopih.

Sturnus cineraceus, Temm.

Four examples. Plentiful near Hankow and Woochung.

Emberiza cioides, Brandt.

Two specimens, both males, from Szechuen.

Emberiza pusilla, Pall.

One adult male from Hankow, on the plains, an uncommon habitat, as it appears to be in general a mountain-bird; and

these plains are perfectly flat, some twenty miles or more in width, and without trees.

Picus (Iyngipicus) scintilliceps (Swinh.).

One male from Hankow (lat. 31°), the southernmost record for this bird so far as I can discover.

Gecinus guerini (Malh.).

Two specimens, both adult males—one from Woochung, in Central Hoopih, the other from Szechuen.

Turtur rupicola (Pall.).

One example, shot at Kweichow, in Eastern Szechuen.

Turtur chinensis (Scop.).

One specimen, shot at the same time and from the same flock as the last.

Phasianus torquatus, Gm.

Three males from Hankow, which, according to Swinhoe, is the most westerly point that this species reaches. This would seem not to be the case; but they will probably be found in all the mountain-woods up the river. Mrs. Greig found this Pheasant at Ichang, which is some distance west of Hankow.

Otis tarda, L.

Two females from Hankow plains. Flocks of as many as six hundred individuals are seen there in winter, and are not very difficult to approach. Probably they come down from Amoorland and Siberia. All the flocks would seem to consist of females alone; but my sister, Mrs. Greig, is going to ascertain this more certainly.

Ægialitis curonica (Gm.).

One specimen from Hankow.

Glareola orientalis, Leach.

One specimen from Hankow.

Totanus hypoleucus (L.).

One specimen from Woochung.

Fulica atra, L.

Two specimens from Woochung. Very numerous on the lakes in central China.

Dafila acuta (L.).

One male, Hankow market.

Querquedula crecca (L.).

One male, Hankow market.

Querquedula (Eunetta) formosa (Georgi).

One male, Hankow market.

Spatula clypeata (L.).

One male, Hankow market.

Podiceps philippensis, Bonn.

One specimen in winter plumage from Woochung.

Larus occidentalis, Aud.

Probably the same as *L. cachinnans*, Pall. One specimen was shot off the Bund at Hankow, which is 600 miles up the Yangtse. This bird is said to have a shorter and stronger bill than *L. argentatus*. Mr. Dresser, on a cursory inspection, thought this specimen was *L. leucophæus*. If so, it is much out of its range. But the colour of the mantle is not in favour of this view, it being quite as light as in *L. argentatus*.

XXXIV.—*Notes on a 'Catalogue of the* Accipitres *in the British Museum' by* R. Bowdler Sharpe (1874). By J. H. Gurney.

[Continued from p. 321.]

Before proceeding with my notes, I have to recur to a few matters mentioned in my last two papers.

I stated (*suprà*, p. 148) that Japan should be added to the list of localities for *Erythropus amurensis*, it having been included in the list of Japanese species published in 'The Ibis' for 1878 (*vide* p. 249). But Mr. Seebohm has been so good as to inform me that the only foundation for its admission to that list was the doubtful suggestion made by

Mr. Swinhoe in 'The Ibis' for 1875, p. 448. This was based on a skin which is now in Mr. Seebohm's possession, and which he has been so good as to allow me to examine. This specimen is merely an adult male of the Common Hobby (*Hypotriorchis subbuteo*), and is not referable to any phase of *Erythropus amurensis*.

I also mentioned (*suprà*, p. 158) that I had not seen any specimen of *Hypotriorchis concolor* which corresponded with Mr. Sharpe's statement that "very old examples" of that species "become leaden black." This statement I may now modify, as, during a recent visit to the British Museum, I there saw a skin of this species from the province of Betsileo, in Madagascar, which appeared to me to be decidedly melanistic, the entire plumage being dark brown slightly tinged with grey on the lower back and on the upper surface of the tail, and greatly resembling in colour the fuliginous plumage of *H. eleonoræ*. This specimen seems, however, not to be a very old bird, as the inner webs of the lateral rectrices are perceptibly cross-barred with bands of a darker brown.

I have also, since my last paper, examined the female Falcon shot by Mr. Blanford in the Anseba valley, Abyssinia, and to which I referred (*suprà*, p. 308); and having tested the measurements given by me in a note at that page, I find them correct, except that of the middle toe *s. u.*, which I now make 1·90 instead of 2·20. This Falcon is hardly sufficiently adult to admit of a thoroughly satisfactory identification; but I incline to the opinion that it is referable to *F. punicus* rather than to the southern *F. minor*.

Of the latter species I measured, at the British Museum, a South-African male, which I had not previously examined, with the following results—wing 10·85, tarsus 1·70, middle toe *s. u.* 1·80. On remeasuring the South-African female in the British Museum, to which I have referred at p. 313, I find the length of the tarsus is not 2·00, as there given, but 1·80.

I have given, at p. 312, the measurements of a female of *F. barbarus* from Granada, which is preserved in the British Museum; and I have now had the opportunity of measuring a

second, immature female* in that collection, also from Granada, and sexed by Mr. Howard Saunders, with the following results—wing 11·35, tarsus 1·75, middle toe *s. u.* 1·80.

On the subject of the dimensions of *F. barbarus* I may mention that Dr. Scully has very kindly furnished me with the following note relating to his measurements of eastern examples, which I have quoted at pp. 311 and 312 :—"I measured the wings on the under surface, not over the upper surface, with a flexible measure, as you do, so that if you took the wing-measurement of the specimen now, you would certainly make the wing a little longer than the dimensions I have given in my paper in 'Stray Feathers.'"

Amongst the specimens of *F. punicus* preserved in the British Museum, I examined, during my recent visit, an adult bird, apparently a male, which formerly belonged to the late Mr. Gould, and which was ticketed by him as having been obtained in Assam. If this locality is correct, it is by far the most eastern one that has yet been ascertained for this species. This specimen resembles the Morocco male described by me under the letter N, above, p. 317; but it is slightly larger than it and other western males, the following being its dimensions—wing 11·70, tarsus 1·90, middle toe *s. u.* 2·05.

I also carefully examined the two Sardinian Falcons for which Mr. Sharpe formerly proposed the specific name of "*brookei*," and I agree with his present opinion, that they must be referred to *F. peregrinus*. They both appear to me to be birds about twelve months old, and the one killed in April 1869 still retains its immature plumage on the least coverts of the right wing. According to my method of measurement the following are the dimensions of these specimens :— ♀, killed April 1869, one wing 13·70, the other wing 14·25†, tarsus 1·90, middle toe *s. u.* 2·15; ♀, killed

* This specimen is labelled, erroneously as I conceive, "*Falco communis*."

† It frequently happens that the two wings do not give, in the dried skin, exactly the same measurement; when this is the case I always take the longer measure, unless there seems to be some sufficient reason for giving both.

April 1871, one wing 13·50, the other wing 13·90, tarsus 2, middle toe *s. u.* 2·10.

I will now refer very briefly to *Falco babylonicus*, a Falcon that I consider to be nearly related to *F. barbarus*, from which it seems chiefly to differ by its larger dimensions. It is a very scarce species in European museums, and I am not aware that I have ever seen an adult male, the few adults that I have examined (including one recently received by Mr. Seebohm from Samarcand) appearing by their dimensions to be all females. I regret that I am unable to add to the information supplied by Mr. Sharpe respecting this species; but as such is the case, I will pass on to the consideration of *Falco feldeggii* and its very closely allied intertropical representative, *F. tanypterus*. Mr. Sharpe treats these Falcons as specifically distinct, and thus describes the habitat of the first, "the countries bordering on the Mediterranean, rarely extending into Central Europe, or below Egypt into N.E. Africa." The habitat of the second, Mr. Sharpe defines as "N.E. Africa, from Nubia to Unyamuesi; W. Africa, on the Niger, and in Aguapim."

Mr. Sharpe describes the adult plumage of *F. tanypterus* as darker than that of *F. feldeggii*, and less spotted on the breast in very old birds. These distinctions do, no doubt, exist, though the difference in the spots on the breast in the old birds is not great, neither is it very constant. But the two races so largely grade and merge into each other that, at the most, they can only, in my opinion, be admitted as subspecifically separable; and I somewhat doubt whether even this distinction can be rigidly maintained, in view of the fact that not a few specimens exist, chiefly amongst those collected in Egypt, in which the coloration is of such an intermediate character as to make it doubtful whether they should bear the specific name of *feldeggii* or of *tanypterus*.

The actual position of the case appears to me to be that *F. feldeggii* and *F. tanypterus* are essentially one species; but a species subject to considerable individual variation, and, in addition to this, assuming, more uniformly, as its habitat

approaches the equator, the peculiarities which Mr. Sharpe indicates as specially characteristic of *F. tanypterus*, and which may perhaps amount to a valid subspecific distinction.

The changes of plumage in *F. feldeggii* appear to me to be correctly described by Mr. Sharpe in his article on this species and the accompanying footnote; and a similar sequence of changes seems also to obtain in the darker race constituting the subspecies "*tanypterus*."

Lord Lilford has been so good as to inform me that in the Spanish nestlings of *F. feldeggii* which he has seen the ground-colour of the crown of the head has been a decided rufous, instead of being either white or very pale whitish rufous, as is usual in very young African specimens. Each feather in the crown has a dark shaft-mark, which in young birds is brown, and in some individuals so broad as to give the upper surface of the head the appearance of being more tinged with dull brown than with any other hue; this latter peculiarity I have especially observed in young birds from Egypt. In the adult birds these shaft-marks on the head are black instead of brown, and vary in breadth as much as in younger specimens; but with this peculiarity, which is less prevalent in the younger birds, viz. that the shaft-marks are usually broadest and most conspicuous in the forehead, immediately behind the whitish frontal line. In many, perhaps most, of the adults of the paler race these shaft-marks on the head are very narrow and inconspicuous; but in other individuals of the paler race they are well marked. In the adults of the darker race, and especially in those from the countries watered by the White and Blue Nile, these shaft-marks form a black patch on the forehead, extending backwards to just behind the eyes.

The nape, which shows a variable amount of black mingled with rufous in the paler and more northern birds, exhibits in the more southern and darker form a large triangular nuchal patch of black slightly tinged with chocolate; in addition to which, the latter race has the plumage generally more deeply coloured, the rufous portion being richer,

and the grey tints darker than is the case in paler specimens from less southern localities*.

In connexion with the occurrence of specimens of an intermediate character in Egypt, I may refer to the circumstance of my son and a fellow-traveller having shot an adult pair of these Falcons at Esné, in that country, which were sitting together on the same tree, and of which the female was a typical pale *F. feldeggii*, and the male sufficiently dark to merit the title of *tanypterus*, being very little less intensely coloured that the darker individuals from Abyssinia or Sennaar†.

I append a list of measurements taken by myself from specimens of both races, which in this Table I have not attempted to separate, my object being merely to show the variations of size incident to the geographical distribution of these Falcons; and for that purpose I have, in this instance, treated *F. feldeggii* and *F. tanypterus* as one species without reference to subspecific distinctions.

MALES, ascertained and presumed.

