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ALLAN HUME

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PREFACE.

THE conclusion of this third volume finds our little local Journal of Ornithology still flourishing and its Editor truly grateful for the kindly, and now widely extended, support that he continues to receive.

During the past year I have made an attempt, (and it must be admitted by no means a successful one,) to supply my readers, with plates of some few new or nearly unknown species. The object of course was to get these done, if possible, in India, and thus, while avoiding the risk and delay attendant on the transmission of specimens to Europe, to open out a new field for the employment of the native pupils from our schools of Art.

This object I have entirely failed to attain; I have met with no native either competent or likely to become competent to draw birds in a fairly artistic style and at the same time in life-like positions. Native colorists I have found in abundance, but the work of these is so slow and laboured, that despite the comparatively low salaries they receive, the plates cost double and treble what they would in Europe and are not nearly so well done.

The 3rd Plate was executed in England, and all future plates must, I fear, for some time to come be similarly executed. A few years hence when our schools of Art have been longer in operation it may be possible to revive the attempt with success.

Carefully prepared local Avifaunas continue to be amongst our leading desiderata. STRAY FEATHERS has already, during its brief existence of little more than 3 years, furnished a considerable number of these, and several more are, I am happy to learn, in different stages of preparation.

At the earnest request of many Indian subscribers, I have commenced the republication of all recently described species which have occurred within the limits of our Empire. These republications will be vigorously persevered in, and will be followed by descriptions of all other species, which though not recently described are yet not included in Dr. Jerdon's work. I shall then (D. V.) publish as an extra number, as complete a list of the Birds of our Indian Empire as I can compile, with a reference in the case of each species to the page in Jerdon or in STRAY FEATHERS, at which it will be found described, as also to

any passages in the latter in which remarks, tending to assist its discrimination from other nearly allied species, occur.

Rough and unscientific as they avowedly are, I am assured that my diagnostical keys to the Osmotrerons, Arboricolas, Arachnotheras Black-naped Orioles, &c., have proved most serviceable to field naturalists here, and I propose, to publish a number more of these, embracing Tits, Goatsuckers, Phylloscopi, Reguloides, Abrornis and the like troublesome genera. I would earnestly solicit contributions of this nature from all who have made any such groups their especial study.

In conclusion, I would again invite all sportsmen (even though no ornithologists, to favor me with notes of their experiences as to the habits, habitats, food and nidification of game and other birds that they shoot; about which, as is only natural, they often possess more real knowledge, than the great majority of professed ornithologists.

ALLAN HUME.

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STRAY FEATHERS.

Vol. III.] JANUARY, 1875. [Nos. 1, 2 & 3.

A First List of the Birds of Upper Pegu.

I.

The genesis of this very imperfect sketch of the Avi-fauna of the upper portion of British Pegu was in this wise.

Captain Feilden, of the 21st Fusiliers, having heard of my penchant for ornithology, very kindly forwarded to me, for examination, about the close of 1871, a collection of birds which he had made in the immediate neighbourhood of Thayetmyo. This portion of our empire was ornithologically quite a *terra incognita* to me, and many of the specimens seemed so full of interest that I thought it a pity to let the collection leave my hands without making a full list of it, and still more so to allow Captain Feilden to leave the country without placing on record his ornithological experiences in this (so far as its Avi-fauna is concerned) little-known tract.

On mentioning my wishes to Captain Feilden, he not only most kindly allowed me to keep many most interesting specimens, but also furnished me with a number of notes in regard to them, which will be found in their appropriate places later on in this paper.

My paper, founded on Captain Feilden's collection, was ready for publication by the close of 1872, when through my late valued friend, Dr. Stoliczka, I learnt that Mr. Oates, an enthusiastic ornithologist, had been for some time collecting vigorously in the same neighbourhood as Captain Feilden. I therefore proposed to Mr. Oates that with the materials I had already collected, and those at his disposal, we should prepare a joint paper on the birds of Upper Pegu; and he, very kindly assenting to my proposal, sent me in 1873 his entire collection for examination, together with very full and interesting notes in regard to a great many of the specimens he had preserved, the vast majority of which he had not only carefully sexed, but measured in the flesh.

II.

Never having as yet visited Upper Burmah myself, I must leave to Mr. Oates the description of the physical features and climatic conditions of the tract whose *Ornis* we shall endeavour partially to enumerate.

Mr. Oates says: "Though the Province of Pegu has been in the hands of the British for twenty years, its ornithology has been much neglected. The earlier acquired provinces of Tenasserim and Arracan were, from the first, worked by numerous collectors, and many birds were first described from these by Mr. Blyth, Colonel Tickell, and others. It is true that the late Dr. Jerdon visited Thayetmyo some years ago, but though he described for the first time three or four species found near that station, he does not appear to have gone into the interior; nor would it have been easy ten years ago for any but local officers to travel at will out of certain beaten tracks. Even now the hiring of carts or coolies, and the purchase of rice from day to day for a large camp, are matters of no little difficulty to those who have habitually to travel about even in their own districts. In fact, travelling in Burmah is simply impossible to the man who does not possess an immense amount of local influence. Burmans in the interior care little for money, and you may be detained for a whole day in a village before a cartman (of whom there may be twenty) will take your baggage to the next village, not more than five miles off.

"With the exception of transport and procuring fresh provisions, there are no difficulties to speak of in travelling about. The Burmese are hospitable to a degree, perfectly free from all caste prejudice, good-natured and polite. In the inhabited parts of the country, every village of any pretensions has a guest-house attached to it. This consists generally of one room, well thatched, with bamboo or boarded floor, well raised from the ground and generally walled in on three sides. There is nothing a Burman thinks more necessary to insure him a felicitous transmigration in his next state of existence than doing some work of charity. The consequence is that the whole country is covered with wells, rest-houses, monasteries, and small sheds on the road-side where waterpots are placed every morning for the benefit of thirsty travellers.

"With a couple of baggage elephants, which by the way are not easily obtainable, though Burmah is popularly thought to be a place where elephants figure largely, it is possible to traverse the country in any direction. My friend, Mr. Kurz, travelled in this manner, most energetically all over the wildest portions of the Pegu Hills. We continually crossed and re-crossed each other's paths without however meeting till we arrived at Tonghoo. I believe he met with no mishap till he came among Christian

Karens, who, on account of some of his followers having incautiously set fire to some jungle, wanted to scalp him. With this trifling exception—and they did not even *do* this—I have never heard of any traveller meeting with insult or being in danger. Travelling in Burmah is safer than in Europe.

"Mr. W. T. Blanford has lately given us a list of the birds obtained or seen by him in the Irrawaddy Valley.

"Captain Feilden collected vigorously at Thayetmyo, and very successfully; but his duties confined him to the station and its immediate neighbourhood, and it is to be regretted that he had no opportunities for travelling in the district.

"Small collections appear to have been made from time to time in Tonghoo, resulting in the description of a few new species by Lord Walden.

"As observers in Burmah are now on the increase, and its Avi-fauna seems likely to be well investigated, it may perhaps be proper to explain, once for all, what is meant by the terms 'Burmah,' 'Pegu,' 'Arracan,' and 'Tenasserim.'

"Burmah is a comprehensive term for the whole region stretching from the extreme north-east corner of Assam to the delta of the Irrawaddy. In breadth it varies much; the parallel of latitude, passing through Mandelay, the heart of the country, traverses the broadest part. Here it is 500 miles broad. Its boundaries are Assam, Munipore, Tipperah, Chittagong, and the Bay of Bengal; on the east, China, Assam, and Siam.

"Many years ago, Burmah embraced as many petty kingdoms as there were large towns or men strong enough to hold their own. Ava, Pagan, Prome, Pegu, Arracan, Tonghoo and Martaban formed the strongest of these. Everlasting wars with each other, plots and intrigues, gradually reduced the number of these kingdoms, till in the last century Alompra, King of Ava, became the sole monarch of the whole of Burmah as above defined.

"Matters went on smoothly enough till about fifty years ago, when the British were compelled in self-defence to annex two large slices of territory. These are now known as Arracan and Tenasserim. Subsequently, in the second war, the intervening territory, now called Pegu, was also taken. These three provinces constitute British Burmah.

"Arracan reaches from Chittagong to Cape Negrais, having the Bay of Bengal on the west and Native Burmah and Pegu on the east, from which it is separated by a lofty chain of mountains named the Arracan Hills. The western spurs lie in Arracan, and the eastern in Pegu.

"Pegu stretches up from the sea to the frontier in latitude 19° 30′ N. On the west the Arracan Hills divide it from that province. Its eastern limits are not very clear. A south-east

line running from the northern frontier till it meets the Salween River a little east of Tonghoo, and this river itself down to Moulmein, would to me appear to define Pegu. A considerable portion of this province lying between the Sittang and the Salween Rivers is named Martaban, and, for administrative purposes, forms part of Tenasserim. Geographically, however, I do not think that it has any claims to be included in Tenasserim. In treating of the birds of this district hereafter, I shall still continue to look upon it as part of Pegu.

"Tenasserim lies to the east of the Salween River and runs down to the Isthmus of Kraw, being separated from Siam by lofty ranges of mountains. Its northern apex lies at the junction of the Salween and Me-Nium Rivers.

"The tract of country in which the birds observed by me were obtained, is that portion of Pegu which lies between the Irrawaddy and Sittang Rivers. Its northern limit is our frontier, running due east and west, in latitude 19° 30′ N. The southern limit is defined by nature, being the junction of the dry and wet regions of Burmah, and though this junction is nowhere abrupt and cannot be defined by a hard and fast line, yet a parallel of latitude through Poungday will sufficiently well indicate it. The tract thus defined is about one hundred miles square.

"The Pegu Yoma Hills, the watershed of the two rivers, stretch from a point in native territory south of Mandelay to Rangoon in a nearly straight line. At the frontier their greatest elevation is about 2,000 feet (their highest point between Thayetmyo and Tonghoo was 1,950 feet, as ascertained by careful levelling), but further down, where they cross our southern limit, a few peaks attain a height of 2,500 feet. From this point they sink rapidly till they finally disappear at Rangoon.

"The spurs which the main ridge throws out to the east extend about thirty-five miles, and sink into a rich belt of perfectly level country, ten to fifteen miles broad, which in the neighbourhood of Tonghoo is about 150 feet above the sea level.

"The western spurs fall rapidly to an altitude of from 500 to 600 feet. Many are then lost, but others straggle to the banks of the Irrawaddy, rising occasionally into bold masses, as in the Sagadoun Hills near Palow. These outlying hills, however, are too low to have any effect on the distribution of birds, and for the purposes of this paper, the country lying on the left bank of the Irrawaddy, for about thirty miles inland, will be termed in my notes 'the plains,' in contradistinction to 'the hills.'

"The vegetation of the plains and of the western spurs to a height of 1,000 feet is nearly the same. Three-quarters of the whole country are covered with mixed forests, in which *Dipterocarpus grandiflora* is the most prominent tree, (the *Eng* of the Burmese). These dry forests are characterized by an absence of

undergrowth (what little there is, is very low); many of them are destitute of bamboos, and in all cases water is very scarce or altogether absent. Under these conditions, it cannot be expected that they should be favorite haunts for birds, and we accordingly find very few species in these dry localities. Woodpeckers alone abound. The soil being sandy, ants of all sorts swarm.

"The remaining quarter of this district is either cultivated or covered with bamboo and scrub jungle, among which the Jujube tree is ever present.

"Elephant grass grows only on some of the sand-banks of the Irrawaddy, and at the bends of nullahs. In nothing is the difference between the dry and wet portions of Burmah more conspicuously shown than in the distribution of this plant. South of Poungday it covers every available piece of ground; it forms the undergrowth of all the forests; and in the Rangoon and Henzadah Districts, miles and miles of ground produce nothing but this grass. Seated on an elephant, it is frequently impossible to look round you; such is its height. There is also another point of difference, trivial it may seem and yet materially affecting the general aspect of the country. In Tharawaddy, and generally south of Poungday, a huge nest-hill of white-ants, from eight to twelve feet high, is to be seen on almost every acre of ground. Northwards, though white-ants are equally common, it would be difficult to find one hill per square mile of country; and the few one meets with rarely exceed three feet in height, are comparatively unsubstantial, and fail to catch the eye. These are two of the more salient points of difference between the dry and wet regions; there are of course many others, but they need not here be dwelt upon.

"To return, at an elevation of 1,000 feet, we still find the dry mixed forests; but there is a large intermixure of Teak, straight and free from branches for thirty or forty feet from the ground, widely differing from the weedy tree of the plains. Large bamboos, growing in clumps of ten or twenty, are scattered over the hill-sides, and constitute the chief feature of the vegetation.

"These bamboos really deserve special mention. Not uncommonly, they attain a height of seventy-five feet, with a girth of twenty-four inches near the ground; perfectly straight, they are also free from the small branches which render other bamboos so troublesome. A cabin can be made from them by a few coolies in half an hour; opened out flat by a few strokes of a knife, a capital floor can be formed over joists of the same material, and at any height from the ground required. The bark, cut into thin strips, supplies all the necessary binding materials. By splitting the bamboos in half, and arranging them after the manner of tiles, a neat and thoroughly rain-proof roof is made. The walls, if necessary, can be made in the same manner as the floor. Whole

Karen villages are composed of houses thus built, and from top to bottom there is not a single nail. These houses last twelve months, at the end of which time the Karens move into another valley, make fresh houses, and cut down as many acres of valuable timber as they want for the cultivation of their crops. One joint of a bamboo will hold about two gallons of water, and they are much used as buckets; a Karen will sling three joints from his forehead in returning from drawing water. The uses to which this large bamboo is put are innumerable, not the least curious of which, perhaps, is for cooking rice. It will stand fire sufficiently long for this purpose, and the rice thus cooked is very delicious. It requires nice judgment, and few Burmans learn the art.

"On crossing the ridge and arriving at the eastern slopes, a very decided change is seen. For some reason or other—aspect possibly—most of the trees retain their old leaves till the new ones come out. These are the Evergreen Forests. They are not continuous nor universal, occurring only in large patches alternately with other patches of the same trees, which in the winter months drop their leaves. Water, which on the western slopes is very scarce, is here abundant; almost every ravine having its spring. Palm trees of various species are common, and the valleys are clothed with dense jungle, the favorite haunt of numbers of *Pittidæ* and *Arboricolæ*. Bamboos are also a trifle larger than on the west.

"On arriving at the foot of the hills the vegetation becomes still more luxuriant; canes, palms, and creepers, cover the ground to such an extent as to make progress impossible without cutting a path. In such jungle the collector may consider himself fortunate if he retrieves one bird out of five shot.

"The change in the birds is no less remarkable than that in the flora. On crossing the main ridge, only by half a mile, *Irena puella* is at once extremely common; yet it appears never to pass the ridge to the westward. The same may be said of *Ceyx tridactyla*, two species of *Arboricola*, three species of *Pitta*, and many others, which are extremely abundant in the Evergreen Forests, but never, I believe, occur, even as stragglers, on the western slopes. There is no doubt but that the Evergreen Forests will yield many more species than are contained in our list. The birds which I have noted were obtained during a five months' survey for a road from Thayetmyo to Tonghoo. With sixty miles of the route uninhabited, except by a few Karens, and with a large number of coolies to cut jungle and carry baggage, it was necessary to push on as rapidly as possible. Another visit to the Hills last April gave good results, and has considerably swelled the list. The birds of the plains have been obtained during a lengthened residence in the valley of the Irrawaddy. But even here the list is, unquestionably, very far from complete.

"There are only a few jheels, and, except in the rains, even these are but small. The Engmah Swamp, ten miles north of Poungday, varies in length from two to eight miles. The swamp at Shwaydoun, south of Prome, is of much the same size; and various small jheels at Boulay complete the total. *Podica personata* is the only noteworthy water-bird that I have yet observed in them.

"The rainfall of Thayetmyo, Prome and Tonghoo, is nearly the same, ranging from 40 to 50 inches per annum. The rains commence about the middle of May, and continue well into October.

"The following tables show the amount of rain which has fallen in Thayetmyo during the years 1862—1872, and the temperature in 1871-72, the only two years of which a register has been kept in the dispensary:—

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total Inches.
1862	...	...	...	...	...	8·525	10·7	9·925	11·9	10·75	...	...	51·8
1863	...	...	...	...	5·15	3·55	9·225	6·0	9·0	6·75	3·375	...	42·375
1864	...	...	...	...	·9	13·9	10·9	5·8	4·1	6·4	...	...	42·0
1865	...	...	...	·3	7·175	9·45	9·525	5·475	10·0	5·3	4·575	...	51·8
1866	...	...	...	...	3·0	13·525	7·175	8·75	10·0	6·25	7·55	...	55·575
1867	...	...	...	·25	9·75	5·525	7·5	8·35	9·325	2·125	2·575	·1	45·5
1868	...	...	·975	·1	6·6	7·325	9·175	11·425	6·75	7·5	2·5	...	50·775
1869	...	...	...	2·2	4·2	6·7	5·35	5·85	2·6	6·3	...	...	33·2
1870	...	·3	...	·5	12·3	6·36	7·89	5·72	6·18	2·6	...	...	40·59
1871	...	...	·8	·21	8·46	7·7	9·61	10·71	12·0	5·34	·74	...	54·85
1872	...	...	...	...	7·23	11·4	6·15	7·89	3·91	3·33	...	...	39·91

TEMPERATURE.

Month.	1871.			1872.		
	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.
January ...	90°	46°	70·1°	87·75°	51°	69·04°
February ...	94	57	70·07	95	48	72·31
March ...	103	61	81·48	104·5	60	84·3
April ...	105·5	69	90·52	106·25	70	89·98
May ...	103·5	71	84·98	105·5	71	86·67
June ...	94	74	81·76	96·5	75·5	83·57
July ...	90·75	74	81·69	96·5	75·5	82·72
August ...	90·25	75·5	81·51	92·5	74·5	82·87
September ...	90·75	74·5	82·51	94·25	74	84·32
October ...	92·75	73	81·94	93·5	71	82·57
November ...	91·25	62·75	78·17	91·5	61	79·74
December ...	86·0	48·5	71·06	93	51	73·41

"The above tables apply equally well to Tonghoo and Prome. In Thayetmyo the cold-weather is more bracing, and the heat is a trifle greater in April than elsewhere.

"The rainfall in the Evergreen Forests must be considerably greater than in the plains, since in March and April heavy thunder-storms are frequent. From the Thayetmyo register they do not appear to have extended to the plains. Light summer showers also are common, occurring chiefly during the hottest months. This exerts, no doubt, a great influence on the vegetation.

"A short description of Thayetmyo and Tonghoo, two of our remotest cantonments in British India, may be acceptable.

"Thayetmyo lies on the west bank of the Irrawaddy, and consists of a native town to the south and a cantonment to the north. The latter is about a mile square, regularly laid out with roads crossing each other at right angles and surrounded by a circular road. The barracks are of Teak throughout, with the floor raised on posts ten feet from the ground, which is paved. This ground-floor is perfectly open on all sides, and forms a mess and recreation-room, which for coolness is not to be surpassed by any building I am acquainted with. Little, however, can be said for the private residences in the station. They are tumble-down, wretched sheds, leaky, ant-eaten, and only kept upright by renewing a portion every few months. There are a few good houses of course, but they only serve to make the bad ones more wretched by contrast. The roads and compounds are thickly planted with trees; the ground is undulating, and on three sides the cantonment is surrounded by hills, some of them high, so that, taken altogether, Thayetmyo can boast of being a very pretty station. Viewed as a military station, there is absolutely nothing wanting. Even racket-courts and a swimming-bath have been built for the comfort of the troops. The garrison consists of one wing of European infantry, one field battery of artillery, and a regiment of sepoys.

"The Irrawaddy, at the frontier, is little short of a mile in breadth. Opposite Thayetmyo a large sandbank has formed of late years, detracting much from the appearance of the place. In the rains, however, the river becomes a mighty stream, obliterating all sandbanks. Steamers of five-feet draught can proceed at all seasons of the year up to Bhamo, 600 miles from the sea.

"Tonghoo is situated in a plain on the west bank of the Sittang. Like Thayetmyo, it consists of a large native town and a cantonment, but both are much inferior in importance. The former was, in olden times, the capital of one of the petty kingdoms into which Burmah was divided. The fort, about a mile and a half square, still exists in tolerably good order, with high earthen walls and a deep moat exteriorly. In the centre

still stands a huge pagoda, which, like those of Rangoon and Prome, attract many people at certain festivals and are held in much veneration.

"The cantonment is of an irregular shape, well-wooded and traversed by many roads; but the general appearance of the station is not so neat as that of Thayetmyo. Officers' houses and military buildings are, however, very similar. The garrison consists of a wing of European infantry, a small battery of artillery (with the guns drawn by Burmian ponies), and a regiment of sepoys.

"The Sittang is a shallow river, unnavigable by any thing larger than a Burmese boat. The trip from Rangoon to Tonghoo occupies eighteen or twenty days *under favorable circumstances!*"

Of the country west of the Irrawaddy, in the immediate neighbourhood of Thayetmyo, Captain Feilden says:—

"You ask for a description of Thayetmyo. The country is one difficult to describe; its general appearance is not unlike that of the lower ranges of the Western Ghâts, where they are crossed by the Bombay and Poona Railway; but the hills, instead of being masses of rock, are a mixture of mud and gravel.

"The country rises from the bed of the Irrawaddy (which is composed of whitish sand mixed with mud) in a mass of undulating ground intersected in every direction by deep ravines, which never appear to run for two yards in the same direction, but all eventually work their way into three tolerably large streams which empty themselves into the Irrawaddy, one south, one just to the north, and the third about two miles north of Thayetmyo. Two of these streams appear to take their rise in table-land, perhaps fifteen miles west of Thayetmyo, without any reference to the hill ranges through which one of them cuts its way, forming a rocky torrent, in which the Fork-tail *(E. immaculatus)* is found. The other rises far inland, running south of a long range of hills said to be a spur of the Arracan Mountains. A very peculiar hill, cut into two parts by the stream already mentioned, rises perhaps seven miles west of Thayetmyo. It appears to break through the undulating mass of twisting ravines, without affecting them in the least; they run steadily up to its eastern slope, and continue their rise from the western slope far away into the interior. Another line of hills, running south-east from the southern slope of this hill, reaches the Irrawaddy perhaps eight miles south of Thayetmyo.

"These hills occupy rather more than a quarter of the horizon, and the spur of the Arracan Mountains occupies a considerable space to the north, so that Thayetmyo is almost surrounded by hills on the land side.

"The ravines in the hill ranges are rocky, and rock breaks through the crest of the hills in one or two places; but the whole of the rest of the country consists of black soil, like cotton soil,

blue and yellow clays, gravel or whitish sand, and is clothed with tree jungle, more or less thick, according to the nature of the soil. There is everywhere an undergrowth of grass, or bulbous plants; the grass in favorable localities often eight or ten feet in height.

"The size of the trees varies much with locality and the distance from Thayetmyo, as the Burmese are always cutting and burning, and seldom let trees grow to any size. There are a great many patches of jungle partially cultivated with the bare trunks of the old forest trees still standing; the trees are chiefly Teak, and *Eng*, with an immense quantity of small-sized bamboo."

III.

And now to return to our birds. Altogether, including all the species obtained or observed by Captain Feilden, Mr. Oates, and Mr. Blandford, I can as yet only enumerate 317 species. This must appear a very small number, but it must always be borne in mind, that this list refers strictly to the limited area already defined. Directly you cross the Sittang and proceed eastwards, directly you cross our southern line and leave dry Upper for moist Lower Pegu, or again directly you wander any distance westwards from the Irrawaddy, you at once meet with numerous species not included in our list.

Still, even making all these allowances, I do not doubt that, including stragglers, this little block of dry, hilly country (say 100 miles square, or 10,000 square miles in extent) will, when thoroughly explored, yield at least 500 species.

As it is, it yields quite as many, looking to its extent, as any other division of British Burmah, so far as I am yet acquainted with them. In Tenasserim I can only count 435; in Lower Pegu, 298; in Arracan, 270 species. Out of these, Tenasserim has 190 species not included in this list; Lower Pegu, 30 not included in either; and Arracan, 58 not as yet included in any of my lists. Many of these will doubtless be found to extend beyond the limits that my imperfect information at present enables me to assign to them; but at any rate, so far as I have yet investigated the question, I can only count altogether 595 species, or say 600, which I actually *know* to occur in British Burmah. To these I might add about 100, which, I am sure, will prove to occur there, and which may have been sent thence, though I have no record of the fact.

But what are 700 species for a country stretching over ten degrees of latitude, with a myriad-isled archipelago, vast rivers and swamps, and the most wonderful diversity of soil, geological formation, physical configuration and level, vegetation and climate?

We may safely estimate the *Ornis* of this rich, but too little-utilized and only half-explored, country at one thousand species; and I entertain no doubt that twenty-five years hence some future

Editor of STRAY FEATHERS will condemn even this estimate as far below the mark.

Returning now to the 317 species which I am able to record as a definite instalment of the *Ornis* of the particular tract with which we are dealing, it will be convenient to divide them into four classes:—

I.—Species (which for the nonce I will call *Indo-Burmese*) common to our tract and to one or more of the following sub-divisions: Bengal, east of the Ganges to Goalundo, and thence of the Brahmapootra, Assam, and Cachar: the Himalayas south of the first Snowy Range, and the Terais, Dooars, Dhoons, &c., which fringe their bases, as far west as the Jumna.

II.—Species (which for brevity—the term is not accurate—I will call *Indian*) common to our tract and to parts of the continent of India outside the limits above indicated.

III.—Species (which I will call *Indo-Malayan* and *Chinese*) common to our tract and to one or more of the following: the Malay Peninsula, the islands of the Archipelago and China; but not, so far as I know, occurring within our limits, except in Burmah and, perhaps in a few cases, the Andamans.

IV.—Species (which I will call *Burmese*) which I do not know of as occurring beyond the limits of Burmah, British and Independent.

Classing the birds thus, and arranging them for the convenience of Indian ornithologists according to Dr. Jerdon's classification, we obtain the following results:—

	I.—Indo-Burmese.	II.—Indian.	III.—Malayan and Chinese.	IV.—Burmese.	TOTAL.	GRAND TOTAL.
RAPTORES.—						
Diurnal ...	2	22	3	2	29	
Nocturnal ...	1	5	2	1	9	38
INSESSORES.—						
Fissirostres ...	5	18	3	2	28	
Scansores ...	7	23	3	6	39	
Tenuirostres ...	1	3	...	3	7	
Dentirostres ...	14	61	2	18	95	
Conirostres ...	5	12	3	8	28	197
GEMITORES ...	2	6	1	1	...	10
RASORES ...	1	3	2	3	...	9
GRALLATORES ...	1	46	1	1	...	49
NATATORES ...	...	14	...	...	...	14
TOTAL ...	39	213	20	45	...	317

Everyone who has tried to arrange as regards distribution a large number of species like this into a few classes must be well aware of the difficulty one experiences in dealing with particular species, which, happening to have a peculiar sphere or range of their own, do not very appropriately fall within any one of the classes chosen.

Thus, amongst the large number of species that under our definition are classed as Indian, the following, for instance, might doubtless be more properly classed as Indo-Burmese: *Chrysophlegma chlorolophus, Micropternus phaioceps, Bringa tectirostris, Megalæma Hodgsoni, Dicæum cruentatum, Erythrosterna leucura, Pomatorhinus schisticeps.* But of all these the area of distribution on the continent of India overpasses, in most cases considerably, the limits assigned for Class I, limits which, despite these exceptions, are natural, and do represent those of the large majority of true Indo-Burmese species.

It is not necessary to give any separate list of the birds included in Class II—that includes all not contained in the three others; but of those comprised in each of the latter an enumeration must be given in order to enable my readers to judge for themselves how far I have correctly assigned its place to each. If they differ on this point, they can then easily correct my figures for themselves.

First, then, we have the so-called Indo-Burmese birds (as defined above), some of which however, extending as they do to Malasia, China, Central Asia, and Siberia, are only Indo-Burmese *quoad* our Indian Empire.

20.—Microhierax cærulescens, *Lin.*

45 *bis*.—Buteo japonicus, *Schl.*

62.—Phodilus nepalensis, *Gray.**

82 *bis*.—Hirundo Tytleri, *Jerd.*

102 *bis*.—Cypselus infumatus, *Sclater.*

116.—Harpactes Hodgsoni, *Gould.*

124.—Coracias affinis, *McClell.*

138.—Psarisomus Dalhousiæ, *Jameson.*

149 *bis*.—Palæornis bengalensis, *Gm.*

152.—Palæornis fasciatus, *Müll.*

168.—Mulleripicus gutturalis, *Valenc.*

173.—Chrysophlegma flavinucha, *Gould.*

* It is, however, still uncertain whether the Pegu bird is identical with the Nepalese or Malayan race or species.

187.—Sasia ochracea, *Hodgs.*
198 *quat.*—Xantholæma cyanotis, *Blyth.*
214 *bis.*—Eudynamis malayana, *Cab.*
233 *bis.*—Chalcoparia cingalensis, *Gm.*
263.—Tephrodornis pelvica, *Hodgs.*
271 *ter.*—Pericrocotus elegans, *McClell.*
346.—Brachyurus cucullatus, *Hartl.*
351 *bis.*—Cyanocincla solitaria, *Müll.*
391.—Stachyris nigriceps, *Hodgs.*
412.—Garrulax pectoralis, *Gould.*
413.—Garrulax moniliger, *Hodgs.*
500.—Ruticilla aurorea, *Pall.*
538 *bis.*—Prinia Beavani, *Wald.*
552.—Neornis flavolivacea, *Hodgs.*
574.—Abrornis superciliaris, *Tick.*
585.—Enicurus immaculatus, *Hodgs.*
630.—Erpornis xanthochlora, *Hodgs.*
650.—Melanochlora sultanea, *Hodgs.*
673.—Cissa speciosa, *Shaw.*
702.—Lonchura acuticauda, *Hodgs.*
710.—Passer montanus, *Lin.*
719 *bis.*—Citrinella rutila, *Pall.*
723.—Euspiza aureola, *Pall.*
771.—Treron nepalensis, *Hodgs.*
776.—Osmotreron Phayrei, *Blyth.*
803 *bis.*—Pavo muticus, *Lin.*
903 *bis.*—Podica personata, *Gray.*

Next we have Class III, the species which are common to our tract and more or less of the countries south and east; but which do not occur, except in Burmah, within the limits of our Empire, save in the case of a very few, which have been found in the Andamans and Nicobars.

23 *ter.*—Micronisus poliopsis, *Hume.*
39 *ter.*—Spilornis Rutherfordi, *Swinh.*

48 *ter.*—Poliornis liventer, *Tem.*
65 *bis.*—Syrnium seloputo, *Horsf.*
75 *quint.*—Scops Lempiji, *Horsf.*
101 *bis.*—Cypselus pacificus, *Lath.*
116 *ter.*—Harpactes oreskios, *Tem.*
127 *bis.*—Pelargopsis burmanicus, *Sharp.*
157 *ter.*—Picus ana[illegible]s, *Horsf.*
171 *bis.*—Gecinus vi[illegible]tus, *Vieil.*
211 *bis.*—Chalcococcyx xanthorhynchus, *Horsf.*
280 *bis.*—Dicrurus leucophæus, *Vieil.*
345 *bis.*—Brachyurus moluccensis, *Müll.*
671 *bis.*—Urocissa magnirostris, *Blyth.*
678 *bis.*—Crypsirina varians, *Lath.*
696 *bis.*—Ploceus hypoxanthus, *Daud.*
795 *bis.*—Turtur tigrina, *Tem.*
819 *ter.*—Francolinus chinensis, *Osb.*
834 *bis.*—Turnix maculosus, *Tem.*
? 927 *bis.*—Herodias melanopus, *Wagler.*

Lastly, we have those species which, though many doubtless do so occur, are not as *yet* known to me from any localities beyond the limits of British and Independent Burmah, unless indeed one of them should be considered identical with an Andamanese species.

These are—

15 *bis.*—Polihierax Feildeni, *Hume.*
57 *bis.*—Pernis brachypterus, *Blyth.*
76 *bis.*—Athene pulchra, *Hume.*
132 *quat.*—Carcineutes amabilis, *Hume.*
139 *bis.*—Serilophus lunatus, *Gould.*
147 *bis.*—Palæornis magnirostris, *Ball?*
163 *bis.*—Yungipicus canicapillus, *Blyth.*
165 *bis.*—Hemicircus canentes, *Less.*
165 *quat.*—Meiglyptes jugularis, *Blyth.*
169 *ter.*—Thriponax Crawfurdi, *Gray.*
177 *bis.*—Gecinulus viridis, *Blyth.*

223 *ter.*—Arachnothera aurata, *Blyth.*
250 *bis.*—Sitta neglecta, *Wald.*
254 *bis.*—Upupa longirostris, *Jerd.*
260 *bis.*—Lanius hypoleucus, *Blyth.*
268 *bis.*—Volvocivora avensis, *Blyth.*
277 *bis.*—Pericrocotus albifrons, *Jerd.*
343 *bis.*—Myiophoneus Eugenei, *Hume.*
344 *bis.*—Hydrornis Oatesi, *Hume.*
345 *quat.*—Brachyurus cyaneus, *Blyth.**
346 *ter.*—Anthocincla Phayrei, *Blyth.*
389 *bis.*—Alcippe Phayrei, *Blyth.*
393 *bis.*—Stachyris rufifrons, *Hume.*†
399 *ter.*—Pellorneum Tickellii, *Blyth.*
399 *sex.*—Pellorneum minor, *Hume.*
407 *bis.*—Garrulax Belangeri, *Less.*
439 *bis.*—Chatarrhæa gularis, *Blyth.*
451 *bis.*—Criniger griseiceps, *Hume.*
452 *quat.*—Microtarsus Blanfordi, *Jerd.*
463 *ter.*—Phyllornis chlorocephalus, *Wald.*
471 *ter.*—Oriolus tenuirostris, *Blyth.*
569 *bis.*—Culicipeta tephrocephalus, *And.*
663 *bis.*—Corvus? insolens, *Hume.*
678 *ter.*—Crypsirina cucullata, *Jerd.*
683 *bis.*—Sturnopastor superciliaris, *Blyth.*
688 *bis.*—Temenuchus burmanicus, *Jerd.*
689 *quat.*—Temenuchus nemoricolus, *Jerd.*
708 *bis.*—Passer flaveolus, *Blyth.*
708 *ter.*—Passer assimilis, *Wald.*
755 *bis.*—Mirafra microptera, *Hume.*
773 *bis*—Crocopus viridifrons, *Blyth.*

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* How *does* Mr. Gray give this from the Himalayas?

† But if this prove identical with *S. præcognitus*, Swinh., it will have to be transferred to Class III.

811 *ter.*—Euplocamus lineatus, *Lath.*
824 *quat.*—Arborophila brunneopectus, *Tick.*
824 *quint.*—Peloperdix chloropus, *Tick.*
855 *bis.*—Lobivanellus atronuchalis, *Blyth.*

Although some differences of opinion may exist as to my assignments, and some of my readers may probably consider that a few of the birds should be otherwise placed, still I do not think that these minor changes will in any way affect the main conclusions to which the figures above given point.

In this dry Upper Burmah the great bulk, or at any rate more than two-thirds of the *Ornis* is Indian; of the remaining third, nearly one-half are peculiar to Burmah. Indo-Burmese forms, as already defined, come next in importance; while the Malayan and Chinese forms, that extend thus far and no further, are comparatively few in number.

Now, in the proportions that these elements of the Avi-fauna bear to each other, the tract we are considering stands out very distinctly from the adjoining regions. Whether you go east, south, or west, you find a diminution relatively in the numbers of the purely Indian and purely Burmese forms, and an increase in the Indo-Burmese and, except in Arrakan, in the Indo-Malayan and Chinese forms, the increase of the latter east of the Salween being most marked.

Imperfectly as these various Burmese sub-regions, and more especially Independent Burmah northwards of the tract we are considering, have as yet been worked, it would be premature to generalize too far; but ever since I commenced the investigation of this question, it has always seemed to me that this particular sub-region with which we are dealing possesses a special interest, as being probably, as it were, an outlying island, where the original Indian *Ornis* has to a great extent maintained its position, while the invading waves of the Indo-Burmese Avifauna passed round it east and west, and meeting beyond it surged onwards to the Himalayas, swept up their flanks, and rolled away westwards, flooding their lower valleys and the dhoons and terais that skirt their bases, and eastwards up the valley of the Brahmapootra. No doubt some of the species, which have now so widely established themselves throughout the country as to be accepted as unquestionably Indian, did not pertain to what I may call the aboriginal fauna, but belonged originally to the invading *Ornis*; but making every possible deduction on this account, the preponderance of essentially Indian and western species in this small sub-province, as compared with what is observable in Northern Tenasserim, Southern Pegu, Arrakan, Tipperah, Cachar, Sylhet, and Assam, so far as I have yet succeeded in registering the birds of these, is very striking.

I have not said anything about genera; I find an insuperable difficulty here in dealing with these. I constantly see genera unhesitatingly set down as Indian, Indo-Malayan, Indo-Chinese, and the like, which do not appear to me to be rightly described by these titles, or indeed by any titles that I have yet seen applied to them. Nor do I find any general consensus as what should be considered Indian, &c. Nor again do I find, after analyzing all the genera occurring within our Indian Empire, so far as I know them, any method of so classing them that each class shall represent approximately the same area of distribution without creating an utterly unmanageable number of classes. No doubt it is possible to neglect distribution, and assign the genus to the territorial division where, owing to its being represented by most species and individuals, it may be inferred to have originated; but this is altogether empirical, and no two ornithologists would probably locate any hundred genera in the same way. To take now the genera included in our present list there are only the following, using the names in their most restricted sense, that I should call Indian, as having presumably their centre of distribution within that region, *viz.*:—

Athene, Palæornis, Hierococcyx, Xantholæma, Hydrocissa, Chrysophlegma, Arachnechthra, Tephrodornis, Hemipus, Volvocivora, Pericrocotus, Chibia, Cyornis, Culicicapa, Oreocincla, Pyctorhis, Alcippe, Chatarrhæa, Molpastes, Suya, Limonidromus, Erpornis, Sturnopastor, Acridotheres, Ploceus, Munia, Mirafra, Alaudula, Crocopus, Osmotreron, Pavo, Gallus, and *Francolinus.*

While many of these extend far beyond the limits the title would imply, many will doubtless by others be denied their right to this title.

But genera like these are easy. What is one to call one like *Elanus,* or even one like *Coccystes?*

In fact, even setting aside the Waders and Swimmers so generally cosmopolitan, not one half of the genera are so capable of local assignment as to throw any real light on the affinities of the fauna of a limited region like that with which we are dealing; and if those only are selected which can be more or less localized, the result tends rather to mislead than enlighten one.

Thus, I have above enumerated all the genera, thirty-five in number, amongst those known to be represented in this region, which, according to my views, can properly be designated Indian. But if we take those whose head-quarters may be considered to be in Malayana, South-East Asia, and the Archipelago, we find no less than forty-four, *viz.*:—

Microhierax, Lophospiza, Spizaetus, Spilornis, Polioaetus, Poliornis, Haliastur, Phodilus, Ninox, Dendrochelidon, Harpactes, Pelargopsis, Carcineutes, Ceyx, Dichoceros, Loriculus, Yungipicus,

Hemicircus, Meiglyptes, Müllerip.cus, Micropternus, Tiga, Megalaima, Ololygon, Zanclostomus, Centrococcyx, Dicæum, Arachnothera, Graucalus, Artamus, Myiagra, Tchitrea (?), *Brachyurus, Mixornis, Timalia, Criniger, Microtarsus, Orthotomus, Zosterops, Crypsirina, Treron, Carpophaga, Chalcophaps.*

So if we were to judge by genera, we should assign a distinctly preponderating Malayan character to the Avifauna, instead of which a study of the species shows that it is essentially Indian, the fact being that numbers of genera, whose head-quarters are further east have outlying species that, in the present day at any rate, are essentially Indian in every sense of the word.

Again, we found, looking to species, that Indo-Burmese forms greatly outnumbered those from Malayana and the East, but only the following genera, eight in number, (and the first of these doubtfully so,) can be characterized as Indo-Burmese, *viz.*:—

Ketupa, Psarisomus, Serilophus, Gecinulus, Chalcoparia, Culicipita, Arboricola, and *Podica.*

Lastly, we found that pure Burmese forms exceed both these latter classes; and yet we have only one single Burmese genus, *Anthocincla,* to record, and that one pertaining properly to the *trans*-Salween country, and only occurring, I believe, as a rare straggler within our limits.

There are doubtless Avifaunas in regard to which the study and classification of the genera they comprise is most instructive, but in the present case it would not seem to help us much.

As to the orders and tribes, it will be seen that the Raptores, Fissirostres, and Scansores, especially the latter, are in great force, being 12, 9, and 12 per cent respectively of the whole, as against 8, 6·5, and 7·6 of the Indian fauna proper, as given by Dr. Jerdon. On the other hand, the Dentirostres are only 30, against 40 per cent. in India, the Conirostres only 9 against 11·4, &c. But in the imperfect state of our knowledge as to the real extent of the *Ornis* of the tract under consideration, no safe conclusions can as yet be deduced from these differences.

IV.

The following is our list:—

2.—Otogyps calvus, *Scop.*

? 3 ***bis.*—Gyps fulvescens,** *Hume.*

4.—Gyps indicus, *Scop.*

Captain Feilden says: "Besides the birds that I sent you, I observed three species of Vulture—the Black Vulture, the Tawny Vulture, and the Common Brown one." Probably the three species he refers to, are those given above; both the first and the last I have seen from Upper Pegu.

Mr. Oates remarks: "*G. indicus*, though nowhere in great numbers, is not uncommon in small parties near villages. It is seldom, however, that more than twenty are ever seen in one place, or about one carcase. Amongst these, two or three *O. calvus* are generally to be seen appropriating all the tit-bits, and if the meal seems likely to run short, driving away the others. These are the only two species that I have noticed. I may add that vultures here have never anything larger than a dog to feed on. A dead horse or cow is a thing never seen* in Upper Pegu."

5.—Gyps bengalensis, *Lath.*

I have received a specimen from near Thayetmyo; it occurs we know as far south at any rate as Tavoy.

8.—Falco peregrinus, *Lin.*

Captain Feilden says: "Though I sent you no specimen, I have shot the Peregrine near Thayetmyo." Mr. Oates, too, has sent me a specimen, a nearly two-year old bird, shot at Prome on the 23rd of November, but I think we may conclude that it occurs in Upper Pegu as a straggler only.

15 *bis.*—Polihierax Feildeni, *Hume.* P. insignis, *Walden.*

I retain my own name for this remarkable and beautiful species, since, so far as I can learn, (though in this I may be in error,) mine was the first *published* description. Prior to its publication a specimen had been exhibited at a meeting of the Zoological Society, with an intimation that Lord Walden intended to publish it under the name of *insignis;* but such an exhibition does not constitute publication any more than showing a bird to a party of friends and telling them you intend to name it so and so. Of course it does not in the least signify which of the two names stands, but mine under strict rule has, I believe, priority.

It is curious that a species so very remarkable in its appearance, and so common in the neighbourhood of what has for so many years been a British cantonment, should have entirely escaped observation until the close of 1871, when specimens were received both by Lord Walden and myself. I considered it nearly allied to the Merlins—in fact, a link between the Merlins and the Chiqueras—and this is the situation which I should still assign to it. Lord Walden, however, has pointed out that it will properly fall under the African genus *Polihierax*, and I have adopted his correction.

Captain Feilden says that "it is pretty common about Thayetmyo." Mr. Oates, writing from this latter locality, remarks: "Not uncommon here; keeps entirely to the dry forests of

* Because the people eat them themselves.—A. O. H.

Dipterocarpus grandiflora, which cover nearly half the Thayetmy District, from the Irrawaddy to the summit of the Pegu Hil I did not observe it on the eastern slopes of these hills; procured a specimen lately from the Arracan Hills however.

The following are the dimensions of this species recorded in the flesh by Mr. Oates:—

Males: length, 10·5; expanse, 17; tail, from vent, 5·5; wing, 5·5; bill, straight from gape to point, 0·75; tarsus, 1·55; length of cere, 0·18.

Females: length, 10·7 to 10·9; expanse, 18 to 19; tail, from vent, 5·8; wing, 5·9 to 6; bill, straight from gape to point, 0·75 to 0·77; tarsus, 1·5 to 1·6; length of cere, 0·18 to 0·2.

The cere, gape, and both mandibles as far as the nostrils, orange yellow; anterior portion of bill, bluish-black; eyelids and orbital region, orange; iris, hazel; legs, orange; claws, black.

In *both* sexes, the mantle is dark bluish-ashy (darkest in the female), and the rump and upper tail coverts pure white. Central tail feathers black, with a few white spots, the remains of three narrow transverse bars, which in younger birds are more or less perfect; laterals, white, broadly barred with black. Quills, blackish brown, or black (the later secondaries and tertiaries more or less tinged slaty), with a few small white spots, most conspicuous on the primaries on the outer webs of all but the first primary, and numerous broad white bars on the inner webs. The chin, throat, and whole lower surface, including wing lining, white; some of the feathers of the throat with narrow central brown shaft stripes, and those of the sides and upper abdomen with broad grey brown dashes. Forehead, lores, and feathers round the eye, greyish white, with dark shafts; rest of the top, back, and sides of the head, and upper back *in the male*, pale slaty grey (each feather with a linear dark shaft-stripe), with traces of an albescent nuchal half collar; *in the female*, rich chestnut, extending in some specimens on to the shoulder of the wing.

In some females the middle back and scapulars are strongly tinged with chestnut; and in some young females, and even in young males occasionally, the feathers of the breast are tinged chestnut along the dark shaft stripes.

Captain Feilden says (*vide infra*) that the female does not assume the chestnut head till at least the second year; but one young male that he has sent me, everywhere browner and duller-colored than the adult has the whole nape and sides of the neck strongly tinged with rusty ferruginous, and the top of the head brown, with here and there a rusty tinge. This looks very much as if the young male assumed the female plumage before passing to that of the old male.

Captain Feilden remarks: "The female, as far as I know, does assume the red head till she is at least two years old. The red runs on the shoulders and extends gradually to the forehead. I have a specimen wholly red, except a small patch on the forehead and another only just tinted with red on the shoulders, but I cannot say how long the head is in becoming entirely red. I fancy that the head of the male also becomes red at a still more advanced age, but I am not certain of this. I have a male with a few red feathers on the shoulders, and I saw both a red and a grey-headed bird following a female during the breeding season. I shot the grey-headed male and the female, but lost the other red-headed bird, which I conclude was a male. I cannot say whether the male or the female is the larger, as their tails are almost always much broken; but in one pair that I obtained with unbroken tails, the male was slightly larger.

"The food consists of insects, with an occasional mouse, snake, or lizzard. The ordinary note of this bird is like that of the White-eyed Buzzard, but of course not so loud. During the pairing season, its call-note is a kind of whistling hoot, which appeared to me to resemble 'tooey,' the 'too,' very much prolonged. I once saw a pair meet, when they uttered a succession of loud harsh screams, which resembled the cries of a flock of Red-wattled Plovers when disturbed, but before they rise. They pair about the last week in January. I found an unshelled egg in March (on dissection). I think I found an old nest in the fork of a tree as I shot a young bird a short distance off, but I only mention this as a help to others in looking for the nest. It resembled a small Hawk Eagle's nest both in make and position.

"The habits of these birds are very peculiar, in some things resembling those of the Magpie. They perch exactly like a Falcon; but if they wish to move along a branch, they hop sideways, or, if the branch is pretty upright, walk up it, foot over foot, if I may use the expression, in the same manner as a Magpie. When at all alarmed they jerk their tail, and when much excited by the approach of any one, lower their heads exactly in the same way as some of the Owlets. Altogether, when moving about the branches of a tree, they might at a short distance be mistaken for a Magpie, except for the shape of the head. The flight is also peculiar, a few tolerably rapid strokes ending, if I remember rightly, in a slightly upwards jerk, then a short sail through the air, and then a few more strokes, and so on.

"I have invariably found them on cleared ground in the middle of jungles seated on trees, and once on a fallen hut. The only exception to this being when I have found them at a spot where several jungle roads meet and form an open space, or on low gravelly hills thinly covered with bushes, and an occasional

tree; their most favorite seat seems to be a dead tree bar[ked] by the Burmese in the middle of one of their half-cle[ared] cotton fields. I once saw a pair on a tree in a dry rice field, [but] on every other occasion the ground was covered partially wit[h] bushes, cotton plants, &c. I have found them from the level of the Irrawaddy to the highest cultivated patches in the hills about Thayetmyo. I have never seen one in a large open space or in thick jungle."

17.—Tinnunculus alaudarius, *Gm.*

This is another species which Captain Feilden informs me that he has obtained at Thayetmyo, although he did not send specimens.

Mr. Oates remarks: "I saw a number of these birds for the first time last November; they were flying round the large pagoda at Shwaybongah opposite Prome, and occasionally perching on the summit, far out of shot.

"The Kestril is a common bird, I find, in the Pegu plains; I have seen a dozen together."

19.—Erythropus vespertinus, *Lin.?* E. amurensis, *Radde.*

The only specimen I have seen from Thayetmyo was sent by Captain Feilden. It is quite a young bird; sex, not ascertained; length, 11 inches; and wing, exactly 9 inches; the whole of the under-wing coverts, white, barred with brown. In this stage it is impossible, I think, to distinguish the eastern and western forms of the Orange-legged Hobby. (*Vide* STRAY FEATHERS, Vol. II, p. 527.)

Captain Feilden says: "I saw four of these birds hawking over a dry field in January, and a fifth early in February, seated on the top of a tall tree; they appeared to be migrating. Food, cockroaches."

20.—Microhierax cœrulescens, *Lin.?* M. eutolmos, *Hodgs.*

Captain Feilden says: "The Red-legged Falconet occurs in Burmah, at any rate as far down as Rangoon. It appears to remain throughout the year, as I have shot it in August, October, November, and February."

Mr. Oates remarks: "Not uncommon in Upper Pegu; I have procured it in January, February, August, October and November, but cannot say if it is migratory. Feeds* entirely on large

* This is certainly the general rule, but we have on several occasions found the flesh, and even some of the feathers, of small birds in their stomachs.

cts, which it catches on the wing, very much as a Bee-r would. It generally returns to the same perch several es. The following are dimensions and colors of the soft rts :—

"*Males:* length, 6·3; expanse, 12 to 12·3; tail, from vent, 2·5 to 2·6; wing, 3·8; bill, from gape to point, 0·43; tarsus, 0·92. *Females:* length, 7·2 to 7·3. The bill is slaty blue, nearly black at tip; cere, dark brown; iris, pale reddish brown; inside of mouth, bluish fleshy; eyelids, bluish grey; feet, bluish brown, darker on toes and yellowish on soles; claws, black."

Wings of females appear to vary from 4·1 to 4·3; wings of males, from 3·77 to 3·97. Adults appear to have a broad frontal and superciliary band continued round the nape, and a stripe under the eye, *pure white;* chin, bright rufous; and whole lower parts, more or less tinged rufous. Immature birds have the frontal and superciliary band much narrower; and this, with the strip under the eye, is *bright rufous;* the collar is rufous white, while the chin and whole lower parts (except lower abdomen, vent, and tibial plumes, which are rufous) are pure white.

In one specimen, for instance, which I take to be an old bird, there is a huge broad white frontal band, nearly 0·4 in breadth; from this extend broad supercilia of the same color, fully 0·15 in width above the eyes, running down unbroken, over the ear coverts, widening as they go, and joining on the one hand the white of the sides of neck, and on the other hand a broad, 0·4 wide, half-collar of the same color. The cheeks are the same color, but the chin and the upper part of the throat are bright chestnut.

In another bird, a young bird as I believe, the frontal band is not above 0·1 in width, and is pale chestnut. It does not join the supercilia, which again above the eye are only 0·05 in width and scarcely wider elsewhere, and are also pale chestnut, and which running down mere narrow lines, still of this pale chestnut hue, join into a very narrow (0·15 broad) rufous-white half-collar. Immediately under the eye there is a tiny pale chestnut patch, but the whole of the chin, throat, and breast, are pure silky white.

Many birds, killed in the autumn as a rule, I think, are intermediate between these two well-marked stages, a little tinge of rufous only may remain on the brow, and the chin may still be quite white, or again the eyebrow may be quite white, and there may as yet be only a faint rufescent tinge on the chin, or sometimes, but this, I think, is very rare; both chin and eyebrow may entirely want the rufous tinge. I have only to add that birds from Pegu appear to be precisely identical with those from Kumaon, Nepal, and Sikhim.

22.—Lophospiza indica, *Hodgs.*

One immature specimen of this species was procured by Oates on the eastern slopes of the Pegu Hills; latitude, 19° nor It is apparently identical with birds from various parts of India. Mr. Oates says: "I only procured one specimen, and this on the Pegu Hills, where it appears to be rare. It measured: Length, 16·1; expanse, 29·5; tail, from vent, 8·0; wing, 8·6; bill, straight from gape to tip, 1·1; tarsus, 2·7.

"Upper mandible and tip of lower, dark brown or black; remainder of lower mandible, plumbeous; cere and gape, lemon yellow; eyelids, naked skin of face, and base of bill in advance of gape, dusky green; edges of eyelids, yellow; iris, bright yellow; inside of mouth, deep blue; legs, yellow; claws, black."

I follow Mr. Gray in separating the Indian form from *trivirgatus;* I have not myself compared specimens, but judging from the dimensions given by Schlegel and others, our Indian birds must be considerably more robust.

23 *ter.*—Micronisus poliopsis, *Hume.*

I described this species, Stray Feathers, Vol. II, p. 235. It is a perfectly separable race, but whether it should or should not be *specifically* separated must, of course, remain a matter of opinion. I have seen specimens from Thayetmyo, Rangoon, and Tenasserim, and Mr. Sharpe, who had independently recognized the distinctness of this race, informs me that he has seen it from Siam and Cambodia also.

Mr. Oates remarks that "the Burmese Shikra is extremely common from the Bay of Bengal to Tonghoo. Of ten specimens noted, eight had the irides yellow, and two red; these latter are apparently old."

He adds later: "I found a family of five together on the 16th June, and shot two. These were young. They were fully fledged and were able to fly as fast as the old birds. The nest appeared to have been on a high branch of a huge Peepul tree. A few fragments could be seen from below.

24.—Accipiter nisus, *Lin.*

Captain Feilden says: "I shot an European Sparrow-hawk at Thayetmyo." Mr. Oates, however, never seems to have met with this species, though he has collected in the neighbourhood of Thayetmyo for more than two years, and perhaps the identification may be doubtful.

25.—Accipiter virgatus, *Tem.*

Captain Feilden says: "I obtained one specimen of the Besra Sparrow-hawk at Thayetmyo." I have seen no specimen, and Mr. Oates appears to have procured none.

27 *bis*.—Aquila mogilnik, *Gm*. A. bifasciata, *Gray*.

A single unsexed specimen of the Plain-brown Imperial Eagle, with the buffy occipital patch just beginning to show, has been sent me by Mr. Oates; wing, about 22·5. In regard to this Mr. Oates remarks: "I have seen no other specimen; this was given me by Feilden in the flesh." Captain Feilden remarks: "The Imperial Eagle in Burmah appears to me to differ from the Indian variety, in wanting the orange buff head described by Dr. Jerdon. I have seen eight or ten of these birds in a day, at perhaps a hundred yards' distance, on an average, and never saw any trace of paling on the neck or head; feet, cere, and gape, wax yellow; eyes, bright, sparkling brown. The feet appear to me smaller than in the Indian bird, and the bird throughout less strongly built. I have found these birds singly, or in twos and threes, seated on large trees growing in the long but broken expanse of rice fields extending from Thayetmyo to Mingdoon, enclosed by spurs of the Arracan Mountains. It is almost impossible to get these birds, as the trees they occupy are generally single, with no cover near them."

I suspect that *Aquila amurensis*, Swinhoe, (PROCEEDINGS, ZOOLOGICAL SOCIETY, 1871, p. 338,) is nothing more nor less than this bird.*

28.—Aquila clanga,† *Pall*.

No specimens of this species have been sent me, and Mr. Oates obtained none; but Captain Feilden's remarks leave no possible doubt as to the species he refers to.

Captain Feilden says: "The few of these birds that I have obtained have been all in the nearly black unspotted stage, with tarsi more or less white. Food, always fish or frogs, except that the stomach of a one-legged bird in very bad condition contained a bandicoot, which he had probably picked up dead."

31.—Nisaetus pennatus, *Gm*.

This species must be comparatively rare in Upper Pegu. Mr. Oates appears never to have procured it. A single specimen sent by Captain Feilden is precisely similar to Indian birds. Dimensions given by Captain Feilden of males, though somewhat smaller than what Jerdon gives, correspond exactly with my own dimensions of males. The bird sent is the mature bird in the brown plumage.

Captain Feilden says: "I have found these birds in the same line of rice fields as the Imperial Eagle, but have only obtained

* Mr. Sharpe has since confirmed this supposition.

† By *clanga*, I mean the bird which we have most of us heretofore callpe *nævia*, Briss. I agree with Mr. Brooks that the true *nævia* is either identical with or *very* closely alied to *hastata*.

them on the general parade ground at Thayetmyo. I have never obtained a female, but once or twice saw a much paler bird that must have been either the female or young. I have always found them, when perched, seated in the centre of moderate-sized trees in full foliage. The stroke of the wing of this bird is much more rapid than is the case in the flight of the other eagles. This bird appears to hunt its own game down, and never touch carrion. The two that I shot contained a White-headed Myna and a field rat; another that I hit and lost, was eating some other bird. These birds are tame, and can be shot by walking past them in a careless manner; but they are not so stupidly tame as the Indian variety often is. I never saw any trace of the Pale-head. The pale birds that I saw appeared to resemble the adult Tawny Eagle in color. I never heard it utter any note."

34.—Spizaetus caligatus, *Raffles.*

Specimens sent by Captain Feilden and Mr. Oates are identical with others from Kumaon and other localities in the Himalayas, Dacca, and other parts of Eastern Bengal. Mr. Oates gives the following dimensions and particulars of three males:—

I.—(I should say about three years old.) Length, 25·7; expanse, 53; tail, from vent, 12; wing, 15·8; bill, straight from gape to point, 1·76.

Iris, orange yellow; eyelids, dark grey; inside of mouth, fleshy; bill, black; cere, blackish brown; feet, greyish white.

II.—(A bird of the year.) Length, 26·35; tail from vent, 12; wing, 16·1; bill, from gape to point, 1·7; tarsus, 4·4.

Iris, yellowish brown; eyelids, plumbeous; inside of mouth, bluish fleshy; cere and bill, black; gape as far as nostrils, bluish black; toes, pale yellowish green; claws, black.

III.—(A male, apparently young, shot in my compound in Prome.) Length, 26·5; expanse, 54; tail, from vent, 12; wing, 16·1; bill, from gape to tip, straight, 1·69; tarsus, 4·2; cere, 35.

Iris, brown; bill and cere, dark brownish black, turning to plumbeous at the gape; shelf, plumbeous; claws black; legs and toes, pale yellow.

He remarks: "Having now secured three specimens, I am beginning to think that the bird is commoner than I once considered it."

Captain Feilden says: "This seems to be a very common bird about Thayetmyo; every ravine in the spurs of the Arracan Mountains seems to contain one or more pairs, as well as every wooded stream in the lower ground. Their wild screaming (whistle) is almost always to be heard long before the bird is seen, as it sits on some large tree rising above the rest of the jungle or wheels in circles far overhead; it is one of the

wildest and wariest of birds. One that I took from the nest nearly two years ago is still as wild as ever, and constantly ruffles up the feathers of its head till they look almost like the crest of a blood-sucker, leaving the rest of the top of the head almost bare. It has also a habit of throwing back the head, apparently looking for a hole in the top of its cage, and bending backwards till it frequently falls over. It appears to have a great desire to wash. When first caught, I gave it water in a sardine tin, when it stood over it and went through the motions of washing, although it was hardly fledged, and could not of course get into the water. This bird shows no change either in plumage, length of crest, the dark color of the eye, or the black cere, since I have had it, except that it has lost the pale tips on the back and wings.

"These birds, as far as I know, feed on Mynas, rats, and frogs. I have taken a young bird from the nest in the middle of May, and seen several young birds about the end of that month. These birds build the usual Hawk Eagle's nest in the fork of the largest and most inaccessible tree that they can find, invariably, as far as I know, overhanging the bed of a stream. Either numbers of these birds build and do not lay, or else they desert their nests on the slightest suspicion of their having been discovered. Of half a dozen nests that I saw building in March, on one of which I saw an old female engaged in arranging the sticks, not one ever contained either egg or young bird; though I found a large egg dropped at a short distance from one of the nests, as if the bird had deserted the nest and not built another. Several pairs of birds belonging to nests in more remote parts of the jungle seemed all to have succeeded in rearing one young bird each. The Burmese state that the birds only lay one egg, which is pure white. Fragments of two eggs, one on the ground and another in the nest from which I got the bird, were white. While the trees are in full leaf, these birds shelter themselves in the middle of some thick tree during the heat of the day."

In the quite young bird of this species, just before the first moult, almost the whole of the head and lower parts are white; a few of the feathers of the forehead and the centre of the crown and occiput are brown-shafted, or have very narrow shaft stripes. Two or three feathers on the breast have very narrow, brown, shaft stripes towards the tips; on the sides of the body there are some brown dashes, and the tibial plumes are very faintly barred transversely with pale rufescent brown. The upper surface of the body, tail, and wings are much as in the adult, except that the sub-terminal tail band is narrower and less conspicuous, and the white margins of the feathers have almost disappeared.

39.—Spilornis cheela, *Lath.*

Birds from Thayetmyo are the true *cheela*, a little smaller no doubt than Himalayan specimens, but with wings varying from 18 to 19 inches in females and of the true *cheela* type. Further south this species appears to be entirely replaced by the next. Mr. Oates gives the following particulars of a female of the present species measured in the flesh :—

"Length, 28·2; expanse, 61; tail, from vent, 12·8; wing, 18; bill, from gape, 2·02; tarsus, 4·05; legs, pale dirty yellow; claws, black; iris, bright yellow; eyelids, well clothed; naked skin in front of eye and shelf, pale greenish yellow; cere, a shade greener; bill, plumbeous, dusky at tip; inside of mouth, bluish.

"The commonest of the large Raptors; extends to my knowledge from the Bay of Bengal to Tonghoo. One was shot in Thayetmyo in trying to carry off a chicken."

Captain Feilden says: "I shot four birds answering to Dr. Jerdon's Crested Serpent Eagle; but as I never shot that bird, I cannot state that they are identical with the Indian bird."

39 *ter.*—Spilornis Rutherfordi, *Swinh.*

It is only, I believe, as a mere chance straggler that this species or race occurs within our limits; its natural home is further east and south.

No separate description seems necessary. I have compared a large series from China, Siam, and Tenasserim with a still larger series of *cheela* from Northern and Continental India, and I have been unable to detect any constant difference in the plumage, though that of the Indian bird is commonly somewhat more richly colored.

In *Rutherfordi* the sexes differ little in size, and the following dimensions recorded in the flesh of four adults, two of each sex, will show how greatly in this respect these birds differ from *cheela* :—

Length, 24·0 to 24·75; expanse, 50·5 to 56·37; tail, from vent, 10·5 to 11·5; wing, 16·3 to 17·25; tarsus, 3·5; bill, from gape, 1·75 to 2·0; weight, 2lbs. to 2·5lbs. The legs and feet are yellowish white; the bill, dark plumbeous; the facial skin, cere and irides, bright yellow.

I have only seen a single specimen of this species obtained within our limits. This was shot on the right bank of the Sittang, about eight miles below Tonghoo, in July.

41.—Polioaetus ichthyaetus, *Horsf.*

A single specimen of this species is sent by Mr. Oates from Thayetmyo with the following remarks and particulars :—

"I shot this specimen in my compound in an apparently exhausted state. It is obviously quite a young bird, and so young

that I could not ascertain the sex. It measured: Length, 29; expanse, 62; tail, from vent, 12·25; wing, 19; bill, from gape, 2·05; tarsus, 3·7; the cere was grey; bill, greyish-blue at base, changing to dark brown at tip; iris, hazel; legs and feet, very pale greyish white."

This is a very interesting specimen of the true *ichthyaetus*, Horsf., which, as I have pointed out in my EGGS AND NESTS OF INDIAN BIRDS, is equally distinct from *plumbeus*, Hodgson, and *humilis*, Tem. It is in that particular stage of plumage which Gray and Hardwick figure as *Haliaetus lineatus*, a stage of plumage which, as far as my present experience goes, is not assumed by *plumbeus*.

The whole of the head, neck, interscapulary region and coverts, except the greater primary ones, are a light wood brown, each feather tipped with pale fulvous white, and with this color running more or less up the shaft of the feathers, especially on the head. The primaries, their greater coverts, and the winglet, dark brown, blackish towards the tips of the primaries. The greater coverts tipped with fulvous white, and the primaries paling to brownish white at the extreme tips; secondaries, a rather darker brown than the back, obsoletely barred darker, and narrowly margined at the tips with brownish white. Back scapulars, rump, and upper tail coverts much the same color as the secondaries. Tail, pale dirty brown, with a broad, irregular, blackish band close to the tips, and another somewhat narrower band higher up; the interspace is very ill-defined, and the basal half of the feathers densely mottled and blotched with dark brown. Chin, throat, ear coverts, and sides of the neck yellowish white, each feather narrowly margined with pale rufescent brown. Lower tail coverts, white or nearly so; rest of the lower parts, pale rufescent brown, each feather with a narrow, central, yellowish white shaft stripe, least narrow on the breast. Axillaries and lesser lower coverts along the ulna, mingled rufous white and rufous brown, the rest of the wing lining, (except the primary lower coverts,) and the basal portion of the quills, white. The median lower primary coverts, tinged with pale rufous; the greater primary lower coverts also rufescent towards their tips, and with one or two imperfect transverse dark brown bands. On the lower surface of the quills, between the white basal portion and the brown or grey brown tips, the inner webs are greyish white, with four or five strongly marked transverse dark brown bars. The lower surface of the tail is white, becoming tinged with brown towards the tip. There is a broad, irregular, subterminal blackish brown band, and the rest of the feather above this is freckled, mottled, and blotched with dark brown.

The nostrils are excessively small in this species; in this specimen they have not been plugged out with cotton, and they measure exactly 0·13 inch long by 0·09 wide.

Since the above was in type, Mr. Oates has sent me the following additional note:—

"A male in somewhat similar plumage to the one you have already described, but more robust, measured—

"Length, 29·4; expanse, 65; tail, from vent, 11·5; wing, 18·5; bill, 2·05; tarsus, 3·8; cere, 0·5; middle claw, straight, 1·3; hind claw, 1·5; bill, dark brown; the basal two-thirds of lower mandible, light plumbeous; cere, a lighter brown than the bill; iris, light brown, mottled and speckled; feet and legs, china-white; claws, black; loral region, dusky greenish; eyelid and shelf, plumbeous.

"This bird is very sluggish and flies heavily."

45 *bis*.—Buteo japonicus, *Schlegel*.

A Buzzard from Thayetmyo would certainly be ranked as *Buteo vulgaris* but for its much smaller size and slightly more feathered tarsi. The tarsi are not feathered quite so far down, nor are the toes quite so short, as in another specimen of *japonicus* that I possess from Kotegurh, Himalayas; but still they differ sufficiently from *vulgaris* of Europe, of which I have six good specimens before me to compel me, to assign the bird to *japonicus*. It is a female, and measured in the flesh 19·5 in length; the wing, 14·3; the tarsus, 2·8 feathered for 1·45; the cere was greenish yellow; the irides, very pale brown; the legs and feet, yellowish. It is certainly not *ferox* in any stage, neither is it, I think, *desertorum*; and if not *japonicus*, (it is far too small for *vulgaris*,) it must be a new species, and if so, might well stand as *burmanicus*. I myself am inclined to believe that it is *japonicus*. It is useless attempting an elaborate description of the plumage; so far as plumage goes, it exactly resembles some stages of *vulgaris*, but it has the outer webs of the earlier primaries, especially just above the emarginations, most conspicuously silvered to an extent that I have never seen in any specimen of *Buteo vulgaris*. I may add that the central tail feathers (and indeed all the tail feathers) are very narrow, not above 1·6 width at the widest, and exhibit beyond the tips of the upper tail coverts no less than ten well-marked, dark brown, transverse bands on a mingled grey and rufous ground, the rufous predominating towards the tips, the grey towards the bases of the feathers.

Captain Feilden says (for Mr. Oates never appears to have met with the species): "I found this bird at the edge of the parade ground in tolerably thick-tree jungle with partially cleared underwood. I believe I caught a glimpse of the same bird eighteen months before in very thick fruit-tree jungle with an undergrowth of Pine-apple. The specimen killed had eaten insects. As far as I know, I have never seen any other specimens."

Mr. Sharpe in the *Accipitres* unites this species with *plumipes*, Hodgson. He is most likely right, but at the same time it seems to me to differ in its shorter wing, somewhat slenderer and slightly less-plumed tarsi, and its more characteristically Buzzard head. However, although we have more specimens than the British Museum, neither museum has anything like a sufficient series to enable any certain conclusion to be arrived at.

48.—Poliornis teesa, *Frankl.*

Numerous specimens sent by both Captain Feilden and Mr. Oates are identical with Indian birds. Mr. Oates remarks that this species is "not uncommon in the Thayetmyo District. The food appears to be small crabs. A *male* measured: Length, 15·75; expanse, 34; tail from vent, 6·4; wing, 11; tarsus, 2·1; bill at front, 1·2. A *female:* Length, 16·5; expanse, 36·5; tail, from vent, 7·3; wing, 11·5; tarsus, 2·56; bill, from gape, 1·3."

A female measured—

Length, 16·5; expanse, 36·5; tail, from vent, 7·3; wing, 11·5; bill, 1·3; tarsus, 2·56; cere, 4.

This bird is fond of flooded paddy land, which it beats over, as a harrier does; but, unlike the latter, it is fond of perching on trees.

48 *ter.*—Poliornis liventer, *Tem.*—Pl. Col. 438.

P. pallidus, *Less.*

The occurrence of this species at Thayetmyo is somewhat unexpected. Temminck, however, in his original description, gave it from Celebes, Sumatra, Java, and the continent of India. It does not occur certainly on the continent of India, but it occurs, as we now see, on the mainland of Asia, on the very northern frontier of the province of Pegu. It is noteworthy that from the Tenasserim Provinces in 1845, Dr. Helfer sent a young specimen of *Poliornis barbatus*, Eyton; while now Captain Feilden and Mr. Oates send not only *liventer*, but also *teesa*, from Thayetmyo. The occurrence of three such species within one comparatively limited province is certainly curious. Mr. Gray (and I follow him) separates *barbatus*, Eyton, from *poliogenys*, and identifies Blyth's *pygmæus*, founded on Dr. Helfer's specimen (*vide* my Rough Notes, No. 2, page 291) with the former, and doubtfully with *trivirgatus*, Moore. Whether this separation be correct or not, we still have three distinct, though nearly allied species from British Burmah.

The specimen sent me by Captain Feilden, an adult male, measured in the flesh; length, 14·5; wing, 10·8; tarsus, 2·6; tail, 6; bill, from gape, 1·3. The bill was pale orange, tipped horny black; orbital skin, cere, and legs, bright orange; irides, golden

yellow. This bird was killed at the end of the breeding seas In the cold-weather, the legs, orbital skin, and cere, are paler.

The specimen sent by Mr. Oates was also a male; and in re gard to this he has recorded the following particulars: "Length, 15·5, expanse, 36; tail, from vent, 6·3; wing, 11·1; bill, from gape, 1·3; mid-toe and claw, 2·1; claw only, 0·73; cere, 0·45; bill, along culmen, 0·9. Fourth quill the longest, third, 0·2; second, 0·7; first 3·3; and fifth 0·45 shorter than fourth. Eyelids, well-clothed with white down. This and the upper-shelf yellow, with an orange tinge; iris, yellow, rather pale; bill and cere, waxen orange; the tips of both mandibles, dark-brown, almost black; legs and feet, yellow; claws, dark-brown. I only procured one specimen, and that at Thayetmyo. It appears to be rare."

Captain Feilden says: "This bird I only found in a long line of paddy fields, extending many miles inland from Thayet-myo, but much broken by patches of jungle, and dotted with large trees standing singly, or two or three together, in the middle of fields. It is an extremely wary bird; I only obtained two quite accidentally. They are not very wild at first, but if they have once been shot at, it appears hopeless ever to get near them again."

Captain Feilden says that this species breeds in March. For further particulars, see my "Nests and Eggs of Indian Birds."

The following is a description of this species, founded on these two specimens: The whole head and neck all round are a pale earthy or grey brown; the feathers darker shafted; the lores are whitish, and the chin and throat more or less faintly streaked with white; the breast is nearly uniform in color with the neck, but here and there with faint traces of obscure rufescent bars; all the feathers darker shafted; the sides and abdomen are some-what more rufous, with white spots or obscure bars, and all the feathers darker shafted; the tibial plumes, vent and lower tail coverts, and the whole under-surface of the wings (except the primaries beyond the notches on the inner webs), pure white; axillaries white, with numerous closely-set transverse bars of mingled brown, and rufous. The quills, and primary greater coverts, and winglet, a rich chestnut red, tipped, more or less broadly, with brown, darkest on the primaries, with the outer webs of the second to the fifth primary from about the emarginations more or less silvered or frosted brown; the greater portion of the inner webs above the emarginations, pure white; the red portions of the inner webs with a few widely-distant, narrow, dark brown transverse bars; the outer webs with traces of similar bars. The first four primaries conspicuously notched on the inner webs, and the third, fourth, and fifth, somewhat emarginate on the outer webs. Rump and upper tail coverts, a rich, more or less brownish rufous; each feather, darker shafted; tail, bright chestnut,

tipped white or rufous white, and with a moderately broad transverse sub-terminal black band on both webs; the central and other feathers exhibit two or three narrow, transverse, dark-brown bars, and a few black spots, traces apparently of these, the one about an inch, the other about two inches above the band just described, and the third just below the tips of the coverts. The whole of the mantle is a more or less rufous brown; some of the coverts, faintly margined paler, and with a somewhat pale-barring on the inner webs, and all the feathers with conspicuously dark shafts. The lesser and median coverts are much browner and less rufous, and very much as in *Poliornis teesa*, and are more or less fringed with albescent. The longest scapulars are brownish at the tips, bright chestnut above, and with traces of grey brown bars: on the lower surface of the wing the tips of the earlier primaries beyond the emarginations are grey, more or less tinged with rufous, and exhibit on the inner webs only, four or five more or less perfect transverse brown bars. The primaries and secondaries are narrowly margined towards the tips with dull white. The entire edge of the wing is white. The lower surface of the tail is white, tinged pinkish, and with the bars already described as present on the upper surface, showing through, more or less distinctly.

53.—Circus melanoleucus, *Gm.*

Mr. Oates and Captain Feilden both sent specimens of males and females of this species. Captain Feilden, who was aware that both belonged to the same species, says: "Sexes appear nearly the same size; in fact, one male I got was larger than a female; the females are extremely common about Rangoon, more so than at Thayetmyo, where this species is not very common." Mr. Oates says: "Not uncommon at the end of the rains, and during the cold-weather; frequents inundated land in preference to any other. Near Poungday it is often found in the large plains of mixed jungle and paddy land. I have never met with a female amongst all those I have shot." This bird is commoner in the Pegu plains than in any part of Burmah I have yet traversed.

This latter is natural enough, seeing that the female never, I believe, assumes the black and white plumage. Mr. F. R. Blewitt has dissected more than twenty black and white birds for me, and found them all, without exception, males. Mr. Oates, however, has sent me females of this species, sexed as such, but he did not realize that they were the females of *melanoleucus* and kept them separate as females of a species with which he was not acquainted. The following are his dimensions and remarks as to a male:—

"Length: 17·8; expanse, 43; tail, from vent, 8·8; wing, 14; bill, from gape, 1·1; tarsus, 3; cere, 0·37.

"The basal half of the bill, as far back as the cere, bluish; anterior half, black; eyelids, well clothed; iris, bright yellow; legs, orange yellow; claws, horny."

From a large series of some thirty adult males from Raipoor, Sumbulpore, Sonepore, Madras, Dacca, Tipperah, Purneah, and Sikhim, I find that in this species the wing in this sex varies from 13·5 to 14·5, and the tarsus from 2·9 to 3·1.

In the young males they are smaller. The only really adult female that I possess (and this is in the *spilonotus* plumage) has the wing 15·1; the tarsus 3·35.

In regard to the females, young birds approaching the *spilonotus* plumage, Mr. Oates gives the total length as 18·5, and 18·75; and I find that the wings measure 14·5, and the tarsi 3·15, and comparing this with the adult, it would seem that this species varies a good deal in size according to age. Looking, however, to the very large series I now possess of this bird, I am prepared to admit that *spilonotus* (with the following dimensions, length, 22 to 23·75; wing, 17·25 to 17·75; tarsus, 3·37; mid toe and claw, 2·75) must be a distinct bird; but what I am inclined to believe is, that the adult male has not yet been obtained, and that it will prove to be a large black and white bird much like *melanoleucus*. Anyhow, the young and the females, as figured, are precisely identical, so far as plumage goes, with those of *melanoleucus*.

Jerdon mentions (Ibis, 1871, p. 342) that Gould "has a specimen of a very large supposed male *C. melanoleucus* from Assam, wing 15·5, tarsus, 3·5. The pale grey color extends more over the carpal joint than in ordinary specimens, so that the whole shoulder appears white. It corresponds nearly in size with true *spilonotus*; but has the tarsus somewhat more slender, and the foot smaller than in specimens of that bird, otherwise it might have been considered the fully adult state."

The slenderness of the tarsi and the smallness of the foot are, I apprehend, characteristics of the male. The same difference is observable between the adult males and females of *melanoleucus*. My only difficulty is, that the tarsus seems too long; in *melanoleucus* the adult females, as already mentioned, have considerably longer tarsi than the males.

It must not be, however, supposed that the peculiar coloration about the shoulder of the wing is anything more than an individual peculiarity. One of the males sent by Captain Feilden has the wing 14 and the tarsus 3·1. It is only remarkable in having the whole shoulder of the wing white. In most specimens a broad black band runs from the shoulder of the wing down to the black median coverts, dividing the broad white band consisting of all the lesser coverts along the ulna, from the white feathers beyond the carpal joint; in this bird the whole

of the lesser coverts are white, only one or two black ones are intermingled just at the joint, the whole shoulder being white, and I have other specimens from other localities precisely similar, and thus agreeing in this respect with Mr. Gould's bird, which, whether it be the adult male of *spilonotus* or not, cannot possibly, with a wing 15·5, be an adult male of our Indian *melanoleucus*.

54.—Circus æruginosus, *Lin.*

Several specimens of this well-known bird are sent by Mr. Oates. He remarks that it is "common on the Engmah Swamp, and in most of the inundated parts of the country. It often attemps to carry off wounded game."

Of a nearly adult male, he gives the following particulars:—"Length, 19·8; expanse, 47·5; tail, from vent, 9·5; wing, 15; bill, from gape to tip, 1·4; tarsus, 3·3."

One of the birds sent is fully adult with the silvery tail and wings.

55.—Haliastur indus, *Bodd.*

Mr. Oates says that "this species is common about Thayetmyo, and occurs in immense numbers in all the tidal creeks of the Pegu plains."

56 *ter*.—Milvus affinis, *Gould.*

All the specimens sent by both Mr. Oates and Captain Feilden belong to the smaller and darker race *affinis*, which occurs equally in Australia, Timor, Macassar, Chusan, and Saigon, and which I have from Madras, the Nilghiris, Raipoor, Dacca, Agra, Dehra, Ajmeer, and Erinpura, and which Mr. Gurney informs me he has seen from Nepal, Calcutta, Poonah and the Deccan. The following are approximately the variations in the sizes of wing of the three races which we have in India :—

Affinis,	wings,	male,	16·75	to 17·25;	female	17	to 17·75
Govinda,	„	„	17·9	„ 18·5;	„	18·1	„ 19·5
Major,	„	„	19·0	„ 20·5;	„	19·25	„ 21·5.

Major is further distinguished by the large patch of white on the under surface of the wing on the basal portion of the primaries. Immature birds, of all the species, are smaller, and the two former, *affinis* and *govinda*, inosculate, so that while some Indian specimens are absolutely identical with the Australian *affinis*, others may be met with, which it is difficult to decide whether to assign to *govinda* or *affinis*.

In regard to these three species, see further STRAY FEATHERS, 1873, p. 160.

Mr. Oates remarks: "This Kite is excessively common in all large towns and villages, and is to be met with occasionally in

thick jungle, far away from houses. At Thayetmyo it goes away for about three months, leaving (in 1872) about the 20th June, and returning about the 15th September; during this interval not one was to be seen. Wings of *males*, 16·4, 16·8; wing of a *female*, 17·3.

"An old monk accounted for the disappearance of the Kites from Thayetmyo in the rains, by saying that they went to the hills to worship Gaudama.

"The Kites begin building as early as the end of November. A female was found sitting on her eggs on the 23rd March. The top of a Toddy Palm is a favorite site for the nest."

According to Captain Feilden, there are two species in Thayetmyo, the common *govinda*, and this, the Malayan Kite; but I have as yet seen no specimens of *govinda* from this locality.

57 *bis*.—Pernis brachypterus, *Blyth*.

Mr. Blyth at one time described a specimen of a Crested Honey Buzzard from Mergui, under the name of *Pernis brachypterus* in the following terms: "Color, dark hair-brown above; crest, simple, broad, 2½ inches long; the feathers composing it, white-tipped, as are also those adjacent. Lower parts, white, with dark central streaks or tears on the breast and flanks."

Now, although the Honey Buzzards sent by Captain Feilden from Thayetmyo have as yet no marked crests, neither of them being old birds, I am pretty certain that they belong to this species. One female measured in the flesh: Length, 23·25; the other was smaller, but the measurement was not recorded; the wings measure 15·6 and 14·8. Now in *cristatus*, the females vary in length from 26 to 28; the smallest wing of any female I have met with was 15·75, and I have one before me now with the wing full 18; both specimens have a very marked black streak running down from below the gape, and encircling irregularly the chin and throat. The plumage is precisely similar to that of *cristatus*, of which they appear to be only a somewhat smaller race with, when fully adult, a more defined crest.

A third specimen sent by Mr. Oates, also a female, and quite an adult, answers precisely to Blyth's description, except that the crest is only 1·5 inch long; of this, Mr. Oates gives the following dimensions and particulars: "Length, 23·7; expanse, 50·5; wing, 16·0; tail, from vent, 11·3; bill, from gape, 1·5; tarsus, 2·1; cere, 0·5.

"Upper, and tip of lower, mandible and cere, black; base of lower mandible, gape, and region of nostrils, bluish. Inside of mouth, dusky blue; iris, bright yellow; eyelids, grey; feet, dirty yellow; claws, dark horny. This species seems to be very rare."

Taking the dimensions of these three females, there can, I think, be no doubt that the Thayetmyo race is considerably smaller than the Indian; but I cannot say that it seems to me to be entitled to specific separation. The dimensions of the smallest *P. cristata*, Cuv., from India that I have ever measured, were: Length, 26; expanse, 55; wing, 15·75; tail, from vent, 11·5; tarsus, 2·19; bill, from gape, 1·63; and this was quite an abnormally small bird.

59.—Elanus melanopterus, *Daud.*

Captain Feilden notes the occurrence of this species at Thayetmyo. Mr. Oates, however, appears only to have procured it from the Arracan Hills.

60.—Strix indica, *Blyth.*

Specimens from Captain Feilden and Mr. Oates are precisely identical with Indian specimens. Mr. Oates says: "Very common in the Thayetmyo Cantonment, occupying the space between the ceiling and the roof of the wooden barracks. It is not found, I think, in thick jungles, nor, as far as I know, far away from the larger villages.

"A female measured: Length, 14·75; expanse, 38; tail, from vent, 4·8; wing, 11·3; bill, from gape, 1·7; tarsus, 2·7; cere, 0·6."

62.—Phodilus? nipalensis, *Gray*, *?* P. badius, *Horsf.*

Mr. Oates does not appear to have met with this species. Captain Feilden says: "I saw a specimen of this bird killed by a gunner with a stone, but could not obtain it; it was in the possession of Captain Penny, R. A. It differed in size from Jerdon's description, measuring: Length, 12·5; tail, 4; tarsus, 3. The bay on the head was mixed with a few buff feathers, which made me suppose that the whole head of the immature bird might be buff." Jerdon's description was, I think, taken from Malayan specimens, which seem to be similar to the Ceylon bird, and which are doubtless the true *badius*. It is impossible for the present to be certain whether this Thayetmyo bird was *badius*, or *nipalensis*.

65 *bis.*—Syrnium seloputo, *Horsf.* S. pagodarum, *Tem.*

Captain Feilden says: "I shot a pair of Mottled Wood Owls differing from the Indian ones, but have unfortunately sent them home." It may be considered rash to assume that these Owls belong to this species; but Mr. Strettell has sent me a specimen of this species, corresponding accurately with Temminck's figure,

Pl. Col. 525, from near Rangoon, and it is therefore not unreasonable to conclude that the birds from the same geographical region only a little further north are the same.

72.—Ketupa ceylonensis, *Gm.*

Thayetmyo specimens are quite similar to Northern Indian ones, but have perhaps even more white about the throat than these; Ceylonese and Southern Indian birds differ somewhat, as noticed in STRAY FEATHERS, 1873, p. 431. Captain Feilden says: "I never took the trouble to shoot the Brown Fish Owl at Thayetmyo, where it is common enough, and so cannot state positively that it is identical with that which I obtained at Rangoon." Mr. Oates says: "Common from Thayetmyo to Tonghoo; it keeps near large nullahs. The specimens I shot were not found in rocky ravines or broken ground, but in places where nullahs passed through gently undulating and well-wooded tracts."

74.—Scops pennatus, *Hodgs.*

Mr. Oates does not appear to have met with this species. One sent by Captain Feilden is in the grey stage, only slightly tinted here and there with rufous; it is exactly similar to Indian specimens. Captain Feilden says: "The only specimen of this curious Owlet that I saw was seated on a low umbrella-shaped bush growing on the undulating table-land of low gravel hills, in which the two streams bounding Thayetmyo take their rise, and which are almost entirely covered with Eng trees. It was very tame. On shooting it, and holding it against the stem of the Eng tree, I was astonished at the exact similarity of the breast of the bird to one of the irregular oblong scales of the Eng bark—the same grey ground with minute pencillings and dashes—the same irregular oblong black lines on the breast that are formed by the cracks round the scale of the bark; in fact, if the breast of the bird had been skinned and flattened on the stem of the tree, I do not think that I could have distinguished it from a flake of the bark itself. This bird was a female, and measured 7·25 inches in length. Bill, black at the tip, dark blackish brown at base; lower mandible, horny, except the gonys which is yellowish; iris, pale yellow, of the shade of a young Shikera's."

75 *quint.*—Scops lempiji, *Horsf.*

Mr. Oates does not appear to have met with this species. Captain Feilden, however, sent me two specimens. These are the true *lempigi*, the Malayan Scops Owl—the *Strix noctula* of Reinwardt figured Pl. Col. 99. I have never seen this species yet from India, but have it from Malacca. All our Indian specimens are referable, as far as I have yet seen, to eight species, *viz.*, *sunia*, *pennatus*,

spilocephalus (gymnopodus), *Brucei*, *lettia*, *plumipes*, *bakhamuna (griseus*, Jerd.), and *malabaricus*, which latter is nearest to the true *lempigi*, besides which we have *Balli* and *modestus*, Wald., from the Andamans.

Captain Feilden gives adults: *Females*, length, 8·75; wing, 6·6; *Males*, length 8·5; wing, 6·4; bill, yellowish at tips, turning into plumbeous and horny at base; iris, brown, tinted olive; scales of feet, grey brown; feet and eyelids, purplish brown; in the young bird the nostrils are said to be fleshy; the iris, pale brown; and the feet, paler than in the adult.

Captain Feilden says: "This Owl appears able to lower its ear-tufts; but when alarmed, I have always seen them erected, standing out much like a cat's ears. They appear to live in holes of trees during the hot-weather, but during the rains they may be found seated on the shady sides of bamboo clumps, or on fallen bamboos partly buried in long grass. They are very tame, and on being disturbed do not fly out of shot, but perch on the sloping stem of some tree at a few yards' distance. If I am not mistaken, this Owl has perched within two or three yards of me at night, lowering and raising its head in a menacing manner, and uttering a short double hoot, resembling "too-hoo."

"I have only found this Owl in or near the peculiar water-courses of Thayetmyo; these water-courses resemble in shape a large rabbit's nest, of which the top has been broken in throughout its whole length. The upper crust of the soil appears to be harder than the lower, and as soon as the water has broken through it, it hollows out a large cave at the point it breaks in through this upper crust, and for some distance the banks of the stream are much undermined. The Owls appear to live in these caves, or in holes of trees, during the hot-weather, taking as above mentioned, to bamboo clumps on the edge of streams during the rains."

76 *bis*.—Athene pulchra, *Hume*.

I have already characterized this species, (STRAY FEATHERS, 1873, p. 469,) and have nothing further here to add in regard to it.

Mr. Oates remarks: "Possibly the noisiest of all the small Screech Owls. They are continually quarrelling with each other at night, and even in the day-time, a pair will commonly come out of some hole in a tree and screech away for a quarter of an hour.

79.—Athene cuculoides, *Vigors*.

Numerous specimens received from Thayetmyo from Captain Feilden and Mr. Oates are in no way separable from Himalayan ones. Mr. Blyth thought that the Burmese bird, which extends down to the level of the sea-shore, might be different and identical with the Japanese race which he named *Whiteleyi*. Certainly the Burmese birds are precisely identical with Himalayan ones.

As for *Whiteleyi*, I can scarcely believe that it deserves specific separation; except for the comparative fewness of the markings upon the feathers of the wing and tail, it is said to be precisely similar to *cuculoides*. The main distinction, we are told, is that "the tail has only six narrow white bars, one terminal, and the other at the extreme base of the feathers, so that only four remain to constitute the conspicuous barring of the rectrices." Doubtless, this is the case with most of the Burmese birds; but so also is it in the case of a great number of the Himalayan specimens: and as regards the paucity or otherwise of the markings on the flight feathers, this is a thing that varies more or less in every specimen.

Captain Feilden says: "I have always found this Owl in the same kind of watercourses as the Scop's Owls during the hot-weather, but during and after the rains they perch on tall, thick, creeper-covered trees. I found a young bird in what I believe to have been an old hole of the great Black Woodpecker, about half-way up a moderately-sized tree."

Mr. Oates says this species is "common away from the Irrawaddy. I did not find it in the Evergreen Forests of the Pegu Hills, but it may occur there.

"It comes out invariably at sunset, and sits on a tree till it is dark enough for its taste. It is not nearly so vivacious as *pulchra*. Ovaria of females at the end of February extremely large. A *male* measured: Length, 8·65; expanse, 20; tail, from vent, 3·15; wing, 5·8; bill, from gape, 0·9. A *female*: Length, 9·3; expanse, 20; tail, 3·05; wing, 5·8; bill, from gape, 0·84; tarsus, 1·1; cere, 0·22; iris, bright yellow; eyelids, yellowish white; cere, brown; bill, pale dirty green; the tip of upper mandible, yellow; legs and feet, dusky greenish yellow; claws, brown. In another bird the bill was uniform, dull, dirty green, wanting the pale tip, and the eyelids were plumbeous."

81.—Ninox hirsutus, *Cuv. et Tem.*

Several specimens quite identical with Indian birds have been sent by Captain Feilden and Mr. Oates. Captain Feilden says: "The Hawk-Owl is not common at Thayetmyo. The note is like the mew of a small kitten; it was only uttered a few times just before the night became quite dark. I noticed the pupil of this bird expanding and contracting many hours after death. A female measured: Length, 12·25; feet, yellowish; cere, greenish plumbeous; ridge of culmen, pale plumbeous; bill, greenish grey; eyelid, purplish-black; iris, bright yellow."

Mr. Oates says: "Not uncommon here. I never heard the doleful cries described by Jerdon and others. A male measured: Length, 12·2; expanse, 28·5; tail, from vent, 5·5; wing, 8·4; bill, from gape, 0·91; tarsus, 1·15; the iris, bright yellow;

eyelids, plumbeous; the edges, yellowish brown; cere, dull green; bill, bluish black; the culmen and tip of lower mandible, yellowish green; feet, pale yellow; claws, dark horny.

"I shot a young one, nearly fully fledged, on the 21st May. These birds do not appear to come out till it is too dark to shoot them."

Besides these several Owls, Captain Feilden says that he shot an Owl resembling the Short-eared Owl, but only about two-thirds of the size of that bird. I cannot conceive what this can have been, but ornithologists in Pegu should be on the look-out for it.

82.—Hirundo rustica, *Lin.*

The specimens sent by Mr. Oates are so excessively bad that it is impossible to speak positively in regard to them; but they appear to belong to the somewhat smaller race commonly known as *gutturalis*, Scop. This is said to be distinguished by its much smaller size and broader bill. The smaller size may be admitted, but as to breadth of bill I am unable to see it. I have carefully compared two adults from Amoy, China, with a large series from various parts of India, Yarkand, and England, and I can perceive no marked difference in the breadth of the bill. The Chinese birds are doubtless smaller, and from what I can make out of the Thayetmyo specimens they belong to the smaller race, which, so far as I am in a position to judge, does not appear to be entitled to specific separation.

82 *bis.*—Hirundo Tytleri, *Jerd.*

The only adult sent—a female with both wings imperfect—has the entire lower parts, including wing lining and lower tail coverts, more rufous than they ever are in the females of *rustica*, while the chestnut of the throat descends down on to the breast, obliterating the central portion of the pectoral band. In the adult males of *Tytleri* the lower surface is a rich chestnut bay; in fact, it is concolorous with the chin and throat, or nearly so; but in the females the lower parts, though much more rufous than in the corresponding sex of *rustica*, are paler than in the male. At present, it is rather a mystery where *Tytleri*, which is only seen at Dacca for a month or two at a time, and that often after the interval of some years, comes from. Mr. F. B. Simson, the late Commissioner of Dacca, who first pointed out the species to Dr. Jerdon, watched vainly for them for three successive years; then they came in great numbers, and he sent me a very large series. A couple of months later they had entirely disappeared. This was in the early part of the rains. It was in June also that he first drew Dr. Jerdon's attention to them. Now, Mr. Oates, who did not, owing to the badness of his specimens, distinguish the two species, remarks in regard to the Thayetmyo

Swallows generally: "These birds are very common; they come in sparingly in July, but by the 1st August they are to be seen in immense quantities. They stay, some of them, till well into May. I have never seen any indication of their nests in Pegu; but as they leave us for only two months, where can they breed? With regard to Tonghoo, the Rev. Dr. Mason writes me as follows: 'Near the close of the rains in October last (1871) they were seen about for a few days, but from that time to the 4th April none were seen; on that day we had a squall and a shower of rain, and they seemed to come in on the wings of the wind; for the squall was in the afternoon, and the Swallows filled my compound in the evening. From that time till the 1st May they were constantly about my compound, night and morning. On 1st May we had a heavy shower and squall, as if the rains were about to commence, and not a Swallow has been seen here since. They went as they came on the wings of the wind.'"

Now, *Tytleri* when it comes does, I understand, breed in Dacca, so that I should not be surprised if these Thayetmyo birds went to Dacca amongst other places to breed. The bird is a very erratic one. This year at Tavoy it appeared in vast numbers on the 25th April, but had disappeared by the 7th May.

85 *bis*.—Cecropis nipalensis, *Hodgs.*

Only one specimen, and that not an adult, is sent; it is therefore impossible to be certain what species this belongs to. I am rather inclined to believe that it will prove to be *striolata* of Temminck. The rump band is about an inch broad, darker-colored than in *nipalensis*. The feathers rather conspicuously dark-shafted, much more so than in *nipalensis*. There is no trace of a rufous collar; but then the bird is a young one, and the striations of the lower surface are better-marked than in *nipalensis*; on the other hand, *striolata* belongs to the Archipelago, and one hardly expects to meet it in Thayetmyo. Besides the points above mentioned I should notice that the lower tail coverts are blackish, albescent towards their bases, and that the exterior tail feathers have no traces of spots on either web. Mr. Oates merely remarks: "I shot one on a tree in company with *rustica*. I have not been able to identify it."

89.—Cotile sinensis, *Gray.*

One specimen only, supposed to belong to this species, has reached me from Mr. Oates. Two others were sent, but they were entirely destroyed by insects. With only one indifferent specimen, unsexed, and with no measurements recorded in the flesh, it is impossible to arrive at any certain conclusion, but my impression is that the Thayetmyo birds will have to be specifically separated.

The bird appears to be smaller, the head and nape much darker, and the feathers of the back, rump, upper tail coverts, and the tertiaries more distinctly fringed at the tips with albescent than in *sinensis*. I have a very large series of this latter species from all parts of India, and can find nothing like the Thayetmyo bird; if distinct, it should stand as *C. obscurior*, nobis.

I at first thought that this might be the true *subsoccata* of Hodgson, but the breast-band is perhaps less strongly marked than in *sinensis*, and the rump is decidedly paler than in that species, so that our bird cannot be identified with Hodgson's.

Mr. Oates says that "this bird is very common on the banks of the Irrawaddy and some of the larger nullahs. It begins to dig its nest-hole very early in the season, soon after the 1st November."

101 *bis*.—Cypselus pacificus, *Lath*.

This species, which occurs also in the autumn in Tipperah, Cachar, and Assam, appears to be an occasional visitant to Thayetmyo.

Mr. Oates says: "This is not a common Swift. I observed a large flock one evening, and managed to shoot three. I have seen it subsequently on a few occasions, but owing to the suddenness of its appearance and its extremely swift flight, it is almost impossible to procure specimens. Two birds, one a female, the other not sexed, shot at Inlay on the 25th February, measured—

"Length, 7·25; expanse, 17; tail, from vent, 3·25 and 3·3; wings, 7·2 and 7·3; bill, from gape, 0·82; width of gape, 0·8; tarsi, 0·42 and 0·48.

"The irides were brown; eyelids, pinkish grey; bill, black; inside of mouth, fleshy; feet, pinkish; claws, dark horny."

He adds: "Since shooting the specimens above referred to, I have seen this Swift several times. It may be known by its enormous expanse and very short tail. It is very seldom that it flies sufficiently near the ground to be shot. I have not heard it utter any cry."

The Thayetmyo birds correspond well with specimens from Tenasserim and from Takow and Amoy, China. The birds vary a good deal in size: Length, from 6·75 to 7·5; wings, 7 to 7·5; tail, 3 to nearly 3·4. The head and nape are a more or less dark sepia brown; there is a black triangular spot in front of the eye, and a narrow albescent line above this extending to the middle of the upper margin of the eye, scarcely visible, except in the fresh bird or in very good specimens. A white band, about 0·4 inch in width, traverses the rump, the feathers having brown shafts. The rest of the back wings, tail, and upper tail coverts, black or blackish brown. The feathers of the back with excessively narrow, pale, margins, or faint traces of these. Traces of

the same are generally, but not always, noticeable on the whole of the feathers of the head and the nape. The inner webs of the quills are hair brown, and the inner halves of these are noticeably paler than the halves next the shafts. The exterior tail-feathers are the longest, and exceed the central ones by a full inch. The sides of the head and neck are of much the same color as the nape, which is generally slightly paler than the crown, and more or less conspicuously, though still very narrowly, fringed paler at the tips. The chin and the centre of the throat is pure white or brownish white; the feathers faintly brown-shafted. The extent of the white on the throat varies considerably in different specimens; the chin in some birds is quite brown. The whole of the breast, abdomen, lower tail coverts and lower wing coverts, except the greater ones, are in some blackish brown, in others a hair, umber, or even sepia brown, each feather fringed at the tip with white. The greater lower coverts, which also show traces of similar tippings and the under surface of the quills and rectrices, are a more or less glossy grey brown.

In good specimens of adults the back, tail, and shoulder of the wing are almost quite black, and exhibit a decided greenish gloss.

I here note that *leuconyx* of Blyth is a very different bird indeed. It is not, I think, as Dr. Sclater remarks, that the white bar on the rump is narrower, and that there is much less white on the throat, because these are points that vary in individuals of both species; but *leuconyx* is altogether a much smaller bird: Length, 5·8 to 6 as a maximum; wing, 5·9 to 6·2 also as a maximum; the under surface with much narrower and less-marked white fringes than in *pacificus*; and lastly, the whole of the feet (not the claws, as has been erroneously stated) very pale-colored, almost albescent in some specimens. This is a thoroughly good species, and no one, I venture to say, who has examined good specimens, would ever doubt it.

For further remarks in regard to other Swifts of this sub-group, *viz.*, *apus* and *acuticauda*, *vide* Vol. II, p. 156.

102 *bis*.—Cypselus infumatus, *Sclater*.

Mr. Oates says: "This species is very common near all villages, and in fact wherever the Borassus (palm) is found. I fancy it breeds about the middle of May. A male measured—

"Length, 5·15; expanse, 11·1; tail, from vent, 2·45; wing, 4·6; bill, from gape, 0·54; tarsus, 0·33.

"The bill and feet are black; the claws, dark brown. The eyelids, plumbeous; irides, brown."

This is the species which Dr. Jerdon described as *Cypselus tectorum* from specimens obtained by Major Godwin-Austen on

the Garrow and Naga Hills. It was originally obtained in Borneo, and now we find it common here about Thayetmyo and equally so further south in Tenasserim.

This species is very similar to *C. palmarum*, Gray, so common throughout India; but it is everywhere much darker-colored, has a considerably shorter tail (that of *palmarum* being about 2·7), and is consequently shorter altogether, has a less-forked tail, the external rectrices projecting only about 1·1 beyond the central ones, instead of 1·3 to 1·4 as in *palmarum*, and has generally a slightly shorter wing. In fine specimens the wings, head, and tail are nearly black; the back, deep blackish hair-brown; the whole upper surface with a faint greenish gloss; the entire lower surface, a moderately dark sepia brown, *slightly* albescent on the chin and throat.

104.—Dendrochelidon coronatus, *Tick.*

Mr. Oates remarks: "Common everywhere throughout the year; it is particularly fond of clearings in thick forests where a lot of big trees have been killed by fire. At Palow bungalow it is to be seen at all hours of the day flying over the house and dipping with incredible velocity to the surface of the Irrawaddy, which flows about eighty feet below the steep bank on which the bungalow is built. A female measured—

"Length, 9·05; expanse, 15·3; tail, from vent, 5·2; wing, 6·3; bill, from gape, 0·78; tarsus, 0·28.

"The bill was black; eyelids, dusky plumbeous, blackish at the edges; iris, dark brown; legs, pinkish brown; claws, black."

109.—Caprimulgus albonotatus, *Tick.*

A male and female belonging rather to this species than the next, with the wing of the male measuring 8·3, and agreeing precisely in tint with birds from Central and Northern India, have been sent by Mr. Oates, who says that this and the next species which he did not discriminate are common on the Pegu Hills, where it entirely replaces *asiaticus*. He gives the dimensions of a male—

"Length, 12·7; expanse, 24; tail, from vent, 6·7; wing, 8·4; bill, from gape, 1·4; tarsus, 0·8.

"Of this specimen the bill was black; the whole gape, vinaceous; eyelids, dark plumbeous brown; the edges, reddish; legs and feet, vinaceous brown; claws, dark horny."

I think that it is at any rate questionable how far it may ultimately prove desirable to separate the present and the succeeding species. No doubt typical *macrurus*, with its very dark tint, and wing in the adult male not exceeding 7·75, does appear a very different bird to the huge pale *albonotatus*, with its 8·8

wing; but then pretty well every intermediate shade of coloring and size of wing may be met with in Eastern India; and here, in the Thayetmyo District, side by side on the Western Pegu Hills, we find typical *albonotatus*, at least so far as coloration goes, with a wing 8·4, and the little dark-colored *macrurus* with a wing only 7·7 inches, both being adult males; and we have other birds, as from Tipperah and even from Thayetmyo, which might be assigned to either race. Certainly Dr. Jerdon's diagnosis of there being no mottlings on the tips of the primaries will not assist us, since I find these on a typical *macrurus* from Malacca.

110.—Caprimulgus macrurus, *Horsf.*

Captain Feilden sent two specimens, typical as to color, but rather larger than the Malayan *macrurus*. The males with wings 8 inches; females with wings 7·75. He says: "I only found this in dense Bamboo jungles in the valleys."

Mr. Oates sends a thoroughly typical *macrurus* from the Western Pegu Hills, of which he gives the following dimensions:—

Male: Length, 11·9; expanse, 23·6; tail, from vent, 6; wing, 7·75.

Captain Feilden further remarks: "This bird closes its eyes whilst seated on its eggs; this must be a great protection from Hawks, as its great eyes are the most conspicuous things about it. The first time I saw this I thought the bird was dead, and stooped to pick it up, nearly touching it before it rose."

112.—Caprimulgus asiaticus, *Lath.*

Mr. Oates says that this species "is common in the plains, but is not found on the hills. A male measured—

"Length, 9·1; expanse, 18; tail, from vent, 4·4; wing, 6·1; bill, from gape, 1·12; tarsus, 0·72.

"The edges of the eyelids were pale buff; the irides, brown; the bill, flesh colored at the base, with a reddish tinge on the upper mandible; the tip, dark brown; feet, pinkish brown; claws, horny."

Only one specimen was sent, and that is a good deal darker in tint than is usual in Continental Indian specimens; but I do not think it is separable.

114.—Caprimulgus monticolus, *Frankl.*

Captain Feilden sent me one specimen of this species, which he said was the only one he had seen, and which he had obtained on the top of one of the highest spurs of the Eastern Pegu Hills. This species occurs also much further south, at Amherst for instance.

116.—Harpactes Hodgsoni, *Gould.*

After comparing seven specimens from Thayetmyo, the Eastern and Western Pegu Hills, and the Arracan Hills, with a much larger series from Tipperah and Sikhim, I entertain no doubt that the Pegu bird at any rate is identical with that from Sikhim. One specimen sent me by Captain Feilden is no doubt a good deal smaller than the others, with a wing of only 5·6 against 5·8 to 6·1, the limits within which the wings of the males of *Hodgsoni* generally seem to vary; but, comparing this with numerous other specimens both from Pegu and elsewhere, as above noticed, I find it is quite impossible to separate this small bird, either by reason of size or difference of color, which latter is really so variable that one requires a series of twenty or so to understand the limits within which it does vary.

Captain Feilden says: "This Trogon is found in the densest jungle, always, I think, on the banks of streams; it does not appear to signify what the height of the jungle is, so long as it is thick; or whether the stream is running through hills or plains."

Mr. Oates says: "Common throughout both the Pegu and Arracan Hills; it is less common in the plains near the Irrawaddy and Sittang. I have generally seen it solitary or in couples, occasionally in a party of five or six, but all acting independently of each other; it is somewhat tame and allows a rather near approach. After catching an insect on the wing, it generally makes for a new perch. It is very silent. The following are the dimensions of several birds measured:—

"*Males:* Length, 13·1 to 13·6; expanse, 17 to 17·5; tail, from vent, 7·6 to 8·15; wing, 5·7 to 5·9; bill, from gape, 1·05 to 1·11; tarsus, 0·6.

"*Females:* Length, 12·7 to 12·8; expanse, 17; tail, from vent, 7 to 7·3; wing, 5·7; bill, from gape, 1·18 to 1·2; tarsus, 0·65 to 0·7.

"The irides are red. Jerdon says chestnut brown, but our bird has it distinctly red. Bill, deep smalt blue; the culmen, the tip of both mandibles, and anterior half of margin of upper mandible, black. The smalt blue changes to brilliant purple blue at the gape. Eyelids and orbital skin, lavender blue; inside of mouth and centre of lower eyelid, flesh color. Legs, pale pink; claws, dusky at base, fleshy at tip."

116 *ter.*—Harpactes oreskios, *Tem.*

No specimens received from either Captain Feilden or Mr. Oates. Mr. Oates remarks: "I saw this bird once only in the Evergreen Forests. It was in company with *Hodgsoni*, and its bright yellow belly rendered it easily recognizable. They were all in a nullah, about twenty feet broad, overgrown with Ferns and Palms, the trees

on either side meeting overhead and rendering the place very gloomy. Trogons are always to be found in such localities, more especially if there should be just a gleam of sunshine through a small gap in the trees. Both these species of Trogons catch their food entirely on the wing, never, as far as I have observed, returning to the same perch. I saw *oreskios* only once, and then my cartridge missed fire."

This species certainly does occur in the Pegu Yoma Hills within our limits, but it is much more common across the Sittang and throughout Tenasserim, at any rate as far south as Mergui.

The following are dimensions, colors of the soft parts, &c., recorded in the flesh from a very large series of both sexes:—

Males: Length, 11·75 to 12·25; expanse, 14·25 to 15·4; tail, from vent, 6·75 to 7·82; wing, 4·82 to 5·12; tarsus, 0·5 to 0·6; bill, from gape, 0·85 to 0·95; weight, 1·75 to 2 oz.

Females: Length, 11·25 to 11·8; expanse, 15·0 to 15·5; tail, from vent, 6·82 to 7·5; wing, 4·8 to 5·2; tarsus, 0·5 to 0·57; bill, from gape, 0·9; weight, 1·75 to 2 oz.

The legs and feet are dull smalt blue, occasionally with a faint pinkish tinge; the claws are bluish horny or bluish white; the irides are deep brown; the orbital skin and eyelids, smalt blue, sometimes very bright; the greater part of the bill is bright smalt blue; a stripe along the ridge of the culmen; the edge of the upper mandible to the nostril and the tip of lower mandible, black or blackish brown.

The colors of the soft parts are alike in both sexes. In the male the lores, forehead, crown, occiput, nape, ear-coverts and sides of the neck immediately behind the ear-coverts, bright olive green; the chin, throat, and breast are of a somewhat similar color, but brighter and with much more of a golden tinge; the entire back, scapulars, rump, upper tail-coverts and central tail feathers, bright chestnut; the latter, tipped black. The wings, (except the lesser coverts, at the carpal joint and along the ulna,) black, paling to dark hair brown on the inner webs of the quills; the winglet and all the greater and median coverts (except the primary greater coverts), the tertiaries and the outer webs of the secondaries, narrowly and somewhat closely barred with white. The second to the seventh or eighth primary narrowly margined on their outer webs with white; a white patch at the base of all the quills, but the first primary, usually only visible beyond the coverts on the outer web, in the sixth to the eighth or ninth primaries.

The central tail feathers have been already described; they are very generally about 0·25 of an inch shorter than the next feathers on each side, which are longest and entirely black. The next pair again are also entirely black. They are about 0·25 inch shorter than the longest; the next pair are about 0·4, the next 2·0, and the exterior of all 3·5 shorter than the longest.

The exterior tail feather has the entire outer web white, and rather more than the terminal half of the interior web white, the remainder black, the white and black meeting in a slanting line, so placed that there is most white towards the shaft, and most black towards the margins. The next two feathers are very similar, but have a portion of the outer webs also black.

The abdomen is a fiery orange yellow, paling towards the vent, which, with the lower tail coverts, are rather pale orange yellow.

The fourth and fifth quills are equal and longest; the third, 0·15; the second about 0·6; and the first about 2·3 shorter.

The sides are something like the breast—the feathers, grey at their bases; the visible portions, more or less bright, golden olive green.

The female differs in having the head olive brown, with only a slight greenish tinge; the interscapulary region, back and rump, rufescent brown; the chin, throat, and breast, a grey brown, with only a faint tinge on the two former of greenish olive. The abdomen and the rest of the lower parts more of a gamboge yellow, with only a faint orange tinge on the upper abdomen. The barrings on the coverts, tertiaries, &c., broader than in the male, and buffy instead of white.

117.—Merops viridis, *Lin.*

Thayetmyo specimens do not appear to me to differ sufficiently to warrant their separation from *viridis;* typical *viridis* has only a moderate tinge of golden rusty on the head and nape. In the far west, in Sindh, this tinge is almost entirely wanting; in the east, in Burmah, it is very strongly developed, and it is to the eastern race Hodgson gave the name *ferrugiceps*. I could easily break *viridis* into three races—a western, southern, and eastern; but they appear to me to be clearly all one bird, and I have no doubt whatsoever that Linnæus's name ought to be retained for them all.

Mr. Oates remarks: "Extremely common everywhere in the plains, except in thick forests; not found in the Pegu Hills. The young are hatched in the first week in May. The following is a *résumé* of the measurements of eight birds:—

"Length, 8·95 to 9·35; expanse, 11·5 to 12; tail, from vent, 4·4 to 5; wing, 3·6 to 3·81; tarsus, 0·39 to 0·43; bill, from gape, 1·3 to 1·49.

"The irides, bright red; bill, black, becoming brown at the gape; eyelids, smoky brown; legs and feet, fleshy grey; claws, horny."

118.—Merops Daudini, *Cuv.*

Specimens from Thayetmyo differ in no respect from those rom other parts of India. Mr. Oates remarks: "Occurs in large

flocks all over the district, and is a constant resident. It is, however, very uncertain in its movements, and appears to be locally migratory. In the rains there are comparatively few, and these are seen singly in the paddy fields perching on bushes. It breeds in all large nullahs with steep banks, and I lately came across a colony in the Irrawaddy; but I have hitherto failed to meet with the large colonies mentioned by Jerdon. It occurs nearly to the summit of the Pegu Hills, but I did not find it on the eastern slopes. It occurs again in the plains near Tonghoo."

Captain Feilden says: "Breeds in vast numbers on the banks of the Irrawaddy. The young leave the nest at the beginning of the rains."

119.—Merops Swinhoei, *Hume.*

Mr. Oates does not appear to have met with this species. Captain Feilden says: "The Chestnut-capped Bee-eater is rather a rare bird about Thayetmyo. I have only found them during the rains on the banks of streams, bordered by sandy cliffs, capped with high trees."

124.—Coracias affinis, *McClell.*

Mr. Oates says that this species is "extremely common over the whole of our limits, scarce only in the Evergreen Forest.

"I found the nest, in a hole in a tree, with the young nearly ready to quit the nest on the 21st May. This bird has a curious habit of lying in the hottest part of the day on thatched roofs with its wings spread out to their fullest extent."

Unfortunately only a single specimen is sent, and that is remarkable for an abnormally slender bill very much hooked at the point, quite unlike the bill of any *affinis* I have from Tenasserim, Rangoon, Tipperah, and the Bhootan Dooars. I can only suppose that this is a deformity, for this remarkable shape of bill, if constant, would almost warrant specific separation.

127 *bis.*—Pelargopsis burmanica, *Sharpe.*

For full description of this species, *vide* STRAY FEATHERS, 1874, p. 165.

Birds from Thayetmyo differ in no way from others from the Arracan Hills, Rangoon, and the Andamans.

Mr. Oates says: "Common everywhere, both in the plains and hills in large nullahs." This Kingfisher hovers in the air like a Kestril. In fact, all the Kingfishers I know do it, but not so habitually as *Ceryle rudis.*" He gives the following dimensions of males:—

"Length, 14·3 to 15; expanse, 20·5; tail, from vent, 4·6; wing, 5·7; bill, from gape, 3·55.

"Of a large female the length was 15·65; the wing, 6·15; the bill, from gape, 3·95; and at front, 3·35."

"Bill, dark red, brown at tip; inside of mouth, dark salmon red; iris, dark brown; eyelids, pinkish; their edges, red; feet, red, paler than the bill; claws, horny."

129.—Halcyon smyrnensis, *Lin.*

Mr. Oates says: "This is very common, but I did not observe it on the Pegu Hills." I have received no specimens from Thayetmyo.

130.—Halcyon pileata, *Bodd.*

This species appears to be rare about Thayetmyo; Captain Feilden apparently never met with it.

Mr. Oates says: "I shot only one specimen, and that at Palow, fifteen miles south of Thayetmyo. It is extremely rare. The stomach contained small crabs. The male I shot measured—

"Length, 12·1; expanse, 18·5; tail, from vent, 3·6; wing, 5·1; bill, from gape, 2·9; tarsus, 0·73.

"The bill was deep, the inside of the mouth pale, red; the iris, dark olive brown; the eyelids, pinkish grey, thickly covered on the lower lid with white feathers, except at the edge where the feathers are black; the legs, dull red; brownish red on the front of tarsus and upper side of toes; claws, dark horny."

The specimen sent agrees well with others from the Sunderbunds and other Eastern Bengal localities, the Andamans and Tenasserim.

132 *quat.*—Carcineutes amabilis, *Hume.*

I have already (Stray Feathers, 1873, p. 474) described this species, and explained my reasons for separating it from *pulchellus*. I am still inclined to consider it distinct; but see also Mr. Sharpe's remarks, Stray Feathers, 1874, p. 484.

133.—Ceyx tridactyla, *Lin.*

Mr. Oates sends a specimen from the Eastern Pegu Hills, in every way identical with others from the Sikhim Terai and other Indian localities. He remarks that this species is "not uncommon in the deep well-wooded nullahs of the Evergreen Forest. It is difficult to secure it, as it waits till you get near and then darts away like an arrow round a corner. A specimen measured—

"Length, 5·3; expanse, 8; tail, from vent, 1·1; wing, 2·2; bill, from gape, 1·55; tarsus, 0·4.

"The bill was bright red; inside of mouth, paler red; eyelids, well-clothed, apparently plumbeous; irides, dark brown; feet and claws, bright red.

134.—Alcedo bengalensis, *Gm.*

Mr. Oates says that this species "is common in all small nullahs and roadside drains, but I did not observe it on the Pegu Hills."

The Thayetmyo birds, of which Captain Feilden sent numerous specimens, appear to be a rather short-billed race, like others that I have from the Andamans, in which the bill at front does not usually exceed 1·4.

136.—Ceryle rudis, *Lin.*

Birds from Thayetmyo differ in no way that I can discover from specimens from various other localities in India and Asia.

There is no possible doubt that the adult female in this species has a single, imperfect, very broad band, which does not quite meet on the middle of the breast; while the adult males have two perfect bands. If, as alleged, the museums of Europe contain "carefully" sexed specimens leading to a different conclusion, all I can say is, that they were *not* carefully sexed. Both Captain Feilden and Mr. Oates say that this species is very common about Thayetmyo. Mr. Oates adds: "More especially in the rains, when it loves to perch on the telegraph wires over flooded paddy land."

138.—Psarisomus Dalhousiæ, *Jameson.*

Mr. Oates says: "I obtained specimens both on the Eastern and Western Pegu Hills. It occurs all over the hills, but is not by any means common; nor do I think it is found in the plains. A *male* measured—

"Length, 10·5; expanse, 13; tail, from vent, 5; wing, 4·05; bill, from gape, 1·27; tarsus, 1·05.

"*Female:* Length, 10·5; expanse, 12·75: tail, from vent, 4·9; wing, 3·93; bill, from gape, 1·26; tarsus, 1·1.

"The general color of the bill is green, the anterior half of the culmen bluish, the middle portion of the lower mandible dusky orange, and with a dusky patch on the edge of the upper mandible, about one-third of the length of the beak from the gape. Inside of mouth, fleshy; iris, brown; eyelids, greenish; legs, dull greenish; claws, bluish horny."

I have an enormous series of this bird from the Himalayas, from the Dhoon eastward to the Eastern Bhootan Dhooars, but they all differ from the two specimens sent from Thayetmyo. In all Himalayan specimens, the patch behind the eye is a decided yellow—at times, it is true, faintly tinged with blue or green, but still always yellow and typically bright pure yellow. In the Thayetmyo birds this patch is a kind of bluish greenish-white.

Again, in the Himalayan birds there is no white margin to the yellow patch at the centre of the base of the throat. Laterally, this exists in all specimens; but not at the centre of the throat. In the Thayetmyo specimens it is very conspicuous on the centre of the throat. Then, again, in the Himalayan birds, on the sides of the head behind the black ear-coverts there is always a broad yellow band, often tipped with satiny white; in the Thayetmyo birds this is very inconspicuous. There is a very decided blue tinge in the back of the Thayetmyo male, not to be found in any of our sub-Himalayan birds.

I do not know whether these differences are constant, but I think it well to call attention to them. If distinct, I would call it *P. assimilis*.

139 *bis*.—Serilophus lunatus, *Gould*.

This species may be at once distinguished from *S. rubropygius*, Horsf., by its much blacker and more strongly-marked supercilium extending to the nape, by the whole front, top and back of the nape, being a very pale grey, tinged with dull yellowish brown, instead of the dark, almost iron grey of *rubropygius*.

Mr. Gould remarks of this species: "In some specimens I find no trace of the beautiful lunate mark on the sides of the neck. These I had regarded as females; but as Mr. Blyth states that he believes the mark to be common to both sexes, I presume those without it must be immature birds." Both these surmises are incorrect; the adult male entirely wants the silvery lunate mark on the sides of the neck, as also the continuation of this across the base of the throat, which lunate mark, together with their continuation on the base of the throat, are the characteristics of the adult female. I must add here that, judging from a large series that I have examined, Mr. Gould's figure (BIRDS OF ASIA, Pt. V) of this species is altogether too brightly colored, especially where the head, nape, rump, and tertiaries are concerned.

Mr. Oates says: "This is a very common bird on the Pegu Hills, but does not occur in the plains. Judging from dissection of specimens obtained in the middle of April, the birds must lay towards the end of this month, or early in May. They are very tame, and perch quite close to one's camp. When I first saw them, I shot six in a very short time at single shots; the survivors either flew away on to another tree quite close by, or after a short flight returned to the same tree. I can quite believe Dr. Helfer's statement as to their extreme fearlessness. The contents of their stomachs were principally grasshoppers; they pick up their food, and I never saw them chasing insects on the wing. They are very silent birds. Of the birds I examined, only two had the shining white collar, and they were both females. The females

are, perhaps, slightly larger. The following is a *résumé* of the dimensions of four birds of both sexes:—

"Length, 6·95 to 7·25; expanse, 10·8; tail, from vent, 2·7 to 2·9; wing, 3·4; bill, from gape, 0·9 to 0·94; tarsus, 0·79 to 0·83.

"The bill is a light, clear blue, paler on the culmen and waxen orange at the gape, the base of lower mandible, the nostrils, and the junction of the upper mandible with the forehead. The inside of the mouth is a rich orange; eyelids, greenish yellow, purer yellow at the angle; irides, dark brown; legs, greenish orange; claws, light blue."

The sexes, as already noticed, only differ in that the females have a narrow white satin band running across the side of the neck from behind the ear coverts and meeting in front, at the base of the throat, where the band in fine specimens has two or three reduplications. The adult males want these white satin marks altogether.

The lores and the feathers at the gape are pale brownish rufous; from above the lores, almost, but not quite, from the nostrils, a strongly marked black stripe proceeds backwards over the eyes and ear coverts to the nape, broadening posteriorly, especially over the ear coverts. The forehead, and the whole space enclosed between these black stripes, is a sort of dove grey, everywhere tinged, except quite on the forehead, with pale, slightly rusty, brown; this tinge is much fainter in some specimens than in others, and is always strongest posteriorly. The scapulars and interscapulary region, a grey brown, more or less tinged with the same color as the nape; where the head and nape are faintly tinged, there the scapulars and interscapulary region are scarcely tinged at all; and in fact they are always less strongly tinged than the nape and occiput. The rump, upper tail coverts, tertiaries, and a spot at the tips of the inner webs of the secondaries and later primaries, pale ferruginous, palest on the tertials, but brightening considerably on the longer upper tail coverts. The tail is black; the three lateral tail feathers on either side broadly tipped with white. The wing coverts and the first primary, black; the edge of the wing, greyish white, and a large white spot on the inner web of first primary near the base. The rest of the primaries and secondaries have a broad, dull, pale blue band, on the outer webs, broader on the fifth primary, and rising under the greater coverts. The rest of the outer webs are black, except for a pretty broad white tipping on the third and fourth primaries, and a very narrow pale blue or bluish white tipping to the other feathers. On the inner webs, as already mentioned, the sixth and succeeding primaries and the secondaries are tipped with pale ferruginous; above this they are blackish brown, with a huge white band towards their bases. The second primary is very

narrowly tipped white, and there is a trace of this on the first; and the fifth primary is bluish on the inner web. The ear coverts, of which the webs are much disintegrated, are intermediate in color between the lores and the crown. The entire lower surface is a delicate French grey, almost white upon the lower abdomen and lower tail coverts, and generally tinged slightly brownish about the chin. The tibial and tarsal plumes (for the upper half of the tarsus is feathered) are deep chocolate brown, with sometimes a white spot inside, immediately above the articulation.

140.—Dichoceros homrai, *Hodgs.*

Only one specimen has been sent, and this is identical with specimens from Sikhim, Nipal, the Dhoon, and elsewhere. Mr. Gray separates the birds from Tenasserim, Malacca, and Sumatra, as *bicornis*, Lin, but the latter also occurs nearly as high up as Tonghoo, and the present species as far south at any rate as Amherst.

Mr. Oates says: "This is a common bird in the Evergreen Forests going about in flocks of five or six; on the western slopes of the Pegu Hills, and in the plains it must be rare. I am told that it is common in the Arracan Hills.

"It is extremely wary and difficult to approach, keeping to the tops of the highest fruit-bearing trees. The Hill Karens state that the nest is made in hollow trees, the female being plastered up during incubation. The sound it makes with its wings when flying is very loud, and can be heard a long way, perhaps half a mile off.

"I do not think the yellow on the head and neck is entirely due to the secretion of the uropygial gland. It does not come off in any quantity when the bird is killed.

"A male measured—

"Length, 51·5; expanse, 66; tail, 18·5; casque, along curve, 7·75; bill, beyond casque, along curve to point, 8·75."

142.—Hydrocissa albirostris, *Shaw.*

Mr. Oates says: "Common throughout the country, both in the plains and the hills."

147 *bis*.—Palæornis magnirostris, *Ball.*

I have already fully discussed this genus, and have only to add that birds from Thayetmyo are very similar to those from the Andamans, and may for the present stand under the same name.

Mr. Oates says that this species is very common about Thayetmyo, and he gives the dimensions of a male as follows:—

"Length, 20·5; expanse, 24·25; tail, from vent, 12; wing, 8·5. The iris, bright yellow; cere, yellow; bill, bright vermillion,

with the terminal one-fourth of both mandibles mellow yellow eyelids, pale pink, with the edges orange; legs, orange."

Captain Feilden says: "These birds disappear during the hot-weather; towards the end of the rains they fly in great numbers from the direction of the Arracan Hills, and across the Irrawaddy. Later in the autumn, they are to be found in small flocks in the Teak trees, and feeding on chillies, &c., all round Thayetmyo. They are a very common bird, but owing to their roving habits, and the height at which they fly when going to their feeding grounds, it is not always easy to procure specimens. Their flight is very slow, compared with that of other Parroquets.

148.—Palæornis torquatus, *Bodd.*

Specimens sent by Captain Feilden and Mr. Oates appear identical with specimens from various localities in India. Both gentlemen say that this species is very common in the neighbourhood of Thayetmyo.

149 *bis*.—Palæornis bengalensis, *Gm.*

This is the smaller, Peachbloom-headed Parroquet, with the lower wing coverts unicolorous, or nearly so, with the breast (which we get from Sikhim, Assam, and Eastern Bengal) instead of pale greenish blue, as in *purpureus*, Müll. (*rosa*, Bodd).

Both Captain Feilden and Mr. Oates remark that this species is common about Thayetmyo alike in the plains and hills.

? 150.—Palæornis schisticeps, *Hodgs.*

One imperfect specimen of this species, or it may have been *Finschii*, was obtained by Mr. Oates on the Pegu Hills on the 27th April. He says that the soft parts were as follows:—

"Cere, ashy brown; upper mandible, reddish yellow; the middle, one-third coral red; the lower mandible, yellow; the edges, dusky."

Mr. Oates did not discriminate this bird from the females of the next species, and so gives no further particulars about it; but presumably it does not descend to the plains, but is a resident of the hills of Pegu.

152.—Palæornis fasciatus, *Müll.?* P. melanorhynchus, *Wagler.*

Thayetmyo specimens differ in no way that I can discover from others, from Kumaon, Sikhim, Tipperah, Tenasserim and the Andamans.

Mr. Oates says: "This bird is very common here, but less so perhaps than the other species. I have shot them with red breasts in April and also in December."

Captain Feilden says: "These birds disappear entirely from Thayetmyo during the hot-weather. The last I saw was in March. At the beginning of the rains, a few scattered flocks, containing birds that have lately left the nest, may be noticed apparently migrating, and from this time a few pairs, apparently breeding, are to be found about the largest trees in valleys high up in the hills. As soon as the rice is cut, they appear in immense flocks and settle on the rice-fields, walking about with great activity, and gleaning carefully the fallen grain. In captivity they will feed at night as well as during the day, and if they escape from their cage, run with great rapidity. I once took one for a rat by candle-light, as it ran from behind a box into a corner of the room."

Captain Feilden gives the length: *Males*, adults, 14 to 14·12; young, 12·25; *Females*, adults, 11·12; young, 10·25. Irides, pale yellow; in young, greyish white; legs, olive green.

153.—Loriculus vernalis, *Sparrm.*

Birds from Thayetmyo do not appear to differ from those from various parts of Continental India north and south, and the Andamans.

Mr. Oates says: "Tolerably common in the plains, more so on the hills. A fine male, which I shot on the Pegu Hills, measured—

"Length, 5·65; expanse, 10·75; tail, from vent, 1·9; wing, 3·45; bill, from gape, 0·45; tarsus, 0·47."

157 *ter.*—Picus analis, *Horsf.*—Picus pectoralis, *Blyth.*—(Journal, Asiatic Society, 1846, p. 15.)

Mr. Blyth when he described this species, which Dr. Jerdon says is identical with *analis* of Horsfield, was not aware of the locality from which his specimen came. This species appears to be one of the commonest about Thayetmyo. Captain Feilden considers that there are two recognizable varieties, one slightly larger than the other; in the former, the forehead and nareal tufts are nearly black; in the latter, these are nearly white. I do not myself think it possible to draw any distinction between the numerous specimens sent me; they differ, no doubt, slightly *inter se* in many little particulars, but there is no constancy in these differences.

The males vary from 6·25 to 6·94 in length; the females are a trifle smaller. The wings vary from 3·55 in the smallest female to 3·9 in the largest male. Bill, at front, 0·75 to 0·85; tail, from vent, about 2·0 to 2·2.

In the male the forehead and crown are crimson; in the female black. The feathers immediately impending the base of the upper mandible, in some whitish, in some dusky, and in some

brown; the nape and the back of the neck, black. The whole upper surface, including wings and tail, dull black, with numerous broad, close, transverse, white bars becoming spots on the outer webs of the primaries, and the tips of some of the coverts. The bird is somewhat like *Macei*, but is much smaller, and may be distinguished at once by having the upper tail coverts and all the tail feathers conspicuously barred with white; whereas in *Macei*, the upper tail coverts, and at least the four central tail feathers, are unbroken black. The cheeks, ear coverts, a stripe extending over the posterior half of the eye and sides of the head and the chin, are white or nearly so, the ear coverts exhibiting a little dusky striation, due to the bases of the feathers showing through. From the gape on either side extends a gradually broadening stripe of black, which ultimately merges in the black of the basal portion of the sides of the neck, the upper portion of the sides of the neck being like the cheeks. The rest of the lower parts a dull, fulvous, or yellowish white, each of the feathers of the breast with a conspicuous (when the feathers are lifted) dark brown, central, linear, lanceolate stripe. The lower tail coverts are delicately tinged with a ruddy pink, and have each a more or less conspicuous brown, triangular, subterminal spot. The abdomen and flanks are very faintly, transversely barred, or in some specimens streaked with pale brown. In some specimens the red feathers of the forepart of the head, each bear a tiny whitish spot near the tip.

Mr. Oates says: "This species does not appear to me to be very common. A female that I shot in some brushwood, measured—

"Length, 6·7; expanse, 12·1; tail, from vent, 2·2; wing, 3·9; bill, from gape, 0·97; tarsus, 0·72; the bill, bluish black, paler at the base; irides, brown; eyelids, purplish brown; legs, plumbeous; claws, bluish horny."

As I have never been able to examine specimens from Java and Sumatra, I cannot say whether these birds from Thayetmyo are really the same as Horsfield's. I merely follow Gray, Jerdon, and others, in uniting them. How they differ from their nearest ally, *Picus andamanensis*, Blyth, I have already pointed out in Stray Feathers, 1874, p. 187. Further south in Tenasserim the present species is replaced by *atratus*, Blyth.

160.—Picus mahrattensis, *Lath.* Picus Blanfordi *Blyth.*—(Journal, Asiatic Society 1863, p. 75.)

Mr. Blyth, when characterizing this species, remarked: "Very like *Picus mahrattensis* of India; but the white markings generally more developed, especially as shown on the wings and tail; it is just barely separable as a race." I myself quite concur that it does not merit specific separation. I also doubt whether it does show more white on the wings and tail than some Indian specimens; these vary *inter se* very much. A specimen

from the Wynaad is very dark; one from Kutch, again, is very similar to *Blanfordi*; and one from Sambhur is undistinguishable from Thayetmyo birds; in the wings, there seems to be no appreciable difference. A male from Thayetmyo has the wing 4·1; so has one from Raipoor, and another from the Wynaad. A Kutch male has the wing only 3·8, and another obtained below Simla has it 4. There is no real distinction in the length of the bill. A Thayetmyo male has the bill 0·8, two others, 0·98. The Simla bird, 1·05; the Raipoor bird, 0·93; the Wynaad bird, 1; the Kutch bird, 0·85, (but the tip of the latter is slightly broken). Captain Feilden says of this species: "*Male*, length, 7·12 to 7·5; *female*, 6·25; iris, red; bill, bluish white, tipped horny."

He adds: "This bird descends a tree, tail foremost, with very great ease. It is found everywhere, from the compounds of Thayetmyo to the tops of the highest hills."

Mr. Oates says: "Common near the banks of the Irrawaddy, but I have not observed it far inland. It affects thick forests generally, but sometimes comes near houses. The stomach of one contained small beetles. I measured two specimens.

"The one, a male; of the other the sex was not discernable.

"The dimensions were: Length, 7·5 to 7·6; expanse, 12·7 to 13; tail, from vent, 2·6 to 2·8; wing, 4; bill from gape, 1·1 to 1·18; tarsus, 0·72.

"Bill, a clear bluish plumbeous, dark on the culmen and tip of both mandibles; inside of mouth, bluish fleshy; eyelids, dark brown; irides, deep red; legs and feet, bright plumbeous; claws, horny blue."

163 *bis*.—Yungipicus canicapillus, *Blyth*.

Mr. Oates says: "This species is universally distributed between Thayetmyo and Tonghoo, but still it is not very common; it creeps about the smaller branches of trees.

"The following are dimensions of males measured: Length, 5·3 to 5·8; expanse, 10 to 10·8; tail, from vent, 1·8 to 1·85; wing, 3·18 to 3·35; bill, from gape, 0·7 to 0·72; tarsus, 0·55 to 0·58.

"Bill, dark plumbeous, paler at gape and on the greater portion of lower mandible; iris, reddish-hazel; eyelids, purplish blue; feet, dusky green; claws, horn color."

Of this species Captain Feilden, who considers them common about Thayetmyo, remarks that the birds living in dense jungle, and those in the outskirts of cultivation, appear to differ in size, and in the centre secondaries of the jungle or smaller bird being larger than the outer; whereas in the large or cultivation-haunting bird they are of the same length. He gives the length of birds shot at the edge of clearings: males, 5·37 to 5·62, and

females, 5; and he says the iris in this race is greyish, reddish brown on the outside; the bill, blackish; legs, olive. Of the jungle bird he gives the length of adult males as from 4·8 to 4·83; young males, 4·62; and females, 4·83. Perhaps he has only sent me specimens of one race. I cannot divide those which he has sent me; they are all undoubtedly *canicapillus*.

We have at least five species of this genus in India which belong to two sections: (*1st*), those with the four central tail-feathers unspotted black; (*2nd*), in which these feathers are black, more or less spotted with white. To the first section belong *pygmæus*, Vigors; and *rubricatus*, Blyth. To the second, *nanus*, Vigors, *gymnopthalmos*, Blyth, and *canicapillus*, Blyth. The males of *rubricatus* and *pygmæus* may be distinguished at a glance. *Rubricatus* has a broad, nuchal, orange crimson crescent; *pygmæus* has only two small sincipital tufts, one on either side, of much the same color. The females are barely separable; but those of *pygmæus* run slightly larger, and have generally the forehead and crown browner, while in *rubricatus* these parts are paler.

Of *rubricatus* I have seen no specimens, except from Sikhim. *Pygmæus* I have from Kumaon, Gurhwal, the Dhoon, and the Mussoorie Hills.

In the next section, *nanus* is distinguished by its yellowish brown cap; *canicapillus*, on the other hand, has a grey head more or less tinged with brown, as in *pygmæus*. These two species can never be confounded, because the yellowish brown head of *nanus* has no nuchal black crescent bounding it posteriorly; whereas the grey or brownish grey head of *canicapillus* has this, just as also have the heads of *rubricatus* and *pygmæus*. *Gymnopthalmos* is close to *nanus*, but it averages smaller, and has the head a darker, purer brown, and the first five or six primaries either absolutely unspotted on the outer webs, or else with the merest trace of such spots; whereas these latter in *nanus* are numerous and conspicuous; lastly, the under surface of *gymnopthalmos* is unstreaked, white or yellowish-white. In all the other species the lower surface is distinctly striated with dark brown, all the feathers of the breast and upper abdomen having more or less conspicuous dark brown central stripes. *Gymnopthalmos* I have only seen from the Malabar Coast and Ceylon; *nanus* I have from numerous localities in the North-Western and Central Provinces; *canicapillus* I have as yet only seen from Tipperah, Arracan, Tenasserim, and Upper Pegu.

The present species, *canicapillus*, is much more nearly connected with *pygmæus* than the above remarks might possibly lead one to conclude. The latter is perhaps rather larger, and the supposed characteristic difference between the two races is that in *pygmæus* the central tail feathers and upper tail coverts are entirely black, while in *canicapillus*, the former are white

spotted, and the latter broadly margined with white. But although this distinction holds good as a rule, I have two specimens of *pygmæus*—one from Kalsi in the Dhoon, and the other from Barsota in Gurhwal—in which the upper tail coverts are conspicuously margined with white; and I have another of *canicapillus* from Tipperah with only two tiny white spots on the inner webs of the two central feathers, and no spottings at all on the next feathers on either side; and another from Thayetmyo, with the central tail feathers absolutely unspotted; and those next to them, with only two small spots on the outer webs of each, while I have plenty of typical birds from both localities. As regards size and shape of bill and color of under parts these afford no criterion, so that, on the whole, all one can say is that, though nine-tenths of the birds can be separated at once by the character of the tails and upper tail coverts, here and there a bird is met with which, unless informed of the locality whence it was obtained, might be almost indifferently assigned to either species.

I should add that the synonomy of this little group much requires investigation. The bird I have identified as *nanus*, Vigors, is the one described as *Hardwickii* by Jerdon. My *rubricatus* is the one of which the male is distinguished by the broad crimson occipital crescent, but whether this should stand under Blyth's name of *rubricatus* or *Mitchelli*, Malh., or *semicoronatus*, Malh., I am not in a position to decide; all I can say is that, though Mr. Gray makes out seven species within our limits, I know of only five, and I scarcely believe that more exist.

165 *bis*—Hemicircus canente, *Less.*

Though neither Captain Feilden nor Mr. Oates have obtained it within our limits, it has been sent thence in several collections. I may add that Mr. Oates procured a single specimen, a male, in the Arracan Hills in January, of which he notes the following dimensions:—

Length, 6·5; wing, 3·95; tail, from vent, 1·7; bill, at front, 0·98; tarsus, 0·7.

Our Indian *cordatus*, Jerdon, is apparently little else than a diminutive race of this species, with less white upon the wing, and more marked white spotting on the forehead and crown of the male. In our Indian bird a fine male has the wing 3·75; bill, at front, 0·75; tarsus, about 0·6.

A similar *canente* has the wing, 3·9; bill at front, 0·9; tarsus, 0·75. And here it may be as well to draw attention to the fact that in the Indian bird Dr. Jerdon says that the male has the forehead and top of the head light whitish yellow, and the female differs from the male in having the forehead and head black with minute whitish spots. Now, I cannot speak with certainty

as to the Indian birds, because, though I have a large series, chiefly from the Malabar Coast, the majority are not from reliable collectors; but in regard to the present species, *canente*, Mr. Davison has recently carefully sexed some twenty specimens, in all of which the adult males had the head black with minute white specks, while the female had the cap yellowish white, thus exactly reversing what Jerdon records of the Indian birds. Jerdon certainly knew the birds thoroughly, and must have shot scores, and it is just possible that this very curious difference between these two nearly allied races may exist; but I think that probably this has been a mere slip of the pen.

As to *canente* there is no possible doubt. Besides these adults we procured several young males, some quite similar to the females, and others showing the black feathers superceding the yellow in the crown.

I may notice here that in the young bird not only are the bills very much smaller, but the entire lower parts want the greenish tinge conspicuous in the adult.

Of course in the adults the bills of the males are markedly longer than those of the females.

The following are the dimensions, colors of the soft parts, &c., recorded in the flesh from a large series.

Males: Length, 6·35 to 6·5; expanse, 12·82 to 13; tail, from vent, 1·82 to 2·12; wing, 3·8 to 3·9; tarsus, 0·75; bill, from gape, 1 to 1·12; weight, 1·75 oz.

Females: Length, 5·62 to 6·0; expanse, 11·45 to 12·55; tail, from vent, 1·5 to 1·65; wing, 3·45 to 3·75; tarsus, 0·62 to 0·7; bill, from gape, 0·82 to 0·92, weight, 1·25 to 1·5 oz.

The legs and feet are dark greenish horny, dark greenish plumbeous, or very dark sap green, often appearing all but black; the claws are blackish plumbeous or black; the bill is black; the irides are dark brown or dark reddish brown.

In the present species the male has the whole of the lores, forehead, cheeks, occiput, and nape, velvet black; the feathers of the forehead and in old birds those of the crown also, with very minute white specks at the tips; the occipital feathers prolonged into a short, full crest; the chin and throat, fulvous white; the front and sides of the neck, breast, and abdomen, olive brown, strongly tinged greenish in old birds; flanks, vent, and lower tail coverts, blackish brown or almost black; the breast and abdomen are much browner, and less green in young birds than in old ones; the sides and back of the base of the neck, all the coverts along the ulna, the tertials, the edge of the wing from the carpal joint, and the wing lining and the rump, white, with a fulvous tinge, brighter and yellower in old birds; each of the tertials, and some of their longer coverts, with a broad black, more or less heart-shaped, spot near the tip; interscapulary region,

scapulars, middle of the back, upper tail coverts, velvet black, a few of the feathers of the interscapulary region in younger birds only, and the longest scapulars, with an excessively narrow fulvous margin at the tips; median coverts, similar and similarly tipped; primaries, secondaries, and their greater coverts, dark hair-brown, almost black; those of the secondaries margined towards the tips with fulvous white; tail feathers, black.

The white markings in the young have a browner and more fulvous tinge; in the old a brighter and a yellower tinge.

The female differs, as already mentioned, in the smaller size and in the conspicuously smaller bill, and also in having the forehead and the entire crown fulvous or buffy white.

165 *quat.*—Meiglyptes jugularis, *Blyth.*

The plumage of this species recalls that of *Hemicircus;* but the peculiar spotting and barring of the throat and cheeks, and the red moustachial streak in the male, together with the short, broad, thick bill, and bowed culmen, leave me no doubt that it should be classed as a *Meiglyptes,* and I am surprised at Mr. Gray's assigning it to *Hemicircus.*

Mr. Oates says: "I know nothing whatever of this bird, which is decidedly rare; but occurring, as it does, both on the Arracan and Pegu Hills, it probably may also be met with on the intervening plains. The following are the dimensions of males:—

"Length, 7·5 to 7·9; expanse, 13; tail, from vent, 2·3; wing, 4; bill, from gape, 0·98; tarsus, 0·78.

"The bill is black; the inside of the mouth, dusky; the iris, dark brown; the eyelids, dark plumbeous; the legs, dull bluish; the claws, horny brown."

The forehead, chin, lores, and cheeks, are black, banded, or spotted with buffy yellow—and in the male there is a short, dull-red moustachial stripe from the base of the lower mandible. The crown and occiput, which latter is garnished with a full broad crest, the upper and middle back, the upper tail coverts, the tail feathers, the breast, abdomen, vent, and lower tail coverts, and the wings, except certain buff markings, to be described further on, are a deep chocolate brown, almost black in freshly moulted specimens: the wing lining, the sides and back of the neck, and more or less of the sides of the body, the rump, the edge of the wing at the carpal joint, the lesser and median coverts along the ulna, one or two broad bands on the tertiaries, and numerous spots on the outer webs of all the secondaries and primaries, (except in some specimens, the first two primaries), buffy yellow. All the quills exhibit large round spots or imperfect bars, white, or yellowish white on the inner webs, which vary much in number and in size, and many of which, especially on the later secondaries, become confluent. In

this species, the fourth and fifth primaries are equal and longest, the third a trifle only shorter, second about 0·5, and first about 2 inches shorter, in these respects agreeing fairly well both with *Hemicircus* and *Meiglyptes*. The central portion of the lower half of the throat is generally of the same color as the breast, but sometimes it also is spotted like, though less closely than, the upper portion of the throat. The crown and ear coverts are generally concolorous with the occiput and crest, but sometimes some of the feathers of these parts exhibit *very* narrow, buff-colored bars, or tiny specks of the same color.

I may add that the sexes differ but little in size.

166.—Chrysocolaptes sultaneus, *Hodgs.*

A large series of this species was sent by Captain Feilden from Thayetmyo, and three specimens were sent by Mr. Oates from the Thayetmyo District and the Arracan Hills.

Captain Feilden makes three varieties out of these specimens. "The common one," he says, "has the males, 12 to 12·5 in length; the legs, nearly plumbeous; irides, pale yellow, edged pale vermilion. In the second variety the males are 12·87 to 13·25 in length; the females, 12·5 (a young female, 12); legs, olive green; iris, pale yellow, edged faintly with dark brownish purple; the crimson on the nape of the male in this race descending lower and forming a faint demi-collar across the black and white; the black of the female, the same. In the third variety the length is 12·5, and the back is tinted red, and the gular stripe is broader."

I have carefully examined all these specimens, and I am perfectly certain that they are referable to one and the same species. As to dividing the Thayetmyo birds into more than one species, this seems to me absolutely impossible, nay more, I have very grave doubts as to how far it will be possible hereafter to retain the southern *Delesserti* distinct from the northern *sultaneus*. There is no doubt that the only difference between these races consists in size, and that this difference is very considerable when typical examples of both are selected.

The following table of nine specimens of each race taken at random will exhibit clearly this difference:—

C. Sultaneus.

Sex.	Bill at front.	Wing.	Locality.
♂	2·1	6·7	Darjeeling.
"	2·4	7·35	Kalsi; Dhoon.
"	2·35	7·35	Fyzabad.
"	2·3	7·4	Markham Gran
"	2·1	6·7	Darjeeling.
"	2·1	7·2	Kumaon.
♀	2·0	7·3	Kalsi; Dhoon.
"	(Juv.) 1·8	7·1	Fyzabad.
"	2·15	7·45	Gurhwal.

C. Delesserti.

Sex.	Bill at front.	Wing.	Locality.
♂	1·85	6·3	Tipperah.
„	1·7	6·1	Mysore.
„	1·9	6·15	Nilghiris.
„	1·9	5·9	Malabar Coast.
„	1·8	6·0	Mysore.
„	1·8	5·95	Ootacamund.
♀	1·7	6·0	„
„	1·7	5·85	„
„	1·7	5·8	„

Contrast with these the following dimensions of Thayetmyo birds:—*Males:* (i) 1·85—6·6, (ii) 1·95—6·3, (iii) 2·15—6·4, (iv) 1·92—6·3, (v) 1·85—6·3, (vi) 2·05—6·35, all these from Thayetmyo, and (vii) 1·9—6·4 from the Arracan Hills. *Females:* (i) 1·85—6·7, (ii) 1·8—6·3, (iii) 1·95—6·45, (iv) 1·8—6·08, (v) 1·8—6·5.

Neglecting therefore the young female from Fyzabad, the dimensions of the two races may be thus stated:—

C. sultaneus	... Bill 2·0 to 2·4;	Wing 6·7 to 7·15
C. Delesserti	... „ 1·7 to 1·9;	„ 5·85 to 6·3,
The Thayetmyo birds give	„ 1·8 to 2·15;	„ 6·08 to 6·7.

So far therefore, as dimensions go, the Thayetmyo birds are intermediate between the two supposed species, and I prefer to retain them as *sultaneus*.

Captain Feilden says: "This species is found wherever there are a number of moderate-sized trees either in clumps or in lines along the borders of streams. They are found at all elevations from the banks of the Irrawaddy to the highest points of the hills about Thayetmyo. I do not think that it feeds upon the ground, although I once shot one apparently on the ground, but I cannot be certain that it was not clinging to some root running above the surface, as the jungle was very thick. Like all Woodpeckers with chisel-pointed bills they make a loud whirring noise by striking a decayed part of a tree with rapidly repeated strokes of the bill; no doubt the rapid vibrations have the effect of driving out insects concealed there. I have seen a pair of these Woodpeckers hawking for white-ants along with Drongos; they flew a short distance, hovered in the same manner as a Pied Kingfisher over a fish, but more heavily and clumsily made half a dozen darts with their bills in different directions, and then returned to the tree. This continued for some time till I shot one of them.

"I have also seen these Woodpeckers amusing themselves by throwing themselves round in the air, from the branch they are clinging to, to another nearly parallel to it, with a loud whirr of the wings; this was repeated many times evidently for amusement."

Mr. Oates remarks: "This species is generally distributed, although not very abundant numerically. I have met with it, both on the plains and on the Pegu and Arracan Hills. I note that the iris is pinkish yellow; the eyelids, slaty brown; bill, the same; legs and feet, dusky green, yellowish on the soles; claws, brown."

168.—Mulleripicus gutturalis, *Valenc.*

Mr. Oates remarks: "This species is not uncommon in thick forests. It is extremely shy and difficult to approach. It appears to be evenly distributed from Tonghoo to the Bay of Bengal, occurring in parties of three to seven. It has a loud, but rather musical, call when flying. A *female* shot in the Arracan Hills measured 18 inches in length. A *male* shot in the Pegu Hills measured: Length, 20·5; expanse, 29; tail, from vent, 7·6; wing, 9·5; bill, from gape, 3·08; at front, 2·7; tarsus, 1·6.

"The bill was bluish white, blackish along culmen and at the tips of both mandibles; the inside of the mouth, bluish black; eyelids, dusky plumbeous; iris, very dark hazel brown; legs, a deep dull blue; claws, bluish horny. The stomach contained only black ants."

The birds sent by Mr. Oates are identical with specimens from the Oudh and Nepal Terai, and again with others from Northern Tenasserim, and seem to call for no further remarks.

Captain Feilden says: "This bird is unknown at Thayetmyo, even to Burmese sportsmen, who are generally very intelligent about birds. I once saw a pair that appeared to be migrating. I followed them for several miles, but could not get a shot. Their note is very peculiar. Until I caught sight of the bird, I thought it was that of some new kind of Bee-eater."

169 *ter.*—Thriponax Crawfurdi, *Gray.*

Several specimens of this handsome species have been sent by Captain Feilden and Mr. Oates. Mr. Oates remarks: "This is common in all the forests of the Thayetmyo District, from the Irrawaddy to the summit of the Pegu Hills. It becomes rare in the eastern slopes, and I do not know if it is ever met with in Arracan. A female I measured was: Length, 15; expanse, 25; tail, from vent, 5·9; wing, 8; bill, from gape, 2; tarsus, 1·4."

Captain Feilden informs me that it is very common in the neighbourhood of Thayetmyo.

The dimensions are as follows: *Males:* Length, 16 to 16·25; wing, 8·1 to 8·5; tail, from vent, 6·0 to 6·5; bill, at front, 1·85 to 1·93; tarsus, 1·25. *Females:* Length, 15 to 15·75; wing, 8·1 to 8·4; tail, 5·5 to 6·5; bill, at front, 1·75 to 1·9; tarsus, 1·25.

In the male, the whole forehead, crown, occiput, and nape, crimson; feathers of the nape and occiput forming a stiff

wedge-shaped crest. A patch on each side at the base of the lower mandible, crimson; lores, cheeks, sides of the head, throat, breast, back of the neck, upper back, scapulars, wings, upper tail coverts, lower tail coverts, and tail, black; the throat and sides of the head with numerous white speckles; the third, fourth, fifth, and sixth primaries, narrowly tipped pure white. The chin, greyish brown in some, blackish brown in others. The middle and lower back, the whole of the abdomen and sides, the greater portion of the wing lining, a greater or lesser portion of the inner webs of the quills towards their bases, white, in some with a delicate yellowish tinge; flank feathers springing from the base of the tibia and the lowest of the white feathers of the rump, white, with a more or less cuneiform, subterminal, blackish brown spot. A few of the lower tail coverts immediately below the vent, edged white.

The plumage of the females is precisely similar, except that there is no crimson patch at the base of the lower mandible; the whole forehead and crown is black, and the crest is smaller; the coverts along the edge of the wing are black.

This species is considerably smaller than *T. Hodgsoni* of Southern India, which is from 17·5 to 19 long, according to sex; has a wing of from 8 to 9, and a bill of from 2·25 to nearly 2·5; the great difference in the size of the bill is very conspicuous; the feet and claws are also much larger. Both on the abdomen and back there is much less breadth of white; none of the primaries are tipped white, and there is no white on their inner webs.

In Malacca, Java, and Sumatra, another nearly allied species, or rather a series of races of one species, occur, *viz.*, *T. leucogaster*, Reinw., Pl. Col. 501, *javensis*, Horsf., which is about 17 inches long, has a wing 9 inches, and a bill from 2·1 to 2·2 in length. This species has the whole of the back and rump black. In the large size of its bill, and in the almost entire absence of white on the inner webs of the primaries *javensis* comes nearest to *Hodgsoni*.

Lastly, we have *T. Hodgei* from the Andamans, which has been fully described (*vide* vol. II., p. 189).

Though considerably smaller, the uniform black plumage of this latter species recalls *martius* of Europe, though that belongs to a separate sub-genus *Dryocopus*, and wants altogether the red moustachial stripe. Malherbe doubted the occurrence of *javensis* in the Tenasserim provinces, and possibly correctly so. In the Salween District at any rate of these provinces, it is *Crawfurdi* that occurs.

Captain Feilden notes, that "the favorite haunt of this bird appears to be some deep valley, at the bottom of which a quantity of alluvial soil has been washed down, out of which a number of young trees, three or four inches in diameter, are growing. The

ground must be clear of the long grass so common in Burmese jungles, as this would of course prevent the bird from flying from stem to stem. They do not absolutely confine themselves to these spots; indeed they may often be seen in large tree jungle, but always adjoining valleys, such as I have described. I have seen one crossing the brigade ground at Thayetmyo. The strokes of the bill of this bird are very slow and loud, almost resembling the blows of the *dah* (Burmese knife). They appear to cling with the feet, and swing the whole body to give force to their blow. The flesh of this bird is very soft in comparison with that of other Woodpeckers. It is very easy to approach this bird before it is alarmed, but when once disturbed it is extremely wary. It is a tolerably common bird ten or fifteen miles west of Thayetmyo, and about the same distance north, but from its secluded habits is little known. I was myself about eight months in Thayetmyo before I obtained one; but having once found out their haunts, I hardly ever went out ten or fifteen miles without seeing or hearing them. They have two notes, one resembling that of the Jackdaw, but not so loud, and, if I may use the expression, with a nasal twang in it; the other like that of *Brachypternus chrysonotus*, Lesson's Woodpecker, but of course much louder. This is very seldom used, only when the bird is wounded or very much startled; the former note is more frequently heard. But, as a whole, it is a silent bird. The flight is different from that of other Woodpeckers; it rather resembles that of the Roller, and is, I believe, perfectly noiseless. I have seen them drop from a high tree nearly to the ground, and then glide off just above the ground in the same manner as a Sparrow Hawk. As a rule, they are found in pairs. I never saw more than two together."

171.—Gecinus striolatus, *Blyth.*

Specimens sent by both Captain Feilden and Mr. Oates are identical with Indian birds from both Southern and Northern India.

Mr. Oates says: "This is perhaps the commonest Woodpecker we have. I have shot it also below Prome. Specimens that I measured varied in length from 11·5 to 11·6; expanse, 16·75 to 17·8; tail, from vent, 3·9 to 4·2; wing, 5·35 to 5·55; bill, from gape, 1·4 to 1·42; tarsus, 0·9 to 0·95. The iris is pink, with an outer ring of white; the eyelids, bluish grey; the upper mandible, blackish; the lower, yellow, blackish at tip and dusky at gape; legs, dull green; claws, bluish horny."

171 *bis.*—Gecinus vittatus, *Vieil.*

Mr. Oates remarks that this species is "tolerably common in all thick forests from Tonghoo to the Bay of Bengal. A

female measured; Length, 13·1; expanse 18; tail, from vent, 5; wing, 5·45; bill, from gape, 1·6; tarsus, 1·12. The whole upper mandible and gonys of lower mandible, blackish horny; rest of lower mandible, pale yellow, except the tip which is horn black; eyelids, slate color; irides, dark red; feet, dusky green; claws, horny brown."

This species is very close to *striolatus*, but may be distinguished at once by its much larger bill, measuring 1·3 to nearly 1·5 at front; by its larger size, it averaging, I should say, fully two inches longer than *striolatus*, and by the conspicuous mandibular stripe, beginning at the base of the lower mandible, composed of pale grey or greyish brown feathers, with black central stripes, and running down on either side of the throat for nearly an inch, and by the unstriated chin and throat. The rump also, I think, is never quite so bright as in *striolatus*.

The following are the dimensions, colors of soft parts, &c., recorded from a large series of fresh specimens of both sexes:—

Males: Length, 12·3 to 12·75; expanse, 17·25 to 18·25; tail, from vent, 4·5 to 5·0; wing, 5·4 to 5·82; tarsus, 1·12 to 1·2; bill, from gape, 1·55 to 1·62; weight, 5 to 5·75 oz.

Females: Length, 11·9 to 13; expanse, 17·5 to 18·4; tail, from vent, 4·12 to 5; wing, 5·3 to 5·55; tarsus, 1·1 to 1·25; bill, from gape, 1·5 to 1·65; weight, 4·75 to 5 ozs.

The legs and feet are dull green, or dull brownish green; the claws, greenish horny, or plumbeous; the irides, brown, or reddish brown; eyelids, plumbeous, or dark grey; lower mandible, greenish, or in some chrome yellow, except a brown, or greenish brown, streak from the angle of the gonys to the tip, and the tip; the upper mandible, blackish.

The lower portion of the lores, brown; the space under the eye between it and the mandibular streak already mentioned, and the ear coverts and feathers immediately round the posterior half of the eye, pale grey brown, faintly striated darker. The whole of the forehead, the upper part of the lores, and the whole top and back of the head, including a short but full occipital crest, velvet black in the female, crimson in the male; the basal portion of the feathers being grey, but these not showing through nearly as much as they do in *striolatus*. The whole of the chin and throat between the mandibular stripes pale fulvous brown, much the same color as the lores, (at times slightly browner or greener,) unstriated. The neck all round a sort of olive yellow tinged with brown, unstriated. The breast, abdomen, vent, and lower tail coverts, white; each feather mostly with a narrow central stripe, and two broader parallel stripes, one on each web at or near the margin, which would seem to be originally brown, but which, with the whole of the feathers on

the breast and upper abdomen, and in some specimens on the entire lower surface, are strongly tinged or suffused with olive yellow, olive green, or greenish fulvous, as the case may be. The tint and the extent of its distribution vary in every specimen. On the lower tail coverts the brown increases very much in extent, so that the feathers might more properly be called brown with cuneiform white bars. The lower surface of the tail is generally dull black, browner on the exterior tail feathers, with very little traces of spottings or barrings. The lower surfaces of the quills are grey brown; all the feathers with conspicuous oval white spots or imperfect bars on the inner webs—one such at the base of the first primary, two or three at the base of the second, four on the third, and so on, till on the secondaries they extend almost to the tips. Wing lining mottled or irregularly barred white and hair brown; all but the greater coverts commonly more or less suffused with green or olive yellow, as the case may be. The entire back, scapulars, rump, and upper tail coverts, wing coverts, except the primary greater ones, tertiaries, and outer webs of secondaries, and tips also of the later of these, a deep olive green, with a golden tinge very strong upon the secondaries and tertiaries, and brightening to a clear yellow on the middle of the rump. The winglet, primaries, and their greater coverts, blackish brown, each feather with numerous moderate-sized white spots or imperfect bars on the outer webs. Traces of the same on the outer webs of the secondaries very apparent on the first three or four, less so on the later ones, in all veiled, and more or less obscured by the golden olive tint. Tail, blackish brown; sometimes almost spotless, sometimes with numerous brownish white spots or imperfect bars on the basal one-third or one-half, as the case may be. The basal portion of the tail feathers is often a dull umber brown. Tibial plumes, a dull earthy brown.

172.—Gecinus occipitalis, *Vigors*.

Specimens from Thayetmyo and its neighbourhood do not appear separable from others, from the Tipperah Hills and various parts of the Himalayas.

Mr. Oates says: "This species appears to be common. I have observed it from Thayetmyo to Tonghoo; it feeds frequently on the ground. I found both black and white ants in the stomach of one. The following is a *résumé* of the dimensions of four specimens, two of each sex, that I measured:—

"Length, 12·8 to 13·2; expanse, 18·5 to 19·4; tail, from vent, 4·3 to 5; wing, 5·7 to 6; bill, from gape, 1·7 to 1·8; tarsus, 0·95 to 1·2.

"Bill, blackish brown; iris, dull red; eyelids, purplish brown; legs, dull green; claws, greenish horny."

173.—Chrysophlegma flavinucha, *Gould.*

Specimens from Thayetmyo and its neighbourhood are identical with others from various parts of the Himalayas. Mr. Cates remarks that this species is "found commonly all over the Pegu Hills, but I have not met with it in the plains. Its cry is very like that of the English Jackdaw. It must begin to lay about the end of April. The following are dimensions taken from several specimens. The sexes do not appear to differ in size:—

"Length, 12·7 to 13·3; expanse, 19·5 to 20·3; tail, from vent, 5·1 to 5·2; wing, 6·1 to 6·4; bill, from gape, 1·52 to 1·77; tarsus, 1·09 to 1·18.

"Bill, dusky bluish white; iris, red; eyelids, gape, and naked skin at gape, greenish blue; legs, dusky blue; claws, horny."

174.—Chrysophlegma chlorolophus, *Vieil.*

Specimens from Upper Pegu differ in no respect from those from various parts of the Himalayas.

Mr. Oates says: "Occurs from Thayetmyo to Tonghoo, but is not very common anywhere. No signs of breeding on the 25th April. The following are dimensions taken from several specimens, the sexes not differing appreciably in size:—

"Length, 10·2 to 10·7; expanse, 16·5 to 17; tail, 3·8 to 4·5; wing, 5·3 to 5·5; bill, from gape, 1·1 to 1·27; tarsus, 0·85 to 0·9.

"Iris, bright red; eyelids, lavender; upper mandible, black, except a small portion of the edges near the gape, which is lemon yellow; lower mandible, lemon yellow, except the tip and margins of the anterior half, which are horny black; inside of mouth, dusky flesh color; legs, dull greenish; claws, bluish horny."

177 *bis*.—Gecinulus viridis, *Blyth.*

In some respects this species is very similar to *Gecinulus grantia*, but in the males the red of the crown extends in the present species on to the occiput and nape, and in both sexes the whole of the deep, dull red of the rest of the upper surface, which characterizes *grantia*, is replaced in the present species by dull olive green.

Mr. Oates remarks: "I have found this species both on the eastern and western slopes of the Pegu Hills, but never in the plains, where, however, it may possibly occur. It is very partial to climbing about the large bamboos which grow on these hills. It appears to be a silent bird, and breeds, I apprehend, about the close of April. The sexes do not differ perceptibly in size. The following are the dimensions of two males and a female:—Length, 10·25 to 11·2; expanse, 15·5 to 17; tail, from vent, 4 to 4·25; wing, 5·1 to 5·2; bill, from gape, 1·18 to 1·22;

tarsus, 0·98 to 1·07. The bill is pale milk-blue, the iris, dull red; the eyelids, plumbeous; the feet, green; the claws, horn color."

In both sexes the forehead is brown, with more or less of a greenish or yellowish tinge at the tips of some of the feathers. In the male, the whole of the rest of the top of the head, occiput, and nape, together with the short full occipital crest, are bright red. In the female, these parts are olive yellow, becoming brighter and yellower on the crest. The lores, chin, throat, cheeks, ear coverts are pale brown, with more or less of an olive yellow tinge, according to the specimen, always most conspicuous on the ear coverts, and brightening to their tips, which, with the feathers immediately behind them, and in the male the feathers of the lower part of the nape (mostly hidden by the red crest), are a golden olive. The scapulars, interscapulary region, coverts, except the greater primary coverts, tertiaries, outer webs of secondaries, rump, and upper tail coverts and margins of the outer webs of the tail feathers towards their base, varying shades, according to the specimen, of golden olive, olive yellow or olive green, brightest and yellowest on the middle of the back; feathers of the rump and upper tail coverts generally tipped more or less with crimson, but at times only rufescent. Tail feathers, dark hair-brown, spotless as viewed from above; winglet, primaries, and their greater coverts, dark hair-brown; all but the first two primaries olivaceous on their outer webs, much paler on the earlier ones towards the tips, and in the later ones becoming much the same dull olive yellow as the secondaries. All the quills with large oval spots or imperfect white bars on the inner webs, two at the base of the first primary, three on the second, four on the third and succeeding quills. Wing lining mingled brown and white; the edge of the wing, and more or less of the wing lining, tinged with dull olive green; breast, abdomen, flanks, lower tail coverts, dull brown; all but the latter, more or less tinged with dingy olive green; traces of small, dull, white spots towards the inner margins of the inner webs of the lateral tail feathers towards their bases.

178.—Micropternus phaioceps, *Blyth.* M. burmanicus, *Hume.*

Although the Thayetmyo specimens differ in many respects slightly from the ordinary *phaioceps* from Lower Bengal, Tirhoot, Dacca, and Tipperah (in that they are larger; that the plumage is generally a lighter and brighter chestnut; that the dark bars on the tertials are narrower and further apart; the head less brown, the chin and throat paler, and the pale margins to the feathers more conspicuous), still with a large series before me I do not think that these distinctions invariably hold good; and I have one specimen, at any rate, from the Himalayas which is absolutely inseparable from my type specimen of this supposed species, and

I therefore unhesitatingly suppress *burmanicus*. In most specimens the distinctions above pointed out hold good more or less; but this is all that can be said, and this will not warrant a specific separation. The type of my supposed species was a male sent me by Captain Feilden, and measured in the flesh: Length, 10·7; wing, 5·25; bill, at front, 1·15.

Mr. Oates, however, has sent smaller specimens. He remarks: "I have observed this bird only on the eastern slopes of the Pegu Hills, and I think it is confined to the Evergreen Forests. It is not uncommon, goes in pairs, is remarkably silent, and climbs small trees and bamboos. The head, tip of tail, and abdomen are much smeared with some gum, or rather, as I fancy, with honey. The contents of the stomach of three specimens were black ants, and a small yellow bee-like insect; the latter in considerable quantities. It is possibly with the honey of these insects that the plumage gets smeared. In the mouth of one just shot I found a small leach. These specimens that I shot varied as follows:—

"Length, 9·75 to 9·9; expanse, 15·25 to 16; tail, from vent, 3 to 3·15; wing, 4·8; bill, from gape, 1·2; tarsus, 0·88 to 0·95.

"The irides were brown; eyelids, plumbeous; bill, dark brown, nearly black, plumbeous at base of lower mandible; inside of mouth, rosy fleshy; legs and feet, greyish brown; claws, horn color."

Captain Feilden says: "The Chestnut Woodpecker does not appear to be confined to any particular locality. I have found them everywhere, from clumps of bamboos in the middle of cul-ivation to deep forests of the largest trees; but on the whole, I they prefer rather open bamboo jungle. The note is not that of *Gecinus striolatus*. It is difficult to learn anything r habits, as they glide about among the bamboos, and rarely themselves. They are stupidly tame."

33.—Tiga Shorii, *Vigors*.

A large number of specimens, in my opinion all referable to his species, have been sent me by Captain Feilden and Mr. Oates, who both want to make three species out of them, found-ng their distinctions partly on size; partly on the color of the rest and forehead in the male; partly on the comparative size, rightness or dullness of the black markings on the side of the ad, chin, throat, and breast; partly on the presence or absence the earthy brown tint in these latter parts; and partly on the size and character of the spottings or lineations on the black head of the females.

After having very carefully examined all these birds, as also a very large series from other localities, I am bound to say that

although, unquestionably, individuals differ *inter se* to a remarkable extent, this appears to me to be characteristic of this species, and I can at present discover no certain diagnosis by which these various birds should be separated.

First, as to size, I find that the wings in the male vary from 5·75 to 6·25, and the bills at front from 1·23 to 1·6; but there is no exact or invariable correspondence between length of bill and length of wing—*e. g.*, one bird with a wing 5·9 has a bill of 1·6, another with the wing 6 has the bill 1·23; two birds with wings respectively 5·8 and 6·1 have both of them the bills 1·35, while another bird with the wing 5·78 has a bill 1·42. The females have the wings equally variable, but the bills seem only to vary from 1·2 to 1·35.

Then, as to plumage, the differences above indicated undoubtedly do occur, but they occur in birds of different sizes; in a word, all the differences appear to me to be individual, and I cannot in any way at present see my way to make more than one species out of them, though it is just possible that if we had a couple of hundred instead of fifty birds to deal with, some separation might be effected.

This species, or group of sub-species, if Captain Feilden and Mr. Oates are correct, appears to be very common in all the dry forests of the Thayetmyo District.

I may note that the specimens from the Arracan Hills are really different, and belong to Blyth's species, *intermedius*, and have the wings 5·5 to 5·7, and the bills only 1·0 in front. Even these typical *intermedius* seem to grade into *Shorii*, so that it is not always easy to say where the one should begin and the other should end. Blyth's diagnosis of *intermedius* was based upon diminutive size, absence of crimson tinge on the upper b and the marking of the black head of the female with elon white oval drops. Now in the most typical *intermedius* t have seen, *viz.*, a male from the Arracan Hills, the upper ba just as much tinged with crimson as in a huge male *Shorii*, w a wing 6·25, which I shot years ago in Kumaon. As regards t females, I have a huge female, the mate of the one last referre to, which has just the same character of long oval white drops on the head that the typical female *intermedius* from Arracan has. If the two are in any way separable except by size, the difference, I think, consists in *intermedius* having the mandibular band more strongly-marked, in having a single narrow stripe down the centre of the chin and throat, and in entirely wanting th earthy brown tinge on the throat, breast, and base of the lowe mandible; while in typical *Shorii* the mandibular stripe is less strongly-marked; there are *two* black lines down the chin and throat, and the intermediate space, together with the breast, and the base of the lower mandible are strongly suffused with

earthy brown. But even this diagnosis will not, I can plainly see, hold good invariably. I have one female before me with a wing of 6 and a bill of 1·25 inch; the head with small oval brown streaks, which, so far as the characteristics I have pointed out go, should be *intermedius*; and I think we shall have ultimately to admit that the two races grade insensibly one into the other, in which case their specific distinctness seems questionable.

187.—Sasia ochracea, *Hodgs.*

The specimens from Pegu belong to this species, and not to the somewhat smaller *abrornis*, Temm., which entirely wants the pale stripe, over the posterior half of the eye and more or less of the ear coverts. Pegu, Tenasserim, and Arracan birds agree well on the whole with specimens from Hill Tipperah, Darjeeling, &c.

Mr. Oates says: "I shot one while pecking very hard at a bamboo about twenty feet from the ground. It was making a very loud noise, tapping incessantly for some minutes. To judge from appearances presented on dissection, they must breed towards the end of April. I observed only one specimen on the Pegu Hills, and should judge it to be rare, but from its size it may escape notice. The bird I killed,—a male,—measured: Length, 3·2; expanse, 6·25; tail, from vent, 0·95; wing, 2; bill, from gape, 0·52; tarsus, 0·5.

"The bill was dark brown on the upper mandible, plumbeous on the lower; the inside of the mouth, dusky; the eyelids, naked and very conspicuous, dusky red; the iris, crimson; legs, yellowish red; claws, yellowish."

[illegible].—Yunx torquilla, *Lin.*

[illegible]ptain Feilden remarks that the iris is brown marked with [illegible]e, not blood-red as described by Jerdon. The Burmese birds [illegible]pear to be a shade darker than Upper Indian ones, but the [illegible]umage of this bird is at all times very variable, so I do not [illegible]ttach any importance to this peculiarity. This species during part of the year appears to be very common about Thayetmyo.

Mr. Oates says: "On the 18th September this bird came in in numbers. I had never observed it before. It was calling all day long. This was at Boulay, a few miles south of Thayetmyo."

[illegible]92.—Megalaima Hodgsoni, *Bonap.*

I class the birds from Pegu as *Hodgsoni*, under the assumption that there really is a distinct species, *lineata*, or rather that our Himalayan species is distinct from Vieillot's *lineata*. I have never yet seen any *lineata* that I could call really distinct; and

if, as I somewhat suspect, the Himalayan bird is not distinct, then of course all will stand under Vieillot's name, *lineata*.

For the present, I assume that *lineata* is a distinct species, with a wing 4·5, and that it is distinguishable, as stated in the Monograph of the Capitonidæ by my friends, the Messrs. Marshall, from *Hodgsoni*, by its smaller size, by the brown edgings to the feathers of the head and neck being deeper in color and much broader than in the Himalayan birds, and by the forehead being almost entirely brown instead of whitish as in *Hodgsoni*; and I say that, though Blyth gives Pegu as a habitat for *lineata*, all the Pegu birds sent to me are *Hodgsoni*.

If we take the true *Hodgsoni* from various localities, we find the wing varies from 5·15 to 5·65; thus, taking a small selection of birds at random, the following are the dimensions of the wings:—

Simla, 5·25; Kumaon, 5·65, 5·35; Gurhwal, 5·5; Dehra, 5·3; Kaladoongee, 5·4; Dacca, 5·15.

In the Thayetmyo birds the wings vary from 5·15 to 5·4. None of these, I think it is clear, can belong to the small supposed *lineata*, with a wing 4·5. Then, as to the other points of difference, I find that some Himalayan *Hodgsoni* have the forehead "almost entirely brown," others again have it "whitish." The same precisely is the case with the Thayetmyo birds. The amount of brown edgings to the feathers and the depth of the color of these edgings varies very greatly alike in the Himalayan and the Thayetmyo birds, and they are certainly not broader or deeper in color in the Thayetmyo than in the Himalayan birds. In fact, there is one Thayetmyo bird in which they are paler and narrower than in any single one of my large series of Himalaya[n] *Hodgsoni*. Further, I may note that I have a large seri[es] these Barbets from Tenasserim, from Pahpoon to Tavoy, the smallest of which has the wing 4·75, while in the great maj[ority] this varies from 4·9 to 5·3. In these, too, some have the typ[ical] coloring of *Hodgsoni*, while in others this appears to be what [is] considered characteristic of *lineata*.

On the whole, without disputing that there *may* be a distinguishable smaller species, and that it *may* possibly also occur in Pegu, what I submit is that all the birds sent to me from Pegu are identical with the Himalayan bird, and must therefore, if these are distinct from *lineata*, stand as *Hodgsoni*.

Mr. Oates remarks that this species is "common in the plains, and extremely common in the hills. Its cry is almost distressing, uttered as it is by dozens of them all day. Its call resembles 'Ko-hpo', 'Ko-hpo', preceded, though not always, by a sort of screaming laugh. I do not know anything of its distribution west of Thayetmyo. My collectors have never brought it from the Arracan Hills. It is not found in the cantonments, though common

a few miles out. A female measured: Length, 11; expanse, 18; tail, from vent, 3·6; wing, 5·3; bill, from gape, 1·83; tarsus, 1·21. The feet were yellow; claws, pale horny; eyelids and bare orbital skin, bright yellow; bill, fleshy, somewhat dusky at the edges and paler at the gape."

195.—Cyanops asiatica, *Lath.*

Identical with specimens from the Himalayas, Lower Bengal and Arracan, but averaging perhaps a little smaller.

Mr. Oates remarks: "This species is very common on both the Arracan and Pegu Hills, but I have never shot it, nor even heard it in the forty miles of plains or undulating ground which stretch eastward from Thayetmyo to the foot of the Hills. It occurs in great numbers on the eastern slopes of the Pegu Hills nearly up to Tonghoo. The bird breeds, I believe, in May. It is difficult to say whether its call should be considered to consist of two or three notes. 'Kotür', 'Kotür', represents its call pretty well, but often there appears to be a third indistinct note. The call of the smaller Barbet *(cyanotis,* Blyth) is distinctly two notes only, and is feebler and more metallic. A specimen from the Arracan Hills measured 9·8 in length, but four specimens from the Pegu Hills varied as follows: Length, 8·7 to 9·3; expanse, 12·75 to 14; tail, from vent, 2·8 to 3·05; wing, 4 to 4·1; bill, from gape, 1·42 to 1·51; tarsus, 1·08 to 1·13.

"The iris was reddish hazel; the edges of eyelids, beaded dusky orange; eyelids, orange brown. The inside of the mouth, dusky blue; legs, pale green; claws, greenish horny; upper mandible, dark brown; the base, greenish yellow; the lower mandible, yellow, dark brown at the edges on the terminal half."

—Xantholæma hæmacephala, *Müll.*

mens from Thayetmyo differ in no appreciable degree rs from all parts of India, the Malay Peninsula, and Both Mr. Oates and Captain Feilden remark that this mmon throughout the country.

-Xantholæma cyanotis, *Blyth.*

tells us that this species is "common in the Ever- f the Pegu Hills. Its note is very distinct from . The bird I shot was moving about the top ree much as *hæmacephala* would. It breeds, I judge, . A male measured: Length, 6·7; expanse, 11; tail, from vent, 2·15; wing, 3·2; bill, from gape, 1·03; tarsus, 0·83.

"The bill was black; the inside of the mouth, bluish black; eyelids and naked skin of face, dusky plumbeous; iris, dark brown; legs, dull greenish yellow; claws, black."

The specimen from Pegu corresponds exactly with others from the Bhootan Dooars, Tipperah, and Dacca. This species is really very distinct from *Duvaucelii*, of which I have numerous specimens from Singapore, Malacca, and that neighbourhood.

In the first place, the red about the face is paler, and more rosy; the ear coverts are more or less of a torquoise blue, instead of being dusky, or blackish green as in *Duvaucelii*. The bristles of the bill, long as they are, are not nearly so long as in *Duvaucelii*, and none of my specimens exhibit the conspicuous black gular band which seems to characterize the adults of *Duvaucelii*.

The adults of the present species have the lores and a narrow, more or less inconspicuous, line at the base of the forehead; a narrow line over the eye not extending beyond it; a more or less broad band over the crown; the ear coverts and the entire chin and throat, a dull torquoise blue, more or less tinged greenish on the coronal band. The forehead, and a spot at the base of the lower mandible, black; a broad line under the eye, rosy, or pale dull vermillion. A line under the ear coverts from behind the black mandibular spot, and a line over the ear coverts from behind the posterior angle of the eye, a dull rosy crimson; sometimes these lines widen out posteriorly and unite behind the ear coverts, sometimes they do not. The entire upper surface, a dark grass green. The first two primaries, and the inner webs of all the rest of the primaries and secondaries, deep hair-brown. The shoulder of the wing, tinged bluish, the lateral tail feathers, with a strong bluish tint. Breast, green, with more or less of a golden tinge; in some specimens with more or less of a ruddy tint, just below the blue throat. The rest of the lower parts, dull pale green, with a yellowish tinge at times on t[he] lower tail coverts. Wing lining and the inner margins of th[e] portion of the quills, pale yellowish white. One speci[men] hibits traces of an imperfect dark blue band near the bas[e] throat.

In younger birds, the black frontal patch is only indi[cated] coronal band is not defined at all, and the whole [head] occiput are a dull dark bluish green, or greenish blue[ish] gradually into the green of the back.

199.—Cuculus canorus, *Lin.*

I have as yet only seen one specimen of the Eur[opean] from Upper Pegu. This was shot in November by [Mr. Oates] at Prome. It is a young bird; in the barred upper plumage, only the rump being pure ashy. It is rather small, the wing being only about 7·8; but this is not very exceptional for a male of the year, although they are *generally*, I think, fully 8 inches.

203.—Cuculus micropterus, *Gould.*

Specimens from Pegu are identical with the bird that we call *micropterus*, Gould; a perfectly distinct species common throughout Lower and Eastern Bengal, and even up into the lower valleys of the Himalayas in Sikhim, Bhootan, and Assam, and distinguished at once from *saturatus* of Hodgson, which I identify with *striatus*, Drapiez, by its huge bill, which is fully as large as that of *Hierococcyx sparveroides*.

Mr. Oates says that this species is "common everywhere, but less so in the plains than in the hills; its note is double and very melodious, and answers well to that described by Colonel Tytler in the Ibis for 1868. It generally selects the topmost bough of a tree—a dead one by preference—and remains calling there for a quarter of an hour or more. A *male* I shot measured: Length, 13·3; expanse, 23·5; tail, from vent, 7; wing, 8·25; bill, from gape, 1·35; tarsus, 0·92. A *female* measured: Length, 12·4; expanse, 21; tail, from vent, 6·2; wing, 7·6; bill, from gape, 1·3; tarsus, 0·89.

"The irides are rich brown; the eyelids, greenish plumbeous; the edges, swollen and deep yellow; the inside of the mouth, fleshy red; gape, yellow; a small portion of the upper mandible under the nostril, and the greater portion of the lower mandible, dull green; the remainder of the bill, blackish horny; legs, a soft, deep, yellow; claws, dark horny."

It will be observed that the male is the species referred to by Jerdon, No. 204, Vol. I, p. 328, as *Cuculus striatus*, Drapiez, and which, if it were distinct, would stand as *affinis*, Hay; while the female is the bird referred to by Jerdon as No. 203, *Cuculus micropterus*. These two numbers, 203 and 204, are the two sexes [illegible] same species. It will be observed that I consider that the [illegible]-billed bird which says "*Kyphul-pukha*" (or "the Kyphul [illegible]ripe"), which has been called *saturatus* by Hodgson, and [illegible]*us* by Vigors and Blyth, and which we got at the [illegible] and heard at the Andamans, is the true *striatus* of [illegible]hile the huge-billed bird which says "*Bho-kutha-kho*" [illegible]e, to stand as *micropterus*. The true synonomy of [illegible] is, and may perhaps always remain, somewhat [illegible]how, it will be understood that the Pegu birds are [illegible]l ones.

[illegible]ere to notice that Captain Feilden mentions having [illegible] specimens of a Bay-banded Cuckoo, answering fairly [illegible] Jerdon's description of *Cuculus sonnerati*, but measuring only 8 inches in length. This was at the beginning of the rains; later he procured two more in November, one of which contained a nearly perfect bluish grey egg. This may have been the hepatic stage of *tenuirostris*, but I hardly think so, as

Captain Fielden was well acquainted with that bird, and I therefore mention the fact to draw the attention of observers in Upper Pegu to the circumstance.

207.—Hierococcyx sparveroides, *Vigors.*

In Part VIII of the Birds of Asia, Mr. Gould figures a *Cuculus strenuus*, which he considers distinct from the present species. "In outward appearance," he says, "this species so closely resembles *Cuculus sparveroides*, that one description would nearly serve for both; but in size it so far exceeds that bird, as well as every other true Cuckoo that I have yet seen, that I have no doubt of its being distinct." Mr. Gould's specimen was from Manilla, and he notes the dimensions at: Length, 15·5; bill, 1·25; wing, 9·37; tail 9.

My museum had long been packed up, and when I obtained a specimen—length, 16·25; wing, over 9; and bill, 1·45 inches from gape—I thought I had an undoubted specimen of *Cuculus strenuus*, and notified Thayetmyo as another locality for this species. Having now, however, examined my whole series, I find that even the Himalayan birds vary from 14 to 15·25 in length; that the wings vary from 8·5 to 9·25, and the bills from 1·18 to 1·35; and that the Thayetmyo specimen, though somewhat longer, and with a stouter bill, has not so long a wing as some of the Darjeeling birds. One of the Darjeeling birds is quite as fine and large a specimen as the one Mr. Gould figures as *strenuus*, and indeed, except that his artist has puffed the throat out a little too much, might have been the specimen figured; *strenuus* must therefore, I fear, now be relegated to the limbo of synonymes.

Mr. Oates says: "This bird, if I have rightly identified it, i[s] extremely common in the hills, but rarely found in the plains. [It] calls chiefly in the mornings and evenings, often long after d[ark]; towards sunset it utters two exquisitely melodious whistling [notes] very different to anything contained in its usual song. [One] measured: Length, 16·35; expanse, 26; tail, from ve[nt] wing, 9·1; bill, from gape, 1·45; tarsus, 1. The leg[s] were deep yellow; gape, bright yellow; upper mandibl[e] nostrils to the tip, deep brown, there being a narrow d[ark] streak from the nostrils, in a line with the closed [eye]; mandible, horn color, darker on the edges and t[ip]; yellow; eyelids, bright yellow; claws, flesh color."

A specimen sent by Captain Feilden, also a male, is [simi]lar in size and in every other respect.

209.—Ololygon tenuirostris, *Gray.*

Mr. Oates sent a specimen, unfortunately destroyed in transit, which I believe to have belonged to this species, which I know

occurs in Pegu. The specimen was so entirely destroyed in transit that I cannot be absolutely certain of the species. Captain Feilden sent specimens of this species, which are precisely identical with those I have from Dacca. He remarks: "I believe that this bird remains at Thayetmyo throughout the year, but I do not distinctly remember it in April and May. There are either two varieties of this bird, or its winter plumage is much duller than its summer garb. Those I send you were shot in January. I have frequently found what I suppose to be the egg of this bird, in the nest of a little Tailor Bird (not the common one), whose name is unknown to me." Doubtless, the Tailor Bird referred to was one of the Prinias, as they are all Tailor Birds so far as the construction of the nest is concerned.

211 *bis*.—Chalcococcyx xanthorhynchus, *Horsf.*

Mr. Oates sends me a single specimen of a young Cuckoo in the hepatic stage, which I identify as above. The bill corresponds precisely, though slightly smaller, as would be the case in quite a young specimen; the wings are only 3·75. The feet appear to have been pale fleshy, and the plumage is somewhat different to any stage of that species with which I am acquainted.

The whole head and neck all round is pale, rusty rufous, with broad longitudinal blackish brown streaks; the rest of the upper plumage is hair brown. The primaries, unspotted; the secondaries, tertiaries, and four central tail feathers, with a series of large triangular rufous spots on the marginal halves of the webs, imperfect bars, in fact not reaching to the shafts. The lateral tail feathers, coverts, scapulars, back and upper tail covers, broadly barred with the same dull rufous. Breast, abdomen, vent, and lower tail coverts, dull white, here and there tinged fulvous, and regularly barred with not very well-defined dull greyish-brown bands. This is not a nestling bird, and is certainly not, I think, the young of any other known Indian Cuckoo; and if it does not belong to this species, it must, I think, be new. It was obtained at Chinzouk, and measured 6·95 inches in length in the flesh. This species has been already described; vol. II., p. 191.

Mr. Oates notes that this is the only specimen that he has met with.

212.—Oxylophus jacobinus, *Bodd.*

This appears to be a common species about Thayetmyo, whence it has been sent by both Captain Feilden and Mr. Oates. The latter remarks: "A few may always be seen near the rifle range; to the eastward, it extends to the foot of the hills, and southwards I have observed it as far as eighteen miles below Prome.

It is generally met with in pairs, but five or six may sometimes be seen together. It appears to feed by preference on the ground, or on very low bushes." Captain Feilden says: "I rather fancy this bird lays two eggs in the same nest, as I have seen a pair of nestlings seated on the same branch. I have often seen this bird hawking moths, just as a Drongo might have done."

213.—Coccystes coromandus, *Lin.*

The Pegu specimens are absolutely identical with those from different parts of India, from the extreme south to the Himalayas.

Mr. Oates says: "This species, though widely distributed, is not common. A male I shot measured: Length, 15·6; expanse, 19; tail, from vent, 9·8; wing, 6·45; bill, from gape, 1·3; tarsus, 1·09. The bill was black, the inside of mouth, rufous fleshy; The iris, hazel; the eyelids, dusky plumbeous; feet, clear plumbeous; claws, bluish horny."

Captain Feilden remarks: "This bird is the commonest Cuckoo at Thayetmyo; in the thicker parts of the jungle every bamboo-filled valley contains one or more pairs. They arrive in the beginning of the rains, and the young birds do not leave till October. They lay in the nest of the Quaker Thrushes I believe, as I have frequently shot the young bird from the middle of a brood of young Quaker Thrushes, and as far as I could see from the thickness of the jungle, the old thrushes were feeding the young Cuckoo. An egg taken from the nest of a Quaker Thrush that I believe to have belonged to this bird, was very round and a pale blue. I believe that this bird keeps some kind of watch over its eggs, as a pair have sometimes seated themselves near me uttering a harsh, grating, whistling scream very unlike their usual Magpie-like chatter, and I afterwards found a young Cuckoo in company with a flock of Thrushes that were constantly to be found in that bamboo clump."

214 *bis.*—Eudynamis malayana, *Cab.*

The Pegu bird is the larger, and much more powerful billed race which Lord Walden identifies with *malayana* of Cabanis. This is the same bird we met with throughout the Andamans and Nicobars; and in treating of the Avi-fauna of these islands, I have sufficiently discussed this species; (*vide* STRAY FEATHERS, 1874, p. 192).

Mr. Oates remarks: "The Malayan Coël is very common at certain seasons. Its cry is heard only from the beginning of March to the middle of May, and at this time it is extremely abundant; but from June to February, I have never seen or shot

a single bird. I fancy they come here only to breed. The oviduct of a female shot on the 12th April contained a fully formed egg. On the Pegu Hills I found it sparingly in April. The sexes appear to be much the same size. The following is a *résumé* of the measurements of four specimens of both sexes, by far the smallest, as well as the largest bird being males—

"Length, 15·6 to 17; expanse, 23·7 to 24·5; tail, from vent, 7·4 to 8·15; wing, 7·8 to 8; bill, from gape, 1·52 to 1·67; tarsus, 1·2 to 1·5.

"The bill is dull green, dusky at gape, and black about the nostrils; the irides, bright crimson; the eyelids, pinkish brown; legs and feet, plumbeous; claws, dark horny."

215.—Zanclostomus tristis, *Less.*

Birds from Thayetmyo and Upper Pegu, like others from near Rangoon, Tenasserim, and Arracan, are undistinguishable from specimens procured in the Sub-Himalayan ranges from Dehra Dhoon eastwards.

Mr. Oates remarks that "this species appears to be spread sparingly over the whole country, but is nowhere very common. The following are the colors of the soft parts of a male which I shot in September: bill, bright green, pinkish about the nostrils; bare skin round the eyes, and edges of eyelids, purplish red; iris, hazel; inside of mouth, dusky; feet, greenish slaty; claws, dark brown."

217 *quat.*—Centrococcyx eurycercus, *Hay.*

In my brief notes on a few birds from Acheen (STRAY FEATHERS, 1873, p. 453), I discussed this little sub-group of Coucals which have the whole of the interscapulary region rufous, and I mentioned that there were three noticeable races, and that the Thayetmyo birds belonged to the race which, if held worthy of specific distinction, should stand as *intermedius*. I also noticed that, though retaining Hay's name for the present, I was inclined to believe that the Javan and Sumatran birds would prove identical, in which case *eurycercus* must give place to *bubutus*, Horsf. I have not yet a sufficiently large series from a sufficient number of localities to decide whether the three races, *C. eurycercus* (vel *bubutus?*), *C. maximus*, and *C. intermedius*, do really deserve specific separation.

In regard to the Pegu birds, Mr. Oates remarks: "This bird is common; I found it nearly up to the summits of the Pegu Hills, on the western, but not on the eastern, slopes. A female killed on the 11th of May, showed no signs of breeding. She measured: Length, 19·4; expanse, 23·5; tail, from vent, 10·0;

wing, 7·9; bill, from gape, 1·77; tarsus, 2·55. The irides were red; the eyelids, purplish brown; bill, black; as also the feet and claws."

218.—Centrococcyx bengalensis, *Gmel.*

Mr. Oates says that "in Upper Pegu this species is, during nine months of the year, rather an uncommon bird; it appears to like swampy ground; grasshoppers appear to be its favorite food.

"They appeared, however, at the end of July in large numbers round my house at Boulay. Some seven or eight would be calling at once from the tops of the highest trees. Their call is very peculiar, 'hoop, hoop, hoop, kurrook, kurrook, kurrook.' The first note is almost invariably repeated three times, the last up to six or seven. I shot a female in the act of calling, so I fancy both sexes call. About the 15th September a few only were calling, and the bird appeared to become altogether rarer. About the middle of October I left Boulay to come here (Prome), and then I lost sight of them. I did not succeed in finding their nests. Ovaria on the 7th September, very large."

He sends two specimens both in the striped plumage, and remarks: "I do not understand the great difference of size, and in the color of the iris, &c., in these two specimens. They were both females, and are very similar in plumage; the first was shot on the 24th November; it measured: Length, 14·5; expanse, 18·8; tail, from vent, 8; wing, 6; bill, from gape, 1·2; tarsus, 1·68. This had the eyelids bluish grey; the iris, umber brown. The gape, base of lower mandible and region of nostrils, pinkish fleshy; the remainder of bill, black; legs, plumbeous brown; claws, dark horny.

"The second was shot on the 13th March; it measured: Length, 15·7; expanse, 20·6; tail, from vent, 8·45; wing, 6·7; bill from gape, 1·35; tarsus, 1·92. This had the iris sickly yellow; bill, coffee brown, paler near the margin, and fleshy on part of the lower mandible."

Now, I myself am disposed to believe that one of these was a male, but there are many points in regard to this species which require fuller investigation. I personally have had no opportunity of working out the question, but my friend Mr. F. B. Simson, so long Commissioner of Dacca, where this species abounds, and who supplied me with an enormous series of them in every stage of plumage, assured me that the striped plumage was seasonal, and not dependent upon age, as is generally thought. That at one season every bird shot was in the striped plumage, at another all were in the black and rufous plumage. I can offer no opinion on the subject myself, but only desire to draw attention to the question, as one deserving full investigation.

223 *ter*.—Arachnothera aurata, *Blyth*.

A good many species of this genus are found within our limits, and though several of these occur only towards the south of the Tenasserim Provinces, it may be convenient to state concisely how they may be most readily distinguished—

A. Upper surface striated.	1. Strongly and conspicuously on entire back.	Lower surface broadly striated.	Wing about 3·5 (*m*).	*A. magna*, Hodgs.
	2. Faintly, almost or entirely obsolete on lower back.	Lower surface with narrower striæ.	Wing about 3·25 (*m*).	*A. aurata*, Blyth.
B. Upper surface unstriated.	3. Throat and breast faintly striated.	... ...	Wing about 3·1.	*A. modesta*, Eyton.
	4. Throat and breast unstriated.	Chin and throat white, no bright yellow about face.	Wing about 2·5.	*A. pusilla*, Blyth.
	5. Ditto ...	A conspicuous yellow ring round the eye.	Wing about 3·75.	*A. flavigaster*, Eyton.
	6. Ditto ...	A conspicuous yellow eyebrow, and mandibular stripe.	Wing about 3·3.	*A. chrysogenys*, Tem.

Besides these, there is *A. Phayrii*, Blyth, whether distinct from *aurata* or not, I cannot say; *non vidi*.*

In regard to the present species, Mr. Oates remarks: "Very common on the Pegu Hills, and not uncommon in the plains; I lately saw a specimen on the banks of the Irrawaddy, near Thayetmyo. It is not met with in large quantities till the Evergreen Forests are reached: it has a curious habit of stretching out its neck when perching, to such an extent as to appear about to over-balance itself. A *male* that I shot measured: Length, 7·1; wing, 3·25; bill, from gape, 1·6; a *female* measured, length, 6·45; expanse, 9·5; tail, from vent, 1·7; wing, 2·95; bill, from gape, 1·48; tarsus, 0·8; bill, black; margin of lower mandible, yellow; inside of mouth and claws, yellow; iris, brown; eyelids, plumbeous; legs and feet, waxy orange."

This species is very close to *A. magna*, but differs apparently in its smaller size, sex for sex, in the greater narrowness of the striations of the under-surface, and the almost entire absence of these on the back. The shoulder of the wing is also, Mr. Blyth originally pointed out, somewhat brighter-colored than in *magna*.

* No specimen of this appears to be in the Calcutta Museum.