	Wing.	Tarsus.	Middle toe *s. u.*
	in.	in.	in.
One from Persia	13·00	1·90	1·90
Eight from Morocco and Algeria	12·10 to 12·80	1·90 to 2·05	1·70 to 2·00
One from Tunis	13·10	1·90	1·90
Six from Egypt	13·00 to 13·40	1·80 to 2·10	1·70 to 1·90
Six from Nubia and Abyssinia	12·40 to 13·50‡	1·75 to 2·00	1·70 to 2·00

* According to Mr. Dresser (*vide* 'Birds of Europe,' vol. vi. p. 54) the scutella on the tarsus are larger in *F. tanypterus* than in *F. feldeggii*; but I have been unable to detect any such difference in the specimens which I have examined.

† *Vide* 'Rambles of a Naturalist,' by J. H. Gurney, Jun., p. 135.

‡ This specimen was shot and sexed by Mr. Blanford.

Females, ascertained and presumed.

	Wing. in.	Tarsus. in.	Middle toe s. c. in.
One from Persia	14·20	1·90	2·00
One from Palestine	14·30	2·00	1·90
Five from Morocco and Algeria *	13·20* to 14·50	1·80 to 2·00	1·80
Three from Senegambia and the Niger	13·70 to 14·50	2·00	1·80 to 1·90
Six from Egypt	13·00† to 14·90	1·90 to 2·10	1·90 to 2·00
Eight from Abyssinia, Bogos, and Shoa	13·30 to 14·90	2·00 to 2·10	1·80 to 2·00

It will be observed that the above lists include an adult male and female from Persia which are preserved in the British Museum; they are both typical examples of the paler race, *F. feldeggii*, and are the most eastern specimens of this Falcon with which I am acquainted.

I may add that the only records with which I am acquainted of the occurrence of *F. tanypterus* to the south of the equator are, first, the specimen obtained by Captain Speke at Kazeh, in Unyamuesi, East Africa, which was identified by Dr. Sclater (*vide* P. Z. S. 1864, p. 107); and secondly, that collected by Falkenstein on the Loango coast, West Africa (*vide* Du Bocage's Orn. d'Angola, p. 534).

The allied, but thoroughly distinct, South-African Lanner (*F. biarmicus*, Temm.) is apparently entirely limited to the southern portion of the African continent; for though V. Heuglin included this species amongst those which he met with in Southern Nubia, Sennaar, and Abyssinia‡, I cannot but think that he, in all probability, mistook for this species

* This specimen was sexed by the late M. Favier, of Tangier.

† This very small female is an immature bird, shot and sexed by Mr. J. H. Gurney, Jun. (*vide* 'Rambles of a Naturalist,' p. 135). It is now preserved in the Norwich Museum.

‡ *Vide* Orn. Nordost-Afrika's, vol. i. p. 27.

F. tanypterus in its oldest and least-spotted phase of plumage. Presuming this to be the case, it is singular that *F. biarmicus* has only been recorded in East Africa in quite southern latitudes; indeed I know of no record of its occurrence in those parts more northern than the specimen seen, but not obtained, by Mr. Ayres in the Mashoona country (*suprà*, p. 239). In West Africa this Falcon has, however, been met with further northward, specimens from the Portuguese territory of Benguela having been recorded by Du Bocage, in his Ornithology of Angola, p. 46, and also in his 19th and 21st Lists of the Birds of Portuguese West Africa.

The late Professor Kaup, at p. 69 of the 'Isis' for 1847, and subsequently at p. 55 of 'Contributions to Ornithology' for 1850, separated as a subgeneric group, under the title of *Gennaia*, the following Falcons:—*F. juggur*, *F. hypoleucus* *F. feldeggii* (with which he united *F. tanypterus*), *F. biarmicus*, and *F. lanarius*, Pallas,=*sacer*, Gmelin. To these I would add *F. mexicanus* (which probably should include as a synonym *F. polyagrus*) and *F. subniger*; and I would eliminate from the group *F. feldeggii* and *F. biarmicus*, which, in my opinion, more properly belong to the restricted genus *Falco*. This, I think, would leave a very natural subgeneric group for which Kaup's term of *Gennaia* may be conveniently employed.

Mr. Sharpe has placed two of the species which appear to me unquestionably to belong to the subgenus *Gennaia* (*G. saker** and *G. mexicana*) amongst the arctic Falcons of the subgenus *Hierofalco*; but I cannot agree with this arrangement, which has been already objected to, and I think with good reason, by Mr. Dresser, in the 'Birds of Europe,' vol. vi. p. 64.

Mr. Sharpe gives the geographical range of the typical species of the genus *Gennaia*, *G. juggur*, as the "Indian Peninsula;" but this definition is not quite sufficiently comprehensive, as this Falcon has been obtained in Afghanistan†,

* I adopt Mr. Sharpe's spelling of this specific name.

† *Vide* Horsfield and Moore's 'Catalogue of the East-India Company's Museum,' p. 21; also 'Stray Feathers,' vol. ix. p. 451.

also in Kashmir (whence was obtained a specimen now preserved in the Norwich Museum), in Nepaul (as evidenced by two examples in the British Museum), and in North-eastern Cachar*.

In all the Falcons of the genus *Gennaia*, as above specified, the two central feathers of the tail are whole-coloured and unbarred in birds of the first year, and, in the case of *G. juggur*, in most adults also; but in a few adults of this species indistinct transverse bars are perceptible. An old Indian male in the Norwich Museum shows nine such indistinct broad dark cross bars on these feathers, separated by narrow and rather ill-defined whitish interspaces.

The comparatively restricted range of *G. juggur* offers a remarkable contrast to the vast area comprised in that of its congener *G. saker*, extending from Western Morocco† to North-eastern China.

It has, however, been held by some eminent ornithologists, and notably by the late Mr. Jerdon ‡, by Mr. Hume §, by Mr. W. E. Brooks ‖, and by Lieut.-Col. Prjevalsky ¶, that two distinct species have been confounded under the specific name of "*Saker*."

If this be the fact, the scarcer of the two phases of coloration—that in which the mantle and tail are crossed by alternate bands of dark brown and rufous, and which has been figured in Wolf's Zoological Sketches, vol. i. pl. 33, in Dresser's 'Birds of Europe,' pl. 377**, and in Henderson and Hume's 'Lahore to Yarkand,' part 2, pl. i., should bear

* *Vide* 'Stray Feathers,' vol. ix. p. 242.

† Mr. Howard Saunders recently informed me that he examined, a few months since, a living specimen of *G. saker*, which had been imported by Mr. Castang from Mogador. This specimen subsequently passed into the possession of Lord Lilford, who agrees with Mr. Saunders in referring it to this species.

‡ *Vide* Ibis, 1871, p. 240.

§ *Vide* (*inter alia*) Stray Feathers, vol. ii. p. 530.

‖ *Vide* Stray Feathers, vol. v. p. 48.

¶ *Vide* Rowley's Orn. Misc. vol. ii. p. 149.

** The figure in the 'Zoological Sketches' and that in the 'Birds of Europe' were both drawn by Mr. Wolf from a specimen brought from Tarsus, which is now preserved in the Norwich Museum.

Hodgson's specific name of *F. milvipes*, of which Mr. Hume's subsequent one of *F. hendersoni* (founded on the specimen figured in 'Lahore to Yarkand') is a synonym. This is a point as to which I can speak with certainty, as the type specimens of "*Falco milvipes*" and "*Falco hendersoni*" are both preserved in the British Museum, where I compared them very carefully in 1875, and again a few weeks since. I find them identical, with some very slight exceptions, arising, as I consider, from the type of *Falco hendersoni* being rather the older bird, and also more recently moulted. Both appear to be male birds*, and differ very little in their dimensions.

Whether *G. milvipes* is really specifically distinct from *G. saker*, or whether, as held by Mr. Sharpe, and as, on the whole, seems to me more probable, it is merely *G. saker* in its oldest stage of plumage, must, I think, for the present remain an open question.

The arguments in favour of the specific identity of *G. milvipes* and *G. saker* are very ably stated by Mr. Dresser in his article on *Falco sacer*, in the 'Birds of Europe,' vol. vi. p. 59; and it is unquestionable that the specimens preserved in the British and Norwich Museums appear to present a series of progressive changes of plumage from the ordinary immature dress of *F. saker* to the type specimen of Mr. Hume's *Falco hendersoni*, which is certainly the most perfect example of the *G. milvipes* phase of plumage that has come under my notice.

On the other hand, we have the strong opinion of Mr. Hume, founded on his very extensive observation of Saker Falcons in Northern India, in favour of the distinctness of the two supposed species; and this view is strengthened by the Mongolian experience of Col. Prjevalsky, who writes thus in the article to which I have already referred,—"In the region of our travels we did not observe, or at least did not obtain, the true *Falco sacer*, Schl. . . . . Everywhere we found only the species described by Hume, in 'Lahore to

* The male sex of the type of "*Falco hendersoni*" was ascertained by dissection; *vide* 'Lahore to Yarkand,' p. 171.

Yarkand' under the name of *Falco hendersoni*. . . . . Henderson's Falcon was found by us wherever we went, from Kiachta down to the sources of the Yantze-kiang."

At the same time it should be noted, that Prjevalsky, in this expedition, obtained only four specimens, the youngest of which, as appears from his description of it, had not yet fully attained the distinctive plumage of *G. milvipes*.

It should also be borne in mind that M. David, whose extensive ornithological explorations in Northern China attach very great weight to his testimony, apparently alludes under the head of *Falco saker* to a Falcon in the ordinary Saker plumage, and not in the *G. milvipes* dress, but with "*taches ovales*" on the outer webs of the rectrices, in the following words:—"Je l'ai rencontré fréquemment en Mongolie, ainsi qu'à Pékin, au Chensi et dans le Setchuan"*.

It is, however, probable that if *G. saker* and *G. milvipes* are really distinct species, they are nearly, if not quite, undistinguishable in their first plumage; and it is just possible that M. David may only have met with immature specimens. A trained female, evidently immature, which the late Mr. Swinhoe obtained at Tientsin†, and which is now preserved in the Norwich Museum, has the two central rectrices unspotted and unbarred, and is generally in the ordinary plumage of a Saker of the first year, except that the spots on the other rectrices are unusually small, and that the mantle is beginning to show slight traces of transverse bars. Should *G. milvipes* be really a distinct species (which, as I have already mentioned, I greatly doubt), this Falcon may prove to be an immature specimen of that race.

I may add that the most western specimen resembling *G. milvipes* which has come under my notice is one from Athens, in the Norwich Museum. I have never seen this phase of plumage from any other European locality, except on the Volga, or from Northern or North-eastern Africa; but this may have arisen from the scarcity of African specimens and of non-Russian European examples.

* *Vide* David & Oustalet's 'Ois. de la Chine,' p. 32.

† *Vide* Ibis, 1861, p. 326, and 1863, p. 88.

The great rarity in Northern India of Falcons in the "*milvipes*" plumage, and the comparative frequency of those in the ordinary "*saker*" dress, can, if both are referable to the same species, only be accounted for by the known fact that amongst some birds of prey immature individuals are usually more vagrant in their migrations than those that are older. As a familiar instance of this I may mention *Archibuteo lagopus*, a species that in its first year's plumage is a frequent and often an abundant autumnal migrant to Great Britain, whilst its occurrence in this country in its most adult dress is an exceptional phenomenon of very great rarity. So again, the autumnal migration of *Pernis apivorus* to our shores is always composed of young birds, the old birds never appearing at that season, though some few in adult plumage visit us in spring.