In both *magna* and apparently *aurata* the females are considerably smaller than the males, and the female *magna* further differs in just the same particulars from its male, though perhaps not quite to a like extent, that male *aurata* does. I am not prepared to say how this latter and female *magna* are to be separated, where the sexes have not been ascertained.

In *aurata* the forehead, crown, occiput and nape, are bright, somewhat golden, olive green; each feather with a somewhat triangular, black shaft stripe; lores, cheeks, and ear coverts, browner and duller-colored. The rest of the upper parts, colored much like the head, but the feathers of the back and sides of the neck and upper back, with excessively narrow darkish brown shaft-stripes; those of the middle and lower back, and upper tail coverts are almost or entirely streakless. Inner webs of coverts and quills and tail feathers, hair brown. All the tail feathers, with a subterminal dark band, beyond which all the lateral tail feathers have a pale patch on the inner web, more and more conspicuous as the feathers recede from the centre. Chin, throat, breast, abdomen and sides, dull white, more or less tinged with yellow or olive green, every feather with a narrow central shaft stripe, scarcely wider, as Mr. Blyth pointed out in the original description than the shafts themselves. Lower tail coverts, pale yellow, with more or less of a brown shaft stripe, and a pale brownish patch a little inside the tip. Wing lining, white or yellowish white; edge of the wing, rather bright yellow; axillaries sometimes the same, sometimes yellowish white.

233 *bis*.—Chalcoparia cingalensis, *Gm*.

Though not apparently obtained by Mr. Oates or Captain Feilden, this species was sent from Tonghoo by Sir Arthur Phayre, and I have received it from other localities within our limits. It is very common in the Tipperah District, from whence, as well as from Malacca, Tenasserim, Dacca, and Assam, I have received many specimens.

The dimensions of this species taken, in the flesh, are as follows:—*Male:* Length, 3·7; wing, 2·2; tail, from vent, 1·6; tarsus, 0·6; bill, at front, 0·5. *Female:* Length, 3·8; expanse, 5·3; tail, 1·3; wing, 2; bill, at front, 0·55; tarsus, 0·58; weight, from 120 to 140 grains.

Bill, black; legs, feet, and claws, green, or dusky green. In the male, the whole of the top and back of the head, back scapulars, lesser and median wing coverts, and upper tail coverts, brilliant metallic green, more emerald in some, slightly more golden in others; the rump, moderately dark olive green; the ear coverts, a rich ruddy metallic purple, (whence Temminck's name *phœnicotis*), below these a narrow stripe commencing in the middle of the lower margin of the eye, and broadening somewhat lower

down on the sides of the throat, bright metallic violet purple; the chin and throat, dull pale ferruginous; the rest of the lower parts, bright yellow; only the upper part of the breast, slightly tinged with this same dull ferruginous color. The quills and their greater coverts, hair brown; the latter, at least those of the secondaries, margined on their exterior webs with dark metallic green; wing-lining, axillaries, and the inner margins of the inner webs of the quills towards their bases, silky white, with a faint yellowish tinge. Tail, black or blackish brown; the feathers, margined on their outer webs with bright metallic emerald green.

The female entirely wants the metallic colors of the male; the lower parts are much as in the male, but slightly paler; the top and back of the head, cheeks, ear coverts, lesser and median coverts, back scapulars and upper tail coverts, dull green, brightening somewhat on the upper tail coverts; quills and their greater coverts and their rectrices, hair brown; the feathers, margined on their outer webs, and in the case of the tertiaries and central tail feathers, more or less suffused everywhere with olive green.

234.—Arachnecthra asiatica, *Lin.*

Specimens from Thayetmyo, at least those few that I have seen, have been remarkable by the entire absence of any greenish gloss in any light; whereas Indian *asiaticæ* are more or less glossed in certain lights with green. I do not know whether this peculiarity is accidental or constant.

Mr. Oates remarks: "Very common about us. Birds in black plumage are the rule here, the so-called winter plumage being rarely seen. Several that I measured, varied as follows: Length, 4·3 to 4·6; expanse, 6·6 to 6·9; tail, from vent, 1·35 to 1·4; wing, 2·1 to 2·2; bill, from gape, 0·8 to 0·82; tarsus, 0·57 to 0·6. Legs and feet, black; claws, dark horny; irides, hazel; eyelids, grey."

236.—Dicæum cruentatum, *Lin.*

Captain Feilden obtained this species at Thayetmyo.

Captain Feilden also mentions: "A common Honey-Sucker with a green head, purple tail coverts and yellow breast," which must, I fancy, be (232) *Leptocoma zeylonica*, Lin.

I may add that Mr. Blanford also got *D. cruentatum* at Thayetmyo.

250.—Sitta neglecta, *Walden?*

The Thayetmyo birds that I have seen, though nearer to *castaneoventris* than any other which I know, are not—at least the few that

I have seen—precisely identical with the specimens of this species that I have from various parts of India. They are rather larger than *castaneoventris*, but not so large as *cinnamomeoventris*; and if the specimens which I have received are correctly sexed, the coloring is nearer that of the latter species than of the former: for instance, the male, instead of having the chin and upper throat pure white, and the rest of the lower parts deep chestnut, has the whole chin, throat, and upper breast, greyish white, and the rest of the lower parts dull pale ferruginous, deepening towards the vent. Moreover, the lower tail coverts are not slaty blue, broadly fringed with ferruginous or chestnut, but are pale brown, broadly edged with white or yellowish or rufous white.

Although in some points our birds do not agree over-well with his description, *e. g.*, in the color of the lower tail coverts, I think I can hardly be wrong in referring them to Lord-Walden's Nuthatch which he thus described in Ann. & Mag. of Natural History, 1870, p. 218:—

"Above, pale slate color; stripe from nostrils, through the eyes to nape, black; lores, supercilium, cheeks, chin, and base of primaries, white; throat, tawny white; breast, pale rufous, deepening into dark rusty on remainder of lower surface; under tail coverts, white, with narrow, rusty edgings; middle rectrices, uniform slate color; wing, 3 inches; bill, $\frac{4}{6}$ inch.

"Three examples of this Nuthatch were obtained from the Karen Hills of the Tonghoo District, Burmah. It differs from its nearest ally, *S. himalayensis*, J. and S., by its much stouter and longer bill, by the deep ferruginous tint of the under surface, and by the absence of a white spot on the basal half of the middle rectrices."

Mr. Oates remarks: "This species is common in the plains, but on the Pegu Hills it is entirely replaced by *D. frontalis*. Two *males* measured: Length, 5·4 to 5·5; expanse, 9·1 to 9·8; tail, from vent, 1·55 to 1·7; wing, 3·1 to 3·25; bill, from gape, 0·88 to 0·9; tarsus, 0·75.

"A *female* measured: Length, 5·15; expanse, 9·3; tail, from vent, 1·45; wing, 2·95; bill, from gape, 0·86; tarsus, 0·75.

"This latter was killed on the 16th March, and the ova were largely developed.

"The colors of the soft parts vary somewhat. In one, the iris was pinkish hazel, and the eyelids bluish grey; in another, hazel-brown and brownish grey. In the first, the upper mandible was bluish black; the basal one-fourth of culmen, bluish white; lower mandible, pale blue. In others, the upper mandible from nostrils to tip, and tip and margins of lower mandible, dark brown; the rest of the bill, pale bluish; legs, plumbeous in the one,

plumbeous brown in the others; claws, bluish in the former, brownish horny in the others."

253.—Dendrophila corallina, *Hodgs.*

Mr. Gray makes two species, *D. frontalis*, Horsf., from Java, Sumatra, Borneo, Burmah; and *corallina*, Hodgson, from Nepal, Ceylon, and Pegu. The former is, I understand, a smaller bird, with a differently colored bill; but I do not exactly know how it is proposed to distinguish Pegu and Burmah. Used in a general sense, Burmah includes the Arracan, Pegu, and Tenasserim Divisions; used in a more restricted sense, it refers to Pegu and Independent Burmah north of Pegu. As a matter of fact, the Pegu birds, as well as those from Tenasserim, at least as far south as Tavoy, are, it appears to me, inseparable from others, which I have from Ceylon, the Nilghiris, the Central Provinces, and various localities in the Himalayas.

Mr. Oates says: "Appears to replace our common Nuthatch of the plains on the Pegu Hills. It is very common, going about in flocks of five or six. Four males that I measured varied as follows:—

"Length, 4·9 to 5·0; expanse, 8·7 to 9; tail, from vent, 1·7 to 1·8; wing, 2·75 to 3; bill, from gape, 0·63 to 0·71; tarsus, 0·68 to 0·70. In two specimens the irides were yellow; eyelids, plumbeous; bill, coral red; inside of mouth, red; feet, pinkish brown; claws, pale horny.

"In two other specimens shot in company with the former, the bill was black pinkish at the gape and nostrils, the irides dark brown, and the legs brownish grey; these latter were shot, I may mention, early in April, which seems early for young birds to be about, and on the other hand late for them not to have assumed full plumage; but I suppose they must be young."

I myself have no doubt that the black-billed birds are young ones, but then the question suggests itself is *frontalis*, really distinct? If so, can it have been young black-billed specimens of *corallina* which led to Burmah being assigned as a locality for *frontalis*?

It will be noticed that these Thayetmyo birds run slightly smaller than our Indian birds, males of which average about: Length, 5·3; expanse, 9·9; tail from vent, 1·9; wings, 3·15; while the females are perhaps a trifle smaller; but in no other respect that I can discover is there the smallest difference.

254 *bis.*—Upupa longirostris, *Jerdon.*

Whether this species is a good one may be doubtful; in size typical males equal or exceed *Upupa epops*, but are more rufous,

absolutely want even a trace of white upon the crest, which *nigripennis*, Gould, our commonest Indian Hoopoe, often has, and have bills incomparably larger than this latter species. I have seen no specimen of *epops* with a bill more than 2·3 inches; the largest *nigripennis* bill that I have yet noticed was 2·1 inches: the bill of one specimen of the present species sent by Captain Feilden measures 2·5 from forehead to point. The bill of the male Hoopoes are always longer than those of the females; but, sex for sex, I believe that typical *longirostris* (a quite young bird, a female, sent by Mr. Oates, has the bill at front 2·2) will be found always to have a bill conspicuously longer than *epops*, from which, moreover, it is further separated by the entire absence of white on the crest, while from *nigripennis* its much greater size at once divides it.

But then my experience is, that the majority of the birds are not typical, but intermediate forms, which it is very hard to separate from *nigripennis*.

As for the absence or presence of the white spot upon the first primary on which Dr. Jerdon lays some stress, it is worthless as a diagnosis of all three species; specimens of each are before me exhibiting the spot on both first primaries, on one of them only, and lastly on neither of them.

Mr. Oates remarks: "This species is common in the plains throughout the year, but is, or seems to be, most numerous in February and March, when I presume it breeds, because it is then incessantly calling."

260 *bis*.—Lanius hypoleucos, *Blyth*—(Journal, As. Soc., Bengal, 1848, XVII, p. 249).

This species appears to be common throughout the province of Pegu, and it has been sent from the northern portions of the Tenasserim provinces.

Length, 7·5 to 8; wing, 2·3; tail, 3·5 to 3·75; bill, at front, 0·45; from gape, 0·8; tarsus, nearly 1.

Bill, blackish brown, yellowish fleshy at gape and base of lower mandible. Forehead, orbital region, and ear coverts, blackish; crown, back, and sides of the head and neck, dark slaty grey to dull ashy; back, scapulars, rump, and upper tail coverts, deep maroon; in faded specimens, ferruginous chestnut; wing, blackish to pale dingy hair-brown. Primaries and secondaries narrowly margined on their outer webs with white, which becomes more and more rufescent as the feathers approach the tertials; tertials broadly, and coverts less broadly, margined with ferruginous. A conspicuous white speculum at the base of the fifth to the tenth primaries, narrowest on the fifth, and increasing in breadth to the tenth. The two exterior tail feathers on each side, pure white; shafts, darker; the next on each side, with the tips and generally

more or less of the outer webs, white; the rest of the inner webs blackish, or in abraded specimens dull brown; the rest of the tail feathers, blackish, or, as above, dull brown, very narrowly tipped with white or rufous white; entire lower parts, pure white, with only a faint, rosy, or rufescent tinge on the sides and flanks, scarcely visible except in good specimens.

I do not think that this species has ever before been described, but Mr. Blyth (*loc. cit.*) pointed out that it differs from *L. vittatus*, Dum=*L. Hardwickii*, Vigors—(1*st*), in having the entire crown nigrescent, passing gradually from the black of the forehead to the dark ashy of the nape, the ear coverts being uniformly colored with the feathers superiorly adjacent; (2*nd*), in having the rump and upper tail coverts of the same deep maroon color as the back and scapularies; (3*rd*), in the much greater development of the ferruginous margins of the great wing coverts and tertiaries; and (4*th*), in having the under parts uniformly white, a little subdued, and tinged with a very faint bluish, but having no trace of rufous on the flanks and elsewhere.

Mr. Oates says: "The White-bellied Shrike is common, except from the end of the cold-weather to the end of July, or thereabouts. It apparently goes away to breed. I did not find it in the Pegu Hills during this interval. A specimen shot on the 15th March was apparently about to breed. It has the usual habits of Shrikes, and is very fond of perching on telegraph posts and wires like so many other birds. It comes in abundantly about the 15th July; at least this was what I observed during two successive years. A male that I shot measured: Length, 8; expanse, 11; tail, from vent, 3·95; wing, 3·5; bill, from gape, 0·82; tarsus, 1·0.

"The irides are pale reddish brown; the eyelids, bluish grey; bill, black; gape and greater portion of lower mandible, fleshy grey; legs, plumbeous; claws, horny."

261.—Lanius cristatus, *Lin.*

Specimens from Thayetmyo are precisely similar to those from other parts of Eastern India and the Himalayas.

Mr. Oates remarks: "This species is by no means common during the greater portion of the year, but about the middle of September it comes in in great numbers, and is then rather shy and very noisy. It spreads at this time over the whole district; and even now in November, in the large town of Prome, one is generally to be seen in my compound. Later on in the year (and I am not sure that they do not entirely disappear during the hot-weather and rains) I have seen but few in the district; *hypoleucos* is the only common Shrike. A male I shot measured: Length, 7·5; expanse, 10·6; tail, from vent, 3·6; wing, 3·45; bill, from gape, 0·89; tarsus, 1.

"Bill at gape and the greater portion of the lower mandible, pale plumbeous, with a pinkish tinge; whole upper mandible and tip of lower, blackish horny; irides, dark brown; eyelids, greyish; legs, dark brown; claws, horny."

263.—Tephrodornis pelvica, *Hodgs.*

Specimens from Thayetmyo are precisely identical with others from Nipal, Bhootan, Tipperah, &c.

Dr. Jerdon does not notice that there is a considerable difference in the sexes in this species. The males have the whole bill black; the females have the base and gape of both mandibles flesh-colored. The males have a band extending from the culmen on either side through the lores, eyes and ear coverts, jet black; and the whole of the upper part of the head inside these stripes, ashy grey. The females want this black stripe entirely, and merely have the ear coverts a little darker than the brown of the head, and have the whole of the top of the head unicolorous with the back, only the shafts of the feathers being a slightly darker brown.

Mr. Oates remarks: "The Nipal Wood-Shrike, as Jerdon calls it, is not uncommon in the plains, and is very common in the Evergreen Forests. It goes in flocks, and has a melodious call. A *male* measured: Length, 8·1; expanse, 13·5; tail, from vent, 3·4; wing, 4·6; bill, from gape, 1·24; tarsus, 0·8.

"The bill, black; eyelids, dark plumbeous; irides, a sickly yellow; legs, plumbeous brown; claws, dark horny.

"Three *females* varied: Length, 8·35 to 8·7; expanse, 14·2; tail, from vent, 3·5; wing, 4·5 to 4·65; bill, from gape, 1·15 to 1·18; tarsus, 0·83 to 0·86.

"Soft parts, as in the males, but the bill is paler, and the gape and base of both mandibles flesh-colored."

265.—Tephrodornis pondiceriana, *Gm.*

The specimens from Thayetmyo, of which I have received several, seem to average slightly smaller than those from any other part of India, but they are not otherwise distinguishable; and as I have already noticed (Stray Feathers, 1873, p. 443) this species is one that varies locally very widely, and of which the numerous races grade one into the other from Ceylon to Sindh, and Sindh to Thayetmyo.

Mr. Oates remarks: "The Common Wood-Shrike is often seen, but generally singly; occasionally it seats itself in the topmost bough of a tree, and sings a well-connected and rather pretty song. This I heard at the end of April. It is generally distributed; but I cannot remember if I met with it on the eastern slopes of the hills. The white eye streak is much more developed in our birds here than in a specimen I have from Kutch."

267.—Hemipus picatus, *Sykes.*

Specimens, male and female, (the latter being, as already noticed, STRAY FEATHERS, 1873, p. 435, the supposed *capitalis* of McClelland,) sent from Thayetmyo, differ in no respect from others from various parts of India, from Ceylon to Nipal.

Mr. Oates says: "I shot a pair about ten miles due east of Thayetmyo, and met with it again in the Evergreen Forest. It is not at all common: the sexes do not appear to differ in size. Specimens of both measured: Length, 5·35 to 5·45; expanse, 7·6; tail, from vent, 2·3 to 2·4; wing, 2·3 to 2·4; bill, from gape, 0·7.

"A male had the bill black; the inside of the mouth, bluish black; the irides, hazel; eyelids, grey; legs, plumbeous brown; claws, horny. The female was similar, except that the inside of the mouth was dusky fleshy."

268 *bis.*—Volvocivora avensis, *Blyth.*

This species was originally described by Blyth (JOURNAL, ASIATIC SOCIETY, 1846, p. 307) under the designation of *melanoptera*, from specimens sent from Arracan by Captain Phayre. Russell, however, had pre-occupied this name for an Australian species, and Blyth changed it to the one above quoted. This has also been sent from Tenasserim by Dr. Helfer; and now we have it from Pegu, where Mr. Oates says that it is "a tolerably common bird. I have always found it solitary, searching for insects in densely foliaged trees. It extends over the Pegu Hills, and I procured an adult male in Pegu town on the 11th March. Specimens of both sexes measured by me varied as follows: Length, 8·55 to 9·3; expanse, 13 t · 13·6; tail, from vent, 3·9 to 4·2; wing, 4·2 to 4·35; bill, from gape, 0·86 to 0·91; tarsus, 0·8 to 0·9. The bill is black; the inside of the mouth, fleshy yellow; irides, dull red; eyelids, plumbeous; feet and claws, black. The front of the tarsus in many birds has a metallic gloss."

This species, in the case of the adult male, has the entire head, neck all round, breast, back, scapulars, rump, and upper tail coverts, pale iron grey, much paler than in *melaschistos*, and of about the same color as the back in *Sykesii*. The wings and tail, black, with a greenish metallic lustre; the former, with most of the quills, excessively narrowly margined with white on the outer webs, most conspicuous on the second primary and on the later secondaries, and with the lesser coverts, especially towards the shoulder of the wing, tinged with iron grey; and the tail, with all the feathers, tipped with white, the central pair almost obsoletely so, and the exterior lateral ones broadly so; the abdomen, greyish white, turning to pure white on the vent and lower tail coverts. The central tail feathers a good deal suffused

with ashy towards their bases, and with traces of obsolete barring. The wing lining and axillaries, unicolorous with the breast.

In a slightly younger male, the abdomen and flanks are faintly barred greyish white; on the lower surface of the wing there is not a trace of any white upon the inner webs of the quills.

A female, whether adult or not I cannot say, differs in having the whole of the under parts, including the wing-lining, and axillaries, but excluding the lower tail coverts, greyish white, very narrowly and closely barred with greyish brown. The feathers at the edges of the eyelids are white, and the ear coverts are streaked with white, having narrow white central shaft streaks. The wings and tail are hair brown, instead of black, and devoid of metallic lustre.

Another female is similar in most respects, but has the lower tail coverts also barred, and has a very large white patch on the basal half or two-thirds of the inner webs of all the primaries, except the first two. It also has the outer webs of all but the first two or three primaries somewhat broadly margined towards their bases with iron grey. The wings and tail are deep hair-brown, but the two central tail feathers are entirely a pale grey brown, except just at their tips.

A young male again is very similar to the last, but has the lower tail coverts white, and has the rump and upper tail coverts faintly and narrowly barred with greyish white. There is much more white on the tips of all the tail feathers than in any other specimen; and the four central feathers, besides the white fringe at the tips, have a moderately large double white spot inside the tips. The primaries and secondaries are conspicuously fringed with white on the margin of the outer web.

These birds are very variable in their plumage, and I cannot at present pretend to understand all the changes. The size of the bill, too, is very variable; indeed, Mr. Oates was almost disposed to think that his numerous specimens might include two species, but I have no doubt myself that all belong to one and the same species.

270.—Graucalus Macei, *Less.*

Specimens from Thayetmyo sent by both Captain Feilden and Mr. Oates are identical with birds from Upper India.

Mr. Oates remarks: "These birds are common within our limits and also in the Arracan Hills. They are very partial to the fruit of the Banyan tree; but I have generally found insects in their stomachs. The males, with black lores and unbanded lower parts, run rather larger. Females without the black lores, and with, I think, generally the lower parts more or less banded, are perhaps somewhat smaller; they vary in length from 12 to 13; expanse, 20 to 21·3; tail, from vent, 5·3 to 6; wing, 6·6 to 7·1; bill, from gape, 1·5 to 1·6; tarsus, 1·1 to 1·2.

"A male had the iris hazel brown; eyelids, grey; bill, black; feet and claws, black. A female had the iris lake red, and the eyelids greyish white."

Captain Feilden also noted that in some of his specimens the irides were brown. I do not think that it is always the case that there is a difference in color in the irides of the two sexes, as there undoubtedly is in those of *Phœnicophaus pyrrhocephalus*, and *curvirostris*, and perhaps others of that same group; I am inclined to believe that in this species the difference is due, as in *Elanus melanopterus*, to differences in age.

271 *ter*.—Pericrocotus elegans, *McClell. and Horsf.*, (Proceedings, Zoological Society, 1839, p. 156).

As already noticed, when treating of the Andaman Minivet (Stray Feathers, 1874, p. 208), I believe that both the Assam and the Pegu birds should be referred to *elegans*.

Mr. Oates remarks: "I think this bird requires to be separated from the Indian *speciosus*, the inner webs only of the central tail feathers being black."

This distinction is possibly not absolutely constant in Burmese and Assamese specimens, but I cannot understand how *elegans* can ever have been confounded with either *speciosus* or *flammeus*. First, as to *flammeus*, no doubt it is of much the same size, and also that the color of *elegans* is, to a certain extent, intermediate between that of *speciosus* and *flammeus*; but then the red extends in *elegans* (as in *speciosus*) on to the third, whilst in *flammeus* it only extends on to the fifth primary. As regards *speciosus*, *elegans* is only about half the bulk. I do not lay very great stress upon the outer web of the central tail feather being entirely red in *elegans*, because I have specimens, both from the Central Provinces and Sikhim, of the true *speciosus* in which the outer webs of these central feathers are partly or wholly red. The points I would insist on are, as regards *flammeus*, the difference of the amount of red on the wing, and as regards *speciosus*, the great difference in size. As regards the females, the same kind of differences exist, and moreover the female of *elegans* has, like that of *speciosus*, a great deal more yellow on the front of the head than that of *flammeus*.

Mr. Oates remarks: "This species is common everywhere, very often alone, at times in flocks of five or six. The males are, perhaps, a little larger than the females as a rule, but the differences are scarcely perceptible.

"The following is a *résumé* of the dimensions of numerous specimens:—

"Length, 7·6 to 8·1; expanse, 11 to 11·7; tail, from vent, 3·3 to 3·9; wing, 3·6 to 3·8; bill, from gape, 0·9 to 0·98;

tarsus, 0·7 to 0·78; bill, legs, and feet, black; claws, dark horny; irides, dark brown; eyelids, plumbeous fleshy; inside of mouth, fleshy, almost salmon-colored."

276.—Pericrocotus peregrinus, *Lin.*

Pegu specimens are moderately dark birds, intermediate in color between those from Southern and Western India (*vide ante*, STRAY FEATHERS, 1873, p. 177, and 1874, p. 209). This species, according to both Captain Feilden and Mr. Oates, is common about Thayetmyo.

277 *bis.*—Pericrocotus albifrons, *Jerdon*—(IBIS, 1862, *p.* 20).

I reproduce here Dr. Jerdon's original description, which is available to very few of my readers:—

"*Male.*—Crown of the head, nape, back, wings and tail, glossy black; forehead, and a wide supercilium, white; lores and ear coverts, mixed white and black; chin, throat, sides of neck nearly meeting on the back of the neck, the greater coverts, tertiaries, and a band on the primaries, and the whole of the lower parts, white; all the tail feathers, except the four centre ones, broadly and obliquely tipped with white; the breast with a gorget of shining orange red, and the rump the same, mixed with white; bill, black; legs, dark brown; irides, light brown. Length, 6·25; expanse, 8; wing, 2·65; tail, 3·25; bill, rather more than 0·32; tarsi, 0·56.

"The *female* differs in having the parts that are black in the male sooty brown, in wanting the breast spot of the male, and in the rump being only slightly mixed with red.

"This pretty bird is the representative in Upper Burmah of *P. erythropygia* of Southern and Central India, from which it differs conspicuously in the white forehead and in the somewhat paler and more aurora tinge of the red on the breast and rump. It is found usually in pairs, or in small families, chiefly in low and thorny jungles, not frequenting the dense forests. It is active and restless, flitting about the smaller branches, and feeding on various insects, which it usually picks up from a leaf or twig, now and then catching one in the air."

Mr. Oates remarks: "This species is extremely local, and not common even in places which seem suitable to it. Apart from the immediate neighbourhood of Thayetmyo, it occurs, as far as I know, only at Palow, fifteen miles south; northward it may be commoner, but the frontier is a barrier that stops all my investigations in that direction. It feeds a good deal on the ground; when flying, it always reminds me of the English Bottle-Tit. It is generally seen in couples. The sexes do not differ in size.

Birds vary in length from 6·4 to 6·6; expanse, 8 to 8·3; tail, from vent, 3 to 3·5; wing, 2·5 to 2·6; bill, from gape, 0·53 to 0·55; tarsus, 0·55 to 0·65.

"The irides are dark brown, hardly distinguishable from the eyeballs; eyelids, grey; bill and legs, black; claws, dark horny."

278.—Dicrurus albirictus, *Hodgs.*

Thayetmyo specimens are not to be separated from others from various parts of the Indian empire. Birds differ *inter se* in size, breadth, and carination of bill; in the size, presence or absence of the white rictal spot, in the length of the tail and the width of the tail feathers; but here, as in the case of *longicaudatus*, I see no possibility of making more than one species. Dr. Jerdon's *longus*, which is supposed to differ in wanting the rictal spot, cannot, it seems to me, stand. There is no part of India, I believe, in which specimens wanting the rictal spot may not be found, and between the absolute absence of the spot, and the presence of a large well-marked spot, every intermediate gradation may be found, from the merest indication on one side of the gape only.

Mr. Oates remarks: "For many months of the year this species is very abundant; but from April to September or October few, comparatively speaking, are to be seen, the bulk go away to breed elsewhere; but where do they breed? On the Pegu Hills I saw none. In the cold-weather you may see a dozen together in your compound; now, in August, it would be difficult to find two in a whole day."

280.—Dicrurus longicaudatus, *Hay.*

Some of the specimens of this species sent from Thayetmyo are probably identical with Blyth's *D. intermedius*, which he thus described (Journal, Asiatic Society, 1846, Pt. XV, p. 298)—"*D. intermedius*, nobis, *nova species*. Also closely allied to *D. cærulescens*, but having no white whatever on the under parts, which are darker than the throat and breast of *D. cærulescens*, and have a faint steel blue gloss. The upper parts are also glossed with steel blue instead of steel green. Length of wing, 5; of middle tail feathers, $3\frac{1}{2}$; and of outermost tail feathers, $1\frac{5}{8}$ inch more. From Penang, in general aspect intermediate to *D. cærulescens* and *D. longicaudatus*."

If these specimens really belong to this species, then I entertain no doubt that this is nothing more than one of the numerous forms of *D. longicaudatus*,—forms which I have satisfied myself are only partially local, varying quite as much with the individual as they do according to locality.

Dr. Jerdon in his recent supplementary notes (Ibis, 1872, p. 120) remarks as follows in regard to the present and a supposed nearly allied species :—

"It has been asserted that the Himalayan bird generally referred to under this name is distinct from the bird from Southern India; and the late Mr. Beavan named it *D. Waldeni*, with which *D. himalayanus* of Tytler is identical. I have recently compared specimens from the Himalayas with others from Southern India, and have been unable to detect any appreciable difference. Hodgson's name of *pyrrhops* is given as a synonyme of this bird by Gray and Blyth, and I followed them. This so far appears to be correct that one drawing of this species in Hodgson's collection is named by him *D. pyrrhops*; but there is another decidedly distinct bird figured by Hodgson under the same name, which will therefore stand as *Buchanga pyrrhops*, Hodgson, the Grey Long-tailed Drongo. Viscount Walden first discriminated this species. It somewhat resembles in coloration *D. cineraceus*, Horsfield, being of a moderately dark shade of grey, with a distinct metallic shine; and the tail feathers always show the ashy grey tinge in a marked manner when compared with specimens of *D. longicaudatus*. The dimensions of one killed at Dacca were as follow :—

"Length, 11; wing, $5\frac{1}{2}$; extent, $16\frac{1}{4}$; tail, $5\frac{3}{4}$.

"I am not certain now whether I ever procured this at Darjeeling (having confounded it with *D. longicaudatus*); but the specimen I got at Dacca I looked upon as a pale individual of that species, and it was not till Lord Walden had pointed out its distinctions and showed me a similar specimen from the Himalayas that I fully recognized its claim to specific separation. I found it by no means rare at Dacca, in groves, and at the edges of jungle, with a strong and rapid flight, quite similar to that of *D. longicaudatus*, capturing insects in the air at a considerable distance from its perch. I have little doubt that it will be found to extend southwards through Chittagong to Arracan; and it was probably seeing specimens of this race that caused Blyth to remark that *Dicrurus cineraceus*, Horsfield, in advancing northwards from the Malayan Peninsula, appears to grade into *D. longicaudatus*.

"I may here remark that Lord Walden considers Blyth's *D. intermedius*, placed as the synonyme of *D. longicaudatus*, to be a distinct race from Burmah."

Now, I quite agree with Dr. Jerdon that *Waldeni* and *himalayensis* are mere synonymes of *longicaudatus*; but I absolutely dispute Lord Walden's supposed species which Jerdon identifies with *Buchanga pyrrhops*, Hodgson. I have some very fine specimens from Dacca, one quite grey enough and pale enough, especially on the under surface, and with the grey tint on the lateral margins of the tail feathers quite strongly enough developed

to illustrate most fully the supposed characteristics of this new species; but, on the other hand, I have another specimen from the same locality undistinguishable from Etawah, Simla, and Southern Indian specimens, and other specimens again intermediate between these; but in size of wing, in shape and size of bill, there is not one iota of difference between the grey bird and one of the darkest Darjeeling birds, or between it and others of different shades from Dacca, as well as from other localities. I hardly understand making a species dependent on a slight difference in tint in a case like this, when difference of tint is not even constant in all the individuals from the same locality. These particular Thayetmyo specimens, to which I have referred, are exactly similar in every respect to the grey Dacca birds, and illustrate, I think, clearly Mr. Blyth's remark, that *Dicrurus longicaudatus* in passing eastwards and southwards begins to assimilate somewhat or approximate to *Dicrurus cineraceus*.

280 *bis*.—Dicrurus leucophæus, *Vieil.* (*Vide ante*, STRAY FEATHERS, 1874, p. 210.)

But besides the intermediate forms above referred to, which I have identified with *longicaudatus*, and which any one who pleases may sub-divide into two species,—*pyrrhops*, Hodg., and *intermedius*, Blyth, both of which, as well as the true *longicaudatus*, Hay, occur together at Dacca, and may be there shot together off the same tree,—there are some specimens from Thayetmyo greyer still than those referred to, and absolutely identical with specimens from Singapore and Malacca, except in having a somewhat narrower bill.

I confess that I do not know how to deal with these *Dicruri*. Nature has drawn no hard-and-fast line between all the innumerable varieties which bind together with an absolutely perfect chain, no single link apparently wanting, the perfectly grey, comparatively short-tailed, and broad-billed birds from Sumatra and the Straits, which I take to be *leucophæus*, and the dark comparatively narrow-billed and long-tailed typical *longicaudatus*. If we compare birds from the opposite ends of the scale, nothing can appear more distinct; but if we carefully collate hundreds of specimens from very numerous localities, the impossibility of drawing any but entirely arbitrary lines of separation becomes more and more palpable.

If two nearly allied races are to be distinguished as distinct species, it appears to me that it is not merely sufficient to define the types of each species, but to lay down such a definition of each species as shall enable observers to refer any specimen they obtain certainly and definitely to one or other species; and this is what it appears to me cannot be done in the case of the four or possibly more races of *leucophæus*, *longicaudatus*, *&c.* As far as I

can judge, define these races how you will, specimens can be produced in regard to which it will always be doubtful whether they should be referred to this or that species; and not only this, but while in certain localities doubtless only a single race is to be procured, in certain other localities two or more of these supposed species will be found associated together with numerous intermediate forms.

How cases like this are to be treated is a question which becomes daily more and more important to Indian ornithologists, as we collect together specimens from all parts of this vast empire. This is a question which, owing to the limited collections existing in Europe, does not appear to me to have been ever sufficiently considered there; and it would be a great boon to us if philosophical naturalists at home would consider the subject in all its bearings, and agree upon some intelligible rule by which we might all be guided. I have elsewhere explained my views in regard to this complex problem, but what I or other individual colonial naturalists think or wish is of little consequence; what is wanted is something like a consensus amongst the leading naturalists at home. The want of some recognized rule is becoming a serious bar to scientific progress, and has a grave tendency to discourage and disgust neophytes.

Mr. Oates remarks in regard to the present birds: "Not uncommon. I have procured it fifteen miles south, and twenty-five miles east, of Thayetmyo. It has all the habits of the Common King-crow. I saw, a few days ago, a family of them,—two adults and three or four well-grown young ones; this was at Tonyeh, thirty miles south of Thayetmyo, on the 26th August. Specimens that I measured varied as follows:—

"Length, 10·6 to 11·5; expanse, 15·6 to 16·5; tail, from vent, 5·7 to 6; wing, 5·2 to 5·4; bill, from gape, 1·1; tarsus, 0·8 to 0·83.

"In the adult the iris is scarlet; the eyelids, grey; bill, feet, and claws, black; and the inside of the mouth, dusky fleshy. In the young, the iris is wood brown; the eyelids, smoky plumbeous; the gape, fleshy; and the inside of the mouth, pale fleshy."

282.—Chaptia ænea, *Vieil.*

Specimens from Thayetmyo are undistinguishable from Nilghiri and Northern Indian birds. Captain Feilden gives the length at from 8 to 8·75. Mr. Oates says: "Not common. I have only seen it a few times. A male measured: Length 8·85; expanse, 14·2; tail, from vent, 4·75; wing, 4·75; bill, from gape, 1·0; tarsus, 0·62.

"Iris, pinkish hazel; eyelids, purplish grey; bill, legs, feet, and claws, black.

283.—Bringa tectirostris, *Hodgs.*

Specimens from Thayetmyo are not separable, I think, from Sikhim and other Himalayan birds, though they seem to be rather smaller and to have a slightly broader and less compressed bill. The whole of this family is extraordinarily variable; and as I have had no opportunity of examining Javan and Sumatran specimens, I do not know that these are really distinct, and only follow Mr. Gray in assigning to our Indian bird Hodgson's name above cited.

Mr. Oates says: "I saw a few specimens in the Evergreen Forests, where it appears to be tolerably common; no bird that I saw of this species had long tail feathers up to the end of April. A female I shot, which had no elongated tail feathers, and which was probably a young bird, measured: Length, 10·3; expanse, 15·8; tail, from vent, 5·2; wing, 5·1; bill, from gape, 1·13; tarsus, 0·85. The bill, legs, feet, and claws were black; the inside of the mouth, blackish grey; eyelids, plumbeous; iris, rich reddish brown."

284.—Dissemurus malabaroides, *Hodgs.*

I have already (Stray Feathers, 1874, p. 212) discussed the different species of *Dissemurus*. I have only to say that the birds from Pegu are identical with those from the Himalayas, except that in the case of some of the specimens that I have seen from the former locality both the crests and bills were slightly smaller than those of Himalayan specimens. A bird, however, from the Arracan Hills is absolutely identical with Nepalese specimens.

Further south and east a different race, *rangoonensis*, Gould, which is, I believe, considered identical with *paradiseus*, L., replaces the Himalayan form.

Mr. Oates says: "The Great Racket-tailed Drongo is common all over the country; near some of the springs of water in the Pegu Hills, especially on the western side where water is scarce, I have seen as many as ten or twelve together close to my camp, trying to get a sip at a small pool of water which I and my followers had monopolized. It has a magnificent voice, and its song is very rich and powerful. It sings at all hours, but chiefly in the evening about sunset. A specimen I shot (sex ?) measured: Length, 21·1; expanse, 19·7; tail, from vent, 15·3; wing, 6·5; bill, from gape, 1·41; tarsus, 1·05. The iris was pink; bill, legs, and feet, black."

286.—Chibia hottentotta, *Lin.*

Mr. Oates says: "This is a rare bird. I procured one at Boulay, and lately saw another at the same place. The bird I shot was a male, and measured: Length, 12·8; expanse, 20·5; tail, from

vent, 6 ; wing, 6·7 ; bill, from gape, 1·62 ; tarsus, 1·09. The irides were pale pink ; eyelids, pinkish grey ; bill, legs, and claws, black ; and inside of mouth, bluish black."

287.—Artamus fuscus *Vieill.*

Thayetmyo specimens differ in no respect, that I can state, from specimens from other parts of India.

Mr. Oates says: "The Common Swallow-shrike abounds throughout the plains; it lies over at Thayetmyo cantonment almost every evening in large flocks high in the air, hawking after insects; towards the hills it disappears. Paired birds are excessively affectionate to each other. I have seen a pair kissing and caressing each other for fully an hour. I have never found the nest, but I saw a pair making preparatory arrangements at the end of April. A male I shot measured: Length, 7·35 ; expanse, 15 ; tail, from vent, 2·4 ; wing, 5·3 ; bill, from gape, 0·95 ; tarsus, 0·65.

"The bill is a fine pale blue ; the tip and anterior half of margins, brownish; irides, dark brown; eyelids, grey; legs, slaty grey; claws, dark horny; inside of the mouth, black in some, bright yellow in others. I have not yet discovered the reason of this."

288.—Tchitrea paradisi, *Lin.*

Specimens sent from Thayetmyo are nearer *paradisi* than *affinis*.

I cannot say that I have ever been very certain of the points of difference between these two species.

Jerdon says that the differences consist in (1*st*) the smaller size of *affinis* ; (2*nd*) in the lengthened central tail feathers being black-shafted throughout their whole length, and often more or less conspicuously margined throughout with black ; (3*rd*) in the crest not being so long, and having the feathers composing it more equal; (4*th*) in the lengthened tail feathers being shorter and narrower ; (5*th*) in the chestnut birds wanting the rich glossy black neck, and having the inner webs of the quills dusky, while they are chestnut in *paradisi*.

Now, No. 5 may be ignored at once, seeing that in one stage of the plumage both species equally want the glossy black throat, and have the inner webs of the quills dusky, and again in another stage both species equally have the glossy black throat and the interior webs of the quills chestnut. Next as to the size, I compare a typical male *affinis* from Sikhim with typical male *paradisi* ; the wings in both are 3·7 ; there is no appreciable difference in the size of the bills. As to No. 2, this distinction holds good in typical specimens, but at the same time I have specimens from Sikhim, shot at the same time as typical *affinis*, with the central tail feathers about 11 inches long, and the terminla

five inches white-shafted. As to No. 3 this also holds good in typical specimens; but I have specimens, some of which I should class as *affinis* and some as *paradisi*, in which the crests are quite intermediate between the typical forms. No. 4 appears to me to be the only criterion, and even this is not very constant.

Now as to the Pegu birds. The tail feathers are decidedly broader than in typical *affinis*; only the basal five inches or so of the central feathers are black-shafted; they have no black margins; the crest is more lengthened and pointed than in *affinis*, and though the tails seem to run shorter than typical *paradisi*, still the birds, as a whole, are decidedly closer to this latter than to *affinis*.

Mr. Oates says: "This species is common in the hills and not rare in the plains. It may occasionally be seen in the cholera-camp hills in Thayetmyo; the males in April are generally in the chestnut plumage, but a fine male shot on the 21st May, which was undoubtedly breeding, was in the white plumage.

"I found the nest in the Evergreen Forests of the Pegu Hills on the 30th April. It is described in NESTS AND EGGS, Part I."

290.—Myiagra azurea, *Bodd.*

Mr. Oates says that this species is "common throughout our limits. The sexes are of much the same size. The birds that I measured varied as follows:—

Length, 6·1 to 6·5; expanse, 8·5 to 8·6; tail, from vent, 2·9 to 2·95; wing, 2·8 to 2·85; bill, from gape, 0·71 to 0·8; tarsus, 0·65 to 0·75; the irides are dark brown; edges of eyelids, blue; eyelids, plumbeous; bill, dark blue, edges and tip, black; inside of mouth, yellow; legs, plumbeous; claws, dark horny. In the female the bill is a little dusky."

Thayetmyo birds differ in no respect from those from all parts of India.

291.—Leucocirca albicollis, *Vieil.*

Thayetmyo specimens agree well with others from various parts of India. Mr. Oates correctly points out that, whereas Jerdon describes *fuscoventris*, Frankl., which I consider to be this same species, as having only the three outermost tail feathers tipped with white, his birds from Thayetmyo have all but the central feathers thus tipped; but this is equally the case with many Indian specimens; in fact, the bird is very variable in this respect, sometimes the outer three, sometimes the outer four, and sometimes the outer five, pairs are tipped with white, and the breadth of this tipping also varies greatly in various specimens. Mr. Oates remarks: "This is common enough about us. The eyelids are grey; the irides, deep brown; and the inside of the mouth, fleshy white."

292.—Leucocirca aureola, *Less.*

Mr. Blyth (JOURNAL, ASIATIC SOCIETY, 1863, XXXII, p. 79) says that the Upper Pegu race "is a little different from the Indian one, being just distinguishable by having the white of the forehead and supercilia not so broad, nor meeting round behind at the occiput; there is also not so much white on the tail feathers." I have carefully examined several specimens sent from Thayetmyo by Captain Feilden and Mr. Oates, and they appear to me absolutely identical in these respects with Upper Indian specimens; at the same time they do appear to me to differ slightly in having much less spotting on the coverts.

Both Captain Feilden and Mr. Oates say that this species is common about Thayetmyo. Mr. Oates gives the following dimensions:—

"Length, 6·9 to 7·15; expanse, 9·6 to 10; tail, from vent, 3·5 to 3·75; wing, 3·1 to 3·4; bill, from gape, 0·68 to 0·7; tarsus, 0·8 to 0·82."

295.—Culicicapa cinereocapilla, *Vieil.*

Mr. Oates remarks: "I observed this bird only on the western slopes of the Pegu Hills, where it was common. The bill is horny brown above, pinkish fleshy below; the inside of the mouth, fleshy; the gape, yellowish; the irides, dark brown; eyelids, plumbeous; legs, feet, and claws, pinkish brown."

Pegu specimens agree well with Indian ones.

296.—Hemichelidon sibiricus, *Gm.*

Mr. Oates says that this species, of which he only sends a single specimen procured on the Eastern Pegu Hills, is rare within our limits.

Great doubts exist in my mind as to the correct nomenclature of this and certain closely allied species. To prevent confusion as to what bird it is that occurs in Pegu, I may note that it is the species which I have figured in LAHORE TO YARKAND, Pl. 4, as *Hemichelidon fuliginosa*, Hodgson; but I am to this day not sure that this bird is the true *fuliginosa* of Hodgson. The bird Jerdon gave me as one of Hodgson's specimens, and which bore Blyth's label, belongs, I consider, to a different species to that which I figured. If this be so (but in this Mr. Sharpe does not concur), then the present species would stand as *Hemichelidon terricolor*, Hodgson. If, on the other hand, I have rightly figured *fuliginosa*, then *terricolor*, Hodgson, must, I believe, merge as a synonyme of *latirostris*, Raffles *(vide ante*, STRAY FEATHERS, 1874, p. 220*)*.

304.—Cyornis rubeculoides, *Vig.*

I cannot say wherein *Cyornis elegans*, Tem., Pl. Col. 596, from Sumatra, differs from our Himalayan species; but I take it to be

a slightly larger and decidedly brighter-colored bird. Mr. Gray, I see, assigns Temminck's name to birds from Pegu and Tenasserim; the specimens however sent me from Upper Pegu are absolutely identical with numerous others that I possess from various parts of the Himalayas; on the other hand, birds from Tenasserim are decidedly brighter-colored, but certainly not larger than Himalayan examples.

Mr. Oates says: "This species is common all over the hills, and I have lately received it from Arracan. I found it chiefly in thickly-wooded nullahs. In April it was, I think, breeding. The contents of the stomach were bugs and small beetles. *Males* measured: Length, 5·75 to 5·95; expanse, 8·5 to 9; tail, from vent, 2·35 to 2·5; wing, 2·75 to 2·8; bill, from gape, 0·75 to 0·77; tarsus, 0·69 to 0·75. A *female* measured: Length, 5·75; expanse, 8·3; tail, from vent, 2·3; wing, 2·7; bill, from gape, 0·66; tarsus, 0·74.

"The bill is black; the inside of the mouth, blackish (bluish fleshy in the female); iris, dark hazel brown; eyelids, bluish grey; legs, pinkish brown; claws, the same."

323.—Erythrosterna leucura, *Gm.*

Pegu birds are similar to those from Sikhim and Eastern Bengal generally. Mr. Oates says: "I met with this bird once at Yattown bungalow, where several were playing about in a Mango tope; this was in March. I have not met with it anywhere else, except once at the end of December at Engmah. I do not think that it can be common. The sexes appear to be of much the same size.

"Length, 5·1; expanse, 8 to 8·3; tail, from vent, 2 to 2·1; wing, 2·6, to 2·68; bill, from gape, 0·58; tarsus, 0·67.

"Iris, dark brown; eyelids, plumbeous; bill, dark brown, yellow at gape, and greyish at base of lower mandible; inside of mouth, orange fleshy; legs, very dark brown, almost black; claws, dark horny."

343.—Myiophoneus Temminckii, *Vig.*

A single specimen in Captain Feilden's collection was identical with Himalayan specimens. This is presumed to have been obtained somewhere in the neighbourhood of Thayetmyo. Unfortunately I know nothing of the distribution of this and the next species.

Mr. Oates however writes to me: "I think I am correct in saying that Captain Feilden's collection was made entirely at Thayetmyo, or at least on the west side of the Irrawaddy. The Arracan Hills throw out bold spurs, which reach quite up to Thayetmyo, forming nullahs such as a *Myiophoneus* delights in. No doubt his specimen, which you refer to *Temminckii* was procured here, where only *Temminckii* should occur.

"I did not discriminate *Eugenei* from the Arracan bird till you pointed out the differences between the two. I have now no hesitation in assigning *Temminckii* to the Arracan Hills, and generally to the whole country west of the Irrawaddy, and *Eugenei* to the Pegu Hills extending eastwards, certainly as far as the Sittang.

"Perhaps therefore, *Temminckii* should hardly find a pla in our list."

343 *bis*.—Myiophoneus Eugenei, *Hume*.

This species has already been described (STRAY FEATHERS, 1873, p. 475). It appears to be common throughout the Pegu Hills to Tonghoo. Mr. Oates remarks: "It is generally found singly in rocky nullahs. Length, 13·1 to 13·5; expanse, 22·2; tail from vent, 5·4; bill, straight from gape, 1·6 to 1·7; wing, 6·9 t 7·2; tarsus, 2·32; the bill, orange yellow; the region of nostril and anterior half of culmen, dark brown; iris, umber brown eyelids, straw yellow; feet, legs, and claws, black."

344 *bis*.—Hydrornis Oatesi, *Hume*.

This species was characterized in STRAY FEATHERS, 1873, p. 477 and we have nothing to add to what was there stated in regard to it.

345 *bis*.—Brachyurus moluccensis, *Müll*.

The numerous specimens sent by both Captain Feilden and Mr. Oates are precisely identical with specimens that I have received from Rangoon, Tenasserim, and Malacca. The bird reminds one much of *Brachyurus coronatus*, but is distinguished at a glan by its glistening blue wing coverts.

Mr. Oates says: "It measures: Length, 8·1 to 8·35; expans 15·8 to 16; wing, 4·7 to 4·9; tarsus, 1·5 to 1·65; bill, at fron 0·95 to 1·05; from gape, 1·2 to 1·25; tail, from vent 1·5 to 1·9.

"The irides are dark brown; the eyelids and a bare spot behind the eye, bluish lead color; the bill, black; legs and feet, fleshy pink, tinged dusky or bluish on the tarsus; claws, pale horny."

The lores, a streak over the eye, cheeks, ear coverts, sides of the head, and a broad nuchal collar, velvet black; forehead, occiput, and nape, a sort of brownish fawn, varying a great deal in shade in different individuals, and with a dark blackish brown central stripe; back, scapulars, and tertials, a somewhat dingy sap green; rump and upper tail coverts, bluish green; the feathers, broadly tipped with shining smalt (?) blue, so as to leave no other color visible until the feathers are disturbed. The tail is black, obscurely tipped with blue; the primaries and their greater coverts are black, with a conspicuous white bar on the inner webs of the first two and on both webs of the other primaries, sometimes on both webs of all

the primaries. The secondaries, dull black, paling somewhat on the inner webs, and broadly margined on the terminal moieties of the outer webs with dull greenish blue; their lesser and median coverts, and the primary lesser coverts, similar to the rump feathers; but the tips not always so completely hiding the ground colour of the feather, which appears as glossless greenish spots amidst the glistening blue. The blue tips, both of rump and coverts (upper tail and wing) have the filaments a good deal decomposed; chin, dusky; throat, white, with a more or less faint buffy tinge; centre of the lower abdomen, vent, and lower tail coverts, bright rose vermillion; rest of the lower portions of the body, buff, darker on the sides of the breast; axillaries and wing lining, black or dusky.

Mr. Oates remarks: "This bird appears by fits and starts. A sharp gale from the south-west in May will bring them in by the dozen, but they disappear again a day or two afterwards. I have also had specimens from the Arracan Hills."

345 *quat.*—Brachyurus cyaneus, *Blyth.*

Mr. Oates says: "This bird is found commonly enough in the Evergreen Forests. It lives in precipitous dark ravines among brushwood, creeps away very cautiously when accidentally met, and would seldom be discovered were it not for the rustling of the dead Bamboo leaves as it hops away. One I flushed in a nullah flew up on a tree where I shot it, but, as a rule, it seldom leaves the ground. At times it may be found on a sunny hillside, where doubtless it goes to pick up black ants. The stomach of one shot in such a situation contained nothing but these; another shot elsewhere had eaten beetles and grasshoppers. The birds vary a good deal in size, but not, I think, according to sex. The following is a *résumé* of the dimensions of six specimens, three males and three females, which I measured:—

"Length, 8·9 to 9·5; expanse, 14·5; tail, from vent, 2·2 to 2·45; wing, 4·45 to 4·6; bill, from gape, 1·2 to 1·25; tarsus, 1·72 to 1·9. The bill is black; the inside of the mouth, dusky fleshy; the irides, dark reddish brown; eyelids, plumbeous; legs, dark fleshy pink; claws, whitish."

In the male the lores, and a long stripe behind the eye, continued backwards to the nape, velvet black; the forehead and crown, pale brown, with a faint greenish olive tinge; all the feathers, black at their bases, with a narrow black stripe from the base of the culmen to the occiput; the feathers of the occiput and nape, elongated, so as to form a full round crest; the visible portions, dull scarlet vermillion; some of the posterior feathers of the crown tinged ruddy. The back, scapulars, rump, upper tail coverts and tail, blue, brightest on the upper back, where in some specimens it becomes almost smalt blue. Quills, dark hair

brown, paling towards the tips. The first six primaries have a broad white band on their inner webs at the bases, and a narrow white band almost hidden by the coverts on the outer webs of the second to the seventh. The primaries, tinged on the outer webs, towards the tips, greyish. The secondaries, broadly margined on the outer webs, except just at their bases, with dull blue. The tertiaries, with the whole of the outer webs and tips, have this same color. The first two or three secondaries often excessively, narrowly, and irregularly margined towards their tips with white. The primary greater coverts, dark hair brown. The rest of the greater coverts suffused on the outer web, and the later ones more or less on both webs, with much the same dull blue as the secondaries, palest on the earlier ones, and with the exterior webs of these at times excessively narrowly margined with white, in which there are often traces of tiny black spots. The median coverts, a somewhat brighter blue. In some specimens, some of the earlier ones conspicuously barred towards the tips with black and white, and all of them obsoletely barred with paler blue. Lesser wing coverts, hair brown, suffused towards the tips with dull bluish green or dull olive. The cheeks and ear coverts, very pale fulvous white; many of the feathers *excessively narrowly* tipped with black. The chin and throat, white or fulvous white; the feathers on each side, more or less broadly margined at the tips with black, as are some of the feathers in the centre of the chin and throat. The whole of the breast, sides of the neck, sides, flanks and upper abdomen, white, barred with black; the last bar near the tip of each feather contracted to a spot; the centre of the breast suffused with a slightly greenish blue; the other parts with a pale, delicate, somewhat lavender, blue. The lower abdomen, vent, and lower tail coverts, dull white or bluish white; some only of the lower lateral tail coverts more or less strongly tinged blue, and in some specimens barred. The edge of the wing is a dull bluish green, the wing lining mostly hair brown, but with a conspicuous white patch, formed chiefly by the median secondary lower coverts.

In the females the color of the crest is duller and paler; the central coronal stripe is less well marked. All the feathers of the back and scapulars are more or less broadly margined with a sort of dull olive green, which, owing to the overlapping of the feathers, is almost the only color seen, the bluer basal portions of the feathers only peeping through here and there. It is with this dull olive green, and not with blue, as in the male, that the secondaries, tertiaries, and coverts generally are suffused. On the lower surface the beautiful lavender blue tinge is wholly wanting, and in the centre of the breast the somewhat greenish blue tinge of the male is replaced by dull fulvous. In other respects the sexes do not appear to differ.

ZOOLOGICAL
CALCUTTA

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ANTHOCINCLA PHAYREI, *Blyth.*

Pl. II.

346.—Brachyurus cuculatus, *Hartl.*

Pegu specimens are absolutely identical with many others that I have from Sikhim, where the bird is very common.

Blyth apparently considers (Ibis, 1866, p. 374) that our Indian bird is distinct from the Malaccan one, and should stand under his name, *nigricollis;* as far south as Tavoy, at any rate, all are of one and the same species.

Mr. Oates correctly points out (as I have previously noticed) that, in describing this species, both Dr. Jerdon (Birds of India, Vol. I, p. 505) and Mr. Elliot (Ibis, 1870, p. 420) omit the conspicuous black patch which on the centre of the lower abdomen surmounts the rich vermillion of the lower ventral region.

Mr. Oates remarks: "I met with this bird in one ravine only in the Evergreen Forests, where I procured several specimens. I searched many precisely similar localities, but never again met with it. Two pairs that I measured varied as follows:—

"Length, 7·3 to 7·55; expanse, 13·5 to 14·5; tail, from vent, 1·55 to 1·65; wing, 4·25 to 4·5; bill, from gape, 1·05 to 1·08; tarsus, 1·6 to 1·7.

"The bill was black; the inside of the mouth, dusky fleshy; irides, dark coffee brown; eyelids, pale plumbeous fleshy; legs, fleshy pink; claws, pinkish horny.

346 *ter.*—Anthocincla Phayrei,* *Blyth.* Pl. II.

Neither Mr. Oates nor Captain Feilden has obtained this species, but Sir Arthur Phayre obtained it somewhere in the Tonghoo District, and it has also occurred in the Pegu Yoma Hills, and must, therefore, be included in this list. Mr. Blyth constituted a new genus for this species, of which he thus writes:—

"A very remarkable Thrush-like *myiotherine* (?) form, with short tail and rounded wings. The tarsi moderate or somewhat short, and the toes furnished with straight claws, especially that on the hind toe. Bill, as in the coarser-billed *Oreocinclæ*, with no perceptible notch to the upper mandible; no rictal vibrissæ; plumage, devoid of bright colors.

"Length about 9·5, of which tail barely 2; closed wing, 4; the fourth and fifth primaries, longest; and the first primary, measuring 2; bill to gape, 1·5; tarsi, 1·13; hind claw, 0·56; color, a rich brown above, paler and more fulvous below, where each feather has a black spot on either web; middle of throat, white, bordered laterally with black, and this again by a streak of black-margined fulvous white feathers below the brown ear-coverts; a long supercilium of feathers, resembling those of the white moustache streak, and above this again the feathers on the sides of the crown, are squamate and pale-centred; primaries and

* The plate is taken from a drawing made by Davison from the fresh bird.

their coverts, which are black, have an angular fulvous spot at the base of the first primary; tertiaries, plain brown, like the back; but the coverts of the secondaries, black, with broad fulvous sagittate tips; bill, dusky; and feet and claws, pale." Obtained by Colonel Phayre at Tonghoo (JOURNAL, ASIATIC SOCIETY, 1862, Vol. XXXI, p. 343).

Now, this description and these remarks fail, I think, to convey an adequate idea of this very handsome, though not gaudily, attired Ground-Thrush.

Mr. Blyth never saw the bird alive, and the type, which, till we obtained others, was perhaps unique, is and always must have been an indifferent specimen. The consequence was that Mr. Blyth was unable to notice the two perhaps most characteristic features in the bird. The first are the wonderful aigrettes, if I may so call them, projecting fully an inch backwards behind the occiput, giving the head a most remarkable appearance; and secondly, the red tint on the lower tail coverts, indicating the close affinity of the bird to the other *Pittæ*, for no one who sees the bird alive or even sees a really good specimen can doubt that this is essentially a *Pitta*. Its habits, its manner of holding itself, its haunts, are all those of the *Pittæ*, and, different as they are in coloring, the Burmese have but one name for this and *cyaneus*. The following are the dimensions in the flesh and description of a fine adult male :—

Length, 8·82; expanse, 13·75; tail, from vent, 2·5; wing, 4·12; tarsus, 1·25; bill, from gape, 1·4; weight, 3 ozs. The legs, feet, and claws are dark fleshy; the bill, black, only the lower mandible reddish brown towards the gape; the irides are deep brown.

A velvet black stripe from the base of the culmen running backwards over the centre of the crown and occiput to the nape, where it widens out and covers the whole nape. The upper part of the lores, the sides of the forehead, crown and occiput on either side of the black streak, warm rufescent buff, each feather very narrowly margined with black and with a black spot on each web, forming a more or less perfect bar towards the bases of the feathers, of which but little is seen till the feathers are lifted; the lower part of the lores, a streak under the eye, and the ear coverts, black; the feathers, mostly rufous-shafted, and some of them a little streaked with rufous. From the posterior angle of the eye, between the dark ear coverts and the buffy black-margined feathers of the forehead, crown, sides, and occiput, a white stripe runs backwards, the later feathers of which, springing from either side of the nape, are much elongated and sharply pointed; the whole of these feathers exhibit more or less perfect black bars on each web. It is the terminal sharp-pointed feathers that stick out behind the head something

like the tufts of the *Crossoptilon*, though of course the feathers are of a totally different texture, being in this case stiff, sharp-pointed, linear, lanceolate in shape. The sides of the neck, immediately below this white stripe, and the upper back just at the base of the neck, black, being in fact a continuation of the central head streak, which, as already mentioned, broadens out on the nape. The entire mantle, rump, and upper tail coverts, very rich, rufescent, olive brown, with a sort of burnished glow almost golden on the upper back; many of the feathers, but not very conspicuously, paler shafted; one or two feathers of the upper back, nearest the black, with a distinct black fringe at their margins; and almost all the feathers of the interscapulary region with a fainter-marked darker marginal fringe. The tail feathers, secondaries, and tertiaries, plain, slightly rufescent, olive brown, the two latter margined slightly more rufescent. Primaries and their greater coverts, blackish brown; the former, with a broad buffy bar at their bases, and paling at their tips to much the same shade as the rest of the quills. The rest of the greater and median coverts, of the same tint as the tertiaries, broadly tipped with bright buff (with occasionally a very narrow fringe of black beyond this), preceded by a broader or narrower, more or less perfect, black bar.

The chin and a spot on the upper throat, pure white. From the edge of the lower mandible, about opposite the middle of the lores, a narrow black stripe descends from either side towards the base of the throat, slanting inwards so as to divide the throat into three nearly equal divisions. The whole of the throat between these two lines, and between these and the black ear coverts, pale buff; the feathers (many of them very narrowly and almost obsoletely), fringed with black.

The breast, abdomen, and sides are a warm, somewhat ferruginous, brown; the sides and flanks, tinged with olivaceous; and all the feathers of these, as well as of the breast, exhibiting a more or less perfect or imperfect black bar not far from the tip. The bar is generally very perfect and conspicuous on the sides and flanks, but on the breast they are mostly reduced to double spots or even to a spot on one web, and very few of them are visible until the feathers are lifted. The lower tail coverts are what I should call a pale salmon vermillion; the centre of the abdomen is slightly paler; the edge of the wing and the carpal joint is buffy with very narrow, almost obsolete, transverse dusky bars. The wing lining, except the primary lower greater coverts (which are a grey brown like the under surface of the quills), are, like the patch at the base of the primaries, buff-colored.

As regards the structural affinities of this bird, I must admit that, as Mr. Blyth says, the bill has no perceptible notch; the rictal vibrissæ are also inconspicuous, but not more so, I

think, than in *Brachyurus moluccensis*. The toes and claws are very much on the model of this latter bird, but the tarsi are doubtless conspicuously shorter. The bill is longer and more compressed than in most of the *Pittæ*; but, excepting the notch, it is almost a miniature of that of *Brachyurus megarhynchus*, except that the culmen of this latter is straighter and less arched than in our present species. The bird clearly belongs to a distinct genus, but I myself entertain no doubt that it must be included in the *Pittidæ*.

We have attempted to convey a feeble idea of this remarkable bird in the accompanying plate, but we shall require a couple of years' practice before we can turn out much in the way of pictures.

351 *bis*.—Cyanocincla solitaria, *Müll.*

Following Mr. Sharpe, I, for the present, identify the birds from Thayetmyo with the Eastern Blue Rock-Thrush; but I am myself by no means satisfied with the explanation of the changes of plumage in this species afforded in the "BIRDS OF EUROPE." Mr. Sharpe's conclusion is that there are two distinct species, one of which, the Eastern one, at one stage of its existence exhibits more or less of deep chestnut coloring on its lower surface, which it entirely loses when fully adult. My own view, I confess, is that there is only one true species, but that many of the members of this species, whose habitat is eastern, exhibit more or less of this ferruginous tinge as an individual peculiarity; that, broadly speaking, the further east and south-east you go the more the rufous exhibited, and the greater the proportion of individuals that exhibit it; but still in all localities some individuals remain true to the type, showing no rufous at any stage of their existence.

If this view be not admitted, then we must say that there are two species—a Western, which extends, though sparingly, to the extreme east; an Eastern, confined to the east; and throughout the tract of country in which the western overlaps the eastern, an inter-breeding of the two, producing hybrids with every degree of rufous in their plumage from one single feather up to the full amount of the Hainan birds, which are the most rufous that I have seen.

First, I would premise that I have examined some hundreds of these birds shot in all parts of India. I have now before me twenty-five males in more or less of the blue plumage from the Khelat Hills, various localities in Sindh, Muscat, Ladakh, hills near Simla, near Mussoorie, Almorah, from Mount Aboo, the Sambhur Lake, from Goorgaon, Mynpoorie, Etawah, Saugor, the Nilghiris, and Coimbatore, and not one of these or of any that I have examined from any locality, except Eastern Bengal, exhibits or exhibited the faintest trace of rufous. I have one male from Dacca, exhibiting a faint ferruginous tinge on the

lower tail coverts; but I have others again from further east, *viz.*, Tipperah, in different stages of plumage, none of which exhibit the smallest trace of rufous anywhere.

Of the Thayetmyo birds, one is a male in the almost perfect blue plumage, only a few blackish points are dimly seen upon the back, and the greater coverts are dimly margined with white. There is not a trace of rufous about this specimen. The second is a male, also in blue plumage, but with the whole of the feathers of the upper and lower surfaces, except on the head and chin, tipped with dull white, preceded by a blackish line. In this bird the whole of the lower tail coverts are mingled chestnut and blue. The third is similar to the last, except that the white tippings have almost disappeared from the upper surface; while, curious to say, the chin and throat are not blue, but still retain the young spotty plumage. This has only a trace of chestnut in the lower tail coverts. This has also the faintest possible chestnut tinge in one or two of the under-wing coverts. The fourth is a female, in no way differing from dozens of other Indian ones that I have."

Now, if this chestnut plumage was doffed on the birds coming to maturity, these quite young blue birds ought to show much more rufous than others more advanced; but I have before me a specimen, killed at Hainan on the 29th March 1868, which is in perfect adult blue plumage, no single trace of immaturity, except tiny white tippings to the greater coverts, which has the whole lower breast, abdomen, vent, lower tail coverts, wing lining, and axillaries, deep chestnut. Then, I have a younger bird from Formosa, in much the same stage of plumage as the third male from Thayetmyo, in which the axillaries and wing lining are pale chestnut, and the whole of the abdomen, vent, and lower tail coverts are mottled with a comparatively pale chestnut. Lastly, I have a female from Amoy, identical, as far as I can judge, in every respect with our Indian female.

And here I wish particularly to note that, whereas Mr. Sharpe remarks that the adult females are precisely similar to the males, I must say that, though I have shot and sexed several scores of these birds, I have never had the luck to meet with a female in the blue garb of the male, and I confess that I still think it very doubtful whether she ever does assume it, in India.

In regard to these eastern and western races, and the supposed smaller Indian race, I can only say that if large series are compared, I do not believe that any substantive difference in dimensions can be established. Big and little birds, short and long [redacted]d ones, occur wherever the species occurs, and it seems to me quite unreasonable to pick out the smaller birds and convert them into a separate species, when all sizes, big and little, occur side by side.

In corroboration of these views I may add that Mr. Davison has recently shot and sexed thirteen males and six females in the Tenasserim Provinces. Eleven of the males are in the blue, or blue and rufous plumage, two young males are in the female garb, and all six females are in the spotted garb. If Mr. Sharpe was correct in saying that the adult female was similar to the male, it seems scarcely probable (let alone my own experience) that there should not amongst all these birds killed by Davison be one blue female, or even one female showing the slightest tendency to assume the plumage of the adult male.

Then, as regards the rufous plumage, the youngest blue birds amongst this Tenasserim lot, everywhere on the mantle and on the lower surface, banded with blackish brown, fringed paler, exhibit scarcely a trace of rufous. Only a slight tinge of this color is observable on the lower tail coverts.

As the banding begins to disappear, the rufous on the lower tail coverts and about the vent becomes more pronounced, in a further stage it has spread up the middle of the abdomen, and by the time that all traces of the immature banding has disappeared, the axillaries, wing lining, sides, entire lower breast, middle of abdomen, vent, and lower tail coverts are deep chestnut.

Running parallel to this series, however, is another composed of birds shot in the same localities, in which the progress from the most strongly banded form up to the entirely unbanded one may be traced without the bird at any time exhibiting a single rufous feather. I cannot, therefore, avoid withholding for the present my assent to Mr. Sharpe's views in regard to this species.

Mr. Oates makes the following remarks in regard to this species :—

"Without being a common bird, it is not unfrequently seen singly, more especially in the vicinity of wooden bungalows.

"At Thayetmyo one occasionally came into my compound for a day or two, and then disappeared for a month or two. It will flit into the verandah, sit on the post plate, and remain for a few minutes in perfect silence. I never heard it utter a note. Three birds that I shot, males, measured as follows :—

"Length, 8·9 to 9; expanse, 14·2 to 14·6; tail, from vent, 3·4 to 3·6; wing, 4·65 to 4·75; bill, from gape, 1·18 to 1·22; tarsus, 1·1 to 1·2.

"The bill was blackish horny; the gape and the inside of the mouth, yellow; the legs, feet, and claws, black; irides, hazel; eyelids, pinkish plumbeous."

355.—Geocichla citrina, *Lath.*

Most of the specimens from Thayetmyo are precisely identical with others from Oudh, Darjeeling, Dacca, and various localities in Continental India. One only exhibits scarcely a trace of white

markings on the wing, thus showing an approach to Blyth's Malayan species *innotata*.

Mr. Oates remarks: "Though not often *seen*, this is really a common bird from Thayetmyo to Tonghoo. The sexes are of much the same size. Specimens measured varied in length from 8·55 to 8·7; expanse, 14 to 14·75; tail, from vent, 3·2; wing, 4·6 to 4·8; bill, from gape, 1·1; tarsus, 1·33.

"Those killed at the end of April in the Pegu Hills were apparently about to breed.

"The bills were blackish brown; the gape and base of lower mandible, fleshy; eyelids, greenish plumbeous; irides, dark hazel; legs, feet, and claws, fleshy pink."

371.—Oreocincla dauma, *Lath.*

A single specimen sent from Thayetmyo is identical with Himalayan examples.

Though unknown in the plains of India during the hot-weather, it occurs there as a straggler during the cold-season. I shot one once at Bhurrey, the point of junction of the Chumbul and Jumna Rivers, and Mr. Blewitt has sent it from Raipore, and Mr. Ball from Chota Nagpore.

Mr. Oates remarks: "I have only seen a single specimen, which I shot on the 14th April, in the Evergreen Forests of the Pegu Hills. This was a female and measured—

"Length, 10·35; expanse, 16; tail, from vent, 3·6; wing, 5·5; bill, from gape, 1·23; tarsus, 1·28.

"Bill, dark brown above and at centre of lower mandible, remainder of lower mandible, pale brown, the gape with a tinge of orange; inside of mouth, yellowish. Eyelids and naked spot behind eye, plumbeous; iris, dark hazel brown; legs and claws, fleshy white, the latter with a tinge of pink."

385.—Pyctoris sinensis, *Gm.*

Four specimens which I have received from Thayetmyo are absolutely inseparable from Indian specimens from various localities. Some of them have bills a great deal deeper than some Indian birds, and one of them has a bill a good deal less deep than several Indian birds. There is absolutely no separating them. What then is Jerdon's *altirostris* which he described from Thayetmyo in the Ibis, 1862, p. 22? This is what Dr. Jerdon said:—

"Above, pale reddish brown, deepest on the wings and tail, forehead and streak over the eye, hoary grey; beneath, whitish; tinged on the lower part of the breast, abdomen, and flanks with pale fulvescent; quills and tail feathers, slightly dusky on their inner webs; under-wing coverts, pale ferruginous; bill, fleshy horny; legs, fleshy; irides, dark brown, with an outer circle of white; eyelids, pale sulphur yellow.

"Length, 6¼ inches; expanse, 7½; wing, 2⅜; tail, 3; bill, ⅜, ¼ inch-high; tarsus, 1.

"This interesting bird is very closely allied to *Chrysomma sinensis*, for a young bird of which I at first mistook it. It differs, however, in some important particulars, more especially in the depth of the bill, in which it makes an approach to the *Paradoxornis* group. The claws are more lengthened and less curved than in that species. It will probably be considered worthy of separation as a sub-genus. I found it frequenting long grass in islands on the Irrawaddy River, in Upper Burmah.

"It had partaken of ants and small coleoptera."

Now, this description agrees perfectly with our birds, except that the forehead and the streak over the eyes are white and not hoary grey. As to the bills I have already remarked that they do not differ in any way constantly from those of Indian birds, and the same may be said of the claws. It is impossible to make a second species out of *these* Thayetmyo birds, let alone a new sub-genus. Can it be that a distinct species, *altirostris*, inhabits this same limited locality? Observers on the spot must solve this question. In the meantime all the birds sent by Captain Feilden and Mr. Oates are positively *sinensis* and nothing else.

Mr. Oates remarks: "These birds though common are not often seen. They occasionally sing on a low tree with much vivacity. I did not observe it on the hills. Specimens measured: Length, 6·8 to 7; expanse, 7·9 to 8·3; tail, from vent, 3·4 to 3·5; wings, 2·5 to 2·6; bill, from gape, 0·6; tarsus, 1·0.

"Irides, pale orange yellow; eyelids, deep orange; the edges, tumid; bill, black, yellowish at nostrils; inside of mouth, yellow; feet, pale orange yellow; claws, pinkish."

389 *bis*.—Alcippe Phayrei, *Blyth*.

The specimens sent by Captain Feilden and Mr. Oates are doubtless identical with that described by Blyth (JOURNAL, ASIATIC SOCIETY, 1845, Vol. XIV, p. 601) in the following words:—

"*Alcippe Phayrei* is most allied to *A. poiocephala* (Jerdon), but is distinguished by its much less rufescent hue, especially on the tail and its upper and lower coverts, which are devoid of such a tinge, or the upper tail coverts retain it only in a very slight degree. Length about 5½ inches, of wing 2¾, and tail 2½; bill to gape, under ¾ inch; and tarsi, ⅝ inch. Upper parts, slightly fulvescent olive brown; the crown, ashy; and wings, particularly the large alars, margined with somewhat deeper fulvescent; lower parts, fulvescent whitish, whitest on the throat and middle of the belly; bill, dusky above, below paler; and legs light-colored; outermost tail feather, $\frac{5}{16}$ an inch shorter than the middle ones; inhabits Arracan, where discovered by Captain Phayre."

Alcippe Phayrei differs not only in the less rufescent hue from *poiocephala*, approximating in this respect more closely to *nipalensis*, but it has longer and slenderer bill than *poiocephala*, and *a fortiori* a very much longer bill than *A. nipalensis*, which is moreover altogether a smaller bird; but in one respect it more closely resembles *nipalensis*, a point that Blyth appears to have overlooked, in that it exhibits the same sort of dark streak running backwards on either side of the nape that *nipalensis* does; only in *Phayrei* it is less strongly marked, and sometimes appears to be *almost* obsolete.

Mr. Oates remarks: "This little Quaker Thrush is not uncommon in the Evergreen Forests. It struck me as being very silent. It breeds, I think, about the end of April. Two males I shot on the 19th April in the Pegu Hills measured—

"Length, 6·15 to 6·25; expanse, 8·25 to 8·5; tail, 2·65 to 2·78; wing, 2·55 to 2·65; bill, from gape, 0·72 to 0·73; tarsus, 0·84 to 0·9.

"In the one the bill was yellow at gape, brown on upper mandible; the lower mandible also brown, but the tip yellowish; inside of mouth, yellow; iris, whitish brown; eyelids, yellowish green; feet, fleshy brown; claws, the same. In the other, the bill, legs, &c., were the same; the iris, however, was pale blue; eyelids, plumbeous, yellowish at the edges."

391.—Stachyris nigriceps, *Hodgs.*

A specimen from the Pegu Hills, a female shot off the nest, agrees perfectly with others from Darjeeling.

Mr. Oates remarks: "I procured only one specimen of this bird in the Evergreen Forests. I shot it off the nest on the 29th April. The nest and eggs are fully described in your NESTS AND EGGS OF INDIAN BIRDS, Pt. II.

"The female measured: Length, 5·45; expanse, 7; tail, from vent, 2; wing, 2·2; bill, from gape, 0·73; tarsus, 0·84.

"The bill was bluish black on the upper mandible; pale bluish on the lower; the anterior half of the margins, dusky; eyelids, bluish; iris, orange brown; legs, pale dusky green; claws, yellowish."

I am inclined to believe that in this species the bill changes color in the breeding season. Specimens that I have obtained in the cold-season had the upper mandibles pale brown; the lower mandibles, pale yellowish horny.

393 *bis.*—Stachyris rufifrons, *Hume.*

This species was fully described in STRAY FEATHERS, 1873, p. 479. I have nothing to add to what I then stated, except that, judging merely from the description, I cannot be at all sure that this is not identical with *S. præcognitus*, Swinh., from China.

395.—Mixornis rubricapilla, *Tickell.*

Pegu specimens do not appear to be quite so yellow underneath as all my Himalayan specimens are; but I believe that the color of the lower surface varies a good deal in this species according to season.

Mr. Oates remarks: "This species is found sparingly on both sides of the Pegu Hills. A male measured: Length, 5·4; expanse, 7; tail, from vent, 2·15; wing, 2·3; bill, from gape, 0·73; tarsus, 0·7

"The irides are a sickly white; the eyelids, plumbeous; the bill, horny brown; the inside of the mouth, fleshy brown; legs and feet, fleshy horny; claws, yellowish horny."

396.—Timalia pileata, *Horsf.*

Pegu specimens are very similar to birds from Tipperah, Dacca, the Lower Sikhim Valleys, &c.; but the bills are appreciably smaller, and the color of the upper surface appears to run somewhat paler: but I have only seen two specimens from Thayetmyo, and I do not know whether these differences are persistent, but I do not think so.

Mr. Oates remarks: "This is a common bird in the plains, and is generally met with in pairs. I found the nest at Thayetmyo on the 2nd June. It contained young ones only a few days old. The nest was placed on the ground in the centre of a low, but very thick, thorny bush.

"Two males measured as follows:—

"Length, 7·0 to 7·1; expanse, 8·0 to 8·1; tail, from vent, 3·1 to 3·5; wing, 2·6; bill, from gape, 0·73 to 0·78; tarsus, 0·9 to 0·97.

"The bill was black; irides, dark red; eyelids, dark bluish grey, inside of mouth, black; legs, purplish brown; claws, horn colored."

Lord Walden separates the Indian bird as *T. Jerdoni*, and offers the following remarks on this subject (AN. AND MAG. OF NATURAL HISTORY, 1872, p. 61):—

"*Timalia Jerdoni*, nova species.

"*Timalia pileata*, Horsf., *apud* Jerdon, BIRDS OF INDIA, Vol. II, p. 24, *nec* Horsf.

"A narrow frontal band extending over the eyes. The cheeks, chin, and throat, white. Forehead and crown, deep chestnut; remainder of upper surface, dark olive grey; quills and rectrices above, brown, tinged with olive; rectrices, traversed by numerous narrow bands of a darker shade of brown. Upper part of breast white, changing to cinereous lower down; each feather, with a black shaft; remainder of lower surface, fulvous, mixed with cinereous olive; under-tail coverts, cinereous olive.

Longitudo.

	Rostr. a mar.	Alæ.	Caudæ.	Tarsi.	
T. Jerdoni ...	0·31	2·36	2·88	0·88	Khasia Hills.
T. pileata ...	0·50	2·62	3·12	1·00	Java.

"Described from specimens obtained in the Khasia Hills.

"This bird has hitherto been considered identical with the Javan *T. pileata*, Horsf. A comparison I have recently been enabled to make with authentic Javan examples has convinced me of their specific distinctness. True, *T. pileata* is a larger bird; in it the bill is much more powerful, its altitude being quite double that of examples from the Khasia Hills. The crown of the head is bright ferruginous, not dark chestnut. The color of the upper plumage, wings, and rectrices is considerably paler, that of the lower is pale tawny, and the ashy color of the black-shafted breast plumes is less intense. My deeply lamented friend Dr. Jerdon fully concurred with me in the propriety of separating the two species.

"In the BIRDS OF INDIA this species is said to extend through the Malayan Peninsula to Java; but I believe that it has never been found further south than Arracan. Neither it nor the Javan species has been shown to occur in the Malayan Peninsula or in Sumatra. It seems to belong to that category of Javan forms (such as *Harpactes oreskios, Crypsirhina varians, Bhringa remifer, &c.*), which, while absent from the intermediate regions, Sumatra and the Malay Peninsula, re-appear further to the north in Burmah, some penetrating as far as Nipal."

I fear this is not quite correct. I have seen only one Javan specimen, it is true, but that had the wing only 2·47, and I can provide Lord Walden with any number of Indian specimens with wings from 2·5 to 2·6.

Possibly Lord Walden's supposed *pileata* is the male and his *Jerdoni* the female. Every one who has shot these and kindred birds knows what a great difference in size there is in the sexes.

Then, as to this species not occurring in the Malay Peninsula, I am not sure where this is supposed to commence, but most certainly *this*, *H. oreskios* and *Crypsirhina varians* all occur as low down as Mergui, which is hardly separable from the Malayan Peninsula.

399 *ter*.—Pellorneum Tickellii, *Blyth*.

One specimen is sent, which I suppose to belong to this species. Mr. Oates says: "This specimen agrees pretty well with Blyth's meagre description which you quote at page 299 of STRAY FEATHERS for 1873. It is not uncommon on the eastern slopes of the Pegu Hills, frequenting brushwood and heaps of rubbish in

the nullahs. It is very tame and slow in its movements. A female that I shot measured—

"Length, 5·6; expanse, 7·2; tail, from vent, 1·9; wing, 2·22; bill, from gape, 0·79; tarsus, 1·02.

"The bill is dusky above, pale fleshy beneath; the inside of the mouth, yellow; irides, reddish brown; eyelids, greenish fleshy; legs, fleshy white; toes, of a slightly paler color."

399 ***sextus.*—Pellorneum minor,** ***Hume.*** **? P. subochraceum,** ***Swinh.***

Mr. Oates sends an unmistakable specimen of this species, and says: "This bird appears to feed on the ground in pairs. I have met with it very rarely, and always in thick brushwood on the ground. A pair I shot measured as follows:—

"*Male.*—Length, 6·65; expanse, 8·6; tail, from vent, 2·65; wing, 2·62; bill, from gape, 0·82; tarsus, 1·05.

"*Female.*—Length, 6·4; expanse, 8; tail, from vent, 2·7 (?); wing, 2·5; bill, from gape, 0·79; tarsus, 1·0.

"*Primaries.*—Fifth, sixth, seventh, and eighth, sub-equal and longest; fourth, 0·05; third, 0·35; second, 0·6; and first, 1·0, shorter than the longest."

I described this bird (STRAY FEATHERS, 1873, p. 298) from a very indifferent specimen, which must have been a female. The type specimen agrees well with a specimen sent by Mr. Oates, except that the latter is rather more fulvous below. The proportions of the primaries, as given by Mr. Oates, agree very well with those of the type specimen. Mr. Oates has sent another specimen which, though it has a somewhat longer wing, belongs also, I think, to this same species; but the bill is broken, and the specimen otherwise so indifferent that I cannot be quite certain. Of this Mr. Oates, who seems inclined to consider it as distinct, remarks—

"This is far from common. I have met with only two specimens. One measured: Length, 6·5; tail, from vent, 2·7; wing, 2·75; bill, from gape, 0·82; tarsus, 1. The irides were reddish chocolate; the upper mandible, dark horny, slightly paler towards the tip; the anterior half of lower mandible, very pale horny; the basal one-half, light yellowish; legs, feet, and claws, fleshy."

The bird is very close to both *ruficeps* and *nipalensis*, but it has a much shorter bill than the former and a much slenderer one than the latter. The spotting on the breast is paler-colored, less in extent and less conspicuous altogether than in either species.

I have recently obtained a series of more than twenty of this species, a considerable number of which were measured in

the flesh. The males as usual amongst these birds run, I find, a good deal larger than the females. The following are the dimensions of both sexes:—

Males: Length, 6·65 to 6·8; expanse, 8·5 to 9·25; tail, from vent, 2·25 to 2·82; wing, 2·5 to 2·75; tarsus, 0·95 to 1·05; bill, from gape, 0·8 to 9·85; weight, 1 to 1·2 oz.

Females: Length, 6·12 to 6·4; expanse, 8 to 8·25; tail, 2·4 to 2·6; wing, 2·37 to 2·5; tarsus, 1·0; bill, from gape, 0·79 to 0·83; weight, 0·75 to 0·85 oz.

In both sexes, legs, feet, and claws are pinkish fleshy; the irides vary from red brown to reddish pink or light pinkish red. The upper mandible is dark brown, paling to the tip. The lower mandible yellow from base to the angle of the gonys, and thence to tip, fleshy or fleshy white.

There is no doubt that this is a perfectly good and distinct species, but now that I find the bird common, I begin to suspect that this is *P. subochraceum* described by that indefatigable ornithologist Mr. Swinhoe in the AN. AND MAG. OF NATURAL HISTORY, 1871, p. 257.

He says: "Like *P. ruficeps*, Swainson, of India, but smaller, with *less deep* bill and shorter tarse; crown, richer rufous, with a distinct pale buff eye streak extending to the nape; breast, flanks, and vent, buff, leaving the belly nearly white; the breast streaked with a few, long, olive brown, arrow-head marks; length, 5·8; wing, 2·7; tail, 2·6.

"My single specimen of this bird was collected in the Tenasserim Provinces, and sent to me some years ago by Mr. Blyth. My *P. ruficeps* is from Mr. Beavan's collection."

Now, if Swinhoe had specimens of the real *ruficeps* from Southern and Central India, of course the two birds could not be identical; but it seems probable that he had specimens of the thick-billed *nipalensis*, Hodgs. (re-described as *Mandellii* by Mr. Blanford), in which case there would be no difficulty in identifying *minor* and *subochraceum*

402.—Pomatorhinus schisticeps, *Hodgs.*

Two specimens sent by Mr. Oates belong to this present species, while specimens received from a little further east in Northern Tenasserim are *leucogaster*, Gould—that is to say, smaller birds with shorter bills, a much less cinereous tinge upon the forehead and crown, and a marked, though irregular, ferruginous demi-collar on the nape.

Mr. Oates remarks: "This species is common throughout our limits, and is the only bird of the genus I have met with here. It goes about in parties of five or six; its cry is '*oo-roo-roo-roo-ta-rway*,' repeated frequently from the middle of thick jungle.

"Males measured: Length, 9·2 to 9·3; expanse, 11 to 11·4; tail, from vent, 3·9 to 4·2; wing, 3·7; bill, from gape, 1·3; tarsus, 1·3.

"The bill is orange yellow; the base of the lower mandible and gape, dusky; the inside of mouth, flesh color; iris, pale yellow; eyelid and naked skin behind eye, pale lavender; legs, dusky plumbeous; claws, horny."

407 *bis*.—Garrulax Belangeri, *Less.*

Specimens from Thayetmyo appear to be identical with others from the neighbourhood of Rangoon and various localities in Tenasserim, where this species is specially common and abundant.

Mr. Oates says: "This is a common bird both in the plains and on the hills—commoner perhaps in the latter; goes in flocks of from five to twenty, feeds on the ground, and has a very loud cheerful laugh, which it utters in chorus with others on the slightest provocation. Their united noise is rather startling, when heard unexpectedly, in some dark forest. Specimens I measured gave dimensions as follow:—

"Length, 11·2 to 11·8; expanse, 14·5 to 16·25; tail, from vent, 4·1 to 4·8; wing, 4·85 to 5; bill, from gape, 1·4; tarsus, 1·8. The bill is black; the gape, yellow; the inside of the mouth, flesh-colored; iris, pinkish hazel; eyelids, yellowish grey; legs, plumbeous; claws, pale horn color. I found the remains of insects and two grains of rice in the stomach of one that I dissected."

This species, though recognizable at the first glance, only differs from *Garrulax leucolophos*, Hardw., in having, as Mr. Blyth pointed out in 1841, the whole back, wings, sides, vent, and lower tail coverts more or less ferruginous, which color in *leucolophos* is confined to the nape and sides of the neck, passing downwards across the breast, and in having the white of the under parts, which in *leucolophos* terminates abruptly at the lower part of the breast, continued some way down the middle of the abdomen.

412.—Garrulax pectoralis, *Gould.*

Some of the Thayetmyo birds differ from Darjeeling specimens in having the whole upper surface somewhat paler; the chin, throat, and whole space within the pectoral band, pure white, instead of more or less ferruginous; in having the breast and flanks only faintly tinged with this color; and lastly, in having the white tips to the lateral tail feather somewhat broader. I do not know whether these distinctions are constant in all specimens; in dimension the birds correspond exactly.

It is curious how the ear coverts vary in this species; in some birds they are entirely silvery white; in others, they are mingled

black and white; and in others again (and this was the form that Blyth long ago separated as *melanotis*) they are entirely black. This does not appear to be a sexual difference: to the best of my remembrance both sexes vary equally in this respect. Is it seasonal, or is it due to age? This is a problem I should like to see solved.

There is another problem scarcely less puzzling, and that is the relation of the present species to *moniliger*, Hodgson. This latter is nothing but a smaller race of *pectoralis*; which it matches feather for feather; its ear coverts vary just as those of *pectoralis* do, but it is very distinctly smaller, and has a wing fully half an inch shorter. It might be supposed that these were different sexes of the same species, but this is certainly not the case; we have both sexes of each race.

If these races occurred in different localities, the matter would be comparatively easy; but, as far as I know, wherever the one is found the other also occurs, and this is certainly the case in Sikhim, in the Bhootan Dhooars, in Assam, the Tipperah Hills, and Pegu.

How are we to explain these two persistent differently-sized races, precisely similar in every other respect, living side by side, and yet apparently not interbreeding? At any rate, I have never seen a specimen intermediate in size between the two races.

Mr. Oates says: "Within our limits this species is as common as *Belangeri*, and of similar habits. I found the nest of this bird on the 27th April. The nest I have already described in Nests and Eggs, Pt. II. A pair I shot measured as follows:—

"*Male:* Length, 12·7; expanse, 17; tail, from vent, 5·1; wing, 5·7; bill, from gape, 1·5; tarsus, 1·95.

"*Female:* Length, 12; expanse, 17; tail, from vent, 5; wing, 5·7; bill, from gape, 1·5; tarsus, 1·8.

"The irides are reddish brown; the upper mandible, dark brown; lower mandible, bluish horny at base and tip, darker in the middle; inside of mouth, bluish fleshy; eyelids and bare patch behind, grey; edges of eyelids, orange yellow; legs, light plumbeous; claws, bluish white."

413.—Garrulax moniliger, *Hodgs.*

Identical with specimens from other localities referred to in the preceding.

Mr. Oates remarks: "This species is not so common as *pectoralis*, but is of the same distribution. I shot one female off her nest on the 27th April in the Pegu Hills. The nest is described in Nests and Eggs, Pt. II. A pair I shot measured as follows:—

"*Male:* Length, 12; expanse, 15·2; tail, from vent, 4·8; wing, 5; bill, from gape, 1·3; tarsus, 1·74.

"*Female:* Length, 11·2; expanse, 14·3; tail, 4·7; wing, 4·6; bill, from gape, 1·3; tarsus, 1·72.

"Another female measured 11·7.

"The irides, bright yellow; eyelids and their edges, dark dull purple; bill, dark horny; tips and margins of both mandibles, very light transparent horny."

439.—Chatarrhæa Earlei, *Blyth.*

Mr. Blanford obtained this species on the banks of the Irrawaddy, in high elephant grass, at Thayetmyo (IBIS, 1870, p. 466), and I have now received specimens thence, though neither Mr. Oates nor Captain Feilden appears to have met with it.

439 *bis.*—Chatarrhæa gularis, *Blyth.*—(JOURNAL, ASIATIC SOCIETY, BENGAL, 1855, XXIV, p. 478.)

This species, which appears to be common in Pegu and Upper Burmah, is not of course described by Dr. Jerdon, and I therefore transcribe Blyth's original description: "Color, ruddy brown, passing to olivaceous on the hind part of the back, each feather having a narrow black mesial streak; frontal feathers, narrow, stiffish pointed, and white, with black mesial line—these peculiar feathers continued over, but not beyond, the eye; lores, blackish; chin and throat, pure white, extending down the front of the neck; ear coverts and sides of neck, unstreaked ruddy; breast and flanks, ruddy brown, paler on belly; and lower tail coverts, duller brown; tail, dull olive brown, and conspicuously rayed across; bill, dull plumbeous, yellowish towards gape; and legs, pale brown, and darker on joints; length, about 11 inches; of tail, 6 inches; closed wing, 3¾ inches; bill to gape, 1 inch; and tarsus, 1⅛ inch."

Mr. Oates remarks: "This species is common round Thayetmyo and as far south as Prome, and easterly to the foot of the Pegu Hills. The sexes are of much the same size. A pair measured as follows:—

"Length, 10·1; expanse, 10·4 to 10·8; tail, from vent, 5·3 to 5·4; wing, 3·2 to 3·25; bill, from gape, 1·0 to 1·05; tarsus, 1·35 to 1·4."

I have however a specimen fully as large as that of which the dimensions were given by Mr. Blyth.

440.—Megalurus palustris, *Horsf.*

Mr. Oates says: "Having recently procured this bird, I identify with it two birds which I once saw at Thayetmyo in a bean field, on a sand-bank opposite the station."

451 *bis.*—Criniger griseiceps, *Hume.*

I have already described this species (STRAY FEATHERS, 1873, p. 478), and have nothing now to add to what I then said, except that it is very distinct from *C. ochraceus*, Moore, of which also we now have a large series.

452 *quat.*—Microtarsus Blanfordi, *Jerdon.*

This species was first discriminated by Dr. Jerdon (Ibis, 1862, p. 20).

Mr. Oates remarks: "Common in the Irrawaddy Valley as far south as Prome, and easterly to the foot of the Pegu Hills. Its range is chiefly north of Thayetmyo in native territory. It has a harsh note, and is very irritable when approached, raising its crest and chattering. It is generally found in gardens and waste land, and is not uncommon in our cantonment. The sexes are of much the same size. Specimens measured—

"Length, 7·6 to 7·7; expanse, 10·5; tail, from vent, 3·05 to 3·25; wing, 3·12 to 3·15; bill, from gape, 0·81 to 0·88; tarsus, 0·85 to 0·93. The fifth primary is the longest; the fourth, sixth, and seventh, sub-equal; the third 0·15, the second 0·55, and the first 1·4 shorter than the fifth. The irides are pale yellowish brown; eyelids, greenish plumbeous; bill, light brown, paler at the base of lower mandible and gape; inside of mouth, flesh color; legs, clear plumbeous; claws, horny."

I have specimens of this bird also from Bhammo in Upper Burmah.

The entire upper surface is a dull pale earth brown, with a slight olive tinge, most marked upon the rump, the margins of the outer webs of the quills and greater coverts, and of the outer webs of the tail feathers. In some specimens the head also has a decidedly olive tinge, and the feathers of the forehead and crown are slightly lengthened and faintly centred darker. There is no trace of this in other specimens. The lores, chin, and cheeks, are dull white, slightly tinged with grey or brown. The ear coverts are pale brown, conspicuously shafted with pure white, and this is the most conspicuous feature in the bird's plumage; the breast and the rest of the lower parts are pale brownish grey, passing on the abdomen and lower tail coverts into very pale fulvous; the upper abdomen is likewise, in some specimens, streaked with pale fulvous; the wing lining and the margins of the quills on the inner webs are also pale fulvous; the lower surface of the tail, pale brownish grey, often, in fine specimens, with a faintly fulvous tinge.

Specimens vary a good deal in tint, according to the season at which they were killed; some are much more olivaceous above and fulvous below.

456.—Rubigula flaviventris, *Tickell.*

This species is included in Mr. Oates's list. The only specimen he sent, however, was so entirely destroyed that I cannot say whether he had correctly identified it, or whether it was some distinct nearly-allied species; however, the bird has already been

sent by others from Pegu, and we may, I think, safely accept Mr. Oates's identification. He says: "This bird is very common in the Evergreen Forests; dozens may be seen on the hills on any Banyan tree which may happen to have fruit. I believe it to be entirely frugivorous.

"A female measured: Length, 7·7; expanse, 10·2; tail, from vent, 3·6; wing, 3·2; bill, from gape, 0·72 (in another, 0·8), tarsus, 0·65. The irides were pale yellow; the eyelids, yellowish fleshy; bill, dark brown; inside of mouth, fleshy yellow; legs and feet, brown; claws, dark horny."

Subsequently I have examined two specimens from the Pegu Yoma Hills. They are identical with Indian examples.

460.—Otocompsa emeria, *Shaw.*

Neither Captain Feilden nor Mr. Oates has sent this species, but it was obtained by Sir Arthur Phayre somewhere in the Tonghoo District, and I therefore include it in our list.

Mr. Oates says: "Mr. Raikes shot a specimen at Prome which he showed me. It is perfectly identical with birds from Lower Pegu, of which I have lately procured several. The dimensions are much smaller than those given by Jerdon. The Burman bird is very common throughout Lower Pegu, and extends into our limits sparingly.

"A female measured: Length, 7·55; expanse, 9·6; tail, 3·1; wing, 2·95; tarsus, ·8; bill ·85; iris, hazel brown; inside of mouth, yellow; bill, legs, and toes, black."

This would appear to be the smaller race, with shorter ear tufts, usually identified with *monticola*, McClell., but which I do not think can be this species, because, though I have seen many examples of it from Assam, I have also seen one in which the red ran forwards above and below the eye, so as to make nearly a ring round it. This I take to be *monticola*. It may be merely an abnormal form of the ordinary Assam race, but it gives the bird a very different appearance, although in other respects I did not notice (I had, however, no opportunities of *comparing* it) any differences in plumage.

461.—Molpastes pygmæus, *Hodgson.*

In these Thayetmyo birds I expected to meet with Blyth's *nigropileus* (Journal, Asiatic Society, 1847, Vol. XVI., p. 472).*

* "*Pycnonotus nigropileus*," says Blyth, "merely differs from *P. hæmorrhous*, in having no black on the throat and breast, which are brown, with greyish margins to the feathers, like the back; and the whole nape and back are much paler than in *P. hæmorrhous*, the cap alone being black." We found this and *chrysorrhoides*, Lafr., (the Chinese form) common in Northern Tenasserim.

As a matter of fact, however, the Thayetmyo specimens are somewhat intermediate between *pygmæus* and Blyth's bird. In general character of plumage it resembles *P. intermedius*, Hay, (which is very doubtfully distinct); but it has the large bill and wing of the true *pygmæus*; the black however is confined to the cap, and the breast is brown, narrowly edged with greyish white; but the whole chin and throat are black as in *pygmæus*, and I have no doubt that, if the whole country between Dacca and Mergui were to be properly worked, every intermediate stage of plumage between typical *pygmæus* and typical *nigropileus* would be met with. *Chrysorrhoides*, Lafr., which is the Chinese bird and not, as Mr. Gray makes it, identical with the Indian or Madras Bulbul, is very common in Northern Tenasserim, as is also *nigropileus*, and these two grade into one another. Again, the Madras Bulbul, *pusillus*, Blyth, and *pygmæus*, if typical examples be selected, are very distinct; but between them we have *P. intermedius*, and between *intermedius* and each of them again we have an almost unbroken series of links.

Mr. Oates says: "This species is very common in the plains, but is not found on the hills."

I follow Mr. Gray in calling this species "*pygmæus*;" hitherto the name has been generally given as "*pygæus*."

463 *ter*.—Phyllornis chlorocephalus, *Walden*.

Lord Walden characterized this species in the AN. AND MAG. OF NATURAL HISTORY for 1871, p. 211.

He remarked: "The Burman representative of the Sumatran and Malayan *Phyllornis icterocephalus*, Tem., *apud* Bonap., has not been hitherto discriminated. It chiefly differs from that species by possessing a much longer bill, by having the crown of the head green and not yellow, and by wanting the intense golden color of the nape. The frontal plumes are bright yellow. The female (perhaps the young male) has the forehead, as well as the crown, bright green. Bill from nostril full half an inch; other dimensions as in Malaccan examples (four in number) of *Phyllornis icterocephalus*, Tem. Described from three adult males and one female obtained near Tonghoo."

Mr. Blyth says he received *cochinchinensis* from Sir Arthur Phayre from somewhere in the Tonghoo or Thayetmyo District, but his bird doubtless belonged to the present species, of which Mr. Oates also sent one specimen so entirely destroyed by insects that I only identified it by the dimensions which he recorded in the flesh.

Numerous specimens subsequently obtained by ourselves enable me to give full dimensions and a description.

Males: Length, 7 to 7·4; expanse, 9·82 to 11·0; tail, from vent, 2·75 to 3·0; wing, 3·25 to 3·39; tarsus, 0·65 to 0·7; bill, from gape, 0·82 to 0·95; weight, 1 oz.

Legs and feet, plumbeous, or dull horny blue; claws, plumbeous, horny, brown at tips; bill, black; irides, deep brown.

The male has the lores, the cheeks as far back as the centre of the eye, the chin, the upper throat, and a gradually narrowing streak down the centre of the rest of the throat, velvet black, with a very short, dull violet cobalt mandibular stripe on either side: a band across the forehead over the lores and eye and round the eye, and thence bounding the black of the throat, pale yellow. The rest of the forehead, and the anterior half of the crown and a more or less perceptible extension behind the yellow eye-band to the ear coverts and these latter, pale green, with only a faint yellowish tinge. The occiput, nape, and sides of the neck behind the ear coverts, green, with a strong golden tinge. On the lower part of the throat the pale yellow band is greatly extended, and gradually changes on the upper part of the breast to a golden green like that of the nape. Back scapulars, rump, and upper tail coverts, grass green, with more or less of a golden tinge on the upper back, and darker and purer on the rump and upper tail coverts. Central tail feathers, blue green; shafts, brown; lateral tail feathers, dull blue; all the feathers, very narrowly margined at the tips with albescent. Inner webs of primaries and secondaries, dark hair brown. Winglet, outer webs of primaries, and their greater coverts, bright cerulean blue, greener in some lights, and all slightly tinged greenish toward their tips. Lesser coverts, glistening smalt blue; median and secondary greater coverts, outer margins of outer webs of secondaries, and visible portions of tertiaries, grass green, with more or less of a golden tinge at times. Inner portions of outer webs of secondaries, blue; and more or less of a blue green tinge on parts of the inner webs towards their bases. Lower breast, abdomen, sides, flanks, vent, and lower tail coverts, *bright* grass green. Edge of the wing at carpal joint, blue. Wing lining and greater portion of the lower surface of the quills, except the first two primaries and the tips of the next two or three, pale satin brown. The coverts, faintly tinged with green. The tibial plumes, brown.

It must be understood that in the head, neck, and back the pale yellow, the green, and the golden, run smoothly into one another without any hard lines of demarcation.

The female wants the black lores, chin, and throat, the yellow encircling band, and has much less of the golden tinge on the nape and sides of the neck. The tail and wings are much less blue, and the shoulder patch is much smaller in extent, less glistening, and verditer blue. The black in the males is replaced by a slightly bluish green, and the mandibular stripe represented by a small pale bluish green patch.

The young male seems to be exactly like the female, except that it wants the blue tinge on the chin and the middle of the

throat, that it generally exhibits traces of a sub-terminal brown band on the tertiaries, and the shoulder patch is of almost the same color as that of the adult male, though less in extent.

465.—Phyllornis aurifrons, *Tem.*

Messrs. Gray and Gray separate the Himalayan race as *Hodgsoni*, Gray, from *aurifrons*, Tem., which was originally described from Sumatra; neither of them appears to have examined Sumatran examples, and I am therefore not prepared at present to separate the two races, the more so as Temminck's figure (Pl. Col. 484-1) represents perfectly one of the many phases of plumage of our bird. Moreover, I have *aurifrons*—I mean the Himalayan bird—not only from numerous localities throughout the whole Sub-Himalayan region eastward of the Jumna, but from Dacca, Tipperah, and Northern Tenasserim. Now, we have it here from Pegu, and I have seen it from somewhere near Penang. All that can be said apparently of the Himalayan birds is that they run perhaps a trifle larger than those from Eastern Bengal, Burmah, &c.

Mr. Oates says: "This species is common in the plains. I did not meet with it often on the hills, and what few I saw I did not shoot. Specimens that I measured varied as follow:—

"Length, 7·5 to 7·7; expanse, 11 to 11·75; tail, from vent, 2·8; wing, 3·55 to 3·9; bill, from gape, 0·95 to 1·0; tarsus, 0·65 to 0·8; bill, black; inside of mouth, bluish grey; eyelids, dark brown; legs and feet, plumbeous; claws, horny."

467.—Ægithina tiphia, *Lin.*

Here we have from Thayetmyo, killed on the 19th May, a typical *Iora zeylonica*, with the whole nape and back black, absolutely undistinguishable from Ceylon males in breeding plumage; and a second bird, killed on the 2nd June in the same locality, with the whole head and nape black, and the back yellow, fringed with black, as is so commonly the case in *zeylonica* from different parts of India.

On the subject of the two supposed species, *tiphia*, Lin., and *zeylonica*, Gm., I have already (STRAY FEATHERS, Vol. II, p. 459) recorded my views at some length, but as the question is rather important, being typical of a great number of similar ones, I venture to re-state in a somewhat different form my argument. I am entirely open to conviction. I am ready to change, *on good cause shown*, the most cherished opinion I hold at a moment's notice. I have not a bit more belief in my own infallibility than in that of my neighbour's, and am quite convinced that I make just as many, if not more, mistakes than they do. All I want is the truth.

Why I press this question is that I have paid particular attention to it, more I think than any one else has yet done, and I want others to take it up also, so that it may be throughly threshed out.

My contention is—

1*st*.—If you base the distinctness of the species on difference of habitat, then I can show typical *tiphia* from the extreme south of India, and *zeylonica* from Burmah. Nay, there is in the India Museum a specimen, a black-headed, partially black-backed, male, collected in the Wellesly Province which I pointed out to Mr. Wood-Mason, and which he concurred with me in pronouncing absolutely identical with another Ceylon specimen in the same drawer.

2*nd*.—If you base the distinctness of the species on difference of size, then I can show equally big and equally little birds in *both* plumages.

3*rd*.—If you base the distinctness of the species on difference in plumage, then I say we can show every stage between the two typical forms.

I confess that I am unable under these circumstances to see my way to making two species.

Possibly, if the subject be throughly studied, some slight, but certain and constant, diagnosis may be established, and, if so, no one will hail the discovery with greater pleasure than myself.

Mr. Oates says that this species is very common, and gives dimensions as follow :—

"Length, 5 to 5·3; expanse, 7·5 to 7·9; tail, from vent, 1·8 to 2; wing, 2·3 to 2·45; bill, from gape, 0·63 to 0·65; tarsus, 0·7 to 0·82. The irides yellowish white; bill, whole lower mandible, and margin of upper to within 0·1 of the tip, light blue; remainder of upper mandible, black; legs and claws, pale blue. In one specimen the irides were brown."

Mr. Oates refers to another species of *Iora*, which varied in length from 5·5 to 5·6, and had the wings 2·4; the other dimensions and colors of soft parts as in the present species, and remarks : "Both species, if distinct, are equally common," and his notes show that the specimens of both were killed at Thayetmyo on the same date. There is no doubt that this supposed second species, of which one male is sent, were birds in the *tiphia* plumage.

469.—Irena puella, *Lath.*

Specimens from Thayetmyo are not separable from others from Southern India, and the Himalayas, and the Andamans.

They all belong to the true *puella*, as distinguished from *malayensis*, Horsf. Here I think that Lord Walden is clearly right. So far as I have yet seen, there is no gradation between the two species; all the birds that I have examined, either have the lower tail coverts reaching to the end of the tail, or falling from 1·2 to 1·[illegible] of this. I have not as yet, however, obtained specimens from the southern portion of the Tenasserim provinces, and if from these or any other intermediate locality between Tenasserim and Penang we should get specimens with an intermediate length of lower tail coverts, then I should refuse to admit *malayensis* as a distinct species; for the present it seems to me impossible not to accept it.

Mr. Oates says: "It is only on the eastern slopes of the Pegu Hills that this bird is found; in the plains and on the western slopes of the hills it never occurs, neither have I ever received it from the Arracan Hills.

"It is extremely abundant in all the Evergreen Forests, frequenting well-wooded ravines. Jerdon states that it keeps to the tops of the highest trees; this, however, is not the case in Pegu, where the bird seems to prefer low densely-foliaged trees. It does not wander much, as a rule. It has a sweet note, a kind of clear whistle not to be compared, however, in richness to that of the Common Black-headed Oriole. It is very sprightly in its actions, flitting from branch to branch restlessly, but never going far from the particular locality it has selected. I measured a good many; the sexes do not differ constantly in size. The following is a *résumé* of the dimensions:—

"Length, 10 to 10·45; expanse, 15·3 to 15·5; tail, from vent, 4·1 to 4·5; wing, 4·9 to 5·2; bill, from gape, 1·15 to 1·25; tarsus, 0·79 to 0·87.

"In one specimen the under-tail coverts fell short of the end of the tail by 1·2, in the rest by 1·25.

"The irides are rich red; the eyelids, pinkish fleshy; bill, legs, feet, and claws, black; the inside of the mouth, fleshy. I examined the stomachs of many specimens; they were all entirely filled with Banyan figs. Looking to the appearances presented on dissection, I should say that they breed during the latter half of April."

471 *ter*.—Oriolus tenuirostris, *Blyth*.

My museum happens to be rather rich in Black-naped Orioles. Of some of the species rarest in collections, I have, if my identifications are correct, a very fine series, and in hopes of helping to clear up some of the difficulties that beset this little group, I subjoin a rough diagnostical key to the several species, eight in number, with which I am acquainted, and shall be glad to have any errors pointed out.

With no, or scarcely any, yellow on the quills.	With only a narrow yellow frontal band, or pair of frontal spots.		Wing, 6 ...	frontalis, Wall. (Sula Islands).
	With a broad black occipital band, 0·6 to 0·7 wide.		Wing, 5·75 to 6·12.	macrourus, Blyth. (Nicobars).
	With narrow black occipital band, 0·3 to 0·4 wide.		Wing, 5·25 to 5·4.	andamanensis, Tytler. (Andamans).
With the tertiaries only moderately broadly, and secondaries very narrowly, tipped with yellow.	No yellow wing spot; occipital band, 1 to 1·3 wide.		Wing, 6 ...	crorhynchus, Vigors. (Philippines).
	A small wing spot; occipital band, 0·5 to 0·7 wide.		Wing, 5·5 to 5·8.	Broderipi, Bonap. (Sumbava, Lombok, Flores).
With much yellow on the tertiaries.	Outer halves of the outer webs of the tertiaries yellow.	Wing spot very small or wanting.	Wing, 5·25 to 5·7; bill, very broad at base; 1·25 at front.	hypocrepis, Wagler. (Sumatra, Java).
	Entire outer webs of tertiaries yellow.	Wing spot moderate, 0·3 to 0·4 deep.	Occipital band, 0·4 to 0·8; bill, strong.	chinensis, Lin. indicus, Jerd. (Southern India, China, and Tenasserim).
		Wing spot very deep, 0·7 to 0·8.	Occipital band, 0·3 to 0·4; bill, more slender.	tenuirostris, Blyth. (Burmah).

I do not think that we can separate *chinensis* and *indicus*. No doubt some of my Chinese specimens (from Mr. Swinhoe, from Formosa, and Fungshan) have a slightly larger bill, a somewhat larger wing spot, and decidedly more yellow on the tertiaries than any Southern Indian specimen I possess; but in a large series from Tenasserim, shot at and about the same time and place, I can match in every respect every Chinese and Southern Indian specimen. As to *hypocrepis*, Wagler, Bonaparte says that this has no wing spot, but all my Sumatran specimens exhibit a very small wing spot.

Mr. Oates remarks of *tenuirostris*: "This species is not uncommon about Thayetmyo, but it is not so plentiful as *melanocephalus*. An adult male that I measured was: Length, 10·1; expanse, 18; tail, from vent, 3·85; wing, 5·9; bill, from gape, 1·35; tarsus, 0·97.

"The irides were crimson; the eyelids, grey; the bill, pale pink; the inside of the mouth, fleshy; legs, plumbeous.

"In a young bird, with a streaked lower surface, the bill was black and the irides brown."

This present species, *tenuirostris*, was first described by Blyth (Journal, Asiatic Society, 1846, p. 48), but he described a

young bird which he at the time believed had come from Central India. The bird is so close to *indicus* that it seems unnecessary to give a full description. It may at once be distinguished from this latter; (1*st*), by its much slenderer bill; (2*nd*), by its much narrower occipital band; (3*rd*), by the much greater extent of yellow on the primary greater coverts; (4*th*), by the much greater extent of yellow on the tail. On a fine adult male *indicus* from the Malabar Coast the terminal 1·5 of the inner webs of the external lateral tail feather is yellow; in the same feather in *tenuirostris* the yellow extends nearly 2 inches; about 0·4 of the tips of the feathers next the central ones in *indicus* are yellow; in the same feather in *tenuirostris* the yellow extends to nearly an inch; of course, in both instances, I refer to adult males. There is always much less yellow on the tails of younger birds.

472.—Oriolus melanocephalus, *Lin.*

The Black-headed Orioles from Pegu are typical *melanocephalus*, that is to say, they have the black of the chin and throat coming well down on the breast, and they have the yellow running well up the outer webs of the tertiaries. They are, in fact, quite similar to birds from Lower Bengal, such as one generally meets with there. I have already (Stray Feathers, 1873, p. 439) expressed my opinion as to the great difficulty that presents itself in separating *ceylonensis* from *melanocephalus*, and need therefore say nothing further on this subject here.

Mr. Oates tells us that this species is very common about Thayetmyo, and he gives the following *résumé* of the dimensions of six specimens of both sexes which he measured in the flesh:—

"Length, 8·9 to 9·8; expanse, 15 to 16·3; tail, from vent, 3·35 to 3·5; wing, 5 to 5·3; bill, from gape, 1·22 to 1·38; tarsus, 0·97 to 1·0. In an adult the irides were crimson; the eyelids, yellowish grey, with the edges black; bill, pink; the terminal half, dusky; inside of mouth, fleshy; legs, plumbeous; claws, dark horny.

"In younger birds the bill was fleshy brown, overrun with spots and patches of dusky pink; iris, bright red; centre of lower eyelid, pale yellow; edges of both, purpurescent; legs, brown; claws, nearly black.

"In a quite young bird the bill was black; eyelids, grey; iris, hazel brown; legs, plumbeous; the margins of the scutæ, nearly white."

475.—Copsychus saularis, *Lin.*

The Thayetmyo birds are very nearly true *saularis*; that is, so far as I can judge from the males only, for I have received no

females. Still the males have more black on the fourth tail feather than is usually seen on typical *saularis*, and probably the upper surface of the females would prove to be slightly darker than in the females of typical *saularis*. I have already explained (STRAY FEATHERS, 1874, p. 230) how the Andaman birds are exactly intermediate between *saularis* and *mindanensis*; these Thayetmyo birds are, I take it, intermediate between the Andaman birds and *saularis*, but nearest to the latter. The Tenasserim birds on the other hand are more like those from the Andamans.

Mr. Oates remarks: "Common in the plains, but I never met with it on the hills."

476.—Cercotrichas macrourus, *Gm.*

I have seen no specimens myself from Thayetmyo.

Mr. Oates says: "On the hills this bird is very common, and it occurs also in the plains, but is less abundant there. It may frequently be heard in the Rifle-Range Nullah at Thayetmyo by any one who cares to go and listen to our finest songster.

"The dimensions of males and females that I measured were as follow:—

"*Males:* Length, 10·35 to 10·8; expanse, 11·75; tail, from vent, 5·9 to 6·2; wing, 3·7; bill, from gape, 0·92 to 0·95; tarsus, 1·09 to 1·1.

"*Females:* Length, 9·25; expanse, 11·1; tail, from vent, 5; wing, 3·65; bill, from gape, 0·95; tarsus, 1·01.

"The bill is black; inside of mouth, fleshy; legs and claws, fleshy pink; iris, dark brown; eyelids, plumbeous. This species breeds with us about the end of April."

481.—Pratincola caprata, *Lin.*

Thayetmyo specimens are identical with Indian birds.

Mr. Oates remarks that it is "common in the plains from Thayetmyo to the foot of the Pegu Hills."

483.—Pratincola rubicola, *Lin.*

One specimen of this was sent by Mr. Oates, shot at Wadow. He says it is "common in the plains only, and on waste ground where there are patches of dry grass and small shrubs."

This specimen belongs to the smaller darker race, which many ornithologists separate as *indica*. In this, however, I cannot follow them, as any really large and carefully selected series sufficiently proves in my opinion that the two races grade absolutely insensibly one into the other; of course, naturalists who separate them explain this on the theory that they interbreed on the extreme limits of their respective areas of distribution, and they would doubtless explain the occurrence of typical specimens

of one race in the very centre of the area of the other by saying that these are mere seasonal migrants. It does not much matter, perhaps, how the thing is explained; the facts are the same.

484.—Pratincola leucura, *Blyth.*

A single specimen procured at Boulay is quite identical with birds from Tipperah, but they are rather darker and brighter-colored, and perhaps a shade smaller, than those from Sindh; but the difference is not sufficient to warrant specific separation: indeed, is not so great nearly, though it is of the same kind, as that between *rubicola* and *indica*. This species is only to be found in the plains about paddy lands.

486.—Pratincola ferrea, *Hodgs.*

Mr. Oates procured a single specimen of this Chat—a female—at Prome, on the 23rd November. He gives the following dimensions:—

Length, 5·95; expanse, 6·4; tail, from vent, 2·5; wing, 2·25; bill, from gape, 0·72; tarsus, 0·92.

The bird occurs, as we already know, in the Arracan Hills, although whether as a permanent resident or a seasonal visitant is uncertain, and it now appears that in the winter, at any rate, it straggles down to the plains of Upper Pegu.

500.—Ruticilla aurorea, *Pall.*

A single specimen, a female, was sent me by Captain Feilden, who obtained it in the cold-season in the neighbourhood of Thayetmyo. It was the only one, he said, that he had seen.

512.—Calliope camtschatkensis, *Gm.*

Of this species also Captain Feilden sent a single specimen, killed near Thayetmyo.

530.—Orthotomus longicaudus, *Gm.*

Thayetmyo specimens are identical with those from various parts of India.

Mr. Oates remarks: "This is a common bird in the plains, and possibly also on the hills, though I did not observe it on the latter. I found the nest of this species containing young birds in the Thayetmyo cantonment on the 12th August. The irides are reddish yellow; the eyelids, grey; but their edges, reddish yellow; the upper mandible, dark horny; the lower, pale fleshy; the inside of mouth, pale whitish fleshy; legs, rufous fleshy; claws, pale brown. The length varies very greatly, according

to the development of the tail. The expanse is usually about 5·8; the wing, 1·8; bill, from gape, 0·63; and the tarsus, 0·8 or thereabouts."

536.—Prinia gracilis, *Frankl.*

Thayetmyo specimens are identical with others from various parts of India. Mr. Oates remarks: "I do not know anything precise about the occurrence of this bird. I only shot one at Sakanghee. I have as yet paid little attention to these small warblers. The one I shot was a male. It measured: Length, 4·55; expanse, 5·6; tail, from vent, 2·15; wing, 1·7; bill, from gape, 0·58; tarsus, 0·7.

"The irides were hazel red; eyelids, grey; bill, horny, paler at gape; legs, pinkish fleshy; claws, pale pinkish horny."

This, I may add, is *gracilis*, "*pure et simple*," and not the more rufous race, with "the tail above and wings externally uniform rufous or light ferruginous," from Arracan, which Blyth described (JOURNAL, ASIATIC SOCIETY, 1847, p. 456) as *P. rufescens*.

538.—Prinia Hodgsoni, *Blyth.*

A specimen from Thayetmyo, though marked a male, agrees perfectly with females from the Wynaad, Sambhur, and other parts of Upper India. The male in this species has the bill a good deal larger than the female, the head darker, and the breast band broader and darker.

Mr. Oates says: "Common round Thayetmyo Cantonment in small parties. The male sometimes sits on the topmost twig of a bush, and sings a tremendously hearty little song. A male measured: Length, 4·3; expanse, 5·8; tail, from vent, 1·75; wing, 1·8; bill, from gape, 0·52; tarsus, 0·75; irides, amber; edges of eyelids, orange; claws, pale horny; bill, blackish brown; inside of mouth, black."

I may note that I think that the bills and the color of the inside of the mouths in many of these little *Priniæ* and *Drymoipi* become much darker in the breeding season. The bird described by Mr. Oates was shot on the 2nd June.

538 *bis.*—Prinia Beavani, *Walden.*

A single specimen from Thayetmyo is identical with one from Commillah, Tipperah, and others from the Bhootan Dhooars, Sikhim, and Tenasserim. Lord Walden first described this species from specimens obtained by the late Captain Beavan, at Sconaygoon, on the Salween River, and who gave the colors of the soft parts as: "Irides, reddish yellow; legs, fleshy; beak, black horny."

Lord Walden's original description runs as follows:—

"It is a well-marked form, having the head and nape dull cinereous brown, contrasting distinctly with the slightly ruddy brown of the dorsal plumage. The upper surface of the wings and tail is of a similar color, the outer edges of the primaries being edged with ferruginous. From the nostril, and extending over and a little beyond the eye, a bold pure white band. The chin, throat, cheeks, breast, and belly, pure white. The under wing coverts, under tail coverts, and thigh coverts and flanks, fulvous. The rectrices, which in the specimens sent are comparatively short, are tipped with dirty white, which edges a dark brown terminal spot, showing through to the upper surface. The remaining under surface of the rectrices is pale brown, similar in hue to the under surface of the quills, the inner edges of these latter being pale ferruginous. The tail consists of ten feathers, which are graduated; the first primary is about two-thirds the length of the second, which is considerably shorter than the third; the fourth is longer than the third, and but slightly shorter than the fifth, which and the sixth are equal and longest; the seventh is equal to the fourth.

"Wing, 1·65; tail, 1·75; bill, from forehead, 0·5; from nostril, 0·31; tarsus, 0·75; hallux, 0·25; middle toe, 0·44."

This species is nearest to *gracilis*, from which, if you cut off the heads of the birds, its body, wings, and tail would be undistinguishable; but it differs in having a markedly longer and stronger bill, in the cap being a decided grey brown, while in *gracilis* it is unicolorous with the back; and in having the loral eye streak, which in *gracilis* is feebly defined, a much purer white, and much more distinct and conspicuous.

We recently measured five males obtained in Tenasserim in the flesh. They varied as follows:—

Length, 4·25 to 5·0; expanse, 5·25 to 5·75; tail, 1·45 to 2·25; wing, 1·55 to 1·7; tarsus, 0·75 to 0·95; bill from gape, 0·55 to 0·62; weight, 0·25 oz.

The legs and feet varied from pale to dark fleshy, and in one were slightly brownish; the claws were fleshy brown. Bill varied from horny brown (December to February) to black (end of April); the gape and base of lower mandible being paler, in some fleshy, in some bluish. The irides varied, some light red (end of April), some reddish or orange brown, some light wood brown.

Mr. Mandelli has recently sent me numerous specimens obtained in Sikhim.

539.—Cisticola schœnicola, *Bonap.*

Specimens from Thayetmyo correspond entirely with many others from all parts of India, from Ceylon to Sindh, and Sindh

to Dacca. As I have mentioned (STRAY FEATHERS, 1873, p. 439), the plumage of this species varies very materially, as also does the length of the bill; but this is the case in every locality. Thus, here one of the birds sent by Mr. Oates has an entirely streakless olive brown head, whilst another has the head bright pale fulvous, each feather with a broad black central streak, and had Mr. Oates shot a sufficient series, he would doubtless have obtained, as I have elsewhere, specimens exhibiting every possible intermediate variation of coloring. I am myself persuaded that not a few of the new *Cisticolæ* described of late years are nothing but stages of plumage of one and the same species. I have been rather fortunate in obtaining most of the necessary materials, and I hope shortly to be able to review this genus.

Mr. Oates remarks that this species "is very common in all paddy lands in the rains."

547.—Suya crinigera, *Hodgs.*

A single specimen from Thayetmyo agrees well with some specimens from the Himalayas. This is a species which varies much in size and in plumage, and though no doubt the males are always larger than the females, this is not the sole reason of the difference, as you get small males also. Sometimes the whole upper surface, the head especially, is very strongly striated with dark brown, and the bird has quite a ruddy tint; at other times the striations are almost obsolete, and the whole upper surface is a dull earthy brown. I think the changes of plumage of this species require investigation; it is possible that some birds that I have passed by as *crinigera* really belonged to *obscura*.

Mr. Oates says: "This is not uncommon immediately round the Thayetmyo cantonments; I have seen it nowhere else. It likes to sit on the topmost bough of a rather high tree, or less frequently on a shrub, and to sing a weak grating song which lasts for two or three minutes. A male I shot measured: Length, 7; expanse, 7·3; tail, from vent, 3·3; wing, 2·25; bill, from gape, 0·68; tarsus, 1·0.

"The irides were pale brownish yellow; the bill, black, paler at base of lower mandible; the inside of the mouth, black; eyelids, plumbeous; feet, yellowish; claws, pale horny."

These are scarcely the habits of *Suya crinigera* in the Himalayas; there they avoid towns and villages, and affect open sunny slopes, at an elevation of 2,000 to 4,000 feet, where there is some stunted scrub and a little high grass, in amongst which scrub and grass they thread their way, comparatively rarely showing themselves, except during the breeding season, and in some little thorny bush amongst which they build their flimsy little nest.

552.—Neornis flavolivacea, *Hodgs?*

A specimen sent by Mr. Oates I identify somewhat doubtfully with this species; the bill is wanting, and both wings are imperfect, and under these circumstances this is not a bird of which one can be absolutely sure; however, I believe I have correctly identified it. Mr. Oates remarks that he "met a party of seven or eight on the 10th January at Tamagan. They were moving very restlessly amongst brushwood. They have a sharp note frequently repeated."

555.—Phyllopseuste fuscata, *Blyth:*

A single specimen is sent from Yattoun, Thayetmyo District, by Mr. Oates, who says: "I only shot one bird of this species, and that in a Mango grove. I carbolized the bird, and did not ascertain its sex; but it measured: Length, 5·2; expanse, 7·8; tail, from vent, 2; wing, 2·45; bill, from gape, 0·54; tarsus, 0·88.

"The irides are brown; the eyelids, grey; the upper mandible, dusky rufous; the lower mandible, dusky at tip only; the remainder, fulvous yellow; gape, yellowish; inside of mouth, yellow; legs, dusky fleshy, darker on the toes; claws, yellowish horny."

The specimen sent agrees perfectly with others from Cachar, Tipperah, the Bhootan Dhoars, &c. It is entirely an eastern form, and I myself have never known it to occur, south of the Himalayas, west of a line drawn north and south through Benares.

561.—Phyllopseuste affinis, *Tick.*

562.—Phyllopseuste indica, *Jerd.*

Both these, Mr. Blyth records, were obtained by Sir Arthur Phayre in the Tonghoo District.

564.—Reguloides trochiloides, *Sundev.*

One very bad specimen carbolized and without a tail, which I refer to this species, is sent by Mr. Oates from the Pegu Hills, where he shot it on the 10th April. It is, he says, the only bird of the kind he met with, but he has not yet worked the small Warblers.

This bird agrees perfectly in size and markings with *trochiloides*, but it absolutely wants, except on the wing bars, the yellow tint so conspicuous on the whole lower surface of *trochiloides*, on the edge of the wing, on the long superciliary stripe, and on the cheek stripe; but I believe this is due to the birds having been carelessly carbolized. I find that where carbolic acid is allowed to spread at all it turns all yellow feathers pure white. I have noticed this in many birds, and have tried experiments with carbolic acid which have proved the fact beyond a doubt,

and here amongst the birds sent by Mr. Oates is an *Abrornis superciliaris* with the whole abdomen pure silky white, bleached by the incautious use of carbolic acid. Now that small birds are so commonly carbolized, ornithologists should be on their guard against this change of color. I have not been able to ascertain that this substance affects any other color. Many people object to carbolized birds, but there is no doubt that if the process is carefully performed, it is the only way open to the travelling naturalist, who has to preserve twenty or thirty specimens a day, of securing really perfect specimens, in which the various stripes and streaks about the head of many of the small, soft-plumaged birds—*Phylloscopi, Reguloides,* and the like—shall not be in any way disarranged.

565.—Reguloides superciliosus, *Gm.*

Obtained by Sir Arthur Phayre in the Tonghoo District.

569 *bis*—Culicipeta tephrocephalus, *Anderson.*

A single specimen sent by Mr. Oates I refer to this species. In size and general appearance it differs in no way from *Burkii*; but when closely examined it proves to have, which Dr. Anderson does not notice, a much smaller bill than any *Burkii*, and moreover the central head streak is pure grey, and on either side of the occiput from behind the eye runs another grey stripe, which, curving round the base of the occiput, meets at the termination of the head stripe. Of the great number of *Burkii* now before me, no specimen presents any such appearance, but one or two of them have portions of a few of the feathers of the head streak grey; this difference of coloring, coupled with a conspicuous difference in the size of the bill, quite justifies, I think, the separation of the species, which Dr. Anderson first obtained in Upper Burmah and of which we have numerous specimens from Tenasserim.

Mr. Oates says: "This bird is uncommon. I met with only one specimen on the western slopes of the hills. It was a male, and measured as follows:—

"Length, 4·8; expanse, 6·8; tail, from vent, 2; wing, 2·3; bill, from gape, 0·56; tarsus, 0·72.

"The irides, dark brown; eyelids, plumbeous; upper mandible, dark horny brown; the edges, pale reddish yellow; the whole lower mandible, pale reddish yellow; the inside of the mouth, reddish fleshy; legs, fuscous yellow; claws, pinkish horny."

574.—Abrornis superciliaris, *Tickell.*

This is the species first described, (JOURNAL, ASIATIC SOCIETY, 1859, p. 414) from Tenasserim, later described by Jerdon and Blyth

from Darjeeling as *albigularis* (PROCEEDINGS, ZOOLOGICAL SOCIETY, 1861, p. 200), and this latter name having been forestalled, again described by Jerdon, in 1863, in his BIRDS OF INDIA, Vol. II, p. 203, as *flaviventris*. Neither of the descriptions appear to me altogether correct. In the original one it is said that the cap is light ashy; in Jerdon's, that the head is greyish; but in none of the specimens that I have seen has more than the forehead and anterior half of the crown been grey; the posterior half of the crown and occiput are always concolorous with the back. Again, Jerdon says that the lores are black; but they are not black, they only have a dusky stripe running through them; not merely are the chin and throat white, but so also is the upper margin of the breast. The whole of the cheeks and ear coverts are greyish white, only the extreme tips of the latter are sometimes faintly tinged with green. There is in good specimens a dusky spot behind the eye, and the ear coverts are sometimes greyish brown instead of greyish white.

Mr. Oates remarks: "This species does not appear to me to be common. I have only met with it on the western side of the hills—in nullahs, amongst brushwood. The birds vary a good deal in size. Two specimens, the smaller, perhaps a female, though I did not ascertain the sex, measured as follows:—

"Length, 4, 4·4; expanse, 5·6, 6; tail, from vent, 1·55, 1·8; wing, 1·72, 1·92; bill, from gape, 0·55, 0·57; tarsus, 0·71, 0·78.

"The bill is a more or less dark brown above, paler and more or less plumbeous on the lower mandible; the inside of the mouth, yellow, or pale orange, fleshy; the irides, dark brown; eyelids, grey or plumbeous; legs, dusky or fleshy yellow."

585.—Enicurus immaculatus, *Hodgs.*

Thayetmyo specimens are identical with others from Sikhim. A very little further south-east this species is entirely replaced by *Leschenaultii*, V.

Mr. Oates says: "The Spotless Fork-tail is common in all the hill streams, but not in the plains, where I have never seen it. It appears to be equally common in the Arracan Hills. It has rather a pretty song which it sings off a bush. A male measured—

"Length, 9·8; expanse, 12·5; tail, from vent, 5·3; wing, 4; bill, from gape, 0·95; tarsus, 1·22.

"Birds from the Arracan Hills seem to be slightly smaller.

"The irides are brown; eyelids, well-feathered; bill and inside of mouth, black; feet and claws, pale yellow."

590.—Motacilla luzoniensis, *Scop.*

A single specimen, a female with the wing 3·65, in winter plumage, sent me by Mr. Oates, is, I consider, clearly referable to this species. This Wagtail, he says, is one of the commonest birds about Thayetmyo. It is to be regretted that he was unable to send a series, as it is not improbable that more than one species of Grey Wagtail occurs within our limits.

593 *ter.*—Budytes cinereocapilla, *Savi.*

This also is said by Mr. Oates to be excessively common during the colder season, within our limits. He sent me a single typical male. As he has not yet worked up the Wagtails, it is not unlikely that other species of *Budytes* also occur.

595.—Limonidromus indicus, *Gm.*

A single specimen was obtained by Mr. Oates in the heart of the Pegu Hills, in dense forest, on the 13th April. Captain Feilden also sent this species from the immediate neighbourhood of Thayetmyo.

596.—Pipastes agilis, *Sykes.*

Mr. Oates remarks: "Very common in the cold-weather. It begins to come in about the 25th August."

Captain Feilden also sent specimens, and remarks that they are very common about Thayetmyo.

597.—Pipastes plumatus, *Müll.*

A single specimen was obtained by Mr. Oates in the Pegu Hills, in thick jungle, on the 10th April. He did not discriminate this from *agilis*, so I do not know whether the present species occurs in the plains also.

600.—Corydalla rufula, *Vieil.*

Sir Arthur Phayre obtained this species in the valley of the Sittang in the Tonghoo District.

630.—Erpornis xanthochlora, *Hodgs.*

Pegu specimens correspond exactly with others from Sikhim, where it is a very common bird at moderate elevations.

Mr. Oates remarks: "This is a common bird all over the hills, frequenting ravines and nullahs. Two specimens, a pair, of which I took the dimension in the flesh, measured as follows (the figures first given in each case are those of the male) :—

"Length, 4·83, 4·63; expanse, 8·3, 8·0; tail, from vent, 1·8, 1·85; wing, 2·65, 2·67; bill, from gape, 0·62, 0·6; tarsus, 0·7, 0·72.

"The irides were brown; the bill, fleshy horny above; the edges of the upper mandible and the whole of the lower mandible, light fleshy; gape and inside of the mouth, yellow; eyelids, plumbeous; legs, feet, and claws, pinkish."

631.—Zosterops palpebrosa, *Tem.*

Specimens sent by Captain Feilden appear to me identical with Indian ones.

645.—Parus cæsius, *Tick.*

Specimens sent by Captain Feilden are absolutely identical with specimens from Southern and Northern India.

650.—Melanochlora sultanea, *Hodgs.*

Pegu specimens are identical with others from Sikhim and Bhootan.

Mr. Oates says: "This species is common on the hills, generally in pairs, but sometimes in small flocks. The males seem rather larger than the females. Some *males* measured as follows:—

"Length, 7·9 to 8·3; expanse, 12·5 to 13; tail, from vent, 3·8 to 3·85; wing, 4·15 to 4·3; bill, from gape, 0·69 to 0·7; tarsus, 0·95.

"A *female* measured—

"Length, 7·7; expanse, 12; tail, from vent, 3·45; wing, 3·9; bill, from gape, 0·67; tarsus, 0·87.

"The bill is black; the inside of the mouth, dark fleshy; the eyelids, plumbeous; the irides, dark hazel brown; legs, dull blue; claws, dark horny."

660.—Corvus Levaillantii, *Less.*

Pegu birds are inseparable from Indian ones. One specimen has the bill rather more bowed than in any Indian specimen that I possess, resembling in this respect the Andaman birds; another is identical in every respect with one killed at Abbottabad in the extreme north-west frontier.

Mr. Oates remarks: "This species is common in jungle, away from large towns, in pairs, but at times it assumes the habits of *impudicus*, collecting in large numbers, and coming into the house to snatch food off the table; such is the case at my small house at Boulay, where *impudicus* is comparatively rare. A male measured: Length, 19; expanse, 37; tail, from vent, 7·6; wing, 12·2; bill, from gape, 2·3; tarsus, 2·3."

663.—Corvus impudicus, *Hodgs.*

I refer the Burmese Crow with very great hesitation to the same species as our Indian one. It is no doubt similar in form

and size, but it is entirely black, with at most a somewhat dull appearance about those parts which in our Indian Crows are a pale brownish grey, or in very western examples pale greyish white; and, moreover, it has, it seems to me, a somewhat longer, slenderer, and more compressed bill than *impudicus* has; no doubt the grey portions of many of the Crows from the extreme west and north-west of India are much purer and paler than birds from Sambhur, Agra, and Cawnpore, and it might be supposed from this analogy that as we proceeded further east these grey parts became darker and duller, till at last in Pegu they disappeared altogether; but the little evidence which I possess on this subject is adverse to such a conclusion, since specimens from Calcutta and Dacca are identical with those from Sambhur. If in the course of time, as the country is further explored, every intermediate shade of coloring between, say, the Dacca and Thayetmyo birds is found to be exhibited in intermediate localities, then, notwithstanding the slight difference which appears to me to exist in the bill, I should quite agree to consider the Pegu birds a mere race of *impudicus*; but if, on the contrary, no such connecting links be discoverable (and I can find no record of any such ever having been observed), then I think that the Burmese bird is entitled to specific separation, and might stand under my name—*C. insolens*.*

Mr. Oates remarks: "This Crow is very common, specially in large villages and towns."

671 *bis*.—Urocissa magnirostris, *Blyth*—(JOURNAL, ASIATIC SOCIETY, BENGAL, 1846, Vol. XV, p. 27: Gould's B. A., Pt. XIII, Pl. 3).

Mr. Blyth in characterising this species or race remarked as follows:—

"Resembles *U. occipitalis*, but is still more richly colored, especially on the wings, the bill much larger than in others, and a great naked space surrounding the eyes; the legs and claws are also large and strong; length of bill to gape 1·75; that of *U. occipitalis*, barely exceeding 1·5, its depth and strength also considerably greater; inhabits the Yamadong Mountains, separating Arracan from Pegu." Subsequently Mr. Blyth doubted the validity of this new species, but Mr. Gould, who obtained an imperfect specimen from Bangkok, while carefully avoiding all useful details, asserts that it is decidedly different from *U. occipitalis* and every other species he has yet seen. I cannot of course tell what the Bangkok bird may be like. Mr. Gould figures it with a bill measuring 1·8 from gape to point. I dare say

* See also STRAY FEATHERS, Vol. II, p. 479.

this may be an artistic exaggeration, but even the type specimen had not so large a bill as this, and *magnirostris*, if so the Upper Burmese race from Thayetmyo is to be called, usually has a bill of 1·6 to 1·7, against 1·5, a *maximum*, as I think, for *occipitalis*. In good specimens there is no great naked space surrounding the eyes, and in fact, the only real differences between fine specimens of the two races are—(1*st*), that *magnirostris* is rather more richly colored, especially on the wings; and (2*nd*), that the bill averages nearly a quarter of an inch longer, is proportionally stouter, and is of a somewhat deeper and brighter color. Captain Feilden adds that the legs are scarlet, instead of the reddish orange of *occipitalis*, and that the irides are of different shades of brown, but never red.

Mr. Oates confirms this statement in regard to the irides being hazel brown, and the bill and feet deep coral red; but then the sole specimen sent by Mr. Oates unsexed, and perhaps a female, is undistinguishable, I should say, from true *occipitalis*, and it remains to be discovered whether both races inhabit Pegu, or whether the specimen first named by Mr. Blyth, and that which I owe to Captain Feilden, are fair samples of a race, or merely abnormally fine males of *occipitalis*, or whether it is only the males of this Burmese race, which are characterized by the richer coloring of the wings and the larger size of the bill. In favor of *magnirostris* being distinct, I am bound to say that, though I have an excessively large series of *occipitalis* from various parts of the Himalayas, many of them really superb birds of our own preserving, I have not one that, in regard to size of bill and coloring of wings, can be mistaken for the *magnirostris* sent me by Captain Feilden. I should add that a specimen from the Arracan Hills, apparently a young male, has a rather larger bill than *occipitalis* of the Himalayas ever has, but not so large as either Blyth's type or Captain Feilden's bird. On the whole, it seems to me very doubtful whether this species can be maintained; what is wanted is a really large and carefully sexed series from Pegu and the Arracan Hills.

Mr. Oates says that "this bird," (but whether he means the big-billed or small-billed race is uncertain,) "is very common in some localities in the plains. It likes the neighbourhood of villages in forest country, and may often be seen on the stages erected for stacking straw."

These habits are curious, and are different to those of *occipitalis* of the Himalayas, which I have never seen in the immediate vicinity of villages.

673.—Cissa speciosa, *Shaw.*

Specimens from Thayetmyo correspond well with others from Tipperah and various parts of the Sub-Himalayan Ranges from

the Bhootan Dhooars westwards to where the Jumna debouches from the hills; westward of this I have not observed it. Although it cannot be exhibited by measurements, I think that the bills, both of Thayetmyo specimens and others from the Arracan Hills, do average slightly larger than those from the Sub-Himalayan tracts and Eastern Bengal.

Mr. Oates says: "Common in the Pegu Hills, and also on those of Arracan, but not found in the plains. I found the nest, and shot the female off it on 19th April. The nest and eggs have been described in NESTS AND EGGS, Pt. II.

"A *male* measured: Length, 15·3; expanse, 18·3; tail, from vent, 7·8; wing, 5·9; bill, from gape, 1·7; tarsus, 1·7.

"*Female:* Length, 14·9; expanse, 17·75; tail, from vent, 7·8; wing, 6; bill, from gape, 1·58; tarsus, 1·8.

"Bill, legs, feet, and edges of eyelids, coral red; rest of eyelids, yellowish brown; irides, blood red; claws, pale red; inside of mouth, reddish fleshy."

674.—Dendrocitta rufa, *Scop.*

The Thayetmyo specimens sent belong to the somewhat larger-billed and darker race of this species. Southern Indian birds seem generally rather smaller, paler, and conspicuously smaller-billed. Captain Feilden notices that the irides are dark brown. Mr. Oates says that the species is common about Thayetmyo, and he gives the colors of the soft parts as follows:—

"Bill, black, purpurescent towards the base, and flesh-colored at the gape; inside of mouth, reddish fleshy; eyelids, grey; iris, pinkish hazel; legs and feet, black; claws, horny."

678 *bis.*—Crypsirina varians, *Lath.*

In writing of *C. cucullata* Mr. Oates remarks: "I once had a shot at a bird with a similarly shaped tail, and much the same size. It appeared to be jet black all over; unfortunately I missed it: what could it have been?" I have no doubt that this was *Crypsirina varians*, Latham, of which I have fine specimens from the neighbourhood of Rangoon and again from various localities in Northern Tenasserim. When I say *varians*, I mean a bird exactly of that type. I have no Javan specimens to compare it with, and the Burmese bird may prove to differ in some minor particulars sufficiently to warrant its specific separation.

Looking to what Mr. Oates says, and to its having been obtained by Colonel Phayre in Tonghoo, we shall have to add *Crypsirina varians* to our list of Upper Pegu birds.

The following are dimensions recorded in the flesh, and description taken from birds procured in Tenasserim:—

Length, 12·8 to 13·5; expanse, 13·75 to 15; wing, 4·37 to 4·75; tail, from vent, 7·5 to 8·25; feathers next the central tail

feathers about 1·3; the next pair about 2·4; the next about 3·8; and the external pair of all about 5 inches shorter than the central and longest pair; tarsus, 1·05 to 1·15; hind toe and claw about 0·8; bill, from gape, 1·0 to 1·1; from margin of frontal feathers straight to tip about 0·8. The sixth primary, the longest; the fifth, a hair's breadth shorter; the fourth, 0·1; the third, 0·35; the second, 1·0; and the first, 2·1 shorter than the longest. Weight, 1·75 to 2 oz.

Bill, legs, feet, and claws, black; irides, turquoise blue, darkening towards pupil, where it is almost ultra-marine.

A broad velvet black band covers the base of the lower mandible, the lores, and the front of the forehead. The whole of the rest of the bird, except the quills and rectrices, a dark metallic green, much the same kind of color as in *Calornis*, and with more or less of a bronzy tinge, most strongly marked on the rump and upper tail coverts and on the abdomen. The tibial plumes, vent, and lower tail coverts are a deep brown, almost wanting any trace of the metallic lustre. The primaries are black, with a slight green metallic lustre on the outer webs. The secondaries and tertiaries also black, but with the same dark green metallic lustre on the outer webs and tips that is exhibited by the rest of the upper surface of the bird, and with more or less of green lustre on the inner webs also. The tail, black; the central tail feathers, expanded into a broad racquet shape at their tips, and all of them more or less suffused with a dark green metallic lustre, most marked towards the outer webs of the lateral feathers towards their bases.

Subsequently Mr. Oates remarked: "The bird referred to as the one shot at unsuccessfully was undoubtedly, as you surmised, *C. varians*. An adult female in splendid plumage, which I lately shot in Pegu town, had the iris red with a beautiful outer ring or sclerotic of blue (?); eyelids thickly feathered, with the exception of a small portion low down, which is plumbeous. Bill, legs, and claws, black; inside of mouth, flesh color; ovaria, minute; food, entirely insects.

"When shot it was thoroughly overhauling the outer branches of a Mango tree, and while doing so uttered a remarkably loud and disagreeable note."

678 *ter*.—Crypsirina cuculata, *Jerdon*.

Mr. Oates says: "This is a common bird for twenty miles round Thayetmyo; it seems very local, but it may extend north some distance beyond the frontier. It goes singly or in pairs; occasionally I have seen as many as six together; it wanders from tree to tree, much as *Dendrocitta rufa* does. It was certainly not breeding on the 11th May, when I shot several specimens

and I have no idea when it does breed. Birds that I measured have varied as follows:—

"Length, 12 to 12·1; expanse, 12·5 to 12·7; tail, from vent, 7 to 7·8; wing, 4·08 to 4·2; bill, from gape, 0·78 to 0·9; tarsus, 1·0 to 1·1.

"In the old birds the irides are blue; the eyelids, leaden; the whole bill, black; the legs and claws, dark brown; the inside of the mouth, flesh color. In what Mr. Hume says are the young birds, the basal portion of the bill is orange, and so are the edges of the eyelids and the inside of the mouth."

This species was first described by Dr. Jerdon, Ibis, 1862, p. 20.

The whole of the chin, throat, cheeks, ear coverts, lores, forehead, crown, and occiput, black; the extreme tip of the chin, a spot at the base of the lower mandible, the lores, a narrow spot under the anterior half of the eye, and a narrow frontal band, velvet black; the rest with a dull green metallic lustre; a dull white line, narrow across the throat and widening somewhat on the nape, sharply defines the black of the head. The breast, abdomen, vent, flanks and lower tail coverts, the back, scapulars, upper tail coverts, lateral tail feathers, tertiaries, and all but the greater primary coverts, a pale delicate brownish or dove grey; central tail feathers, winglet, primaries, their greater coverts and secondaries, dull black; the central tail feathers paling somewhat towards their bases, especially on their outer webs. The secondaries, paler, more or less broadly margined with white or greyish white on their outer webs and tips, and paling on the inner webs towards their margins; wing lining and axillaries, silky, very slightly greyish or brownish white; the central tail feathers, somewhat abruptly widened out on both webs towards the tips: three inches from the tips they are only about 0·5 wide, while half an inch from the tips, where they are widest, they are 1·3 wide. They widen out more gradually on the inner, and much more suddenly on the outer, web. The tail feathers, ten in number, are very much graduated, all but the central pair normally shaped. The pair next the central ones are 1·4; the next pair, 2·5; the next pair, 3·5; and the exterior tail feathers, 4·7, or thereabouts, shorter than the central ones.

The fourth, fifth, and sixth primaries are equal and longest; the third and seventh, about equal; the second, about 0·75; and the first, about 1·75 shorter than the longest.

The interior margins of the quills albescent towards their bases on the lower surface of the wings.

In the young birds there is no hood; the lores, ear coverts, and chin are blackish brown, and the top of the head is darker brown. Then there is no white line round the neck; the grey of the plumage is duller and dingier; and quills and central tail feathers, altogether duller-colored.

Dr. Jerdon says: "I found this neatly plumaged little Magpie not rare at Thayetmyo in Upper Burmah. It was generally seen singly, now and then in pairs; wanders about a good deal in low jungle, and feeds on grasshoppers, locusts, mantides, and the like. I have seen it catching white-ants, as they issued from their nest in the winged state, with considerable dexterity, returning usually to the same perch. It breeds early, I imagine, for I killed young birds in June. They differ from the old ones in having the hood dusky ashy, instead of black. A native shikaree assured me that it occasionally perched on the backs of cattle to devour the insects that often infest them."

683 *bis*.—Sturnopastor superciliaris, *Blyth*.

Mr. Oates says: "I hope to be able to send you a skin soon; I have none by me now. The bird is very common at some periods of the year, but it is now (1st October) two or three months since I saw one."

Fortunately, I have other specimens from Upper Burmah, and can describe the species. It is very close to our common *Sturnopastor contra*; it only differs in being on the average slightly smaller, with slenderer tarsi and smaller feet, and withal having a decidedly larger bill. The whole forehead is white or yellowish white; there is much more white above the eye than in *contra*; and all the feathers of the crown have a conspicuous narrow white shaft stripe. I do not think that there are any other constant points of difference between this species and our common Indian one.

684.—Acridotheres tristis, *Lin*.

Specimens from Thayetmyo appear quite identical with others from various other parts of India.

Mr. Oates says: "This species is common all the year through; it keeps near villages and houses, and only goes into the jungle to feed."

688 *bis*.—Temenuchus burmanicus, *Jerdon*.

This species was first described by Dr. Jerdon from Thayetmyo, (Ibis, 1862, p. 21). He then said in regard to it: "This Mynah is somewhat aberrant, being allied in its coloring and less robust form to *Sturnia*, but approaching *Sturnopastor* in its red bill and habits. It is a ground Mynah, of familiar habits, feeding in the compounds and about villages in Upper Burmah, and breeding in holes in old trees. At the pairing season it is generally in pairs; afterwards small flocks of them are seen together, and many consort together in the same tree. It is rather a silent bird, but has the usual Mynah-like call when it takes wing. It feeds chiefly on insects."

Mr. Blyth remarked (JOURNAL, ASIATIC SOCIETY, 1862, p. 342): "A fine species approaching to *Acridotheres* in size, the markings of its wings and tail, and also in having the skin bare under and behind the eye. Length about 9·5, of closed wing, 4·5; and tail, 3; bill to gape, 1·25; and tarsi 1·25. Culmen of bill compressed and elevated above the nostrils. Head, cheek, and throat, white. The back and scapularies, pure ashy, and the lower parts, vinaceous, passing to white on the lower tail coverts; wing primaries, white at base; the remainder, black; secondaries and tertiaries with their coverts bronzed, and having a narrow black margin to each feather; underneath, the wing is white on the anterior half, and dusky for the remainder; middle tail feathers brown and black margined, like the tertiaries; the rest, black; each feather more largely white-tipped to the exterior. Bill, coral-colored, with the basal half of the lower mandible and below the nostrils, black; legs and claws, bright yellow. Procured by Colonel Phayre at Tonghoo, also by Dr. Jerdon at Thayetmyo, and at Arracan by Mr. W. T. Blanford. It is also evidently the species to which Major Tickell directed my attention, as a White-headed Mynah, common about Rangoon, and which he had only observed in that vicinity; but I did not chance to meet with it."

Mr. Oates remarks: "This species is common throughout the year; it is more of a Tree Mynah than the others. It is very fond of searching the flowers of the Cotton tree *(Salmalia malabarica)* for insects. I have seen fully a hundred of these birds on one of these magnificent trees at one time. It also feeds on the ground in large flocks. The dimensions of several that I measured were as follows:—

"Length, 9 to 9·25; expanse, 14 to 14·8; tail, from vent, 2·85 to 3·1; wing, 4·4 to 4·75; bill, from gape, 1·1 to 1·24; tarsus, 1·2 to 1·36. Irides, dark brown; about one eighth of an inch of the lower part of the iris, yellow,—this has been constant in all the specimens I have examined; eyelids and naked skin of face, slaty brown; the gape, the basal half of the lower mandible, and the base of the upper mandible, black; the remainder of the bill, dull red; inside of mouth, dark blue; legs, feet, and claws, dusky orange."

A fine specimen has the entire head, chin, throat, and upper breast, white. The whole of the feathers on the top and back of the head, elongated, very narrow, and pointed; the white not pure, except at the bases of the feathers, but with a very faint brown tinge; the whole of the back, scapulars, rump, and upper tail coverts, brownish grey, paling on the rump and upper tail coverts; the lesser coverts about the shoulder of the wing, darker grey; winglet and primaries, black, the latter paling to brown at their tips, and with a white band at their bases, narrow on the first two or three primaries and gradually widening; primary greater coverts, white; the first and second have some blackish brown

on the inner webs; the third and fourth, nearly entirely black on the outer webs; the rest of the greater coverts, the median coverts, the secondaries, and tertiaries, hair brown, bronzed, the latter on both webs, the rest on the exterior webs, but leaving on each feather a very narrow dark brown margin to which the bronzing does not extend; central tail feathers, brown, bronzed, but more faintly than the tertials and secondaries; lateral tail feathers, black; the pair next the centre, with a white spot at the tip; the next pair, regularly tipped; the next, more broadly, and so on to the external pair, which have nearly the terminal one inch white; the breast and centre of abdomen, pale vinaceous; flanks and sides, browner and greyer; region of the vent, more or less fulvous; lower tail coverts, slightly sullied or yellowish white; edge of the wing, axillaries, wing lining, and basal portion of primaries, pure white; lower surface of quills, pale, glossy, hair brown; the first primary is spurious, less than half an inch in length, the second large primary is the longest, the third slightly shorter, the fourth about equal to the first long primary; the tail is a good deal rounded; the exterior tail feathers, from 0·5 to 0·75 inch shorter than the central ones.

Mr. Oates sends one specimen obtained in the Pegu Hills, which he considers to belong to a distinct species, but which I think is merely the young of the present one. It is of precisely the same size, and had the soft parts colored very similarly, but it has the whole of the head, neck, and throat, where these are white or slightly sullied white in the adult, thoroughly dirty or suffused with a dingy grey brown tint. The interscapulary region is browner, and the breast, upper abdomen, and flanks have a somewhat deeper vinaceous tinge; in other respects the birds are identical. He adds: "This Mynah is conspicuous by its absence from the plains of Lower Pegu, where *tristis* and *superciliaris* are both common.

689 *quat.*—Temenuchus nemoricolus, *Jerdon.*

This species was originally described (Ibis, 1862, p. 22) by Dr. Jerdon in the following terms:—

"Head, nape, face, and whole lower parts, white; the back of the neck, back, and wings, ashy, tinged with ferruginous on the upper tail coverts; quills, black; secondaries, the same, edged with grey externally; winglet and a spot on the greater coverts, pure white; thigh coverts, tinged with rusty; tail feathers, blackish on the inner web, more or less grey externally, and tipped with chestnut, increasing in extent from about $\frac{1}{8}$ inch on the middle feathers to $\frac{3}{4}$ inch on the outer tail feathers; bill, blue at the base, then green, with the tip yellow; irides, glaucous white; legs, dull yellow; length, $7\frac{3}{4}$ to 8; expanse, $12\frac{1}{2}$; wing, 4; tail, $2\frac{1}{2}$; bill, $\frac{5}{8}$; tarsus, $\frac{7}{8}$.

"This is a typical *Sturnia*, and, like my *S. Blythii* and *S. malabarica*, keeps entirely to the forest and to the tops of the trees. It has a pleasant warbling song."

Dr. Jerdon gave me what I understood from him were the type specimens of both this and the preceding species; my specimens do not agree at all well with his description. In my bird the forehead and crown, chin, throat, and ear coverts are pale buffy white, slightly more buffy on the three latter; occiput, similar, but slightly greyer; back of the neck, brownish grey; back, scapulars, and lesser wing coverts, greyish brown; rump and upper tail coverts, fulvous or dingy buffy; quills, winglet, and primary greater coverts, dark brown; median coverts and secondary greater coverts, fulvous white; tail feathers, dark brown, the external pair, with most of the outer web and all but the central pair, broadly tipped with rufous; breast and upper abdomen, pale brownish white; lower abdomen, fulvous white; tibial plumes and lower tail coverts more rufescent; wing lining and axillaries, white, the former tinged somewhat rufescent.

My specimen may be somewhat faded, as it is dated Thayetmyo, 1861-62; but Dr. Jerdon's description must, I think, be wrong about the winglet, and the spot on the greater coverts being white.

Neither Mr. Oates nor Captain Feilden appears to have met with this species.

693.—Eulabes javanensis, *Osbeck*.

I have already (Stray Feathers, 1874, p. 254) explained the insuperable difficulty that appears to me to exist in separating *javanensis* and *intermedia*, and it will be sufficient here to say that the Upper Pegu birds, while they have bills a great deal larger than the Raipore and Sumbulpore birds, correspond in this respect fairly well with those from Sikhim, but have smaller bills than those from the Tipperah Hills and from Malacca.

Mr. Oates says: "Very common on the Pegu Hills, and appears to be equally so on those of Arracan. I have heard of its being seen near the Irrawaddy, but I must say I doubt whether it ever really is found in the plains at all.

"The sexes are of much the same size. The specimens I measured varied as follows:—

"Length, 11·25 to 11·85; expanse, 19·75 to 20·5; tail, from vent, 3 to 3·5; wing, 6·3 to 6·5; bill, from gape, 1·47 to 1·53; tarsus, 1·35 to 1·42.

"The bill is coral red, yellow at the tip; the inside of the mouth, fleshy; the irides, brown; eyelids, well-feathered, naked skin, in general, deep yellow; more or less tinged with orange on the face, and purer, and varying in depth of color on the lappets; the uppermost corner of the lappet near the eye, tinged with blue; legs, feet, and claws, yellow."

694.—Ploceus baya, *Blyth.*

Specimens from Thayetmyo agree well with others from all parts of India.

Mr. Oates says: "I never got two birds with the soft parts of the same color. I wish you would clear up the whole matter by explaining how and when the changes take place.

"This is a very common bird with us. Its nest is to be seen everywhere just now in September. Specimens that I measured in the flesh varied as follows:—

"Length, 5·6 to 6; expanse, 8·5 to 9; tail, from vent, 1·9 to 2·2; wing, 2·7 to 2·8; bill, from gape, 0·68 to 7; tarsus, 0·8 to 1·0."

As regards the soft parts, I cannot quite explain all the changes. The legs and feet do not appear to me to vary perceptibly. The eyelids are always, I think, grey; in the breeding season perhaps a little bluer, in the cold-weather a little more fleshy. In the breeding season the bill is black, except the gape, which is yellow; in the winter it is pale, brownish, horny yellow in some, more dusky in others, and acquires, I think, somewhat more of a pinkish tinge in the spring.

I wish to call attention here to *Ploceus megarhynchus*, nobis, Ibis, 1869, p. 356. I have now five specimens of this bird, two from the terai below Nynee Tal in winter plumage, and two from Dacca, and one from the terai below Darjeeling, nearly in breeding plumage. The bird is quite distinct from *baya*, which it most resembles, and *a fortiori* from *bengalensis*, from Blyth's *striata*, which is supposed to be identical with *manyar*, Horsfield, and from *hypoxanthus*, Daud. In both winter and summer plumage it appears to resemble *baya*; but it is altogether a larger and more massive bird, with a wing from 3 to 3·2 at least, a bill at front 0·7 to 0·8, with an enormously stout tarsus, 0·9 to 0·95 in length, and, judging from my specimens, I should say weighing quite double as much as *baya*. I feel almost confident that specimens of this will be found in the British Museum, as although *baya* is the common species below Darjeeling, I have obtained a specimen of *megarhynchus* also from this locality, and Mr. Hodgson is sure to have done the same; whether he ever published any name for it I cannot say. The late Dr. Jerdon at once recognized the distinctness of this species. Directly I showed it to him he said he had never seen anything like it; it will probably be found to occur all through Eastern Bengal and the entire Sub-Himalayan region east of the Ganges. It was plentiful enough about Kaladoongee and Jewlee, below Nyneetal, in December 1866, when I shot it there, without however unfortunately at the time sufficiently recognizing its distinctness.

695.—Ploceus manyar, *Horsf.*

Thayetmyo birds appear to be identical with Indian ones; whether these latter, which Blyth named *striatus*, are really identical with Javan specimens I cannot say. They seem to be generally so considered at home, and I therefore adopt Horsfield's name.

Mr. Oates says: "This species is scarcely less common about Thayetmyo than *baya*. The following are the measurements of a female shot on 7th December:—

"Length, 5·4; expanse, 8·3; tail, from vent, 1·85; wing, 2·65; bill, from gape, 0·63; tarsus, 0·91.

"The irides were brown; the eyelids, grey; the bill, yellowish horny, darker on the upper mandible; legs, fleshy; claws, pinkish."

696.—Ploceus bengalensis, *Blyth.*

Mr. Blanford states that he obtained this species at Thayetmyo. Four closely-allied species, therefore, of this one genus occur in this single locality.

696 *ter*.—Ploceus hypoxanthus, *Daud.*

Rangoon and Thayetmyo specimens appear to be identical with the Javan bird which Horsfield called *philippinus*, but which is, I believe, distinct, and more nearly allied to *baya*. The Javan bird, says Mr. Strickland (JOURNAL, ASIATIC SOCIETY, 1844, p. 945), "is bright yellowish above; back, striped with dusky; wings, dusky; each feather, margined whitish; tail, dusky, narrowly tipped with whitish; beak, shorter than in *bengalensis*; the cheeks and throat, blackish, with a yellow streak dividing that on the lower jaw; lower parts, deep yellow."

This brief description appears to agree sufficiently well with our Burmese birds, but these *Ploceï* require, it seems to me, to be carefully overhauled.

Mr. Oates remarks: "In the Thayetmyo District this species is not common, although it is occasionally met with, but at Poungday in the Prome District I found it very abundant. The large plains of elephant grass near that town, the first indications that you are on the limits of the dry region, seem well adapted to the bird. I saw several dozens in one morning's ride. This was in June, and they were apparently building. I do not know if the male assumes the dull brown plumage in the winter months, but you certainly never see the yellow bird after October. It either changes plumage, or migrates southwards. Later I took the eggs and nest which I have described in NESTS AND EGGS, PT. II. I shot a pair at Palow on the 19th September. The *male* measured—

"Length, 5·7; expanse, 8·5; tail, from vent, 2·1; wing, 2·6; bill, from gape, 0·6; tarsus, 0·8.

"The bill was deep black; the under side of the lower mandible, dark horny; the inside of the mouth, dusky fleshy; the irides, brown; the eyelids, grey; legs, pinkish fleshy; claws, horny.

"The *female* measured—

"Length, 5·2; expanse, 7·7; tail, from vent, 1·85; wing, 2·3; bill, from gape, 0·54; tarsus, 0·78.

"The lower mandible and the edges of the upper were pale fleshy horny; the remainder of the upper mandible, dark brown; the inside of the mouth, fleshy; the rest as in the male."

In this species the bills are shorter and proportionally deeper than in any of our other Indian birds species.

In breeding plumage the male has the forehead, top, and back of the neck, rump, and upper tail coverts, breast, abdomen, sides, flanks, and lower tail coverts a bright gamboge yellow, only the central portion of the upper breast just below its junction with the blackish throat slightly tinged with brownish orange. The feathers of the back and scapulars are dark brown, dusky at base, and broadly fringed with dark yellow. The wings are hair brown, all the feathers narrowly margined with white. In some specimens the brown is almost black, and the longest tertiary and one or two of the later secondaries are margined with pale yellow, instead of white. The tail is hair brown, in some blackish brown, excessively narrowly margined (chiefly at the tips and on the outer webs towards their bases) with yellowish white. The lores, cheeks, ear coverts, chin, and throat are black; the lowest feathers of all, where the black meets the yellow, are more or less tipped with that color; traces of a narrow, yellow, mandibular stripe, from the inferior angle of the lower mandible, more apparent in some specimens than in others; axillaries, pure white or nearly so; edge of the wing and wing lining, very pale fulvous or buff.

I have never myself shot this bird, and do not know therefore what the non-breeding plumage of the male may be, nor do I know whether the female assumes the yellow plumage. The female shot by Mr. Oates at the same time as the male in breeding plumage, and which may be a young one, though I do not think so, is, except so far as the bill is proportionally broader and deeper, an exact miniature of the female *Ploceus baya*, and agrees with this feather for feather.

698.—Munia atricapilla, *Vieil.*

Mr. Oates says: "This species is common; it affects elephant grass and swampy places in preference."

Unfortunately the only specimen sent by Mr. Oates was entirely destroyed. I have no Upper Pegu specimens by me, but examples from Tenasserim do not differ from Indian ones.

699.—Lonchura punctulata, *Lin.*

Mr. Oates says: "This is by far the commonest *Munia* of these parts, being found everywhere except on the hills. Grass and paddy lands are their favorite haunts. Specimens that I measured varied as follows:—

"Length, 4·7 to 4·8; expanse, 6·9 to 7; tail, from vent, 1·6 to 1·8; wing, 2·1 to 2·2; bill, from gape, 0·41 to 0·46; tarsus, 0·61 to 0·63.

"Irides, deep reddish brown; eyelids, plumbeous; bill, bluish black, paler and somewhat plumbeous on lower mandible; inside of mouth, dusky; legs, plumbeous; claws, horny."

Specimens sent by Mr. Oates were unfortunately destroyed; I have little doubt that the species is correctly identified; at the same time Tenasserim specimens are not, as I mentioned (STRAY FEATHERS, Part II, p. 480) identical with Indian ones.

702.—Lonchura acuticauda, *Hodgs.*

A single specimen, a young bird, sent by Mr. Oates, appears identical with others from Sikhim.

Mr. Oates remarks that it is comparatively common about Thayetmyo.

706.—Passer indicus, *J. & S.*

Mr. Oates remarks: "This is the common House-Sparrow of the country, and is very common. Although these birds breed all the year through, nesting operations are carried on in a very desultory way, except in February and March."

708 *bis.*—Passer flaveolus, *Blyth.*

This pretty Sparrow belongs to the same group as *cinnamomeus*, Gould, of the Himalayas, and *rutilans*, Tem., of Japan. It was first described by Mr. Blyth (JOURNAL, ASIATIC SOCIETY, 1844, p. 946).

He remarked: "With a close resemblance in its markings to the Common Sparrow, except that the back is not streaked, this pretty species is distinguished by its smaller size and predominating yellowish plumage. The bill somewhat inclines to be slender, and in this respect, as well as in the absence of all streakiness above, some approach is shown to *Gymnoris flavicollis*. In the male the top of the head, nape, and rump, are of a dull light green, inclining to yellowish on the forehead," (I should say greenish grey, with a narrow pale frontal band); "the cheeks and sides of the forehead are tolerably bright yellow, and the rest of the under parts are sullied yellow: streak from eye to mouth, and the usual patch on the throat and foreneck, deep black; sinciput," (I should say broad streak from posterior angle of

eye to nape), "mantle, and anterior third of wing, chestnut bay, passing to maroon at the bend of the wing; there is a whitish bar on the wing, formed by the tips of the smaller range of coverts; and the rest of the wing, with the tail, is dusky," (I should say pale hair brown); "the feathers margined with yellowish brown," (I should say yellowish white); "bill, black," (in the breeding season); "and legs, brown. The female is nearly uniform pale brown above, darker on the mantle, and having the whitish bar on the wing somewhat narrower; supercilium, cheeks, and under-parts, dull yellowish; and bill, light brown. Length 5, or nearly so; of wing $2\frac{3}{4}$, and tail 2; bill to forehead $\frac{7}{16}$ inch, and tarsi $\frac{5}{8}$ inch; from Arracan, where procured by Captain Phayre."

Mr. Oates remarks: "This species is nearly as common as *indicus*. It is, however, more of a Bush Sparrow, generally building its nest in trees; one pair indeed built a nest in my house, but as soon as it was finished the birds left the place."

708 *ter.?*—Passer assimilis, *Walden.*

In the AN. AND MAG. of NATURAL HISTORY for 1870, p. 218, Lord Walden describes the above species, which, if a good one, is entitled to a place in our list. The description is so brief that it is impossible to pronounce positively; but so far as it goes, it would apply fairly well to the young of *flaveolus*.

Lord Walden says: "Resembles *P. cinnamomeus*, Gould, but differs by being smaller, by having a slenderer and smaller bill, and by having the cheeks and sides of the neck pure white, and the breast, flanks, and ventral region ashy grey. Wing, $2\frac{5}{8}$ inches; tail, $1\frac{6}{8}$, or nearly $\frac{1}{2}$ inch shorter than in *P. cinnamomeus*; from Tonghoo."

710.—Passer montanus, *Lin.*

Though Mr. Oates does not appear to have observed it, several specimens of this species have been sent me from Upper Burmah, where, however, it is not, I believe, a permanent resident, as in Arracan and further south in Burmah, but merely a seasonal visitant.

719.—Citrinella fucata, *Pall.*

Occurs as a cold-weather visitant at Tonghoo, and hills between Tonghoo and Thayetmyo. Mr. Oates quite recently obtained a specimen a good deal further south, at Wan, in Lower Pegu.

719 *bis.*—Citrinella rutila, *Pall.*

Also occurs as a straggler during the cold-season in Upper Pegu, as well as in Tenasserim, Lower Pegu, Upper Burmah, Assam, and the Bhootan Dhooars and Sikhim.

This bird is not included in Jerdon, and I must therefore describe it from a pair killed at Pahpoon on the 17th January.

Male: Length, 6·25; expanse, 9; wing, 2·9; tail, from vent, 2·62; tarsus, 0·65; weight, 0·55 oz.

The *female* is barely perceptibly smaller.

The bill is brown, paler on the lower mandible; legs and feet, fleshy.

In the male the entire head and neck all round, back, rump, lesser and median wing coverts and all but the very longest tail coverts, bright chestnut; most of the feathers of the throat, some of those of the upper parts, narrowly and inconspicuously fringed with a paler color; the fringe is so narrow in this specimen that it is impossible to say whether it was yellow or white. The longest upper tail coverts are brown, tinged with chestnut. The tail feathers are hair brown. The exterior tail feather on either side has a streak about an inch long and $\frac{1}{8}$ inch broad, white or greyish white, which commences at the tip, runs down the margin a little way, and then turns down slantingly towards the shaft, where it ceases. The next feather has a minute greyish white spot at the tip. All the feathers have a barely perceptible greenish olive tinge at the extreme margins of the outer web. Winglet, quills, and primary greater coverts, hair brown; tertiaries, tinged chestnut on the outer web; the rest, margined on their outer webs with pale olivaceous yellow; secondary greater coverts, like the tertiaries, but more strongly suffused on the outer webs with chestnut; lower parts, breast to lower tail coverts, pale clear yellow, streaked, dashed, and tinged on the sides and flanks with olive green.

The female has the lores, cheeks, ear coverts, chin, and throat, a slightly fulvous white, with an obscure streak of dull brown spots running down from the base of the lower mandible on either side of the throat; the breast and the rest of the lower parts much as in the male, but slightly paler. The sides of the neck behind the ear coverts, pale chestnut. The feathers, fringed with greenish ashy; and it is this color alone that is seen till the feathers are lifted. A narrow dark brown inconspicuous supercilium runs backwards from above the nostrils over the eye. The forehead, crown, and occiput, chestnut; most of the feathers, with a blackish brown shaft spot towards the tip, and broadly fringed with pale, dingy yellow or yellowish white. The mantle, including the lesser and median coverts, the feathers mostly brown, broadly fringed with pale yellowish olive, and here and there tinged with chestnut. Rump, pale chestnut; the feathers, narrowly fringed yellowish. Upper tail coverts and tail, hair brown; the former fringed at the tips, the latter at the margins towards their bases, with pale yellowish olive or dull greenish yellow. The tertiaries and their own and the secondary greater coverts,

dark hair brown, broadly margined on their outer webs, the two former with rufous, the latter with greenish fulvous. The rest of the quills, the primary greater coverts, and the winglet, a somewhat lighter hair brown; and all the feathers conspicuously margined on their outer webs, but not nearly so broadly as the feathers already mentioned, with greenish albescent.

This is the only female we secured, and, though it was carefully sexed, I do not feel quite certain that it was not a young male.

723.—Euspiza aureola, *Pall.*

Though neither Captain Feilden nor Mr. Oates appears to have obtained this species, I have myself seen a specimen killed near Thayetmyo, and Sir Arthur Phayre obtained it in the neighbourhood of Tonghoo. It must, therefore, be included in our list.

755 *bis*.—Mirafra microptera, *Hume.*

This species has been already characterized (Stray Feathers, 1873, p. 483). It is the same species as Dr. Jerdon mentions under the name of *affinis* as being common about Thayetmyo. Captain Feilden says: "This is certainly the commonest Lark about here."

Mr. Oates remarks: "Very common, being seen all the year through in every field and on every road-side. It is so tame that it will hardly get out of your way. I found the nest on the 20th July, and have described it, as well as the eggs, in Nests and Eggs, Part II.

"The dimensions of the female that I measured were as follow:—

"Length, 5·5; expanse, 9; tail, from vent, 1·55; wing, 2·8; bill, from gape, 0·55; tarsus, 0·82.

"The irides, hazel; lower mandible and margin of upper, very pale pinkish fleshy; the remainder of the upper mandible, dark horny; legs, light fleshy; claws, pinkish."

762.—Alaudula raytal, *Blyth.*

Specimens from Thayetmyo, from the sandy banks of the Irrawaddy and its affluents, are precisely similar to those from similar localities on the Ganges and its affluents.

This bird must not be confounded with *Alaudula Adamsi*, nobis, (Ibis, 1871, page 405, and Stray Feathers, 1873, page 213), which is the Sand-Lark of the Indus and its affluents, which is perfectly distinct, and, like *raytal*, is a permanent resident of the localities in which it occurs. Some one, I forget who, has been confounding *Adamsi* with *pispoletta*, Pallas; but I have specimens of this both from Europe and North-West India, and it is perfectly

distinct; in fact, *pispoletta* is much nearer *Calandrella brachydactyla*, only it has a much shorter and more conical bill, and has the breast rather conspicuously marked with striæ.

Of the present species, *raytal*, Mr. Oates remarks: "This is a very common bird on all sand-banks, but I have never seen it away from the Irrawaddy; it runs very quickly, and in poling up the river in a boat they seem to like to keep up with one—I fancy to pick up insects which are disturbed by the falling sand. At the close of March dissection showed clearly that they were about to breed, but unfortunately I was away from Boulay in April, or I should have been sure to secure nests. The dimensions of males that I measured were as follow:—

"Length, 5·4 to 5·43; expanse, 10·1 to 10·2; tail, from vent, 1·8 to 1·85; wing, 3·15 to 3·2; bill, from gape, 0·58 to 0·62; tarsus, 0·75 to 0·77; legs, fleshy yellow; claws, pale horny; bill, horny, with a tinge of green; the gape, yellowish; the tip, dusky; irides, brown; eyelids, bluish grey; inside of mouth, fleshy."

771.—Treron nipalensis, *Hodgs.*

Mr. Oates remarks: "I procured a pair on the Pegu Hills, where it or the next species, possibly both, for I did not discriminate them, are common.

"A *male* measured: Length, 10·8; expanse, 16·74; tail, from vent, 3·4; wing, 5·75; bill, from gape, 0·97; tarsus, 0·95; spread of foot, 2·0.

"A *female* measured: Length, 10·6; expanse, 17·5; tail, from vent, 3·2; wing, 5·5; bill, from gape, 0·93; tarsus, 0·91; spread of foot, 1·98.

"The coloration of the soft parts in the sexes do not differ. The bill is bright red at the base, yellowish on the culmen, and bluish white on the corneous portion; inside of mouth, reddish fleshy; eyelids, bright greenish blue; iris, blue, with a pale orange sclerotic (?); legs, bright red; claws, pale horn; the bare skin of the face as in the eyelids."

In general appearance and coloring of plumage this species is so close to *Osmotreron Phayrei* that I have repeatedly known the two to be confounded, and yet they can be discriminated at a glance.

In the *first* place the corneous portion of the bill in this species is much larger than in *Phayrei*, so much so that while in this latter a considerable low, ceral space intervenes between the frontal feathers and the corneous portion of the bill, this latter in *Treron* runs right back to these feathers.

In the *second* place *Treron* has a huge, bare space round the eye, which *Phayrei* has not.

In the *third* place Treron has no orange on the breast.

In the *fourth* place the base of the upper mandible from nostril to gape in *Treron* is bright red; in *Phayrei*, blue.

The following are exact dimensions, as well as colors, of soft parts recorded at different times from a number of fresh specimens. The sexes do not differ appreciably in size:—

Length, 10·46 to 11·0; expanse, 17 to 18; tail, from vent, 3·46 to 3·75; wing, 5·62 to 5·76; tarsus, 0·75 to 0·9; bill, from gape, 0·9 to 0·99: weight, 5 to 9 oz.; average, 6 oz.

The legs and feet vary from lake pink to coral red; the orbital skin is pea-green; the irides vary from bright orange to yellowish red, with an inner deep blue ring more or less apparent. The gape and base of upper mandible to nostrils, bright red; the rest of the bill, pale yellowish or greenish white, tipped greenish.

773 *bis*.—Crocopus viridifrons, *Blyth*—(Journal, Asiatic Society, Bengal, 1845, Vol. XIV, p. 1849).

Mr. Blyth described this first from Tenasserim, but it is most abundant in Upper Burmah, about Thayetmyo. He characterized the species, which is after all only an intensified form of *phœnicopterus*, as follows:—

"*Viridifrons* is distinguished by having the anterior half of the head and the medial, (I should say *basal*,) portion of the tail of the same as bright yellowish green as the breast, though somewhat less fulvescent, (I should say *golden*,) that of the tail being *well defined*, and contrasting strongly both with the grey tip and also with the grey coverts impending the tail, so that this green appears as a very conspicuous broad caudal band; the throat also is not weaker-colored as in *T. phœnicopterus*."

I may add that the grey of the lower parts is purer, the neck, as a rule, brighter-colored all round, and the lilac shoulder-patch generally greater in extent.

Captain Feilden remarks that "the birds of this species living in single trees or clumps in clearings are larger; those in dense jungle, smaller." In length the larger birds vary, according to him, from 12·5 to 13·5 in length, and the lesser ones from 11·25 to 12·12; but I remark that of six of the larger race that he measured five were males, while out of six of the smaller five were females, and I apprehend that the difference in size is due to sex rather than to habitat. The wings vary from about 6·9 to 7·5.

Mr. Oates remarks: "This species is common throughout the plains during the whole year. I have, however, never found its nest. I have never received it from the Pegu Hills, nor from those of Arracan. It is essentially a bird of the plains, as *Osmotreron Phayrei* is of the hills. The two are never found

together, nor do they ever seem to trespass on each other's domains. These Pigeons are gregarious, and strictly frugivorous. It is astonishing how they can swallow the larger fruits which I have found in their stomachs whole. A male measured—

"Length, 12·8; expanse, 23; tail, from vent, 4·9; wing, 7·5; bill, from gape, 1·0; tarsus 1·0.

"The iris was blue, with an outer circle of pink; eyelids, grey; soft part of bill, greenish; corneous portion, pale bluish white; feet, orange yellow; claws, bluish."

776.—Osmotreron Phayrei, *Blyth.*

This species can never be confounded with any of the others of this genus which occur within our limits.

The subjoined rough diagnostical table of all our species may be useful:—

I. Males with orange on the breast.	A. Strongly marked.	1. Entire head above and below, grey.	No red mantle in male.	*O. viridis*, Scop. (Tenasserim).
		2. Forehead and crown, green; occiput and nape, grey.	Ditto	*O. bicincta*, Jerd.
	B. Faint ...	1. Forehead, crown, and occiput, deep grey; bill, small.	Red mantle in male.	*O. Phayrei*, Bly. (Burmah.)
II. Males without orange on the breast.	A. Lower tail coverts bay or chestnut in males, mingled green, & white in females.	1. Forehead and crown, pale grey; occiput, scarcely tinged greyish.	Ditto	*O. malabarica*, Jerd.
	B. Lower tail coverts alike in both sexes, similar to those of female of preceding species.	1. Forehead, crown, and occiput, pale French grey; bill, large.	Ditto	*O. chloroptera*, Bly. (Andamans and Nicobars.)
		2. Forehead, chin, and throat, bright yellowish green; occiput, only, grey.	Ditto	*O. pompadora*, Gm. (Ceylon, Southern India.)

I have only to add to this that I have seen no second species, either from Ceylon or Southern India, which could stand as *flavogularis*, Blyth, as distinct from *pompadora*, Gm. If *flavogularis* be decided to be distinct, then *pompadora* does not, I think, occur in Ceylon; but *pompadora*, we know, was described from the drawing of a Ceylon bird, and though Mr. Gray

retains *flavogularis* as a distinct species, I myself think that there is no doubt but that it must be treated as a synonyme of *pompadora*.

Mr. Oates says: "I have procured this bird both in the Arracan and the Pegu Hills. As stated above, it is never found in the plains. It has similar habits to *C. viridifrons*, feeding in large flocks on fruits and wandering about a good deal in search of them. When shot, they seldom drop to the ground till their bodies have become cold; their feet appear instinctively to clasp a branch.

"I have no measurements of this species, except the lengths of two. A male from the Arracan Hills was 11·1, and a male from the Pegu Hills 11·7.

"The buff patch on the breast and the very different bill are sufficient to discriminate this from *T. nipalensis*, and I do not know why I should have confounded them."

I do not find that the sexes differ much in size; but some males are bigger than any females. The following are the dimensions and colors of the soft parts, which have been recorded at various times from numerous fresh specimens:—

Length, 10·75 to 11·75; expanse, 18·46 to 19·5; tail, from vent, 3·37 to 4·0; wing, 6·0 to 6·25; tarsus, 0·82 to 0·95; bill, from gape, 0·82 to 1·0; weight, 4·5 to 6 oz. The legs and feet vary from purplish pink to lake red; the irides have an inner ring, at times not very apparent, of deep blue, an outer one of salmon pink; the eyelids, bluish or pale plumbeous. The bill is pale bluish, the basal portion darker.

778.—Sphenocercus sphenurus, *Vigors*.

At the foot of the hills near Tonghoo Mr. Oates shot a Green Pigeon, which he identified (and to judge from his description, for he was unable to preserve the skin, correctly so) with the present species.

780.—Carpophaga ænea, *Lin.*

Mr. Oates remarks: "This species is a common bird, both in hills and plains, and equally common in the Arracan Hills."

793.—Turtur meena, *Sykes*.

I cannot understand why Mr. Gray unites *meena* with *rupicola*, Pall. In the first place, as already mentioned (LAHORE TO YARKAND, pp. 121, *et seq.*), I at one time fancied that *rupicola*, Pall., was a Pigeon and not a Dove, and identical with *rupestris*, Bonap. In the second place, supposing *rupicola*, Pall., to be equal to the oriental form of *auritus*, which oriental form divides itself

into two different races, *gelastis*, Tem., from Japan, and probably Eastern China, and *pulchrata* or *vitticollis*, Hodgson, from the Himalayas, still *mœna* is alike distinct from all of these, and is constantly distinguished from all of them by its uniform grey under tail coverts.

As I noticed in LAHORE TO YARKAND, p. 125, the grey coloring of the under tail coverts varies in shade, the more western birds, from Mahableshwar, for instance, having the coverts somewhat paler, and those from Tipperah and the Khasia Hills having them darker. The Thayetmyo birds are similar to those from Raipore and Sumbulpore, not quite so dark as those from the Bhootan Dhooars, the Khasia Hills, and Hill Tipperah, but a good deal darker than those from Mahableshwar and Mount Aboo.

Mr. Oates remarks: "This species is generally distributed, but is nowhere very common. Specimens of *males* measured: Length, 13·25 to 13·3; expanse, 21·3 to 22; tail, from vent, 5·4 to 5·6; wing, 7·1 to 7·4; bill, from gape, 0·92 to 0·97; tarsus, 1·06 to 1·15. A *female* measured: Length, 12·6; expanse, 20·5; tail, from vent, 5·0; wing, 6·6; bill, from gape, 0·98; tarsus, 1·12.

"In a female the bill was brown, with a vinaceous tinge on the basal half; the irides, orange; eyelids, pale blue, a circle surrounding them, and their edges red; legs, red; claws, black: of a male I noticed that the inside of the mouth was black."

795 *bis*.—Turtur tigrina, *Tem.*

Thayetmyo specimens are not typical; they are intermediate between *suratensis* and typical *tigrina*. I have already explained this (STRAY FEATHERS, 1873, p. 461, *q. v.*).

On what grounds Mr. Gray unites *chinensis* and *tigrina* I cannot say. Typical *tigrina* from Sumatra is a great deal more distinct from *chinensis* than it is from *suratensis*; every intermediate link may be found between the two latter, but *chinensis* not only entirely wants the dark shaft stripes, which even *tigrina* retains, but is a much larger bird, having, as far as my specimens go, a wing fully half an inch (and in many cases a great deal more) larger than any specimens of *tigrina* or *suratensis*, or the many intermediate forms that occupy the vast region lying between Assam and Sumatra.

Mr. Oates says: "This species is common everywhere in the plains; but I did not meet with it in the hills. It seems to breed at all times of the year; two eggs I took measured 1·21 by 0·88. They are, of course, pure white. They are generally placed within fifteen feet from the ground in Bamboo bushes or shrubs. A male measured: Length, 12·5; expanse, 17·2; tail, from vent, 5·7; wing, 5·5; bill, from gape, 0·9; tarsus, 1·0.

"The bill is black; eyelids, pale slaty, irides, reddish hazel; inside of mouth, fleshy; feet, purplish red; claws, dark horny."

796.—Turtur risorius, *Lin.*

A specimen sent by Captain Feilden appeared identical with Indian specimens. It does not appear to be common within our limits, for Mr. Oates says he procured only a single specimen.

797.—Turtur humilis, *Tem.*

A specimen sent by Captain Feilden appeared identical with Indian birds. Mr. Oates also sent one, but it was unfortunately destroyed. He says: "Very common. In March these Doves collect in immense numbers, and, I fancy, are more or less gregarious when breeding. As a rule, they are found in fours or fives."

798.—Chalcophaps indica, *Lin.*

Thayetmyo specimens appear identical with those from all parts of India, Tenasserim, the Andamans, and Nicobars.

Mr. Oates says: "I have found this species tolerably common in the Evergreen Forests of the Pegu Hills. I have also seen specimens in a collection made at Thayetmyo and its immediate neighbourhood."

803 *bis.*—Pavo muticus, *Lin.*

Mr. Oates sends no specimens and gives no measurements of this species, but he remarks: "It is uncommon in our limits. I know of only three places where it is found—in a patch of jungle near Myohla; in the valley of the North Nawing Nullah, about ten miles west of the main ridge of the Pegu Hills; and lastly, in the neighbourhood of the Duyindabo Police Thannah. This last place I know by repute only. There may possibly be other places where it is found. It has a great love for particular spots, and seldom leaves places it likes. It is likely enough to occur near Tonghoo along the banks of the Sittang. I failed to find it in any of the magnificent forests on the eastern slopes of the hills. Below Poungday, in the Tharawaddy Division, it is extremely common."

811 *ter.*—Euplocamus lineatus, *Lath.*

Mr. Oates says: "This species is very common in the Pegu Hills, as common indeed as the Jungle Fowl. In the plains it is met with sparingly, and only in ravines and broken ground. I think the two Arracan birds I send you are different in coloration

to the two Pegu Hill birds.* Can they be hybrids between *lineatus* and *Horsfieldii*?

"*Males* from the Pegu Hills that I measured varied as follows: Length, 26·15 to 27·4; expanse, 29·5 to 30·5; tail, from vent, 11·6 to 12·9; wing, 9·2 to 9·5; bill, from gape, 1·32 to 1·37; tarsus, 3·0 to 3·25. The irides were reddish hazel; the exposed part of the eyelid, pale bluish grey; bill, pale green, dusky at the tip; the anterior half of the edges of the upper mandible and that part of the culmen which lies between the nostrils are bluish grey, tinged with red in parts; skin of face and lappets, deep crimson; legs, plumbeous brown; claws, pale horny; spur, dark brown at base, paler at tip.

"A *female* measured: Length, 20·1; expanse, 28; tail, from vent, 7·7; wing, 8·5; bill, from gape, 1·35; tarsus, 2·9.

"The irides were reddish brown; eyelids, plumbeous; legs, dusky flesh color; claws, pinkish horny; bill, pale greenish horny, turning to black on culmen between nostrils."

This species was first described by Latham (GEN. HIST. OF BIRDS, Vol. VIII, p. 201), and it was figured by Jardine and Selby (Vol. IV, pl. 12).

The latter plate, though as a whole very fair, fails to show the conspicuous white shaft stripes which characterize the whole lower surface.

Specimens measured in the flesh by Davison varied as follows:—

Male: Length, 25·5 to 30·0; expanse, 29·75 to 32·75; tail, from vent, 10·0 to 13·5; wing, 9·25 to 11·5; tarsus, 3·25 to 3·62; bill, from gape, 1·5 to 1·55; weight, 2·5 to 3 lbs.

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* These birds are unquestionably *Lophophorus Cuvieri* of Temminck, Pl. Col. 1, though Temminck figures a bird with an abnormally shaped bill, and with an even, instead of a falcate, tail. I have had no sufficient opportunities for investigating the matter, but Mr. Blyth was of opinion that these were hybrids between *Horsfieldii* and *lineatus*, and whether we look at males or females, they do appear intermediate between the two species. In the *males* the entire lower surface is streakless, as in *Horsfieldii*; there are no white central stripes to any of the feathers, some of the lateral tail feathers have nearly lost the white markings. The tips of the neck feathers show glossy blue-black patches, similar to those in *Horsfieldii*, though the rest of the feathers are freckled, as in *lineatus*. Everywhere on the upper surface the white frecklings are coarser and further apart than in *lineatus*, and all the lower back, rump, and upper tail covert feathers, though freckled as in *lineatus*, are fringed at the tips with white as in *Horsfieldii*. In the *female* the white stripes on the lower surface are greatly reduced in breadth, are buffy in color, and are almost entirely confined to the breast. The white arrow-head markings of the back and sides of the neck and upper back of *lineatus* are entirely wanting. Many of the coverts and the longer scapulars exhibit the conspicuous crescentic white tippings characteristic of *Horsfieldii*. In other respects, however, the female agrees with that of neither species. The whole back and wings are a more or less rich rufous olivaceous brown, everywhere closely freckled with blackish brown. The tail is rufous, pale on the central tail feathers, deep chestnut on the four exterior pairs, the others intermediate; the chestnut feathers freckled on the inner webs only, the others on both webs, with blackish brown. As to whether these are or are not hybrids I suspend my opinion.

Female: Length, 23 to 24; expanse, 24·75 to 26; tail, from vent, 9·6 to 10·0; wing, 9 to 9·5; tarsus, 3·25 to 3·4; bill, from gape, 1·5; weight, 2 to 2·5 lbs.

The legs and feet were generally pinkish fleshy or pinkish brown; sometimes a sort of bluish horny.

In the male the spurs are dark at the base, whitish horny at tip. In the males, the bills are pale bluish or greenish horny, darkest at base. In the female, pale horny brown. The irides seem to vary a great deal; some were brown of different shades usually more or less tinged with red; others are noted as very pale pink or even fleshy white; in fact, all the soft parts in this species seem to vary very greatly, doubtless according to age, season, and sex. In both sexes the facial skin is blood red.

The male has the forehead, crown, and occiput, dull black. The occipital feathers, greatly elongated, so as to form a crest nearly 2·5 inches long; the feathers, narrow. Webs, greatly disunited, and with a bluish-green gloss. The sides and back of the neck, the back, scapulars, upper tail coverts, the whole of the wings, and nearly the whole of the tail, black, finely vermicillated, with zig-zag wavy white lines—these lines much coarser, and wider apart on the secondaries and on the lateral tail feathers. The central tail feathers, white; only the basal two-thirds of the outer webs, finely vermicillated with black; the next tail feathers on either side similar, but more broadly vermicillated with black everywhere, except just at the tips and on the inner margins of the inner webs towards the tips. The inner webs of all the quills, duller and browner, as are also the whitish vermicillations; the outer webs of the primaries also duller and browner, and the white vermicillations greyer, less well-defined, and becoming almost confluent. Chin, throat, and front of the neck, black. Breast, abdomen, vent, lower tail coverts, and tibial plumes, black, with more or less of a blue lustre, especially on the two first, and all the feathers, both of the breast and abdomen, with conspicuous, pure white, central, shaft stripes, varying however a good deal in breadth in different individuals. The sides and flanks, brown; the feathers, tipped blackish, and more or less powdered or finely freckled with white. In some specimens the feathers on the sides of the breast have the white stripe more or less powdered with black, and the whole outer webs white, vermicillated with black, or *vice versâ*.

The female has the forehead, crown, occiput, and crest, which is shorter than in the male and with the webs less disunited, a moderately dark, slightly rufescent, olivaceous brown. The back of the neck, back, scapulars, rump, and all but the longer upper tail coverts, the whole wings, except the primaries and the winglet, a pale (scarcely rufescent) olive brown, darkest on the secondaries, tertiaries, and lower back, very uniform if looked at from a little

distance, but when closely examined most of the feathers of the wing and upper tail coverts exhibiting an *excessively* fine powdering of dusky and more rufescent brown; besides this, the secondaries exhibit numerous imperfect paler wavy bars, very much broken up and wide apart, and here and there bordered with darker brown. The whole of the back and the sides of the neck with narrow white arrow-head bars, which sometimes have a darker brown line running along their margins. The inner webs of the quills a dark hair brown, a little powdered, and freckled chiefly towards the tips with dull pale rufous. The outer webs of the primaries, a very pale olive brown, only slightly freckled with darker brown; the winglet, darker; and the outer webs more strongly mottled with dark brown and a very pale olive brown; the longer upper tail coverts, buffy or buffy brown, very finely freckled, and vermicillated with dark brown; the central tail feathers, buffy or rufescent white, freckled or irregularly vermicillated on the outer webs, except quite at the tips, with blackish brown. The remaining six tail feathers on either side with the outer webs most irregularly, but broadly, barred with black and white; along the centre of the white bars run a series of black spots and blotches, and in the middle of the black interspaces are blotches and clouds of mingled chestnut and fulvous. The exterior four pairs, with the inner webs, much like the outer; the next pair, with the inner webs towards the tips yellowish white, freckled and blotched with black; and the next pair with the whole of the inner webs similar, and thus resembling the outer webs of the central pair. The chin and throat, pale whity brown; some of the feathers, paler centred; the basal portion of the front of the neck and the whole of the rest of the lower parts, chestnut; each feather, with a moderately broad white central shaft stripe. The white, not very sharply defined, but freckled towards its edges, with brown or chestnut on the breast, and dark brown on the flanks, sides, and lower tail coverts. The flanks and tibial plumes are similar to the rest of the lower parts, but have a somewhat browner shade; the lower surface of the quills and greater lower coverts, a pale glossy grey brown. The rest of the wing lining a sort of pale chestnut brown, each feather with a very narrow shaft stripe.

Captain Feilden says: "This bird is tolerably common in the hills west of Thayetmyo, but appears to be unknown to any but Burmese. It seems to require rock and very steep hill-sides covered by long grass for shelter, and flat alluvial soil bare of grass, and covered with brushwood and young trees, for feeding ground; in fact, its feeding ground is precisely the same as that of the Black Woodpecker, and I have several times lost a bird of each species by being undecided which to fire at. An old male is a most extraordinary looking bird. The tail only is seen

moving through the long grass, and I invariably thought at first that it was some new porcupine or badger, or some animal. The note, too, adds to the deception, it reminded me a little of young ferrets. They run with great rapidity, but rise readily before a dog, and would not be difficult shooting but for the steepness of the hill-sides on which they are found, and the nature of the soil—gravel just stuck together by the material that forms the petrified wood so common there. This, covered by grass or dried Bamboo leaves, makes the footing so slippery that any attempt to raise my gun hurriedly generally brought me to my knees. These birds feed a great deal on the young shoot of a kind of Orchis, which rather resembles a large Roselle flower, and its juicy leaves enable these Pheasants to live for some time far away from water; but in the middle of the hot-weather they are forced to retire from the Thayetmyo Hills by the long grass being burnt. They return at the beginning of the rains. They hatch in August."

Mr. Oates remarks: "As already noticed, this species is common throughout the whole of Pegu east of the Irrawaddy. Its limits to the south* beyond Moulmein, and to the east beyond the Pounloun range of mountains, are not known with certainty. To the west† of the Irrawaddy it is entirely replaced by *Cuvieri*.

"*Lineatus* is rare or common, just in proportion as the country is level or mountainous. In the plains or undulating portion of Upper Pegu it will be met with in small numbers, if the ravines and nullahs are sufficiently precipitous to suit its taste; but in these places, at the best, only one or two will be shot in a long morning's work. It is not till we get to the foot of the hills that the Pheasants can be said to become common. Here the nullahs, with their pools of water and rocky beds, are particularly favorable to it. As we mount higher, it increases in numbers to such an extent that it is no difficult matter to knock over half-a-dozen in a morning while marching, and that without leaving the path.

"This Pheasant is averse to all cultivation, and shuns even the *yahs* or hill gardens of the Karens, though these may be several miles from the nearest *tay* or village. It must have thick cover, even while feeding. In the mornings it comes out to feed on the ridges, where the jungle is a trifle less thick than in the valleys. At 9 or 10 o'clock it descends into the valleys, and after drinking retires into some small secondary watercourse for its midday siesta. At this period of the day seven or eight may be found together, if it is not the breeding season. When feeding, they go singly or in pairs. Their food is very varied. Ants, both

* We have observed it at least as far south as Meetamyo in 14° north latitude.—A. O. H.