The differences, whether specific or not, which exist between *G. saker* and *G. milvipes* have a curious parallel in the *Gennaia* Falcons of North America, which are thus divided and defined by Mr. Ridgway* :—"*Falco lanarius*, var. *polyagrus*; adult, above with obscure transverse spots of bluish; young, above with feathers bordered with rusty. *Hab.* Western division of North America, eastward to Illinois, Oregon to Lower California and Texas.

"*Falco lanarius*, var. *mexicanus*: above uniform dark brown with a faint plumbeous cast, the feathers without trace of light or rusty edges, outer web of tail-feathers without trace of light spots. *Hab.* Mexico."

It would seem, however, that the two type specimens of Lichtenstein's *Falco mexicanus* which are preserved at Berlin, agree better with the phase of plumage which Mr. Ridgway refers to *F. polyagrus* than with that which he refers to *F. mexicanus*; for Professor Schlegel, who describes these two specimens in his Museum d'Hist. Nat. des Pays-Bas, vol. i. *Falcones*, p. 18, there says of them, "Queue avec une douzaine de bandes peu distinctes et composées de taches d'un roux pâle. Le mâle adulte . . . plumes de la tête et

* *Vide* Baird, Brewer, and Ridgway, 'Land Birds of North America,' vol. iii. pp. 100 and 124.

de la nuque avec de bords roussâtres peu distincts, ... La jeune femelle . . . plumes du dessus avec des bords clairs plus prononcés."

At the same time, this point will be one of but little consequence if Mr. Sharpe is correct in treating "*Falco polyagrus*" of Cassin as merely a synonym of "*Falco mexicanus*" of Lichtenstein. My impression is that this is the correct view, as the American Falcons of the genus *Gennaia* which have come under my own observation have all appeared to me to be referable to one and the same species. I annex a few memoranda descriptive of those which I have most recently examined.

(A) Norwich Museum *.

Milk river, July 18.

This is a very young bird, the primaries being not yet fully grown. It is remarkable for the strong luteous tint which entirely pervades the otherwise white under surface of the body, except the lower flanks, where the feathers are blackish-brown narrowly edged with fulvous, and excepting also the space occupied on the breast and abdomen by numerous dark-brown longitudinal shaft-marks, which are largely developed both as to length and breadth; the cheeks, eyebrows, and throat are of a buffy white, resembling the ground-colour of the breast; the feathers of the upper part of the head are black along the shaft with rufous-brown edges, the rufous tint being especially apparent on the nape; the feathers of the mantle are dark brown edged with rufous, the latter colour being paler on the edges of the quill-feathers of of the wing and on the upper tail-coverts; all the rectrices are largely tipped with buffy white, the central pair being narrowly edged on the sides with white, but otherwise a somewhat pale uniform brown; the other rectrices are all distinctly barred with rufous on the inner webs.

(B) Norwich Museum.

Wyoming, August 17 (marked ♀).

* For this and three other specimens of this Falcon the Norwich Museum is indebted to the authorities of the Smithsonian Institution.

This is similar to A, but evidently somewat older. The external rectrices are slightly mottled with rufous on the outer webs, the luteous tint of the underparts is much paler, and the shaft-marks on those parts are somewhat smaller; the dark flank-feathers are spotted with rufous, and some are broadly edged with white next the abdomen.

(C) Collection of Messrs. Salvin and Godman.

(D) Cambridge Museum (marked ♀).

Both these specimens are from Sacramento valley, and much resemble specimen B.

(E) Norwich Museum.

Little Colorado river (marked ♂).

This example resembles B, C, and D, except that the shaft-marks on the under surface are shorter, assuming the form of oval longitudinal spots.

(F) Collection of Messrs. Salvin and Godman.

North Park, Colorado (marked ♀).

This Falcon is very similar to B, C, and D, but is beginning to acquire rufous cross bars on the wing-coverts and upper tail-coverts; an exceedingly slight trace of cross-barring is perceptible on the central pair of rectrices, all the others are slightly barred on the outer webs, and strongly on the inner.

(G) Norwich Museum.

Real del Monte, Mexico*.

This specimen resembles E, except that the nuchal and interscapular feathers are strongly marked with transverse alternate bars of rufous and of dark brown†.

(H) Cambridge Museum.

Fort Colville, September 21 (marked ♂).

* This is the most southern specimen that I have examined, unless the locality of "Contra Costa" attached to specimen I, the latitude of which I have been unable to ascertain, be more so; but one of the types of Lichtenstein's *Falco mexicanus* appears to have been obtained in the still more southern locality of Tehuantepec (*vide* Journ. für Orn. 1872, p. 156), the other being from Monterey, according to Professor Schlegel, *l. c.*

† A specimen from Mexico much resembling G is preserved in the British Museum.

This example resembles G, but has traces of cross bars visible on the central rectrices, which G has not.

(I) Cambridge Museum.

Contra Costa.

This specimen exhibits in greater perfection than any other that I have examined the cross-barring on the mantle, each feather of which bears two transverse bars, which, as well as the tip, are rufous, the interspaces being dark brown, and the barring being longitudinally interrupted by narrow dark shaft-marks. The general effect bears a remarkable resemblance to the "*milvipes*" phase of *G. saker*: the central rectrices are perceptibly, but not very distinctly, cross-barred; and all the others are transversely and more strongly barred on both webs, these markings being more developed on the outermost pair.

All the shaft-marks on the under surface have assumed the character of spots, mostly of an ovate form; and the dark feathers of the flanks are variegated by two whitish-rufous spots on each web.

(J) Norwich Museum.

Wyoming (marked ♂).

This bird is in a similar dress to that last mentioned, except that in I the plumage has been somewhat recently assumed, and in J the reverse is the case, the bird having just begun to moult, and the old plumage being much worn and faded, the effect of which is a grey tint over the whole upper surface, which considerably obscures the distinction between the dark brown and the rufous transverse bars, both being modified by the tinge of grey, which, however, has not perceptibly altered the hue of the dark narrow shaft-marks on each feather of the mantle.

Ten indistinct dark cross bars are perceptible on the central rectrices.

The general appearance of this specimen is so grey as not to be altogether unlike the Australian *G. hypoleuca*.

Mr. Ridgway informs me that he considers this Falcon to be fully adult, and that he has only seen five or six examples in this dress.

The following are my measurements of the specimens just referred to:—

Males, ascertained or presumed.

	Wing.	tarsus.	middle toe s. u.
	in.	in.	in.
A	not fully grown	2·00	2·00
E	12·50	2·00	1·90
G	12·15	1·90	1·80
H	12·10	1·90	1·90
J	12·05	2·00	1·70

Females, ascertained or presumed.

B	14·30	2·10	2·05
C	13·70	2·10	2·15
D	13·80	2·15	2·10
F	13·80	2·05	1·95
I	13·60	2·10	2·00

The scarce Australian *G. hypoleuca*, to which I propose now to refer, like the other Falcons which I have included in the subgenus *Gennaia*, has, when immature, the central pair of rectrices entirely free from the transverse bars, the other rectrices being at that age less distinctly barred than in the adults. The immature plumage, which is not described by Mr. Sharpe, may also be recognized by the greater length and breadth of the shaft-marks on both the upper and the under surface, some of the latter assuming the appearance of ovate spots, especially towards the flanks; the nape is also tinged with cream-colour in the young plumage, with dark terminal spots on the nuchal feathers; and the grey of the mantle is then more or less tinted with pale brown.

The specimen described by Mr. Sharpe as "adult" appears to me to be passing from immature to adult dress; in the fully adult bird the central rectrices have numerous and distinct transverse bars of dark grey with interspaces of pale grey, as shown on the figure of this Falcon in Gould's 'Birds of Australia'; in an old female preserved in the Norwich Museum these bars are twelve in number.

The measurements of *G. hypoleuca* given by Mr. Sharpe appear to me to have been taken from a very short-winged male. I annex the dimensions of a presumed male and three

presumed females which have come under my own observation :—

	Wing.	tarsus.	middle toe s. u.
	in.	in.	in.
Male (Norwich Museum ..	11·00	1·50	1·80
Female (do.)	12·85	1·70	1·90
Do. (do.)	12·00	1·60	1·70
Do. (Cambridge Museum)	12·00	1·80	1·75

The equally rare, but considerably larger, Australian Falcon, *G. subnigra*, so far as is known, is subject to but very little variation of plumage at different ages; but the tail in this species also seems to alter with age, being in the first instance free from cross bars, and subsequently assuming them.

In a male contained in the Norwich Museum, and presumably immature, all the rectrices are unbarred; but Mr. E. P. Ramsay describes an adult female as having "the tail crossed with indistinct broken bars of very pale rufous and tipped with buffy white"*.

The oblong whitish spots which in some species occur on both webs of the feathers of the under tail-coverts, are absent in others; these also are perhaps a mark of age, as, according to Mr. Ramsay, they are present in the adult female above referred to.

XXXV.—*On some Raptorial Birds recently acquired by the Norwich Museum.* By J. H. Gurney.

The Norwich Museum has recently acquired some additional specimens of Raptorial birds, as to which I am desirous of recording a few observations.

1. An adult female of *Accipiter rhodogaster* (Schleg.) from Celebes, procured through Mr. Whitely. This specimen has the peculiarity, which I have not observed in any other example of this species, of the rufous colouring of the breast extending to the sides of the neck, there forming a broad collar, which, in a much narrower and less perfect form, also extends across the nape.

* *Vide* Cat. of Australian Birds in Sydney Museum, p. 50.

This collar does not appear to me to be the remains of immature dress, as it corresponds in tint with the adult plumage of the upper breast.

This specimen measures as under:—Wing 7·9 inches, tarsus 2·20, middle toe *s. u.* 1·65.

2. An adult specimen of *Urospizias etorques*, Salvad., obtained by Mr. Goldie on the Astrolabe mountains, New Guinea, and apparently a female from its measurements, which are as follows:—Wing 10·10 inches, tarsus 2·60, middle toe *s. u.* 1·70.

I have already mentioned (*suprà*, p. 126) that I felt doubtful of the identity of the New-Britain Hawk, which has been referred to *Urospizias etorques*, with the true *U. etorques* of New Guinea; and having now had an opportunity of examining an adult specimen of the latter, I feel persuaded that the New-Britain bird is specifically distinct. I have already described the latter in my notes on New-Britain birds above referred to; and I would now suggest that this Hawk, which appears to be peculiar to the New-Britain group, should be named after the old navigator, William Dampier, by whom those islands were discovered in 1699, and should bear the appellation of *Urospizias dampieri**.

The above-named specimen of *U. etorques* is a somewhat larger bird than the three females of *U. dampieri* which I have described at pp. 126–128, as may be seen by a comparison of the measurements which I have there given of those specimens with the dimensions of the presumed female of *U. etorques* particularized above.