† But see what Captain Feilden says.—A. O. H.

white and black, are eagerly sought after; the former are an especial weakness of our bird, and the only food on which it thrives in captivity. During the hot-weather Pheasants eat the fig of the Peepul ravenously; and I have shot birds with nothing but this food in the stomach.

"The breeding season begins about the 1st March, and by the end of the month all the hens have commenced laying. It is during this month only that the male makes that curious noise with his wings which seems peculiar to the Kalij group. It may be imitated very fairly by holding a pocket-handkerchief by two opposite corners and extending the arms with a jerk. This noise, made only by the male, is undoubtedly a challenge to other cocks. I have frequently hidden myself near a bird thus engaged, and on two occasions I shot cock birds running with great excitement towards the sound.

"The eggs and nest are described in NESTS AND EGGS, Part III.

"The chickens, as soon as they are hatched, are very strong on their legs, and run with great speed. I was fortunate enough to capture portions of four broods. It is astonishing in what a short time the little birds make themselves invisible. It is difficult to secure more than two out of one batch. It is a case of pouncing on them at once, or losing them. The mother is a great coward, running away at the slightest alarm, and thus contrasting very unfavorably with the Jungle Fowl, which keeps running round and round the intruder with great anxiety till her young ones are in safety.

"The young are very difficult to rear. From some cause or other they become paralysed, lose the use of their legs, languish, and die.

"In the chicken from the egg the top of the head is fulvous, albescent on the forehead. There is a stripe from the base of the upper mandible to the eye; also a black line from the posterior corner of the eye, passing under the ear coverts, and terminating at the back of the head. The whole lower surface is white, with a tinge of fulvous; upper neck, back, and rump, black. Two conspicuous fulvous white lines run from the shoulder to the root of the tail along the sides of the body, one on either side; quills, brown, much freckled with fulvous; and the greater coverts, largely tipped with white.

"The adult plumage is assumed at the autumn moult, the white streaks on the breast and belly disappearing with age, and being nearly entirely absent in very old cocks.

"This Pheasant is not very shy; on the contrary, it is rather tame; but it has the habit of sneaking quietly away, and very few birds will be seen by one who does not know its peculiarities. It never takes wing unless suddenly surprised, when it

will skim across the valley and alight again as soon as possible. Its only call is a low chuckle frequently uttered, both when alarmed and when going to roost."

812.—Gallus ferrugineus, *Gm.*

Pegu specimens are quite undistinguishable from our Indian birds.

Mr. Oates says: "The Jungle Fowl is extremely common, perhaps more so on the Pegu Hills than in the plains; in many villages they are found up to the very fence, and no doubt they interbreed with the domestic Fowl, some of which are undistinguishable from the wild bird. The specimens sent were purposely procured many miles from any village; in some cases twenty or thirty miles away in remote valleys. They may be looked upon as genuine jungle-wallahs. A male measured—

"Length, 28·2; expanse, 29; tail, from vent, 14·3; wing, 9; bill, from gape, 1·19; tarsus, 3·1; spur, 1·3.

"The legs were purplish brown; the claws, dark bluish horny; comb, wattles, eyelids, and entire skin of the head, deep dull red; irides, orange red; bill, dark brown, reddish towards the base, and paler at the tip of the lower mandible."

819 *ter.*—Francolinus chinensis, *Osb.* F. Phayrei, *Blyth.*

Specimens from Pegu correspond exactly with others from Amoy and Fokien. Mr. Oates remarks: "This species is common in the valley of the Irrawaddy, as low down as Prome; south of this town I have never seen nor heard it, though a few may occur in the dry forests, called the 'Engmah Indein.'

"It frequents open places in forests, scrubby jungle, and waste land; a few may be flushed occasionally in a paddy field after harvest, but, as a rule, it does not stay in the open country. It has a call which is difficult to syllabicate; but in its general character it resembles that of *F. vulgaris*, as noted in Jerdon. It is particularly vociferous in June and July, at which time it breeds.

"It does not keep in flocks or coveys, though many are often found in the same neighbourhood. The call is uttered from a stump, and occasionally from the branch of a tree, as much as ten feet from the ground. The sexes do not appear to differ in size. Specimens that I measured varied as follows:—

"Length 12·6 to 13·1; expanse, 18·25 to 18·3; tail, from vent, 3·1 to 3·35; wing, 5·25 to 5·8; bill, from gape, 0·95 to 1·02; tarsus, about 1·6.

"Of a *female* I have noted that the legs were a fine pale orange; claws, purplish grey; bill, dark horny brown; the gape

as far as the nostrils and the basal two-thirds of the lower mandible, being dark fleshy yellow; irides, pale reddish hazel; eyelids, yellowish grey."

The birds are of about the same size, and somewhat resemble the other Francolins of India. The following are measurements taken from the dried skins of males:—

Length, 12 to 13; wing, 5·75 to 6·25; tail, from vent, 3 to 3·5; tarsus, 1·8; bill, from gape, 1 to 1·1; female, slightly smaller.

Male: Lores, and a stripe under the eye, ear coverts, chin and throat, white, often slightly soiled, or rufescent; feathers impending nostrils, with a stripe over the eye and ear coverts to the nape, another stripe from the gape or base of the upper mandible (dividing ear coverts, &c., from throat), black; a fulvous fawn streak above the black eye streak, generally meeting on the forehead in front, and again on the occiput; crown and occiput dark brown; the feathers, more or less edged with pale fulvous; the neck all round, wing coverts, sides and breast, black, with a row of oval white or buffy spots on each web of every feather; on the back of the upper neck these spots are smaller and less perfect, extending sometimes quite to the margins of the feathers, and are often tinged fulvous, the feathers of the centre of the back and of the upper neck being narrowly margined at the tips with fulvous fawn, and of the lower neck being tipped with rufous; on the breast the spots are somewhat larger, very perfect, and purer white; on the sides they are largest of all, and often strongly tinged with rufescent buff; on the coverts the spots are generally a pale rufescent buff. The scapulars and interscapulary region are black, mingled with pure chestnut, the longer chestnut feathers of the scapulars having towards the tip on the outer, and in some cases on both webs, a broad black streak, band, or patch, containing an oval yellowish white spot. One or two of the tertiaries are like the secondaries, which are deep brown with conspicuous, pale, buff, transverse bars on the outer webs, and a freckling of the same color all along the margin; and in the case of the latest tertiaries, a chestnut tinge towards the tips, and traces of freckling or barring on the inner webs also; the primaries have a conspicuous row of pale buffy white spots on the outer webs, and a row of very similar spots down the middle of the inner web, the ground color being hair brown, paling somewhat on the tips and the inner margins of the inner webs. The lower back and rump are black, very narrowly and regularly barred with white. The upper tail coverts are similar, but the black mostly replaced by fulvous brown. The tail feathers are black, but with a few very narrow transverse white bars towards their bases, in some specimens extending almost to the tips; the flanks and abdomen are buffy or rufous white, or pure buff, with dark shafts and a series of broad, more

or less cuneiform, transverse black bars; the lower tail coverts are chestnut, most of them in some birds with a small black spot on each web near the tip. The wing lining and axillaries are closely-barred white or fulvous white, and darker or lighter brown.

The male has spurs from 0·3 to 0·4 inch in length; the bill, black; and the legs, dull, pale, brownish orange.

The bird sent as a female, possibly a young male, is somewhat similar, but has the lower mandible a livid horny, has the black eye streak much less developed, and not prolonged to the nostrils; the gape stripe also less well marked, the white of the throat, ear coverts, &c., generally more rufescent, and the whole of the feathers, which in the adult male are so conspicuously marked with oval spots, are here regularly and somewhat closely barred black and fulvous white; there is only a tinge of rufous on the shorter scapulars, and the whole back and upper tail coverts are olive brown, indistinctly margined paler, and pencilled with wavy speckled bars formed of tiny greyish white and blackish brown dots; the scapulars and some of the feathers of the upper back with conspicuous yellowish white shafts.

Another bird sent as a young female, but which I take to be the adult female, has the chin and throat white; the lores, a stripe above the eye, cheeks, and ear coverts, pale rufous, with a few tiny brown speckles where the gape stripe in the male would run; crown, occiput, and nape, dark brown, the feathers, everywhere margined with dull rufescent; the breast white, here and there tinged with rufescent, with regular blackish-brown bars, which, as the feathers approach the abdomen, become more or less cuneiform; the bars on the flanks and sides broader, and the feathers more tinged with rufous buff; the feathers of the back of the neck, dark brown at the base, olive-brown towards the tip, with small white or rufous white double spots springing from the shafts, which towards the tips are pale. Scapulars and interscapulary region and tertiaries, deep brown at the bases, with conspicuous yellow shafts, tipped and margined olive brown, freckled and pencilled inside the margins towards the tips with pale rufous, and with one or more irregular, narrow, transverse bars of the same color. Lower back, rump, and upper tail coverts, deep brown towards the base (very little of which, however, is visible until the feathers are lifted), very narrowly tipped and margined greyish, and everywhere freckled and pencilled towards the tips with a pale olive brown or rufescent olive. The wing coverts are much like the breast.

There is generally a chestnut tinge on some of the scapulars towards the tips. The lower tail coverts are bay or dull chestnut, many of them with traces of an imperfect, cuneiform, blackish brown bar near the tip. The quills are as in the male, but the markings are somewhat smaller.

824 *quat.*—**Arborophila brunneopectus**, *Tickell*, (JOURNAL, ASIATIC SOCIETY, 1855, p. 277).

Mr. Oates says: "This bird and the next (*A. chloropus*) are equally common in densely-wooded ravines and nullahs of the Evergreen Forests on the eastern slopes of the Pegu Hills. I have never met with the two in the same valley, each species appearing to occupy one stream to the exclusion of the other; they may occasionally straggle to the western slopes, but this must be the case rarely, as I never came across them; in fact, the jungle is not adapted to them, being spare and dry. Westward, the range of this and the next species (*chloropus*) does not, I think, extend to the Arracan Hills, as all the many specimens of *Arboricola* which I have procured there belong to another species (*A. intermedia*, Blyth). As I found both *brunneopectus* and *chloropus* at the foot of the hills near Tonghoo, it is more than probable that they also extend eastward of the Sittang.* The males are rather larger than the females, but they do not differ, I can positively assert, in plumage or in the color of the soft parts. Their food appears to consist of hard seeds, but in one instance I found a beetle in the stomach of one of them. They breed, I judge, in May. I never heard a call in the forest which I could identify as proceeding from this bird or the next. I believe both to be particularly silent. I have occasionally seen them in the bed of a nullah, where they were probably either bathing or dusting themselves.

"*Males* measured: Length, 11·25; expanse, 18; tail, from vent, 2·5; tarsus, 1·85; bill, from gape, 1·0.

"*Females* measured: Length, 10· to 10·7; expanse, 17·75; wing, 5·15; tail, from vent, 2·4; bill, from gape, 0·98; tarsus, 1·7.

"Bill, black; eyelids and patch behind the eye, red, more or less naked; skin of throat, deeper red; iris, dark brown; legs and claws, orange; some specimens have the legs tinged with lake. In some specimens the skin of the throat shows through a great deal more than in others."

This species was first described from specimens sent by Tickell from Moulmein, and obtained by him in the mountains of the northern part of Tenasserim.

Mr. Blyth at the time remarked as follows in regard to them:—

"*A. brunneopectus* has the breast and flanks tawnyish brown, instead of ashy, with no admixture of ferruginous on the latter, which are spotted quite differently from those of any of the other species, each feather having a large rounded white spot,

* As a fact, both extend eastward of the Salween, where (as near Pahpoon *chloropus* is very common. Mr. Oates remarks that he has never heard the cal of this latter species, so I may mention that it is very like that of the Grey Partridge.—A. O. H.

a broad black terminal border, and another spot of black above the white; throat, fulvous white, passing to black in front of the neck, but no white below this (as in *A. atrogularis*), nor do the black spots descend visibly upon the breast, though on turning up the feathers a rudiment appears upon each of the black and white markings, which become so developed on the flanks; crown, brown, black-spotted, and passing to whitish on the sides of forehead; back and scapulars scarcely differing from those of *atrogularis*."

Although this sufficiently indicates the species referred to, it is hardly satisfactory or sufficient.

The posterior half of the forehead, the crown, and occiput a rich olive brown, each feather with a black, more or less, triangular spot at the tip on the shaft; lores and a narrow line above and below the eye, uniting in a triangular spot behind the eye, and a line running backwards from the apex of this spot over the top of the ear coverts, widening behind them and more or less encircling them, black; anterior half of forehead, and a line continued backwards over the eye (narrow immediately above it and widening behind it), and above the ear coverts and the black line already described. Chin, cheeks, and ear coverts, pale unspotted fulvous fawn; the throat and neck all round, of much the same color, but more olivaceous on the back of the neck, and each feather with a more or less black triangular spot at the tip. Breast, unspotted olivaceous brown, with more or less of a ferruginous tinge; middle of abdomen and vent white; sides and flanks pale olivaceous brown, those nearest the centre of the abdomen with a strong tinge of the same rusty as the breast, each feather with a terminal black band, above which is a large oval pure white spot, and in a few of the feathers some black markings again above this spot. The lower tail coverts a more or less rusty olive brown, in some pale ferruginous, those nearest the vent tipped with white, and all with one or more imperfect, broad, transverse, black bands. The lower surface of the quill, pale satin grey; median lower coverts, white; lesser lower coverts, dark brown. The entire back, rump, and upper tail coverts, a bright, pale, olive brown; the feathers, more or less black-shafted, and with two or three narrow, wavy, transverse, black bands, most conspicuous on the upper back, much less so on the rump and upper tail coverts, where, however, black, more or less, diamond-shaped spots on the shafts are more conspicuous; besides the bars, most of the feathers are very narrowly fringed with blackish or dusky. The scapulars and tertiaries, bright chestnut, with a huge, black, oval patch near the tip, and above that a broad patch, extending over one or both webs, of pale, olivaceous grey. The primaries, their greater coverts, and the winglet, plain hair-brown, the primaries only slightly freckled at their margins

with rufous. The median coverts, the secondaries, and their greater coverts broadly margined, the secondaries on the outer webs only, the coverts more or less on both webs, with chestnut rufous, the coverts having also often a pale spot at the tips; the lesser coverts concolorous with the back, sometimes much more broadly barred with black, so that the whole shoulder of the wing appears of this color, and sometimes showing only narrow, almost obsolete, edgings of this color. The tail is olive brown, generally nearly concolorous with the back, with numerous black, freckled, wavy lines.

The specimens vary very greatly in several respects. In the first place, in some birds the black spots on the head are very small, leaving the prevailing tint olive brown; in others they are so large, becoming especially on the occiput broad tippings, as to leave only a few spots of the brown peeping through here and there; in some the barrings of the back are very broad and conspicuous, an eighth of an inch broad perhaps; in others they are not above a twentieth of an inch wide; in some the breast is only slightly tinged with rusty; in others very strongly so, and in these latter specimens the whole bird above and below is somewhat more rufescent than the specimen I have described.

I have only examined four females, but Mr. Oates vouches that the males are precisely similar.

824 *quint.*—Peloperdix chloropus, *Tickell*, (Journal, Asiatic Society, 1859, pp. 415 and 454).

Mr. Oates remarks: "This species is of similar habits and like distribution to the last (*A. brunneopectus*). The sexes do not appear to differ sensibly in size. In plumage they are absolutely identical. The following are the dimensions of four specimens that I measured:—

"Length, 10·95 to 11·9; expanse, 19 to 20; tail, from vent, 2·6 to 3·2; wing, 5·75 to 6·3; bill, from gape, 0·87 to 0·92; tarsus, 1·67 to 1·83.

"The irides are dark hazel brown; bill, dusky red at base; anterior half, greenish; eyelids and orbital region, livid rufous; legs, greenish; claws, yellow."

This species was first obtained in the Amherst District of the Tenasserim Provinces. Colonel Tickell, its discoverer, remarked in regard to it:—

"It appears tolerably numerous, but, as far as my observations go, is entirely confined to the forests on the banks of the Zummee River. Unlike its known congeners, it avoids mountains, and inhabits low, though not humid, jungles, where the ground merely undulates or rises into hillocks.

"Like the rest of its tribe it is difficult to flush, and runs with great rapidity, jumping adroitly over obstacles, and diving into impenetrable thickets for security. Early in the mornings these birds come out on the pathway, scratching about amongst the elephant's dung, and turning over the dead leaves, for insects. They do not appear to have any crow or call, though during the pairing season this may not be the case. The Karens did not even know the bird; but this is no proof of its rarity, for these people pay no attention to the living products of their forests.

"The sexes are precisely similar in plumage and size; the flesh, rather dry and tasteless."

Mr. Blyth remarked: "The present species differs from *P. Charltoni* in having the interscapularies unmottled olive brown, crossed with numerous black rays on each feather. The supercilium is more delicately pencilled, and the ear coverts are not ferruginous, but white, with black spots like the throat; and below the throat there is a broad ferruginous band also with round black spots. Breast similar to the back, olive brown, with numerous blackish cross-rays, below which the under parts are ferruginous, paling at the vent and interior of thighs. The flanks have no well-defined broad black bands, as in *P. Charltoni*, but are prettily mottled with dusky in a manner difficult to describe; and the same remark applies to the wing coverts. Tail, freckled and marked with zig-zag dusky bands."

The portion of the lores next the eye, and a stripe over the eye and ear coverts, and backwards to the nape where the two stripes almost meet, white, becoming fulvescent towards the nape, each feather more or less margined with black. The point of the lores, forehead, between the two stripes above mentioned, crown and occiput, a rich, dark, olive brown. Chin, throat, cheeks, ear-coverts, white; each feather, with a small, terminal, black spot, more or less wanting in some specimens on the chin and the centre of the throat; extreme tips of the ear coverts, tinged rufescent. A broad, pale, ferruginous collar round the upper neck, not quite meeting behind; each feather, with a black spot at the point; and one or two of the lower ones, in some specimens, on the side of the neck, with more or less of a buffy shaft stripe at the tip. Lower neck all round, rich olive brown, not quite so dark as the crown, almost or entirely unspotted and unbarred; upper breast, entire back, and scapulars, and upper tail coverts, a richer and somewhat more rufous olive brown, the feathers irregularly fringed with black or dark brown and with two or three narrow, irregular, wavy, freckled bars of the same color, and the interspaces more or less clouded and freckled. On the rump and upper tail coverts the ground color, so much as is visible of it, is perhaps buffy rather than rufescent olive, and the feathers

here exhibit traces of a very narrow fringe of this color outside the terminal black line. The tail feathers are rufous, freckled, and irregularly barred with blackish brown. The primaries, and their greater coverts, and the winglet, hair brown; the former, slightly freckled towards the tips with pale rufous; the latter, with freckly, irregular bars of this color on the outer webs. The secondaries, slightly darker than the primaries, freckled at the tips like these, but more strongly so, and with five or six irregular, freckled, rufous bars on the outer webs. The lesser and median coverts, longer scapulars, and tertiaries, mingled buffy white, pale rufous, and olive brown, irregularly barred and freckled, and with a few blotches of blackish brown; a good many of the scapulars with narrow, buffy-white, shaft stripes at the tips. Lower breast and middle of abdomen, in some a somewhat pale ochreous buff, in others ferruginous. Lower abdomen and vent, white or buffy white; lower tail coverts, colored much like the middle of the abdomen, several of them with one or more imperfect black bands. The flanks and sides are tinged with the same ferruginous or buff as the breast and abdomen; the feathers, freckled with black or blackish brown, and with narrower or broader, irregular, wavy, or freckled, transverse bars of the same color, and the feathers of the flanks with narrow buffy white shaft stripes towards the tips.

I have already (STRAY FEATHERS, Vol. II, p. 449) given a rough diagnostical key, which will, I hope, enable sportsmen and others to discriminate readily the eight species of *Arboricolæ*, or *Arborophilæ* which occur within our limits.

830.—Coturnix coromandelica, *Gm.*

Mr. Oates remarks: "This Quail is very common; indeed, very fair quail-shooting is to be got at Thayetmyo on the brigade-ground and adjacent scrub jungle."

833.—Turnix pugnax, *Tem.*, (*Pl. Col.* 60).

These Bustard Quails vary much in plumage and somewhat in size, especially in depth of bill. I cannot as yet see my way to separate *taigoor*, *pugnax*, &c. The specimens now sent by both Captain Feilden and Mr. Oates agree, some of them exactly, with Malacca specimens, others with Raipoor, Madras, and Kutch birds, while one is closest to a Ceylon specimen. I am inclined to believe that if one could get together a large series from a number of different localities, all the different types would be found represented from each locality. At present I treat all the plains birds as belonging to a single species—*pugnax*. I am inclined, however, to think the larger Sikhim race, *plumbipes*, Hodgs., entitled to specific separation.

Mr. Oates remarks: "This Bustard Quail is generally spread over the plains, and ascends a short distance up the spurs. It keeps in pairs, is not very common, and is a constant resident. Two *males* measured—

"Length, 6·15 and 6·5; expanse, 11 and 11·5; tail, from [illegible] 1·5; wing, 3·3 and 3·45; bill, from gape, 0·7; tarsus, 0·88 [illegible] 98.

"[illegible]*male* measured: Length, 6·7; expanse, 11·3; tail, from [illegible] 3; wing, 3·5; bill, from gape, 0·85; tarsus, 0·95.

"In a male the irides were yellowish white; eyelids, purplish grey; gape and both margins of both mandibles, as far as the middle, dusky orange yellow; tip of lower mandible, pale; rest of bill, dark brown; legs, dusky yellow on tarsus, becoming dark glossy brown on lower portion and toes; claws, dusky white."

834 *bis*.—Turnix maculosa, *Tem.*

Mr. Blanford notes that he obtained this species (*T. Blanfordi*, Blyth, JOURNAL, ASIATIC SOCIETY, 1863, p. 80) at Thayetmyo. I have it from Kolidoo a little further south-east.

843.—Glareola lactea, *Tem.*

Both Captain Feilden and Mr. Oates sent specimens of this bird, and Mr. Oates says that it is "common on all sand-banks in the Irrawaddy; occasionally in the evening it comes inland in large numbers, hawking Swallow-like after insects. I found an egg of this bird in a sand-bank on the 12th April. It was laid on the bare sand, and measured 1·03 by 0·8. It was a pale buff, much blotched all over with two shades of pale yellowish brown. Specimens measured—

"Length, 6·7; expanse, 17·2 to 17·5; tail, from vent, 2·1; wing, 5·7 to 5·8; bill, from gape, 0·75 to 0·78; tarsus, 0·75 to 0·81.

"Irides, dark brown; eyelids, dark grey; terminal half of the bill, black; of the rest, two-thirds are red, changing to yellowish brown at the gape; legs and claws, black."

845.—Charadrius fulvus, *Gm.*

Pegu specimens are similar to those from all parts of India and the Andamans. Mr. Oates says that this is not a very common bird within our limits.

847.—Ægialitis mongolicus, *Pall.*

Is said by Mr. Oates to be tolerably common.

850.—Ægialitis philippinus, *Lath.*

I really do not pretend to understand the synonymy of these the smallest of the Plovers, and I think it is high time that

Mr. Harting took mercy on the ornithological world generally and worked out the synonymy of the little wretches. The species sent from Thayetmyo is the one designated by Jerdon *minutus*, Pallas, a diminutive race of the species which he calls *philippensis* of Scop., but which Mr. Blyth says is *curonicus*, Besek., which latter Mr. Gray says is a synonym of *fluvi[illegible]* Bechst. I call the present species *philippinus*, because M[illegible] makes *minutus*, Pallas, a synonyme of this, but whether [illegible] really two or ten of these nearly allied races, or by wha[illegible] the two or the ten should properly stand, it is simply impossible to decide.

Of this present species, *minutus*, Pall, *apud* Jerdon, Mr. Oates remarks: "This is a common bird all through the cold-season, being found chiefly on the sand-banks of the Irrawaddy and large nullahs. It must, I think, breed with us, but I have not noticed it at all during the rains.

"A female measured: Length, 6·25; expanse, 13·1; tail, from vent, 2·2; wing, 4·2; bill, from gape, 0·55; tarsus, barely 1·0.

"The bill was black; the gape and base of lower mandible, pale yellow; the eyelids, grey; their edges, tumid and bright yellow; irides, dark brown; legs and feet, dusky brownish yellow, darker on the toes and bare portion of tibia; claws, dark horny."

This bird will not do for *philippinus*, *apud* Blyth (Ibis, 1867, p. 164) which, he says, has a tarsus 1·12 in length, and the tail unbanded, with the outermost three feathers white; all the tail feathers have a black band; the two outermost feathers on either side, white, with the band on the inner webs only; the next three pairs, pale olive brown, white-tipped, with a dark band, and the central tail feathers similar, but without the white tip. Then, again, *philippinus* has the crown, according to Blyth, rufescent brown, with a more rufous periphery, some black behind the white nuchal collar above, and the pectoral streak narrow or interrupted in front; but there is no rufous at all upon the head of our small Plover, and the pectoral streak, as he calls it, is a broad and perfectly continuous band; in fact, the bird is, as far as I can tell, in every respect a perfect miniature of our Common Indian-ringed Plover, *fluviatilis*, *coronicus*, or whatever its proper name may be, which is found everywhere up the Persian Gulf, all over India, and also at the Andamans, and what increases the difficulty is that between the two races intermediate-sized links appear to occur.

854.—Chettusia cinerea, *Blyth*; C. inornata, *Schl.*

Mr. Gray assigns *cinerea*, Blyth, to Bengal and *inornata* to Japan. I have seen no Japanese specimen, but from the plate and description in the Fauna Japonica, our Bengal bird would seem to

be identical with the Japanese one. Anyhow the Pegu birds, like those from Tenasserim, differ in no respect from specimens from Bengal.

This species appears to be rare in Upper Pegu, and to be found only in and about one or two of the very large swamps. Oates says: "I have met with only one specimen of this bird. [redacted]hot on the 11th November at Engmah, and I arrived there [redacted]n time to rescue it from the cook. I dare say more will [redacted]n up. It measured: Length, 14·8; expanse, 32·0; tail, 4·9; wing, 9·8; bill, from gape, 1·68; tarsus, 3·3; legs and toes, yellow; the joints and portions of the toes with a greenish tint; claws, black; edges of eyelid and lobes, with basal two-thirds of bill, bright yellow; terminal one-third of bill, deep black; inside of mouth, flesh color; iris, light crimson; eyelid, well-clothed, plumbeous."

855 *bis*.—Lobivanellus atronuchalis, *Blyth*.

Mr. Blyth separated the Indo-Chinese race of *Lobivanellus indicus*, Bodd, *goensis*, Gm., under the name of *atronuchalis*. The birds are very similar, but differ, I think, sufficiently to warrant specific separation. The following are the more important differences:—(*1st*), the tarsi are longer and slenderer, measuring 3·3 to 3·5 against 2·9 to 3·1 in *indicus*; the beak, too, in the present species is somewhat smaller and slenderer; (*2nd*), the white streak behind the eye runs in *indicus* the whole way down the side of the neck, becoming doubtless somewhat greyish towards the base of the neck; in the present species this white streak is only about an inch long, ends abruptly, and below this the neck all round is black; (*3rd*), in *atronuchalis* the black descends right down to the base of the back of the neck an inch further nearly than it does in *indicus*, and it is there divided from the olive of the back by a broad white band, which is wanting in *indicus*; (*4th*), the black in front does not descend so far down on the breast in *atronuchalis* as it does in *indicus*.

Mr. Oates remarks of the present species that it is extremely common all over the country. He gives the dimensions of a male as—

"Length, 13·4; expanse, 27·4; tail, from vent, 4·25; wing, 8·5; bill, from gape, 1·3; tarsus, 3·4."

857.—Hoplopterus ventralis, *Cuv*.

The Thayetmyo specimens are precisely identical with those from all parts of Northern India and the Central Provinces. In designating them as above I merely follow Mr. Gray, who identifies *malabaricus*, Bodd., the name which I fancied correctly pertained to the present species, with *bilobus*. Gm.

Mr. Oates remarks that this species is "not very common within our limits; when found, it is generally on sand-banks and in sandy nullahs. It has a curious habit of stretching out its head and hissing when it apprehends danger. A male measured: Length, 12·2; expanse, 24·5; tail, from vent, 3·5; wing, 7·9; bill, from gape, 1·4; tarsus, 2·5.

"Bill, black; legs, plumbeous brown."

858.—Esacus recurvirostris, *Cuv.*

Captain Feilden mentions having procured this on the Irrawaddy in the neighbourhood of Thayetmyo.

859.—Œdicnemus crepitans, *Tem.* Œ. indicus, *Salv.*

Captain Feilden sent a single specimen procured in the neighbourhood of Thayetmyo. It is quite identical with the Northern Indian bird, and belongs to the somewhat smaller race which some ornithologists separate as *Œ. indicus*, Salvad.

870.—Gallinago Horsfieldii, *Gray.*

Mr. Oates says: "This is the Common Snipe of the country. Thayetmyo is not a good place for them, owing to the want of paddy land and swampy ground; but at Tonghoo everything is favorable, and very large bags are made. I have shot it on the 1st September, and it stays till the 1st March. A female measured: Length, 10·3; expanse, 17·5; tail, from vent, 2; wing, 5·1; bill, from gape, 2·45; tarsus, 1·35."

871.—Gallinago scolopacina, *Bonap.*

Mr. Oates remarks that "the Common Snipe is comparatively rare; *the* Snipe of Burmah is the Pin-tail. *Scolopacina* does not appear till the cold-weather is well in, say in December, and then but few will be found in a large bag of Snipe. It stays till late. I have shot them in March."

872.—Gallinago gallinula, *Lin.*

Mr. Oates remarks that "a single specimen is occasionally killed, but it is very far from common."

877.—Numenius arquatus. *Lin.* N. lineatus, *Cuv.*

878.—Numenius phæopus, *Lin.*

Captain Feilden states that he procured both these species at Thayetmyo.

884 *bis.*—Tringa damacensis, *Horsf.*

This is the first specimen of this species that I have seen from India, conspicuous at once by its mid-toe and claw, a full inch in

length, and by the brown shafts of all but the first primary. In this latter respect it corresponds with *Temminckii*, but differs from that species in wanting the band across the chest and in having the tail like *minuta*.

Mr. Oates remarks that this species "is very common during [illegible] cold-weather on sand-banks and edges of ponds, &c., in [illegible] from ten to thirty." For further remarks in regard to [illegible]resent species and *minuta*, *vide* STRAY FEATHERS, 1873, [illegible]2, and p. 491.

885.—Tringa Temminckii, *Leisl.*

Mr. Oates mentions killing another small Stint with the wing 3·75 and tarsus 0·77, with the legs and feet dirty green, which was distinct from the preceding. The specimen had been unfortunately destroyed; but it can scarcely have been other than the present species.

891.—Totanus glareola, *Lin.*

892.—Totanus ocrophus, *Lin.*

893.—Tringoides hypoleucos, *Lin.*

Mr. Oates says that all these are very common in the cold-season, and that he has shot *hypoleucos* on the 14th August.

894.—Totanus canescens, *Gm.*

895.—Totanus stagnatilis, *Bechst.*

Neither of these, according to Mr. Oates, are common within our limits, but both occasionally occur.

898.—Himantopus intermedius, *Blyth.*

Although I follow Mr. Gray in adopting Mr. Blyth's name, *vide* STRAY FEATHERS, 1873, p. 248, I am by no means convinced that there is more than one species of this genus in Europe, Africa, Asia, Malayana, and Australia.

Mr. Oates remarks: "At times a few of this species appear, but it is not a common bird. A female measured: Length, 14·7; expanse, 27·5; tail, from vent, 3·2; wing, 9·4; bill, from gape, 2·8; tarsus, 4·74.

"Irides, red; eyelids, well-clothed; bill, deep black; inside of mouth, dusky fleshy; legs, lake red; claws, black."

[illegible]odius indicus, *Lath.*

[illegible]rks: "This is a very common bird in all [illegible] and always getting in the way of the duck-[illegible] long continued kitten-like mew, which it

utters when disturbed, stretching its head and neck out to their full length; the Burmans call it '*Bee*' in imitation of its call.

"I do not think that the changes of plumage of this bird are well understood. I may state—(1*st*), the black plumage is that of the adult, and once assumed it is never changed; black birds out-number very considerably the yellow ones in the w[illegible] months; (2*nd*), black birds are within small limits alw[illegible] the same size, showing conclusively that they are full-grown adult; (3*rd*), yellow birds are in every particular smaller t[illegible] black ones, and *inter se* vary also very much in size; whence I conclude that yellow birds are the young, and that broods of two years are to be found together; (4*th*), that in the summer months the number of yellow birds is much reduced, showing, I think, that the elder brood must have moulted into black plumage during the preceding spring (Jerdon states that, to his certain knowledge, they moult in the spring). I infer that the bird assumes the black plumage the second spring after birth, and that there is no seasonal change of plumage in adults."

So far as regards moulting in the spring, I find that specimens shot on the 4th May in the Central Provinces have not quite completed the moult, still showing a few red feathers on the head, a few rufous feathers on the nape, and a few white feathers about the breast and abdomen. As to the difference in size, I can say that sex for sex the yellow birds are very perceptibly smaller than the adult; but the males always run very much smaller than the females, and of course, if young yellow males are compared with the adult females, the difference is very great. Mr. Oates gives dimensions as follows:—

"*Adult females:* Length, 12·3 to 12·4, expanse, 24·3 to 24·7; tail, from vent, 2 to 2·2; wing, 7·1 to 7·2; bill, from gape, 1·38 to 1·42; tarsus, 2·9 to 3·2; hind toe and claw, 3·5 to 3·75.

"*Young females:* Length, 12; expanse, 24; tail, from vent, 2; wing, 7·15; bill, from gape, 1·4; tarsus, 2·9; hind toe and claw, 3·65.

"*Two young yellow males:* Length, 10·2 to 10·8; expanse, 20 to 21; tail, from vent, 1·5 to 1·7; wing, 6·15 to 6·2; bill, from gape, 1·26; tarsus, 2·5 to 2·65; hind toe and claw, 2·2."

To this I may add the dimensions of an *adult male:* Length, 11·5; expanse, 20·75; tail, from vent, 1·75; wing, 6·2; bill, from gape, 1·35; tarsus, 2·5; hind toe and claw, 3·1.

Mr. Oates adds: "The legs are olive green; the claws, horny, transparent at the edges; the irides, brown; the [illegible]lids, densely clothed with white feathers, their edges with black [illegible] basal half of upper mandible, dull livid; the edg[illegible] and a spot at the base of the upper mandible [illegible] minal half of upper mandible and the whole lo[illegible] somewhat dusky at the centre and yellowish

901.—Hydrophasianus chirurgus, *Scop.*

Mr. Oates remarks: "I have only seen one specimen. It is a rare bird with us. A male shot on the 11th February, in winter plumage, measured: Length, 11·05; expanse, 22; tail, from vent, 3; wing, 6·7; bill, from gape, 1·06; tarsus, 1·96.

"The irides were pale yellow; eyelids, well clothed; bill, dark brownish black; the basal half of the lower mandible, bright yellow; legs, dull greenish; claws, horny."

902.—Porphyrio neglectus, *Schlegel.*

This, according to Mr. Gray, is the name under which our *Sultana Coot* should stand; certainly it is not *poliocephalus*, Latham, which has a brown back, and which has the whole head, neck, and lower parts, a unicolorous pale lavender blue. Specimens from Thayetmyo appear to differ in no respect from birds from Sindh and all parts of India. The only specimen sent however has, even for a female, a rather unusually small bill.

Mr. Oates remarks: "This species is common in the Engmah Swamp, and is found also occasionally in other jheels.

"Except where found as a mere straggler, this bird is gregarious. In the Engmah Swamp fewer than twenty or thirty are rarely seen in one flock. At Boulay, where the bird is uncommon, they occur singly. They move through bushes very cleverly, stepping from one branch to another very quickly and without much commotion.

"A female measured—

"Length, 17; expanse, 31·5; tail, from vent, 4; wing, 9·6; bill, from gape, 1·48; from posterior margin of shield to tip, 2·55; tarsus, 3·6.

"Anterior half of bill, waxen red; basal half and culmen to near the tip, very dark blood red; the region of the nostrils, whitish; the central portion of shield, the same blood red as the bill; the edges, bright coral red; irides, bright red; eyelids, plumbeous; legs and feet, fleshy red, more or less dusky on all the joints; claws, horny."

903 *bis.*—Podica personata, *Gray.*

Mr. Oates says: "I procured one specimen on the Engmah Swamp. It flew up near the canoe with a heavy flight. I do not think the bird is rare, but being very unwilling to rise, it is often overlooked in the dense masses of vegetation floating on the water. A male measured—

"Leng[illegible]2; tail, from vent, 5·8; wing, 10·1; bill, from gape, [illegible]·1. From the back of the shield to the tip of the [illegible]hind-toe has no web or lobe; the inner toe where [illegible]dest was 0·88 broad; the middle toe, 0·8; and

"There are eighteen tail feathers; the gizzard is very muscular; the contents of the stomach entirely shell fish, swallowed shells and all, the shells being found in the stomach broken into small pieces.

"The irides, hazel brown; tarsus and toes, light green; the lobes, yellowish towards the edges; claws, horny; bill, waxen orange, becoming slightly yellowish towards the tip; inside of the mouth, pale lilac; eyelids, yellowish fleshy; their edges, sickly yellow."

I think this bird is decidely more nearly allied to *Fulica* and to *Gallicrex* than to any other genera. I may add to Mr. Oates' remarks that the tibia is bare for about 0·6; that the tarsus is broad and strong, not compressed as in the Grebes; and the claws too are claws, and not nails as in the Grebes; the inner toe claw is much the largest; the mid-toe to root of claw is 2·6; its claw from root to point straight, 0·49; outer toe to root of claw, 2·2; its claw, 0·45; inner claw to root of claw, 1·9; its claw, 0·6.

The second and third primaries are the longest; the first is 1·3, the fourth 0·2, the fifth 0·7, the sixth 1·25, the seventh 1·80, and the tenth 3·25 shorter than the longest.

The tail is very much rounded, the exterior pair 2 inches, the next pair 1·5, the next 1·1, the next 0·8, the next 0·6, the next 0·3 shorter than the six central ones, which are longest.

The whole of the front of the head, as far as a line drawn across the crown from a little in front of the posterior angles of the eyes, and a broad streak from above the posterior angle of the eye backwards to the nape, the whole of the lores, cheeks, part of the ear coverts, chin, throat, and part of the front of the neck, velvet black, and more or less glossy; the width of the black on the front of the neck, regularly diminishing, and terminating in a point about 2·5 inches from the base of the neck. From the posterior angle of each eye a white slanting line runs down to the end of the black point, thus defining the black along its whole length. Just in front of the black lores there is a narrow white line dividing them from the sides of the upper mandible. The crown, occiput, and a broad ill-defined streak down the back of the neck, a sort of dusky greenish bluish grey. The sides of the occiput between the black streak and the dark greenish bluish grey band running down the back of the neck on the one side, and the white bounding line of the black of the face and the throat on the other, pale brown, with a sort of olive green tinge. The lower part of the neck in front, the sides and flanks, a [illegible] of drab brown; the latter, darker, and with the faintest [illegible] or perhaps rufescent tinge; breast and middle of [illegible] and shorter lower tail coverts, white, more or less [illegible] faintly barred with a pale drab brown in t[illegible]

abdomen, and lesser lower tail coverts strongly and very regularly barred with this same brown; longest lowest tail coverts, which extend to within an inch of the ends of the longest tail feathers, plain brown, of much the same color as the sides, unbarred and unspotted; median lower tail coverts, uniform, somewhat paler brown, slightly barred with white towards the tips; lower surface of the wing (except lesser and some of the median lower coverts, which are dull or light hair brown), glossy satin brown. The entire back and scapulars moderately dark brown, with a greenish tinge toward the tips of the feathers, most conspicuous on the upper back and interscapulary region. The upper tail coverts, more olivaceous, and wanting this greenish tinge; tail feathers, plain hair brown, albescent towards the tips, and very distinctly, though obsoletely, barred. The entire wings are a warm, but not dark, hair brown, all the feathers becoming slightly paler towards the tips and on the margins of the outer webs.

This was a male. The females, Tickell tells us, have "the irides straw color; the chin, throat, and front of the neck, where black in the male, white, with a margin all round of black, which extends a little over the lores, and has the same white outer border as has the black mask of the male, *cætera pares*."

904.—Gallicrex cinereus, *Gm.*; cristata, *Latham.*

Mr. Oates remarks: "A common bird, generally distributed over all marshy places; it has a loud, deep, booming call, and is crepuscular in its habits. The stomach is extremely muscular: one I examined contained green rice, rice leaves, and a small shell.

"A male killed on the 6th June measured: Length, 17; expanse, 28; tail, from vent, 3·8; wing, 8·5; bill, from gape, 1·7; tarsus, 3·35.

"Iris, hazel brown; eyelids, smoky plumbeous; frontal shield and base of upper mandible, deep dull red; horn, pinkish; the bill, with the above exception, is yellow, there being a red spot at the base of the lower mandible; inside of mouth, flesh color; legs, plumbeous green; claws, horny.

"They probably breed here in June."

905.—Gallinula chloropus, *Lin.*

Specimens from Pegu differ in no way from those we have from many parts of the world.

Mr. Oates says: "This species appears to be common. I shot three birds in one week near my own house."

907.—Gallinula phœnicura, *Penn.*

Mr. Oates remarks that this is very common in the plains of Upper Pegu. For further remarks in regard to this species, *vide* Stray Feathers, 1874, p. 300.

911.—Rallina fusca, *Lin.*

This species is probably not uncommon. Mr. Oates recently secured a pair. He says: "I have watched these birds for a long time. Close to my house there is a nasty, dirty swamp overrun with reeds. Just at its tail end, about fifty yards from my verandah, there is a small, comparatively clear, piece of water. Upon this piece of water these two little birds were to be seen every morning walking about briskly over the Lilies; but whenever I attempted to get near them, they would stalk away into the grass. At last I managed one fine morning to get the male, and nearly a fortnight after the female. They are evidently a pair.

"The *male* measured: Length, 8·55; expanse, 12·2; tail, from vent, 1·75; wing, 3·8; bill, from gape, 1·0; tarsus, 1·4.

"The *female:* Length, 7·8; expanse, 12; tail, from vent, 1·7; wing, 3·75; bill, from gape, 0·98; tarsus, 1·46.

"The stomachs contained small insects, and much gravel and sand. In both sexes, iris, crimson; eyelids, plumbeous; the edges, coral red. Inside of mouth was flesh color; bill, greenish brown; legs and toes, red; the hind part of tibia and knee, fuscous. Shot at Boulay on the 21st September 1873."

These birds are precisely identical with others from Ceylon, Calcutta, and various parts of Northern India.

Dr. Jerdon says that the legs and feet of this species are pale green; I cannot say that I have ever seen a specimen with the legs this color. The bird is comparatively very rare in Upper India, so that I have not seen many fresh specimens; but all I have seen had the legs red or reddish. Perhaps in mid-winter the legs are green. I hope that some one in Lower Bengal, where the bird is pretty plentiful, will ascertain whether this be so or not; (see also STRAY FEATHERS, Vol. II, p. 461).

912.—Porzana ceylonica, *Gm.*

A specimen from Thayetmyo is precisely identical with others from Ceylon, Cawnpore, and other parts of Upper India. As I pointed out (STRAY FEATHERS, 1873, page 440), Blyth's species, *amauroptera*, will not stand; it is merely the female of the present species. I have both supposed species, both from Ceylon and from Upper India; in all cases the so-called *amauroptera* were females.

Mr. Oates says: "I have only obtained one specimen, which was caught alive in the verandah of the house of Colonel Horace Browne, Deputy Commissioner of Thayetmyo, who kindly sent it to me."

Fasciata, Raffles, which is so common in Malacca, Penang, and Singapore collections, and which we have from Amherst, though rather similar, is a smaller bird, has the olive of the back much

more rufous, and has all the scapulars, coverts, and *both* webs of primaries and secondaries more or less banded with white. In *ceylonica* a few of the smaller scapulars are in some specimens similarly banded, and there are white bars or traces of them on the inner webs of both primaries and secondaries; but the banding never extends either to the coverts or to the outer webs of the quills.

913.—Hypotænidia striata, *Lin.*

A specimen from Thayetmyo is darker, and rather larger billed, than Indian specimens usually are, but not nearly so dark as the Andaman birds (*vide* STRAY FEATHERS, 1874, p. 302).

Mr. Oates says: "The specimen I send is the only one I have seen; it was shot near Prome by Captain E. Swetenham, and kindly given to me by him."

916.—Leptoptilos javanicus, *Horsf.*

Mr. Oates remarks: "This species occurs in the plains singly during the rains." No specimen has been sent; but the two species could scarcely be confounded.

917.—Mycteria indica, *Lath.*

Mr. Oates remarks: "This is not a common bird, but remains with us all the year through. A male measured: Length, 52·4; expanse, 85; tail, from vent, 9·4; wing, 22; bill, from gape, 11·9; tarsus, 12·7.

"The legs and feet are coral red; claws, dusky pink; bill, black; gular skin, dusky purple; eyelids, dusky purple, turning to pink at the centre of the lower lid; irides, bluish brown."

Specimens from Thayetmyo and Rangoon are identical with our Indian ones. How far south *indica* proceeds, and where it meets the Australian *australis*, I have not been able to ascertain. I cannot even satisfactorily make out the difference between the two species; but it appears to consist mainly in the lower part of the back in *australis* being black, while it is white in the present species.

920.—Melanopelargus episcopus, *Bodd.*

Mr. Oates says: "This species occurs in flocks in the rains, and is also seen in the cold-weather. A male measured—

"Length, 36; expanse, 70·5; tail, from vent, 8·0; wing, 20·6; bill, from gape, 6·8; tarsus, 6·9.

"The irides are crimson; eyelids and naked skin in general, plumbeous, becoming purplish on the throat. The bill is black, reddish on the anterior half of culmen, the tips of both

mandibles, the anterior three-fourths of gonys, and nearly the whole of the cutting edges, except the gape; feet, red; claws, reddish horny."

923.—Ardea cinerea, *Lin.*

Captain Feilden procured this species at Thayetmyo.

924.—Ardea purpurea, *Lin.*

925.—Herodias alba, *Lin.?* H. egretta, *Gm., nec Tem.*

929.—Bubulcus coromandus, *Bodd.*

930.—Ardeola Grayii, *Sykes.*

All these species are reported to be common in Thayetmyo by Mr. Oates, the first occurring chiefly in reedy swamps.

926.—Herodias intermedia, *V. Hasselq.*

927 ?—Herodias garzetta, *Lin.*

Besides the above, all of which he enumerates, Captain Feilden says that he also procured these two species in the neighbourhood of Thayetmyo.

927 *bis?*—Herodias melanopus, *Wagl.*

I have considerable doubts as to the correctness of Captain Feilden's identification of *garzetta*.

Mr. Oates remarks: "If Captain Feilden has rightly identified *garzetta*, then this is the Heron which breeds in such vast quantities in the Thayetmyo Cantonment. But it cannot well be this bird.

"I have no skins, but I have careful measurements and descriptions of three birds—

I.	♀ ;	L.,	20·5 ;	exp.,	35·5 ;	tail,	3·2 ;	wing,	9·2 ;	tar., 3·6.
II.	juv. ;	„	20·0 ;	„	35·2 ;	„	3·3 ;	„	10·0 ;	„ 3·5.
III.	♂ ;	„	20·3 ;	„	36·5 ;	„	3·4 ;	„	9·8 ;	„ 3·65.

"Bill, 3·02. All three were shot on the 25th August.

"In I, the bill, face, and iris, bright yellow; legs and feet, black.

"In II, much the same as the above; the bill and face being dull yellow.

"In III, the bill and face were neither so bright as in the I, nor so dull as in II; there was also some brown about the nostrils.

"Plumage of III, which I took to be an adult male, with no signs of immaturity about him. Whole plumage, pure white,

mandibles, the anterior three-fourths of gonys, and nearly the whole of the cutting edges, except the gape; feet, red; claws, reddish horny."

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II. juv.; „ 20·0; „ 35·2; „ 3·3; „ 10·0; „ 3·5.
III. ♂; „ 20·3; „ 36·5; „ 3·4; „ 9·8; „ 3·65.

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"In II, much the same as the above; the bill and face being dull yellow.

"In III, the bill and face were neither so bright as in the I, nor so dull as in II; there was also some brown about the nostrils.

"Plumage of III, which I took to be an adult male, with no signs of immaturity about him. Whole plumage, pure white,

tinged with the slightest possible suspicion of fulvous on the following parts:—

"The head and anterior half of neck, the back, and scapulars.

"Feathers on head erectile, but not forming a conspicuous crest.

"The dimensions would do for *Bubulcus coromandus*, but this in summer plumage is a very different bird. They are too small for *H. garzetta*, which moreover has the bill (according to Jerdon) black at all seasons. The Thayetmyo bird, of which hundreds may be seen in the cantonment, is a bird colored as I have described during the summer months, and with a yellow bill varying in intensity in different individuals."

Looking to dimensions and to the black feet, this should be *melanopus*. The bill seems too long, the wings and tail short for *coromandus*, and then in August this latter ought to exhibit its conspicuous golden buff plumage; on the other hand, I am not aware that *melanopus* ever exhibits even a slight fulvous tinge, nor that the bill is *yellow* all through the year!

Without specimens further speculation is useless. The bird is certainly not *garzetta*, but it may be neither *coromandus* nor *melanopus*.

931.—Butorides javanicus, *Horsf.*

Thayetmyo specimens are somewhat differently colored to Indian ones. The sides and back of the neck are more tawny, the back is more bronzed, and the head and crest with, I think, a slightly brighter metallic gloss, and that though the specimens sent were shot in winter. I do not know that they could be considered distinct (though the tarsi also seem to run longer); but still, if the differences I have pointed out are constant, the Pegu birds constitute a distinguishable race.

Mr. Oates remarks: "This little Bittern is common in the Engmah Swamp, living in the thick brushwood on its banks. The irides are yellow; naked skin, green, duller on the eyelids; inside of mouth, fleshy salmon-colored; upper mandible, black, with a small streak of green below the nares; gape, greenish brown; lower mandible, greenish yellow, more or less black along the edges; legs and feet, green, except front of tarsus and ridge of toes, which are brownish; claws, horny; soles, tinged with orange."

932.—Ardetta flavicollis, *Latham.*

Mr. Oates remarks: "The Black Bittern is pretty plentiful in swamps in the plains, and in the hills every nullah in the Evergreen Forests contained one or more of these birds.

"Males measured as follows:—Length, 23 to 23·4; expanse, 29 to 30·8; tail, from vent, 2·7 to 2·8; wing, 8·1 to 8·3; bill, from gape, 4 to 4·2; tarsus, 2·9.

"Irides, pale red; eyelids, bluish; bill and skin of face, a dingy rufous chocolate, blackish on culmen and paler on terminal half of lower mandible; legs, feet, and claws, black."

934.—Ardetta sinensis, *Gmel.*

A single specimen was obtained by Mr. Oates at Thayetmyo in August.

937.—Nyctiardea nycticorax, *Lin.*

Mr. Oates remarks: "Last Christmas there were immense numbers of this species in the bushes bordering the Engmah Swamp. I shot a good many, and they were all exactly the same as the specimens now sent. On going there again last June and July, not one was to be seen; it is very curious that all the birds I saw at Christmas were young ones. I did not shoot or see a single one without the white spots on the wing."

The specimens sent are certainly the young of this species, and it is curious that Mr. Oates should have met with none but young birds; however, it is nothing uncommon for the young of migratory birds to travel in flocks by themselves without any adults. With us, in India, the Night Heron is everywhere, as far as I know, a permanent resident.

Later Mr. Oates writes to me: "I have now ascertained that this bird is pretty common and a permanent resident, but I have never met with it since in such immense numbers as I did at Engmah in December."

939.—Anastomus oscitans, *Bodd.*

Mr. Oates has sent a head only of this species; it is, he says, "a rare bird in Upper Pegu."

943.—Ibis falcinellus, *Lin.*

Captain Feilden says: "I also shot the Glossy Ibis, but I do not think it is common."

Mr. Oates writes: "I once saw a large flock of what must have been this species flying high and out of shot."

950.—Sarkidiornis melanonotus, *Tem.*

Mr. Oates says: "Common in the Engmah Swamp in large flocks; feeds a good deal on young paddy. I lately saw one in captivity; it continually dived from one end to the other of its tank, some fifty feet in length."

951.—Nettapus coromandus, *Lin.*

Mr. Oates says: "This species is very common."

953.—Dendrocygna major, *Jerdon.*

Mr. Oates says that "this species is very common, especially about the Engmah Swamp. On the 21st July I found a fully formed egg in the oviduct of a female; flappers were about in the middle of October."

954.—Casarca rutila, *Pall.*

The Ruddy Shieldrake is common in the winter months on all sand-banks in nullahs, &c.

962.—Dafila acuta, *Lin.*

Mr. Oates appears to have only met with this species on the Engmah Swamp, and even there it appears to be far from common.

964.—Querquedula crecca, *Lin.*

Mr. Oates says: "This is a common species in Upper Burmah."

965.—Querquedula circia, *Lin.*

A single specimen—an immature female—has been sent by Mr. Oates, who says this is the only specimen of the species he has met with.

975.—Podiceps minor, *Lin.*

Thayetmyo, like Indian, specimens are in my opinion quite undistinguishable from English and European ones. It is very common in Upper Burmah.

985.—Sterna seena, *Sykes.*

Mr. Oates says: "This species is common all the year round on the sand-banks of the Irrawaddy, on which it lays its eggs in the third week of March. Occasionally it is seen a long way from the large rivers."

987.—Pelodes javanica, *Horsf.*

Mr. Oates says: "Very common in the Irrawaddy; it lays at the end of March."

995.—Rhynchops albicollis, *Swainson.*

Mr. Oates remarks: "Common in the Irrawaddy River. I have never found anything in its stomach, except a little oil.

"Males measured: Length, 18·1 to 18·3; expanse, 45 to 45·5; tail, from vent, 5 to 5·1; wing, 16; bill, from gape, 4 to 4·2; tarsus, 1·1 to 1·2.

"The bill, bright red, becoming yellow at the tip of both mandibles; irides, dark brown; eyelids, grey; legs, bright red; claws, blackish horny."

In regard to the food of these birds I may remark that, according to my experience, they feed chiefly about sunset and a little later. On moonlight nights parties of them have passed me on the river, and I have rarely failed to find [illegible] of fish in their stomachs when shot in the evening. I have often found their stomachs apparently empty, as described by Mr. Oates and Dr. Jerdon, but I think have more generally found some remains of fish in them, no matter at what hour they were shot.

1004.—Pelecanus? philippensis, *Gm.*

Captain Feilden says he got "the Common Pelican" at Thayetmyo; probably it was this species.

1007.—Graculus melanognathus, *Brandt.*

1008.—Plotus melanogaster, *Penn.*

Mr. Oates says: "Both these species are common within our limits."

Additions to the Avifauna of Ceylon, and notes on various Species found there.

By W. Vincent Legge, r.a.

Since the publication of my paper, *antea*, *Vol. I.*, *p.* 487, *Phodilus badius*, *Glareola lactea*, and *Onychoprion fuliginosa* have been added to the list of Ceylon birds, *vide* Mr. Hume's notes, *antea*, *Vol. I.*, *p.* 429, and *Limnætus Kienieri*, by a gentleman in Ceylon, who published his discovery in the Journal of the Ceylon Asiatic Society. I now give two additional species, *Neophron ginginianus* and *Prinia Hodgsoni*, in the following notes, and recapitulate *Glareola lactea*, in order to make a more extended notice of it than was contained in the above paper.

The numbers that precede the names are those of Dr. Jerdon's work and Mr. Hume's Catalogue; those that follow the name in brackets are those of Mr. Holdsworth's Catalogue. All measurements and descriptions of the soft parts, *as is invariably my rule*, are taken from the specimen in the flesh, except where the contrary is specified.

6.—Neophron ginginianus, *Daud.* (1.)

This Vulture, the most important addition for many years to our Ceylon Avifauna, must now take its place at the head of the existing catalogues, an immature example having been shot in the hills some months ago by a gentleman in the Public Works Department. The bird in question occurred at Newara Ellia, our Sanitarium—which is situated at an elevation of 6,200 feet above the sea level—during the early part of last March. This was during the prevalence of the north-east monsoon, the time of year, when, as I predicted, *antea*, *p.* 488, *Vol. I.*, Indian Raptors will be found to stray southwards to Ceylon. It was at this season that I procured *Poliornis teesa* and *Erythropus vespertinus*, and Mr. Bligh of Kandy his interesting straggler *Limnætus Kienieri*. It is to be hoped that each successive season will replenish our list, now that the study of ornithology is more zealously pursued than heretofore.

Our Scavenger was, it appears, very tame at the time he was observed, and was flying about the native bazaar, when he met with his untimely end. Bearing in mind the habits of this species and its mode of frequenting the vicinity of human dwellings in search of its sustenance, it is not unreasonable to suppose that, as it has not been hitherto observed, this is its first actual appearance of late years in the island. But that it should have been found at this particular place and at such an elevation seems remarkable; for, as regards its South Indian range, I presume that it is by no means confined to the highlands which correspond in the character of their Avifauna to our hills. It must be inferred, therefore, that it was driven southwards, in a high northerly wind, at a considerable elevation, and brought itself to a stand in the hills of the Central Province, thence making its way to the nearest collection of human habitations, which, probably, would have been Newara Ellia.

9.—Falco peregrinator, *Sund.* (2.)

This fine Falcon, so rare in Ceylon, is seen occasionally about the high cliffs of Fort Frederick, and is, I have no doubt, from the abundance of food afforded it there, a permanent resident at Pigeon Island. This islet is situated 14 miles north of Trincomalie at about 1½ miles from the mainland. Near this place, about ½ mile nearer the shore, is another rocky islet, frequented by flocks of *Columba intermedia*, which furnish many a dainty meal for the Royal Falcon. Pigeon Island itself is rarely visited, except by fishermen who can only land at the south side, where there is a little beach backed by a tangled thicket, which rises gradually to the pinnacle in the centre, whence the northern side descends in the form of a perpendicular face right

into the sea. This cliff, under which it is very difficult to pass forms a splendid shelter for the *Shahin;* for he can perch and roost on the shelves which jut out into the numerous crevices in the face of the rock, without being disturbed by any one on the island, who does not choose to scramble along the almost inaccessible rocks at its foot. I visited the spot on the 6th instant in search of pigeons, and, finding none, was clambering over the rocks on an adjoining islet, separated only at high water from the main portion, with the view of finding a suitable hole for a bath, when I espied a splendid Falcon coming along over the water and making for the cliff. I quickly turned back, reached the cliff, and got out on to an enormous boulder, where I *enfiladed* the face of the cliff, having a good view of the whole of it, but not a vestige of a Falcon was to be seen. I then determined to get right underneath, and jumped across a chasm to a lower boulder, from which I could see every spot almost in the precipice, but no Falcon. I then shouted and out-shot three splendid fellows; bang went the 12-bore, and of course missed,—I never did anything *but* miss first shot on such critical occasions, and always shall—and in an instant they were all over the water, where it was folly to drop them; back they came, dashing at the rock, and not caring a pin for my shot, when bang went the weapon and down came a fine fellow between two large rocks, where I judged him to be safe, and went in for several shots at impossible distances at the other two, who wheeled and dashed round the summit of the rock in such a manner that I was sure they must be breeding. After a while the third bird made off, the second disappearing suddenly from the battle field. Thinking it was about time to pick up my dead bird, I made my way across, and through the water, to the spot where I had dropped him, when to my extreme gratification I found that he had fallen into a sluice, out of which the first receding wave must have carried him! Not a sign of my prize anywhere, high and low, I searched, and at last gave up in despair, convinced that a monstrous blue rock fish had long since polished him off, determined that Pigeon Island Falcons should never fall into the hands of the ruthless soldiery! Getting back was a matter of squeezing myself into the thickness of a board, and so propelling myself up a huge cleft for about 15 feet, but it was accomplished, and, arriving at our camp under the trees on the beach, where my companion was hungrily waiting breakfast, the first sight that greeted me was a magnificent winged *Shahin* hanging by his knotted primaries (Moorish boatmen haven't much idea of the value of a bird's quills!) to the branch of a tree. My companion* had dropped

* Major Sir John Campbell, R.A.

him as he shot past, and hence his disappearence from my side of the island.

A long yarn this, over the shooting of a Falcon, but I must be forgiven, as this is the second authenticated instance of a *Shahin* being procured in Ceylon. Layard's bird was the first. My specimen is a female in, what must be, nearly the fully adult plumage. Dimensions: length, 16·75; wing, 12·8; tail, 6·5; tarsus, 2; mid toe, 2·15; its claw, 0·82; bill, from gape to tip straight, 1·15; expanse, 38·1.

Iris umber brown; bill dark slate blue, changing to greenish at the edge of the cere, which, with the gape and base of under-mandible, is chrome yellow; tarsi and feet gamboge yellow. The head, hind neck, and cheek-patch are almost black; back and scapulars dark slate with darker mesial lines, while the wing-coverts are margined only with the slaty hue; the lower back gradually pales into fine bluish grey, handsomely barred *in the centre* of the upper tail-covert feathers with blackish; the tail is broadly tipped with buff; the throat and chin almost pure white gradually changing from the rufous white of the chest to the uniform rufous of the breast and belly. The only markings beneath consist of a few bars on the lower flanks and under tail-coverts.

The pale rump is very conspicuous in this bird when on the wing.

What are the relative powers of flight of this species and the Peregrine as observed in India? I witnessed, on the 12th of this month, a remarkable capture of a Palm Swift by the former bird. On the shore of Fort Frederick stands a solitary Polungra Palm, in which a little colony of *C. palmarum* breed every year. I was about to ascend the tree to look at the nests, and was watching the little troop of Swifts circling round me, when a Shahin which has been about the cliff for the last fortnight dashed past me and gradually mounting higher and higher went away with a twisting flight for about 300 yards at a tremendous pace; I could not see, at this moment, what he was pursuing, as it was just getting dusk, but he suddenly checked himself and shot down with *meteoric* swiftness almost into the sea. I perceived a poor little Swift just in front of him; close to the surface of the water, it dashed along in a horizontal direction for about 100 yards, closely pursued by the Falcon, and then twisted hither and thither for the space of a few seconds, the *Shahin* following its every movement until he struck it with his talons, and seizing it in his bill flew past me to the cliff. The whole chase did not last more than a minute, and though I pitied the poor little *Cypselus*, with its young clinging to the palmyra leaf above me, I returned home with the impression that to a naturalist a finer sight could not have presented itself.

37.—Limnætus Kienieri, *De Sparre.* (12 *bis.*)

Mr. S. Bligh of Kandy gives an account of the shooting of this interesting addition to Ceylonese birds in the last number of the Journal of the Ceylon Branch of the Asiatic Society.

72.—Ketupa ceylonensis, *Gmelin.* (29.)

All examples of the Brown Fish Owl that I have shot have the tarsi and feet decidedly *murky sap green;* there is no yellowish tint, whatever, in the leg, except it be, when the specimen is drying, between the reticulations. Jerdon lays particular stress on the yellow hue, and I see Mr. Holdsworth gives the colour as "dirty yellow," whether or not, from a freshly shot specimen I cannot say. Furthermore, in Ceylon examples the bill is not "horny yellow," but dusky greenish grey, dusky brown on the culmen, at the curve in some, and with a brown patch on either side of it in others. Judging from four specimens that I have measured, there does not seem to be much difference in the size of the sexes. Length from 20 to 20·5; wing from 14·5 in a *female* to 15·3 in a *male.*

105.—Batrachostomus moniliger, *Layard.* (44.)

I have seen, I think, two species of this interesting genus; the one, a small rufous bay brown bird, with an enormous mouth and shortish tail,* the other larger and of paler plumage, corresponding to the description given by Mr. Hume of his Ceylon specimen, *antea, Vol. II, p.* 354, but of much greater length† than that example.

The former was procured in the forests of the Western Province between Negombo and Koonegalle, and was purchased for the Local Museum in 1869. I regret to say I have no data of this specimen, as when I repaired to the Museum for the purpose of taking notes on it, I found that it had disappeared, having been thrown away, I suspect, by a careless native taxidermist, because it was not a good skin!

The latter I shot myself in a bamboo thicket a few miles from Galle. I met with it at about 3 in the afternoon, sitting across a horizontal branch in the thicket, its eyes shut, and with all the appearance of an Australian *Podargus.* When I first saw it, I was within a few feet of it; it did not see me, nor open its eyes, as if it heard anything, and I was thus enabled to slink away to a suitable distance before serving the ends of science by taking the unconscious creature's life.

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* This is apparently the true *moniliger*, Layard.—Ed., S. F.
† My measurements were from the dry skin.—Ed., S. F.

The dimensions of this bird are*:—length, 9·1 inch; wing, 4·6; tarsus, 0·5; mid toe with claw, 0·8; bill across gape, 1·4 wide; gape to tip, 1·4. The iris was yellow; bill greenish brown; feet fleshy grey; ends of toes darker. The general plumage above is sepia and rufous brown, mottled with black and white, darkest on the head and most rufous on the wing-coverts; the feathers of the head have terminal black spot with the extreme tip white; loral plumes rufous, with dark bars; a whitish supercilium; the scapulars have the outer webs whitish buff finely mottled with black, and having the appearance of two broad longitudinal stripes; tertials mostly silvery grey, mottled dark with a terminal arrow-headed spot, followed by an extreme white tip; the wing-coverts mottled rufous and black, with a large terminal white spot, bordered by a black anterior edge; primaries dark brown with marginal fulvous spots and with the tips mottled; tail with alternate fulvous and grey bands, the whole finely mottled and with a dark dividing transverse mark at every two bands; beneath the throat and chest tawny, mottled and cross-rayed with brown and with a white band across the throat; the feathers with the white spots having a transverse anterior black border to them; breast paling to greyish, mottled brown and with a white terminal spot on the feathers at the side of that part; tibial plumes fulvous, with narrow cross rays; abdomen fulvous.

147.—Palæornis eupatrius, *Linn.* (62.)

The genus *Palæornis* is exciting particular attention at the present moment. I therefore subjoin a few particulars regarding our Ceylonese birds.

I do not think the question of inferiority in size in our insular birds can be quite considered a settled matter, for I have seen in the Western Province of this island enormous birds flying high over my head and always unfortunately out of range; they were, curiously enough, always single; but of course this was only a coincidence, and could not be accepted as a reason for thinking that there were two species of large parakeets here. Last year I shot several examples in a hitherto unexplored part of the south coast of the island, which, I am sure, were smaller than many I had seen previously on the wing. The wing of a male of one of these measures 8 inches, but the tail was much abraded, and I am unable to say even approximately what the normal length was; with regard to the mandibular stripe in this example, it is by no means ill-defined or narrow, measuring 0·3″ at the widest part, and running out into a fine point on the anterior edge of the rose

* This appears to me to be clearly *B. punctatus*, Nobis, S. F., Vol. II., p. 354.—Ed., S. F.

ring, exactly on a level with the eye. This feature is about the same as this in all caged examples I have seen. In a young male the rose ring was incomplete, not extending round the hind neck; a female, immature, but apparently *full grown*, measured 15·75; wing, 7·4; tail from vent, 8·5; height of upper mandible, 0·65; length from nostril straight to tip, 1·17. Iris dingy yellow, with a darkish inner circle (our male, when adult, has the iris golden* yellow); feet, more slaty than in the adult. The bill is much smaller than in the males, in one of which latter it measures in height nearly 0·8, and in length from the nostril 1·35.

Since the above was written, I have procured a male of the year at Pigeon Island, in which the bill measures 0·8 in height, and the maxilla 0·7. There is not a vestige of a mandibular patch or neck ring in this example, the plumage being that of an adult female. It has a wing of 7·6.

152 *quat.*—Palæornis Calthropæ, *Layard.* (65.)

The bill of an immature female in my collection is reddish black. I have never had an opportunity of examining nestling females, so *I* cannot assert that their bills are red, but from the reddish hue in my specimen alluded to here, it is probable that the part in question is red when the birds are very young. The crown and nape in my bird are dull green, overcast with bluish; there is only a trace of the black gorget and an indication of the bright green neck ring; the interscapular region is overcast with bluish on a dull green ground, and the back and rump are *brighter* blue than in the male (adult), with, however, the longer upper tail-coverts of a light green, which is continued along the edge of the blue region to the flanks.

166 *ter.*—Chysocolaptes Stricklandi, *Layard.* (70.)

This Woodpecker is abundant in many parts of the island, and may, I think, be considered the most numerous of our *Picidæ* after *B. ceylonus* and *B. puncticollis*. It appears to have been until lately entirely overlooked in the low country districts, and thought to be quite a hill species. This is by no means correct. In 1872, I found that it inhabited the forests of the low hills in the south-west of the island, as well as the mountains of that part (Ibis, 1874, p. 15). Prior to that I had shot it on the banks of rivers in the south-east. Last year I met with it throughout the plains of the same district. It is likewise abundant both in the cocoanut groves and jungles of the north-east (vide STRAY FEATHERS, Vol. I., p. 340), in the former of which I have shot *Brachypternus ceylonus*, *B. puncticollis* (?) and this bird within a

* Out of more than a dozen live specimens of *sivalensis*, now before me, one of which has been six years in captivity, not one has more than a *faint* yellowish tinge to the white irides.—ED., S. F.

few yards of each other in the same compound. In the Central Province it is abundant at all elevations, but not so numerous at medium altitudes, such as 3,000 to 4,000 feet, as *B. ceylonus*.

The average dimensions of adult males are: length, 11·5 inches; wing, 5·8 to 5·9; bill at front, 1·7 to 1·8; females, as far as I can judge from half a dozen examples collected in different parts of the islands, are slightly larger than the other sex. The smallest I have has a wing of 5·8, and the largest one of 6·1. Immature birds, well into the first year, are shorter in the bill by from 0·09 to 0·15, and have the upper mandible darker about the culmen than adults.

Judging from two examples (females) in my collection, which were shot in the forests between here and the central road, the plumage of this Woodpecker appears to fade in a remarkable manner, particularly as regards the head, hind neck, and wings. When in new feather, the black of the head in the female is intense black, and the spots quite circular, and much more perfect than in the abraded stage. In one of the above instances, however, the head and nape are intermingled with *old light brown* feathers, the point of the wing and tip of earlier primaries are brownish grey, and the red of the least wing-coverts faded into reddish grey; a few of the pectoral feathers are also of an umber brown hue. In the other case, the tips of the nuchal feathers, those of the hind neck, point of wing and the primaries, as well as their coverts, are light brown, while the interscapular region is reddish gray. In the first instance, the entire head would appear to have been in a faded condition before any of the new black feathers sprung; in the second, the black of the vertex and forehead consists of the *old* feather, and the process of fading seems to have commenced from the neck upwards.

Were it not that these two females, as far as size, colour of iris,* and bill were perfectly adult, and that the peculiar appearance of the tips of the quills and wing-coverts gave unmistakeable signs of abrasion and alteration of colour, I should have been disposed to have regarded this coloration as immature.†

179.—Micropternus gularis, *Jerdon*. (72.)

With regard to Mr. Hume's remark, *antea*, *Vol. I.*, *p.* 434, *re* Mr. Holdsworth's notice of the dark lower parts of Ceylon specimens, I would suggest that, in all probability, the latter gentleman took his observations from males, which are considerably darker than females, both above and beneath. This species

* Dusky in the young.

† Doubtless the brown feathers were the remains of immature plumage.—Ed., S. F.

has a wider range in Ceylon than has been supposed. It is confined to no particular part of the low country, but is to be met with in all open forest districts. It is tolerably common along the river Gindurah near Galle, and in jungles on the borders of tanks in the south coast, in similar localities in the district of Trincomalie, and in the forest country of the interior of the western province.

180 *bis*.—Brachypternus ceylonus, *Forster*. (74.)

This species has a very wide range in Ceylon. I have found it in all districts that I have visited, with the exception of Jaffna. Mr. Holdsworth does not record it from Aripo, and therefore it may be absent from the north-western portion of the island. It is, however, to be found in the forest country between Trincomalie and the northern road, and I suspect extends across to the western side as far as the confines of the low scrubs near the coast in which Mr. Holdsworth chiefly collected, and where, from my experience of it in the south-east, I know it would not be found. In this latter district it is abundant up the country where there is forest, but it does not affect the scrubby jungles along the coast line.

280.—Buchanga longicaudata, *A. Hay*. (111.)

This is entirely a forest bird, as Mr. Holdsworth in his catalogue affirms it, on Lord Walden's authority, to be; it frequents the tops of high trees, and is fond of selecting a dead branch as its perch, from which it darts out on its prey. It is common in the Trincomalie jungles, where I have generally found it in the vicinity of tanks and retired valleys. I have also observed it in the wilds of the south-eastern districts. According to Jerdon, it would appear to attain a larger size on the Continent than here. My largest male measured 11·4 inches, with a tail of 6 and a wing of 5½; while females average about 10·8 in length, with a wing of 5·2. Immature birds have the terminal white spot to the under wing-coverts and the white bars on the under tail-coverts common to most of the genus. The iris in this Drongo-shrike is *redder* than in any of the others.

B. minor is the common species at Jaffna, where it may be seen perched on the backs of cattle even inside the Fort. The immature bird has brown wings and much white edging about the abdomen and lower parts, besides the under tail-covert bars.

281.—Buchanga cœrulescens, *Linn*. (112.)

According to my observations of Ceylon examples, the upper surface of this species exhibits a marked distinction in the

greenish rather than the *greyish** blue of that part, from *leucopygialis*.

I think the examination of a large series of both these species would prove the Ceylon bird to be the smaller; both, however, vary much in size and length of wing. *Cærulescens* is stouter in the bill than *leucopygialis*, and has a fine light edging at the tips of the inner primaries and secondaries which the latter has not. It frequents the jungles (not occurring about open paddy fields like our Ceylon species) in the north and south-east of the island, and in these localities is by no means uncommon. I obtained a specimen in 1868 at Colombo, on the west coast, but, further than this, I am not aware of its occurrence in any but the above districts.

538.—Prinia Hodgsoni, *Blyth.* (165 *bis.*)

This Prinia, which from its confined habitat in Ceylon has been overlooked, must now be added to our list. I met with it last year in July and August in great numbers in the flat jungle-covered country of the south-east. It fell to my gun, in the first instance, in a clearing in the jungle, where it was affecting long grass and low bushes, and subsequently I always found it in such places, and along the edge of jungle roads. It consorted at that season in little troops of 4 or 5, consisting of old birds and their young broods, and I therefore procured without difficulty immature birds in all stages. Jerdon has altogether omitted the pectoral band so conspicuous in the adult male, and this, together with the very limited range of the species in Ceylon, and that, too, confined to the south, the habitat of most of our peculiar birds, disposed me to look upon it as new, but my specimens were identified by Mr. Blanford as *Hodgsoni*, and all claim to novelty on the part of the newly found stranger was thus put aside for ever!

I found that the female differed from the male in the much lighter colour of the upper surface and pectoral band (incomplete in the young female) and in the presence of a lightish line surmounting the lores. The gradation in the hue of the iris and tarsi from the newly-fledged nestling to the adult was very distinct. In the former the iris was *olive* and the tarsi had a brownish anterior wash; in birds of about two months old but fully grown the iris had become olive yellow and the tarsi fleshy yellow, slightly tinged with brown; while in the adult these parts are *reddish yellow* and *fleshy* yellow respectively. The pectoral band is very faint in the newly fledged nestling, and deepens to ashy in the bird of the year, but is neither so broad nor so deep as in the adult. The Ceylon bird does not

* The young, in which the head and wings are brownish, are somewhat grey about the back, that colour mingling with the normal glossy hue.

quite agree in size with Jerdon's measurements. The dimensions of several of my specimens are as below :—

Sex.	Total length.	Wing.	Tarsus.	Bill at front.
♂	4·3 in.	1·8	0·75	0·45
♀ *juv.*	4·1	1·6	0·7	0·45
♂	4·1 (tail not perfect.)	1·78	0·75	0·45
♂ *juv.*	4·32 (tail 1·8)	1·75	0·7	0·42
♀	4·1	1·75	0·7	0·42
♂	4·3	1·85	0·75	0·45
♀ *juv.*	4·25	1·75	0·7	0·45

843.—Glareola lactea, *Temm.* (224 *bis.*)

STRAY FEATHERS, Vol. I., p. 440.

I procured this *Glareola* about swamps and on the shores of the salt pans (Lēwāys) near the town of Hambantota* on the south-east coast. Natives there affirm that it is resident throughout the year with them, and, if this be the case, I have no doubt that it breeds in February or March in the great sand-hills near the town. I procured both old and young birds during my stay there, and had adult specimens sent me in October. Mr. Layard, who was a fellow passenger to Australia with me in November last, informed me that he is almost sure he saw Swallow plover, at times, about Point Pedro.

Notes on some Birds observed in the Suliman Hills, west of Dera Ghazi Khan.

BY V. BALL, M.A.,

Geological Survey of India.

A few days spent on a geological tour in the northern portion of Beluchistan and the south-east corner of Afghanistan during last month (July), gave me an opportunity of making some observations on the birds of that little-known part of the country. Towards the end of the trip, when my regular professional work was completed, I had leisure sufficient to enable me to collect a few specimens.

As to the character of the country in which these birds were found much might be said; but I shall limit my remarks to a few words here.†

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* Spelt in my notes (*antea*, Vol. I., p. 489) Hawbantota by reckless P. Ds., who murdered several other words, such as *sexual* into *several*, and so forth! W.V.B.

N.B.—Your former article was so—well, *charmingly* written, that you ought to be thankful it ever got printed at all.—ED., S. F.

† For an amount of the physical features and geological structure, reference may be made to my paper on the Luni Puthan Coal in the Records of the Geological Survey, Part III., 1874.

The main axis of the hill system of the Suliman range proper runs more or less north and south, and is flanked on both sides, but only to a small extent on the east, by subordinate ranges, which are formed of the crumpled and denuded folds of rolling beds of nummulitic *and more* recent tertiary rocks.

The valleys running between these ranges are, for the most part, tolerably fertile, though there is far from being anything approaching to luxuriant vegetation. Wheat and other grain crops are said to be of excellent quality.

But few trees are to be seen, except where there may happen to be a perennial supply of water. Even in such places they are, for the most part, species of *Acacia*, *Zizyphus*, *Capparis*, and the like, which do not require much moisture. A dwarf palm (*Chæmarops Ritchieanum*) is rather common in the vicinity of stream courses, and an olive (*Olea feruginea*, Royle) occurs on the steep sides and the tops of hills.

Such being the character of the physical features and vegetation, no very rich list of birds can be anticipated.

My collection was made chiefly in the vicinity of the newly-established sanitarium, which is on the main Suliman range, at an elevation of about 5,880 feet. Some of the birds noted were observed at lower elevations or even in the plains. These I shall specially distinguish :—

6.—Neophron ginginianus, *Daud.*

I did not collect any specimens of the Scavenger Vulture, and have, therefore, nothing particular to record regarding it, save that it was more abundant in the Sulimans than in any other part of India which I have visited. This was probably due to the fact of the absence or extreme rarity of any of the species of true Vultures. So far as I saw, Ravens and an occasional Lammergeyer were the only other birds with which it had to share the carrion.

7.—Gypætus barbatus, *L.*

I saw the Lammergeyer twice in the Sulimans. On both occasions it was soaring about in the vicinity of the carcases of dead animals. As I was riding along the line of march, I had no opportunity of obtaining a specimen.

17.—Tinnunculus alaudarius, *Gm.*

I saw one Kestril in the highest part of the hills. The species must be very rare there.

56.—Milvus govinda, *Sykes.*

I shot a specimen of this bird of normal appearance at Saki Surwa. Owing to the extreme heat of that most infamous place I failed to preserve it.

On several occasions I saw a species of Swift (*Cypselus*) near the highest points, but did not obtain a specimen. On two or three evenings a *Caprimulgus* (? *C. mahrattensis*) fluttered past our tents. I frequently saw a large *Merops* in the plains, and one or two specimens inside the outer margin of low hills. This, I suppose, was *M. ægyptius*. At Dera Ghazi Khan, *Coracias indica* was common, and I think I saw it up to the hills,—but the first morning I entered them as I was riding through the Sine Pass my attention was drawn by an unfamiliar note, and casting my eyes across to the opposite bank I saw three Rollers which I had no hesitation in at once identifying with *C. garrula*.* I did not meet with either species further in the hills. *Palæornis torquatus* was very abundant, as well as other birds to be subsequently mentioned, in the famous date groves which surround Dera Ghazi Khan, but I saw none in the hills.

Both *Collyrio lahtora* and *C. vittatus* occurred in the higher regions, but were extremely rare. *Buchanga albirictus* I saw on several occasions when passing through the low outer ranges, but I do not remember to have seen it on the main range, or even in the valleys to the west.

Chatarrhœa caudata I saw within the hills, but not at high elevations; both it and *M. terricolor?* were tolerably abundant in the plains between Dera Ghazi and the hills.

Otocompsa leucotis, Gould, was seen in the lower ranges. *Thamnobia Cambaiensis*, if that be the true name of the Sindh species, was also observed. Often it occurred at tolerably high elevations.

489.—Dromolæa picata, *Blyth.*

The Pied Stone-shot was perhaps the most abundant bird which I met with in the higher regions. A nest which I found in the rocks on the 10th of July at an elevation of 5,880 feet contained three very young quite unfledged nestlings, which were probably not a week old. The nest was a very loose structure, the component parts of which (chiefly dried grass) were kept together by their position in a sheltered cleft of rock.

I noticed that these birds had very much the habits of *Copsychus saularis*. Towards evening they used to come about the bungalow, perching on the verandah and singing with a low twittering note. Occasionally they would pick up insects off the ground, and sometimes capture them while on the wing.

* For the range of this species in India, *vide* Vol. I, p. 168.—Ed., S. F.

544.—Drymoipus longicaudatus, *Tick.*

I obtained two specimens of a bird which Mr. Brooks considers belong to this species.

Small parties of it were not uncommon in the bushes at the higher elevations bordering water-courses.

547 *bis.*—Suya obscura, *Hume.*

A single specimen of a bird, quite unknown to me, proved, on comparison with the type in Captain Biddulph's collection, to be identical with the bird recently described by Mr. Hume under the above name.

The general appearance of the plumage seems to me to be nearer *Drymoipus* than *Suya*.

Measurements in inches :—

Wing, 2·1; tail, 2·7; tarsi, 0·83.

547.—Suya crinigera, *Hodgs.*

The Brown Mountain Wren Warbler was common at the higher elevations, being generally found perched on the bushes of wild olive.

604.—Agrodroma Jerdoni, *Finsch.*

The Brown Rock Pipit was abundant in various stages of plumage on the dry grassy slopes of the higher elevations. I have no doubt that it breeds there, as some of the young birds could only fly very indifferently.

606.—Heterura sylvana, *Hodgs.*

I shot one specimen of the Upland Pipit, and saw several others in the highest part of the hills; but the species seemed to be less abundant than the preceding.

657.—Corvus Lawrencei, *Hume.*

Mr. Hume has separated the Sind and Punjab bird from the European, chiefly on account of its smaller size. The only specimen which I brought away with me is certainly very much smaller than any of the specimens of *corax* and *tibetanus* in the Indian museum with which I compared it. There seemed to me to be more difference between it and *corax* than there is between the latter and *tibetanus*.

These Ravens occurred throughout the hills. A large flock of them kept up with the camp, and together with the *Neophrons* held high revels over the offal of the *Dumbas* (5-quartered sheep*) which were from day to day slaughtered by the Khans and their followers.

* That is to say sheep, in which the "*Dum*," or tail, is so enormous, as to reckon as a separate quarter.—Ed., S. F.

I also observed these birds in the plains up to Multan. At Sher Shah I saw a Common Crow (*C. impudicus*) bullying a young Raven, one of the old birds making no attempt to defend it. It would seem that no birds are safe from the attacks of these impudent Crows.

Measurements in inches:—Wing, 16·25; tail, 9·5; bill at front, 2·3; tarsi, 2·8.

690.—Pastor roseus, *L.*

Every morning between 7 and 8 o'clock I observed a number of flocks of the Rose-colored Starling flying towards the plains. Their destination was, I believe, the date groves 25 miles off, which surround Dera Ghazi Khan. The dates were at that time getting ripe, and large numbers of Mainas and Parrots were attracted by them. I saw too large flocks of Common Starlings flying through the groves, but cannot say certainly that they also eat dates; it however seems to me probable that they do.

Some of the Rose-colored Starlings, I was told, roost in the station, but the luxurious birds which I observed had, it would seem, their hill sanitarium to which they retired to enjoy cool slumbers.*

757.—Mirafra cantillans, *Jerdon.* ?

A young bird which I shot in the Chamarlang valley at an elevation of about 4,000 feet appears to belong to this species. I did not observe any others.

769.—Galerida cristata, *L.*

The Crested Lark was not uncommon in the higher regions. I did not observe it lower down. Possibly it leaves the plains during the hot weather and rains.

788.—Columba intermedia, *Strick.*

The Common Blue Pigeon was obtained in the higher regions. I also saw one specimen of *C. livia.*

It would appear that this is the border land of the two species.

820.—Caccabis chukar, *Gray.*

One specimen of the Chukar seemed identical in depth of coloration with an example of the Himalayan bird from the vicinity of Simla. The species appeared to be tolerably common in the higher regions.

* I think there may be some mistake here. I understand from Mr. Ball that he never saw any flocks *returning* in the evening, and the end of July is just when these birds commence returning to Western India from their breeding haunts further west. Where these are is still uncertain. See further on this subject, Vol. I, p. 208.—Ed.

821.—Ammoperdix Bonhami, *Gray.*

A small covey of Sesee Partridge hung about the Bungalow hill. I only discovered this fact on the last day, and only secured one young bird, the dimensions of which fall short of those which have been published.

The craw of this specimen contained a quantity of millet, which must, I think, have been picked up from the droppings of some horses, which were tethered close to the place where I found the birds.

822.—Ortygornis ponticeriana, *Gmel.*

The Common Grey Partridge was seen and heard several times in the higher valleys.

855.—Lobivanellus indicus, *Bodd.*

The Red Wattled Lapwing occurred sparingly in some of the higher valleys at from 3,000 to 3,500 feet.

Besides the above, I observed several other birds. As their identification is doubtful, I do not include them in this list.

On the Breeding of Aceros nipalensis.

By J. Gammie, Esq.

Chinchona Reserves, Sikhim.

On the 20th of May Mr. Munro, of Poomong, sent word that he had discovered a breeding hole of *Aceros nipalensis*, so next morning Dr. King and I went to see what could be done in the way of robbing the nest.

Mr. Munro met us on the road, and conducted us to the tree in a hollow of which the female was sitting.

The tree was a species of Dysoxylon, 80 or 90 feet in height, unbranched for 50 feet up, and situated close to a stream at an elevation of about 2,000 feet above the sea. A few feet under the lowest branch, and just above a bulge in the stem, there was a vertical slit which proved to be the entrance to the Hornbill's house. Long bamboos were cut and formed into a very primitive sort of ladder, and a Nepalee ascended.

We stationed ourselves some distance up a steep bank, about 20 yards from the tree, whence we could watch the struggle between the Nepalee and bird. The male had been looking on from a respectable distance at the house-breaking preparations, and

uttering hoarse croaks in hopes of intimidating us; but, as soon as he saw the man ascending, he evidently thought discretion the better part of valor, for he took to flight, and was neither seen nor heard any more that day, but, like the bold fellow he was, left his better half to do the best she could under the circumstances.

The opening appeared ridiculously small for the admission of such a huge bird, and we could see quite distinctly the plaster on each side of the slit. The plastering had evidently been done by the female from inside, and did not meet in any part. At the top of the slit there was a round hole left, and from this hole to the bottom there was a narrow slit of about 2 inches broad down the middle. When the man neared the nest the old lady poked out the tip of her beak and commenced a loud cackling noise, which she kept up for a considerable time. The man stood on the bulge in front of the nest, and held on by a small forked bamboo which he had hooked on to the branch above, and then commenced the struggle between the Nepalee and the mother Hornbill.

The old lady cackled and protested as well as she could against this unwarrantable interference with her domestic affairs. She opened her beak to the full extent of the opening in the tree, and bit manfully at the stick and "*kukree*" (Nepal knife) which the man pushed into her mouth to try to make her cease from reviling and move upstairs—the tree, I should say, was hollow for a good way up.

The bulge was less than a foot in width, so that the man had a very ticklish place to stand on with nothing but a small bamboo to hold on by, and though none of us doubted the pluck of the bold Pahari, yet, what between the frightful noise, the awful looking cavern of a mouth, and the plucky way in which the bird fought, we were all inclined to back the old lady and give long odds. As it turned out, our bets would have been quite safe; for after a quarter of an hour's conflict, the Pahari descended in despair.

A big Lepcha then went up to try his fortune, and, strange to say, he only gave her a single poke when up she went aloft. I suppose she thought, like school boys, one and one fair play, but one down and another at her immediately after, was too much of a good thing, and, no doubt, seeing other eight or ten people down below, had the idea that she would have to fight the lot one after the other, and as they were more than she could reasonably hope to master, it would be better to give in at once, so up she went, and we saw her no more.

She was still upstairs when we left the foot of the tree sometime afterwards; certainly she deserved credit for her pluck,

which after all was misplaced, for the solitary egg was addled. The bottom of the hollow on which the bird sat was level with the lower end of the opening. In the hole there were merely a few of her own feathers, which I send you. I also send the egg* and a sample of the plastering† material, which looks to me uncommonly like the bird's own ordure.

The entrance, after the plaster was picked away, measured 17 inches in length by 4½ inches in breadth, and the hollow of the tree 17 inches in diameter. The height of the hollow could not be measured, but it must have been considerable. I am told that two young ones were taken out of the same hollow last year, and that it has been robbed every season for many years past. The natives also inform me that the Aceros never lays more than two eggs, and occasionally one only, as in the present instance, but that two is the more usual number. The female is said not to leave the nest from the time of her entrance till she comes out with her young ready for flight, a period of about three months.

The male was seen to feed his mate, through the narrow opening, with Dysoxylon fruit the evening before we robbed the nest. At this season of the year Dysoxylon fruit seem to be their principal food. The nest tree was laden with fruit, and was probably chosen, on this account, by the lazy husband, in order to reduce the labor of feeding his wife and children to a minimum. The Lepchas and Nepalese eat both the old and the young of the Aceros, and pronounce them to be rather good eating.

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* The egg is a broad oval, compressed somewhat towards one end, so as to be slightly pyriform. The shell is strong and thick, but coarse and entirely glossless, everywhere pitted with minute pores. In colour it is a very dirty white, with a pale dirty yellowish tinge, and everywhere obscurely stippled, when closely examined, with minute purer white specks, owing to the dirt not having got down into the bottoms of the pores.

It measures 2·25 by 1·75.—Ed., S. F.

† "The plaster appears under the microscope to be almost entirely composed of vegetable tissue, cells, fibres, oil globules, &c., and contains no evidence of the presence of any clay or mineral matter of any kind. The vegetable tissue looks as though it had been semi-digested, very many of the cells being wholly or partially emptied of their contents, and free granules and globules of a bright yellow oily-looking matter abounding.

"The most abundant and characteristic forms of cells present are, 1*st*, small, totally empty thick-walled cells, scattered or still holding together in small patches; 2*nd*, very large rounded cells full of the yellow oily matter so abundant in the free state, and when full of a deep brown colour. Their contents may be rather of a gummy than oily nature, perhaps, as boiling with *liquor potassae* reduces the material to a glutinous mass of deep brown colour. There are naturally also some fragments of feathers, spores of fungi, &c., present in small numbers."

This is our eminent pathologist Dr. D. Cuningham's report, and it makes it quite clear, I think, that the plaster is nothing but the bird's own ordure, with which she closes the aperture, leaving a hole large enough to admit of her protruding the whole closed bill, and a slit below sufficient for the play of the terminal ⅔rds. of the lower mandible when she opens her mouth to be fed. The heap at the foot of the tree of rejected droppings daily cast out by the bird was of the same composition as the plaster, but contained less of the gummy globules and a larger proportion of feathers, scraps of wood, &c., &c.—Ed., S. F.

The Swallows and Swifts of Berar.

By James Aitken.

I have never observed the English House Swallow, *H. rustica* (which is so abundant in Bombay throughout the whole cold season), in Berar.

The Wire-tailed Swallow, (*H. filifera.*)

This species supplies in Berar the place of *rustica*, which it so strongly resembles in its habits. It seems to be even fonder of water, indeed it rarely leaves it, skimming over the surface with a speed matching that of the Swift, its metallic colours flashing in the sun. It is a permanent resident, and breeds from February till June. The nest is a mere shallow saucer built under a rock or wall, sometimes even an earthy bank at the water side, and it exhibits in the construction all the forethought and patience of its English relative. The first nest I watched took four weeks to complete, a narrow layer of mud being added cautiously each day, and left to dry. When this part of the business was complete, a lining of fine grass was added, then one of feathers, and on this were laid three long-shaped eggs, of a white colour, well spotted with dark reddish brown. I confess to having been guilty of the cruelty of taking two of these for my collection, but the faithful little bird continued still to sit, and I had afterwards the satisfaction of seeing the remaining egg hatched and the young one fledged. Long after they are able to fly, the young are fed in the air by the old birds exactly after the manner of the English Swallow, parents and young circling round and round, and then, with a complacent twitter, clinging together for an instant, during which the mouthful of insects is transferred from the one to the other.

The Mosque Swallow, (*H. erythropygia.*)

This is one of those birds which seem highly to appreciate the advantages of civilisation, and to think, like Cowper's cat, that men take a great deal of trouble to please them. In Berar they have almost discarded the mosques which gave them their name, and have betaken themselves to the culverts of the roads, which are now being constructed all over the country. Wherever a road is made, some of the culverts are sure to be taken possession of, as soon as the rains commence, by pairs of these Swallows, which may be seen darting in at one end and out at the other, or hawking about for flies over the pools of water at the road side; their flight has, however, nothing of the extreme rapidity

of that of the Swifts or Wire-tailed Swallows. During the cold season the young often assemble in large flocks, but these all disperse, or perhaps migrate, as the weather gets warmer, and only a few pairs remain to breed during the monsoon. The nest is of mud, with a prolonged entrance running along the wall, and is lined with coarse grass and feathers. The eggs are long shaped, and pure white, without spot of any kind. In the subterraneous situation in which the nest is so often placed, and with the air still further excluded by the long neck, it is a marvel how the young escape suffocation.

The Cliff Swallow, (*H. fluvicola.*)

The smallest of our Swallows, and much less familiarly known than the other species, as it lives in colonies, and is strictly confined to certain localities: at Akola there is one of these colonies, which build their nests under a broken portion of a wall which stretches out into the Moorna; the nests are retort shaped; a few stand apart, but the majority are attached together, the tubular necks all standing out from the wall, and presenting a very peculiar appearance. With the first heavy showers of the monsoon the river comes down in a flood, and washes the whole place clean; as soon as the rains abate, rebuilding commences, and the bustle in the early morning is prodigious, the birds hurrying from all quarters with their bills full of mud. They are much persecuted by sparrows, who take possession of the egg cup of the nest before the neck is added, and a single pair will cause several nests to be deserted before they suit themselves. As soon as the nests are finished the eggs are laid, and when hatched the birds simply throw the eggshells into the water instead of carrying them to a distance, as is done by most birds, aware, apparently, that the stream will carry them away. I have noticed this also in the case of the weaver bird. The second brood is in February, during which month they swarm about the nests like bees about a hive, while every now and then splash into the water goes some too fragile neck, breaking even under the light weight of the little owner. These breakages do not, however, interfere in the least with the process of incubation, but appear to be repaired even while the mother bird is sitting. The eggs are two, sometimes three, in number, of a white colour, spotted with faint red; I have seen some, however, pure white; they vary greatly both in colour and size. After the young quit the nest, they associate in a large flock, playing about over the surface of the water, and drinking frequently as they fly. The old birds do not by any means confine themselves to the water, but spread freely over the country, and sing much on the wing. Their flight is comparatively feeble.

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The Dusky Crag Martin, (*Cotile concolor.*)

The natural habitat of this Swallow is amongst rocks, and on the faces of cliffs, and in such situations it may always be found, but it readily avails itself of the windows and porches of houses, even nesting among the two-storied houses in native towns. I have also known it make its nest on the side of a well. The nest is open all round, merely attached to the wall by one side, and is very neatly lined with feathers. The eggs are more round than those of any of our other Swallows, and are minutely speckled with brown, especially about the thick end; the usual number is, I think, three. They are persecuted while building, and occasionally driven away by the Sparrows, but their open nest not being adapted to the wants of these birds, they do not take possession of it. Though capable, from their length of wing, of great speed, they are no travellers, but may generally be found flying about their chosen cliff or building in a very leisurely manner; the young continue about the spot for some time, but I never saw the old ones feed them upon the wing after the manner of the Wire-tailed Swallows.

The Indian Swift, (*Cypselus affinis.*)

This bird is of course abundant, and its rushing flight and shrill cry often strongly recall summer evenings at home. Its habits are indeed but a feeble copy of those of the English bird, the same circling near their nests, always screaming as they pass them, and the same, assembling in numbers high in the air in the evening, though they fly low much more frequently. They breed once in February, and again during the monsoon. The nests are probably better known than those of any other Indian Swift or Swallow; they are generally built under roofs, sometimes in a crevice between the wall and the roof, but often attached to the roof itself. In the latter case the straws of which the nest is composed are so firmly agglutinated that it tears like a piece of matting; and it is generally ornamented without, as well as lined within, with feathers. Two or three long, white eggs are laid. The young, like those of the English Swift, never become perchers, but take boldly to the wing whenever they leave the nest, returning to it when fatigued until they acquire their full powers. Numbers take possession of the porches and verandahs, where these are high enough, of the cutcherries and other large buildings now erected all over the land, and fly backwards and forwards, building their nests, or tending their young, totally regardless of the crowd that may be moving below. It is no uncommon thing to see the top of an archway covered with their nests, all closely packed together; but where there is ample accommodation, as in a cutcherry verandah, each nest usually stands apart.

The Palm Swift. (*C. batassiensis.*)

Palm trees are scarce in Berar, but wherever a solitary one rears its head there may be found the Palm Swift flying round and round it. I once, and once only, saw several of these birds flying about a grove of mango trees where there was not a palm tree within miles. As is well known, it attaches its nest to the leaf of the cocoanut or toddy palm, but I have never succeeded in procuring either the nest or eggs.

The Avifauna of Kashgar in Winter.*

By the late Dr. Ferdinand Stoliczka, Ph. D.