The other differences between the two species are pointed out in my account of *U. dampieri* (pp. 126, 127). I have there referred to the description given by Count T. Salvadori of the New-Guinea *U. etorques*, with which the present specimen agrees, except as regards the markings on the breast and underparts, of which Count Salvadori, at p. 53 of his work, observes "Questa specie non presenta mai il collare cervicale rossigno e le fascie trasversali sulle parti inferiori:" this

* It should be noted that Mr. E. P. Ramsay has recently designated a species of this group from the Solomon Islands *Astur pulchellus* (J. Pr. Linn. Soc. Zool. xvi. p. 131, 1882).—Ed.

latter character is probably a variable one, as in the present specimen of *U. etorques* the underparts are very distinctly cross-barred, and more so than in *U. dampieri*. The dark cross bars on the breast in this specimen are rufous much tinged with greyish brown; on the abdomen they are a pure rufous, with the interspaces white; in *U. dampieri* these interspaces are pale rufous, and narrower than in this example of *U. etorques*. I may also mention that in the latter the tail shows nine perceptible, though not very distinct, dark cross bars on the central rectrices, the lowest being subterminal.

From these particulars, and those recorded at p. 127, it will be seen that the differences between the two species comprise, in addition to those of measurement, the coloration of the irides and of the chin and upper throat, also the character of the transverse markings on the under surface and on the central rectrices.

3. An example of *Nisaetus morphnoides* (Gould), apparently adult, and resembling in coloration the Queensland specimen described by Mr. Sharpe in the P. Z. S. for 1875, p. 338, except that the upper tail-coverts are dark brown, partially cross-barred (but not tipped) with white, and that the shaft-marks on the underparts are dark brown, rather than black, also that there is no tinge of chestnut on the under wing-coverts.

I am not aware that this species has hitherto been recorded from New Guinea, where this specimen was obtained, also on the Astrolabe Mountains, by Mr. Goldie.

It would seem, by its small size, to be a male, and to be shorter in the wing (which appears to be fully grown) than two Australian males of which the measurements are given by Mr. E. P. Ramsay in his 'Catalogue of Australian Accipitres,' p. 29.

The following are the comparative dimensions:—

	Wing. in.	Tail. in.	Tarsus. in.	Middle toe s. u. in.
♂, West Australia	13·70	8·00	2·20	1·70
♂, New South Wales	13·00	8·00	2·10	1·50
Supposed ♂, New Guinea..	12·30	7·30	2·20	1·70

Two Australian females of this species in the Norwich Museum are considerably larger, and measure as under:—

	Wing. in.	Tarsus. in.	Middle toe *s. u.* in.
♀, Swan River	15·20	2·40	1·70
♀, Queensland	15·80	2·40	1·80

The difference in size between the sexes of the nearly allied *N. pennatus* is decidedly less, as will be seen by the undermentioned dimensions of a male and female of that species preserved in the Norwich Museum:—

	Wing. in.	Tarsus. in.	Middle toe *s. u.* in.
♂, France.....	14·30	2·30	1·60
♀, Morocco	15·55	2·30	1·50

4. A specimen of *Machæramphus alcinus*, Westerm., also obtained on the Astrolabe Mountains by Mr. Goldie. This species has already been recorded from New Guinea by Mr. Sharpe* and by Mr. E. P. Ramsay†, who mentions that his specimens (a male and female) were both destitute of the occipital crest; there is, however, an elongation of the occipital feathers, which may be said to amount to a crest, in Mr. Goldie's specimen, which is unsexed, but measures as follows:—Wing 13·80 inches, tarsus 2·10, middle toe *s. u.* 1·80, occipital crest 2.

This example agrees with those described by Mr. Ramsay in having a distinct, though somewhat irregular, white nuchal collar.

5. A specimen of *Ninox assimilis*, Salvad. & D'Alb., obtained on the Astrolabe Mountains, New Guinea, by Mr. Goldie, who has made the following note with reference to it, viz.:—"Eyes bright yellow, feet chrome-yellow. It measures as follows:—Wing 10·6 inches, tarsus 1·4, middle toe *s. u.* 1·4.

6. Two examples of *Rostrhamus plumbeus*, Ridgw. (*vide* Ibis, 1879, p. 341). The Awl-billed Kite inhabiting Florida

* *Vide* Journal of the Linnean Society (Zoology), vol. xiii. p. 308.

† *Vide* "Cont. to the Zoology of New Guinea," in Proc. of Linnæan Society of New South Wales, 1879, p. 247.

was described by Mr. Ridgway in vol. iii. of the 'Land-Birds of North America,' pp. 208, 209, under the title of "*Rostrhamus sociabilis*, var. *plumbeus*;" and the Norwich Museum has lately been indebted to the authorities of the Smithsonian Institution, through the good offices of Mr. Ridgway, for two Florida examples of this race. Both these are marked as males, though, from the longer wing of one specimen, I am inclined to think it may in reality be a female. This example is very nearly adult; the other is in change from immature to adult plumage; a third Florida specimen, lately supplied to the Norwich Museum by Mr. Whitely, is entirely in immature dress. On comparing these specimens with South-American examples of *R. sociabilis*=*leucopygus* (*vide* Ibis, *l. c.*), I find no difference, except in the somewhat larger dimensions of the Florida bird. The following are measurements of specimens in the collection of Messrs. Salvin and Godman and in the Norwich Museum; amongst the latter is an immature specimen from Peru of larger size than than the other South-American examples, and with a more developed upper mandible, which I suspect may belong to an undescribed species.

Rostrhamus sociabilis.

	Wing. in.	Tarsus. in.	Middle toe s. u. in.	Culmen s. c. in.
Adult, Demerara, N. M.	13·60	1·80	1·50	1·10
Immature, Brit. Guiana, coll. S. & G.	14·15	1·90	1·70	1·15
Ditto, ditto	13·30	1·80	1·70	1·15
Adult, Brazil, N. M.	13·30	2·00	1·50	1·10
Immature, U. S. of Colombia, coll. S. & G. (marked ♀)	13·90	1·90	1·75	1·25
Adult, Bolivia, N. M.	13·70	1·90	1·60	1·25
Immature, Peru, N. M.	14·20	1·90	1·70	1·40

Rostrhamus plumbeus.

Immature, Florida, N.M.	14·00	1·80	1·50	1·25
Ditto in change, Florida, marked ♂, N. M.	14·30	2·00	1·70	1·10
Nearly adult, Florida, marked ♂, N. M.	14·90	2·00	1·70	1·10

7. A specimen of *Poliohierax insignis*, Wald. The Norwich Museum has lately obtained a female of this species from Western Siam, in which all the underparts, except the lower surface of the remiges and rectrices, are of an entirely pure white. This is the only specimen I have examined in which the underparts were wholly immaculate, with the exception of the wing and tail quill-feathers; and I therefore think it worthy of record.

XXXVI.—*Notices of recent Ornithological Publications.*

[Continued from p. 344.]

53. *Adamson's 'Scraps about Birds.'*

[Some more Scraps about Birds. By Charles Murray Adamson. 8vo. Newcastle-upon-Tyne: 1880-81.]

Mr. Adamson's 'Scraps' consist of a kind of irregular catalogue of the birds in his collection "with the dates of capture, and some observations on the different species, their peculiarities and habits." He tells us that nearly all these birds have been set up by himself from specimens which he had recently killed. The volume is illustrated by numerous lithographs of rough but spirited sketches made by the author, "mostly at the time the birds were procured," and will be appreciated by many British ornithologists.

54. *Barboza du Bocage on West-African Birds.*

[Avez das possessões portugezas d'Africa occidental. Por J. V. Barboza du Bocage. Vigesima segunda lista. Jorn. Sc. Math. Phys. e Nat. Lisboa: 1882.]

Prof. Barboza du Bocage's twenty-second list of birds of the Portuguese possessions in Western Africa comprehends 36 species collected by Sr. Anchieta in Benguela during a short visit in that province. Three are new to the district, namely *Toccus monteiri*, *Aedon paena*, and *Saxicola schlegeli*.

55. *Bulletin of the Nuttall Ornithological Club.*

[Bulletin of the Nuttall Ornithological Club: a Quarterly Journal of Ornithology. Vol. vii. no. 2, April 1882. 8vo. Cambridge, Mass.]

Among the varied contents of the present number the most interesting are perhaps the first portion of Mr. Brewster's memoir of the birds collected in Arizona by Mr. F. Stephens, and Mr. Lucas's notes on the *os prominens*. In Mr. Stephens's series of 650 skins, "embracing the results of six months, uninterrupted work," were examples of many rare Western species, such as *Harporhynchus bendirei*, *H. crissalis*, *Auriparus flaviceps*, and *Helminthophaga luciæ*.

56. *Collett on new Norwegian Birds.*

[*Oreocincla varia* (Pall.) og *Ægialitis alexandrina* (Linn.), nye for Norges Fauna. Af Robert Collett. Vid.-Selsk. Forh. Christiania, 1881, no. 10.]

Mr. Collett records the occurrence of an example of *Oreocincla varia* near Stavanger, in October 1879, and of *Ægialitis alexandrina* (i. e. *Æ. cantiana*) near Jaderens Rev, in June 1881. The latter was killed by the writer himself out of a flock of five birds, all apparently of the same species. Mr. Collett advocates the usage of Linnæus's term *alexandrinus* for what is commonly termed the Kentish Plover. Both species are new to the avifauna of Norway.

57. *Collett on the Ear-formation of the North-European Owls.*

[Craniets og Oreaabningernes Bygning hos de nordeuropæiske Arter af Familien Strigidæ af Robert Collett. Vid.-Selsk. Forh. Christiania, 1881. no. 23.]

This very useful and instructive paper contains an account of the formation of the organs of hearing in the ten North-European Owls. These are all Buboninæ, *Strix* being wanting in Scandinavia, and fall into six groups, in two of which the cranium is asymmetrical.

58. *Cowan on Madagascar Birds.*

[List of Madagascar Birds, together with the Native Names among a few of the different Tribes. By Rev. W. Deans Cowan. Small 4to. Antananariva: 1881.]

This is a list of the names of the recognized species of Madagascar birds, with their native names among the various tribes given in parallel columns. The total number of species in the list is 219, including several introduced.

59. *Cruttwell's 'Table of the Animal Kingdom.'*

[A Complete Table of the Animal Kingdom, arranged in their Divisions, Classes, Orders, Suborders, and Families; with the Meanings of Scientific Names, and common examples of each. 8vo. Frome.]

There is nothing novel in Mr. Cruttwell's arrangement of the class of birds; and his "meanings" of the terms are not very well expressed, and in some cases, we fear, not quite accurate.

60. *Dalgleish on Birds and Eggs from Uruguay.*

[Notes on a Collection of Birds and Eggs from Central Uruguay. By John J. Dalgleish. Proc. R. Phys. Soc. Edinburgh, vol. vi. p. 232.]

Mr. Dalgleish's collection was made on the Estancia de la Tala, about 170 miles north of Monte Video, and contains specimens of 24 species and their eggs. The latter are described, and those of *Geranoaetus melanoleucus*, *Tænioptera nengeta* and *T. irupero*, *Molothrus badius*, *Paroaria dominicana*, *Pitangus bellicosus*, *Milvulus tyrannus*, *Serphophaga nigricans*, *Nothura maculosa*, and *Rhynchotus rufescens* are figured. Good notes on nidification are given; and a very interesting general description of the country and its physical character is prefixed.

61. *Dresser's Birds of Europe.*

[A History of the Birds of Europe, including all the Species inhabiting the Western Palæarctic Region. By H. E. Dresser, F.L.S., F.Z.S., &c. Parts lxxxiii. & lxxxiv.]