When I saw the last stragglers of Indian birds retracing their steps across the Karakorum towards the end of October last, I was more than ever anxious to learn what birds remain in Eastern Turkistan during the winter months. The cold during that time was represented by some people as being excessive, by others as moderately mild, with the exception of a few really cold days.

We arrived at Yarkand on the 8th of November, and, leaving it again on the 28th of the same month, reached Yangishur, Kashgar, on the 8th of December. Before giving a list of the birds which we observed, I shall say a few words regarding the climate and physical aspect of the country round Kashgar, in order that it may more easily be understood how it is that certain birds, which we should hardly expect to meet here, can find sufficient comfort for their stay in winter. I shall then proceed with my enumeration according to the different local conditions.

The climate of the countries around is hardly so severe as might have been expected. There were clear sunny days almost the whole winter, with slight breezes, but no heavy or cold winds. The minimum ranged in January and February between 15° above and 5° below zero, F., but the days were tolerably warm, though in perfect shade the thermometer rarely rose above the freezing point. It is very often the case that snow begins to fall in February, though rarely more than a foot deep at a time. This year snow began to fall only in the beginning of March, and did not remain on the ground more

* This unfinished paper was the last ever written by the author; it was drafted without a single work of reference to consult, and when he was already suffering much. It is nevertheless with all its imperfections (which he would have eliminated in the revision, which in his latest letter he told me that he was about to make) one of great interest, and I have therefore thought it right to publish it *as it stands*. I have added notes and corrections, after a careful examination of his specimens, which are so labelled as to leave no doubt in any case as to what species he refers to in this paper.—Ed., S. F.

than a few days, except in sheltered and shady localities. Kashgar lies in the western corner of Eastern Turkistan, at an elevation of little above 4,000 feet above the sea. To the north the lower offshoots of the Thianshan mountains are situated at a distance of about 45 miles; while the higher ridges—averaging about 14,000 feet—begin about 50 miles off. To the west and south the low hills are about 30 miles distant, and the high ranges of the Pamir begin at a distance of about 70 miles. Many of the peaks are here covered with eternal snow, and some rise up to, if not above, 25,000 feet. To the south-east towards Yarkand and towards the east, the whole country is an open plain, mostly a desert. About 50 miles east by north of Kashgar are tolerably extensive forests, and further on, about Maralbashi, are numerous swamps covered with high grass. This is the hunting ground of the Tiger and of the Maral, a stag doubtfully identical with the Shao of Tibet; *Ant. gutturosa* and several species of Foxes, as well as small indigenous Hares, appear to be numerous.

Near Kashgar itself cultivated land is very extensive; but as a rule nothing thrives well except through irrigation. For this purpose there are numerous canals which intersect the country in all directions. The rivers are fed by numerous springs, many of which retain a temperature above the freezing point during the whole winter, some of them with a little marshy ground about them. There are no forests in the close neighbourhood. The only large trees are near the houses, two kinds of poplar, *P. alba* and *P. balsamifera*. In two or three places a low jungle of these trees extends perhaps for half a mile. Along the streams and watercourses willows and Eleagnus bushes are not uncommon, but they merely fringe the water edge.

Wherever stagnant water occurs, unless supplied by springs, it may be said to be frozen between the middle of December and the end of February; but the flowing water of the Kashgar Daria is only partially frozen across the entire breadth of the river.

I shall now attempt to give a short insight into the Avifauna of our country, somewhat in the manner in which it comes before the observer. Let us see first what creatures we meet round the towns and near habitations, then proceed on to the fields and low jungle, and at last to the grassy swamps and the rivers. In conclusion, I shall add a few notes regarding the Avifauna of the neighbouring valleys in the hills.

The most familiar bird near the houses is *Passer montanus*, which here replaces *P. indicus*. The former species is a permanent inhabitant, but some people told me that the Indian

Sparrows come during the summer; however, I cannot vouch for this statement. The next familiar birds are three crows, *C. cornix*, *frugilegus*, and *corone;* the two former are only winter visitants, and melanism in *cornix* is by no means uncommon. Both are somewhat smaller than the dimensions given by Jerdon of the respective species, probably taken from European specimens. *Corone*, of which I am somewhat doubtful, is a permanent inhabitant, and breeds about towns and villages in Eastern Turkistan.

Another permanent resident, *P. bactriana*, is very common in the gardens about houses. Often associated with the crows, though more generally only met with in the open field, is *Colœus monedula, ? daurica,** which is only a winter guest. None of these corvine species had left Kashgar about the middle of March, but they evidently were preparing for a start. I was told they all leave by the end of that month or early in April. The Jackdaws very likely wander to the Maralbashi forest and those about Aksu. *Turtur risoria*† was always very common, but *T. auritus*, I met only on a few occasions. It is said to be common in Kokan. A few *Motacilla*, apparently *alba*,‡ used very often to visit our court-yard, and *Tichodroma muraria* was seen throughout the winter on the walls of houses and high river-banks, though not very commonly: it is however a regular permanent inhabitant. I saw a few *Sturnus vulgaris*, but it rarely remains here the whole winter; it was more common near Yarkand, which is a little warmer, and when the cold begins to be intense, the bird seems to wander with many others down the desert plain in a south-easterly direction, re-appearing at the beginning of March. He is a favourite bird of the husbandman, and you see a number of pots and old gourds stuck up in many trees of the gardens ready for him to place his nest in.

Athene noctua—or perhaps Blyth's name *bactriana* will have to be retained for this very pale bird—lives in holes of walls and river banks, generally it prefers the latter. At the beginning of March I saw one collecting stalks evidently for its nest, but I do not expect that it lays before the end of the month.

Leaving our close quarters, and taking a stroll into the field, the first bird we meet everywhere on the road will no doubt be *Galerita magna*, a permanent resident, and unquestionably the most common bird in the whole of this part of Eastern Turkis-

* The Jackdaws are similar to those from Cashmere, some of them being paler throated than English specimens, but none of them approach closely the typical *daurica*.—Ed., S. F.

† This is the large form that I have called *Turtur Stoliczkæ*, S. F., Vol. II., p. 519. —Ed.

‡ The only specimens preserved are *dukhunensis*.—Ed.

tan. Next to it are *Otocoris penicillata* and *Alaudula pispoletta*, the latter a very good songster, rising in the air like a true lark. It and *G. magna* are often caged. The favourite cage-bird of this tribe is, however, *Melanocorypha torquata*. I had with great difficulty procured a specimen in Yarkand by purchase, but as a rule the people do not wish to part with the bird under two or three tillas; some would not accept any offer at all. I was told that it occasionally arrived at Kashgar towards the end of January, and by carefully watching the time I was successful in getting two specimens. The only true lark and by no means common is *arvensis* or perhaps *dulcivox*. It is decidedly larger than what is usually called *triborhyncha*, but there is a difference of half-an-inch in the length of the wings between the two sexes. It is said to come during the winter from Kokan. Towards the end of January I got a few specimens of a beautiful *Montifringilla*,* grey, with a yellow spot on the breast. The birds were only seen during a few days.

Of young birds I got a solitary specimen of what appears to be *Otis tetrax*, a few *Coturnix communis*, and on a few occasions I saw a large *Pterocles*, apparently *arenarius*, but neither of these appear to be regular winter inhabitants: they are only stray birds which remain in favourable localities. *Phasianus Shawi* is also, as a rule, got in the high grass in open waste ground. A *Circus*, very like if not really *cineraceus*,† is very often seen hunting over the fields, and *Tinnunculus alaudarius* is equally common. *Buteo ferox* is, however, much rarer, and still more so another species which is apparently Hodgson's *plumipes*. I have seen only a single specimen of a large vulture, apparently *fulvus*, and adding the *Noctua* previously mentioned, a stray *Accipiter nisus*, and *Otus vulgaris* in high grass and roosting during the day in trees, we have about the complete list of *Raptores* which you may find in the neighbourhood of Kashgar. On one occasion, Captain Biddulph shot a Merlin (*Lithofalco* [illegible]) in Yarkand about the middle of November.

Approaching the water-courses which intersect the fields in all directions, and are, as a rule, lined with bushes and trees of *Eleagnus*, one is sure to meet with *Turdus atrogularis*, which feeds on *Eleagnus* berries. It is a common bird here during the winter, but leaves for the hills during the summer. A *Merula*,‡ much like *mandarina*, is also tolerably common.

Upupa epops looks after insects generally on paths between the fields and on the sands; not many of them, however, remain here; it is more common about Yarkand. Among low

* This I find from the specimens is *Petronia stulta*, Scop.—Ed.

† All the specimens preserved are *cyaneus*.—Ed.

‡ This is *M. vulgaris*, Ray, quite identical, it seems to me, with numerous English specimens that I have.

bushes *Propasser rhodochlamys*, a rather paler bird than the one we usually call so; a *Passer* of the type of *P. rutilans** Japan, *Parus cyanus*, a ruddy colored *Ruticilla*,† apparently new, and the ubiquitous *P. montanus* are sure to be found. Somewhat rarer are an *Emberiza*‡ with a black throat, and the *Regulus cristatus* which I have seen in the Himalayas, ? *himalayensis*. Once I got a couple of a *Columba*, probably *œnas*§ in a bit of forest east of Yarkand. Both *Lanius excubitor*‖ and *L. arenarius* are occasionally seen, but are by no means common; a new *Sylviparus*¶ is rare except about Maralbashi. Captain Biddulph shot several there, and says that it prefers high grass to bushes. A few *Picus*(1) very like *medius*, but apparently with much less red on the top of the head, are to be met with near the ziarats wherever a few large trees are to be seen. Generally among willow trees, a beautiful rosy-winged *Pyrrhula*,(2) of the size of *aurantiaca* is met with: it is a permanent resident (I got nest and eggs of it); another smaller *Pyrrhula*,(3) of reddish brown and less rosy wings, is more common among desert bushes. On the edges of marshy ground we are sure to meet a *Pipastes*,(4) probably *agilis* or an *Anthus*,(5) a new *Podoces*,(6) which Biddulph got first from Maralbashi, and an *Emberiza*(7) of *spodocephala* type. In higher grass *Suya albosuperciliaris*, a new *Troglodytes*,(8) much paler than the European bird, a new *Emberizine* bird,(9) or either intermediate between that group and the Ampellides, and a beautiful orange-colored bird(10) with black moustache (of both of these last I got full particulars as to nidification). In the middle of November I once got a solitary *Melizophilus*,(11) very like *M. striatus*, of which Blanford, I see, remarks that it does not belong to that genus. Along streams I got a few specimens of *Alcedo ispida*(12). During the height of the winter it keeps near streams which do not freeze.

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* *Passer salicicola*, Vieil., is what he has labelled as "*rutilans* type."—Ed.

† *Ruticilla rufogularis*, Moore, identical with specimens from Attock and Huzara, where it is common (as also in Afghanistan) in winter.

‡ *Emberiza schœnicola*, Lin.—Ed.

§ *Palumbœna Eversmanni*, Bp.—Ed.

‖ The specimens preserved are *L. lahtora*, Sykes.—Ed.

¶ *Ægithalus Stoliczkæ*, Hume., S. F., Vol. II., p. 521.—Ed.

(1) This is *Picus leucopterus*, Salvad.—Ed.

(2) *Erythrospiza obsoleta*, Licht.—Ed.

(3) *Erythrospiza obscura*, Licht?—Ed.

(4) The specimens preserved are *P. plumatus*, Müll.—Ed.

(5) *Pratensis*, Lin., *spinoletta*, Lin, *and cervinus*, Pall. were all preserved.—Ed.

(6) *Podoces Biddulphi*, Hume, S. F., Vol. II., p. 503.—Ed.

(7) *Emberiza hortulana*, Lin.—Ed.

(8) *Troglodytes pallidus*.—Ed.

(9) *Emberiza pyrrhuloides*, Pall.—Ed.

(10) *Calamophilus biarmicus*, Lin.—Ed.

(11) *Cettia Stoliczkæ*, Hume.—S. F., Vol. II., p. 520.—Ed.

(12) The specimens belong rather to *A. bengalensis*.—Ed.

Let us turn now to the larger swamps and rivers both at Kashgar and Yarkand. During the first half of the winter, *Vanellus cristatus*, *Charadrius fulvus*, *Tringa minuta*, *Totanus calidris* and *stagnatilis*, *Ardetta minuta*, *Mergus castor*, *Gallinago scolapacinus* and *solitarius*, and *Graculus carbo* were common. When snow fell several of them appear to have moved more eastwards. Among ducks, *Anas boschas* is the commonest during the whole winter, on every river that does not freeze on account of the strong current. Besides that I observed *Querquedula crecca*, *Branta rufina*,* *Spatula clypeata*, *Casarca rutila*, *Mergellus albellus*, which were occasionally shot. Among waders *Ardea cinerea*, *Actitis ocrophus*, are common; somewhat less so *Herodias alba*, and *Botaurus stellaris*. *Scolopax rustica* was shot in November and December, but was not observed later. It moved probably more to the east. *Fulica atra* and *Porzana maruetta* and the little *grebe* I only saw on a few occasions near tepid springs.

In the surrounding hills the number of birds is very small; as common I observed *Columba rupicola*, young *Caccabis pallidus* or rather *græca*, a *Passer*† of the type of *pyrrhonotus*, *Linota brevirostris*, a beautiful little tit-like bird,‡ apparently quite new, a black-cheeked *Accentor*,§ *Cinclus leucogaster*, *Fregilus graculus*, *Pyrrhocorax alpinus*, *Podoces Hendersoni*, *Otocoris penicillata*, *Montifringilla Adamsi*, *Tetraogallus tibetanus*,‖ *Aquila chrysaetos*, *Gypaetos barbatus*.

I observed no Saxicola, no Pratincola, no Swallows or Swifts, no Fly catchers, no Honey-suckers and none of the Timalidæ.

On Dromas Ardeola.

[redacted]

By W. Vincent Legge, R.A.

Mr. Layard, in his invaluable notes on Ceylon birds (Annals and Magazine of Natural History, 1854) says:—"I place this bird (*D. ardeola*) among the Terns, as I cannot help agreeing with Blyth in his remarks upon its affinities and position." He goes on to say:—"I have obtained several specimens, *all at sea*, with the exception of one, and that was shot on¶ Calpentyn Lake."

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* *Aythya ferina*, Lin.—Ed.

† *Passer ammodendri*, Severts.—Ed.

‡ *Stoliczkana Stoliczkæ*, Hume, S. F., Vol. II., p. 513.—Ed.

§ *Accentor montanellus*, Pall.—Ed.

‖ The specimens preserved are not *tibetanus*, Gould, but a pale variety, doubtfully distinct, of *Tetraogallus himalayensis*, Gray.—Ed.

¶ A large inland bay or salt lagoon on the west coast, north of Colombo, a great resort of waders and wild fowl.

An ornithologist finding *Dromas ardeola*, were he not previously acquainted with it, under such *tern-like* circumstances, as Layard did, far out at sea, perhaps winging its way steadily up and down the coast, (it must have been flying straight from one place to another however; it was not out for a cruise,) would, as a matter of course, look at it as having relations with sea-birds. It is certainly a remarkable form, and, as I imagine, it is found in India, as in Ceylon, on wild out-of-the-way shores and estuaries rarely visited by Europeans, and where its habits can with difficulty be studied; the more it is searched for by Indian naturalists and its economy made known through the pages of STRAY FEATHERS, the better and the sooner will its true affinities be worked* out.

In Ceylon, as far as my researches go, *Dromas ardeola* frequents the salt lagoons and numerous back waters on the north-east coast above Trincomalie. In the great resort of all waders and natatorial birds (exclusive of *Anseridæ*) on the south-east coast, *viz.*, the salt lagoons of the Rattnegam district, I have not seen it, and this fact, coupled with the experience of other observers, who have found it only high up on the west coast, goes far to prove that it does not extend to the south of the island.

The line of country to the north of Trincomalie is one long series of salt lagoons and large shallow lakes, lying at a short distance from the coast, in most instances only separated from the sand hillocks of the shore by a narrow strip of thick jungle, and connected with the sea by shallow outlets, which are crossed near the beach by bars and sand banks nearly high and dry at low water. As the shores of these waters are extremely flat, a large portion of them is left bare by the receding tide, and beyond the water line it is so shallow that *Herodias*, *Ardea*, and such like long-legged genera may be seen stalking along, spearing their finny prey at a distance of more than ½ a mile; whereas the foreshore and grassy salt marshes, lying often between it and the edge of the jungle, are the resort of multitudes of *Totaninæ*, *Tringinæ*, *Charadrinæ*, &c. It is needless to add that all this region is as wild as wild can be. Here then is the temporary winter (?) home of nearly every species of wader found in Ceylon, and here *Dromas ardeola*, amongst them, plies his "*crabby*" vocation unmolested, and almost unobserved by naturalist or collector.

* I don't myself think that there is very much left to be worked out as to its affinities; Van der Hoeven, in his "Annotationes de *Dromade ardeola*, Payk," clearly showed from its osteology as long ago as 1867, that the place of *Dromas* is next to *Hæmatopus*, and it is, I think, beyond doubt that it is a connecting link between this latter genus and *Esacus*. In all their actions, in their modes of walking, standing, and flying, *D. ardeola* and *E. recurvirostris* are not to be separated. See also S. F., Vol. II., pp. 88 *et seq.*, and 293.—ED., S. F.

One of the largest of these lakes, the "Peria Karretje," appeared, from what I saw, when in the neighbourhood, to be the favourite resort of this bird; I found it all along its shores in small parties of a dozen or more, or feeding singly in company with other birds, and I noticed that, while flocks of *Tringinæ*, *Totaninæ*, &c., fed, as they always do, along the edge of the water or on the recently uncovered foreshore, the crab plovers were always out in the water at various depths. When reposing, especially, they seemed to prefer standing in the water, a flock, which I tried to approach one day, being so far out that I was at first under the impression that they must be swimming. It is a most grallatorial like bird in its whole deportment, its movements, its flight, its manner of feeding, and in the spots which it frequents. In the distance it has precisely the appearance of the Oyster-catcher, until scanned with the glass, its bill and coloration undeceive one. They walk slowly about; I did not observe them running as one would expect. They pack very close when in a flock, and are not then so shy as when they are alone. I never could get within shot of solitary individuals, but one day after a mighty hard bit of stalking along slush and mud, with a belt of grass to cover the birds' *bodies* from below, though they saw me plain enough, I got a lucky "pot" at a pack of about 30, with that most useful of all shot, No. 7, and got three. One of them, that was only winged, gave considerable trouble in his capture, and struggled away at a great rate, getting out of his depth and swimming fast and well until I knocked him over with a second shot. His thick breast plumage gave him considerable buoyancy, and he sat high on the water.

I did not hear their note while observing them feeding or shooting at them, but when a flock was being stalked they became somewhat noisy, the usual sign of alarm in shore birds, and they uttered in consonance a somewhat musical note resembling the noise of geese in the distance, which, mingled with the roar of the surf on the neighbouring beach, had a peculiarly wild and sea-shore-like sound. They have a steady straight-along flight, with a quick flapping of the wings, and keep, as I noticed, close over the water.

The birds I procured on the Peria Karretje lake were two females and a male, the latter proving from my measurements the larger of the two sexes, and it may not be unadvisable therefore to give dimensions of both male and female:—

♂ Length, not taken in the flesh; wing, the bird was in moult, and the first feather therefore imperfect, but by comparison of the 2nd feathers of both sexes it would be 8·5 inches; tail from vent, 3·7; tarsus, 4; bare portion of tibia, 1·5; mid toe with the claw, 1·85; outer toe, with claw, 1·5;

inner toe, with claw, 1·4; bill, to gape, 3; at front, 2·55; from tip to angle of gonys, 1·8.

♀ Length, 16·0; wing, 8·3; tail, from vent, 3·5; tarsus, 3·5; bare portion of tibia, 1·5; mid toe, with claw, 1·65; inner toe, with claw, 1·3; outer toe, with claw, 1·4; depth of web between mid and outer toe, 0·7; between mid and inner toe, 0·45; bill, at front, 2·35; from tip to gape, 2·9; from tip to angle of gonys, 1·75.

From the above measurements it will be observed that the male is considerably the larger bird of the two,* and this is especially noticeable in the stout, prominently-scaled tarsus of the former. There is no appreciable difference in the plumage of the sexes.

The bills of all three specimens in my collection are much scratched and marked by the claws of the crabs upon which the bird feeds, denoting, perhaps, many a death struggle on the part of the pugnacious quarry. It would be interesting to observe in what manner this plover, or as I should style it *Crab-catcher*, disposes† of its formidable prey, although, looking to the powerful bill and strong and heavy skull the readiest conclusion is, that, with such weight at its disposal, it has not much difficulty in smashing in the backs of the shells against the ground, and thus gaining access to the contents of the body; it would also appear to finish off with the claws, for the stomach of one of my birds (those of the other two were perfectly devoid of food) contained many small pieces and the entire "nippers" of several of the claws of what appeared to be the small hermit crab. I regret that I was unable to determine whether small crustacea and marine insects form part of the sustenance of this bird; if it confines itself to crabs alone, this fact will account for its local distribution, tolerably numerous on one lagoon and totally absent from another, and combined with its apparent love of wild and little known regions, will explain its absence altogether from many parts of the Ceylon Coast where one would expect to find it.

The pectination of the middle claw is very remarkable in this bird; it is plainly observed in the case of the male, where the

* It is curious that in the four specimens of an old and young bird of each sex that I measured in the flesh there was no appreciable difference in the size of the sexes; and that the old female was a shade the largest of the four, the *young* male coming next(?), then the adult male, and smallest of all the young female. My largest bird however (see Vol. II., p. 293) was in some dimensions slightly smaller than Mr. Legge's male. I suspect that it will prove that in this species it is rather the individuals than the sexes that differ in size.—Ed., S. F.

† In the stomachs of those we examined there were no traces of *large* crabs. The birds seemed to have confined their attentions to small crabs, swallowed nearly whole. Some that we extracted, though much smashed, were still sufficiently perfect to permit of their being at once and unhesitatingly identified. Our birds had eaten *nothing* but one species, a reef-liver, *Gonodactylus chiragra*.—Ed.

dilatation is larger than that of the female, and has three distinct *cuts* on the inner edge more than $\frac{1}{20}$th of an inch deep.

It would throw considerable light on the true position of *Dromas ardeola* if its breeding habits could be accurately observed; Layard, I believe, found it nesting in Ceylon, but I am unable to find his notes on the subject; I think they are contained in one of the numbers of the Journal* of the Asiatic Society of Bengal, and demonstrate the egg to be quite plover-like in form. Taking all points into consideration, it appears, then, that the right position of this curious bird is among the sea shore plovers, *Hæmatopodidæ*, those aberrant characteristics which might be deemed sufficient to separate it into a distinct family of its own (*Dromadidæ*, Bonaparte) *coming next* to the former, being the peculiar form of head and neck, structure of bill and great length of tarsus, together with its remarkable partially-webbed feet.

Notes upon a collection of Birds made between Mussoori and Gangaotri in May 1874.

By W. Edwin Brooks, C.E.

The following list does not include all the birds I saw during my hurried trip.† Of many common species I took but little note, and the total number of species to be found in the country through which I passed will largely exceed the number that I happened to come across. I scarcely halted any where to explore the surrounding country. Derali was the only place where I halted for two or three days, to see what the fine pine woods near the snows contained.

The valley of the Bhagiruttee may once have been a very beautiful one, but owing to wholesale wood-cutting operations it is now a distressing sight to see almost any part of it.

* The notice is in Sir W. Jardine's contributions to Ornithology. The egg itself though in a very dilapidated condition, is still in the Museum of the Asiatic Society of Bengal.

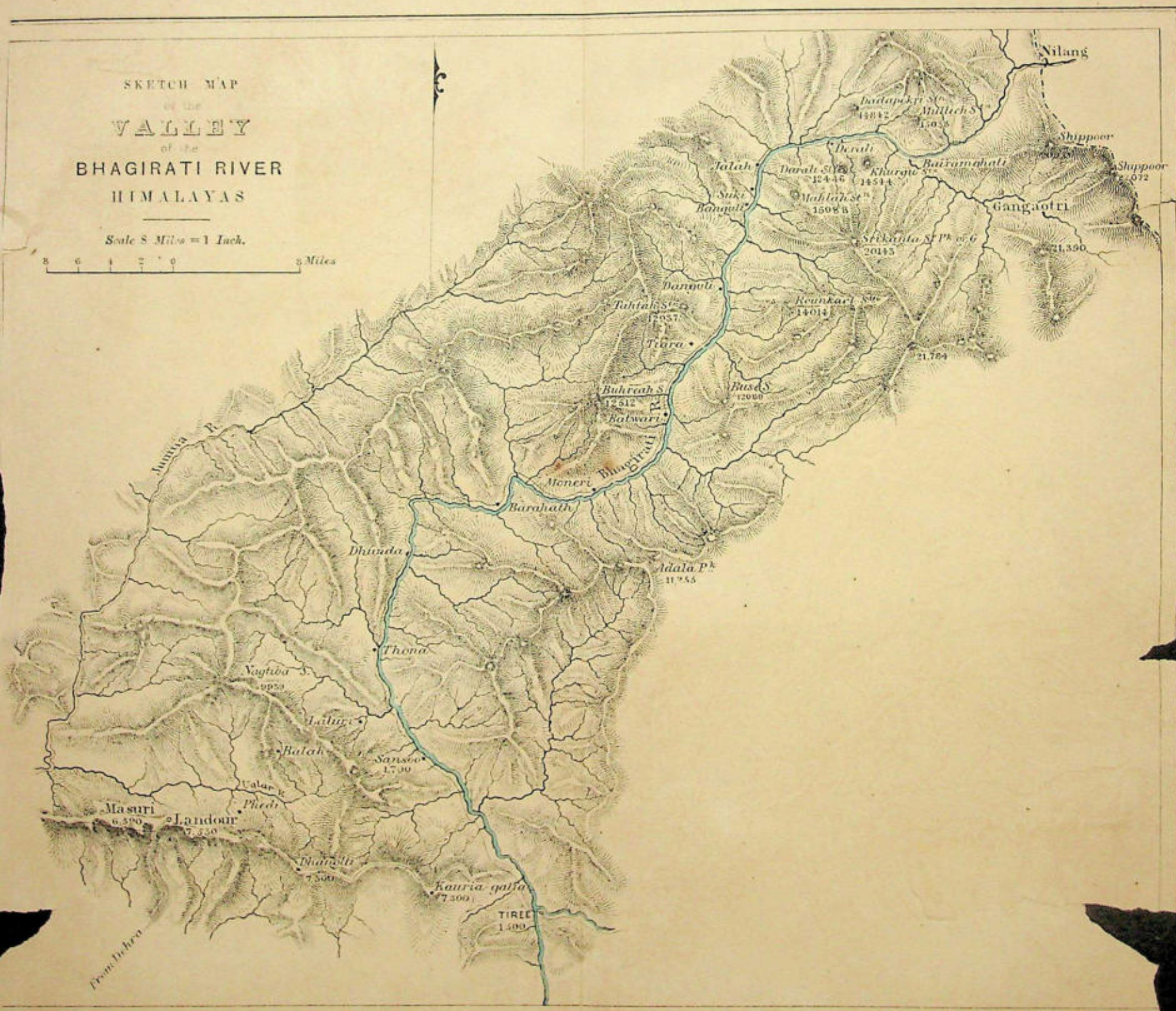
It is a broad oval, somewhat compressed towards the small end, exactly the same shape as eggs of *Esacus recurvirostris* and *magnirostris* and *Œdienemus crepitans*.

The egg measures 2 inches by 1·4.

In color, it is a warm drab color or *cafe au lait*, pretty thickly blotched, streaked, and spotted with deep blackish brown.

I have seen many eggs of *Œ. crepitans* perfect counterparts of this egg, and it is by no means certain that this egg *did* belong to *D. ardeola*. Layard only considered that he had good grounds for *believing* that it did, while Blyth considered that *it could not well* have belonged to any other species.—Ed., S. F.

† I have prepared a rough sketch map to illustrate Mr. Brooks' paper, but of many of the places mentioned I have been quite unable to ascertain the correct elevation. I take, at the request of numerous subscribers, this opportunity of re-publishing as notes to this paper, Mr. Brooks' original descriptions of several Western Himalayan species which are not included in Dr. Jerdon's work, and have not yet been noticed in Stray Feathers.—Ed.



Reduced from the Indian Atlas Sheet No. 41, and Lithographed at the Surveyor General's Office, Calcutta, January 1870.

ZOOLOGICAL SURVEY
1875.
CALCUTTA

Wherever the traveller goes, he will see whole hill sides that have had their pines cut down, and instead of the most lovely of trees, to those who are fond of Alpine scenery, little else is to be seen but hill sides studded with stumps of tree trunks, and here and there a miserable surviving pine. On one hill side beyond Derali the clearance is complete. A good part of the timber appears to have been removed from the spot where it was felled, but perhaps a greater part is found either in the shape of half rotten or wholly rotten prostrate trunks, or else in the shape of short logs which stud the river bed from end to end.

Many of these latter appear to be stranded beyond the reach of ordinary floods, and there they remain rotting away, until an extraordinary flood comes which will move them. Such wanton and wholesale destruction of the timber of a fine valley is not to be met with any where else upon the face of the earth, I believe. As a natural result, birds have become scarce, and had I known the exact condition of the valley, I should never have dreamt of taking an ornithological trip in that direction, and nothing would tempt me to go again.

High up on a hill side, a huge pine will be found, cut down and rotting away, for which there are no existing means whatsoever of transport to the river. I found numbers of such trees in various stages of decomposition, and some too rotten even for removal as fire-wood.

This is the sort of destruction to be regretted, for the valley will never again be the lovely place it once was. The age of fine timber growth is a by-gone one, and in this utilitarian one, even the smallest sapling is removed for some imaginary purpose.

The natives of the valley have also caused much destruction to timber by the pernicious practice of lighting fires at the foot of a tree for cooking or other purposes. By a succession of fires the fine tree becomes quite hollowed out, and at last it falls, in some cases across the Bhagiruttee valley road, so that travelling there is by no means safe.

The tree is frequently used as a fire place before vegetation ceases. I saw many putting out leaves still, that had only a hollow shell of a trunk at the base.

With this explanation regarding the want of wood, my very meagre list of birds met with will be understood.

The country is, moreover, not a good one for collecting birds. Springs of water are much scarcer than in Cashmere, and the river as a rule runs in a narrow gorge among rocks, a furiously foaming rapid torrent from which it is difficult for even a bird to obtain a drink.

Beyond a certain point, I believe Barahath, it appears to be devoid of fish, owing to the rapidity of the current, and perhaps to its icy coldness. Here and there, and especially at Derali, it opens out somewhat, and then we have broad shingle banks, where a few Wagtails and other birds of aquatic habits are found; but these fine shingle beds are sadly disfigured by huge logs of timber. Some of these had been so long stranded and were so rotten, that I was much tempted to cut into them for firewood; but I refrained, and sent my people to gather fuel where they could. However, the stranded logs form convenient perches for *Motacilla Hodgsoni* and *Calobates melanope*, to say nothing of an occasional *Actitis hypoleucos* or *Hydrobata asiatica*. Sometimes they were the favorite resort of *Ruticilla* (?) *fuliginosa* and *Chæmorrornis leucocephala*; and thus the fine old tree still answered a useful purpose. The decaying logs too harboured numerous insects, upon which these birds fed.

Forty or fifty years hence, the last of the decomposing logs will have disappeared, and the felled trees, left where they fell, will also have vanished. The valley may again become to some extent pleasant to visit, but the fine trees are gone, and while the world lasts they will probably not be replaced; for in most instances the clearance has been too complete to allow of trees being left to scatter seed. I saw no indications of new ones being planted.

The country is a very poor one, agriculturally considered. Food is scarce, and very dear—dearer than any place I know of. Could any one imagine the prevailing price of the poorest description of meal, "Chooa-ka-atta," to be only six seers for the rupee, wheatmeal 4 and 5 seers only! Such a thing as a fowl or an egg was not to be had after leaving Mussoori. Beyond Derali, even milk is not to be obtained, and for about a week I had none. Chooah-ka-atta is a meal made from the seed of a sort of red "sâg" or spinach.* This I did not indulge in; but my servants and coolies had often the greatest difficulty in inducing the natives to sell them even this miserable food. For my own use I took wheatmeal with me from Mussoori. This my cook liberally invaded on his own account, and had I prolonged my trip for another month, as I originally intended, I too should have been thrown on spinach meal as the "staff of life," and such fare does not do for an Englishman when he is walking from 12 to 20 miles per day, to say nothing of digressions from the road after birds it is

* This so called Spinach, the *Anardana* or *Ramadana* of the natives, is the *Amaranthus frumentaceus* of Roxburgh. It is a Princes feather, and the *Amaranthus speciosus* of gardeners is merely a variety of it. It is grown as a food crop, together with the Batu (*Chenopodium album*), throughout the hills, from elevations of four to nine or ten thousand feet.—Ed., S. F.

desirable to obtain. Some villages had no other meal to sell but this "Chooah-ka-atta." The price of food appears to be regulated by the Tiree Rajah, and I was sometimes shewn his purwannah, empowering the *bunniahs* to sell at such exorbitant rates.

I took a rifle with me thinking it might be the means of occasionally procuring a good meal of fresh meat for myself and camp followers; but large game shooting up the Bhagiruttee valley is a profound mistake. Sport there is a thing of the past. The villagers possess abundance of firearms, and are such keen sportsmen in their way, that no European sportsman going up that valley should dream of even a chance shot. The rifle had better be left behind as a useless encumbrance. Large game, however, is not the principal object of native attack, for the Monal (*Lophophorus Impeyanus*) is the most profitable game. For every male there is a ready sale at the godown below Derali, the price being Rs. 2-8.

However, the near extinction of the species will of itself cause the trade to be abandoned, or perhaps no enthusiastic lover of the trade may succeed Mountaineer, and the Monal may thus again become a plentiful bird. It is to be hoped it may, for a more lovely sight can hardly be imagined than the flight of a fine male in the bright sunlight. I only saw a couple fly past me, and I shall never forget them.

Beyond Danguli I saw five *Thar** perched on the top of a rock, about 400 yards above the road. Putting up the last sight of my rifle, I tried a shot at them, but without result. The ball went very close, and they vanished. I afterwards went many miles over the *Thar* country, but never saw another. Below Banguli village, I saw a single *Gooral*† at a similar distance, and again missed. This was the sum total of my large game shooting. It is a spoiled country in almost every respect, both for the ornithologist and the sportsman. The tourist and the artist, if they can be content with very slender fare and indigestible tinned provisions, will still enjoy the trip, for the main features of the country are still left; despite the lost trees the valley is unusually rugged and grand, and the view, as Derali is reached, is very charming. Up at Gangaotri wood becomes scarcer, and birds there became so few and far between that I resolved on retracing my steps at once. I have now said enough about the valley and its misfortunes, so shall now commence my list. The numbers are those of Dr. Jerdon's work and Mr. Hume's catalogue.

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* More correctly, Tahr, *Hemitragus jemlaicus*.—Ed.
† *Nemorhædus goral*.—Ed.

2.—Otogyps calvus, *Scop.*

Seen occasionally and far into the interior, where one would not expect to see a plains-loving Vulture. I saw one or two soaring high up above Derali.

3.—Gyps himalayensis, *Hume.*

Not common. I occasionally saw this bird seated on its nest, where the cliffs were suitable and lofty. I noticed one nest above the road, but so high up that it was almost out of rifle shot, and at the opposite side of the narrow glen in which the river there runs. But for the white mark on the rock, caused by the dung of the bird, I should not have noticed it. On firing a ball near the place, the old bird flew off, and proved to be of this species. This was in May. All the nests of this bird which I saw were inaccessible, and whether they contained young or not, I could not tell; none of them occurred below Barahath. The eyrie above referred to was not far from Danguli.

6.—Neophron ginginianus, *Daud.*

I noticed this species up as high as Danguli.

7.—Gypætus barbatus, *Lin.*

Not uncommon at Mussoori. Seen again near Lalúri; I also observed it near Derali.

13.—Hypotriorchis subbuteo, *Lin.*

I procured an adult female at Derali on the 20th May. It was flying about after sunset, and I was struck with the very great rapidity of its flight. One object of its pursuit was a Pipit (*Anthus rosaceus*), which it very nearly caught, as it flew over my tent, which was pitched in the old apricot orchard below Derali, and on the river bank. At this point the Hobby abandoned the pursuit, and flew up the hill side, perching on the summit of a lofty pine. I sent one of my men after the bird, particularly charging him to give it the right barrel, which was loaded with No. 5, but he gave the luckless hobby the left, which contained BB, one pellet of which broke its wing, otherwise it is not a bad specimen. This was the first Hobby I had ever seen in life. I have a male Hobby procured at Dhurmsala in May 1870.

17.—Tinnunculus alaudarius, *Briss.*

Common in all parts of the valley, and I saw several eyries. In the low hot parts of the valley, as well as at Gangaotri, the

bird is equally at home. All were of the true pale or European type, and not the dark toned bird that I procured in Kumaon. *Sikhim Kestrils, which I have seen, are also of the European type.*

24.—Accipiter nisus, *Lin.*

Seen three or four times, and two procured; both being adult males. One near Gangaotri, 18th May, and the other at Suki, 22nd May. It is a scarce bird in the hills.

32.—Neopus malaiensis, *Reinw.*

A fine female was procured near Dhanolti in the end of May, on my return journey. This bird is not common, for it was the only one I saw.

33.—Nisætus Bonellii, *Tem.*

I saw a pair near Sansoo in the end of May, and obtained the female. Sansoo is the low part of the valley, and not far from Teeree.

36.—Spizætus nipalensis, *Hodgs.*

A white breasted immature bird was seen at Derali.

39.—Spilornis cheela, *Daud.*

Was frequently seen in the lesser ranges. One was obtained not far from Sansoo.

54.—Circus æruginosus, *Lin.*

I saw one about the third of May flying along the Aglar river, which is not far from Mussoori.

55.—Milvus govinda, *Sykes.*

(*Milvus major*, Hume, and *Milvus melanotis*, Temm. and Schleg.) The larger Kite, and evidently that described by Sykes,* is tolerably common at Mussoori. I met with it as far as Barahath on the Bhagirattee.

* I must absolutely dissent to this identification; my *major* may be *melanotis*, Tem., though that is still, I think, a doubtful question, but in my opinion it certainly is not *govinda*, Sykes.

According to Mr. Brooks' views we have only two Kites in India; in my opinion we have most distinctly three, *viz.*, *affinis*, Gould, comparatively rare, but more plentiful to the south and east, *govinda*, Sykes, the common Kite everywhere, and *major* (or it may be *melanotis*), rare, except in the hills; found in the plains chiefly in the cold weather, and almost if not entirely unknown in Southern India.

Sykes' description is to be found at p. 81 of the P. Z. S. for 1832, and the only single point in this that could guide us is the length 26 inches and tail 11 inches. Sykes' measurements were taken from his dried skins. We all know how natives drag out the necks, and a bad skin of *govinda* might well measure 26, when the fresh bird is sometimes 25. *Govinda* varies in length from 22 to 25, and has a tail of from 11 to 13. *Major* varies from 26 to 28, and has a tail of from 12 to 14. So far as dimensions go, then, there is nothing to lead us to conclude that *govinda* was the largest of our three Kites; on the contrary, the inference would be that it was the medium-sized one.

56 *ter.*—Milvus affinis, *Gould.*

The common Indian village Kite, and the species which breeds in the plains, while the other migrates. This bird is as common as the larger species at Mussoori. I sent examples of it to England, which Mr. Gurney declared to be identical with the Australian *M. affinis.*

80.—Glaucidium Brodiei, *Burton.*

I saw this little Owl frequently at Mussoori.

82.—Hirundo rustica, *Lin.*

Frequently seen, as it is at all hill stations. This bird is identical, as far as I can see, with *H. gutturalis*, Scop.; and I am not so sure that the identification of it with the European species is correct. The wing is generally much shorter, and the bird is smaller.

85 *bis.*—Hirundo (Cecropis) nipalensis, *Hodgson.*

The hill species is not, I believe, *H. daurica*, L. The rump band, as a rule, is very pale, and the striation intermediate in boldness between that of *daurica* and *erythropygia.* The latter I found in Cashmere as far up as Chungus on the Tawi river, but I did not see *H. nipalensis* in Cashmere.

But the main point is this, Sykes describes the bird as *the* common Kite in the Dukhun, "constantly soaring in the air in circles, watching an opportunity to dart upon a chicken, upon refuse animal matter thrown from the cook-room, and occasionally even having the hardihood to stoop at a dish of meat carrying from the cook-room to the house."

Now this Kite is *govinda.* I have examined more than 30 specimens of Kites from Bombay, Matteran, Sholapoor, Sattara, and Poona, and never found one *major* amongst them, nay, when last at Bombay and Poona, I specially noticed the Kites, and while I thought I recognized some *affinis*, I can positively affirm that there were no *M. major.* This is much the case in Calcutta, where, during the last three years or more, I have closely scrutinized every Kite without ever seeing more than one or two *major*, which on the wing may be distinguished at once by the great white patch at the base of the primaries, on the lower surface of the wing.

Everywhere in the plains, *major* is a bird of the jungle, very rarely approaching towns or even large villages, and living more on frogs, locusts, &c., than on offal.

It is absolutely certain in my opinion that Sykes' *govinda* was not *major*, first because it is our medium-sized Kite alone of the two larger sizes that occurs in the Dukhun, except perhaps as a straggler, and second, because while the medium-sized has, the larger has *not*, in the plains, the habits attributed to *govinda* by Sykes.

Sykes may have killed a *Milvus major*, and there may be a specimen of this in his collection, but the bird which he described as *the* common kite of the Dukhun, and whose habits he descanted on, was the medium-sized one.

My own impression is that very few people to this day *know* the real *Milvus major* with its 21 to 22-inch wing and huge pure white wing patch; large *govindas*, with mottled greyish white and brown wing patches, have, to my knowledge, been sent home as *major*, but this latter, except in particular localities, is a rare and wary bird, not often seen, and hard to procure, whereas if we accept the identification of some writers (I do not refer to Mr. Brooks, who *does* know the bird), they are as plentiful all over the country as blackberries on a Devonshire hedge.

No doubt there remains the question, are the three races specifically distinct? This each ornithologist must answer as he listeth; undoubtedly intermediate forms occur, but I shall have more to say on this subject hereafter in a separate article.—Ed., S. F.

The breadth of the red rump band is no criterion whatever, and varies very much in the same species.

92.—Chelidon urbica, *Lin.*

I saw flocks of this species at Mussoori in the end of April, and obtained three, which agree with the description of the European bird. When I returned in June they were all gone.

93.—Chelidon cashmiriensis, *Gould.*

I obtained one between Suki and Derali, where they were flying about in considerable numbers. This bird may be best described as a miniature of *C. urbica*. It is found in Kumaon, and I found it breeding in Cashmere, a little at this side of Ahabad serai, and also a few miles below Posiana in the cliffs of the "Chitterpanee" river. It is found also on the Sutlej, in the interior beyond Simla.

98.—Cypselus melba, *Lin.*

A few seen at Moneri.

Cypselus ?

At many places up the valley, I saw a small Swift much resembling *C. affinis;* but I did not shoot any. This I regret now, for they were probably *C. leuconyx*.

Cypselus ?

A Swift of similar size and appearance to *C. apus*, was not uncommon about Moneri and Batwari. It was probably *C. pekinensis*, Swinhoe, and the species which is common up the Scind valley in Cashmere. I do not believe in the identity of this Swift* with the European bird, and I have never seen any adult English Swift with the same pale shafts to the primaries, and the light-toned appearance of the whole bird which is a moderate brown instead of a blackish bird. The breeding female that I obtained in Cashmere should not have been so pale had it been *C. apus*. Then again, the monticolous habits of the bird should be considered.

100.—Cypselus affinis, *Gray.*

A White-rumped Swift abounded at Mussoori and other places inland, but I did not shoot one. Jerdon includes it as Himalayan; and it must, therefore, be a hill species, for he was a very accurate observer, and knew the difference well between the two allied Swifts.

* It is possible that the Swift here referred to may be *C. acuticauda*, Blyth, which varies a good deal in tint, see also S. F., Vol. II., p. 156.—Ed.

103.—Collocalia nidifica,* *Latham.*

I saw great numbers one evening at Dhanolti, and shot a pair. In colour this bird much resembles *Cypselus infumatus*, Sclater, but it is more robust with broader quill and tail feathers; the tail also is not so deeply forked.

149.—Palæornis purpureus, *Müll.*

A male procured at Dhúnda. Wing lining and axillaries verditer, as described by Mr. Hume.

150.—Palæornis schisticeps, *Hodgson.*

Frequently seen in the lesser ranges.

154.—Picus himalayanus, *J. & S.*

In the oak woods where the elevation was from 6,000 to 7,000 feet.

159.—Picus brunneifrons, *Vig.*

Not uncommon about the village of Banguli.

163.—Yungipicus pygmæus, *Vigors.*

Seen at Sansoo, and one procured.

186.—Vivia innominata, *Burton.*

Seen near Danguli.

191.—Megalaima Marshallorum, *Swinhoe.*

Occurs as high up the valley as Suki. I believe that the peculiar cry of this bird is a compound one, in which both male and female take part; the latter part of the cry being the female's.

195.—Cyanops asiatica, *Lath.*

Very common below Dhúnda, on the wooded banks of the Bhagiruttee. Unlike the preceding, this one is comparatively tame.

199.—Cuculus canorus, *L.*

Exceedingly common as far as Derali.

203.—Cuculus micropterus, *Gould.*

Common about Mussoori and in the oak woods beyond Landour. I did not hear it near the snows.

* In my opinion certainly *not nidifica*; it is barely separable from *unicolor*, Jerdon, of the Nilgiris. I myself believe that *C. brevirostris*, McClell = *C. infumatus*, Sclater (S. F., Vol. I., p. 295), but should this *not* be the case, then the Himalayan birds which I have from Hazara to Sikhim must, if separated from *unicolor*, stand as *brevirostris*.—Ed.

225.—Æthopyga miles, *Hodgson*.

One procured near Dhúnda, and again seen near Batwari.

227.—Æthopyga Gouldiæ, *Vigors*.

I shot one near Danguli.

234.—Arachnechthra asiatica, *Lath*.

In the low warm parts of the valley.

243.—Certhia himalayana, *Vigors*.

The only *Certhia** seen, even in the woods near the snows. It is particularly common from Bairamghati to Gangaotri.

248.—Sitta himalayensis, *J. & S.*

Seen near Mussoori and Landour, in the oak woods.

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* The following are Mr. Brook's original descriptions of his two new species, *Certhia Hodgsoni* and *Sitta cashmirensis*.—Ed.

"Certhia Hodgsoni.

"The Cashmir creeper is closely affined to *C. familiaris*, but differs in the following respects:—

1. A much longer bill, which is also much lighter coloured.
2. Not nearly so rufous in tone, specially as regards rump and upper tail-coverts.
3. The spots on the head and back are very white, and the brown of the upper surface, specially that of the head, is almost black. This gives the Cashmir species a general grey tone, as opposed to the rufous or fulvous tone of the European bird.
4. The English bird has the *three* outer primaries (including the diminutive first) plain brown; and the *fourth* is marked with a buff patch on the outer web. In the Cashmir bird there are *four* plain primaries, and the *fifth* is marked with the buff patch on outer web. On opening the wings of the two birds, it will be found that the arrangement of the buff and brown of the quill feathers generally differs in position and extent. I have no hesitation whatever in separating the Cashmir species. It has also a lighter coloured bill and lighter feet and claws. It is found sparingly in the pine woods near the snows. It was seen at Gulmurg and also at Sonamurg, where Captain Cock took a few nests. The egg is much more densely spotted than that of the English creeper, so as almost to hide the reddish white ground colour. Size 0·59 to 0·65 long, by 0·48 broad; time of laying, the *first* week in June.

"I give dimensions of the two species:—

	C. Hogdsoni.		*C. familiaris.*	
	Male.	Male.	Male.	
Length of *skin*, ...	4·8	4·75	4·8	4·85
Wing, ...	2·54	2·5	2·4	2·42
Tail, ...	2·5	2·3	2·4	2·4
Bill at front, ...	·68	·67	·42	·53
Tarsus, ...	·62	·62	·62	·6
Length of foot, including claws, ...	1·25	1·2		

"Mr. Blyth, *Ibis* for January 1867, identifies a Western Himalayan bird with *familiaris*. I think this specimen will prove to be the present species and not *familiaris*. *C. Himalayana* is found on the south side of the Pir Panjal Mountain, but I did not meet with it in Cashmir Proper, where it is replaced by *C. Hodgsoni*."

"Sitta cashmirensis.

"In colouration very like *S. himalayana*, but the Cashmir bird is much larger, with the white on the tail differently distributed. The wing measures 3·3 in. The white of the chin, throat, and side of the head is not abruptly defined, but shaded gradually into the rufous of the lower parts. It is very like *S. europæa*, but is distinct. The abdomen, flanks and lower tail-coverts are darker than in *S. himalayana*. There is no white edging to the under tail-coverts as in *europæa* and *cæsia*. I procured this bird in the pine forests of Cashmir."

249.—Sitta leucopsis, *Gould.*

This is a more Alpine species, and is not uncommon in the pine forests near the snows. I saw numbers above Derali.

251.—Sitta cinnamomeiventris, *Blyth.*

In the lower hills among the "cheer" pines this is the prevailing Nuthatch.

257.—Lanius erythronotus, *Vigors.*

Occurs sparingly as high up as Suki, where I obtained one.

271.—Pericrocotus speciosus, *Latham.*

I saw this bird below Mussoori, half way from Rajpúr.

273.—Pericrocotus brevirostris, *Vigors.*

Met with as high up as Derali, and even in the pine woods close to the snows. I procured males in the female plumage.

280.—Dicrurus himalayensis, *Tytler.*

Frequently observed in the lower hills. This bird is also known as *D. Waldeni*, Beavan.

282.—Chaptia ænea, *Vieillot.*

Seen near Barahath.

288.—Tchitrea paradisi, *L.*

Occasionally seen at low elevations, such as Dhúnda.

291.—Leucocirca fuscoventris, *Franklin.*

One obtained near Sansoo.

294.—Chelidorhynx hypoxantha, *Blyth.*

Is not uncommon in the pine woods above Derali, and I also saw it at Gangaotri.

295.—Culicicapa (Cryptolopha) cinereocapilla, *Vieill.*

Frequently seen, but not near, the snows. For the change of generic term vide P. Z. S., 1871, p. 381.

296.—Hemichelidon sibiricus, *Gmel.*

In the pine woods above Derali, and also near Bairamghati.

298.—Alseonax terricolor, *Hodgson.*

One procured near Dhúnda. This species has a longer tail than the Chinese *A. cinereoalba*, T & S = *A. latirostris*, Raffles,

according to Mr. Swinhoe. Whether Mr. Swinhoe's identification is correct or not, I do not know. Mr. Hume identifies *A. terricolor*, Hodg., with *A. latirostris*, Raffles; but neither of these naturalists gives us any particulars concerning the identification. Have they examined the type; if not, what are the precise grounds for the identification?* Blyth appeared to regard *A. latirostris* as distinct from *A. terricolor*. If it cannot be shewn to a certainty what *A. latirostris*, Raffles, really was, we had better discard the term altogether, and distinguish the two birds as *A. terricolor*, Hodgs., and *A. cinereoalba*, J. & S. I have not seen an Indian-killed example of the latter. The museum example thus labelled appeared to me to be *A. terricolor*, but it was so ragged and old as to be almost beyond recognition.

301.—Eumyias melanops, *Vigors*.

Not uncommon about Mussoori and for a few marches beyond.

304.—Cyornis rubeculoides, *Vigors*.

Common in all the lower parts of the valley, where there is thick cover. It does not affect the woods near the snows. The song is sweet and robin-like, but less varied than that of the Red-breast.

307.—Cyornis ruficauda, *Swains*.

A rather scarce bird. I obtained two; one at Derali and the other near Bairamghati, 14th and 19th May. The song is full and sweet, but short.

310.—Muscicapula superciliaris, *Jerdon*.

Tolerably common as far as Suki. *M. æstigma* is so very like this species, that it is often overlooked. I have one of the latter, obtained at Assensole, 130 miles above Calcutta. This was of course in the cold season.

320.—Siphia leucomelanura, *Hodgson*.

I saw a few at Derali, where I again (as in Cashmere) procured the male in female plumage.

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* The precise grounds for identification are, that Lord Walden, Mr. Swinhoe, and myself have between us compared specimens from all parts of India, from Ceylon to Murree and Darjeeling, from Burmah, Tenasserim, the Malayan peninsular, from the Andamans, Sumatra, Japan, China and Lake Baikal and that, as I understand, we are all agreed that it is one and the same species that is found in all these localities. I cannot admit that all *cinereoalbas* have longer or shorter tails than *terricolor*. Chinese specimens, sent by Mr. Swinhoe, agree perfectly with Sikhim specimens, and both, with Andamanese, Sumatran, and, I may add (Birds of Borneo, Salvadori, p. 129), Bornean ones.—Ed.

323 *ter*.—Erythrosterna hyperythra, *Cabanis*.

A single one obtained near Phedi in the beginning of May. I did not see this species afterwards. It is not an Alpine bird.

324.—Erythrosterna acornaus, *Hodgs*.

I obtained a bird which appears to be this species near Mussoori, on the 27th of April. ERYTHROSTERNA PUSILLA, Blyth, is, as far as I can see, only the newly moulted autumna plumage of the female of ERYTHROSTERNA MACULATA, Tickell.*

The light tips to coverts wear off, and the rufous rump fades very much, so that in summer the bird becomes quite ashy in appearance.

Jerdon remarks that "in summer the male assumes a bright ferruginous colour on the chin and throat." He was surely thinking of some other bird, perhaps the female of *M. sapphira*. I have examined a good series from Darjeeling before coming to the above conclusion.

343.—Myiophonus Temminckii, *Vigors*.

Very common along the banks of the Bhagiruttee. I saw it nearly as far as Gangaotri.

347.—Hydrobata asiatica, *Swainson*.

Common on the Bhagiruttee from Bairamghati downwards.

351.—Petrocossyphus (Cyanocincla) cyanus, *Lin*.

A few seen about a rocky hill near Mussoori, opposite the house named "Belle vue" at that station.

352.—Orocetes (Petrophila) erythrogastra, *Vigors*.

I saw one at Landour.

353.—Orocetes (Petrophila) cinclorhynchus, *Vigors*.

Common about Mussoori, and I observed it also at Lalúri and other places in the lesser ranges.

356.—Turdus (Geocichla) unicolor, *Tickell*.

Common about Mussoori in the wooded valleys there.

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* These small Flycatchers are most puzzling, and I have been specially working them for the last two years, in the hopes of completing an useful monograph of them. But even with Hodgson's original drawings at hand, I have been utterly puzzled. I have at least six undescribed species, but cannot make sure, so close are the species and so brief are the descriptions, which are the described and which the undescribed species. I do not however think that there can be any doubt as to the distinctness of *E. pusilla*, Blyth. The female of *maculata*, sent me with the male and *nest*, is grey brown, albescent beneath, *but with the black upper tail-coverts and black and white tail of the male*. Now in *acornaus* the upper tail-coverts are fulvescent or rufous, and the tail feathers a dark somewhat rufescent brown, with rufous brown margins. Like Mr. Brooks, I have failed as yet to procure any specimens of *pusilla*, with bright ferruginous chin and throat, but I have never obtained this species when breeding.—ED.

357.—Turdus (Cichloselys) Wardii, *Jerdon.*

Not uncommon at Mussoori. Its song is a strange one, of two notes, and quite unmusical.

361.—Merula boulboul, *Lath.*

Found near Mussoori and in the oak woods beyond Landour. At Kauriagalia I saw many. It is a charming songster.

368.—Turdus Hodgsoni, *Lafres.*

Was met with from Dhanolti to Kauriagalia, and again up above Derali. It is a greyer bird than the European one, and I cannot agree with Messrs. Sharpe and Dresser in considering it identical. Even young birds want the greenish tinge of the rump which marks the European bird.

370.—Oreocincla mollissima, *Blyth.*

A single example obtained above Derali.

371.—Oreocincla dauma, *Latham.*

Seen several times, and I procured one above the village of Banguli. I took the eggs of this bird at Gulmurg in Cashmere, the only nest ever taken I believe.*

392.—Stachyris pyrrhops, *Hodgson.*

Frequently met with in the lower parts of the valley. Below Dhúnda I obtained a fully-fledged young bird on the 27th May; it must therefore breed rather early. Its note is a low soft whistle; and on account of its skulking habits, it is very difficult to shoot. In note and habits, this species is very like *Horornis pallidus,* in spite of its differently shaped bill. I have not seen any of the other three species of *Stachyris* in life.

Horornis, as a genus, has little or nothing in common with *Dumeticola* and *Tribura.* The notes of the *Dumeticola* that I heard in Cashmere were strictly those of a *Locustella,* and from *Locustella* the genus simply differs in the unicolorous upper plumage and the rounded wing.

405.—Pomatorhinus erythrogenys, *Gould.*

Common about Mussoori, and I occasionally met with it up the Bhagiruttee valley, in the lower and warmer parts. The male and female call together, as in the case of *Meg. Marshallorum,* a sort of curious plural call.

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* *Vide* "Nests and Eggs," p. 236, where I have wrongly, it would appear, attributed to Captain Cock the taking of this nest.—Ed.

407.—Garrulax leucolophus, *Hardwicke.*

A few seen not far from Dhúnda.

425.—Trochalopteron lineatum, *Vigors.*

Seen on many occasions about Mussoori, where it is excessively common. I also met with it as high up as Derali.

429.—Sibia capistrata, *Vigors.*

Common about Kauriagalia and Dhanolti; seen also at Suki; also near the village of Banguli, which is on the mountain side above Danguli. I have frequently mentioned Dhúnda as one of the places where species were obtained or seen. Dhúnda was a collection of cattle sheds only, formed of branches of trees and rough thatch of dried grass. Nearly the whole had been burnt down before I arrived there, and the place was entirely abandoned. It is one of the camping places marked on Montgomerie's Route Map, and if not rebuilt, future travellers may perhaps search in vain for Dhúnda.

444.—Hypsipetes psaroides, *Vigors.*

Very common as far up as Suki.

459.—Otocompsa leucogenys, *Gould.*

Frequently seen in the warm parts of the valley.

461.—Pycnonotus (Molpastes) pygæus, *Hodgson.*

Occurs in the lower parts of the valley. The brown ear patch serves to distinguish this species.

470.—Oriolus kundoo, *Sykes.*

Seen in the warm parts of the valley.

475.—Copsychus saularis, *Linn.*

Seen about Dhúnda and other places of moderate elevation.

481.—Pratincola caprata, *Linn.*

In the lower parts of the valley.

438.—Pratincola indica, *Blyth.*

Not by any means so common as it is in Kumaon. On bare open hills, where there are a few bushes here and there, it is frequently seen. The Stone Chats of the south of England differ considerably from those of the north of England and of Scotland. The former much resemble our Indian birds; but I have not seen yet an exact correspondence, and am therefore not satisfied with the identification. The large Northumbrian

504.—Adelura (Ruticilla) cœruleocephala, *Vigors.*

Not uncommon in the upper parts of the valley among the pine woods. This species does not quiver its tail as all Redstarts do, and its manners and habits differ from those of the true Redstarts. It is a Wood-chat, but differs considerably in structure from *Pratincola*. In manner and notes it put me much in mind of *Ianthia rufilata;* and the differences are so slight, that it might very well stand in that genus.

505.—Rhyacornis fuliginosa, *Vigors.* (" *Ruticilla fuliginosa.*")

Common on the Bhagiruttee.

506.—Chæmorrornis leucocephala, *Vigors.*

Not uncommon from Danguli to Derali.

507.—Larvivora superciliaris, *Jerdon.* (*L. cyana*, Hodgs.)*

This species was most numerous at Suki. It affects thick cover, and is as much addicted to hiding itself from human observation as *Cyornis rubeculoides*.

508.—Ianthia rufilata, *Hodgson.*

This bird is more numerous in the upper part of the valley than in the parts of Cashmere that I visited. Its call note, or alarm note, whichever it may be, is Robin-like, and its manners are much those of a Robin. I did not hear the song, if it has any. It is a very shy bird. Some of the males that I shot were (as in Cashmere) in the female plumage. These were also breeding males, as proved by dissection. This appears as if the blue plumage were not assumed after the first moult, supposing the *Ianthia* nestling to be spotted as most of these birds are. The changes the various Warblers are subject to, and the time when these changes take place, are interesting questions; and we have much to learn concerning them. I used to think that the first moult of a Warbler produced the adult plumage; but in the cases of *Ianthia* and *Siphia* this cannot be the case. I refer to *Siphia leucomelanura*, for with the others, in life, I am unacquainted.

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* Hodgson's name, which is *cyanea*, and not *cyana*, has, I think, precedence, and should stand. The nearly allied species so common in Eastern Siberia and China, and, as we have recently found, in Northern Tenasserim, is *cyane*, Pallas (=*gracilis*, Swinh). *Cyane* does not, I think, extinguish *cyanea*.—Ed.

bird that I have is most surely distinct from *P. indica*. I once held a contrary opinion, when I knew less about the two birds, but I am now a convert to Mr. Blyth's conclusion. I believe that Mr. Swinhoe also regarded the two as distinct. However, I am open to conviction upon good evidence, not mere assertion.*

486.—Pratincola ferrea, *Hodgson*.

Tolerably common about Mussoori, and found as far up as Derali. This bird, in its mode of nesting, eggs, habits, and notes, together with its *song*, is a true Chat with sylvine tendencies, and is far removed from the Flycatchers.

503.—Ruticilla frontalis, *Vigors*.

The only Redstart seen up the valley. From Derali to Gangaotri it was common. Its song is very inferior.

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* Dr. N. Severzow (Anglice, Severtzoff) remarks (Cabanis, J. fur O., 1873, p. 359), "Against this Hume unites *Pratincola indica* with *P. rubicola*, as I think incorrectly, for the inconstancy of the diagnostic points, which he relies on, appears to me to depend on an inadmissible selection of these, namely, 'pure blackness' (*indica*) or 'mottledness' (*rubicola*) on the back. This I myself also found to be variable, and did not believe in *P. indica* until Dr. Cabinis taught me the real distinguishing points, which I have found to hold good in Indian, Turkistanic, Uralic, and Siberian specimens, even in the autumn plumage when the broad fawn colored feather borders do not allow the faintest trace of black to be seen on the back. These positive distinguishing characters are differences in marking, conditioned by the histologic differences of the structure of the plumage on the upper surface of the body. (*Diese festen Kennzeichen sind Zeichnungsunterschiede, durch histologische Structurverschiedenheiten der Federn am Oberkörper bedingt*).

PRATINCOLA INDICA.

♂ Dorso maculis centralibus nigris extus rotundatis, marginibus plumarum autumno late fulvescentibus, aestate deciduis, aestate dorso nigro, plumis latis, rotundatis, mucronatis, uropygio candido, apicibus autumno [illegible], aestate deciduis, maculis scapalibus nullis.

♀ Uropygio rufo.

PRATINCOLA RUBICOLA.

♂ Dorso maculis scapalibus nigrofuscis, elongatis, autumno aliquot dilutius fusco marginatis; aestate, si margines detriti, plumis dorsalibus angustis, acuminatis ut *Sturno*; Uropygium album, apicibus autumno rufis, maculis scapalibus elongatis nigris.

♀ Uropygio etiam maculato.

"The geographical distribution of both forms, (one may take them for species or sub-species,) is also against their union. For in Russia between the Dnieper and Volga there is a belt about 150 miles in breadth where neither form breeds.

"Westward is *rubicola*, whose limit in Germany towards the east is however about the Elbe (Borggreve), then a northern limit from the upper Elbe to the lower Dnieper.

"Eastward is *indica*, the northern limit of which rises rapidly from 50° N. Lat., on the River Usen, to the south of the Ural Mountains and then along their eastern slope to 58° N. Lat.; in Siberia from Irtysch southwards. On the Ural River *indica* has also its southern limits, and there (about 47° N. Lat.) meets *P. Hemprichi*, but this southern limit becomes further east a western limit, naturally with a border zone where both occur.

"*P. Hemprichi* appears geographically to force itself between *rubicola*, *indica*, and the South African *P. pastor*, and to separate them."

As to the diagnosis, I shall have more to say hereafter; as to the geographical limits thus assigned, I can only say I am puzzled. Middendorf got *Hemprichi* on the Stanovoi Mountains, Radde on the middle Amoor, and if Dr. Severzow's views are correct, this species not only divides *rubicola*, *indica*, and *pastor*, but it cuts off the Trans-Volgan, so-called *indica*, from Indian *indica*.

I take this opportunity of noting that I still consider, as I always have done, that Dr. Stoliczka's *P. macrorhyncha* from Cutch is nothing but *Hemprichi*.—ED., S. F.

513.—Calliope pectoralis, *Gould.*

Three examples were procured which varied much in shade. Specimens from Sikhim are of an unusually dark blackish* grey, while my Cashmere ones are a moderately dark brown. The Sikhim females that I have seen are also of a darker tone; still, I do not think there is any specific difference. Out of a fair series, hardly two birds are alike. I found each of the three birds solitary; one was obtained at Derali, and two lower down the valley, between Barahath and Moneri, as well as I remember.

516.—Acrocephalus dumetorum, *Blyth.*

I saw a pair of these birds in a dense rose thicket near Dhanolti, which is not far from Landour. This was the very end of May. Whether the birds bred there or not I don't know. The male was not singing when I passed. I made a good search for the nest, but without effect. All Reed Warblers build a cup-shaped nest, I believe; and on this account I doubt the eggs procured by Captain Hutton, *vide* "NESTS and EGGS," page 327. Mr. Hume also appears to doubt them; still it is possible that the habits of this bird, as it is not an aquatic one, may differ from those of other Reed Warblers.

526 *bis*.—Horornis pallidus, *Brooks.*

I described this species† as *Horeites*, but on comparing it with *Horornis fortipes*, I find it is about the same size, and is a true

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* I have noticed that the birds which I procured in November and December, when they occur at least as low down as 5,000 feet, are much darker, blacker, and greyer than those that I have shot in the interior in summer at heights usually of above 9,000 feet.—ED.

† As this species is not in Jerdon, and is now mentioned in STRAY FEATHERS for the first time, I subjoin the original description as also that of *Dumeticola major*, Brooks.

"HOREITES PALLIDUS.—A larger bird than the last (*H. brunneifrons*, Hodgs.), but of very similar construction. It is found in dense jungle at lower elevations. Its song is a strange prolonged whistle with a sudden turn at the end; the second strain consists of 5 or 6 notes in a different key; after a short silence, the long whistle is begun again. I have heard more than one visitor to Cashmere call this bird 'the whistling bird.'

"The description is as follows:—Length, 5·15 inch; wing, 2·2; tail, 2·2; bill, ·33; and from gape, ·5; tarsus, ·9; irides hazel brown; bill light brown; lower mandible paler, except the tip; legs, toes, and claws light fleshy brown. Whole upper surface dull greyish olive or rather pale olive grey; a slight tawny tinge on the wings and basal half of tail, on the outer webs of the feathers. Lower back and upper tail-coverts rather lighter and brighter in tint than the rest of the back; being more of a pale brown with slight tinge of yellow in it. A dull whitish grey supercilium. Pale brown streak through the eye. Cheeks and ear-coverts brownish white, mottled with pale brown. Chin to abdomen greyish white. Sides of breast, flanks, tibial plumes, and lower tail-coverts pale brownish grey; the flanks being slightly tinged with fulvous, and the lower tail-coverts still more so; lining of wing creamy white.

"This bird has none of the depth of rich colouring of the *Horornis* group. Its mode of coloration is rather like that of *Acrocephalus dumetorum* in faded summer plumage, but paler and lighter. The tarsi, feet, and claws are strong and stout. Tail much graduated, the outer feathers being ·42 shorter than the central ones. In the wing the 5th primary is the longest, and a shade longer than the 6th; 4th a little shorter

Horornis. *Horeites* may be described as a small slender-billed *Horornis*. Structurally, the two genera are very much alike.

H. pallidus was met with above Danguli, and was common at Suki, frequenting the dense thickets on the hill side there. It is seldom seen, and can only be found by its most peculiar whistle. There is a considerable pause between this whistle and the second strain of the song, which latter is not a whistle but a sort of chattering warble, ending with an abrupt turn. Between the whole song and its repetition, there is a longer pause, and if disturbed the bird is silent for some time.

536.—Prinia gracilis, *Franklin*.

Common in the lower parts of the valley, as far as Moneri. The forehead is generally covered with the red pollen of a jungle-flowering bush.

537.—Prinia cinereocapilla, *Hodgson*.

This bird was not uncommon near Dhúnda, but was not seen beyond Barahath. It may be known by its very dark lead grey cap, and the generally very rufous tone of the back and wings. Its song is quite different from that of any other *Prinia*

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than 6th; 3rd equal to 8th: 2nd very short, and ·48 short of tip of wing. The rictal bristles are distinct and almost ·22 inch long. The bill has a very faint notch at the end like that of *Horeites brunneifrons*."

"DUMETICOLA MAJOR.—Similar to *D. affinis*, Hodgson, but much larger; measuring from 6 inches to 6·3 inches; wing, 2·28 to 2·3; tail, 2·7; bill at front, ·55; from gape, ·75 to ·8; tarsus, ·87; mid toe and claw, ·72; hind toe and claw, ·6; tail excessively graduated, the outer feathers being 1·12 inch shorter than the central ones. The bill is long and compressed at the sides, generally quite black, but sometimes dark brown, with the lower mandible pale, except towards tip. Legs and feet pale flesh colour, with the claws a trifle darker. Irides dark brown; lores whitish. A cream coloured supercilium. Cheeks whitish, finely mottled with light brown. Chin, throat, and upper breast pure white, finely spotted with dark brown on the breast. These spots are confined to the breast, and in some specimens they are faint or entirely wanting. Centre of belly and abdomen white; sides of breast and flanks shaded with olive brown; under tail-coverts pale brown, each feather being broadly bordered with dull white. Whole upper surface dark dull olive brown, the crown of the head being conspicuously the darkest. Primaries, secondaries, and tertials, also wing coverts with the edges of the feathers, rather rufescent. Lining of wing white, with a few small brown markings towards ridge of wing; the tail feathers are obsoletely cross-rayed.

"The longer, straighter, and stronger bill, and the differently formed wing, with tolerably large 1st primary, separate this bird from true *Locustella*. The upper surface is also devoid of streaks. I obtained several specimens. It ranges from 6,000 feet upwards, even to 10,000 feet elevation, and frequents exclusively places where the ground cover is abundant. It is seldom seen. The song is strictly that of a *Locustella*, similar to that of *L. Rayi*, but slower and louder. By beating the cover where I heard the birds, I was enabled to get an occasional snap shot, and thus secured my specimens. They were all males.

"For the sake of comparision, I give Mr. Hodgson's dimensions of 4 specimens of *Dumeticola affinis* as recorded on the drawing of the bird.

Tip of bill to tip of tail ...	6½	6½	5	5
Bill to gape ...	1/16	1/16	1/16	1/16
Tail ...	2	2½	2	2
Closed wing ...	2½	2 1/16	2½	2½
Tarsus to sole ...	⅝	⅝	⅝	⅝
Central toe and nail ...	½	½	½	½
Hind do. do. ...	½	½	½	½

"The bill of the Cashmere bird is nearly one quarter of an inch longer. The tail and total length are also much longer."

I have heard, and is better and more varied. There was a good deal of red pollen on the foreheads of those I procured. In the middle of May, they were very ragged, and in the moult. It affects trees and tolerably thick jungle occasionally, and in this respect differs from other *Prinias*.

538.—Prinia Hodgsoni, *Blyth*.

At Barahath and other similar places of moderate elevation.

547.—Suya crinigera, *Hodgson*.

Common at Mussoori and at many places beyond, but was not met with in the Alpine parts of the valley.

556.—Phylloscopus* magnirostris, *Blyth*.

I frequently heard its song near Danguli and again not far from Gangaotri. Also on the road from Sansoo to Kauri-agalia in a rocky wooded glen through which a small stream

* Subjoined is Mr. Brooks' original description of *Phylloscopus Tytleri*.—Ed.

"In plumage resembling *P. viridanus*, but of a richer and deeper olive; it is entirely without the "whitish wing bar," which is always present in *viridanus*, unless in very abraded plumage. The wing is shorter; so is the tail; but the great difference is in the bill, which is much longer, darker, and of a more pointed and slender form in *P. Tytleri*. The song and notes are utterly different; so are the localities frequented. *P. viridanus* is an inhabitant of brushwood ravines, at 9 and 10,000 feet elevation; while *P. Tytleri* is exclusively a pine forest *Phylloscopus*. In the places frequented by *viridanus* it must build on the ground, or very near it; but our new species builds 40 feet up a pine tree a compact half-domed nest on the side of a fir branch. Eggs pure white. Captain Cock took the only nest obtained, shooting the old bird off the nest. Properly speaking, none of the notes of *P. Tytleri* could be called a song, but the song of *P. viridanus* is not at all a bad one, and quite *Phylloscopine*. I give measurements of the new bird, and also of *P. viridanus* for the sake of comparison. Here let me observe that Colonel Tytler is, properly speaking, the discoverer of this interesting *Phylloscopus*; for four years ago he shot one at Simla, which, together with one of my own specimens, I have sent to Dr. Tristram for examination. Col. Tytler had labelled the bird *Sibilatrix affinis*; while *Phylloscopus affinis* stood in his Museum as *Asilus affinis*. As most ornithologists do not recognize the generic distinctions of *Sibilatrix* and *Asilus*, and as *Asilus* has been applied to a genus of insects, I have, with Col. Tytler's permission, altered the name of his bird to *Phylloscopus Tytleri*. The only question remaining is whether it is distinct from the *Phylloscopi* described by the Russian naturalists. Dr. Tristram identifies *P. viridanus* with *P. Schwarzi*, Radde; but it is possible that he may have compared the Russian specimens with some of *P. Tytleri*. The measurements of my specimens are—

P. Tytleri.

Length.	Wing.	Tail.	Bill at front.	Bill from nostril.	Tarsus.
No. 1 ♂ 4·76	2·35	1·75	·38	·33	·76 shot off nest by Capt. Cock.
„ 2 ♂	2·27	1·67	·38	·33	·76 Col. Tytler's bird.
„ 3 ♂	2·35	1·83	·35	·3	·75 Cashmere.
„ 4 ♂	2·3	1·7	·36	·31	·7 „
„ 5 ♂	2·2	1·55	·35	·3	·7 „
„ 6 ♂	2·4	1·7	·35	·3	·7 „
„ 7 ♂	3·27	1·72	·37	·32	·75 Almorah.
„ 8 ♀	2·32	1·78	·35	·28	·7 Etawah.

flowed. The conditions this bird requires are wooded cliffs or very steep rocky banks impracticable for man, and plenty of flowing water below. Above a roaring torrent it is in its element, and sings most vigorously. The discovery of this bird's nest and eggs will be a great difficulty. It is very shy and of a retiring disposition, and the female is rarely seen. But for its song, the male also would generally escape observation. The peculiarly shrill sweet song I have referred to before, J. A. S., 1872, p. 79. It is the most melancholy one that could be imagined, but of singular sweetness.

561.—Phylloscopus affinis, *Tickell.*

Is not uncommon up the valley, even as high as Gangaotri. This in May; but whether they bred there or not I cannot say.

562.—Phylloscopus indicus, *Jerdon.*

One obtained at Mussoori, in the end of April.

563.—Reguloides occipitalis, *Jerdon.*

Common and observed as far as Bairamghati. It breeds near Landour.

565.—Reguloides superciliosus, *Gml.*

Tolerably common in the Alpine parts of the valley, and most numerous at Gangaotri.

566.—Reguloides proregulus, *Pallas.*

Common in the Alpine parts of the valley. It breeds about Derali, Bairamghati, and Gangaotri, in the large moss-grown deodars.

Only one specimen was measured in the flesh, No. 1.

P. viridanus.

Length.	Wing.	Tail.	Bill at front.	Bill from nostril.	Tarsus.	
No. 1 ♂ 5	2·5	2·00	·3	27	·8	Cashmere.
„ 2 ♂	2·55	2·15	·32	·29	·8	„
„ 3 ♂	2·45	1·9	·32	·29	·7	„
„ 4 ♂	2·57	2·05	·32	·30	·8	„
„ 5 ♂	2·47	1·93	·32	·30	·8	„
„ 6 ♂	2·55	2·00	·3	·28	·76	Etawah.
„ 7 ♂	2·45	2·03	32	·29	·74	„
„ 8 ♀	2·36	2·08	·32	·28	·75	„

567.—Reguloides viridipennis, *Blyth.*

One obtained at Gangaotri, and another near Bairamghati; and doubtless it occurs in other parts of the Alpine portion of the valley. Its notes are so similar to those of *Reg. occipitalis*, that it is probably often overlooked.

Reguloides viridipennis may be best described as a small bright-coloured *Reg. trochiloides*. This larger, but very similar species, I have not yet seen from the north-west.

569.—Culicipeta Burkii, *Burton.*

One was obtained in the forests above the village of Banguli, at a distance of about 3 miles from the river.

573.—Abrornis albosuperciliaris, *Blyth.*

Common at Mussoori, and found at many places up the valley as far as Suki. I have examined a series of *Abrornis xanthoschistos* from Sikhim, summer as well as winter birds, and I am forced to the conclusion that the north-west bird is, as a rule, a much paler one and consequently that *albosuperciliaris* is a good species, unless the difference in the tone of the grey is due to the damper Sikhim climate. I have not yet seen a newly moulted autumnal example of *albosuperciliaris*, and would remark that *Reguloides superciliosus* and many other birds from Sikhim are deeper in tone and of purer and brighter colour than the same birds are in the north-west. I formerly expressed an opinion that the two species of very closely allied *Abrornis* were identical. In size they are alike, and the only difference is the shade of grey.

It should be borne in mind that *A. xanthoschistos*, Hodgson, is quite a distinct bird from the very small one that I described as *A. Jerdoni** (Pro., A.S., 1871). This has a very short wing and tail, but no wing bar as in *A. poliogenys*, Blyth. Dr. Jerdon's *A. xanthoschistos*, No. 572, gives dimensions inapplicable to the true *xanthoschistos*; and he probably had a *Jerdoni* before him when he wrote his description.

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* The following is Mr. Brooks' description of *Abrornis Jerdoni*.—Ed.

"The dark slaty-headed *Abrornis*. Dimensions—length of skin, 3·5, but the bird in the flesh would probably measure 4·75; wing, 1·62; tail, 1·57; bill at front, 0·35; from gape, about 0·5; tarsus, 0·72.

"Colors similar to those of *A. xanthoschistos*, but the slate color of the head and shoulders is very dark, without the greenish tinge observed in the other species. There is no light colored coronal streak, but a greyish white supercilium. Lower back, bright yellow green, as are also upper tail-coverts. Upper part of wing vivid green. Two outer tail-feathers white on their inner webs; the white of the outermost one being spotless, while that of the penultimate one is clouded with pale brown spots; but that of the lower surface of the body from chin to under tail-coverts bright yellow; bill and feet colored as in the other species."

580.—Regulus himalayensis, *Blyth.*

Seen a few times near Derali. This species is of purer coloration, and quite grey about the neck. It is, I think, quite distinct from *Reg. cristatus.*

584.—Enicurus maculatus, *Vigors.*

Found below Mussoori, in water-courses where the cover is dense.

587.—Enicurus Scouleri, *Vigors.*

Not far from Danguli I observed a pair. I repeatedly saw them dive through the foaming torrent, and towards a large stone or rock over which the water flowed; and it was most probable that their nest was under this strongly rushing water. How ever such a slight little bird could get through such a violent rush of water I could not imagine.

589.—Motacilla maderaspatana, *Brisson.*

One procured at Moneri. The back was very brown, and patched with grey—an unusual thing for this species. It was the only one I saw.

589 *bis*.—Motacilla Hodgsoni, *Gray.*

(*M. cashmirensis*, Brooks.) Found above Danguli, and near Derali; one also obtained at Gangaotri. This bird is quite distinct* from *M. luzoniensis*, Scop, which has at all seasons much more white about the head, and is a more delicately and slenderly built bird, as well as being somewhat sm[illegible] as a rule: the bill is conspicuously smaller. *M. luzoniensis* retains, it is said, a white throat at all seasons,† while the present species does not. *M. luzoniensis* is not found at all in the North-West. It is common at Patna and Dinapore in the cold season, but I don't think I have yet seen an example from a place so far west as Buxar. Being a Railway Engineer, I refer to places situated on the line of the East Indian Railway, and much of my collecting has been done from the telegraph wires alongside of the railway. To these wires both *Budytes* and *Motacilla* are very partial as perches, and I have good series of these birds obtained with but little trouble as I passed along the line from time to time. But let me return to my subject.

If it can be satisfactorily proved that ♂ *M. personata*, Gould, retains the grey back all through the summer, then it is, beyond all doubt, a distinct species from *M. Hodgsoni*, Gray. Bob.

* I hope every one will suspend their opinion on this very moot point.—Ed.

† This, in my opinion, has never been satisfactorily established. I consider that I have *luzoniensis* in full breeding plumage, identical with what Mr. Brooks calls the full summer plumage of *Hodgsoni*.—Ed.

have the eye set in the same *small diamond-shaped patch of white*; in size they are the same, but we have the *one* alleged constant difference of colour of the back as the characteristic distinction. I am speaking of the males only, for mature female *Hodgsoni* has often a grey back, *but rather darker than the grey of personata*. Mr. Gould's examples of *M. personata* were from the plains of India; consequently they may not have been in full breeding plumage, as these birds leave the plains rather early in the spring. I procured many black-backed examples of *Mot. luzoniensis* at and near Dinapore and Patna, *but I never saw the other species, even those procured the latest in the season with the diamond-shaped white eye patch* (*M. personata*), *with even a spot of black on the back*, nor have I yet seen an *autumnal* plains example of *M. personata* with even a spot of black on the back. Old examples of *M. luzoniensis* are very subject to parti-coloured backs; and it is late in the spring before the back becomes wholly pure black. I have now before me Sikhim and Bhotan Dooars examples of *M. Hodgsoni*, obtained in November, December, and January, with *black* backs. *In autumn and winter plumage old examples of M. Hodgsoni retain much more black on the breast than those of M. luzoniensis do.* To show clearly the decided distinctness of the two species, a few very brief descriptions of birds, now before me, will be useful.

1. *M. luzoniensis* ♂, Dinapore, 16th December. From centre of crown of head to tail-coverts, including the whole back, pure black: forehead, for more than half an inch, cheeks, ear-coverts, chin, throat, and upper breast, all pure white. A ⅝ in. gorget or crescent of black on the breast; wing-coverts and rest of lower surface pure white.

2. *M. Hodgsoni* ♂, Sikhim, December. Eye set in a diamond-shaped patch of white; a narrow black streak under the eye, bounding one of the lower sides of this diamond-shaped eye patch; chin white; throat white, speckled with black; from half an inch below the base of lower mandible to a distance of two inches from the same point, pure black; *the sides of this black breast portion being in communication with the black of the head and back; in luzoniensis, this lower black is at the same season* severed from the upper black.*

3. *M. Hodgsoni*, Sikhim, November, precisely resembles the December bird, and has the same black line from the corner of the mouth passing beneath the eye; this black line, bounding one side of the white diamond-shaped eye patch, as above stated.

4. *M. Hodgsoni*, Bhootan Dooars; precisely resembles the November and December birds.

* But some birds of the same species change from the summer to the winter plumage, and *vice versâ*, much earlier and much later than others, and I am unable to discover *any constant* structural difference between *luzoniensis* from China, Tenasserim and Lower Bengal, and the supposed *Hodgsoni* from Sikhim to Cashmere.—Ed.

5. *M. Hodgsoni*, Sikhim, April. In fine summer plumage with the black advanced to within a sixteenth of an inch of the base of lower mandible, *i.e.*, a small spot of white on the portion of the chin nearest the bill; below the very narrow black line, which is principally an effect produced by the black continuation of the bill, is a *short narrow strip of white*. I suppose this is what some ornithologists call the "moustache;" but a moustache on the *lower* lip would be an anomaly.

M. Hodgsoni, "Sikhim, May," is just like the above bird with a *very* narrow white "moustache," rather longer than in the April bird. The spot of white on the point of the chin is about the size of a pin's head.

M. Hodgsoni ♂, Gangaotri, 18th May. A trace of the white moustache on one side only; on the other side it is vanished: chin and throat pure black.

M. Hodgsoni ♂, near Suki, 12th May. No moustache; chin, throat, and breast, all pure black.

M. Hodgsoni ♂, Derali, 19th May. Only two white specks of moustache left on one side; chin black.

M. Hodgsoni ♂, Derali, 20th May. No moustache; chin, &c., black.

M. Hodgsoni ♂, between Suki and Derali, 21st May. A faint trace of the moustache on one side only; chin, &c., quite black.

It will thus be seen that with the disappearance of the white moustache the black line from the corner of the bill also becomes included in the lower black of chin, throat, and breast, and that this white line below the bill is not a constant characteristic of the species.*

M. luzoniensis, Scop. I now place before me seven *black-backed* examples of this species procured in Sikhim and in the plains, the latter by myself, the former by Mr. Mandelli.

No. 1, Sikhim, Sept. No moustache nor stripe, either black or white from corner of mouth: from the forehead, right down to the black crescent on breast, all is pure white; the white feathers about the bill are fuller than in the other bird, *and conceal its gape more.*

No. 2, Sikhim, Oct., exactly like No. 1.

No. 3, Dinapore ♂, 20th Nov., exactly the same.

No. 4, Dinapore ♀, 16th Dec., exactly the same; a pure "*White-faced Wagtail.*"

No. 5, Patna ♂, 9th Feb. The same: the black crescent in this one is very narrow, being only one-third of an inch broad in the centre.

No. 6, Patna, 9th Feb. Identical with the last, but gorget on breast half an inch broad.

* This is certain, and was pointed out, Vol. I., p. 28.—Ed.

4. *M. Hodgsoni.* "Sikhim, March," is exactly the same as the others.

No. 7, Patna ♂, 5th March. Like the others, but the gorget mixed with a few white feathers.

It will thus be seen how much more white there is on the anterior lower surface of this species than there is in the other bird. From base of bill to nearest or concave edge of the black crescent averages about an inch and a half; while in *M. Hodgsoni*, the white of an October bird only measures five-eighths of an inch from base of bill. I have thus, I think, clearly established the perfect specific distinctness of these two Black-backed Wagtails. I only wish I could follow up *Motacilla luzoniensis* into April, May, and June; but alas! where does it go in summer? and my materials stop short at March! I may have an April bird, but my collection is in such disorder, it is impossible to find it now. To arrange some thousands of small birds is no joke; and as yet I have not had time to do so.

Here I must stop and count up my first personal pronouns. I am horrified to find they far exceed the number used by my friend Mr. Hume; but in spite of Lord Walden's elegant example I find the simple, even though it may seem egotistical, plan of saying I, when I mean I, convenient, and less troublesome, and I may add less affected than a careful omission of as many *I's* as* possible. Perfection of style like Lord Walden's is beyond me; and I hope, if he ever sees this paper, he wont publish the result of his enumeration of MY I's. Again, I have digressed, and must beg the critic's forgiveness; but I am too old now to be taught how to avoid an I.

I admire Lord Walden's brilliant style, sparkling as it does, with wit and humour, but my homely English will, I hope, serve to convey my meaning, and if so, it will answer every purpose just as well.

Three of our Indian Black and White Wagtails appear to acquire spring plumage by the black spreading up till it reaches the base of the lower mandible. These are *M. Hodgsoni*, *M. personata*, and *M. dukhunensis*, Sykes. One, *M. madaruspatana*, is a well-known constant resident, larger and blacker than the others, and always black to the same extent; and the fifth, *M. luzoniensis*, appears to retain a large amount of white on chin, throat, and upper breast, but to what extent the black gorget alters in April, May, and June I for one don't know. With reference to this black crescent or gorget, let me remark that the black patch is not always of pure crescentic shape, but frequently, in winter birds, it is almost a *circular* patch, about

* To judge from the case of *rufula* and *striolata*, it seems truly a case of *eyes* and *no eyes*.—ED.

the size of a shilling. I shot one or two *M. dukhunensis* the other day, thus marked; and I have seen others. I should be sorry to distinguish a species by this circular shape of the pectoral patch. In J. A. S. for 1872, p. 82, I re-described *M. Hodgsoni* as *M. cashmirensis;* and I indicated its probable identity with *M. personata*, Gould; but this was not proved, and was, I think, a mistake*. Mid-summer breeding examples of *M. personata*, with grey backs, would decide the question, and it is to be hoped they will be obtained before long if not already actually in hands. The complete history of Mr. Gould's species is very interesting. My present conviction is, that it is a good species. Females both in winter and summer, of the black-backed birds, are variable; some are a dark grey, others lighter; some have spotted backs, or blotched with the two colours rather, while others closely approach the male, and have nearly pure black backs.

592.—Calobates melanope, *Pallas.*

Frequently seen up the valley of the Bhagiruttee.

At Batwari, I saw fully-grown young birds following the parents in the bed of a small stream, and being fed by them. The young, through my telescope, appeared to be plain grey and white, and I could not observe any yellow about them; but probably the vent and under tail-coverts might have been tinged with yellow. I never closely examined the nestling of the affined species, *C. boarula*, so cannot say more about the exact plumage of the nestling.

The comparatively short tail of this species precludes its identity with *C. boarula*. I have the latter from Asia Minor.

596.—Pipastes maculatus, *Hodgson.*

Rather scarce up at Derali and Bairamghatti. In the pine woods above Derali I heard its song, which was different from that of *P. arboreus*, although of similar character. I heard the latter's song on two occasions when I was in Cashmere in 1871.

P. maculatus frequents by preference open grassy glades among the pines, and generally high up near the snows. The plumage of this bird is notably† distinct at all seasons from that of *P. arboreus*. The latter *never* has the posterior part of the supercilium PURE WHITE, as in *P. maculatus*, but has it *always* of a uniform fulvous tint; nor has *P. arboreus* any of the strong greenish tint characteristic of *P. maculatus*. The character of striation on the back is, at all seasons, utterly different in the two birds. The long-drawn sibilant note, *something like the call*

* See also Vol. II., p. 456.—Ed.

† See also "NESTS and EGGS," p. 383.—Ed.

of the Redwing (*Turdus iliacus*), is not possessed by *P. arboreus*; and with this observation the egotistical one dismisses the idea of their identity for ever; but perhaps Lord Walden or my friend Mr. Dresser (both of whom I know to be very able ornithologists, and who have each done gigantic work for which I am sure I am grateful if no one else is) may think fit to unite these two Pipits, as the former did, or wished to do, *C. striolata* and *C. rufula*; and as the latter did all the Larks, save, perhaps, the Wood-lark, which escaped the wholesale fusion—confusion, I should perhaps have said.

Anthus agilis, Sykes, is a term often applied to *P. maculatus*, but the reason for such a misapplication no one can tell. It is a fancy or sort of fashionable mistake, which there is no accounting for.

Did not Blyth declare his conviction that the type was *P. trivialis* = *P. arboreus*, but the specimen being an old one, he was not positive? At all events there are no grounds whatever for applying the term to our Eastern Green Wood Pipit, which we don't find frequenting the ground described by Sykes. His words are, "Found on open stony lands;* female unknown; closely resembles the Titlark of Europe. Its chief difference is in the hind toe." The total length he gives is 6½. This is larger than either *P. maculatus* or *P. arboreus*: probably the bird was one of the three barren land Pipits, *C. striolata*, *Agrodroma campestris*, or *C. rufula*. An undersized and young *C. striolata* would answer the description well; and the hind claw of these young birds is much shorter than that of the adults. Mr. Blyth knew the two Pipits well; and when he did not recognize the Eastern Green Pipit in Sykes' type, we may be satisfied that whatever *P. agilis* was, it was not *P. maculatus*. The use of the term is inconvenient, and tends to confusion: some apply it to the Western Tree Pipit, while others apply it to the eastern, or Chinese Green Pipit. A similar fashionable error is the indiscriminate application of the term *Budytes viridis to all the Green-backed Wagtails*! One man intends one species by "*B. viridis*," and another, another species; but all have a very hazy notion of the bird they wish to indicate. Local lists containing such vague terms are very puzzling and comparatively valueless. *We have in the Indian longitude, the whole four Green-backed Field Wagtails*, and let each have its proper name, even on the score of convenience, for this lumping of species that clearly differ is getting beyond all bounds in this miserable Darwinian age. I look upon the terms "*viridis*" and "*agilis*" as convenient shelters for the undecided naturalist; and behind such terms he feels safe.

* But all about Poona, you do find *maculatus* frequenting "open stony ground."—Ed.

600.—Corydalla rufula, *Vieillot.*

Occurs in the warmer parts of the valley. I noticed it above Dhúnda.

604.—Agrodroma Jerdoni, *Finsch.*

Breeds at and about Sansoo, where there is much open land. It delivers its poor unmusical song as it flies. Between summer-faded ashy specimens, and autumnal ones in fresh plumage, there is much difference.

605.—Anthus rosaceus, *Hodgson.*

Was common at and about Derali, especially on open places, a mile or two below the snows. These places were very damp on account of the snow having very recently melted. They were in flocks as late as the 19th of May, and apparently had not then paired.

This bird is distinct from the western *A. Cecilii*, Audouin = *A. rufogularis*, Brehm = *A. cervinus*, Pallas. The latter I have seen from the Andamans and from Yarkand, kindly shewn to me by Mr. Hume. On reading carefully Pallas's description I am convinced now that his bird was the one found in Europe, and not Hodgson's pale Himalayan bird. The term would be inapplicable to *Anthus rosaceus*. A Maltese example of mine agreed perfectly with the Yarkand one.

606.—Heterura sylvana, *Hodgson.*

Rather scarce up the valley, but in suitable rugged places it was noticed. About Mussoori, it is not uncommon. The song is something like the Titlarks, but slower and very much louder. This bird does not occur in the low hot parts of the valley.

616.—Siva strigula, *Hodgson.*

First seen near Phedi and Balah: afterwards found rather common near Danguli; they were in small flocks.

623.—Ixulus flavicollis, *Hodgson.*

Seen, and one procured at Danguli.

631.—Zosterops palpebrosus, *Temminck.*

At Dhúnda and other places of moderate elevation. Identical with plains' examples.

634.—Ægithaliscus erythrocephalus, *Vigors.*

Common at Mussoori, and at several other places in the interior, but does not occur near the snows. It is partial to oak woods.

638.—Lophophanes melanolophus, *Vigors*.

Frequent near Landour, and found as high up as Gangaotri.

640.—Lophophanes rufonuchalis, *Blyth*.

Common at Derali, and other places of similar elevation. I found a nest under a large stone, in the middle of a hill foot-path, up and down which people and cattle were constantly passing; the nest contained newly-hatched young. This was the middle of May.

644.—Parus monticolus, *Vigors*.

Common in the oak-woods beyond Landour.

645.—Parus cæsius, *Tickell* (olim *P. cinereus*.)

Frequently seen at moderate elevations, near Dhúnda for instance.

647.—Machlophus xanthogenys, *Vigors*.

Seen in the oak-woods of the Nagtiba range, between Balah and Lalúri; also in oak trees in Mussoori.

661.—Corvus intermedius, *Adams*.

Common at Mussoori, and found up to Gangaotri. The tail of this species is always longer than that of *C. culminatus*, Sykes, of the plains; and it is invariably of duller plumage. The voice too is notably different. I shot numbers of the plains' bird on my return, to see if by any chance I could get one corresponding with the hill species, but I could not. I have the hill bird from Cashmere, Murree, Mussoori, Bairamgati, Kumaon, and Sikhim, and they all correspond in having a much longer tail than the bird of the plains.

666.—Nucifraga hemispila, *Vigors*.

Frequently seen beyond Mussoori, at various elevations.

669.—Garrulus bispecularis, *Vigors*.

In the oak-woods about Kauriagalia and Dhanolti.

670.—Garrulus lanceolatus, *Vigors*.

Very common about Mussoori, and at many places further in the interior. It is not found near the snows.

671.—Urocissa occipitalis, *Blyth*.

Frequently seen at moderate elevations.

676.—Dendrocitta sinensis, *Latham.*

Seen occasionally beyond Mussoori.

679.—Fregilus himalayanus, *Gould.*

A few Choughs were seen at Bairamghati, probably of this species; I shot one, but it stuck on the top of a huge pine, which my men could not climb.

684.—Acridotheres tristis, *L.*

Occurs at Mussoori, and also at places further in the interior.

686.—Acridotheres fuscus, *Wagler.*

Is much more common than the last. Common at Mussoori, and also seen at places beyond. The colour of the iris serves to distinguish the bird, apart from its darker tone.

691.—Saraglossa spiloptera, *Vigors.*

Common at this side of Dhúnda, and also seen between Sansoo and Kauriagalia. It breeds early, for I saw fully-grown young in the end of May.

702.—Munia acuticauda, *Hodgson.*

Obtained at this side of Dhúnda in small parties.

706.—Passer indicus, *Jard. and Selby.*

Seen at Mussoori, and at several places beyond. One obtained at Sansoo in no way differs from plains' examples.

708.—Passer cinnamomeus, *Gould.*

Common at Mussoori, and at other places beyond.

711.—Passer flavicollis, *Franklin.*

Some seen near Dhúnda, and one obtained. It is a bird of the lesser ranges only.

714.—Emberiza Stracheyi, *Moore.*

According to Messrs. Dresser and Sharpe, *E. cia* is not Indian. *E. Stracheyi* was common in the upper parts of the valley.

716.—Emberiza Huttoni, *Blyth.*

A single female obtained a short distance above Dhúnda, and was the only one seen. It must have been a straggler.

724.—Melophus melanicterus, *Gmelin.*

Seen in the warmer parts of the valley.

729.—Pyrrhula erythrocephala, *Vigors.*

At Danguli some were procured.

738.—Carpodacus erythrinus, *Pallas.*

Frequently seen in the upper parts of the valley.

742.—Propasser rhodochrous, *Vigors.*

Frequently seen, and a few procured at Danguli, Suki, and Derali.

734 *bis*.—Propasser ambiguus, *Hume ?*

Five females of a species I am unable to determine were procured at Suki and Derali. At the latter place they were congregated with numbers of *Fringilauda sordida*. There were no red males with them. I sent one to Mr. Hume.

748.—Callacanthis Burtoni, *Gould.*

In the woods above Derali, but not common.

749.—Carduelis caniceps, *Vigors.*

Common in the upper parts of the valley.

750.—Coccothraustes spinoides, *Vigors.*

This bird, not being a Siskin, I have altered the generic term,* *vide* J. A. S., 1872, p. 84. I saw some between Sansoo and Kauriagalia, and obtained one.