With great pleasure we hail the issue of the last two parts

of Mr. Dresser's 'Birds of Europe,' together constituting vol. i., and rendering this great work complete. The first part was published in March 1871; so that eleven years have barely sufficied for its elaboration. There can be no doubt that, whatever may be its defects and omissions (and in a work of this kind where knowledge is continually progressing at a rapid rate, they must necessarily be numerous), Dresser's 'Birds of Europe' is in many respects the best available authority for the student of the birds of the Western Palæarctic region, and will long remain so. It is the more remarkable as being *not* the work of a professed naturalist entirely devoting himself to the subject, but of a gentleman engaged in business all day, who has given up the few hours he "could spare from the arduous duties of a city life" to his favourite pursuit. We are sure that all members of the British Ornithologists' Union and other friends of ornithology will join us in offering the author our warmest congratulations upon the completion of his excellent and laborious undertaking.

In the present work Mr. Dresser treats of 624 species of birds as appertaining to the ornis of the western Palæarctic region. We read with great pleasure of his intention to continue his labours, and to bring out, after having collected sufficient material, a work on the birds of the Eastern Palæarctic region, excluding those species which are treated of in the present work.

62. *Godman and Salvin's 'Biologia Centrali-Americana.'*

[Biologia Centrali-Americana; or Contributions to the Knowledge of the Fauna and Flora of Mexico and Central America. Edited by F. Ducane Godman and Osbert Salvin. (Zoology.) Parts viii. to xvi. 4to. London: 1880–82. Published for the editors by R. H. Porter, 10, Chandos Street, Cavendish Square, W.]

This important work has made steady progress since our last notice ('Ibis,' 1881, p. 160). In 1881 six parts were duly issued; and the April number of this year is also now before us. In the class of birds the Mniotiltidæ are finished in part xiv., and the Vireonidæ very nearly so in part xv.

In the latter group *Vireo amauronotus* (ex Mexico, Orizaba) is described as new. The following species are figured :—

Pl. IX. Geothlypis chiriquensis.
„ —— caninucha.
„ —— poliocephala.
X. Dendroeca decora.
„ Setophaga torquata.
„ Basileuterus melanogenys.
XI. Ergaticus versicolor.
Pl. XI. Setophaga lacrymosa.
XII. Vireo ochraceus.
„ —— pallens.
„ —— carmioli.
XIII. Hylophilus viridiflavus.
„ Neochloe brevipennis.

P. L. S.

63. *Gould's 'Birds of Asia.'*

[The Birds of Asia. By J. Gould, F.R.S. Dedicated to the Honourable East India Company. Part xxxiii. Folio. London: 1882.]

The twenty-third part of this important work contains figures of the species named in the following list, among which the two *Sphenocichlæ* are of special interest. Mr. Sharpe (whose initials are appended to the articles upon them) is of opinion that the nearest ally of this peculiar form is *Pnoepyga*.

Sibia melanoleuca.
Trochalopteron melanostigma.
Actinodura ramsayi.
Hyloterpe philippinensis.
Sphenocichla humii.
—— roberti.
Iyngipicus ramsayi.
Iyngipicus temminckii.
—— aurantiiventris.
—— doerriesi.
—— scintilliceps.
Irena cyanogastra.
—— melanochlamys.

64. *Gray on Eggs of the Great Auk.*

[On two unrecorded Eggs of the Great Auk (*Alca impennis*) discovered in an Edinburgh Collection; with Remarks on the former Existence of the Bird in Newfoundland. By Robert Gray. Proc. Roy. Soc. Edinb. Session 1879–80, p. 667.]

Mr. Gray took the opportunity afforded him by the exhibition of two "unrecorded" eggs of the Great Auk, which have lately "turned up" in Edinburgh, to make some remarks to the Royal Society of Edinburgh on this much-loved subject. It appears that Mr. Donald M'Queen, who assisted at the capture of the last Great Auk in 1821–22, is still living in St. Kilda.

65. *Gray on rare Scottish Birds.*

[On the Occurrence of the Night Heron in Clackmannanshire and the American Night Heron in Ayrshire. By Robert Gray, F.R.S.E. Proc. Roy. Phys. Soc. Edinb. 1880.]

Mr. Gray records the occurrence of a specimen of the Night-heron (*Nycticorax griseus*) in May 1879, near Alloa, in Clackmannanshire, and of a specimen believed to be referable to the American Night-heron (*Nyctocorax gardeni*) "about three years ago," near Kilmarnock, in Ayrshire.

66. *Gray on the Pintail Duck in the Outer Hebrides.*

[Note on the Occurrence of the Pintail Duck in the Outer Hebrides. By Robert Gray, F.R.S.E. Proc. Roy. Phys. Soc. Edinb., 1880.]

Mr. Gray notes the occurrence of a flock of the Pintail (*Dafila acuta*) in North Uist "with some satisfaction," as in his previous researches he had only ascertained one instance of its having been obtained in these islands.

67. *Holub und Pelzeln's 'Ornithologie Südafrikas.'*

[Beiträge zur Ornithologie Südafrikas. Mit besonderer Berücksichtigung der von Dr. Holub auf seinen südafrikanischen Reisen gesammelten und im Pavillon des Amateurs zu Wien ausgestellten Arten. Von Dr. Emil Holub und Aug. von Pelzeln. Royal 8vo. Wien: 1882.]

This volume gives an account of Dr. Holub's collections and extensive observations in South-African ornithology. Among the rarer species obtained were *Falco dickersoni* and *Drymœca holubi*, sp. nov., tab. i., both from Eastern Bamangwatoland; *Lanius pyrrhostictus*, sp. nov., tab. ii. (Transvaal), and *Lamprocolius sycobius*, tab. iii. (Central Transvaal). Many pretty woodcuts of nests and other details are given; and the whole forms a valuable contribution to our knowledge of the South-African avifauna.

68. *Holub on the Ornis of South Africa.*

[Ueber die Vogelwelt Südafrikas. Vortrag gehalten im grünen Saale der k. k. Akademie der Wissenschaften im ornithologischen Vereine am 11. November 1881, von Dr. Holub. Mitth. d. Ornith. Vereines in Wien, 1882, no. 1.]

An address on the leading features of the South-African

avifauna made by Dr. Holub to the Ornithologists' Union of Vienna.

69. *Johnston on the Natural History of Mossâmedes.*

[Report on the Natural History of Mossâmedes and District, and of South-western Africa generally; with reference to the proposed Expedition of the Earl of Mayo. Prepared, at his Lordship's request, by Mr. H. H. Johnston. 8vo. London: 1882.]

In anticipation of the expedition of the Earl of Mayo to South-Western Africa (on which he has now started) Mr. Johnston, who accompanied him, has prepared the report now before us. We trust it may be found useful; but as regards the birds at least, we cannot say that the "list of the more remarkable species" is altogether accurate.

70. *Lawrence on Birds from Yucatan.*

[Description of a new Species of Swift, of the Genus *Chætura*, with Notes on two other little-known Birds. By George N. Lawrence. Ann. Acad. Sc. New York, ii. p. 245.]

Chætura gaumeri, sp. nov., from Yucatan (allied to *Ch. vauxi*), was discovered by Mr. Gaumer, who has spent three years in that country and made large collections. Mr. Lawrence describes the female of *Pyranga roseigularis*, and adds a note on the validity of *Centurus rubriventris*, from examples likewise procured by Mr. Gaumer, whose first series has been purchased by the University of Kansas.

71. *Lorenz on the Skeletons of* Stringops *and* Nestor.

[Ueber die Skelete von *Stringops habroptilus* und *Nestor notabilis*. Von Dr. Ludwig. Sitz.-Ber. Akad. Wissensch. Wien, 1881, p. 624.]

Herr Lorenz describes the skeletons of *Stringops habroptilus* and *Nestor notabilis* from specimens lately acquired by the Imperial Cabinet of Vienna, and figures the whole skeleton of the former, and some of the more characteristic bones of both.

72. *M'Vean on the Ornithology of Yedo.*

[Notes on the Ornothology of Yedo. By Colin A. M'Vean. Proc. Roy. Phys. Soc. Edinb. 1877.]

We have just become acquainted with this paper, dated so

far back, through Mr. Robert Gray's courtesy. Mr. M'Vean resided some years in Yedo, the capital of Japan, and gives us some interesting notes on the birds (about 75 species, perhaps not in every case quite accurately identified) which he observed there. Mr. M'Vean "was much struck with the extraordinary number of birds of various kinds to be seen within its boundaries. The profusion of bird life, indeed, appeared to be especially worthy of remark, bearing in mind the great extent and population of Yedo, and the traffic and noise of its busy streets. In the midst of this, and often within reach of the cast of a trout-rod from the sides of crowded streets, wild fowl of all descriptions, from a snipe to a swan, floated quietly at their ease or fed on land, without heeding the bustle around them, or being disturbed by the passing crowds."

73. *'Ornithologist and Oölogist.'*

[Ornithologist and Oölogist. Published by Jos. M. Wade, vol. vi. nos. 10, 11. Royal 8vo. Norwich, Conn.: 1881-82.]

We have looked through two numbers of this popular journal of American ornithology (which seems already to be in its sixth volume) with much pleasure. We may call attention to the notes on the nesting of *Geococcyx* (p. 85).

74. *Pelzeln on the Progress of Ornithology in* 1880.

[Bericht über die Leistungen in der Naturgeschichte der Vögel während des Jahres 1880. Von August von Pelzeln. Arch. für Naturgesch. Berlin, 1882.]

We have to thank Herr v. Pelzeln for a copy of *his* Record of the Progress of Ornithology in 1880. Great attention, we observe, is paid to the smaller and more popular memoirs relating to the European fauna.

75. *Pelzeln on Central-African Birds.*

[Ueber Dr. Emin Bey's zweite Sendung von Vögeln aus Central-Afrika. Von August von Pelzeln. Verh. zool.-bot. Gesell. Wien, 1881, p. 605.]

Herr v. Pelzeln describes a second collection of birds (174

skins, referable to 84 species) made by Dr. Emin Bey in 1880 and 1881, between Ladó, the seat of government of the Egyptian equatorial provinces, and the Albert Nyanza. 21 species are mentioned as new to the district.

76. *Ramsay on Birds from the Solomon Islands.*

[Notes on the Zoology of the Solomon Islands, with Description of some new Birds. By E. P. Ramsay, &c. Proc. Linn. Soc. N. S. W. vi. p. 718 (Aug. 31, 1881).]

The new birds described are *Astur versicolor, Ianthœnas phillipanæ*, and *Ptilopus richardsii**, all from the island of Ugi, *Ptilopus lewisi*, from the islands of Florida and Malayta, *Chalcophaps mortoni*, from Ugi, and *Sturnoides minor* from San Christoval. We have also notes on *Nasiterna finschii, Ptilopus eugeniæ, Pt. johannis*, and *Myiagra cervinicauda*.

77. *Ramsay on a new Honey-eater.*

[Description of a new Species of Honey-eater from S.E. Coast of New Guinea. By E. P. Ramsay, &c. Proc. Linn. Soc. N. S. W., vi. p. 718 (Aug. 31, 1881).]

"The tongue having been removed from the only specimen, it is difficult to determine the family of this species; but Mr. Ramsay for the present terms it *Plectorhyncha fulviventris*. The collector is not stated.

78. *Ramsay on* Oriolus affinis.

[Notes on *Oriolus affinis*, Gould. By E. P. Ramsay, F.L.S. Proc. Linn. Soc. N. S. W. 1881.]

Mr. Ramsay vindicates the claims of *Oriolus* (i. e. *Mimeta*) *affinis*, from N.W. Queensland, as a good species, "which has nothing whatever to do with the young of *O. flavocinctus*, as supposed by Mr. Sharpe."

79. *Ramsay on a new* Eurystopodus.

[On a new Species of *Eurystopodus*. By E. P. Ramsay, F.L.S. Proc. Linn. Soc. N. S. W. vi. (Dec. 25th, 1881).]

The species is described as *E. nigripennis*, from Rubiana,

* *Ptilopus richardsi*=*Pt. rhodostictus*, Tristram, Ibis, 1881, p. 134, pl. iv. See below, p. 473.

one of the Solomon group. It seems to be the same as *Caprimulgus nobilis*, Tristram, *suprà*, p. 134, pl. iii., the latter being certainly a *Eurystopodus*, although the artist has depicted rictal bristles.

80. *Reinhardt on Birds from Greenland.*

[Notitser til Grönlands Ornithologi (2). Af. J. Reinhardt. Vidensk. Medd. Kjöbenhavn, 1881, p. 183.]

Prof. Reinhardt gives an account of some recent occurrences of certain birds in Greenland, in continuation of former papers on the same subject. The species remarked upon are *Turdus migratorius*, *Charadrius apricarius*, *Numenius borealis*, *Gallinago wilsoni*, *Procellaria leucorrhoa*, *Podiceps holbölli*, *Oidemia perspicillata*, and *Stelleria dispar*.

81. *Ridgway on new Birds from the Sandwich Islands.*

[Description of a new Flycatcher and a supposed new Petrel from the Sandwich Islands. By Robert Ridgway. Proc. U.S. Nat. Mus. 1882, p. 337.]

The new birds described are a Flycatcher of the genus *Chasiempis* (*C. sclateri*) and a Petrel of the genus *Cymochorea* (*C. cryptoleucura*). Both are from Waimea Kaui, Sandwich Islands (*V. Knudsen*).

82. *Ridgway on a new Owl from Puerto Rico.*

[Description of a new Owl from Porto Rico. By Robert Ridgway. Proc. U.S. Nat. Mus. 1882, p. 366.]

A new form of Short-eared Owl from Puerto Rico is described as *Asio portoricensis*. Besides this Mr. Ridgway recognizes *A. galapagoensis* as distinct from the cosmopolitan *A. accipitrinus*.

83. *Ridgway on two new Thrushes.*

[Descriptions of two new Thrushes from the United States. By Robert Ridgway. Proc. U.S. Nat. Mus. 1882, p. 374.]

The new Thrushes are *Hylocichla fuscescens salicicola*, from the Rocky Mountains, and *H. aliciæ bicknelli*, from Slide Mountain, Ulster County, New York.

84. *Salvadori's 'Prodromus,'* part xi.

[Prodromus Ornithologiæ Papuasiæ et Moluccarum, Auctore Thoma Salvadorio.—XI. Gallinæ. Ann. Mus. Civ. Genov. xviii. p. 5.]

The Gallinæ of the Papuan subregion consist of Megapodiidæ, Perdicidæ, and Turnicidæ, 14 of the first group, 4 of the second, and a single *Turnix*—19 species in all, according to our author. To these must be added Mr. Forbes's new *Turnix*, described above (p. 428).

85. *Sharpe's 'Birds of South Africa.'*

[The Birds of South Africa. By E. L. Layard, F.Z.S. New edition, thoroughly revised and augmented, by R. Bowdler Sharpe, F.L.S., F.Z.S. Part V. London: Quaritch, April 1882.]

We welcome with pleasure the fifth part of Mr. Sharpe's work, and trust that the sixth and last part may soon follow it, and bring this long-delayed volume, commenced in 1875, to a conclusion. The present part continues the account of the Passeres into the Alaudidæ, but does not conclude them. It is a difficult task to ascertain what species in it are now described for the first time, as in some cases no references whatever—not even the authority for the specific term—are given. But the author has kindly informed us that the only *new* species mentioned are two, incidentally described in the list of the Red-winged Bush-Shrikes (p. 397)—namely *Laniarius blanfordi* from N.E. Africa, and *L. ussheri*, of which no locality is given.

86. *Sharpe on the Ornithology of New Guinea.*

[Contributions to the Ornithology of New Guinea. By R. Bowdler Sharpe, F.L.S., F.Z.S. Part vii. Diagnoses of new Species of Birds from the back of the Astrolabe range, New Guinea. Journ. Proc. Linn. Soc., Zool. xvi. p. 317 (March 2, 1882).]

Mr. Sharpe gives the characters of some new species of birds, of which examples are contained in a collection made by Mr. A. Goldie in S.E. New Guinea, and promises a detailed account of the whole series at a later period. The species described are *Trichoglossus goldiei*, *Cyclopsittacus*

coccineifrons, Pœcilodryas albifacies, Monacha periophthalmicus, Edoliosoma poliopsa (poliopse?), Pachycephalopsis poliosoma, Zosterops delicatula, Melilestes poliopterus, Ptilotis marmorata, Eupetes pulcher, and *Munia grandis.*

87. *Sharpe on a new Sand-Martin.*

[On a new Species of Sand-Martin (*Cotile*) from Madagascar. By R. Bowdler Sharpe. Journ. Proc. Linn. Soc., Zool. xvi. p. 322 (March 2, 1882).]

The new species is characterized as *Cotile cowani* after the Rev. Deans Cowan, by whom a large series of it was obtained in the forest of Ankáfana, in the Betsileo country. It is nearest to *C. paludicola* of S. Africa.

88. *Stejneger on* Myiadestes.

[Description of two new races of *Myiadestes obscurus*, Lafr. By Leonhard Stejneger. Proc. U.S. Nat. Mus. 1882, p. 371.]

The "races" described are *M. obscurus*, var. *occidentalis*, from South-western Mexico and Guatemala, and *M. obscurus*, var. *insularis*, from the Tres Marias Islands.

89. *Weyenbergh on Birds in the Cordova Museum.*

[Catálogo de la Coleccion de pájaros. Por Dr. H. Weyenbergh. Periodico zoologico, Cordoba, tomo iii. p. 311.]

In his eighth report upon the Zoological Museum of the National University of Cordova (Argentine Republic), Dr. Weyenbergh gives a rough catalogue of the birds in the collection. There are said to be 491 specimens, referable to 243 species; but a great number of these are undetermined, and some of the names are unknown to us. The species thus designated will be described later if they shall prove to be really new. The occurrence of a *Cinclus* in Tucuman, if authentic, is of great interest.

XXXVII.—*Letters, Announcements, &c.*

We have received the following letters addressed to the Editors of 'The Ibis:'—

Bognor, Sussex,
4th March, 1882.

Sirs,—In vol. ix. p. 367, of 'Stray Feathers' (lately received) is "A Tentative Catalogue of the Birds of the Deccan and South Mahratta Country," by Capt. E. A. Butler, H.M. 83rd Regt., in which that gentleman, after giving a list of the authorities whom he has consulted, including Major Lloyd's List of Konkan Species, adds, "I am compelled to say (though I have always duly quoted his statements) that I think some of Major Lloyd's specimens must have been erroneously identified. It is simply incredible, for instance, that *Propasser rhodochrous* should have occurred at Matheran."

Most persons reading the above would, I think, conclude that I am responsible for the statement that *Propasser rhodochrous* occurs at Matheran. As a matter of fact, the bird appears in my list with the remark that "it is inserted on the authority of Dr. Smith, who records it from Matheran." My list, written in 1876, is a bare enumeration of species, drawn up, with other lists, in the form of a preliminary sketch for the use of the compiler of the 'Bombay Gazetteer.' It does not profess to be a record of only personal captures, but was compiled from various sources, as stated in the introduction, Dr. J. G. Smith's "Matheran Hill" being mentioned among the authorities I had consulted.

With regard to my identifications generally, a perusal of Capt. Butler's paper leaves me with the impression that he cannot have read the remarks which accompany my List, while it is clear that he has failed to make himself acquainted from other sources with what constitutes the Konkan—a duty the more incumbent upon him if, as I gather, he has no personal knowledge of the district. To illustrate my meaning, I quote here a few of Capt. Butler's observations, thus:—

Xantholæma malabarica.

". . . . Mr. Fairbank records it from Savantvadi. Major Lloyd, incredible as it seems, includes it also as a Konkan species; but Mr. Vidal has not, as yet, obtained it in Ratnagiri."

Dicæum concolor.

". . . . It has also been obtained at Savantvadi. It belongs to the Sahyadri range and adjoining forests . . . . Mr. Vidal has not observed it in Ratnagiri, though Major Lloyd includes it in the Konkan list: possibly the latter was mistaken."

Parra indica.

". . . . It occurs sparingly from north to south of the region, as I have heard of its occurrence in the Thana district . . . . it is included in the Konkan list by Major Lloyd, though not yet observed in Ratnagiri by Mr. Vidal."

I have selected these three examples because they contain the solution of the difficulty, inasmuch as they show very clearly that, in Capt. Butler's opinion, the forests of the Sahyadri range and the districts of Thana and Savantvadi do not form any part of the Konkan, and are consequently outside the area to which my List applies. In other words, he deprives the Konkan of two thirds of its recognized limits, and tests the accuracy of my List by comparing it with Mr. Vidal's statements concerning the restricted area of Ratnagiri. I cannot find, on referring to my List, that I have written any thing to warrant such an interpretation; on the contrary, when treating of boundaries, I see that I expressly mention the Thana districts as constituting one of the administrative divisions of the province; and although, it is true, I make no mention there (I do further on) of the small State of Savantvadi in the South Konkan, yet neither do I mention the Habshi's State of Jinjira, in the Kolaba division, nor the State of Jawar, and other tracts in the North Konkan, nor, for the matter of that, do I mention the island of Bombay; nevertheless these are all included within the boundaries given, and it never occurred to me that they could be deemed

otherwise than in the Konkan. If Capt. Butler will do me the favour to read my introductory chapters, he will find that I state my intention of dealing with the entire Konkan, defining its limits as extending from the territory of Goa in the south to the province of Gujarat in the north, thus embracing all the districts of North and South Konkan, with the watershed of the Sahyadri range bounding them on the east. These limits, recently modified by the transfer of North Kanara to the Bombay Government (thus extending the Konkan still further to the south), are also to be found in the 'Imperial Gazetteer of India,' vol. v. p. 436. I see also that Mr. Vidal (whose paper was before Capt. Butler) mentions Savantvadi as within the limits of the South Konkan ('Stray Feathers,' vol. ix. p. 3). When, therefore, Capt. Butler enumerates birds as occurring in the Sahyadri forests and in the districts of Thana and Savantvadi, and then finds fault with me for recording them as Konkan species, basing his arguments moreover on the ground that the species recorded by me have not also been met with in Ratnagiri, I can only reply that he is writing under a misconception of the scope of my remarks, adding an expression of my regret if any thing I have written, or omitted to write, has led him into the error of supposing that my general List of Konkan species is only a list of the species of one particular collectorate of the Konkan.

Yours &c.,

J. Hayes Lloyd.

Northrepps Hall, Norwich.
March 15, 1882.

Sirs,—An instance of partial melanism has lately come under my notice which, I think, is sufficiently remarkable to be worth recording.