751.—Metoponia pusilla, *Pallas.*

Common from Danguli upwards. They were in flocks in the middle of May.

753 *bis*.—Fringilauda sordida, *Stoliczka.*

Common on the hill side above Derali, where there was open ground.

778.—Sphenocercus sphenurus, *Vigors.*

Common in the lower parts of the valley.

778. *bis*.—Sphenocercus minor, *N. Sp.*†

Very similar in colour to the former, but altogether smaller. Its much shorter tail at once strikes the observer.

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* But it is not a *Coccothraustes*, and why not take Cabanis' name *Hypacanthis*.—See NESTS and EGGS, p. 472.—ED.

† I have shot many of these, but do not believe them to be distinct, but only young birds, because two nestlings that I took in 1851 and kept for more than three years had scarcely attained their full size when they were killed. During their second year, they were much smaller, and *had* much shorter tails, but by the middle of the third year they were full-sized. *Minor* for all that *may* be a good species and *may* never grow bigger, but certainly young *sphenurus* would answer exactly to the above definition of *minor*.—ED.

Length in the flesh, of a breeding male, 11·25 inch; wing, 6·75; tail, 4·2; bill, at front, 7 inches. Of a female, shot at Mussoori in 1869. Length of skin, which is not stretched, but is quite as long as the bird would be in life, 9·9 inches; wing, 6·5; tail, 4 inches; bill, at front, ·6 inches.

The male was shot at Sansoo on the 28th of May.

790.—Columba leuconota, *Vigors.*

In large flocks near Derali, and I saw it also close to Gangaotri.

792.—Turtur rupicolus, *Pallas.*

Common as far as Bairamghati.

794.—Turtur cambayensis, *Gmelin.*

In the low parts of the valley between Dhúnda and Sansoo.

795.—Turtur suratensis, *Gmelin.*

Found as high up as Moneri.

796.—Turtur risoria, *L.*

In the lower parts of the valley, such as Sansoo.

804.—Lophophorus Impeyanus, *Latham.*

Met with sparingly near the snows. It will soon be extinct in this part of the world.

806.—Ceriornis melanocephala, *Gray.*

I saw skins in the hands of the natives. Found above Banguli village, I was told.

808.—Pucrasia macrolopha, *Lesson.*

A few seen where the cover was good, but not near the snows.

818.—Francolinus vulgaris, *Stephens.*

Common in all the lower parts of the valley up to Batwari.

855.—Lobivanellus goensis, *Gmelin.*

A few seen near Dhúnda and other low parts of the valley. I also saw this bird near Almorah in 1868.

867.—Scolopax rusticola, *Lin.*

One seen above the village of Banguli, at a spring in the forest.

879.—Ibidorhynchus Struthersii, *Vigors*.

At and near Derali there are large shingle beds where the valley opens out a little. Here one or two pairs of this rare and curious bird may be seen. The Crows persecute it much; and, I believe, had taken the eggs, when I was there. I made a diligent search, but could not find either eggs or young.

893.—Actitis hypoleucos, *L.*

I saw a few pairs near Derali and similar places where there were gravel beds.

958.—Anas boschas, *L.*

A pair were seen on a small mountain tarn above Derali. The male was obtained. This was in the middle of May.

1005.—Graculus carbo, *L.*

A few seen at Barahath, perched on stones in the middle of the swiftly rushing stream.

What is a Species?

To those who have neither thought nor read much on subjects connected with Natural History in one or other of its branches, the definition of "species" may appear an easy matter, altogether beyond controversy.

They will say that in relation to organic life, a species is the minimum admitted sub-division, one in which, with the exception of differences arising from sex, age, season, malformations, and similar accidental deviations from type, all the individuals which compose it resemble each other in all essential points, and are descended from parents, and, under natural conditions, give birth to offspring, similar to themselves.

A moment's consideration will show that this so-called definition only shifts the difficulty one step further. We now require to define what constitutes an "*essential* point," and what amount of difference between individuals suffices to *prevent* their resembling each other in all essential points. A very slight study, however, of scientific classification proves that existing systems permit no general and precise definition of an essential difference, and that differences, at any rate, of form, colour, and size, that in one kingdom, order, tribe, and even family, would be generally accepted as specific are as generally, and, as more careful investigations would show, rightly so, disallowed as such in another.

So far, therefore, this popular definition helps the practical observer little. It explains, indeed, what a species is in theory, but it does not aid him much in deciding in many cases whether he ought or ought not to separate any little group of organized beings, that he meets with, as a distinct species. He will say, true these do differ from the other most nearly allied similar groups, but is the difference in this case essential? is it sufficient to justify a specific separation?

As a matter of fact, naturalists have answered these questions in the most contradictory manner. One has made 1,200 species, for instance, out of the Birds of Europe, whilst another compresses them into less than half that number. As to a vast number of species, although there may not be absolute unanimity, there is at least a pretty general consensus amongst modern naturalists as to their validity; but on the other hand, there are hundreds and thousands of little groups or races, out of which probably no two naturalists in the whole world would reject or accept precisely the same ones as valid species.

Men holding one set of opinions in regard to the origin of species would accept most of them, those holding different views would equally reject the majority; but the members of each party would none the less differ *inter se*, the fact being that the former are not agreed as to what *does*, the latter as to what *should*, constitute a species.

The amount of difference necessary to warrant specific separation has always been felt to be so entirely a matter of personal opinion, that it has been sought to import another element, *viz.*, that of locality, into the question. Many men will allow a difference to be specific if observed between two groups found in widely separated localities, which they would ignore if both groups were found in the same province.

This, however, appears to me equally unphilosophical from whichever point of view it is considered.

There are of course two ways of looking at a species in the abstract—the one is that each is a distinct creation, the other that each is merely a variation, which has become permanent, from some pre-existing form. Under either supposition, locality cannot effect the question; no matter where you find it, either it is or is not a variation of sufficient importance to justify its specific separation, or again, it is or is not a distinct creation.

This dogma, by the way, of each species being a distinct creation, is, if rightly considered, any thing but a theological one. It is *perfectly* true in one sense, but it in no way removes our difficulties. Every species *is* a distinct manifestation of creative energy, in other words, according to my views of the power of God, that prevades the universe—*but so too is every individual.*

Naturalists of an older school at times seem to fancy that they settle the question by saying that there can be no intermediate forms and no blending of species, because every species is a distinct creation; but as no two individuals are precisely alike, it is quite clear that from their point of view each individual is a distinct creation, and hence, that the groups into which they gather bodies of individuals are more or less arbitrary and dependent on opinion. This difference they say is specific, that a mere variation; in other words, here there *has* been a distinct creation, there there has *not*; but who has told them so? If they contented themselves with saying, "if we could find out which were distinct creations, these and these only would we admit as species," no one could gainsay them; but as a matter of fact they cannot find this out, there is no revelation on the subject, and as they can never make sure of what are and what are not distinct creations, or consequently which little closely allied groups ought, according to their views, to constitute species, and which only "races" or "local varieties," it would be only reasonable for them to admit with the modern school that the "species" with which we deal in practise are after all nothing but divisions, adopted for convenience, more or less artificial and more or less matters of opinion.

To be logical we ought, it appears to me, to accept one of two theories; either the direct constant interference of the Creator in every detail, or the continual operation under natural laws of a creative energy.

If however we could really grasp the somewhat hazy ideas prevalent on this subject, we should, I apprehend, find that the popular view was a sort of compromise between these two formulæ, based on a notion that God interferes in the more important events of the world, leaving minor matters to be governed by natural laws. Thus, those who would stoutly maintain that the Blue Rock Pigeon was created as a distinct species by the direct action of the Almighty would scout the idea of His having directly intervened to produce the Fantail or the Carrier. When some blood-stained tyrant is hurled by an indignant people from his misused throne, this is accepted as the handiwork of God by myriads who would deem it profane to suppose that he had any concern with the daily slaughter of animals for human consumption.

Sometimes the compromise takes another form, and the notion seems to be that the Creator has from time to time imparted successive impulses to the world or things in it, leaving it and them in the interim to run on in accordance with natural laws, and thus through long past ages has created now this, now that

association of animated beings. Still, as the natural platform gradually varied, and existing forms slowly became obsolete, replacing them by others more appropriate to the cycle.

To those who can look through the clouds of language into the firmament of thought, it is needless to demonstrate that inexorably limited as our powers of conception are, no real difference that we can appreciate underlies these different views; the essential proposition in each is identical, and they stand apart in virtue only of the words in which they are clothed, and the varying set of inchoate ideas which each individual mentally associates with these. Creator, God, Creative Energy, Natural Laws—are all beyond our conceptive faculties. Each mind conjures up some more or less vague cluster of ideas, which represents what it understands by these *words*; but no mind can ever arrive at a sufficiently definite and perfect conception of the powers themselves to decide whether they are all identical, distinct, or merely allotropic essences.

And as a matter of fact, as might have been expected from these premises, no formula of words that we may adopt, as representing to us our abstract conception of the universal scheme, can, if we reason logically, affect our decision as to what does, or should, constitute a species.

Those who affirm that everything progresses under the ceaseless operation of natural laws, will at once admit that all hard and fast lines of demarcation must be more or less artificial, and all systems of classification, and even the definition of the minimum sub-divisions we call species, more or less matters of convenience.

To those who hold to the direct intervention of Providence in every detail, it should be sufficient to point out that, as each individual is equally with each natural order the special work of the Creator, any gathering up of larger or smaller groups of individuals into what we call species must, as we can only imperfectly trace His design, be more or less arbitrary.

To those, lastly, who hold that the Creator intervenes in some cases to produce markedly different forms, but in others allows a multitude of minor differences to arise through the operation of natural laws, it should suffice to remark that we are unable to do more than *guess* where He has intervened and where natural laws have operated, that we are quite ignorant of what are great and what small differences in His eyes, and that however anxious we may be to restrict the term species to those groups of individuals which have arisen from a distinct creative act, our ignorance absolutely precludes our doing this with any certainty. We cannot follow His hand, we can only *conjecture*, what differences may and what

may not have arisen from a distinct creative act, and thus the term species here too becomes a more or less arbitrary division and dependent on each man's phantasy.

Since then whatever view we take of the scheme of creation, species must, at any rate until our present knowledge is infinitely multiplied, still remain an arbitrary term, let us endeavour so to define it as to leave as few doubts as possible as to the exact limits we arbitrarily assign to it, so that it shall be moderately certain that referring to a common standard, what one naturalist admits as a species shall be admitted by others, and that what one rejects others also shall as a rule reject.

A simple illustration will explain perhaps my view of our position in regard to this question.

If we look at a map of the Indian Archipelago, with its complicated groups and clusters of thousands of islands, we may suppose either that each of these indicates a separate centre of upheaval, or that these are all that is left to us in a wide area of subsidence or submergence of what was once a compact continent; or we may suppose them to be the results partly of elevations, partly of depressions in the crust of the earth, and partly of alterations in the oceanic level independent of these; but adopt what hypothesis we will as to their formation, this ought surely not to affect our decision as to the method of entering on that map the names that are to facilitate our reference to the various places and the record of our observations in regard to each.

We may give each separate island big and little a distinctive name, we may group little clusters under one name, and give long promontories of the big islands separate names; it is all a matter of convenience, and cannot and ought not to be governed in any way by our conceptions as to the manner in which the existing state of things has eventuated.

For my part, for the sake of obtaining a simple and intelligible rule, that all who run may read, I would give every island, however small, divided off by ever so narrow a channel, a separate name; but I would give no separate name to a promontory,* however long.

I would therefore adopt the popular definition of a species with which I commenced, and would further define an essential difference to be one however small that is constant and that is not bridged over by intermediate links.

This latter clause appears to be essential. So long as the promontory remains attached, I should deprecate bestowing on it a distinct name as if it was a separate island. Where the

* Some acute individual will enquire what I would do with a place that is an island at high and a promontory at low water. I can only reply that as it is not always an island, I shall treat it as a promontory.

sea has swept away the neck of land that once united it with another island, it ceases for me to be a promontory, and earns its distinctive name. Where time has obliterated the links that once connected two closely allied forms, I would admit them as distinct; where the links yet remain unbroken, I should desire to see them recognized as one species, widely as typical individuals selected from opposite ends of the scale may differ.

Many of course will hold a contrary opinion and say that if all the individuals found in A constantly differ from those in C, they should be considered distinct species; but this does not *necessarily* follow; on the contrary, if we can show that in B, that lies between A and C, a perfect series of forms occur intermediate between those of A and C, then all must, according to my view, be considered to pertain to one and the same species.

As regards differences that are thus bridged over, I consider them as justifying the recognition of a local race, but not as warranting specific separation. Thus *Coracias affinis*, to give the most familiar example, I consider a local race, because, though typical examples of this supposed species differ widely from *Coracias indica*, every intermediate link-form between the two races regularly and constantly occurs.

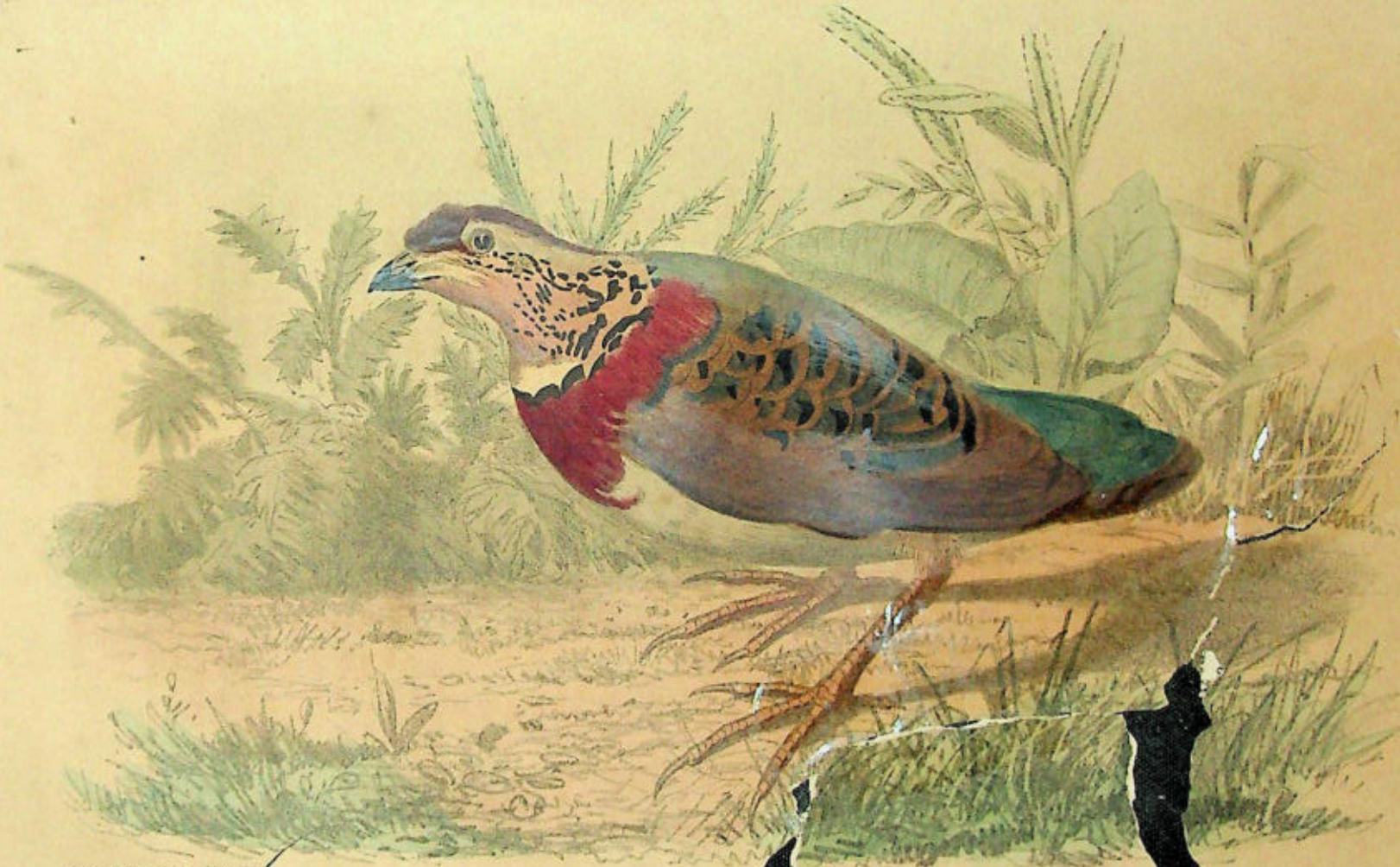
Local races may be incipient species, may become species hereafter; but just as the buds on fissiparous animalculæ cannot be properly called distinct animals until divided from the parent, so neither should these local races be considered distinct species so long as they remain connected with each other by a perfect chain of intermediate forms.

Naturalists generally may not be prepared as yet to accept the distinction thus drawn between a species and a local race, but it is, I believe, what we shall all come to sooner or later; it is, I humbly conceive, the only way of dealing with the question that is at once logical and capable of universal practical application.

A. O. H.

Notes.

THE ACCOMPANYING—map, I fear I ought to call it, of *Arboro-phila Mandellii*, though terribly out of drawing according to my notion, sufficiently correctly represents the distribution and colors of the markings, and will enable every one, I hope, to recognize the bird (when met with) at a glance. I say when met with, advisedly; Captain Cuttles' standing recommendation to make a note of, when found, would be excessively appropriate in the present case. We know perfectly where the bird occurs,



Stray Feathers Vol. III

ARBORICOLA MA[illegible]IUME.

Pl I.

1874
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viz., in the Western Bhotan Doars; but up to this present moment, Mr. Mandelli's specimen, which is the one figured (or made a figure of) in our plate, is, I believe, unique.

At page 496, Vol. II., I noticed that I had sent home a specimen of a *Locustella* that occurs in Sumatra and Tenasserim, which I considered to be the true *lanceolata* of Temminck, for identification, in consequence of Lord Walden's having identified another species, my *L. subsignata* from the Andamans, as Temminck's bird. The specimen I sent home was from Tenasserim. Mr. Sharpe writes:—"As far as I can make out, your bird is the true *lanceolata* of Temminck, and Mr. Dresser, who has lately been working up this genus, concurs in this view."

It is remarkable that we have not only obtained *Brachyurus megarhynchus*, Schleg, during the summer, as high up in Tenasserim as Amherst (S. F., Vol. II., p. 475), but numerous specimens were this year obtained in the Delta of the Irrawady. This species appears to be really as widely distributed as the nearly allied, though much smaller billed *B. moluccensis*, Müll, and it is probably the extreme similarity of the plumage of these two species which has led to the one remaining so long overlooked.

I am indebted to Miss Cockburn for a superb series, nearly fifty specimens I think, of a little bird which, though possibly common enough in the hilly portions of Southern India, apparently rare in collections—I mean *Munia pectoralis*. ith the birds, she sent me also their young, which latter yet, I believe, been described. These have the entire e a dull uniform somewhat chocolate brown, without trace of the yellowish white shafts so conspicuous upper part of the adult. Again, the chin, throat, hich in the adult are an uniform brown, so deep as black, are in the young a pale earthy brown, afts, and faintly barred paler again. The rest of s, which in fine specimens are uniformly salmon the young buffy, mottled and imperfectly barred Altogether the young would scarcely be recog- ing to the same species.

Books and papers received.—We have to acknowledge with thanks the following books, pamphlets, and papers on ornithological subjects, which have been kindly sent us by the authors during the course of the past year.

A Catalogue of the birds of New Zealand, by Captain F. W. Hutton, F. G. S., &c.

On the Geographical relations of the New Zealand fauna, by Captain F. W. Hutton, F. G. S., &c.

Contributions to the Ornithology of Africa, by R. Bowdler Sharpe, Esq., F. L. S., &c.

Catalogue of birds, Vol. I., *Accipitres*, by R. Bowdler Sharpe, Esq., F. L. S., &c.

Various miscellaneous papers by R. Bowdler Sharpe, Esq., F. L. S., &c.

Revision of the Ornis of New Zealand, by Dr. O. Finsch, &c.

Monograph of the genus *Certhiola*, by Dr. O. Finsch, &c.

On a collection of birds from Eastern Asia, by Dr. O. Finsch, &c.

Conspectus systematicus et geographicus Avium Europæarum, by Dr. Alph. Dubois.

Miscellaneous papers by Dr. Alph Dubois.

A series of papers on new and little known birds from new Guinea, by D. Adolph Bernard Meyer.

Descriptions of new species of birds from New Guinea, by T. Salvadori.

The birds of Borneo, by T. Salvadori.

On the Geographical distribution of Asiatic birds, by H. J. Elwes, Esq., F. Z. S.

Monograph of the Genus *Saxicola*, by Messrs. Blanford and Dresser.

Descriptions of new birds from the Naga Hills, by Major Godwin-Austen.

Game, shore, and water birds of India, by A. LeMessurier [illegible]

With reference to what I have said at pages [illegible] of Vol. II. as to the colour of the bill in the quite y[oung] *Palæornis fasciatus*, I beg to add the following no[te] DeRoepstorff:—"You will remember naming [illegible] *Palæornis* with the *black* bill for me. Now, I g[ot] a little one before its feathers were properly g[rown] upper mandible was then red; on this account [I] was a male, but after a short time I found the colour of the bill, which was not unlike that of th[e] the adult male, change into black."

With reference to my remarks in regard t[o] of the Andamans, (Vol. II., p. 191) I note now that I hav[e] just received a specimen of the true *Cuculus micropterus*, killed at the Andamans by Mr. A. DeRoepstorff. *Both C. striatus* and *C. micropterus* have therefore been correctly included in the avifauna of the islands of the Bay of Bengal.

Letters to the Editor.

Sir,

In my notes on *Tringa salinæ*, Pallas, and *T. minuta*, Leisler, at page 492, Vol. I, Stray Feathers, I called attention to a female* of the latter having a bill of 0·78 and a wing of 3·9 inches, and which was larger than the other specimens of that species in my collection, and put the question as to whether it might not be the larger race of that bird, *viz.*, the *T. albescens* of Temminck. I now write to say, from what I have since observed, that the *Tringa* inhabiting the west coast of Australia appears to belong to the same species as the above example, although it differs somewhat in the *pure white* of the chest. Several specimens were shot at King George's Sound on the 10th of November last by Mr. Edgar Layard's son, who with his father were fellow passengers of mine *en route* to Fiji at that date. I took notes and measurements from three examples, a male and two females, which had the wings, respectively, 4·1, 4·2, and 4 inches (male the smallest), and the bills at front 0·69, 0·73, and 0·72 inches; the middle toes with the claws of the two females were 0·7 and 0·76 inches; I omitted to measure that of the male. The soft parts were as follows: iris brown; bill black; legs and feet blackish, having the tarsi concolorous with the tibia and feet, and wanting the greenish hue perceptible in Ceylonese specimens of *P. minuta*. One of the females is now in my possession; there is much white about the forehead and region above the dark lores. This is the case with the larger birds found in Ceylon—the primary shafts are white about the centre, the first being somewhat sullied near the base, and the remainder very brown at that part; the upper surface resembles that of Ceylon specimens of the larger race; but as I have remarked above, the chest is pure white, having none of the striations or brownish grey marks perceptible on all Ceylonese examples that have come under my notice. This latter characteristic is the only one in which it differs from my tropical

* This bird was procured on the south-east coast of Ceylon, a region of that island in which, on account of its geographical situation, south world and Australian species are most likely to occur. Present researches are proving this to be, as regards marine avifauna, the most interesting locality in Ceylon. Not only did I find there in abundance at a season—June, July, and August—when they are absent from other parts of the country, *Glareola lactea*, *Ægialites Geoffroyi*, *Æ. mongolicus*, *Æ. cantianus*, and *Himantopus autumnalis* (Hass), *the two latter breeding in numbers*, but I also ascertained it to be the resort of thousands of *Sternula placens*, Gould, which were also breeding abundantly, a large species of *Gelochelidon* (possibly *G. macrotarsa*, Gould), *Hydrochelidon indica*, Steph, and another smaller species, *Thallaseus bengalensis*, Less., *P. cristatus*, and last but not least an interesting little stranger which Mr. Howard Saunders informs me is either *Sternula antillorum* or an entirely new species. With such a list of Grallatores and Natatores resorting thither at a season when up to the present time they have been supposed to be absent in breeding purposes in more northern latitudes, what may not still be found there!

examples, but nevertheless it is noteworthy that the larger birds from Ceylon with the very white foreheads have whiter chests than the smaller, or what I consider to be true *minuta*.—W. V. Legge.

Sir,

I send you three eggs of *Leiothrix callipyga* out of the same nest, taken at Rishap, Darjeeling, at the elevation of 4,000 feet above the sea, on the 17th instant. The nest is of the usual composition and size, is well made, and was placed in a shrub, at three feet from the ground, in the ordinary way. It is so unusual to find eggs of this bird at this late season of the year, and those now sent differ so much from each other in size, shape, and coloration, that I think they may be of special interest. One which is of the usual type was evidently quite fertile, but the other two, which are abnormally small and deficient in colour, were addled. They appear to me to be the produce of a pair that had been robbed of their nest and eggs once or twice this year before, (I took several nests from the same locality during the past breeding season,) and had made a desperate effort to rear a brood in spite of such adverse circumstances, but, like many other sanguine creatures, had attempted too much and ended in partial failure. Had they been contented with two eggs, both might have been good and of the orthodox style, but no! they must have the regular number, and, owing to their repeated, and, consequently, enfeebled efforts, the result is one fertile egg only, and two which are neither of the right size and shape nor color, and addled to boot,—a sad warning to birds and human beings against attempting too much.

I suspect that many of the eggs deficient in color are the later produce of birds that have been robbed one or more times during the season, and have been compelled, by the force of nature, to make repeated efforts to multiply their species, though too enfeebled to produce eggs of the proper size or color.—J. Gammie.

Mongphoo, 22*nd October* 1874.

Sir,

I have lately found *Rhynchæa bengalensis* breeding in this locality. I shot a male bird on 5th December, and on dissection found that it was breeding: on 10th December a brace rose from some marshy grass, of which I shot one, which proved to be a female. I found a fully formed egg in it which would have been laid in a day or two, the shell being still soft. I had a long

search next day in hopes of finding the nest, but without success. Still I think that I have found enough to warrant my saying that *Rhynchæa bengalensis* breeds in this locality in the month of December. Should you consider it worthy of notice, please mention this fact in STRAY FEATHERS.—M. FORBES COUSSMAKER.

CHAMRAJNAGAR, 20*th December* 1874.

SIR,

I shot the other day under the Erie Hill a kind of Sand Grouse (*P. coronatus*),* which is new to me.

I have shot *P. senegallus*, which are common enough in many places, but *coronatus* I have only seen in one place under the Soorjana and Erie Hills, where we go for Ibex; and the species appears little known to even old Sindhees. It is very like *senegallus*, but has a black patch on each side, above the bill, and another down the throat. The plumage is altogether lighter in shade, and their cry and flight is different from those of *senegallus*.—FRANK WISE.

KURRACHEE DISTRICT,
Sindh, 10*th December* 1874.

SIR,

As some of your readers may be interested to learn that *Cursorius coromandelicus* does appear, occasionally at least, in Lower Bengal, in spite of Dr. Jerdon's remarks to the contrary, I may state that I have now twice shot these birds close to Calcutta, that is to say, at Muddenpore (where there is a station of the Eastern Bengal Railway,) 33 miles distant from our city.

When the nature of the country in that neighbourhood is taken into consideration, there is nothing surprising that this species should be found there, for nowhere I should imagine is the country more suitable to its habits. The whole district extending from Muddenpore to Kanshrapara and far inland from the Hooghly is comparatively speaking high dry ground. Here and there are deep hollows, in which water collects and forms lake-like expanses, permanent, and not mere shallow jheels, and these, with the high ridges here and there dotted with fine trees, give a very pleasing appearance to the country in general. The higher parts are sparingly cultivated with such crops as grow well on dry soil, Tobacco, Linseed, Tilseed, &c., but a good deal is still grass land, and it is on these undulating

* Fully described S. F., Vol. I., p. 224—when I recorded its occurrence for the first time within our limits. My specimen was from the extreme north-west of Sindh; we now have it in the same Province from a great deal further south.—ED.

Downs that the birds I have had the good fortune to meet with were shot.

I have only bagged two pairs; the first on the 23rd December 1865, and the second in November of the present year, on both which occasions there were several others scattered about the plain. I may add that as I only visit this station at long intervals, my not having fallen in with the species more frequently is easily accounted for.—J. C. PARKER.

SIR,

On the evening of this 29th instant, settled in cultivated fields and other extensive plains bordering the Nujjeefghur Jheel, some 5 miles north-west of the Gurhi Patrol's post, Goorgaon District, I met with this (to me) new species of Sand Grouse.* There were several flocks, in number exceeding 300. Their peculiar Grouse flight, added to their strange note, "kah kah," at once attracted my attention. But so very wild were they, that after an hour of severe stalking I only secured the specimen (male) I send you. My Shikaris, however, next day brought three males and one female. I have for nearly 30 years, at various times in the cold season, shot over the vast plains in the Goorgaon District, annually visited by the large Grouse (*Pterocles arenarius*), but I never met with the present species before. And I can safely affirm that it has not during this long period been obtained about here by any other sportsman of my acquaintance. Probably, this species is one of the six you mentioned in your Scindh paper (I have no books by me to refer to); and if so, the fact is interesting, that from some unknown cause this Grouse has this season extended its migrations so far east.

Another, as I think noteworthy fact, is, that a gentleman who accompanied me on the same dates and on the same plains shot a couple of the common small Grouse (*P. exustus*) in the *nest* plumage. I am certain they were not two months' old, and I state this the more positively, having during my residence at Raipoor shot scores of young birds in precisely the same nestling plumage. There can be no doubt, then, that the common Sand Grouse (*P. exustus*) does, at least occasionally, breed twice a year.† I had kept a specimen to send for your inspection, but unfortunately a house dog destroyed it.—R. F. BLEWITT.

DELHI, 31*st December* 1874.

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* The specimen sent is *P. alchata*. We have hitherto known this only as a regular winter visitant to the north of Sindh, Dera Ghazee Khan, Dera Ismail Khan, Hote Murdan, and other places west of the Indus, the neighbourhood of Attock, Peshawar, and Huzara, and the occurrence of this species so far east as the Nujjeefghur Jheel is very remarkable and noteworthy—*vide* S. F., Vol. I., p. 221.—ED.

† See NESTS AND EGGS, Part III. It breeds pretty well all the year round.—ED.

Notice to Correspondents.

Kind and, I fear, partial friends, who have written letters assailing a brother ornithologist, on account of a recent attack upon me, must pardon my not having published them. We have had quite enough of the matter. I was *obliged* to *reply* with a short bark to the very prolonged growl from across the water; but to carry on a set controversy further could do no earthly good. There is plenty yet to write about birds, and plenty of work for us all to do, without wasting paper and time in abusing each other.—A. O. H.

STRAY FEATHERS.

Vol. III.] MAY, 1875. [No. 4.

Machæramphus alcinus, *Westerman.*

Westerman, Bijdragen tot de Dierkunde; I., p. 29; Pl. 12.
Schlegel, Handl. Ois. I., Pl. 1, Fig. 6, p. 168; — id. Mus-Pays-bas, Pernes, p. 7.
Sharpe, P. Z. S., 1871, *p.* 502.
See also, *Gurney, Trans Z. S., VI., p.* 117, *Pl. XXIX.* for M. Anderssoni, *Gurn.*

I have recently received from Malewoon (which is situated at the southern extremity of the Tenasserim Provinces), a splendid adult male of this rare and interesting species. The specimen was shot by Mr. A. L. Hough on the 14th of March last, and was carefully measured in the flesh, the colours of the soft parts being also recorded.

Few of my Indian readers have probably ever even heard of the genus to which this curious bird belongs. It was instituted in 1848 by Dr. G. F. Westerman for a specimen of this very species, which had been obtained at Malacca. Since then altogether four or five specimens have, I believe, been received in Europe from the same locality, and a second very closely allied species of the same genus has been discovered in Damara Land, South Africa, by the late Mr. Charles J. Andersson, and named after that lamented ornithologist by Mr. Gurney (*l.c.*)

The first point of interest about the bird, therefore, is that like *Polihierax Feildeni*, its only known very near ally or congener is African.

But it is the structure of the bird itself that is most noticeable. It has a small and comparatively feeble bill, with the culmen, except quite at the base, pinched up into a sharp, almost knife-like, edge. The gape is enormous, reminding one of that of *Podager* and other fissirostral genera, and extending back to quite below the middle of the eye. There are two faint sinuations on the cutting edge of the upper mandible, possibly analogues of the double teeth in *Baza*. The cere is

very small and inconspicuous. The nostrils are long, oblique, pierced near the margin of the cere, and partly overhung by a membraneous shelf. The eyes are very large and almost certainly indicate crepuscular habits. The entire lores are densely feathered, reminding us so far of *Pernis*, but the feathers are soft and velvet-like, and not scaled as in *Pernis*. From the centre of the base of the occiput springs a moderately broad graduated crest of pointed lanceolate feathers, consisting, in my specimen, of 16 feathers, of which the four longest are 3·2, 2·8 and 2·6 inches long. The wings have the 2nd and 3rd quills equal and longest; the 1st and 5th are equal and 2 inches shorter than the 2nd and 3rd. In the 1st quill the inner web is suddenly reduced at about 3 inches from the tip to less than one-half its previous breadth; a similar less conspicuous notch in the 2nd, and a trace of the same in the 3rd. The tertials are broad and rather elongated, being a little longer than the 6th primary. A faint sinuation is observable on the outer webs of the 2nd and 3rd quills. The tail (of 12 feathers) is decidedly *Milvine* in its character, the feathers broad, and the tail as a whole slightly forked; the outermost tail-feathers nearly half an inch longer than the central ones, and the intermediate ones graduated, so that when pulled out to its full width the tail is square ended. The tarsi are moderately stout, feathered in front for about three-fourths of an inch only, reticulate, but exhibiting a tendency to form an inconspicuous row of small hexagonal scales, on both the front and back of the tarsi, from $\frac{1}{4}$th to $\frac{3}{5}$th up them reckoning from the foot. The mid toe is long, slender, and accipitrine in the character of its pads. The outer and inner toes, together with their nails, are almost exactly the same length, but the outer toe is much longer and slenderer, and has a very much smaller claw, while the inner toe is much shorter and stouter and has a huge claw very nearly as big as that of the hind toe—in this respect recalling *Neopus*, and many of the owls.

The claws are well curved and sharp, more or less compressed, except that of the mid toe, which has the inner side dilated into a knife-like edge, as in many other genera.

This species has been supposed to be distinguished from *M. Anderssoni* by (amongst other points) the want of a distinct supercilium; but this can be no longer maintained, my present specimen having the snow-white band *over* and below the eye, absolutely and precisely as in Mr. Wolf's splendid figure of *M. Anderssoni* (*l. c.*). Other differences are the short inconspicuous crest, the much paler general tint, and the white lower abdomen and lower tail-coverts of this latter [illegible]ies. All these *may* prove good points, but on the other hand it is easy to see that they *may* all be marks of nonage, and it

appears to me that at present the only certain permanent differences are the greater size of the present species (wing, 14·62 in a male, against 13·91 in a female of *Anderssoni*) its larger and more sharply carinated bill, and its excessively inconspicuous black cere. The specimen, now before me, an adult male, measured in the flesh as follows :—

Length, 18·0; expanse, 46·0; tail, from vent, 7·37; wing, 14·62; tarsus, 2·5; bill, from gape, 1·8; straight from edge of cere to point, 0·75; mid toe, to root of claw, 1·87; its claw, straight from root to point, 0·68; outer toe, 1·37; its claw, 0·55; inner toe, 0·86; its claw, 0·83; hind toe, 0·7; its claw, 0·87; width of gape, 1·45; greatest height of upper mandible, 0·4; weight, 1·25 lbs.

The irides were bright yellow, the bill and claws black, and the legs and feet pale plumbeous; the cere, which is barely traceable, has not been separately noted, but seems to have been black; in *Anderssoni* it is plumbeous, but it cannot have been so in this species, for Davison, who received the specimen in the flesh, remarks "the cere appears to be wanting," so that it cannot have differed in colour from the bill. The bird had not quite completed its moult; the great majority of the feathers are sooty black, in one light, blackish brown in another, but in the wings, tail, and abdomen are a few old feathers which are a dull dark Buzzard brown. A broad stripe of pure white, 1¼ inches in width, occupies the whole throat and front of the neck, marked with a black diamond-shaped patch on the chin, continued as a line of black spots down the centre of the throat; a very irregularly-shaped snow-white patch in the middle of the breast. A pure white eyelid band, ⅛th of an inch wide, above and below the eye, *very* nearly meeting at the posterior angle, but not meeting in front by about ¼th of an inch. The whole of the rest of the plumage the dark colour already referred to. The crest I have already described. The shafts of both quills and tail-feathers are brownish white on their lower surfaces.

This remarkable genus differs, I believe, from all other known Raptorial forms in its sharply carinated culmen. Looking to its general form, its densely feathered lores, the shape and position of its nostrils, its feet and legs, specially the scutellation of the tarsi, its long crest, and central throat stripe, I have no doubt that it is intermediate between *Pernis* and *Baza*, but it has many lateral affinities, the kite-like tail, the slender hawk-like middle toe, the huge owl-like eyes, and looking to its broad flat skull, huge gape, and *Nyctibius*-like hooked and carinated bill, I think we must accept it as what Swainson would have designated the Fissirostral type amongst the Raptores.

A. O. H.

On Curruca affinis and Curruca garrula.

By W. Edwin Brooks.

With the addition of two more examples of *C. garrula* from my friend Canon Tristram, I have now five* specimens of the English bird, and I cannot avoid coming to the conclusion that the Indian species is quite distinct.

1.—I have examined fully one hundred of *C. affinis* collected from Cashmere to Dinapore, and have examined the types of *affinis* in the Indian Museum. I notice a structural difference between this species and *C. garrula*, *viz.*, a slightly different form of wing.

The 2nd quill of *C. garrula* is equal to the 5th, or, as in two of the five examples now before me, a trifle shorter; but of 46 Indian birds, also before me, 31 have the 2nd quill equal to the 6th, 14 have it intermediate between 6th and 7th, and one has it equal to the 7th. If there were no other difference, this structural one is quite against identity.

2.—I also observe that the bill of the English bird is shorter and not so stout as that of the Indian species.

3.—The plumage of the English bird is very much softer and more silky.

4.—The ear-coverts of the Indian bird are much darker, and contrast very strongly with the ash grey of the head.

5.—The upper surface, from lower neck to tail-coverts, is browner in the Indian bird, and more ashy in the English.

6.—The Indian bird builds its nest much higher from the ground than the English one, and also does not care so much about its concealment.

I observe that the coloration of the tail (with regard to the amount and purity of the white, and the penultimate feather being tipped with white or not) is not specifically characteristic; for I have a Norfolk example with the tail of typical *affinis*, and numbers of Dinapore and other birds have the tail of typical *garrula*. The real differences are those I have pointed out. There may also be differences of note and song; but it is so long since I heard the English bird that I forget. The Indian species varies much in size, some being as small as any *garrula*, while others are larger; but variation, as regards size, should not, in this species, be taken into account; and I believe we have only one species of lesser white throat in India.

I have not seen any Indian-killed example which corresponds exactly with the English bird; and taking the points I have

* A sixth example of *C. garrula*, belonging to Mr. Hume, which I have seen since this paper was written, has the 2nd quill a trifle longer than the 4th, which further confirms the position that this bird has not such a rounded wing as *C. affinis*.

noticed into consideration, I think we may safely expunge *C. garrula* from the Indian list, for it has no more right to be there than *Phylloscopus trochilus*. I know that my present conclusion is at variance with my former one, but I had not then discovered the structural difference alluded to. We might almost also call the very different quality of plumage a structural difference; that of the English bird being so very silky. I may have been rather precipitate in generalizing upon only five examples of *C. garrula*, but others have drawn conclusions from a less number than five, and these five agree very well.

On the occurrence of Querquedula angustirostris in the Doab and Oudh.

By A. Anderson.

To Mr. Ross Knyvett, District Superintendent of Police, Futtehgurh, I am indebted for the first recorded occurrence of the Marbled Duck in the North-West Provinces. This new addition to the Avifauna of this part of the country will be of interest to the sportsman as well as to the ornithologist. This specimen, which is now in my collection, was shot out of a flock of Pintails in January last at a jheel in this district. Mr. Knyvett informs me that since then another Duck of the same kind flew *close past him*, but he did not fire at it.

On the 5th of March I happened to be at Sandee in the Hurdui district (Oudh), where my shikaree shot another out of a flock of three: subsequently he saw two or three more, but owing to the expanse of the water he was unable to approach within shot of them. This specimen was a *male*, and measured as follows: Length, 17·3; wing, 7·7; tail, from vent, 3·5; tarsus, 1·4; bill, straight, 1·7.

As Mr. Hume has very recently given a detailed description of the plumage (as well as habits) of this species, Stray Feathers for 1873, p. 262, *et seq.*, any further details would be superfluous. An admirable figure too, of this Duck, will be found in Mr. Dresser's work on the "Birds of Europe." That author, however, must be making a mistake in giving the "*total length as* 14·6 [illegible]" and that of a *male* too!

Podiceps cristatus breeding in the Plains.

By A. Anderson.

To my friend, Mr. R. Nicholson (whose good offices I had secured in the matter of procuring varieties for me), the ornithological world is indebted for the first authentic information on the breeding of the Crested Grebe in the plains of India. I have now in my possession several *young* specimens of this Grebe, which were shot in various parts of the Doab as well as in Oudh, which prove *beyond a doubt* that they were bred in those localities. These examples are in a *downy* state, and their wing feathers have hardly commenced to grow. The following is an extract of a letter from Mr. Nicholson, dated the 31st January last:

"Yes; I shot two young Grebe in the Hurdui district, which I send you, and saw a great number of young birds, but could not get more, as I had no boat.

"I came across these young birds on almost every jheel in the Hurdui district. Judging from their different stages, I should say that they were bred from July to October. An old *Mullah* (boatman) assured me that they laid in '*bhadon*,' and that he had, on numerous occasions, come across their eggs; these he described as being white, and rather large for the size of the bird. There is not the slightest doubt of their being the young of the Grebe, for the old birds kept swimming close to their young, making a queer sound, something like the noise from a cracked trumpet. I shot one of the parent birds as well, &c."

Since the above was received, several of my correspondents have confirmed what Mr. Nicholson has written, by procuring immature birds, *which were unable to fly*, in the larger jheels of the Futtehgurh district.

The swamps in this part of the country dry up, as a rule, by the end of May. The Grebe must, therefore, betake themselves to the rivers, or perhaps they migrate to the north of Oudh, returning again in August and September (when the jheels refill) for the purpose of fulfilling the golden law; the majority of them, however, push up northwards.

I know of one jheel, or rather a lake (n[illegible]itted for obvious reasons), where upwards of a *hundred* [illegible]ere slaughtered in the course of one week!

I have made arrangements to take their e[illegible]rson next autumn, when I hope to be able to add some [illegible]s on this subject.

Additional Notes on Birds collected between Mussoori and Gangaotri in May 1874.

(*Vide ante*, *p.* 224.)

By W. Edwin Brooks, C. E.

The Editor has added sundry foot notes to my paper on the birds observed between Mussoori and Gangaotri, some of which require counter-notes.

Milvus govinda, p. 229, Vol. III., 1875.

Mr. Hume says: "Sykes's measurements were taken from his dried skins." I don't think there is any reason for coming to such a conclusion,* but would prefer taking it for granted that Sykes, being a good ornithologist, would not prefer the comparatively worthless measurements from the skin when he could measure in the flesh. It should be remembered he was dealing, not with a foreign collection, but with one made in the country, and, for all we know to the contrary, made by himself. The lengths given for other species are fairly accurate, for example *Circus pallidus*. Why should we conclude that the Kite is stretched when the Harrier is not.

The disposition of the large Kite is variable. This year I have found them so tame that I have frequently passed within 10 or 12 yards of them seated on the telegraph posts alongside of the Railway without their moving. I remember, on one occasion, when I wished a friend to see the white patch under the wing, that I had to direct the trolly-men to throw stones at the bird to make it fly. Birds are only shy when they are persecuted, and it would not do to infer any thing specific from shyness or the reverse. I notice that Mr. Hume still retains the term "*major*," although Mr. Sharpe found it identical with the types in the Leyden Museum.

I think we have said enough about the Indian Kites, and it only remains to be seen which bird Sykes's types are. There certainly is not an Indian species intermediate between the large bird and the small *affinis*.† The large bird has not always a clear patch of white under the wing;—sometimes this part of the primaries is only mottled with white.

Hemichelidon sibiricus, *Gml.*

There is one of Hodgson's specimens in the Indian Museum, and it is identical with the common *H. sibiricus*. I sent home examples, which were also found to agree perfectly with

* But it really is a fact. Sykes never wrote his paper till after his return to Europe.—Ed.

† Well, I think, that there *is*.—Ed.

Hodgson's types. I have seen the little Flycatcher Dr. Jerdon gave Mr. Hume; and if it were mine, I would soon describe it as new. Hodgson's *Muscicapa terricolor* is not a *Hemichelidon*, or Hood-billed Swallow-like Flycatcher, but has a bill intermediate between that genus and *Butalis*. The drawing gives a plan of the bill, and it is impossible to apply the generic term of *Hemichelidon* to this species. Flycatchers, with this shaped bill, are known as *Alseonax*. Against the identification of *A. terricolor* with *A. latirostris* I have only to say that Mr. Swinhoe identified the distinct *M. cinereoalba* with *A. latirostris*. The careful determination of what bird *A. latirostris*, Raffles, is, is a very interesting question, which probably no one will ever care to work out. Nothing but a reference to Raffles's types (if they exist) would settle the matter. I don't think that because *A. terricolor* has been procured in the same part of the world from which Raffles got his *A. latirostris*, that it is therefore identical with Raffles's bird.

I lately re-examined the two Chinese examples of *Mus. cinereoalba* in the Indian Museum, and they are most decidedly distinct from any examples of *Alseonax terricolor* that I have seen, especially as regards length of tail—that of the latter bird averaging one-fifth of an inch longer. The shape of the bill is also different.

I do not consider Mr. Hume's reason for identifying *A. terricolor* and *A. cinereoalba* satisfactory. That he, Lord Walden, and Mr. Swinhoe compare specimens from various countries and find them identical is all very well, but my impression is, that they overlooked the important difference of length of tail. It is also quite possible that both species occur in China. I have shot many Indian examples, but never got one with so short a tail as the Chinese ones referred to. I therefore, for the present, prefer to consider the two birds as distinct, until the types of *A. latirostris* and *A. cinereoalba* have been carefully examined.

Erythrosterna leucura, p. 105, is an African species. Our Indian bird is *A. albicilla*, Pallas.

Corvus insolens, Hume, p. 144, is clearly distinct from the Indian species. I saw this Crow at Rangoon and Moulmein. Even if it did interbreed with the Indian bird in its geographical confines, it would not affect the question; for we have instances on record of the Pheasant interbreeding with the Black Grouse.

Even where intermediate forms or races do occur, bridging over, as Mr. Hume expresses it, the differences between two species, I do not think they affect the validity of the species. Mr. Hume complains that it is difficult, and often impossible,

ample in either one or the other of two affined collection is a very inferior one to Mr. Hume's, seen a good many birds in my time, and I have not ie bird I was unable to place in some species or other. refer to well-known affined species. The most formidable difficulty I know of, is to separate Winter-plumaged *Drymoipus inornatus* from *Drymoipus longicaudatus;* but I think I see my way out of it. This group of birds, including *Prinia*, is the one which perhaps is in the greatest confusion just now, and one or more species will shortly be knocked on the head. I don't say that I am able to do so. Mr. Hume has an immense collection of these little birds, and might clear them up, if he sets to work.

Erythrosterna maculata, *vide* foot-note, p. 236.—The bird sent with the nest was not the female of *E. maculata*, according to Hodgson's and Mandelli's account of that bird; it was probably an immature male. I have little doubt about *E. pusilla* being the female of *E. maculata* in autumnal plumage. Mr. Mandelli is also of opinion that *Siphia tricolor*, Hodgson, is the female and immature male of *Siphia leucomelanura;* and I believe he is correct. The buffy tinge of the under parts fades more in the North-West than in Sikhim.

Pipastes maculatus.—Mr. Hume, in a foot-note, p. 251, says: "But all about Poona you do find *maculatus* frequenting open stony ground." To which I would reply, it is just as likely as that Wheatears and Sandlarks should frequent dense forests. The information Mr. Hume has received is decidedly not to be trusted,* for it is directly contrary to the habits of the bird. I know of no bird so fond of shade; and while *P. arboreus* can be procured among crops at some distance from trees, the other species, as far as my experience goes, is not to be found except where there are trees. It was impossible for Sykes's bird to have been *maculatus*, unless it was a wearied migrant that had accidently dropped upon the "open stony lands." Besides no one knew the green *maculatus* better than Blyth, and he did not recognize it in Sykes's type, which to him appeared to be *P. arboreus*. The peculiar, narrow, and indistinct striation of the back of *maculatus* could never have escaped the accurate eye of Blyth; and I have unbounded confidence in his conclusion that Sykes's type of *agilis* was not *maculatus*. Upon this subject I need not say more, and if Mr. Hume and others will fondly stick to the pet term of *P. agilis*, I cannot help it. They are welcome to the little pleasure, and to *Bu[illegible] viridis* [illegible] such-like useless terms. Some day or [illegible] leasure of examining Sykes's

[illegible] there myself.—Ed.

types with a tidy little series of *Corydalla striola*, *P. arboreus*, *P. maculatus*, and *A. campestris* of my to; and, if possible, I will make Sykes's type clear only hope that these valuable types have been properly to all these years, and have not been reduced to dust by i In the latter case, I shall have the best of it, and not my friend Mr. Hume.

Motacilla Hodgsoni, *vide* the second foot-note, p. 246.—If Mr. Hume has *luzoniensis* in full breeding plumage identical with the full breeding plumage of *M. Hodgsoni*, then his bird is *not luzoniensis* but *Hodgsoni*. No two birds could be more thoroughly distinct than these two Wagtails.* The eye of *Hodgsoni* is invariably set in a diamond-shaped patch of white even in the winter season, while that of *luzoniensis* is *not*. The latter has an excess of white about the face, while *Hodgsoni* and *personata* have the least white about the face of all Wagtails, except *M. madraspatana*. No; whatever the White-faced Wagtail is, it is not *M. Hodgsoni*. Look how very different even the young birds are.

I forgot in the proper place to note *Phylloscopus fuscatus*, *vide* p. 139. I once shot one near Etawah among some thick babool trees on the banks of the canal. I saw many in jungle bordering a jheel near Dumraon. It frequents, by preference, the dampest of woods, where it was impossible to walk without getting occasionally over the shoe tops in water. Here *Phylloscopus tristis* was more common even than *P. fuscatus*, and I shot several in mistake for the other bird.

I compared my examples with several sent from Sikhim by Mandelli, and I found them to agree perfectly, and therefore don't believe† in the distinctness of *P. fulviventer*, *vide* "Nest and Eggs," p. 329. This species varies very much in the tone of colour, depending upon the locality and the season of the year. While one will be of a fine dark brown, another will be quite pale in comparison.

W. E. B.

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* This is begging the question.—Ed.

† But *fulviventer* is structurally entirely distinct; it is not a *Phylloscopus* at all.—Ed.

*Recently-described Species.

Republications.

Phylloscopus Tytleri, *Brooks* (*See also ante note, p.* 243.)

The following are the dimensions :—Length, 4·75 inch ; wing, 2·3 ; tail, 1·7 ; bill, at front, ·36 ; bill, from nostril, ·3 ; tarsus, ·75.

The dimensions of *Phylloscopus viridanus* are :—Length, 5 inches ; wing, 2·5 ; tail, 2 ; bill, at front, ·3 ; bill, from nostril, ·29 ; tarsus, ·8.

It will be seen from the above that *P. viridanus* is a larger bird.

In form *P. Tytleri* differs from *P. viridanus* by *having a longer, narrower, much more pointed, and very much darker-coloured bill*, the lower mandible being black-brown instead of pale flesh-colour. This alone is quite sufficient to distinguish it : the wing is shorter, but of the same form as that of *P. viridanus* in regard to proportions of primaries. The tail is shorter. In colour it is of a darker and richer olive on the whole upper parts, and does not appear to have the tail rayed ; that of *P. viridanus* is generally very conspicuously rayed. There is a total absence of the "slight whitish wing-bar," which I have always observed to be present in *P. viridanus*, unless the bird be in very abraded plumage.

In notes and song (if the few notes it utters can be called a song) *P. Tytleri* is utterly different from *P. viridanus*. Its call-note is very peculiar, and once heard could not be easily forgotten. In the localities it frequents and inhabits it is quite opposed to *P. viridanus*. The latter, during the breeding season, frequents mountain-ravines not far from the snows, which are covered with brushwood and small birch trees ; whilst *P. Tytleri* is a forest *Phyolloscopus*, frequenting the pine-woods below the snowy ranges.

Turtur humilior, *Hume*.

I may also take this occasion to mention that in my account of the birds of the Nicobars and Andamans I noticed that I had obtained at the latter Islands a small dove, resembling *Turtur humilis*, but as I believed different.

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* Under this title I intend gradually to republish the original descriptions of all *new* species added of late years to our Avifauna by Jerdon, Brooks, Gould, Walden, Legge, Stoliczka, G. Austen, Salvadori, Canonis and others. At present, scattered as these are about the pages of a dozen different periodicals, English, Italian, German, they are practically inaccessible to the Indian field ornithologist.—Ed., S. F.

I have since obtained a really good specimen which convinced me that it is distinct, and I wish to take the opportunity of characterizing it.

TURTUR HUMILIOR, *sp. nov.*

Length, 9; wing, 5·6; tail, 3·3; bill, at front, (from where the feathers end), 0·55; tarsus, 0·75.

? *Female.*—Head greyish-brown, paling on forehead; rump deep slatey; rest of upper parts, breast and middle of abdomen brown, with a broad black half-collar on the back of the neck, and a more or less vinaceous tinge on the lower parts; wing-lining, sides, and flanks deep slaty-grey.

I had no specimens to compare it with, so sent it to Mr. Brooks. He remarks: "I have never seen any dove like the Andaman one you have sent.

"Its characteristic points are—(1,) the broad collar; (2,) (and the most important) the dark slate coloured wing-lining; (3,) the very brown hue. Its wing is much longer than that of *T. humilis* ♀ which has a pale wing-lining and is quite a differently toned bird. It is of similar size to *T. cambayensis*, but has a much longer wing. It is very much smaller than ♀ *risoria*, which has a light wing-lining, and the brownest *risoria* is quite pale compared with this dusky Andaman Dove."

I hope to figure this sombre little Dove later; in the mean time this will serve to call attention to it.—*Pro. As. Soc., December* 1874.

Eurycercus cinerascens, *Walden.*

Chin, throat, breast, cheeks, and under carpal-coverts almost pure white; remainder of lower surface of body white, faintly washed with ashy grey, the flanks being dark ashy grey; a distinct white ring round the eye, formed by the minute feathers of the eyelids; above ashy olive, each feather, except these of the uropygium, boldly centred with brown; upper surface of the rectrices ashy olive like the back, the middle pair with a narrow dark brown central line on each side of the shaft; no striations or terminal marks on the rectrices; upper surface of the wing, when closed, ashy olive like the back, the secondary coverts being centred with brown; inner edges of the basal portion of the quill-webs underneath white, passing into tawny on the tertiaries. The tail consists of very broad feathers much graduated; legs (in dried skin) brown.

Wing, 2 inches; tail, 3·25; bill, from nostril, 0·28; tarsus, 0·75. Described from an example of a male obtained by Surgeon-Major Day at Dobri, Lower Bengal, on the 27th November 1873.—*A. & M. N. H.*, 1874, *No.* 80.

ris, *Walden.*

n, lores and a broad supercilium extending to ye, and down the side of the neck, white; a broad ding from the nostrils over the eye, then bordering e white superciliary band above, and running down the side of the neck, black; cheeks and ear-coverts black; across the lower throat a broad ferruginous band or collar, separating the white throat from the dingy olive-brown plumage of the breast, flanks, and abdomen; thigh-coverts and under tail-coverts bright ferruginous; forehead, crown of the head, and nape ferruginous brown; back, scapulars and upper tail-coverts olive brown with a ruddy tinge; rectrices above liver brown; quills brown, edged exteriorly with liver brown; shoulder-edge albescent, dashed with ferruginous, under coverts the same; the median breast feathers nearly pure white; bill black; legs (in dried skin) yellowish brown.

Wing, 2·3 inches; tail, 2·12; bill, from nostril, 0·36; tarsus, 0·85.

Described from a male example obtained by Surgeon-Major F. Day at Sudya, Upper Assam, on the 12th of January 1874.

This species possesses an especial interest, as it is a representative form of the Formosan *Alcippe brunnea*, Gould, an aberrant member of the genus.—*A & M. N. H., August* 1874.

Sibia pulchella, *G. Austen.*

The bird now described as new was obtained during the cold season of 1872-73, when I was employed on the Boundary Survey of the Nágá Hills and Munipúr. Other species collected at the same time, and those lately described in a paper read before the Zoological Society, form part of a collection of birds I have been bringing together on the north-east frontier of India. Lists of these have been given from time to time in the "Journal of the Asiatic Society of Bengal," Vol., XXXIX., Part 2, 1870; Vol. XLI., Part 2, 1872.

Sibia pulchella, Nov. sp., Godwin Austen.

Above ashy-grey, bluer on the head, the two centre tail-feathers umber brown, terminating (each colour ¾ inch) in rich black, followed sharply by dark grey; the outer tail-feathers are tipped in like manner with grey, but the black increases on each feather outwards, and on the last extends to its base; shoulders of wing blue-grey, with a bar of pale chocolate-brown coming in at the base of the black primary and secondary coverts; quills [illegible]y-black, the primaries edged pale hoary [illegible]grey, the last three are umber-brown, [illegible] narrowly on outer web with black.

A narrow frontal band and lores black, extendin
below the eye to base of the ear-coverts; bene
with a vinous brown tinge upon the lower breast a
bill black; legs horny brown; irides——?

Length, 9·5 inches; wing, 4·1; tail, 4·85; tarsus, 1·5;
front, 0·75.

I shot two specimens of this very beautifully but subdued-colored *Sibia* in April last, when making the ascent of the Peak of Khúnho, Eastern Burrail Range, Nágá Hills, at about 8,000 feet. The bird appeared pretty numerous, in companies of four to six or eight, haunting the tops of the rhododendron trees, then in full bloom, busily engaged searching for insects in the flowers, and their forehead, chin, and throat were covered thick with the pollen.

In the general distribution of the coloration and form it resembles *S. gracilis*, extremely common in the same locality, but seldom seen there above 6,000 feet.—*A & M. N. H.*

Pomatorhinus ochraceiceps, *Walden.*

Lores black; ear-coverts brown, washed with ochreous; supercilium (commencing at the base of the maxilla and reaching to the sides of the neck), chin, cheeks, throat, breast, and shoulder-edge pure unsullied white; crown and nape bright ochreous ferruginous; back and upper tail-coverts ochreous olive; wings, when closed, ochreous brown; middle rectrices brown, washed with ochreous, remainder, with outer webs, coloured like the middle pair; inner webs pure brown; the terminal portion of all the rectrices hardly tinged with ochreous; abdomen, flanks, thigh, and under tail-coverts ochreous brown, the ventral region exhibiting a brighter ferruginous tint; bill yellow, probably red in the fresh skin.

Wing, 3·62 inches; tail, 3·87; tarsus, 1·25; bill from nostril (in a straight line) 1·00.

Hab. Kareen Hills, Burma.—*A & M. N. H.*, 1873, p. 487.

Sternula placens, *Gould.*

Adult male.—Bill yellow, with the apical third of both mandibles black, as sharply defined as if they had been dipped in ink; forehead white, advancing over each eye to near its posterior angle; lores, a narrow line above the eyes, crown and nape black; upper surface of the body and wing-coverts grey; the first primary slaty black on the outer web and along the inner web next the shaft; the shaft itself and the outer half of the inner web white; the second primary similarly but a little less strongly marked; the remainder of the pri
with lighter shafts; throat and
body silky white; tail white; feet y

10 inches; bill, from the gape, 1⅛; wing, 7½;
¾.
res Straits.*
.—Two specimens of this bird are now before me—
nale, which has been in my collection for many years;
the other, a fine adult male, forming part of the collection above
mentioned, and which had lately been received at Adelaide
from the northern territory at Port Darwin.

I have carefully compared this species with the *Sternula nereis* of Australia, the *S. minuta* of Europe, and the *sternula* of India, supposed to be identical with the latter (but this, I think, is a question). I have also compared it with all the little Terns of America, both North and South. Its nearest ally seems to be the European species; but from this it differs in having considerably longer wings, in the snow-white hue of the shafts of the primaries, and in the larger and well-defined mark of black on the tips of the mandibles; from *S. nereis* it is distinguished by having black instead of white lores.—*A. & M. N. H.*, 1871, *p.* 192.

Porzana bicolor, † *Walden.*

Chin greyish white, passing into pure grey on the throat; entire head, throat, neck, breast, abdomen, flanks, and thigh, coverts ashy-grey; nape, back, uropygium, shoulder-coverts and scapulars ferruginous olive; tail, upper and lower tail-coverts dark slate-colour, almost black; quills above ash-coloured, washed with light brown, underneath pale brown; under wing-coverts pale brown, tinged with ashy; shoulder-edge white; quill-shafts underneath white; bill black at the tip, dark-green at base. Wing, 4·50 inches; tarsus, 1·50; middle toe, 1·50; hallux, 0·37, nails not included; bill, from gape, 1·12, from forehead 0·87.

This well-marked and handsome Rail was shot at Rungbee, Darjeeling.—*A. & M. N. H.*, 1872, *p.* 47.

Cisticola ruficollis, *Walden.*

Stripe over the eye, ear-coverts, thigh-coverts, flanks, under tail-coverts, and a broad band extending from the sides of the neck across the nape bright rufous; feathers of the head pale fulvous at base, changing to rufous at extremity, many with broad black centres; dorsal feathers and wing-coverts black, with narrow fulvous edgings, those on the rump edged and tipped with rufous; quills dark brown, with yellowish-rufous edgings; rectrices above also dark brown, the outer webs washed

* in Ceylon.—Ed., S. F.
of this notice, I had named this species
d sent a full description home to the
D., S. F.

with tawny rufous; tips pale fulvous; rectrices ashy brown; a bold black bar or spot near the feather, which is terminated with pale fulvous; cheeks, throat, and remaining under surface fulvous w or less tinged on the breast with pale rufous; upper m dark brown; under mandible yellowish at base; legs reddish yellow; bill from forehead $\frac{3}{4}$ of an inch; tarsus $\frac{5}{8}$; tail $2\frac{1}{8}$; wing $1\frac{11}{16}$. In another example the rectrices above want the pale terminal fringe.

Obtained at Debroogur.

This very distinct species, in its style of coloration, greatly resembles *Graminicola bengalensis*, Jerd. Dr. Jerdon informs me that it occurs all through Assam, but only in dense long grass.—*A. & M. N. H.*, 1871, *p.* 241.

Notes on a new Dumeticola, and on Tribura luteoventris, Hodgson, and Dumeticola affinis, Hodgson.

By W. Edwin Brooks.

Two examples of a *Dumeticola*, sent to me by my friend Mandelli as *D. brunneipectus*, Blyth (which latter, by-the-bye, appears to me only to be unspotted *D. affinis*) belong to a new species. He asks me to describe this new bird, and I therefore do so as

Dumeticola Mandelli, *N. Sp.*[*]

Mandelli's Dumeticola has the upper surface reddish brown, redder even than *Tribura luteoventris;* wings dark brown, with their coverts, primaries, secondaries, and tertials edged with rufous brown; tail dark brown, obsoletely rayed, and having narrow rufous edges; lores, and apparently a narrow supercilium, greyish white; cheeks and ear-coverts, light brown, the feathers being light shafted, giving the appearance of narrow light streaks; chin, throat, and upper breast, white, shaded into light dusky brown or brownish grey on the breast; the throat of one has a narrow brown streak or spot occupying the centre of each feather; while that of the other is nearly plain white; the dusky breast of each bird is shaded off into pure white on the abdomen; sides of breast, and flanks, dull rufous brown; region of vent pale brown, with whitish edges to the feathers; lower tail-coverts, which reach to within an inch from end of tail, of a darker brown (non-rufous), and broadly tipped with dull white, *locustelle*-like; under-surface of tail feathers dark brown; tibial feathers light brown on outside, bu[illegible] cream-coloured

[*] I may be in error, but I have [illegible] females, and it appears to me to be *D.*

on inside of leg; bill brown, but pale towards base of lower mandible; legs, feet, and claws light brown.

No.	Length of skin.	Wing.	Tail.	Bill at front.	Tarsus.	Mid toe and claw.	Hind toe and claw.
1	5·5	2·07	2·54	·45	·73	·7	·55
2	5·4	2·0	2·58	·43	·73	·69	·54

The tail is much graduated, the outer tail feathers being ·65 shorter than the central ones.

From tip of bill to back of skull measures 1·25 inches. The bill is stronger, longer, and deeper than in *Tribura luteoventris*. Legs and feet of very similar character.

The form of the wing is that of *Dumeticola;* the 1st or small primary is about ·70 in length, the 2nd is ·3 short of tip of wing, the 3rd ·08 from tip, the 4th ·05, the 5th is the longest, the 6th is intermediate in length between 3rd and 4th, and from this they gradually diminish by about twentieths of inches; the 11th is equal in length to the 2nd.

From *Tribura luteoventris* it is easily distinguished by the much larger and stronger bill; also by the grey breast, and being subject to spots on the throat like *D. major*, Brooks, and *D. affinis*, Hodgson.

From *D. major* it is at once distinguished by its very rufous tone of plumage and stouter bill.

From *D. affinis* it is distinguished by its larger size, longer tail, and very rufous tone of plumage.

I should have remarked that the breast of No. 1 is of a light brownish grey, while that of No. 2 is ash grey. By the very similar form of bill, and the upper surface of each bird's plumage being of the very same tone of colour, it is evident that they belong to the same species.

No. 1 is from Native Sikhim, November 1873; and No. 2 is from Native Sikhim, April 1874.

Tribura luteoventris, (*Hodgson.*)

I have examined six of Mandelli's examples of this species. The following are the dimensions :—

No.	Length of skin.	Wing.	Tail.	Bill.	Tarsus.	Mid toe and claw.	Hind toe and claw.
1	5·5	2·03	2·3	·38	·76	·70	·5
2	5·25	1·97	2·25	·38	·78	·70	·52
3	5·10	2·03	2·23	·37	·76	·68	·53
4	4·65	2·14	2·43	·38	·76	·65	·5
5	5·20	2·04	2·65	·43	·77	·67	·53
6	5·15	2·23	2·30	·4	·77	·67	·52

The average colour is reddish brown above, rather darker on the head, but No. 6 is of a paler and more olive tone than the others; there is a fulvous supercilium; cheeks and ear-coverts mottled with brown and fulvous; chin and throat white; pale rufous across upper breast; abdomen white; sides of breast and flanks rufous brown; vent and lower tail-coverts pale rufous brown, in some tipped with dull white. In the generally pale rufous colour of the lower tail-coverts it differs from the allied species; tibial plumage pale rufous brown externally, and whitish on the inside of the leg; tail reddish brown, and obsoletely rayed; bill brown, pale on lower mandible, save towards the tip; legs, feet, and claws, light brown.

No. 1, Native Sikhim, June 1874; No. 2, Native Sikhim, April 1874; No. 3, interior of Sikhim, May 1874; No. 4, Sikhim, March 1872; No. 5, Lower Hills, Bhotan Dooars, February 1874; No. 6, Bhotan Dooars, February 1874. The form of the bill is exceedingly like that of *D. affinis;* outer tail feathers ·84 short of end of tail; lower tail-coverts of the same length as the outer tail feathers. From tip of bill to back of skull 1·22 inches.

I cannot make out any generic difference between *Tribura* and *Dumeticola,* and for convenience sake, it would be better to term *Tribura luteoventris, Dumeticola luteoventris* in future.

Dumeticola affinis, (*Hodgson.*)

Eight examples of Mr. Mandelli's examined:—

No.	Length of skin.	Wing.	Tail	Bill at front.	Tarsus.	Mid toe and claw.	Hand toe and claw.
1	4·4	2·10	1·95	·38	·78	·71	·53
2	4·6	2·05	1·97	·35	·78	·73	·55
3	4·4	2·17	2·15	·37	·73	·67	·50
4	4·9	2·10	2·05	·40	·83	·67	·55
5	5·10	2·12	2·12	·40	·82	·67	·56
6	4·5	2·07	2·12	·42	·78	·73	·55
7	4·5	2·05	2·03	·38	·75	·70	·53
8	3·8	2·03	1·80	·37	·75	·70	·53 evidently a nestling.

The bill of No. 1 is black brown, and lighter on lower mandible; of No. 2, all shining black; No. 3, the same; No. 4, the same; No. 5, black, but pale at base of lower mandible; No. 6, all black; No. 7, very dark brown, and light coloured on lower mandible, except towards tip; No. 8 the same. The plumage of Nos. 1 to 5 is dark rich olive brown above, with a rufous tinge, the general tone being much darker than that of

the two former species; lores white; a greyish supercilium; cheeks grey, mottled with dusky; chin and throat white, shaded off into smoky grey on the breast; the lower part of throat, sides of neck, and upper breast, clouded with black, and rather round spots; flanks olive brown; centre of abdomen pure white; vent light olive brown; lower tail-coverts the same, broadly edged with white; tail olive brown above, obsoletely rayed; lower surface of tail greyish brown; wings similar to back, but rather more rufous.

No. 6 is of similar colour above, but has the chin and throat dull brownish white; breast brownish grey; centre of abdomen white; flanks pale olive; there are a few dusky spots on the upper breast; No. 7 is the same.

No. 8 is a very small bird, and appears to be a nestling of the year. The upper colour is the same; chin and throat fulvous; breast and abdomen brownish white, strongly mottled with large pale brown spots.

It is probable that Nos. 7 and 8 may be females. The tendency to a jet black shining bill in this species is worthy of notice, and shews its distinctness from the two first described. Mr. Hodgson's drawing of *D. affinis* represents the bird without spots on the throat, and it is then in the plumage described by Blyth as *D. brunneipectus*, which I think is the female plumage of *affinis*. Indeed, Hodgson's drawing is stated by himself to be that of a female. It represents a pair of birds, one of them being in outline only, and uncoloured. The egg is of a uniform red colour, like that of *Horornis*. In this respect the egg differs much from that of *Locustella*, which has the ground colour white, spotted with reddish. *Dumeticola* may be described briefly as *Locustella*, with uniform upper plumage, instead of being striated; and with a first primary much larger than *Locustella*, also with the wing much more rounded.

I have seen two or three spotless examples of *D. affinis*.*

The close affinity of *Dumeticola* for *Locustella* is best known from the song of the former; that of *D. major* being exactly like the song of *L. Rayi*, but delivered more slowly.

* So have I, but why fix on these as the types of Blyth's species when there is a *bonâ fide* distinct species answering on the whole quite as well to Blyth's (unfortunately all too) brief description?—Ed.

Avifauna of Chota Nagpur.

Addenda et corrigenda.

By V. Ball, M.A., F.G.S.

Since my paper on the birds of Chota Nagpur was published in Stray Feathers I have had an opportunity of revisiting that part of the country and adding to the number of recorded species. To local correspondents, more particularly to Mr. Levin of Daltongunj, I am indebted for much information, partly new and partly confirmatory of my own previous observations. By these means I am enabled to add 9 species to the 304 previously known, thus arriving at the very respectable total of 313. Although I do not think this includes *all* the species still, as I do not see much prospect before me of having an opportunity of adding further to the number, I think it better not to delay the publication of the present contribution.

Some few changes in the nomenclature have been necessitated; these, it is hoped, will be noted by those who possess the original list.

Colonel Tickell's former connection with Chota Nagpur, and the uncertainty which still attaches to some of the species which he recorded from that part of the country, make it desirable to note here that "At the meeting of the Zoological Society of the 1st December 1874, it was announced by the Secretary that Colonel R. S. Tickell, late of H. M.'s Indian Army, had presented to the Society's library a very finely illustrated MS. work in seven small folio volumes on the ornithology of India."

Reference to this work may possibly throw some light on the vexed questions regarding the identity of the *Spizaetus Lathami*, Lath., of Tickell, *Æthopyga* (*Nectarinia*) *Seheriæ*, Tick., and several other birds.

The greater part of my last season's work was in Sambalpur, where, as was to be expected, the birds are almost entirely of the same species as those found in Chota Nagpur. I have, however, met with a few species not included in my list: among these few I may mention two Owls, *Otus brachyotus*, Gmel., and *Bulacca ocellata*, Less., neither of which, so far as I know, has been seen in Chota Nagpur: also *Chætornis striatus*, Jerd., which I found on the banks of the Mahanadi.

Hereafter I hope to have an opportunity of adding considerably to my collection and obtaining sufficient material for a general sketch of the Avifauna of Sambalpur and the adjoining tributary states."

305.*—Eutolmætus Bonellii, *Tem.* (33.)

Mr. Levin, in a letter dated 7th January 1875, sends a description of a bird which he identifies, and I think correctly so, as the Crestless Hawk-Eagle. The specimen was obtained in Palamow.

Uromitis filifera, *Steph.* (84.)

Mr. Levin in the letter above quoted adds, "I was strolling along the banks, or rather sands, of the Koel a few days before Christmas, when I noticed a long flight of *U. filifera*. (I shot one to make sure.) They were proceeding in small parties of 8 to 10 or 15 steadily to westward, and I am sure at least 200 must have passed during the short time I looked on. They are by no means common here, and I never saw more than 6 or 8 at a time before. I got a nest last April in a cleft in a rock on the Koel near here."

Acanthylis sylvatica, *Tickell.* (95.)

I am able to confirm the editorial foot note to my remarks on this species, having during the past season found it locally abundant on the southern frontier of Chota Nagpur and in Sambalpur.

Cypselus affinis, *Gray.* (100.)

The Common Indian Swift occurs, I find, more generally in the division than my remarks might seem to imply.

Merops philippensis, (118.)

Mr. Levin has seen this bird in small parties on the banks of the Koel in Palamow.

Recently (in April) I met with a large number in the vicinity of a river with high alluvial banks in the Sambalpur district, where I have no doubt they were breeding.

306.—Alcedo asiatica, *Sw. vel* Beavani, *Wald.*

By a most culpable oversight I omitted, when alluding to this bird, to mention that a specimen of *Alcedo* obtained by Captain Beavan in Manbhum and labelled *A. bengalensis* by him had been shewn by Mr. Sharpe to belong to this species. Subsequently† Viscount Walden identified it with his new species *A.* (*rufigastra*) *Beavani*, from the Andamans, and suggested the possibility of its having really come from the Andamans. By whatever name it is to be called the same species was shot by me in the Rajmehal hills, and I therefore see no improbabi-

* These numbers are carried forward from the original list. The numbers in brackets are those of Jerdon's Manual.

† Ann. Mag. Nat. Hist., 1873, p. 487, and *Ibis*, 3rd series, 1874, p. 136.

lity in its having been obtained in Manbhum, and consequently add it to the list.

Mr. Levin, who was my informant regarding the occurrence of *Ceyx tridactyla*, Pallas, tells me now that he has not met with what he supposed to be it since and thinks that he must have been mistaken, so that I was probably right in not including it.

307.—Hydrocissa albirostris, *Shaw.* (141.)

When writing of *H. coronata* I gave my reasons for supposing that *H. albirostris* might also be found to occur in Chota Nagpur. Last year, in December, I was able to place the matter beyond the region of doubt by shooting a specimen at Lobloi near Lanigarh in the south of the Division. It formed one of a small party in an old grove of mango trees. In the same tract of country I also met with *coronata*, so that here the two species overlap each others limits.

Further to the south in Sambalpur *coronata* was very abundant. The measurements of two fine males of the latter species I give here as they were taken in the flesh, those previously published being from dried skins.

A. Total lgth. 36 6"; tl. 14 5"; wg. 13·5"; cqe.*9·1'; bill from gape 7·2" mid toe with claw 2·4"
B. " " 36·5"; " 14·5"; " 13·8"; " 8·3"; " " " 8"; " " " " 2·1"

The very large and excessively black casque of A. made the bird remarkable in a flock of 6 or 7 individuals.

Iris orange-maroon. The stomachs contained fruit only.

Yunx torquilla, *Lin.* (188.)

The Wryneck has been obtained by Mr. Levin in Palamow, but he says it is very rare there, as I also found to be the case in other parts of the Division.

Coccystes Jacobinus, *Bodd.* (212.)

The Pied-crested Cuckoo appears to have been seen more frequently by Mr. Levin in Palamow than by me in the other districts.

Taccocua affinis, *Blyth.* (222.)

Mr. Levin's specimens of Sirkeer from Palamow correspond, he writes, as also did one of mine, with Jerdon's description of this species rather than with that of *sirkee*. His measurements are: Total length 16"; wing nearly 6"; tail 8·25".

Collyrio lahtora, *Sykes.* (256).

I inserted the Indian Grey Shrike in my list with a query. Quite recently I received from Captain Grey, Assistant

* 10·15" measured round the curve.

Commissioner of Lohardugga, a specimen which he shot in Palamow, where he also saw some others.

308.—Volvocivora Sykesii, *Strick.* (268).

The Black-headed Cuckoo Shrike may now be added to our list with safety, as Mr. Levin has shot it in Palamow.

309.—Pericrocotus erythropygius, *Jerdon.* (277).

From time to time in the Satpura Hills, Chota Nagpur, and Sambalpur I have seen small parties of a black and white bird, which I could only suppose was the White-bellied Minivet, but until the 29th of January I had not an opportunity of confirming my suspicion when I shot one (the ♀) of a pair which I came across on the borders of a heavy jungle in Sambalpur. This is one of the most interesting additions which I have to make to the previous list.

Dissemurus malabaroides, *Lin.*

The Bhimraj I found to be rather common in the extensive bamboo jungles which occur in the south of the division passing thence into Sambalpur. The following are measurements of a female measured in the flesh:—

Bill to tip of tail, 20·7″; tail, 6·5″; outer tail feathers, 13·8″; wing, 6·4″; tarsus, 1·1″; bill from gape, 1·5″; frontal crest, 2·1″.

Chibia hottentotta, *Lin.*

I shot my first specimen of the Hair-crested Drongo in the tract of frontier jungle just alluded to. It was a male and was accompanied by another, presumably a female. They were busily engaged, when I first saw them, in sipping the nectar and catching insects in the blossoms of *Bombax malabaricum*.

Measurements taken in the flesh are: Total length, 12·3″; wing, 6·6″; tail, 5·3″; bill from gape, 1·6″; tarsus, ·9″; frontal hair like feathers, 3·5-4″; outer tail feathers, 1.″ longer than the central.

Artamus fuscus, *Vieill.* (287).

The Ashy Swallow-Shrike is perhaps not so rare as I stated. In November last I came across a large flock in Singhbhum, out of which I shot some specimens. From Mr. Levin I hear that he got a bird of the year in 1873, and subsequently both nest and eggs in Palamow. Dr. Jerdon suggests that "it was probably the nest of this bird which was brought to Colonel Tickell as that of the Palm Swift, *Cypselus batassiensis*."

Tchitrea paradisi, *Lin.* (288).

That the Paradise Flycatcher does not make its appearance in the Chota Nagpur and Sambalpur jungles earlier in the year than March, may, I feel confident, be accepted as a somewhat remarkable fact in the migration of birds. Whence does it come? During the present year until after the commencement of April I neither heard nor saw a single individual in Sambalpur. Then, however, I saw them almost daily, and continued to do so during the month of May when marching through the Orissa tributary mehals.

Both Captain Grey and Mr. Levin confirm my statement that this bird does sometimes alight on the ground. The former says that at one place "I had three of the chestnut birds hopping about on the ground round my chair and within ten yards of me. The white specimens appeared to be much more shy." Mr. Levin writes: "Those that came about my garden this year, sometimes, I noticed, settled on the ground and then hopped about for a few paces after insects. At least the young did so; I did not observe the same habit in the old birds." He mentions having obtained it a young chesnut-plumaged male with white wings.

Muscicapula superciliaris, *Jerd.* (310).

The White-browed Blue Flycatcher is perhaps not so rare in Chota Nagpur as I supposed. From its keeping chiefly to the tops of high trees it doubtless often escapes observation. Mr. Levin obtained it at Daltongunj. In Sambalpur I frequently met with it.

Myiophoneus Horsfieldii, *Vig.* (342.)

The Malabar Whistling Thrush occurs, I find, in the same tract of jungle as that which I have above alluded to in connection with *Dissemurus* and *Chibia*. This is at a much lower level (below 1,000 feet) than any of the places I had previously noted it as occurring in. I shot one specimen in March of the present year in a stream in the northern part of Rámgarh, where I also obtained *Geocichla unicolor* and saw *Oreocincla dauma*.

Pitta coronata was extremely abundant in May in the heavy jungle of the tributary states included in Sambalpur and Orissa.

Pycnonotus hæmorrhous, *Gm.* (462).

The Common Madras Bulbul has been shewn to be quite distinct from *P. chrysorrhoides*, Lafr., and the above name used by Jerdon still stands for this species.*

* I rather question this. I think the species must stand as *pusillus*, Bly.—Ed.

Oriolus kundoo, *Sykes.* (470).

In speaking of the distribution of this bird I stated that I had obtained it in the Rajmehal Hills. Subsequently I found that my specimens from that part of the country should be referred to *O. indicus.*

Cercotrichas macrourus, *Gm.* (476).

When passing through Purulia at the end of last year I saw some young Shamas for sale, which were said to have been obtained in the Ajudia Hills a few miles to the south. This confirms Captain Beavan's informant's account that it breeds in the district of Manbhum.

I shot several specimens in the northern part of Sambalpur, where, however, it is far from common.

Cyanecula suecica, *Lin.* (514).

The Indian Blue Throat has been seen and obtained by Mr. Levin in Palamow.

Drymoipus inornatus, *Sykes.*

The Common Wren Warbler has already been given in the addenda at the end of my list. Mr. Levin writes that he has obtained it in Palamow.

310.—Budytes citreola, *Pallas.* (594).

The Yellow-headed Wagtail should, I think, be formally included in the list. I did not do so before as I had no specimen by me. I find I have a note of having got one in Singhbhum, and Mr. Levin writes that it was common in the Lobji and Koel rivers in Palamow during the cold weather of 1873-74.

Eulabes intermedia, *Hay.* (692).

The Black Maina, which Captain Beavan spoke of as *E. religiosa,* must have been this species, as it is the one found in Sambalpur.* In my paper I admitted the probability of its being found in the jungles of Sarunda and Gangpur. Strange to say, on my first day's march into Sarunda at the end of last year a flock of a dozen of these birds flew high over my head: unfortunately they were out of shot range.

Pterocles fasciatus, *Scop.* (800).

The Painted Sand Grouse breeds in Palamow according to Mr. Levin.

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* See S. F., II., 254.

Hepburnia spadiceus, *Gm.* (814).

Since my list was published I have seen the skin of a Red Spur Fowl which was shot in Chota Nagpur. The doubt about its occurrence may therefore be removed. Mr. Levin states that he has shot both Black and Painted Partridges in Palamow, but before entering the second in the list I think it will be prudent to wait for further confirmation of what would be, if proved, an interesting and somewhat exceptional fact.

Microperdix Blewitti, *Hume.*

Since my paper was published Mr. Hume has distinguished (S. F., II., p. 512,) his Raipur specimens of the Painted Bush Quail from the Nilghiri bird under the above name. Having seen Mr. Hume's specimens, and also, for the first time, one from Southern India, I am able to refer the Chota Nagpur and Satpura birds to this newly-separated race or species.

311.—Coturnix coromandelica, *Gm.* (830).

In the absence of specimens or any note of its occurrence I did not insert the Black-breasted Quail in my list. Mr. Levin tells me, however, that he has shot it, so I think it may safely be added. During the past season I shot several in Sambalpur.

312.—Esacus recurvirostris, *Cuv.* (858).

Mr. Levin tells me that he has shot the Large Stone Plover in the Koel river in Palamow. During the past season I saw several parties of the same bird in the rocky beds of the Mahanadi and Ebe in the Sambalpur district, so that they doubtless occur occasionally in suitable localities in the larger rivers of Chota Nagpur.

313.—Hoplopterus ventralis, *Cuv.* (857).

The Spur-winged Lapwing must be added to the list, as I shot it during the past season in the Brahmni river in Gangpur.

Hydrochelidon indica, *Steph.* (984).

Mr. Levin writes that the Small Marsh Tern is common on the Koel, as also is the Large River Tern *Sterna seena*. Though included in my list, I had not got specimens of either.

Mr. Levin has also obtained a Pelican, which he says is far from rare, and which he supposes to be *Pelicanus javanicus*, Horsf.

On Drymoipus inornatus, Sykes, and Drymoipus longicaudatus, Tickell

By W. Edwin Brooks.

Having studied these two little birds for some years, and having procured a large series shot during every month of the year, I am forced to the conclusion that they are identical, *longicaudatus* being the winter plumage of *inornatus*.

When the pale grey and white *inornatus* moults in the autumn, the new quill and tail feathers are of quite a different color from those of the breeding plumage, when the latter is first acquired; the autumnal color of the quills being dark brown, with broad rufous edges, while the tail-feathers are dark brown, rufous towards the edges, and obsoletely cross-rayed. Above the tail appears unicolorous, but from below there is a sub-terminal dark brown or almost blackish spot visible, and beyond this dark spot there is a very pale brown tip. This tip is by no means whitish like the tip of the summer tail. The body plumage in autumn is much tinged with rufous, and the lower surface exceedingly so, especially towards the flanks and lower tail-coverts. The bird is then in *longicaudatus* plumage; and it should also be noticed that the new autumnal tail is a longer one than that of the breeding plumage.

In March and April the spring moult takes place. The lower plumage, from chin to abdomen, becomes almost silvery white, while the flanks and lower abdomen, together with lower tail-coverts, retain a faint fulvous tinge; the new quill feathers are greyish brown with greyish white edges, and the new tail feathers are of a shade lighter greyish brown, with pale edges; there is a sub-terminal dark spot, quite visible from above, and the tip of the feather is dull greyish white, which can also be seen from above. The upper plumage is greyer than in winter, or more of an ashy brown, the feathers of the head having their centres rather darker, so as to present a slightly mottled appearance. The bill also becomes very dark, or quite black, except towards base of lower mandible; and the inside of the mouth, which is flesh coloured or yellowish during the winter, becomes, in the male, of a dark purple brown color or nearly black; upon the whole, a more complete transformation of a small bird could not take place.

The light tips to the tail wear away, and towards the close of a season are not often to be observed.

By *D. inornatus* I mean the bird that Mr. Hume has named *D. terricolor* as being distinct from *D. inornatus* of Southern India. I have neither seen Southern nor Western examples, but I think

the Southern bird, to which Mr. Hume refers, must be one of the stages of the species that I have been considering: there is, however, a Western species spoken of which lines its nest. If such be the case, the Western bird must be distinct from the bird distributed so commonly over the North-West and Bengal. Not having any acquaintance with the Bombay bird I shall not say any thing more about it. In uniting the two species under consideration, I feel quite satisfied in my own mind as to the correctness of the conclusion, and would be glad if others would take the subject up, and give us the result of their investigations.

W. E. B.

Novelties?

Pitta Gurneyi, *Sp. Nov.*

♂. *Crown and occiput lazuline blue; forehead and sides of head black; chin and upper throat white; lower throat intense yellow; breast and abdomen velvet black.*

♀. *Resembles most that of* cyanura, *but wants the white wing bars and blackish coronal streaks of that species.*

I dedicate this really lovely species, an inhabitant of the most southern portions of the Tenasserim Provinces, to my kind friend Mr. J. H. Gurney, well known to all ornithologists as the first living authority where Raptoral birds are concerned.

No more beautiful or interesting addition to our Indian Avifauna has been made for many a long day, and its discovery is one of the results of the systematic ornithological survey of the Tenasserim Provinces which for the past two years has been vigorously prosecuted by my curator Mr. William Davison and my whole staff.

Though conspicuously different from any one of them, this new species is most nearly allied to *P. cyanura*, Gmel., (*guaianus*, P. L. S. Müll.), *P. Schwaneri*, Tem., and *P. Boschi*, S. Müll.—(*?elegans*, Lesson).

There is the same cuneiform blue tail, the same comparatively small bill, the same more or less rufous olivaceous upper surface, the same difference in the sexes, an orange brown replacing on the head of the female, the more marked colours of that portion of the male, and, lastly, the female (though not the male) has the lower surface banded very similarly to that of the female of *P. cyanura*.

Of the habits and haunts of this and other species I shall deal when presenting (as I hope to be able to do next year)

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BRACHYURUS GURNEYI, *Hume*

a complete list of the birds of the Tenasserim Provinces; in the meantime the following are the dimensions (recorded in the flesh) and descriptions of both sexes:—

Male.—Length, 8·25 to 8·75; expanse, 13·45 to 14·0; tail, from vent, 2·05 to 2·5; wing, 4·0 to 4·2; tarsus, 1·55 to 1·65; bill, from gape, 1·1 to 1·15; weight, 2 to 3 oz.

The bill is black; the legs, feet and claws fleshy white; the iris very dark brown.

The forehead, the anterior half of the crown, the lores, cheeks, and ear-coverts, stripe over the eye, and collar round back of the neck, (almost hidden by the long full occipital crest,) breast, abdomen, and lower tail-coverts all velvet black, the largest of the latter tipped with blue; posterior half of crown, occiput, and full occipital crest glossy lazuline blue, much like that of *Irena puella*; tail and upper tail-coverts blue, the latter tending to ultramarine; primaries and their greater coverts dark hair brown; rest of upper surface rufescent olivaceous; the later primaries and earlier secondaries more or less inconspicuously margined towards the tips with grey; chin and upper throat pure white; base of throat for a breadth of about half an inch intense golden yellow. Sides and flanks also, but in some specimens a duller golden yellow, more or less regularly barred with black; thigh-coverts greyish white, obscurely barred with pale brown.

On the lower surface of the wing there is a dull white bar at the base of the primaries.

Female.—Length, 7·75 to 8·12; expanse, 13·5 to 13·62; tail, from vent, 2·0 to 2·25; wing, 4·05 to 4·15; tarsus, 1·3 to 1·5; bill, from gape, 1·05 to 1·2; weight, 2·5 oz.

Bill, black; gape, whitish; iris, very dark brown; eyelids black; legs, feet, and claws, dingy fleshy white.

Forehead, lores, crown, occiput, and nape, bright ferruginous orange brown; cheeks, ear-coverts, and a broad patch behind these latter black; the feathers of the ear-coverts with pale orange brown shafts; chin and throat, dull brownish white; lower tail-coverts dingy black, the longest tipped with dull blue; the whole of the rest of the lower surface of the body, brownish white, strongly tinged in places with yellow, regularly and closely barred with black. Both the yellow tinge and the black barring are in some specimens more or less obsolete down the centre of the lower abdomen, and the thigh-coverts are pale fulvous brown, faintly and obsoletely barred. The rest of the upper surface of the body not already described similar to that of the male, but slightly less rufescent.

When dealing with a species of this genus I take the opportunity of noting that in recent livraison of the Museum des Pays-Bas (dated April 1874), Professor Schlegel remarks

of this genus "ces oiseaux aux habitudes parfaitement sedentaires et ne sachant guère voler, n'ont pas la faculté de se transporter dans d'autres localités du lieu qui les a vu naitre."

Now as regards those species which I have had most opportunities of observing, viz., *moluccensis*, P. L. S. Mül. (*cyanoptera*, Tem.) and *coronata*, P. L. S. Mül. (*bengalensis*, Gmel.) these remarks are wholly erroneous. Both species are eminently migratory, neither, at any rate within our limits, are ever found at other seasons of the year anywhere in or near the localities in which they breed. Both yearly travel hundreds of miles, to their breeding haunts, streaming up in tens of thousands of pairs, all moving at about the same time, though not in flocks. As to *coronata*, Layard and Jerdon and others have recorded this years ago; as to *cyanoptera* we have found this the case during the past two years in Burmah; they come up from the Malay Peninsular and flood not only the Tenasserim Provinces but the valley of the Irrawady, some at any rate getting as high as Thayetmyo, and in this migration they are accompanied by the nearly allied, but much larger billed *megarhynchus*. Doria, too, I see, as quoted by Salvadori (Uccelli de Borneo, p. 236) notices that in Borneo also they are migratory, no specimen having been obtained at Sarawak before October, though not rare there in that month, November and December.

In this same livraison Professor Schlegel remarks that *P. cyanea*, Blyth, appears to be only the adult of P. (*Hydrornis*) *nipalensis*, Hodgs. It is surprising that so eminent an ornithologist should advance such a proposition in 1874. We have found both species breeding and have numerous specimens of both from the nestling to the perfect adult and certainly no two allied species can possibly be more clearly distinct.

Prionochilus modestus, *Sp. Nov.*

Sexes alike. Above dull olive green; below olive grey, and yellowish white, streakily mingled.

To the list of *Prionochili*, already known, *percussus*, Tem., *maculatus*, Tem. *aureolimbatus*, Wall., *obsoletus*, Müll. and Schl., *xanthopygius*, Salvad., and *Vincens*, Sclat., we must now add the present dull-colored but fairly typical species from S. Tenasserim. *Thoracicus*, I have been unable to examine and cannot therefore say whether it should rightly find a place in this genus, or be separated under Reichenbach's name of *Anaimos*, but in regard to *Pachyglossa melanoxantha*, Hodgson, recently

(*Ibis*, 1874, p. 3) united by Dr. Sclater with this present genus, I take this opportunity of reiterating, that in its larger size, more massive body, longer tail, and much shorter, coarser and more triangular bill, suddenly compressed towards the tip, *Pachyglossa* is, in my opinion, quite distinct from *Prionochilus*.

The following are the dimensions of the present species recorded in the flesh from 4 [illegible]s and 5 females:—

Males.—Length, 4·0 to 4· [illegible]xpanse, 7·35 to 7·75; tail, 1·12 to 1·3; wing, 2·25 to [illegible], tarsus, 0·45; bill, from gape, 0·4 to 0·45; weight, 0·35 to 0·4 of an oz.

Females.—Length, 4·0 to 4·12; expanse, 7·0 to 7·5; tail, 1·1 to 1·25; wing, 2·15 to 2·38; tarsus, 0·4 to 0·5; bill, from gape, 0·4 to 0·45; weight, 0·3 to 0·4 oz.

The irides vary in different specimens from pale sienna brown to pale yellowish red, and orange. The legs, feet, and claws are dark plumbeous; the upper mandible varies from pale horny brown to horny black. The gape is always more or less orange, as is also the inside of the mouth, the lower mandible varies, in some it is fleshy white tipped brownish, in others light plumbeous or blue, while in one or two specimens, shot later in the spring, the lower mandible as well as the gape was orange.

The whole upper plumage is a dark olive green, in some specimens precisely the shade of *Dicæum concolor*, Jerd., in others somewhat lighter and brighter; the rump and upper tail-coverts are slightly yellower; the quills, coverts, and tail-feathers are dark hair brown, all edged with yellowish olive green. All the tail feathers are very narrowly tipped with white, the tipping on the exterior feathers of the tail being much deeper on the inner webs. The shoulder of the wing is white; the wing lining white, mingled with olivaceous grey. There is a dull greenish white stripe through the lores. The cheeks, ear-coverts, and sides of the neck dull green like the upper parts, but somewhat greyer. The lower parts are white tinged with pale yellow. A narrow ill-defined stripe of olivaceous grey runs down either side of the throat from the base of the lower mandible. The whole of the beast is streaked, and the whole of the sides and flanks suffused, with this greyish olive, but the centre of the abdomen, the vent, the tibial plumes, and lower tail-coverts are pure *very pale* yellow or perhaps it should be called yellowish white.

It is to be noted that in some specimens the yellow tinge (though pale in all) is much more decided than in others.

This bird at first sight seems like a very green edition of *Piprisoma agile*, but the bill is not nearly so deep, nor is it so strongly compressed near the tip. The bill in the present species is very close to that of *P. vincens*, but is rather *more* compressed

towards the tip than in this *latter* species; but it has a regular *Prionochilus* bill with the bulge at the angle of the gonys in the lower mandible (which is exaggerated in *Piprisoma* and only indicated in *Pachyglossa*) and not the nearly uniform unbroken curve of the lower mandible in *Dicæum*.

Geronticus Davisoni, *Sp. Nov.*

Like papillosus, *Tem., but very much larger; head black with brownish warts on anterior portion of head only; a broad white ring of naked skin across the throat and round the nape.*

It seems incredible that so large, handsome, and strongly characterised a species should be still undescribed, but I can find no mention of it in Mr. Gray's hand list, or in the "Muséum Des Pays-Bas," and I am therefore constrained to describe it under the name of its discoverer, Mr. William Davison, who shot a couple last January on the banks of the Pakchan Estuary in the extreme south of the Tenasserim Provinces.

Both specimens were adult males. The following are their dimensions and description:—Length, 32 to 32·5; expanse, 55·5 to 58; wing, 16·5 to 17; tail, from vent, 8·25 to 8·5; tarsus, 3·62 to 3·65; bare portion of tibia, 2·5; bill, from gape, 7·1 to 7·2; weight, 3·5 lbs. to 4lbs.

The legs and feet are coral red; the irides bright orange; the bill is very dark plumbeous, blue at base, shading to a dull ochraceous clay color towards the tip; the head is black, the anterior portion only, covered with small brown warts, becoming obsolete on the crown and occiput; a broad white band of naked skin encircles the neck; it stretches across the throat beginning opposite the ends of the maxilla, runs up the lower margin of the ear apertures, and across the nape, being prolonged upwards into an arrow-head point on the occiput, where it is strongly tinged with blue.

The whole of the feathered portion of the neck, the breast, and the entire lower parts of the body, the back, scapulars and tertials are precisely similar to the same parts in *papillosus*; a brown of somewhat varying shades tinged especially on the scapulars, tertials, rump, and upper and lower tail-coverts, with a metallic greenish lustre; the wings and tail are likewise precisely as in that species with the same blue and greenish blue metallic lustre, and with the same snowy white patch, though somewhat less in extent, above the elbow joint.

The pure white naked ring round the head or rather round the neck just where this joins the head makes this bird very conspicuous in life. Mr. Davison says that they were not rare but were excessively wary. Their habits appear to be

similar to those of their nearly-allied congener so common in India and Ceylon. A specimen of this latter species, procured in Borneo, is, I note, in the Leyden Museum, but with this exception, I can find no record of its occurrence anywhere in Malasia or the Archipelago, or indeed anywhere except in India and Ceylon.