A male of the common West-African Bishop-bird, *Pyromelana franciscana*, which was purchased from a dealer rather more than two years ago, was at that time in the ordinary winter plumage. In the course of 1880 it acquired its gorgeous breeding-dress, fully and completely; but when

this was lost, it was exchanged, not for the ordinary winter plumage, but for one decidedly melanistic. In the course of last year the bird again fully resumed its complete breeding-dress, without any trace of melanism or other abnormal coloration; but this having since been lost, the bird has again, for the second time, become melanistic.

With the exception of the abdomen and under tail-coverts, which remain white (and possibly of the under wing-coverts, which I have been unable to examine), the entire plumage is now of a sooty brownish black, but with the centres of the feathers on the back darker than the edges, and with some slight brown tips to the feathers of the breast.

This seasonal alternation between a melanistic and non-melanistic plumage is a phenomenon new to me, and, I think, of some interest.

Yours &c.,

J. H. Gurney.

Notes on Birds from the Solomon Islands.—Mr. E. P. Ramsay (writing from Sydney, March 16th, 1882) sends us the subjoined remarks on some of the species described by Canon Tristram in his article given above, p. 133 *et seqq.*

Piezorhynchus squamulatus, p. 136.

Can this be an adult of *P. brodiei*, mihi (*P. vidua*)? I find little or no difference in the description of it from my *P. melanocephalus* (Proc. Linn. Soc. N. S. W. vol. iv. 1879, p. 468); I have a large series, and am now inclined to think that *P. melanocephalus* and *P. squamulatus* are based only on different plumages of *P. vidua*.

Rhipidura russata, p. 137.

I do not see why my name *Rhipidura rubrofrontata* should not stand; it is, without doubt, the same as *R. russata*.

Geoffroyus agrestis, p. 138.

I think this must be the young of *G. heteroclitus*. I have had several specimens.

Nasiterna finschi, p. 138.

As regards the yellow spot the remark is not quite correct.

But this is of little importance in pointing out the differences between the species, as *N. pusilla, N. pusio, N. finschii,* and others have it also.

Ptilopus rhodostictus, p. 139.

This is my *P. richardsii* (see 'Nature,' vol. xxv. p. 282). I received this bird and several new species in January 1881; but as I thought it probable that Mr. Tristram might also have received it, I refrained from describing it until August 1881; I thought that by that time Mr. Tristram, if he had received it, would have mentioned the fact. It is a very common species.

Astur pulchellus, p. 141.

With respect to *Astur pulchellus* being the same as *A. etorques*, I can only say I showed the type to Dr. Finsch, who says it is a good species. I have since obtained it from Florida Island*.

Rhipidura cockerelli, p. 142.

Will any naturalist take the trouble to compare my description (I regret I have not a skin to send) with *R. tricolor*? which is only a large race of *R. motacilloides*.

Nasiterna pusio, p. 143.

This has never been brought from the Solomons.

Lorius hypœnochrous, p. 143,

is from New Britain and Duke-of-York group.

Ptilopus viridis, p. 144,

is *P. lewisii*, sp. nov. We have now a large series (♂ & ♀ et jr).

Carpophaga finschii, Ramsay, p. 144,

is from Irish Cove, New Ireland. The type is in the collection of the Rev. G. Brown.

Phlegœnas johannæ, p. 144,

is from New Britain.

Rallus intactus, p. 144,

is from the Duke-of-York group.

* [*Cf.* Gurney, suprà, p. 453.—Edd.]

Macropygia crossi, Trist., p. 144,
is my *M. rufocastanea*.

Bird's-nest in a Horse's tail.—Capt. Saville G. Reid, R.E., sends the following curious story to the 'Field' of June 10th, as vouched for by Veterinary-Surgeon Longhurst, of the King's Dragoon Guards. Capt. Reid feels "tolerably sure the bird must have been a *Cisticola*, perhaps *C. tinniens*."

"Interesting cases have been from time to time recorded of extraordinary places selected by birds for habitation and nesting; and I take this opportunity of bringing to your notice a case which occurred when I was in camp at Fort Napoleon, Conference Hill, Zululand, and which appears to me to be unique.

"A grey gelding cob, bought about the end of June 1879, at Wakkerstroom, from Mr. Faweus, a government surveyor, whilst I was on special duty purchasing remount horses for the Cavalry Brigade, was noticed at the time of purchase to have a peculiar knotted condition of the tail. After arriving at its destination at Fort Napoleon, several days' march distant, it was placed on the flank of the troop of King's Dragoon Guards, to which it was told off. The next morning, after reveille, the non-commissioned officer in charge of the troop noticed a little dark-coloured bird (known, I am told by our interpreter, as a Weaver or Bottletit) fly and conceal itself in the cob's tail just at the extremity of the dock. Shortly afterwards he saw it reappear, settle near some spilt forage in the picket lines, feed, and then return to its former hiding-place. This roused the curiosity of the non-com., who, accompanied by several of the men of his troop, examined the cob's tail, and there found a perfectly formed bird's-nest, about three inches in diameter, and about six inches from top to base, beautifully lined with short chestnut-red hair, which, upon examination, I found had been collected from the red transport oxen, and not from chestnut horses. The most striking thing which occurs to me is that the little bird must have accompanied the cob from Wakkerstroom, in the Transvaal, to our camp in Zululand, sufficient

time not having elapsed since its arrival at the fort for so complete a nest to have been manufactured.

"When I bought remount horses I always immediately cut their tails short, so that I could easily distinguish them, when grazing during the day, from other horses belonging to civilians and others; and when squaring this cob's tail with scissors, I remarked to Capt. Becher, who was with me, that the tail was peculiarly matted and curled, and therefore very difficult to cut quickly. The cob was driven, with a string of others, by Zulus from Wakkerstroom to our camp, about five days' journey.

"The following officers saw and examined the nest, and were as much astonished as I was, viz.:—Col. Alexander, Capts. Benthall and Becher, Adjutant Nicholas, and Quartermaster Murphy, of the K. D. G.'s; Capts. Knox and Sharp, and Lieut. Ridley, of the 4th (King's Own). I wrote this account at the time; but circumstances delayed its publication. The cob, after the nest was discovered, was, unfortunately, sent away with several others to fill up our casualties at the front, and is reported to have died near Fort Newdigate.

"As a twig of any sort, to say nothing of a tree, is quite a rare thing to see in many parts of the Transvaal and Zululand, and as the nights are particularly cold, I can quite understand these tame little birds getting into the hair of a horse's tail for warmth when the animal was lying down, and, later on, taking it into their heads to make a nest in such comfortable quarters."

S. Longhurst, A. V. D., K. D. Guards
(Meerut, Bengal).

Pet Birds in Sumatra.—Mr. Carl Bock* speaks as follows of the native pets of Sumatra.

"In most native houses and huts may be seen a pet of some kind. The most common is a Turtle Dove (*Turtur tigrinus*), called 'Ballam,' or in some places 'Perkoetoe.'

* [The Head-Hunters of Borneo, by Carl Bock (4to, London, 1881), p. 298.]

These birds are highly prized, in fact are held almost sacred; the prices given for them vary, according to perfection of colour and shape, from five to twenty guilders each.

"Each bird is kept separate in a small bamboo cage, of circular shape, with a conical roof, and a cloth cover over the top. Very often these cages are stuck upon high bamboo posts; but when the owners go out to the rice-fields, or to market, they generally take their pigeons with them. The birds are perfectly tame, and never attempt to fly away, the natives daily taking the birds out of the cage and caressing them. One of my servants spent a month's salary in buying a Ballam, and took it with him wherever we travelled, and, on his return to Padang, sold it for double what he gave for it.

"Besides these birds many Malays keep a small green Parrot (*Loriculus galgulus*), which they call 'Selindit.' This is a lovely little bird, that always sleeps, like a Bat, head downwards; the average price of these birds is sixpence each.

"Sometimes I have also seen the beautiful Ground-Pigeon (*Chalcophaps indica*), which the Malays call 'Punei tamar,' and the Beo (*Gracula religiosa*), which can talk as well as a Parrot."

Note on Sternula placens.—Owing to the crass stupidity and mismanagement of our former agents, our first part of 'The Ibis' for 1881 was lost; and we have only just received a duplicate copy through our present agent, Mr. W. Wesley, of the Strand. We could not, therefore, sooner amend a typographical error which we see has slipped into our article (Ibis, 1881, p. 134) under the head of *Sternula placens*. For "a *Sternula* which *he* had formerly identified with *S. nereis*," read "which *we* had formerly" &c. The mistake in the identification was ours, not that of Mr. Masters, who has had better opportunities of judging, having access to Gould's works and numerous specimens.—E. Layard & E. C. Layard, Dec. 19, 1881.

A new West-African Finch.—In the first number of 'Die

gefiederte Welt' for this year (Jahrg. xi. p. 6), Dr. Carl Russ describes a supposed new species of *Estrelda* under the name *Ægintha fuchsi*, based upon four living specimens, supposed to have been received from West Africa. It is allied to *Estrelda cinerea* and *E. melpoda*.

The Birds of Uganda.—In Messrs. Wilson and Felkin's most interesting new work on Uganda, the former writer gives us the following account of its birds:—"Among birds the most noticeable are the Parrots, Vultures, Kites, and Fish-Eagles. There are two species of the former, one being the Grey Parrot, famed for its powers of talking, the other a small yellow-and-green bird. The first of these Parrots is very common among the forests on the shores of the lake, and is often seen in flocks of two or three hundred. The Vultures are the scavengers of the towns and large villages, and there are always great numbers of them about the capital, where they feed on the victims of the executioners. Kites abound everywhere, and are very destructive to the chickens. The finest bird in Uganda is undoubtedly the White-headed Fish-Eagle (*Haliaetus vocifer*), which is found on the Nyanza and the various streams where fish exist. Guinea-fowl are numerous in the jungle, and afford good sport, in addition to which their flesh is excellent eating; but they require heavy shot to bring them down. On the lake quantities of water-fowl are met with—Ducks, Geese, Storks, Cranes, the Sacred and Glossy Ibises, Darters, Herons, Gulls, and the gorgeous Scarlet Flamingo"*.

It is to be lamented that no ornithological collector has yet penetrated to Lake Albert Nyanza.

Bird-life in the Pribylov Islands.—In his most interesting memoir on the Fur-Seal Islands of Alaska, lately issued by the Smithsonian Institution, Mr. Henry W. Elliot speaks of the arrival of the summer birds as follows:—

"After the dead silence of a long ice-bound winter, the

* Wilson and Felkin's 'Uganda and the Egyptian Soudan' (London, 1882, 2 vols. 8vo), vol. i. p. 169.

arrival of large flocks of those Sparrows of the north, the 'Choochkies' (*Phaleris microceros*), is most cheerful and interesting. Those plump little Auks are bright, fearless, vivacious birds, with bodies round and fat. They come usually in chattering flocks on, or immediately after, the 1st of May, and are caught by the people with hand-scoops or dip-nets to any number that may be required for the day's consumption, their tiny rotund forms making pies of rare savory virtue, and being also baked and roasted and stewed in every conceivable shape by the Russian cooks—indeed they are equal to the Reed-birds of the South. These welcome visitors are succeeded, about the 20th of July, by large flocks of fat red-legged Turnstones, *Strepsilas interpres*, which come in suddenly from the west or north, where they have been breeding, and stop on the island for a month or six weeks, as the case may be, to feed luxuriantly upon the flesh-flies, which we have just noticed, and their eggs. Those handsome birds go in among the seals, familiarly chasing the flies, gnats, &c. They are followed, as they leave in September, by several species of Jack-Snipe and a Plover, *Tringa* and *Charadrius*; these, however, soon depart, as early as the end of October and the beginning of November, and then winter fairly closes in upon the islands. The loud, roaring, incessant sval-din, together with screams and darkening flights of innumerable water-fowl, are replaced in turn again by absolute silence, marking out, as it were, in lines of sharp and vivid contrast, summer's life and winter's death."

The Migration of the Little Bustard.—"Whilst staying at the next station after the mud volcanoes, I was lucky enough to witness a passage of the 'Strepita,' or Lesser Bustard (*Otis tetrax*). These magnificent birds were in millions all over the steppe. The ground was grey with them; the air full of their cries, the sky alive with the movement of their wings. With them were a few small flocks of another bird, which I thought I recognized as the Golden Plover; but of this I am by no means sure. So much struck was I by the strange sight which this enormous passage presented, that I

stayed the greater part of the day to watch it; and when at last I left, the almost inconceivable flood of winged creatures was still rolling on over the steppe from west to east in undiminished numbers. The Russian powder which I bought at Tiflis had turned out so badly that at this time I had almost given up using it for any thing larger than Teal, and even then it was necessary to be at very close quarters to bring the bird to bag, so miserably weak was it. Thanks, however, to the dense masses in which the Bustards stood and flew, I was enabled to secure sufficient to supply my man and myself with a welcome change of diet by the expenditure of only two of my treasures, 'express' cartridges. Judging by what I killed, I should say the birds were only just starting from their summer haunts in the Crimea and the Caucasus for their winter-quarters in the east. Had it not been so, they would hardly have been so deliciously [illegible] found them"*.

Expeditions accomplished and in progress.—[illegible] Stanford, we are glad to say, has recovered from the attack of fever which prostrated him on the Punjab frontier (see above, p. 348) and is safe in England. Mr. Elwes, accompanied by Mr. Dixon, has just made a very successful excursion of a month's duration to the Aures mountains of Algeria, and has discovered a new Chat (*Saxicola*). We hope to be able to give some account of this expedition in our next number. Lord Lilford has passed the winter months in his yacht in the Mediterranean, and has secured a fine series of *Larus audouini*. Of Dr. Finsch we have heard nothing more since he went from Thursday Island in December last. He is, no doubt, in New Guinea.

Obituary.—Charles Robert Darwin,
Died 19th April, 1882.

In common with all our brethren, editors of scientific

* [Sport in the Crimea and Caucasus, by Clive Phillipps-Wolley, F.R.G.S. (8vo: London, 1881), p. 295.]

journals, we must say a few words on the event which has deprived the world of its greatest naturalist. The varied qualifications of CHARLES DARWIN have been recounted by many an able pen; but it behoves us in this place to dwell especially on the value of his labours to the particular branch of biology which it is the object of these pages to promote. We venture to believe that we shall be only echoing the voice of all our readers when we assert that there is not one of them but has felt that the dignity of the study which he pursues was raised every time that Mr. Darwin drew from it evidence in support of that theory with which his name will be in all time associated. We venture further to declare that Mr. Darwin's ingenious investigations, his irresistible interpretation of particular facts the significance of which had never before been understood, but, above all, his marvellous method of combining and correlating the results of observation, must be recognized by all thinking ornithologists as breathing into their science a living soul the existence of which was previously unsuspected, and as endowing it with an interest and a beauty beyond any thing that it had been supposed to possess.

When we remember the way in which the Theory of Evolution was, at its birth, scouted in so many quarters, it is with no small satisfaction that we can turn to the earliest volume of this periodical and point out how quickly the truth of the Darwinian "hypothesis," as it used to be called in those days of its dawn, was recognized by one of the oldest and most valued of our contributors—one also by no means apt to be driven about by vain blasts of doctrine. As the volume is very scarce, and the passages may never have come under the eye of many of our present readers, we think we may be pardoned, long as they are, for reproducing these words here. It is the testimony of an ornithologist given purely on ornithological grounds, without bias in any other direction, and written and published, as we must particularly point out, before the now celebrated 'Origin of Species' appeared.

"Writing with a series of about 100 Larks of various species from the Sahara before me, I cannot help feeling

convinced of the truth of the views set forth by Messrs. Darwin and Wallace in their communications to the Linnean Society, to which my friend Mr. A. Newton last year directed my attention, 'On the Tendency of Species to form Varieties, and on the Perpetuation of Varieties and Species by natural means of selection'*. It is hardly possible, I should think, to illustrate this theory better than by the Larks and Chats of North Africa.

"In all these, in the congeners of the Wheatear, of the Rock Chat, of the Crested Lark, we trace gradual modifications of coloration and of anatomical structure, deflecting by very gentle gradations from the ordinary type; but when we take the extremes, presenting the most marked differences. Are these extremes, it may be asked, further removed from each other than the Guinea Negro or the Papuan is from the typical Caucasian? and are these species aboriginal and indigenous, or are they developed by climatic and other local causes? I think the latter alternative almost demonstrable in the case of these birds. These differences of structure (I am using the word here in its widest sense, to include colour, form, and size) doubtless have a very direct bearing on the ease or difficulty with which the animal contrives to maintain its existence. In the Desert, where neither trees, brushwood, nor even undulation of surface afford the slightest protection from its foes, a modification of colour, which shall be assimilated to that of the surrounding country, is absolutely necessary. Hence, without exception, the upper plumage of every bird, whether Lark, Chat, Sylvian, or Sand-Grouse, and also the fur of all the small mammals, and the skin of all the Snakes and Lizards, is of one uniform isabelline or sand colour. It is very possible that some further purpose may be served by the prevailing colours, but this appears of itself a sufficient explanation. There are individual varieties of depth of hue among all creatures. In the struggle for life which we know to be going on among all species, a very slight change for the better, such as improved means of escaping from its natural enemies (which would be the effect

"* Journ. Proc. Linn. Soc., Zool. iii. p. 45."

of an alteration from a conspicuous colour to one resembling the hue of the surrounding objects), would give the variety that possessed it a decided advantage over the typical or other forms of the species. Now in all creatures, from Man downwards, we find a tendency to transmit individual varieties or peculiarities to the descendants. A peculiarity either of colour or form soon becomes hereditary when there are no counteracting causes, either from change of climate or admixture of other blood. Suppose this transmitted peculiarity to continue for some generations, especially when manifest advantages arise from its possession, and the variety becomes not only a race, with its variations still more strongly imprinted upon it, but it becomes the typical form of that country. If it be objected that we see many varieties which do not become hereditary, we may reply, that these varieties, having experienced changes not advantageous to their means of existence, may from that very cause become extinct. Still there are many which continue, as the Pied Raven of the Faroe Islands and the Tailless Manx Cat.

"To apply the theory to the case of the Sahara. If the Algerian Desert were colonized by a few pairs of Crested Larks,—putting aside the ascertained fact of the tendency of an arid hot climate to bleach all dark colours,—we know that the probability is, that one or two pairs would be likely to be of a darker complexion than the others. These, and such of their offspring as most resembled them, would become more liable to capture by their natural enemies, Hawks and carnivorous beasts. The lighter-coloured ones would enjoy more or less immunity from such attacks. Let this state of things continue for a few hundred years, and the dark-coloured individuals would be exterminated, the light-coloured remain and inhabit the land. This process, aided by the above-mentioned tendency of the climate to blanch the coloration still more, would in a few centuries produce the *Galerida abyssinica* as the typical form. And it must be noted, that between it and the European *G. cristata* there is no distinction but that of colour.

"But when we turn to *Galerida isabellina*, *G. arenicola*,

and *G. macrorhyncha*, we have differences not only of colour, but of structure. These differences are most marked in the form of the bill. Now to take the two former first, *G. arenicola* has a very long bill, *G. isabellina* a very short one; the former resorts exclusively to the deep loose sandy tracts, the latter haunts the hard and rocky districts. It is manifest that a bird whose food has to be sought for in deep sand derives a great advantage from any elongation, however slight, of its bill. The other, who feeds among stones and rocks, requires strength rather than length. We know that even in the type species, the size of the bill varies in individuals, in the Lark as well as in the Snipe. Now, in the Desert, the shorter-billed varieties would undergo comparative difficulty in finding food where it was not abundant, and consequently would not be in such vigorous condition as their longer-billed relatives. In the breeding-season, therefore, they would have fewer eggs and a weaker progeny. Often, as we know, a weakly bird will abstain from matrimony altogether. The natural result of these causes would be that in course of time the longer-billed variety would steadily predominate over the shorter, and in a few centuries they would be the sole existing race, their shorter-billed fellows dying out until that race was extinct. The converse will hold good of the stout-billed and weaker-billed varieties in a rocky district.

"Here are only two causes enumerated which might serve to *create* as it were a new species from an old one, yet they are perfectly natural causes, and such as, I think, must have occurred, and are possibly occurring still. We know so very little of the causes which in the majority of cases make species rare or common, that there may be hundreds of others at work, some even more powerful than these, which go to perpetuate and eliminate certain forms 'according to natural means of selection.' But even these superficial causes appear sufficient to explain the marked features of the Desert races which frequently approach so very closely the typical form, and yet possess such invariably distinctive characteristics, that naturalists seem agreed to elevate them to the rank of species. The differences in size may be yet more simply

explained by the facility or difficulty of sustaining existence in varying localities. On similar principles we may account for the existence of such a bird as *Galerida macrorhyncha* in the warm, genial climate of the Oases, where, winter being unknown, and food always abundant and close at hand, every stimulus is afforded to a vigorous development, while its prey being generally hidden in the soft open mould of the gardens and barley patches, any tendency to elongation of the bill is fostered and encouraged, until we find a race two inches longer than *Galerida isabellina*, and with a bill exactly double in length (1 inch instead of ·5).

"A process precisely similar may be supposed to have developed the various species of Desert Chats, until we find in the desert of Souf that all distinctive trace of colour has been scorched out, and instead of the brightly clad *Saxicola stapazina*, we have no more cheerful representative of the genus than *S. homochroa*. Widely as these two extremes appear to be separated, yet a well-chosen series of the numerous African species of the class will exhibit a range of transitions so imperceptible, that it will be found very difficult, without careful comparison, to draw a line between one species and the next."—'*The Ibis*,' October 1859, pp. 429–432.

The above are the words of Canon Tristram; and a more perfect or practical application of the theory of Natural Selection it would be hard to find, even in these days of its fullest acceptance—days when those who formerly strove to overwhelm its author with ridicule and contumely have not scrupled to declare themselves its firmest upholders.

Yet it is scarcely possible to speak of DARWIN's death as a loss. He had done the work there was for him to do. Respected by his opponents, honoured by the world of science, loved by his intimates, and venerated by his disciples, his remains lie among those of the greatest Englishmen; and even though, as some may still think, his theory may one day be set aside, as has happened with other well-established theories in times past, the principles on which it is founded will endure for ever.

A MONOGRAPH

OF THE

JACAMARS AND PUFF-BIRDS,

OR

FAMILIES *GALBULIDÆ* AND *BUCCONIDÆ*.

BY

P. L. SCLATER, F.R.S. &c.

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