Ixus Davisoni, *Sp. Nov.*

Like T. Finlaysoni, *but larger (wing, 3·5) and brighter colored; upper surface much more strongly tinged with golden olive; no orange yellow streaks on forehead, but a conspicuous orange line over the lores.*

In November last Mr. Davison, amongst a number of other birds, obtained, while he was on a visit to Mr. Oates at Rangoon, sent me a specimen of an *Ixus*, which, though allied to both *Finlaysoni* and *flavescens*, and especially the former, is yet quite distinct from these, and appears to me to be as yet undescribed. A single male was shot at a place 12 miles north of Rangoon, and not being discriminated by Davison, who mistook it for *Finlaysoni*, was unfortunately not measured in the flesh. The following dimensions are those of the dry skin:—

Length, 8·0; wing, 3·5; tail, 3·3; tarsus, 0·8.

Bill, legs, and feet, blackish brown; crown, occiput, nape, and sides of neck dull olive green; the feathers inconspicuously centered and tinged with golden olive; lores dark brown; a bright orange line over the lores; ear-coverts mingled brown and orange yellow; chin, throat, breast, dull pale earth brown; all the feathers of the two former, with conspicuous bright orange yellow shaft streaks, and those of the latter a little margined with olivaceous; upper abdomen and flanks similar, but darker and more strongly tinged with olive yellow; centre of upper abdomen with streaks of gamboge yellow; lower abdomen, vent, and lower tail-coverts very bright gamboge yellow; entire mantle, rump and upper tail-coverts dull golden olive, brightest on the two latter; the bases of all the feathers earth brown, which however only shows though slightly on the upper back, and back of the neck; quills, dark hair brown, the outer webs entirely overlaid with moderately bright golden olive; the tertiaries more or less overlaid with the same on the inner webs, and some of the later secondaries with a tinge of the same on the inner webs at the tips; the shoulder of the wing, the wing lining, and the margins of the inner webs on the lower surface of the quills gamboge yellow, brightest on the first; the tail dull golden olive, the inner webs duller and browner, and all obsoletely barred in certain lights.

Lyncornis Bourdilloni, *Sp. Nov.*

Very similar to L. *cerviniceps, Gould, but conspicuously smaller and brighter colored.*

It is to Mr. Frank Bourdillon that I am indebted for the first specimen of the *Lyncornis* of Southern India that I have seen. It is a female shot on the 15th January at Kalland Khauni, South Travancore.

I have long known that we had a *Lyncornis* in Southern India, or else some very large horned Goat-sucker, but I have hitherto failed in obtaining a specimen Now that Mr. Bourdillon has secured one, it appears to me necessary to separate it under a distinct name. It must, not, however be supposed that it is a very distinct species. It is merely a diminutive race, and it bears to the Burmese *L. cerviniceps* precisely the same relation that the *Hemicercus cordatus* found in the same jungles in Southern Travancore bears to the Burmese *H. canente*, (Less.)

The following are the measurements recorded in the flesh of the female shot by Mr. Bourdillon, which is an adult in very perfect plumage:—Length, 14·5; expanse, 32; wing, 10·25; tail, 7·62; tarsus, 0·56; bill from gape, 1·45.

I shall not attempt to describe the plumage, it is precisely that of *cerviniceps*, but only perhaps somewhat more rufescent and richly colored than any of the 50 odd specimens of the Burmese bird which we have in our museum; but I subjoin the measurements recorded in the flesh of a dozen females of the Burmese bird to shew the marked difference that exists in the size of the two races.

L. cerviniceps, ♀.—Length, 15·62 to 16·5; expanse, 34·5 to 36·25; wing, 11·37 to 12·62; tail, 7·9 to 9; tarsus, 0·75 to 0·82; bill from gape, 1·7 to 1·82.

The males are, if any thing, a trifle larger as an average.

I should note that amongst the females of *cerviniceps* some not fully adult specimens were measured, so that the figures above given hardly represent (unless the minima be rejected) the real difference in size between the two races.

Mr. Bourdillon says, "I am inclined to think that this must be a *Lyncornis* from the long ear-tufts, which, though hardly visible now, were most conspicuous when I picked the bird up. Indeed my first idea was that I had some kind of Horned Owl. The specimen was obtained in a 'hillmen's' clearing on the banks of the Peenaven-aur about 15 miles north of this (Mynall), at an elevation of 600 feet above sea level. Irides dull brown; legs and feet brownish pink; claws ashy. The bird was observed with 3 or 4 others of the same kind flying

high some 20 or 30 feet above the tops of the tallest trees. The party appeared soon after sunset, and at first their flight was slow and heavy; as darkness increased however they became more active, and invariably caught their food on the wing. On dissection the bird proved to be excessively fat, and its stomach contained several large green bugs and yellow beetles."

Notes on Cerchneis vespertina and C. amurensis.

By R. Bowdler Sharpe, F.L.S., F.Z.S. etc.,

Mr. Hume having expressed a wish (S. F., II., p. 527) that some one should give the differences between the Eastern and Western Red-footed Kestrels in all their respective plumages, I believe I can do this from the series now in the British Museum, and I trust that it will be useful in enabling Indian ornithologists to distinguish between the two species, so that we may arrive at their proper geographical distribution. In the table of Kestrels, given in the Catalogue of Birds, (p. 423) I have included both sexes of each species that I was certain of, in order to make the identification of all the plumages an easy matter, but in this particular table I did not introduce the young birds owing to my not having before me a sufficiently-complete series; as, however, examples of the immature plumages of both the Red-legged Kestrels are present in the museum, I will give an additional table specially with reference to the point mentioned by Mr. Hume.

a.—Tail uniform leaden grey.

a'.—Under wing-coverts and axillaries bluish grey like breast..... *vespertinus*, ♂ ad.

b'.—Under wing-coverts and axillaries pure white; breast grey..... *amurensis* ♂ ad.

b.—Tail grey, banded with black.

c'.—Dorsal plumes broadly barred with blackish but not margined with rufous.

a''.—Under surface *rufous*, either uniform or with slight remains of blackish shaft lines *vespertinus*, ♀.

b''.—Under surface creamy *white;* the breast broadly streaked and the flanks barred with black; abdomen, thighs, and under tail-coverts uniform pale rufous..... *amurensis*, ♀.

d'.—Dorsal plumes barred with blackish; but also broadly barred at the tips with rufous.

c''.—Head rufous with narrow shaft-lines of black; forehead whitish; under surface of body buff, *streaked* down the centres of the feathers with

brown; *no* bars on the flanks; tail bluish, shaded with buff and crossed with 11 bars of black..... *vespertinus, Juv.*

d'.—Head dark bluish, with black shaft streaks; forehead fulvous; under surface of body buff, broadly streaked with black on the chest and *barred* on the flanks with the same colour; tail bluish, with about eight narrow blackish bars..... *amurensis, Juv.*

I may remark that an immature specimen from Nepal has more than eight bars on the tail, in fact it has ten, but these are much narrower than the grey interspaces, even if the other characters did not hold good and distinguish it at once from the young of *C. vespertina.*

Notes on "The Spotted Eagle," Aquila nævia.

By W. Edwin Brooks.

The synonyms of which are—

Aquila nævia,	... *Brisson.*
Falco nævius,	... *Gmelin.*
Falco maculatus,	... *Gmelin.*
Falco maculatus,	... *Latham.*
Aquila clanga,	... *Klein.*
Aquila clanga,	... *Pallas.*
Aquila vittata,	... *Hodgson.*
Aquila nævia,	... *Schwenckfeld.*
Morphno congener,	... *Aldrovandi.*
Aquila minor,	... *Buffon.*

Some difference of opinion appears still to exist as to what bird was the Spotted Eagle (*Aquila nævia*) of the old authors.

I have repeatedly endeavoured to shew that the small Spotted Eagle of Northern Germany, and which I identified with the Indian *Aquila hastata*, Lesson, is *not Aquila nævia;* but in Stray Feathers, Vol. III., p. 25, under the head of *Aquila clanga*, Pall., Mr. Hume adds a foot-note to this effect. "By *clanga* I mean the bird which we have most of us heretofore called *nævia*, Brisson. I agree with Mr. Brooks that the true *nævia* is either identical with, or very closely allied to, *hastata.*" Mr. Hume has quite forgotten what I have written, for I have endeavoured to shew the very opposite. He has also forgotten the extract from Mr. Gurney's letter quoted in Stray Feathers, Vol. II., p. 332, as follows:—"Writing to me recently, Mr. J. H. Gurney says: 'There are certainly two Spotted Eagles of different

species which have hitherto been confounded under the name of *nævia*, both being European.

'The large bird (which Brooks is quite right in saying is the *nævia* of Brisson) is, I think, identical with the Indian *A. vittata* of Hodgson.

'The smaller bird is excessively close to, and possibly identical with, the Indian *A. hastata*.'"

I shall once more show that the larger species is the true *nævia* of the old authors.

Take first the description by Brisson, pp. 425 and 426 of his Ornithology.

He gives the following synonyms:—

Aquila nævia, Schweuck.

Aquila clanga, Klein.

Morphno congener, Aldrovandi.

Morphno congener, *Aldrovandi*, Willoughby.

Stein adler, of the Germans.

Rough-footed Eagle, of the English.

The dimensions given are evidently inaccurate, and may be set aside in favour of the statement: "Galli sat magni crassitie est, et corpulentiâ." We are told that the general colour of the body is obscure or dusky ferruginous. This I would take to mean a dark brown with a reddish shade in it. Such a description, as regards general body colour, does not apply to the smaller species, which is of a much lighter brown than the large bird, and this brown is not reddish.

Again, Brisson says: "Alæ subtus maculis multis ovalibus albis, hinc inde sparsis insigniuntur." This is evidently derived from Aldrovandi, who says: "Color totius prope ferrugineus est, nisi quod ad extremas alas versus ventrem attinet, maculis multis ovalibus et hinc inde sparsis insigniretur." We here understand from Brisson that the lower part of the wings, or away from the bend and shoulder, is spotted with oval white spots. This is precisely the case with our larger Spotted Eagle. It is generally well spotted on the lower part of the wing, and after the first plumage is free from spots from the bend along the ridge to where the wing joins the body. In the smaller species (*A. hastata*) the peculiarity is, that the *upper* part of the wing is well spotted, and increasingly so in the second plumage after the spots are lost on the *lower* part of the wing. The ridge and bend spots are then much larger than they are in the nestling, and so numerous as to be often confluent.

The word "subtus," used by Brisson, I understand to mean the lower part of the *outside* of the wing, as opposed to the upper portion near the bend and shoulder; and this being the case, the description is inapplicable to the smaller bird, in which the general position of the spots is reversed.

The next sentence to be noticed is, "Crura et pedes pennis restiuntur ad principium digitorum usque, et albis similiter notis sunt aspersa." The thighs of the larger bird are most strongly streaked with buffy white.

The secondary and tertiary quills, of a young example of the larger species, are generally well barred on the inner webs, and their ends are broadly tipped with dull white. This is noted in the description. Again, "Rectrices in exortu et apice albent; in reliqua longitudine obscure ferrugineo tinguntur, et maculis latiusculis fuscis transversim notantur." The tail of immature *nævia* is well barred and white at the bases and tips of the feathers. Not only are the bases of the rectrices white, but the lower row of upper tail-coverts is generally snowy white.

Brisson's description is not a good one, but it applies fairly to the larger species, which Mr. Hume terms "*Aquila clanga.*"

It should be noticed that one of Brisson's synonyms is *Aquila clanga*, Klein. Pallas adopts this term, and quotes Willoughby as the author of it. He also gives *Aquila nævia*, Brisson, as a synonym. It is thus clear that *Aquila nævia* and *Aquila clanga* are synonymous; and if the former term cannot be applied to the larger Spotted Eagle, neither can the latter.

Pallas, like many other old authors, did not apparently feel bound to confine himself to the oldest term in use for a species. For example, he termed the Skylark *Alauda cœlipeta*, using Klein's term, which author he quotes. It is, therefore, plain enough that Pallas, in his *Aquila clanga*, only quoted an old existing term by Klein. In the face of Pallas's synonyms, it is surely indefensible to attempt to separate *clanga* from *nævia*, and the favourite practice should be discontinued. Pallas's description, I may observe, perfectly suits the larger Spotted Eagle; and the pointed reference to the white, so often found on the tarsus, conclusively fixes the species intended.

Let us now consider Latham's description of "The Spotted Eagle"

"Falco maculatus," *Latham.*

His synonyms are:—

Morphno congener, Raii. Syn., p. 7., Will., p. 32, Id. Engl., 63, Geni. Orn. I., t. iv.

Kleiner Fisch Adler, Naturf, viii., s. 54.

Aquila Clanga, Klein, Av., p. 41.

Spotted Eagle, Gen. Syn. I., p 38. Arct. Zool. II., p. 215.

Latham says: "Wings marked with oval white spots, which are larger as they are placed more downwards, and on the greater coverts they occupy almost the whole of the end; the back spotted with pale buff colour."

Now this sentence, and especially the remark that the back is spotted with pale buff colour, most conclusively proves that Latham's Spotted Eagle was the larger species; for, in immature plumage, it *has* oval fulvous spots on the back, but the smaller species, as far as my opportunities of acquiring information go, has invariably a *spotless* back. These back spots, of the immature *nævia*, are very perfect ovals, occupying the greater portion of the feather towards the apex.

Again, Latham says: "Upper tail-coverts white." This is specially the case with the larger species; the upper tail-coverts, or at all events the lower row, are snowy white.

All the rest of his description is perfectly applicable to the larger Spotted Eagle. It is thus clear that Latham's term cannot be applied to the smaller bird; *because it wants the oval spots on the back, to say nothing else.*

Regarding its geographical distribution, Latham observes: "This is found everywhere in Russia and Siberia, and even in Kamtschatcha, and is the most unwarlike of any of the kind; has a plaintive cry, hence called *planga* and *clanga* * * * This is supposed by some to differ in sex from the Rough-footed Eagle. Temminck observes that it is common in Africa, and particularly in Egypt."

The smaller species appears only to be known in Pomerania, so it cannot be the well-known and widely-distributed bird described by Latham. Of course the smaller bird occurs in many parts of Europe, besides North Germany, and ought to be commoner in Southern and Eastern Europe than it is in Germany. It is, like *A. nævia*, a migratory Eagle that goes southward in winter.

Let us now consider Gmelin's two species, FALCO NÆVIUS and FALCO MACULATUS, *vide* his Systema Naturæ.

FALCO NÆVIUS, 49, F. cera pedibusque lanatis luteis, corpore ferrugineo, infra alas albo-maculato.

Aquila nævia, Briss. Orn., p. 122, n. 4.

Petit aigle, Buff. Hist. Nat. des Ois. I., p. 91.

Rough-footed Eagle, Charl. onom., p. 63, n. 6. Lath. Syn. I., 1, p. 37, n. 14.

Stein adler, Frisch, Vög. t. 71.

Habitat in Europa, gliribus præfertim vicitans.

Magnitudo *galli grandis*; longitudo 2 *pedum cum* 7½ *pollicibus*; irides *flavæ*; tectrices *caudae secundariæ albæ*; ungues *nigri*.

FALCO MACULATUS, 50, F. cera pedibusque lanatis luteis, corpore supra ferrugineo; subtus fusco.

Morphno congener, Raj. Av. 7, n. 7, Will. Orn., p. 63.

Spotted Eagle, Latham Syn. I., 1., p. 38, n. 15.

Longitudo *bipedalis* Rostrum *magnum* et ungues *nigri*; irides *cinereæ*; pennæ *scapularum et tectrices alarum apice macula ovali*

albicante insignetæ; dorsi maculis coloribus bubalini; venter *similibus lineis striatus.* Gmel. Syst. Nat., Vol. I., p. 258.

From the synonyms of each it is as clear as possible that Gmelin's Nos. 49 and 50 are one and the same species, and that he was not describing new species when he wrote these brief descriptions, but was compiling from descriptions by older authors. His *Falco nævius* is the *Aquila nævia* of Brisson, whose description he excessively condenses into two lines; but for the synonyms, and the repetition of Brisson's erroneous total length, also of Brisson's expression "magnitudo galli grandis," Gmelin's description is so imperfect that no bird could by its means be recognized.

His *Falco maculatus* is evidently quoted from Latham, not perceiving that it was the same species as No. 49. The longitudinal dimension is Latham's, and I may observe, is about the length of the bird, if not stretched out, but measured as it sits. Gmelin repeats the description of the oval spots on the wings, and of the buff oval spots on the back. This being the case, we may dismiss at once the idea of any connection between *Falco maculatus*, Gmel., and the smaller North German Spotted Eagle.

With regard to Pallas's description of *Aquila clanga*, the synonyms and the description leave no room for doubt as to the species intended; and it would be wasting time to prove that *Aquila clanga*, Pallas, is *Aquila nævia*, Brisson, *Falco nævius*, Gmel., and *Falco maculatus*, Gmel. and Latham. Pallas apparently refers to the bird in a more advanced stage.

When I had written thus far, my friend Mr. Hume kindly sent me Sharpe's catalogue of the *Accipitres*, in which he applies Latham's term "*maculata*" to the lesser European Spotted Eagle. In a foot-note Mr. Sharpe says: "There is so much difference of opinion as to which is the true *F. nævius* of Gmelin that it is best to adopt the title of *A. maculata* for the species."

Against such application I strongly protest, and I have above shewn that the term strictly belongs to the larger Spotted Eagle. Let it be remembered that Mr. Sharpe applies the name of the Kamtschatchan, Siberian and Indian Eagle to the Pomeranian one, and I think few will follow him. It may be interesting as a display of fancy synonymy, but hardly accords with my views of the accuracy desirable in ornithological nomenclature.

Mr. Sharpe gives a long list of synonyms, which he considers belongs to the Pomeranian Eagle, and a few remarks upon them may be useful, should my views be admitted to be correct.

The first synonym Mr. Sharpe gives is—

1.—*L'Aigle tacheté*, Brisson. This term applies only to the larger bird.

2.—*Rough-footed Eagle*, Lath. I have not seen the description, but the old authors, including Pallas, apply the term to the larger species.

3.—*Spotted Eagle*, Latham, is the English term for his *Falco maculatus*.

4.—*Falco maculatus*, Latham, Gen. S. N., p. 258 (1788.) Using the generic term *Aquila*, Latham's term becomes *Aquila maculata*.

Gmelin's *Falco maculatus* is quoted from Latham. The same description, much condensed and in Latin. No one will fail to see that it is clearly applicable only to the young bird of the larger Spotted Eagle. Gmelin, quoting from Brisson, describes the same species as *Falco nævius*. Note the geographical distribution Latham gives of his *Falco maculatus*, even to Kamtschatcha. One of Latham's synonyms is *Aquila clanga*, Klein. Is it not then easy to connect Latham's *F. maculatus* with the larger species, the Asiatic one? Gmelin's *Falco nævius*, I think no one will deny, is not an original description, but is Brisson's one condensed. The synonymy connects Brisson's *Aquila nævia* with *Aquila clanga, Klein.* Two birds equal to one and the same are identical, and *nævius* is *clanga* and *maculatus* is *clanga*. We know that Pallas's *Aquila clanga* is not one originally described, but is a reproduction of Klein's species. In the face of these facts I cannot see that it is possible to give the term *maculatus* to the small Local Eagle, without committing a great mistake. Is it at all likely that the old authors knew, as a rule, that there were two Spotted Eagles? I don't think there is any evidence to shew that any other than the larger and widely distributed bird was known to the old authors.

If Messrs. Sharpe and Dresser apply the term *Aquila maculata* to the Pomeranian Eagle, how about the bird being found all over Asia even to the extreme east? We don't hear of the Pomeranian Eagle in Eastern Asia, but Latham tells us his *Falco maculatus* "is found everywhere in Russia and in Siberia, and even in Kamtschatcha." We know that Siberian birds winter in India; therefore the migratory Pomeranian Eagle is an Indian bird. This is the conclusion to be arrived at if we bestow Latham's term upon the Little Pomeranian Eagle, a conclusion not at all in accordance with Messrs. Sharpe's and Dresser's views.

5.—*Aquila nævia*. This is the fifth synonym Mr. Sharpe gives; and here follows a long list of authors who have misapplied the term, and have, according to Mr. Sharpe, applied it to the lesser bird.

6.—*Aquila melanaetus*, Savign., 1809, was previously (1788) applied to the Golden Eagle.

7.—*Aquila planga*, Bonn et Vieill, 1823. *planga* and *clanga* refer to the Oriental bird.

8.—*Aquila bifasciata*, Brehm. *Vog. Deutschl*, p. 25 (1831 *ex Hornsch nec Gray.*)

The question is, is this correctly given as a synonym by Mr. Sharpe?* As I have noticed (as might be expected) some errors in the synonymy of the catalogue, I am not prepared to pin my faith to this identification, especially as others of Brehm's terms are clearly applicable to the little eagle in question.

9.—*Aquila pomarina*, Brehm, *Vog Deutschl*, p. 27 (1831).

This appears to be a likely term for the little Eagle which is now in search of a name; but I cannot ascertain, with the limited means at my command, whether his other term of *Aquila subnævia* may not be the prior term. The latter clearly, I think, refers to the lesser species; and is a much more suitable term for it than *Aquila maculata*, which is wholly inapplicable. We Indian ornithologists must depend upon European ornithologists to let us know whether *pomarina* or *subnævia* is the correct term, depending upon which was bestowed first.

10.—*Aquila fusca*, Brehm, (1855). This is at all events a modern term, and was applied by Gray and Hardwick (1833) to *Aquila hastata*, not to *Aquila vindhiana* as supposed by some.

11.—*Aquila fulviventris*, Brehm, (1855). May or may not be the lesser bird. The more fulvous bird below is the larger species when immature. The equivalent of this term has been previously applied (1819) to *Haliaetus leucoryphus*.

12.—*Aquila maculata*, Dresser, 1874, is the last synonym and a reproduction of Latham's term. I have said enough about the inapplicability of the term, and need not say more. Our safest course at present is to adopt Brehm's term of *Aquila pomarina* for the Lesser Spotted Eagle. If it should ever be shewn that this is a synonym of the Larger Spotted eagle, then we have Brehm's other term of *Aquila subnævia* to fall back upon.

It will be seen that I am assuming the accuracy of Messrs. Sharpe's and Dresser's statements, that though the European adult bird is very close to *Aquila hastata*, yet there is a marked

* This seems doubtful. In the XIIIth or Supplemental Vol., (published by his son) of Naumann's great (but to most Englishmen too little known) work on the birds of Germany, *Aquila fusca*, *bifasciata* and *nævia*, of Brehm, are all treated as synonyms of "Der grosse Schreiadler," which he calls *clanga*, p. 40. The plates and text leave no doubt that the larger species is here intended. It may be worth noticing that in this same volume, the adult of *A. bifasciata*, Gray, is figured (T. 340) as a 2-year old *heliaca*, *imperialis*, or whatsoever the white scapular-patched species should now be called. Also, that the plates, Nos. 10 and 11, of the lesser "Schreiadler," which he calls *nævia* (Vol. I.) so exactly represent specimens that I possess of *hastata*, that I can hardly believe that they were taken from specimens of another species.—Ed.

difference in the young: the young of *Aquila pomarina* having "the nape-feathers entirely ochraceous buff, forming a patch.*" Such a buff-nuchal patch I have never seen in *Aquila hastata*. It would, however, be interesting to know how many of these young birds, with a buff nuchal patch, have been seen? If only one, I would discard it as a *lusus naturæ*. If two or three are in existence the species is distinct from *hastata;* but Messrs. Sharpe and Dresser at times fail in giving necessary information, and they expect other ornithologists to adopt their conclusions without shewing the reason why. Now it is a sad omission not to let us know whether the buff-nape is a constant distinction or not, and for want of this information I am unable for the present to accept it as a characteristic of the young Pomeranian Eagle. It is only this buff patch in the young bird that prevents the abolition of one of the two species.

I notice that Mr. Sharpe speaks of the *adult* male, *Aquila pomarina*, as having spots. Also of *Aquila hastata* he says: "I have never seen any adult European birds with the small white spots on the least wing-coverts which frequently occur in *A. hastata*. This character appears to me to be probably a sign of the adult plumage, and may perhaps present a character of importance in distinguishing *A. hastata* from *A. nævia*."

In this sentence Mr. Sharpe uses the term *nævia* for the Lesser Spotted Eagle, although we are told *maculata* is to be adopted instead.

Mr. Sharpe uses so many spots for his *adult* eagles that it is clear he does not know, that the mature Spotted Eagle is always *wholly spotless*, no matter whether it be *hastata*, *pomarina*, or *nævia*. The quantity of small white spots on the least coverts about the bend and upper ridge of the wing is very variable, even at the same age. One nestling *hastata* I lately sent to the Norwich Museum had these little spots profusely, while its companion, which I have by me now, has comparatively few.

The Larger Spotted Eagle or true *Aquila nævia* of the old authors and of Gmelin, Mr. Sharpe distinguishes as *Aquila clanga*, Pallas. I think, however, no reason has been shewn why we should depart from the well-known and most appropriate name by which the Spotted Eagle has always been known, and I hope few will follow Mr. Sharpe in this, to my notion, indefensible change of name.

It is the common and well-known bird over almost the whole of the old world, while the Pomeranian Eagle appears to be a

* This is mentioned in Naumann's description, p. 220, "im genick steht ein schön rostgelber fleck," but I can see no trace of this in Pl. 10, where the nape is colored properly as in young *hastata*.—Ed.

very great rarity,* so difficult to obtain that though I have been trying for it for several years I have only succeeded in getting one old rag of a skin. Is it possible that this scarce little Eagle can be the bird which attracted the notice of all the old writers? Are we to believe that they knew† the two Spotted Eagles and were able to discriminate them? I think not, and if so, which Eagle were the old authors most likely to come across, but the common one which is generally distributed? Wherever the lesser one is found there will the other be also found and in greater abundance.

In a recent letter Mr. Gurney gives me particulars regarding two Spotted Eagles shot in Cornwall. Lengths, 27 and 27½ inches, wing of the former, 20 inches, and weight 4lbs. 1 oz. Now it is quite clear to me that neither of these birds were *Aquila pomarina*, but were both the large bird or true *nævia*. I have weighed many examples of this species, and generally found the female to weigh from 4 to 4½lbs. An average *A. hastata*, which is the same size as *Aquila pomarina*, weighs from 2½ to 2¾lbs. If this large species extends even to England, why should it not occur much more commonly in Poland and Germany? Mr. Sharpe says, "South-Eastern Europe, very rarely extending into Poland and Germany." This is vague, and I am afraid far from accurate. If there are suitable marshes in Poland and Germany, it would not be easy to keep *Aquila nævia* out of these countries except by exterminating the bird.‡

My impression is, that if I were to go and shoot in either of these countries I should get ten of *nævia* to one of *pomarina*.

Indian ornithologists will be glad when the value of the buff-nuchal patch of young *A pomarina* is determined; for if it be not proved a constant fact, we shall lose our Indian *Aquila hastata*.

I may here notice that in the list of synonyms of *Aquila hastata*, Less., 1834, the last is *Aquila nævia*, Brooks, S F., I., p. 293 (1873).

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* It is not certain that it is really so rare. Mr. Brooks will remember when we both thought *hastata* to be so rare as to be almost a myth, but as soon as we had clearly discriminated it, we found it common enough, and received it from fifty localities from Abbotabad to Calcutta. Naumann speaks of having met with more of the smaller than the larger species, and in another place he says, "that the larger Eagle appears to occur in almost the same regions as the lesser one, may depend chiefly on the variability of both species. This will hardly be cleared up until people learn to discriminate the two species better. In some localities the larger, in others the lesser, is the rarest." Naumann clearly did not look upon the lesser Eagle as *rare*.—Ed.

† Some of the older writers certainly did recognize that there were two species.

‡ Naumann, however, whose surpassing practical knowledge is indisputable, says that in Pomerania and Holstein the larger species is rare.—Ed.

This is a mistake. I identified *Aquila hastata* with *Aquila pomarina*, but never with *Aquila nævia*, which I have always regarded as the larger bird. I hope I shall never again be accused of consenting to the application of the term *nævia* to the Lesser Spotted Eagle.

True *nævia*, or the Larger Spotted Eagle, is the *subspecies* (!) *Aquila clanga*, Pall., according to Mr. Sharpe. In the list of synonyms I notice that many of the old terms belonging to this well-known bird are diverted, and the synonymy, as a whole, appears to me deficient.

The adult bird is described as being similar to the Lesser Spotted Eagle, but very much larger. Here again we must accept an adult bird with spots.

The description of the young male is, I think, susceptible of improvement. The spots on the wing-coverts are described as "oval," but the buff spots on the lower back and rump are "triangular,"—a *fac simile* of such a triangle would be instructive. The fact is the spots are invariably pure ovals.

W. E. B.

Baza sumatrensis, *Lafr.?*

I received almost simultaneously from Mr. Mandelli (a supposed female obtained in Native Sikhim), and from my curator Mr. Davison (an ascertained male obtained in the extreme south of the Tenasserim Provinces) two specimens of a *Baza*, which, although disagreeing in several important respects with my friend Mr. R. Bowdler Sharpe's diagnosis and description of that species (*Accipitres*, pp. 352 to 357), belong, I am inclined to believe, to Lafresnaye's *sumatrensis*.

The main points of divergence are, 1*st*, size. The male, measured in the flesh, has the wing 13·1. The supposed female has the wing 13·75—both have the crest fully 3 inches long, black, tipped with white; 2*nd*, in the throat stripe, both having a conspicuous chin and throat stripe, as in *magnirostris*; 3*rd*, colour, both being much more brightly colored, than Mr. Sharpe's figure (Pl. XI. *op. cit.*), the male having the bands on the lower surface, intermediate in colour between those of *erythrothorax* and *magnirostris*, (as shown in Mr. Sharpe's Pl. X.) and the bands in the female, being intermediate in colour, between those of *magnirostris* and *sumatrensis*, as shown in the figures referred to.

My idea is, that Mr. Sharpe's young female was probably a young male, that my female is a considerably older bird, and my male a *very much* older one, and that in this species the

throat stripe appears with age (it is much less conspicuous and lighter in colour in the female than the male), and that with age, also, the bands on the lower surface deepen in colour and spread further up on to the upper breast.

So little is known apparently of this species that even if incorrect my hypothesis may be pardoned.

One thing is certain, if not *sumatrensis*, these specimens belong to a new and unknown species,* which in that case may aptly stand as *Baza incognita*, nobis.

The following are the dimensions and colours of the soft parts (recorded in the flesh) of the male, which I take to be adult:—

Length, 18·5; expanse, 40·0; tail, 9·62; wing, 13·12; tarsus, 1·6; bill from gape, 1·35; straight from nostril to point, 0·9; midtoe to root of claw, 1·53; its claw straight from root to point, 0·66. Weight 16 oz. The double teeth in the upper mandible very sharply cut and conspicuous. The 4th and 5th quills the longest; the 3rd 0·25, the 2nd 1·15, and the 1st 2·75, shorter. All the first five quills distinctly emarginate on the inner web, the 2nd to the 6th emarginate on the outer webs; exterior tail feathers 0·5 shorter than central tail-feathers; penultimate pair about 0·22 shorter than the central ones.

The tail has four dark bands, the 4th hidden by the upper tail-coverts. The terminal band is 1·65, the 2nd 0·76 and the last visible one 0·62 broad. The first interspace is 1·15 and the 2nd 0·67 broad.

The legs and feet were white, slightly tinged with blue; the irides bright yellow; the claws, upper and tip of lower mandible and cere blackish; the base of the lower mandible paler.

The forehead and a broad but inconspicuous band from the latter over the eyes to the nape pale whitey brown; the shafts darker brown; the crown, occiput, nape and sides of the neck rufescent buff, the feathers broadly centered with dark brown; the crest black, narrowly and obsoletely barred, the feathers with pure white tips; the interscapulary regions and

* I was at one time inclined to identify these birds with *Lophastur Jerdoni*, Blyth (J. A. S. B., XI., 464 and XV. 4) from Malacca, and it is still *possible* that my birds may pertain to this species; but he gives the wing at only 12·5, the crest as only 2·25 long and dull black; whereas in our birds the wings are 13·1 (male) and 13·7 (female), the crest 3 inches long, glossy black, and with a most conspicuous white tip, which would never have escaped Blyth.

Mr. Sharpe, adopting a suggestion of Blyth's, made when the latter had probably never seen a skin or figure of *B. Reinwardti*, has identified *Jerdoni* with this latter, but I cannot, after carefully perusing the original description, concur in this view, since, in my opinion, the size of wing and general description point clearly to *magnirostris*. Salvadori (*Uccelli di Borneo*, p. 11,) says that he believes *Jerdoni* and *sumatrensis* to be identical, but the absence of the pale tipping to the crest feathers of *Jerdoni* in both adult and young, seems to me to preclude this identification.

scapulars are a rich dark brown, with a decided purplish gloss. All the feathers with an excessively narrow marginal rufescent or fulvous fringe; on raising the feathers the rich brown with the purple gloss (which has I may mention in some lights a greenish tinge) is found to be confined to a broad terminal band; the basal portion of the feathers are a somewhat pale drab brown; the smallest scapulars are the richest and warmest in coloring, the longest the dullest; the rump and upper tail-coverts much about the same tint as the longer scapulars. The tail a rather pale drab brown with one subterminal brownish black band, and three other moderately dark brown bands, the third almost entirely hidden by the upper tail-coverts; the quills have the outer webs brown, banded obscurely but broadly with darker brown, the inner web a rather dark drab brown at the tips and white at the bases with several broad black or blackish brown transverse bands; the primaries, especially the earlier ones, are considerably darker on the outer webs and have a greyish tinge on the interspaces of these webs; the tertiaries are much paler brown; the lesser coverts along the ulna and at the carpal joint are almost black; the greater coverts are about the same color as the ground of the tail; the median coverts somewhat darker; all the quills are white tipped, the secondaries most conspicuously so, and a few of the median coverts are also tipped in the same way. There is more or less of a purple gloss over the whole upper surface of the wings and tail.

The lores and an inconspicuous band under the eye and the base of the ear-coverts grey, the feathers darker shafted; the rest of the ear-coverts and the lateral portions of the throat fulvous, the feathers more or less dark shafted; chin and throat pure white, or with the faintest yellowish tinge, with a narrow but very conspicuous black central stripe; upper breast mingled white, and a pale, somewhat brownish, rufous; lower breast, sides, flanks, axillaries and abdomen white, with broad regular transverse brownish rufous bands darkest on the sides and flanks; vent and lower tail-coverts white, with a dingy yellowish tinge, with here and there a trace of a transverse rufous band; the wing-lining is yellowish white, with rufous bars and mottlings; the lower surface of the quills are, at the tips, pale French grey, with black transverse bands; higher up they are white with pale greyish brown bands; the lower surface of the tail greyish white, the dark bands showing through more conspicuously on the outer webs and less so on the inner webs except of the four central tail-feathers. All the tail feathers are tipped with drab brown, paling at the extreme tip almost to white. This tipping is about a quarter of an inch wide on the central and three-quarters of an inch on the exterior tail feathers.

The supposed female was sent to me by Mr. Mandelli as *Spizaetus Lathami* of Tickell. He was doubtless led to this conclusion by its long Spizaetus-like crest, but I can hardly think that Tickell could have overlooked the short, half-bare tarsi, feeble feet and doubly toothed bill, and called this bird a *Spizaetus*. Still as it has now been obtained in Native Sikhim, a specimen *might* have strayed to the hilly parts of Chota Nagpore, and as Colonel Tickell's specimens are now understood to be about to be made available for examination, it will be interesting to ascertain whether Mr. Mandelli's idea has any foundation in fact.

The following are the measurements from the dry skin of this supposed female :—

Length, 22·0; wing, 13·75; tail, 10·25; tarsus, 1·7; bill from gape, 1·3; from nostril straight to point, 1·0; midtoe to root of claw, 1·7; its claw straight from root to point, 0·68. The double teeth in the upper mandible not so sharp or quite so marked as in the male; the quills as in the male, but the 3rd 0·4, the 2nd 1·2 and the 1st 3·2 shorter than the 4th and 5th. Tail much as in the male, but the two central tail-feathers are not *quite* fully grown, and are still a trifle shorter than those next to them. The tail with four bands as in the male, the terminal one 1·77, the next 0·8, and the last visible one 0·63, broad; the first interspace 1·1 and the 2nd 0·75 broad.

The supposed female is as a whole very similar to the male, but the forehead, and in fact the whole of the head, nape, and sides of the neck, are more rufescent and have less conspicuous dark brown central stripes; the mantle is a much less dark brown; there is less of the purple gloss, and the marginal fringes of the feathers are broader and more rufous; there is no grey about the cheeks, which are pale fulvous fawn; the chin and throat too are fulvous white, and the throat stripe is brown instead of black, as in the male.

The mottled portion of the breast extends lower down than in the male; the barring on the rest of the lower surface is paler and more purely rufous than in the male; the quills and tail, both above and below, are almost precisely similar in the two specimens, but all the coverts in the female are lighter and more rufescent, and all are more or less distinctly margined with white at the tips.

If these birds are really *sumatrensis*, the occurrence of one of them in Native Sikhim is well worthy of record, and if, on the other hand, the species be new, no apology for this notice is necessary.

A. O. H.

A Second List of the Birds of Tenasserim.*

From November last year to the end of March my establishment have been working under Mr. Davison in the southern portion of the Tenasserim provinces.

I do not think it necessary to furnish a map of the area worked, as this is comparatively small and may be at once defined as a somewhat triangular tract, bounded on the north by an imaginary line drawn east and west through the province, a little north of Mergui, east by the hills dividing Tenasserim from Siam, west by the sea, and on the south by the Pakchan Estuary which forms the southern boundary alike of the province and of the British Empire in this Peninsular.

But though the area explored was small, and the time occupied limited, the results have been sufficiently important to require early record.

To my list of the Tenasserim ornis, already published, and which included 431 species, 79 have been added, raising the total to 510 and of the species included in my former list on the authority of† others, but not at that time obtained by us, 28 have now been secured.

Of the 79 species now added to our list, few are new to science, but amongst these latter are to be numbered one of the loveliest of that most beautiful group, the *Pittidæ* and a most remarkable *Ibis*.

The rest are mostly birds already known to occur at Malacca, and are important as proving the extension northwards of the purely Malayan fauna as far at any rate as Mergui, while some (e.g. *Berenicornis comatus*) have hitherto apparently only been recorded from Sumatra or other Islands of the Archipelago.

Another year at least will be occupied in completing our preliminary exploration of the province exclusive of the Mergui Archipelago, but as soon as the work is finished I shall endeavour to present our readers with a complete list of the Avifauna of Tenasserim, with some account of the physical features of the province, the relations of its ornis to those of surrounding regions, and full descriptions and measurements of all species not included in Jerdon's Birds of India.

For the present I must content myself with the two following lists, and with a very few supplementary remarks.

Before proceeding further I desire to record the great obligations I am under to Count Salvadori, without the aid of whose invaluable work on the Birds of Borneo I should never

* For the first list see Vol. II., p. 407, *et. seq.*

† Printed in italics.

have been able, in this brief space, to work out with certainty the numerous forms, previously unknown to me, which are included in the following :—

List of Birds now to be added to the ornis of Tenasserim.

57 *ter.*—Macheiramphus alcinus, *Westerm. Malewoon ;* only one specimen seen and obtained, (*vide supra*, p. 269).

58.—Baza lophotes, *Cur. Mergui, Malewoon* ; not uncommon in December and January throughout the south of Tenasserim.

58 *bis.*—Baza sumatrensis, *Lafres.* Single specimen, (*vide supra*, p. 312).

83.—Hirundo javanica, *Sparrm.* (H. domicola, *Jerd.*) ; rare.

85.—Hirundo erythropygia, *Sykes. Pakchan, Malewoon ;* not uncommon. The smaller race identical with specimens breeding in the plains of India. Those from the hilly parts of Northern Tenasserim were identical with the larger Himalayan race.

95 *bis.*—Chætura coracina, *S. Müll. Pakchan* ; very rare.

103 *quat.*—Collocalia spodiopygia, *Peale. Mergui, Pakchan.* Identical with specimens from the Andamans. With the conspicuous whitey brown rump ; perfectly distinct from Linchi, *Horsf.*, unicolor *Jerd.*, and innominata, *nobis.*

104 *bis.*—Dendrochelidon comata, *Tem.* Common in suitable localities throughout the extreme south of Tenasserim.

104 ter.—Dendrochelidon klecho, *Horsf. Bankasoon, Pakchan ;* rare.

107.—Caprimulgus indicus, *Lath?* Single specimen, near Mergui.*

115 *bis.*—Harpactes Duvaucelii, *Tem.* Common in Southern Tenasserim. These are not *orrophæus*, Cab. and Heine, but have the upper tail-coverts red, and not colored like the back.

131 *bis.*—Halcyon concretus, *Tem. Malewoon ;* rare.

135 *ter.*—Alcedo euryzona, *Tem. Bankasoon ;* rare.

145 *quat.*—Anorrhinus galeritus, *Tem. Bankasoon ;* rare.

145 *quint.*—Berenicornis comatus, *Raffl. Bankasoon ;* not rare, but very wary.

146 *quint.*—Rhinoplax scutatus, *Bodd. Bankasoon ;* rare and almost unprocurable being persistently hunted by the natives

* Although I record this as *indicus*, I believe that it will probably prove distinct. It is of the same type—tarsi feathered, all but the central tail-feathers in the male with a conspicuous white subterminal band ; a white spot on the inner webs of the first four primaries, and a buffy white spot on the outer webs of the 2nd to the 4th, but the bird is somewhat smaller and yet has a wing larger than average (7·9). The tail-feathers are much narrower, and the white spot on the 1st primary smaller. Then the bird is altogether more richly colored, the central head stripe broader and more strongly marked, and the whole of the wings are much more rufous.

If distinct it may stand as *C. innominata*. It is too small for *Jotaka* and (to judge from Wolf's figures in the Faun-Japon.) somewhat differently colored also.

for the heads, for which there is a great demand in Siam, Japan and China for carving.

165 *quint.*—Meiglyptes tukki, *Less.* (M. marginatus, *Reinw.*) *Bankasoon;* rare.

169 *quat.*—Thriponax javensis, *Less. Bankasoon;* not very uncommon.

176 *bis.*—Lepocestes porphyromelas, *Boie.* Not uncommon throughout the extreme south of Tenasserim.

178 *bis.*—Micropternus badius,* *Raffl. Pakchan;* rare.

185 *bis.*—Gauropicoides Rafflesi, *Vig. Bankasoon;* not common.

190 *bis.*—Caloramphus Hayii, *Gr. Malewoon;* rare.

211 *quat.*—Chrysococcyx basalis, *Horsf. Moulmein;* one specimen only seen and obtained. It is not adult and the identification may therefore not be correct, but it is neither *smaragdinus,* Bly., or *xanthorhynchus,* Horsf.

215 *bis.*—Rhodopytes Diardi, *Less. Malewoon, Bankasoon,* &c.; not rare.

216 *quint.*—Poliococcyx sumatranus, *Raffl.* Common throughout the south of Tenasserim.

224 *ter.*—Arachnothera chrysogenys, *Tem. Mergui;* not common.

224 *quat.*—Hypogramma nuchalis, *Blyth.* Rare.

231 *ter.*—Chalcostetha insignis, *Jard? Patæ Island;* single specimen.†

232 *quat.*—Anthreptes simplex, *Mül. Tenasserim Town, Malewoon;* rare.

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* These are either *badius*, or belong to a new species.. They do not agree over well with any of the descriptions I can find, or with specimens from the Straits, and not at all with Malherbe's figures or dimensions. They certainly do not belong to *phaioceps, Bly.*, or *gularis*, Jerd. But there is so much confusion as to the members of this little group, and the statements of authors are so contradictory as to *badius, badiosus,* &c., that until I have time to compare a really large series of the Indian, Malayan, and Insular races, I cannot pretend to assert that these Southern Tenasserim birds are positively *badius*, Raff.

† If I have erred in assigning the single specimen (a female) obtained, to this species, I hope the error may be pardoned. No description of the female I believe exists, except in Sch. and Müll, V. N. G. N. O. B, a work not accessible to me. Even of the male I failed to find reliable dimensions. Jardine in the Naturalist's library, XIII., p. 263, gives the length at 3·6, while Mr. Gould, P. Z. S., p. 663, gives it as 14·75!

My specimen is, I should say, clearly a *chalcostetha* as defined by Cabanis, with much graduated tail, and in size and shape both of bird and bill it agrees well with Temminck's figure of the male Pl. Col. 138, p. 3.

The following are the dimensions recorded in the flesh of my single female specimen:—

Length, 5·1; expanse, 7·25; tail from vent, 1·82; wing, 2·25; tarsus, 0·55; bill from gape, 0·82; at front, straight, 0·77; weight, 0·3 oz.

The irides were very dark brown; the bill, legs, feet and claws black.

The lores, cheeks and ear-coverts brownish grey; a black line from the gape to the anterior angle of the eye, and a minute black spot at the posterior angle; a narrow white line surrounds the eye, except where interrupted by this black line and spot; the forehead, crown and occiput brown, each feather margined with grey, so as to produce a scale-like appearance; upper parts dark brown, all the feathers margined and suffused towards the margins with dull olive green, which is the only

232 *quint.*—Anthreptes ?* *Pabyai.* Single specimen.
240 *quint.*—Prionochilus maculatus, *Tem.* Not rare in the extreme south.
240 *sex.*—Prionochilus modestus, *Hume.* (*Supra.* p. 298). Common throughout the extreme south of the province.
266.—Hyloterpe grisola, *Blyth.* (Hylocaris luscinia, *S. Müll*). *Kolon Island, Mergui;* rare.
273 *bis.*—Pericrocotus igneus, *Blyth. Pakchan,* &c.; not very rare.
273 *quat.*—Pericrocotus ardens,† *Boie. Pakchan;* not rare.
277 *ter.*—Pericrocotus cinereus, *Lafresn. Mergui* and southwards to the Pakchan Estuary; not uncommon.

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colour visible until the feathers are disturbed; quills and their greater coverts dark hair brown, margined with olivaceous; longer upper tail-coverts black or blackish, margined with olive green; tail black, all but the central feathers tipped white, the external pair broadly (for 0·32), and the succeeding ones less and less broadly; chin and throat greyish white; upper breast very pale grey brown; lower breast and rest of lower parts, dull, rather pale greenish or olivaceous yellow, purest along the median line and most tinged with olive at the sides; lower tail-coverts nearly white, but with the faintest possible tinge of yellow, and the feathers much disintegrated; wing lining white, tinged along the carpal joint with pale primrose.

If this should prove to belong to a new species it may stand as *Chalcostetha insperata*, nobis.

* I have no idea what species this female belongs to. It is clearly, I think, an *Anthreptes*, and it appears to me to belong to an undescribed species. In general coloring it is very like *A. simplex*, Müller, except in wanting the frontal band, but it is very much smaller and I should say did not weigh half what that species does. I have no particular knowledge of this group myself, but I have compared this specimen with females of the following species:—*asiatica, lotenia. flammaxillaris, pectoralis, simplex, hypogrammica, zeylonica, minima, brasiliana, malaccensis,* and *singalensis*, and it is clearly not an *Æthopyga*. It seems to me probable that the species is new. The following are the dimensions, &c., recorded in the flesh:—Length, 4·75; expanse, 7·0; tail, 1·75; wing, 2·25; tarsus, 0·5; bill from gape; 0·6; at front, 0·5; weight, 0·27 oz. The bill was darkish horny brown; the irides lake red; the legs, feet, and claws pale reddish green; the entire upper surface is a moderately bright yellowish olive green; the quills dark hair brown margined and suffused on the outer webs with the same color as the back, but slightly yellower; the entire tail feathers olive yellow with a brownish tinge in some lights on the median parts of the feathers; lores dusky greenish; ear-coverts pale greyish green; chin and throat white with a greenish tinge; rest of lower parts pale green with a yellowish tinge down the centre of the breast and abdomen, on the vent and lower tail-coverts; wing lining and axillaries pure white, the latter tinged at the tips, and the edge of the wing at the carpal joint colored with pale gamboge; lower surface of quills pale hair brown; the inner margins of the inner webs silky white; lower surface of tail-feathers dull olive yellow; the 4th, 5th and 6th quills are sub-equal and longest, the 3rd is slightly shorter, the 2nd is 0·3, and the 1st is 1·0 shorter; tail even, except the outermost pair, which are 1·05 shorter than the rest. If new "*xanthoe hlora.*"

† Though I have recorded this species as *P. ardens* the dimensions exceed somewhat those given by Salvadori. (Birds of Borneo, p. 145.)

Even if not the true *ardens* it belongs to the same minimum sub-division of the genus, and is, I should think barely separable from *ardens*. There are two divisions of these, red, pink and orange *Pericrocoti;* one in which there is no second patch of bright color, on the outer webs of the later secondaries towards their tips and the other in which this second patch appears. In the first group we have *brevirostris, solaris, miniatus* and its diminutive *igneus*. In the second we have *speciosus, xanthogaster, flammeus, elegans, andamanensis* and *ardens*. In *speciosus* and *elegans* the red patch on the *primaries* extends to the outer web of the 3rd primary, but *elegans* is a good deal smaller, and as a rule has only the outer webs of the central tail-feathers black. In *flammeus* the red on the primaries only extends to the 5th. In *andamanensis*, and this present bird which I give as *ardens* it extends to the 4th: but this is a somewhat smaller bird than *andamanensis*, the wings only measuring

280 *bis*.—Buchanga leucophæus, *Vieil.* *Bopain*; rare.

280 *ter*.—Buchanga cinerascens, *Blyth.* Tenasserim Town and *Malewoon*; not common.

280 *quat*.—Buchanga leucogenys, *Walden.* Very common throughout the whole of the southern portion of the Tenasserim province.

282 *bis*.—Chaptia malayensis, *Hay.* *Bankasoon, Pakchan*; not rare.

289 *ter*.—Philentoma pyrrhopterum, *Tem.* *Bankasoon, Malewoon*; rather rare.

296.—Hemichelidon sibiricus, *Gm.* Not uncommon in the extreme south of the province.

344 *ter*.—Brachyurus cæruleus,* *Raffl.*? Base of the hills dividing Siam and Tenasserim. Not very rare.

346 *bis*.—Brachyurus Gurneyi, *Hume.* (*Supra*. p. 296). Common at foot of the hills about the southern extremity of Tenasserim.

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from 3·4 to 3·6 against 3·5 to 3·75 in *andamanensis*, and the color is perhaps slightly different. A fine male measured in the flesh was only 7·5 long; a similar male of *andamanensis* was an inch longer; moreover all these Southern Tenasserim specimens agree with *elegans* and *ardens* in having only one web of the central tail-feathers black; but then Salvadori gives the wing of *ardens* at only 3·17. Lord Walden (*Ibis* 1872, p. 372) gives the wing of *ardens* at 3·18, but in the *Ibis* for 1873, p. 310, he gives the wing of one adult male from Sumatra at 3·5. Accepting this latter dimension my birds agree better with *ardens* than any other species. They have the red on the wing differently arranged from *speciosus*, *elegans* and *flammeus*, and they are smaller than and differ in the amount of black on the tail from *andamanensis*, and appear to agree except in being slightly larger in every respects with *ardens*. If distinct and *new*, *flammifer*, nobis.

* I am by no means certain that this is true *cæruleus*, and not a nearly allied representive species.

I have been unable to find any really full and satisfactory description, but I have consulted Schlegel's Muséum Des Pays Bas and his Ois. Ind. Neerland in the latter of which three figures are given of this species, also Temminck's figure (217) and description in the Pl. Col., also Raffles' original description in the Trans. Lin. Soc., XIII., 301., as also the brief abstract descriptions given by Bonaparte (Consp. Gen. Av., 253) and Elliot (*Ibis*, 1870, 412).

So far as I can make out our bird is in every way larger; length, 11·62; wing, 6·37; tarsus, 2·2; bill at front, 1·55; against a wing of 5·85; a tarsus of 2·05; and a bill at front of 1·3 in the Sumatran bird.

Standing alone this difference of size would not have attracted my attention, but if the descriptions above referred to are correct, then there is a very marked difference in the coloration of the head. In the first place, there is a marked black stripe through the lores; in the second place, the chin and upper part of the throat is white, faintly tinged with grey; in the third place, the forehead as far back as the middle of the eye the very broad supercilium continued backward to the black collar, the cheeks, ear-coverts and sides of the neck in front of the black eye stripe are a glaucous greenish grey; all the feathers of the forehead and the supercilium as far back as a quarter of an inch behind the eye, are narrowly margined with black. The rest of the bird answers well enough to Schlegel's description, but the delicate glaucous grey of the head, with the faint greenish metallic sheen on the forehead and supercilium, produce an effect as unlike any of Schlegel's figures, and *a fortiori* Temminck's, as it is possible to conceive. Should this species prove distinct it should stand as *B. Davisoni*, nobis.

Whether distinct or not its occurrence in the hills, dividing Tenasserim and Siam, is a matter of no little interest.

Davison only succeeded in shooting two specimens, both adult males, and both precisely similar.

391.—Stachyris nigriceps, *Hodgs.* *Tenasserim Town;* rare; a single specimen obtained.

396 *bis.*—Timalia erythroptera,* *Bly.* Common at the southern extremity of Tenasserim.

396 *ter.*—Malacopteron majus, *Bly.* *Pakchan*; rare.

396 *ter* A.—Malacopteron ferruginosum, *Bly.* *Pakchan, Malewoon;* not common.

396 *ter* B.—Malacopteron olivaceum, *Bly.* Very common about the southern portion of the province.

396 *quat.*—Drymocataphus nigricapitatus, *Eyton.* *Malewoon, &c.;* rare. These are the true *nigricapitatus*, with the sides of the head grey, spotted and lined with white.

447 *ter.*—Hypsipetes malaccensis, *Bly.* *Pakchan;* not uncommon.

451 *quat* A.—Criniger tristis, *Bly.* (*Ibis*, 1865, p. 47). *Bankasoon, Pakchan;* not rare.

451 *quint.*—Tricholestes minutus, *Hartl.* Common throughout the extreme south of the province.

452 *sex.*—Ixos analis, *Horsf.* *Very* common throughout the southern portions of the province.

452 *sept.*—Ixos plumosus, *Blyth.* Common.

452 *oct.*—Ixos brunneus,† *Blyth.* Common.

452 *nov.*—Ixos pusillus, *Salvad.* *Pakchan;* rare.

466 *ter.*—Phyllornis cyanopogon, *Tem.* *Bankasoon;* rather rare.

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* Count Salvadori, "Uccelli di Borneo," p. 214, speaking of this species, remarks that he is convinced that two supposed species, the one with the whole head and neck grey and the back also grey and tinged with olive, and the other with the crown, occiput, nape, and back rufescent chesnut (or rather as I should say rufescent olive) are merely different sexes of the same species—the former being the males, the latter the females. The latter, the alleged females, were described by Blyth, J. A. S. B., XI., p. 791, under the name of *Erythroptera* as follows:—"Length, 5·25; wing, 2·25; tail, 2·0; its outermost feathers 0·75 shorter than the middle ones; bill to forehead, 0·62; to gape, 0·75; tarsi a little exceeding, 0·75. Upper parts rufous olive brown, darker on the head; the wings bright rufo-ferruginous; forehead, sides of head, throat, foreneck, and breast ash colour, becoming paler towards the belly; flanks pale fulvous brown; bill dusky; legs apparently yellowish." The former, the supposed male, was described by Blyth, *Ibis*, 1865, p. 46, under the name of *bicolor* as follows:—"Like *T. erythroptera*, nobis, but dark ashy with rufous mantle wings and tail." Salvadori himself further describes the male as follows:—"Head, neck, all round, and breast leaden ashy; the back on the other hand and rump concolorous, tinged with olive; the abdomen grey, slightly tinged with olive; bill horny black; feet brown; irides red. In fresh specimens the skin of the head and neck blue." Of the supposed female he says: "Similar to the male but with back rufescent chesnut, tinged with olive, as are the nape and occiput."

Now I cannot think that the supposed males of Salvadori really, as he says, belong to the same species as those described by Blyth as *erythroptera*. We obtained 13 specimens, two of which are not sexed; of the remainder six are males and five females, and apparently all adults; all agree perfectly and absolutely with Blyth's original description. Not one of them shew any tendency to approach Blyth's *bicolor*, or the fuller description of this species given by Salvadori. It is very probable that both species occur in the Malay Peninsula, and both may occur in Borneo (but Salvadori only appears to have got males) but that the two species are distinct our large series, in my opinion, abundantly proves.

† I notice that Count Salvadori, Birds of Borneo, pp. 198, 199, places *Ixus plumosus*, Blyth, as the male, and *I. brunneus*, Blyth, as the female of the same species.

473 *bis.*—Oriolus xanthonotus, *Horsf.* *Pakchan;* not common.
563.—Reguloides occipitalis, *Jerd.* Common from August to February in Southern Tenasserim.
587 *bis.*—Enicurus ruficapillus, *Tem.* *Pakchan, &c.;* not common.
593 *quat.*—Budytes flava, *Lin.* *Mergui, Tenasserim;* common.
601.—Corydalla striolata, *Bly.* *Mergui;* rare; single specimen obtained.
668 *ter.*—Platylophus malaccensis, *Cab.* Not uncommon towards the base of the hills in the southern extremity of the province.
688 Temenuchus malabaricus,* *Gm.* *Mergui;* rare.
701 *bis.*—Munia leucogastra, *Blyth.* Common at the southern extremity of the province.
703 *quat.*—Erythrura prasina, *Sparrm.* Common towards the extreme south of Tenasserim.
774 *bis.*—Osmotreron vernans, *Lin.* Common.
797 *ter.*—Geopelia striata, *Lin.* *Pakchan;* common, but only there.
831.—Excalfactoria chinensis, *Lin.* *Pakchan;* not common.
848.—Ægialitis cantianus, *Lath.* *Mergui; not common.*
882.—Tringa subarquata, *Güld.* *Mergui.*
884.—Tringa minuta, *Leisl.* *Mergui;* not very common, appear to me to be true *minuta*, but further comparison is needed.
923.—Ardea cinerea, *Lin.* *Pakchan;* not common.
928 *bis.*—Demiegretta sacra, *Gmel.* *Mergui;* not plentiful.
942 *bis.*—Geronticus Davisoni, *Hume.* *Pakchan;* not rare, but very wary (*supra*, p. 300.)
980.—Xema brunneicephala, *Jerd.* Not uncommon.
983.—Gelochelidon anglicus, *Mont.* *Mergui:* rare.

Blyth described the two species, J. A. S. B., XIV., pp. 567 and 568, and his description of *brunneus* omits the main difference, *viz.* that of size. I have examined the types, and I find that *plumosus* differs in having the coverts and the quills and rectrices very decidedly margined with yellowish olive green, in being everywhere greener above, in being larger. (Length, 7·75 to 8 against 7 to 7·3 in *brunneus*, and wing 3·25 to 3·5 against 3·0 to 3·3 in *brunneus*), in having the shafts of the ear-coverts more conspicuously pale than *brunneus*, and in having the chin and throat more albescent and the entire lower surface a purer brown. The type specimens are old and faded, but I have now a good series, six of each sex of *brunneus*, from Tenasserim, as also a dozen (all but one however males) of *plumosus*, from the same locality, and their identity with the types and the distinctness of these is, to my mind, indubitable. I may add that I have also *Iros* (*Pycnonotus*) *pusillus*, Salvad., op. cit. p. 200, from the extreme south of Tenasserim, a perfectly good species, much smaller than either of the preceding, with a comparatively much smaller bill. With good specimens I cannot understand any confusion between *plumosus* and *brunneus*, but even with the worst specimens the longer, much darker bill of *plumosus* more rapidly compressed immediately beyond the nostrils, ought to serve to distinguish the two.

Whether either of these three species is *simplex* of Lesson, Revue. Zool., 1839, p. 167, it seems quite impossible to determine.

* These *Temenuchi* are true *malabaricus*, identical with continental Indian specimens and conspicuously different from the race or species from Northern Tenasserim, which I called *leucopterus*. (Stray Feathers, Vol. II., p. 480, note.)

989. —Pelicanopus Bergii, *Licht. Mergui, &c.;* not rare; identical I think with birds from Muscat, the Mekran Coast, Sindh, Bombay, the Laccadives, the Malabar Coast, and the mouths of the Hooghly.

Next I subjoin a list of those species which, though entered (*in italics*) in my first list, had not been actually procured by us when this latter was printed, but of which we have secured specimens during this past cold season.

Of the birds herein noted I need only remark that Mr. Davison is probably the first European who has ever seen the great Argus in large numbers wild, and that though he failed to obtain the eggs, he succeeded in capturing chicks apparently not above a day old.

40.—Pandion haliaëtus, *Lin.*
43.—Cuncuma leucogaster, *Gm.*
48 *bis.*—Butastur indicus, *Gm.*
54.—Circus æruginosus, *Lin.*
74.—Ephialtes pennatus, *Hodgs.*
75 *quint.*—Ephialtes Lempiji, *Horsf.*
118.—Merops philippinus, *Lin.* (M. Daudinii, *Cuv*).
126.—Eurystomus orientalis, *Lin.*
128.—Pelargopsis amauroptera, *Pears.*
165 *ter.*—Meiglyptes tristis, *Horsf.*
173 *ter.*—Chrysophlegma puniceus, *Horsf.*
173 *quat.*—Chrysophlegma malaccensis,* *Lath.*
203.—Cuculus micropterus, *Gould.*
216 *ter.*—Zanclostomus javanicus, *Horsf.*
218.—Centrococcyx bengalensis, *Gm.*
289.—Tchitrea affinis, *Hay.*
449 *bis.*—Trachycomus ochrocephalus, *Gm.* Very common throughout the southern extremity of the province.
451 *quat.*—Criniger phaiocephalus, *Hartl.* Rather rare.
468 *bis.*—Jora Lafresnayi, *Hartl.*
532.—Prinia flaviventris, *Deless. Malewoon;* rare.
803 *ter.*—Argus giganteus, *Tem.* Not rare in the hills.
809 *bis.*—Euplocamus Vieilloti, *G. R. Gr.* Common in the hills.
831 *ter.*—Rollulus roulroul, *Scop.* Not rare at the extreme south of the province.

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* I note that Dr. Sclater remarks, (P. Z. S., 1863, p. 211,) when writing of *Venilia* (*Callolophus*) *malaccensis* that "Malherbe figures the present bird (*Picidæ, II., Pl.* 76) but calls it wrongly *miniata.*" This is, I think, a mistake. Malherbe figures the back as red (not as greenish as in *malaccensis*) and in his description, (*p.* 117), says, "le dos est d'un rouge vif, ondulé de rouge blanchâtre"

On the other hand, Malherbe figures the hinder part of the crest as yellow, whereas in the Javan birds the *whole* crest, as well as the back, is said by Dr. Sclater to be red. I, however, have seen a specimen bought at Singapore (but brought probably from some of the Islands) corresponding in all respects with Malherbe's figure and description, and I conclude that his bird, as well as the specimen I refer to, were either varieties of *miniata* or else belonged to another nearly allied race.

831 *quat.*—Caloperdix oculea, *Tem. Bankasoon;* very rare.
903 *bis.*—Podica personata, *Gray. Margui*; rare.
916.—Leptoptilus javanicus, *Horsf.*
920.—Melanopelargus episcopus, *Bodd.*
922.—Ardea sumatrana, *Raffl.*

Let me now take the earliest opportunity of noting prominently that having this season obtained a series of males I believe that, different as the birds appear, *Orthotomus nitidus*, nobis, (STRAY FEATHERS, Vol. II., p. 507) are the females of *O. flavoviridis*, Moore, and that my species should, therefore, probably be cancelled. It is very curious that all the birds we got last year in the northern half of the province were females, entirely wanting any trace of black or grey on the throat or breast, while all that we obtained this year at the extreme south were males answering to Moore's description.

I ought, I think, with reference to what I said at p. 181 *antea*, to draw special attention to the fact that all the *Irenas* obtained in the extreme south of the Tenasserim province are in some respects intermediate between the Indian form and the Malayan one, *viz. puella*, Latham (*indica*, Hay) and *cyanea*, *Begbie* (= *malayensis*, Moore). These two species or races differ, as is well known, in the length of the upper and under tail-coverts; taking average specimens (they all vary a great deal) from (1), Kullar at the foot of the Nilghiris; (2), Mergui Southern Tenasserim; (3), Singapore. The following differences in the proportions of the upper and lower tail-coverts are observable :—

Locality.	Distance by which upper tail-coverts fall short of end of tail.	Distance by which lower tail-coverts fall short of end of tail.
Kullar	2·2	1·5
Mergui	1·3	1·2
Singapore ...	0·9	0·3

In the matter of color also there is a difference. The Kullar birds are a deeper and purpler blue, the Singapore birds are paler and brighter blue, while the Southern Tenasserim birds are intermediate in color between the two.

It may be useful to notice that the Crows obtained at the extreme south of the Tenasserim provinces have larger bills and are larger birds than any that I have ever obtained from any part of continental India; as regards the bills, these are of

precisely the same size as those of the specimens which I shot at the Nicobars, while the wings are perhaps somewhat longer (in an adult male 13·75).

It is probable that these should be assigned to *macrorhynchus*, Temminck, but as I have already remarked (S. F., Vol. II., p. 243, and Lahore to Yarkand Ornithol., p. 85), I do not myself see how these Bow-billed Corbys are to be separated; they differ solely in size, and every gradation of size seems to occur.

A. O. H.

Notes.

It will be remembered that the only nesting place of the Stilt that I have yet been able to discover in Upper India is at the Sooltanpoor Salt Works, some 30 miles south of Dehli. It is curious that in the neighbourhood of these Works, Lieutenant C. Bingham has discovered that *Merops Ægyptius* breeds in numbers. This gentleman has kindly sent me specimens of both eggs and birds, and he remarks that, while occurring at the close of the hot season and beginning of the rains everywhere about Dehli and the country south thereof, they are literally in hundreds about Sooltanpoor, where he failed to notice a single specimen of *M. philippensis*.

In the autumn of 1871 Captain G. F. L. Marshall shot a number of young birds of this species in the Allygurh and Mynpooree districts, and we then thought that these must be exceptional stragglers, but subsequent information shows that large bodies of this species invade Sindh in April, and pass thence right through Rajpootana reaching as far north and east at any rate as Dehli. Throughout this whole tract they breed during the end of April, May, June and July, according to season, and during the autumn parties, chiefly composed of young birds, are to be met with throughout the Doab, if not also in Oudh and Rohilcund. I have now received a large series of these birds (mostly young ones, but two sent by Lieutenant Bingham are old adults) from Sindh, Sambhur, Dehli and Sooltanpoor and the Doab, and having compared these with Le Vaillant's plates, 6, 6 bis and 16, and Swainson's plate in the Birds of Western Africa (together with his description) it seems to me clear that all Le Vaillant's 3 plates represent stages of this same bird, for I have specimens corresponding well to each, and that although his *plate* is bad, the bird *described* by Swainson is also the same. The bird figured by Bree as *Merops persica*, Pallas, is also the same bird. Plate No. 6,

of Le Vaillant, is an adult male, obtained about the breeding season. No. 6 *bis* is a female (always distinguished by less white on the forehead and a less extent of chestnut on the throat) about a month before the breeding time. No. 16 is the young of the year.

A SERIES of *Carpophaga palumboides*, received from the Nicobars, confirms the view I recorded, Vol. II., p. 498, that *Janthœnas nicobarica*, Walden, was merely a stage of plumage of my bird. This series comprises two adult males, with heads not only much whiter than the type, but whiter even, I think, than the figure in the *Ibis*. Two adult females, which have somewhat less white on the head than the type, and two which are Lord Waldens, *nicobarica*, and which are to my mind clearly less mature specimens of *palumboides*. Any how we have now typical examples of both forms, and forms intermediate between these from both Andamans and Nicobars, and I confess that I am at present quite unable to admit the validity of *J. nicobarica*.

At page 266, Vol. II., I mentioned that Moungking declared that there was another large fruit pigeon, greyer than *bicolor*, with a large red naked space round the eye, it is clear now that the species referred to was *palumboides*, which, in the adult male, has the head very white and the bare eye space red.

MR. FREDERIC WILSON, better known as Mountaineer, recently sent me two superb specimens of *Ketupa flavipes* from the valley of the Ganges, or as it is there called the Bhaghiratti, high up in the Himalayas, not very far from Gangaotri. To the best of my knowledge this species has never previously been obtained any thing like so far west. He also sent a noble specimen of *Bubo maximus*, (not the pale form I have hitherto obtained, but one as highly colored as European specimens) and several Eagles of the *chrysaetus* type from the same locality. I say of the *chrysaetus type*, because having now more than a dozen specimens from the interior of the Himalayas, I cannot but think that they are somewhat different from the Golden Eagle of Scotland and France, with which I have compared them; but of this I shall write separately.

A SPLENDID adult male of the Red-legged Hobby, sent me from Cachar by Mr. J. Inglis, enables me to make certain that the species we obtained in Eastern India is *amurensis*. So far as I know, this is the first adult male obtained in India of which we have any record, and according to my experience the bird is quite the rarest of our Indian Raptores.

Dr. Jerdon, B. of I., II., 458, remarks that the irides of specimens of *Carpophaga insignis* from the Himalaya are hoary grey, while those of examples from the south of India are red brown. He also remarks, *loc cit*, that he was "at one time inclined to consider the southern birds as distinct from the Himalayan ones, and the fact of the irides being colored differently would favor the supposition, but without further examples of both" to compare he could not separate them.

I entertain no doubt that the southern bird *P. cuprea*, Jerdon, is a perfectly distinct species from the *Himalayan insignis*, Hodgson.

In the first place, the southern birds average smaller; the wings of Himalayan specimens average, I find, about 10″; those of birds from Travancore about 9″.

In the second place, the whole lower surface in *insignis* is a pale cold grey, without a trace of vinous, and the wing lining is much the same color. In *cuprea* the lower surface is a warm *vinous* grey, and the wing lining is a dark brownish slatey.

In the third place, the upper back and interscapulary region, lesser scapulars, and median wing-coverts have in *insignis* a strong vinaceous purple tinge; this is entirely wanting in *cuprea*.

In the fourth place the rump in *insignis* is greyer, and in *cuprea* more olivaceous.

Other minor differences, which I need not here dwell upon, are observable on a close comparison of a good series of specimens from north and south. It is sufficient here to say that I entertain no doubt of the distinctness of the two species.

I have been comparing a large series of the Burmese *Tiga* or *Chrysonotus intermedius*, Blyth, with three or four specimens of the supposed *rubropygialis*, Malherbe, from Southern Travancore, and I confess my inability to distinguish the two species. Jerdon says that *rubropygialis* is much smaller than *intermedius*, and has the black spots on the head of the female still rounder than in this latter, but as a matter of fact neither of these differences appear to hold good. A male of *rubropygialis*, measured in the flesh by Mr. Bourdillon, was:—Length, 11; expanse, 16·5; wing, 5·62; tail, 4; tarsus, 0·87; bill from gape, 1·4. This was shot at Mynall, Southern Travancore.

A fine male of *intermedius*, shot at Tenasserim on the outskirts of the town of that name, a specially fine specimen, measured in the flesh, Length, 11·12; expanse, 18; tail, 4·25; wing, 5·75; tarsus, 0·85; bill from gape, 1·39.

These two specimens are absolutely identical, except that the head of the southern bird is of a deeper and duller red.

Then as regards the head of the female, the shape of the spots is variable in all the species of this genus, but as a rule both in *intermedius* and *rubropygialis* they appear to be usually linear and not round at all.

As for Malherbe's specimen with the wing only 4¾, it was clearly immature. Out of five *rubropygialis* the smallest has a wing of 5·2; and this also is about the minimum of *intermedius*. I may add that *intermedius* from Arakan, Moulmein, Tavoy, and the Pakchan Estuary are identical with those shot in the immediate neighbourhood of Tenasserim town, and that in Pegu and further north there seem to be traces of *intermedius* grading into *Shorii*, Vigors.

I have no undoubted specimens of the Sumatran species by me, nor have I at present available for comparison any specimen from the Straits, and I am unable therefore to say whether these latter differ, but I am very decidedly of opinion at present that the southern Indian *rubropygialis* and the Burmese *intermedius* are identical.

HAVING at last obtained a copy of N. A. Severtsov's *Vertikalnæ i horizontalnæ raspredlenie Turkestanskikh jevotnikh*, published in the *Izviestia impera torskavo obstchestva lionvetelei, estestvoznania anthopologii i ethnographii*, (*vide* STRAY FEATHERS, Vol. II., 514). I regret to say that I am not much wiser than I was before. It is written entirely in Russian and printed in the Russian character, and though I have attacked the language, I have not yet made sufficient progress to understand two consecutive sentences. I have, however, discovered one important point from the *plates* to wit that my *Stoliczkana stoliczkæ*, has already been named by Severtsov, *Leptopœcile sophiæ*. I don't think that publications in Russian should count!

Letters to the Editor.

SIR,

I do not know if there is any record of *Palœornis sivalensis* (*alexandri apud* Jerd.) breeding in these parts, but I do not see any mention of it in your "Nests and Eggs," so I write to let you know that this morning I found a nest of a pair that had built in a hole in an old 'Bakhain' tree.

There were four well-grown young birds, quite unmistakeable Alexandrines, about two weeks' old.

I saw the old male sitting outside the hole and the old female came out as the boy was swarming up the tree. I regret I

did not find the nest in time to procure the eggs, but I hope to be more fortunate next year.—F. Field.
Goojrat, Punjab, 29*th March* 1875.

Sir,

On the 8th instant I saw a King Crow (*Buchanga albirictus*) sitting on a telegraph wire with a lizard about 6 inches long in its claws, pecking away at it, just as you see a hawk eating a large lizard or a mouse.

The lizard—one of those delicate, fragile, light-colored little fellows which one sees running about in long grass—was not quite dead, though he had ceased to struggle violently. The bird appeared to be pulling the lizard's intestines out in a most deliberate manner.—Henry Wender.

Sholapoor, Deccan, *January* 11*th*, 1875.

Sir,

While shooting on the low alluvial land of the Ganges, about six miles above Cawnpore, on the 17th of February, we were fortunate enough to secure a specimen of a very large Bush Chat. We came across it in a patch of long grass; the bird was solitary, in fact we did not see any other Chats during the whole day. As soon as we had handled the specimen we came to the conclusion that we had obtained a new or very rare species of *Pratincola*, it being nearly double the size of our common *Pratincola indica* or *rubetra* (whichever it may be). It is unfortunately in a transition state of plumage. In measurement and colouring however it accords sufficiently well with Jerdon's meagre description of *Pratincola insignis*, to induce us to identify it with that species. Its size alone precludes it from being *P. Hemprichii* or any other described species of this genus. Dr. Tristram apparently ignores the existence of such a bird as *P. insignis*, for at page 497 of the *Ibis* for 1870 he describes a *Giant* Stone Chat from Mysore and the Sutlej Valley, which he says is *very much larger than any known species of Pratincola*. The dimensions of this species, which he names *P. robusta*, are:—Length, 5·95; wing, 3; tail, 2·45; or less than half an inch smaller all round than Hodgson's *P. insignis*. If the bird that we have is not Hodgson's bird it ought to be called *P. robustior*, but we do not think there can be any doubt as to its identity, as the description in Jerdon, (the only one we know of,) is scarcely sufficient; we append full details of the specimens now in our possession.

Pratincola insignis.—Sex ♂; head and back umber brown, darker in the former with the feathers pale edged; rump and upper

tail-coverts pale ferruginous; tail dark brown with narrow pale tippings; the third tail feather from the centre on one side only has a large white spot on the basal half of the inner web. There are indications of similar spots coming on the other feathers; wings the same colour as the tail, with a broad white patch on the centre of all the primaries (except the first) and the secondaries forming a most conspicuous wing bar very different to the wing spot of *P. indica*. The under parts are sullied white, the breast being washed with rufous.

Length, 6·5; wing, 3·5; tail, 2·4; tarsus, 1·1.

Some months ago we noticed the occurrence of *C. maharattensis* in Bundlekund. We have now received a well-marked specimen of this Goatsucker shot by Mr. Dale, C.S., near Cawnpore. It was found among the clumps of rank grass upon the dried up borders of a large *jheel*. It sat so closely that it was only after beating three times through a small patch of jungle with eight beaters that Mr. Dale succeeded in flushing it. Two were seen, but only the male secured. We have carefully compared this and the Bundlekund specimen with all the allied species, and have come to the conclusion that if they are not *C. maharattensis*, with which we identify them, they belong to a species as yet undescribed. The measurements are identical in both. Length, 9·1; wing, 6·8; tail, 4·3; expanse, 21·5. It belongs to the group with bare tarsi, and the two outer tail feathers tipped white.

In his description of *Meniceros bicornis* Doctor Jerdon omits to mention the difference in plumage between the adult males and females and immature birds.

The description given only applies to the adult male, and is even in this case slightly incorrect. He mentions that *all* the primaries are tipped with white, and the first three have a white streak. From a large series now before us we find it an invariable rule that the two first primaries are blackish brown throughout. It is the 3rd, 4th, 5th, 6th and 7th primaries that are broadly tipped with white, and have a brownish white streak on the outer webs. The head, face, and tail get blacker with age.

In the female and immature birds the first six primaries and sometimes the 7th want the white tips entirely, while on all, but the first two, the whitish streaks are much more developed and conspicuous than in the adult male. The casque also is lower and more depressed lacking the sharp pointed horn.

The specimens we have examined are from Umballa, the Dhoon, Alighur, Muttra, Cawnpore, Bundlekund and Mysore, most of them collected and carefully sexed by ourselves.—C. H. T[illegible] & F. L. MARSHALL.

Sir,

In the last issue of *Stray Feathers*, recently to hand, appears a particularly interesting account of the Wood Owl (*Syrnium indranee*, Sykes), from the pen of W. Vincent Legge, Esq., R.A., of Ceylon, in which he refers to certain local ornithologists who have credited this species with uttering the most diabolical screams, which he scouts as a libel on his evidently-favorite bird, and I think rightly so. Perhaps I may be able to throw some light on this apparently-obscure point, which will not be devoid of interest to that gentleman and others.

The reason why the Cingalese differ so widely as to size of the bird which makes the sounds alluded to above, is, I surmise, because they probably, in common with the Bengalis, regard the notes of two different genera of the family *Strigidæ* with terror,—the one large in size, and the other small. Both these birds I have many years ago shot now and again *while in the act of giving forth their discordant sounds*, for the conflicting statements of the natives regarding them was puzzling in the extreme, and no one, either European or Native, to whom I applied as likely to afford me information on the subject, could give me ought save the most vague and contradictory accounts.

During the close of the cold season and commencement of the warm weather, I have *here* frequently been awakened very late at night from a sound sleep by cries which closely resembled those of two infants in distress, heard alternately from different places out of doors. On enquiry of the native guard, in the verandah from whence proceeding the noise, the invariable reply was, that evil spirits were abroad in the form of owls, and he dreaded to molest them in any way, lest their ire should be aroused against him, and he be inflicted with illness. When I was disposed to leave the bed rather than suffer a continuance of the disagreeable sounds, I used to take down my fowling piece, and follow the direction of the cries (greatly to the horror of the guard, who followed me most reluctantly at a respectful distance), and having discovered the bird calling out, brought it down with a shot. This was the large-sized Owl, which I take to be the Indian Screech Owl (*Strix indica*, Blyth), but I must candidly admit that I have never identified it by comparing it with undoubted specimens of this species. The natives designated the bird *Bhutum Pecha* (no doubt from *Bhut*, signifying "demon," "ghost," etc.), which I have translated as "Goblin-Owl," so if I am wrong in the scientific denomination I have assigned to it, the Editor will be able probably to set me right. The horrible [illegible] uttered

by the pair were, evidently, their amorous calls, and doubtless sounded to them as sweet music,—*chacun à son gout.*

The natives consider the sharp, regular, monotonous notes of the Grey Scop Owl, (*E. griseus*, Jerdon), prolonged for several consecutive hours with only very short intervals, and well described by Mr. Hume in *Rough Notes*, (p. 402), to portend certain death to some one of the inmates of the house near which they are heard, and as coincidences are not altogether rare, I have known the prediction to be verified more than once. This bird I have also shot while repeating its never-varying echoing sounds, though not without considerable difficulty, as the small size of the bird allowed of its being easily screened by the foliage of the tree on which it perched, and a random flying shot fired low in a dark night is usually both dangerous and unsuccessful.

En passant, that the cry of the Owl bodes death was an erroneous idea entertained in England in the time of Shakespeare, for the Bard thus alludes to it in his famous tragedy of Julius Cæsar; Cassa, one of Brutus's confederates, in enumerating the strange occurrences that preceded Cæsar's death, (Act I, Scene III), says :—

> ——————"the bird of night did sit
> "Even at noon-day upon the market place,
> "Hooting and shrieking. When these prodigies
> "Do so conjointly meet, let men not say,
> "*These are their reasons*, they are natural;
> "For, I believe, they are portentous things
> "Unto the climate they point upon."

I may add, that both the Owls here mentioned are to be found in Ceylon; the Indian Screech Owl is well known throughout India, Burmah, Ceylon, and probably Indo-Chinese sub-region, *apud* Blyth; and the Grey Scop Owl is included among the Ceylonese birds by Mr. Hume, under the synonym of *E. bakhamuna*, Forst, *vide Stray Feathers*, Vol. I, p. 432.—H. James Rainey.

Khulna, Jessor, Lower Bengal, *July 17th*, 1874.

[A correspondent, who neither signs nor dates his letter, writes about *Rhynchops albicollis*. Anonymous contributions cannot be published—Ed.]

STRAY FEATHERS.

Vol. III.] NOVEMBER, 1875. [No. 5.

Notes on some Burmese Birds.

By Eugene W. Oates, c.e.

I shall confine the present notes to those birds which are not yet entitled to a place in the Avifauna of the tract already dealt with by Mr. Hume, *viz.*, Upper Pegu, comprised between the Irrawaddy and Sittang Rivers, and the frontier and the latitude of Poungday. Nor do I wish to anticipate any of the information which Mr. Hume will shortly give us relative to the birds of Tenasserim, met with by Mr. Davison. I shall therefore exclude from this list those birds, the names of which are printed in ordinary type in the list at page 467 of Vol. II., "Stray Feathers."

42.—Haliaetus leucoryphus, *Pall.*

The Indian Ring-tailed Fishing Eagle is a common bird along the banks of the Sittang River and the network of tidal creeks which intersect the country on the western side up to the Pegu River.

In a fine adult male, the iris was dusky yellow; the cere and gape, light plumbeous; bill, dark plumbeous; lower eyelid, pale greenish, the upper one, bluish; legs and toes, dull white; claws, black.

The dimensions were:—Length, 32·0; expanse, 80·0; tail, 12·2; wing, 23·0; tarsus, 4·03; bill from gape, 2·65; difference between the longest and shortest tail feathers, ·7; these dimensions are all greater than those of males given by Mr. Hume in his "Rough Notes."

I took three young from a nest on the 17th January. The eldest one was a huge fellow seemingly about 10 or 12 days old, while the youngest one was very small and appeared to be only three or four days old. The third one was intermediate in size to the other two.

43.—Haliaetus leucogaster, *Gm.*

Seen once, flying over the Rangoon Cantonment, by Mr. Davison and myself.

126.—Eurystomus orientalis, *L.*

One specimen was brought to me from the Arrakan hills, and it also occurs, rarely, elsewhere in Pegu.

139 *quat.*—Cymbirynchus affinis, *Bl.*

This bird appears to be abundant on the Arrakan hills from Cape Negrais up to at least the 19th deg. N. Lat.

In plumage and size *affinis* is very similar to the Malayan species, which Count Salvadori has separated as *malaccensis*.

In *malaccensis* the white spots on the tail are confined to the inner webs, and on the 4th and 5th pairs, counting from the outside, are nearly obsolete; the belly is washed in places with rich aureous; the wing spot is indistinct, being much hidden by the coverts; the tertiaries are plain black; and the rump shews no indications of pale transverse lines.

In *affinis*, on the other hand, the white spots on the tail-feathers are larger, extending on the 3 outer pairs to *both* webs. On the 4th and 5th pairs the amount of white on the inner webs is considerable; the belly is either uniformly red or washed with pale silky white; the wing spot is conspicuous, being below the coverts and well exposed to view. Each feather of the tertiaries has a longish, narrow spot of red at its extremity. These spots appear to be invariably three in number, and, curiously enough, the one on the uppermost feather is on the inner web; while, in the other two, it is on the outer. The rump shews, in every specimen I have examined, indistinct transverse lines, nearly obsolete, of black.

I can discover no other differences in plumage. The following are the dimensions of three skins of *affinis*:—Wing, 3·5 to 3·63; tail, 2·9 to 3·1; tarsus, ·85 to ·87; bill, from forehead to tip straight, ·71 to ·77. For the sake of comparison I also give the dimensions of three skins of *malaccensis* similarly measured:—Wing, 3·85 to 3·95; tail, 3·5 to 3·6; tarsus, ·8 to ·93; bill, ·87 to ·92.

The length of one *affinis*, measured in the flesh by my collector with a piece of thread which he brought home to me, was 8·15.

To keep to the excellent rule of "Stray Feathers" of describing a bird which is mentioned in its pages for the first time, I append a short description. Rump bright red, with indistinct cross lines of black. With this exception, the whole upper surface, the lores, the chin, throat and broad pectoral band are deep black. The space between the throat and the pectoral band, the cheeks and ear-coverts, the breast, belly, under tail-coverts and flanks are a rich vinous red; the thighs black; the tail black, with white spots on the outer five pairs of feathers; the wings also black with a conspicuous white spot, and the inner webs chiefly white; the tertiaries with red

spots near the tips; under wing-coverts, yellowish white; edge of wing, golden yellow; the scapulars with some of the outer webs pure white, narrow and sharply pointed.

344.—Hydrornis nipalensis, *Hodg.*

One bird, similar to Himalayan specimens, was brought to me from the Arrakan hills, where it was shot in January.

384.—Gampsorynchus rufulus, *Bl.*

One specimen was brought in to me from Nyoungyo, better known as Mountjoy, on the Arrakan hills in June.

448.—Hemixus flavala, *Hodg.*

One specimen, also from Mountjoy. Mr. Hume examined this and the preceding two species, and declared them all to be undistinguishable from Indian specimens.

514.—Cyanecula suecica, *Lin.*

This bird is frequently seen in the grass-covered plains surrounding Pegu up to, at least, the 1st of May. On this date I procured a female. The blue of the throat and breast is very pale, but the buff patch is large and bright. It is in this specimen nearly surrounded by a broad black line which takes the form of a triangle, the base of which is the pectoral band and the apex on the gullet where, however, the two sides do not quite meet. The pectoral band is comparatively narrow, and there is hardly a trace of rufous below it. It measured:—Length, 6·0; expanse, 9·0; tail, 2·1; wing, 2·7; bill from gape, ·75; tarsus, 1·15; the ovaries were still small.

A male, shot on the 10th of April, has not quite finished his moult, but the blue and buff are nevertheless brilliant. The tips of the feathers on the buff patch are whitish. The pectoral band very broad and deep black, while the rufous below is very indistinct and fails to catch the eye. The dimensions were: Length, 6·15; expanse, 8·7; tail, 2·3; wing, 2·8; tarsus, 1·04; bill from gape, ·7.

In both birds the iris was dark brown; the eyelids, plumbeous; the bill, black; the gape and inside of the mouth, yellow; the claws, dark brown; and while in the female the legs were dark purplish black, in the male they were dusky flesh-colour.

515*bis*.—Acrocephalus orientalis*, *Schleg. A. magnirostris*, Swinhoe.

The Eastern Reed Thrush, as Mr. Swinhoe terms it, is exceedingly common throughout the plains of Pegu from the Sittang to the Pegu river and from Kyeikpadein to Myitkyo. Outside these limits I have not observed it.

* Thus identified by Mr. Hume.

It arrives in great numbers about the 15th of November and stays in undiminished quantities till the 31st May at the least. On its first arrival it affects bamboo bushes, thick clumps of grass and patches of weeds; but as the season progresses, and the Peepul trees come out into leaf, their haunts become chiefly arboreal. It is very strange that a Reed Warbler should take to trees at all, but it does in this instance; and I have shot, and can always obtain, more specimens in Peepul trees at a height of 30 or 40 feet from the ground than in other localities. Its motions are slow and awkward, and it keeps chiefly to the thicker secondary branches. Its note is very harsh and it is uttered very often, betraying the presence of the bird at once.

There appears to be but one moult a year, which takes place in April and May. In these two months specimens are hardly worth preserving. Up to the day of departure the generative organs of both sexes are extremely small. On their arrival here in November the plumage is very perfect.

The food consists entirely of insects and caterpillars. From their frequenting Peepul trees, I thought at one time that they might occasionally eat a fig, but I do not now think they ever do so. Certainly I have never found any fruit in the stomach.

The sexes do not differ either in size or in plumage. The following are the extreme measurements of numerous birds:— Length, 7·2 to 8·05; expanse, 9·4 to 10·7; tail from vent, 2·5 to 3·1; wing, 3·15 to 3·36; tarsus, 1·12 to 1·21; bill, from gape to tip, ·97 to 1·03; the closed wings fall short of the tail by about 2·0; the toes reach to a little beyond the tip of the tail; the under tail-coverts fall short of the tip of the tail by ·95; the difference between the longest and shortest rectrix is ·65; the third primary is the longest; the fourth is ·03; the fifth ·13; the second ·12; and the first, which is very minute, as minute indeed as in *A. brunnescens*, 1·95 shorter than the longest.

The inside of the mouth, throughout the seven months it stays with us, is a rich salmon color; the gape, the lower mandible and the edges of the upper, pale flesh color; the remainder of the upper mandible, dark brown; the eyelids are clear plumbeous; the iris, rich olive brown; the legs and toes, leaden blue; the under part of the latter, pale yellowish; the claws, pale horn color.

The following description is taken from a very perfect specimen shot in November. The sexes, as already stated, do not differ:—

Four stiff black bristles, about ·3 long, spring from either side the gape, and half a dozen soft, hair-like, webless feathers spring from the nape and exceed the ordinary feathers of the

head by ·15; the lores, the feathers of which are stiff and point forwards, are mixed brown and yellowish; a pale fulvous supercilium extends from the nostrils to a little past the eye; the small plumes clothing the edges of the eyelids are rather paler fulvous than the supercilium; the whole upper plumage from the base of the bill to the tail-coverts, olive brown, with a strong fulvous tinge pervading all and strongest on the rump and tail-coverts; the ear-coverts and sides of the neck concolorous with the upper plumage, but the shafts of the first conspicuously paler.

The throat and chin are pale cream color; the cheeks the same, but with the shafts lengthened, hair-like and black; the lateral feathers of the chin present the same peculiarities; from the chin to the upper breast, silky white in some lights, pale creamy in others, with short longitudinal striations of pale brown few in number in the centre, but increasing at the sides of the breast and neck where they run into each other and are lost in the uniform brown of those parts; the color of the breast becomes darker laterally; the lower part of the breast and the sides of the body pale brown, the latter parts strongly tinged with pale buff; the abdomen pale creamy white; and the under tail-coverts clear, pale buff; the thighs, on the outside, are of much the same color as the sides of the body, but as the feathers are dark brown for their basal two-thirds there are signs of bars where they fail to overlap each other. On the inside of the thighs this is not the case. Under wing-coverts, pale buff, brighter near the edge of the wing.

The rectrices are brown, with greyish white tips equally conspicuous on both the upper and under sides, and the outer webs are margined very finely with fulvous brown.

The primaries and secondaries are dark brown, tipped with fulvous white and margined exteriorly with fulvous brown and interiorly with white; the tertiaries are also dark brown, but more broadly margined on the outer web; the upper coverts are very broadly margined with fulvous, so much so that when the feathers are lying in their proper places very little of the central dark brown portion is visible.

517.—Acrocephalus agricolus, *Jerdon.*

The only specimen of this, which I have been able to procure, was shot near Wan in the Pegu plains. It was a male and was hopping about the clumps of elephant grass near the canal. Of it, Mr. Hume, who has seen the specimen, says that it is less rufous than Indian examples generally.

It measured:—Length, 5·3; expanse, 6·6; tail, 2·4; wing, 2·1; tarsus, ·9; bill from gape, ·7; the iris was pale yellow; eyelids, plumbeous; the upper mandible, dark brown; the

lower, fleshy yellow; the inside of the mouth, orange yellow; the legs and claws, pinkish brown; the soles of the toes, yellow. It was shot on the 21st March. The fourth and fifth quills are subequal and longest, and the first falls short of them by 1·18.

532.—Prinia flaviventris, *Delessert.*

The Yellow-bellied Wren Warbler is very abundant throughout Lower Pegu in suitable localities. In the plains between the Sittang and Pegu rivers they are constant residents, breeding freely from May to August and September. In Rangoon also all round the Timber Depot at Kemandine, and in the low-lying land between the town proper and Monkey Point they are very numerous.

As in other Warblers, that I have examined, of this group, the inside of the mouth, during the breeding season, is black.

544 *quat.*—Drymoipus extensicauda*, *Swinhoe.*

The Broad-tailed Wren Warbler is perhaps the commonest bird of the Pegu Plains. From Myitkyo on the Sittang, and possibly from further north, down to Rangoon, it is to be found in all the low tracts covered with grass.

It is an amusing little bird, always on the move. Perched on the summit of a stalk of elephant grass it gives out its monotonous song, consisting of one note repeated some twenty times; then, with its ample tail held at right angles to the back, it skips away to the bottom of the next tuft only to reappear shortly on the summit with its persistent little song. These birds seem hardly able to regulate their flight. They seldom fly more than 20 yards, and in this short space they appear in eminent peril of turning sundry somersaults, for the bill on these occasions points to the ground, while the tail, bent well over the back, is nearly horizontal.

Where it occurs, it is a constant resident and breeds from May to August. I have found the nest in the middle of May, but it is not till July that the bulk of the birds lay.

The nest is never more than four feet from the ground, and is attached either to two or more stalks of elephant grass; or to the stem of a low weed; or to the blades of certain tender grasses which grow in thick tufts. There is little or no attempt at concealment. The materials forming the nest are entirely fine grasses, of equal coarseness or fineness throughout, gathered green and so beautifully woven together that it is almost impossible to destroy a nest by tearing it asunder, although it may be looked through. In shape it is somewhat of a cylinder, with a tendency to swell out at the middle. Its length, or rather height, for its longer axis, being invariably

* As identified by Mr. Hume.

parallel to the stalks to which the nest is attached, is generally upright, is from 6 to 8 inches, and its extreme width 4. The entrance is slanting and placed at the top of the nest, one side of which is produced an inch or two above the lower edge of the entrance. The thickness of the walls is very small, seldom reaching half, and generally being only a quarter of an inch. Occasionally the nest is almost globular, but the back of the entrance is in every case produced upwards some inches. There is no lining at all.

The eggs never exceed four, and frequently are only three, in number, and the female does not commence sitting till the full number is laid. She deserts the nest on the slightest provocation, and if a nest, with only one or two eggs, is found and the fingers inserted, it is useless to leave the eggs in hopes of getting more. She will lay no more. I have tested this in, at least, ten cases.

In shape the eggs are regular ovals, slightly pointed at the smaller end. In length they vary from ·55 to ·62, and in breadth from ·42 to ·46, and the average of a large number is ·58 by ·44. The ground color is pinkish white in some, pale green or blue in others, and the egg is covered, chiefly at the large end, with spots and blotches, of all shapes and sizes, of dark purplish—and reddish—brown. Some of these are half washed out, while others are very dark and well defined. A few eggs have only these paler marks on them; others, by far the majority, have both. In addition, some seventy-five per cent. of the eggs have fine, narrow, irregular lines scrawled over the egg, chiefly over the large end, but occasionally extending to the smaller. All the eggs have a fine gloss.

The sexes do not differ appreciably in size. The total length varies enormously according to the development of the tail. The following are the dimensions of various full-plumaged birds of both sexes:—Length, 5·75 to 6·1; expanse, 5·9 to 6·6; tail, 2·8 to 3·15; wing, 1·8 to 2·02; tarsus, ·8 to ·9; bill, ·59 to ·65; there are 10 rectrices, and the different pairs fall short of the central ones by ·3, ·65, ·9 and 1·5; the central feathers are about ·4 broad, and the whole tail very massive. The 4th, 5th and 6th primaries are sub-equal and longest; the 1st ·7, the 2nd ·3, and the 3rd ·15 shorter.

The gape and lower mandible are pale flesh color; the upper mandible dark brown, and the tip of the lower somewhat brownish; the inside of the mouth flesh colour; the iris nut brown; the eyelids plumbeous; the edges yellowish brown; the legs and toes pinkish brown; the claws pale brown.

The whole upper plumage, including the scapulars and the lesser upper wing-coverts fulvous brown; the feathers of the forehead and upper part of the head conspicuously dark-centred,

and those of the back and coverts faintly so; the upper tail-coverts rufescent; the lores, a broad streak over eye; the space under the eye, the chin, throat, flanks, breast and under tail-coverts a warm creamy buff. The ear-coverts mingled brown and pale buff; the sides of the neck concolorous with the upper portion; two conspicuous bristles on either side of the gape, black; the under wing-coverts and the edge of the wing, as the flanks; the belly and abdomen nearly pure white; the winglet and the greater upper wing-coverts dark brown conspicuously edged with yellowish brown. The primaries dark brown, narrowly edged, on the outer web only, with yellowish brown; the secondaries and tertiaries the same, but with a broader edging; the inner webs of all the quills are edged with buff. This edging is narrow and short on the first primary, but it broadens and lengthens progressively up to the last secondary, and becomes nearly obsolete on the tertiaries; the tail is brown, each feather striated with close indistinct fine lines of a darker shade, about ·1 apart. All the feathers tipped white, and on all but the central pair there is a subterminal dark spot, more conspicuous from below than above.

584 *bis*.—Enicurus guttatus, *Gould*.

One specimen was procured on the Arrakan hills (Pegu side) by Mr. Raikes's collector. It seems a typical example, for the spots on the back are quite round.

704.—Estrelda amandava, *L*.

This bird, though very abundant, is very local. It appears to be confined to the tract of low country surrounding Pegu. Its limits, according to my experience, appear to be the Pegu River and the Rangoon and Tonghoo road on the west; the Sittang River on the east; the Paghain Creek on the north; and the Pyne Kyoon Creek on the south.

It abounds wherever it is met with, is a constant resident, and associates in numerous flocks, feeding entirely on very minute grass seeds.

738.—Carpodacus erythrinus, *Pall*.

A male was procured in January on the Arrakan hills; precise locality unknown.

767.—Alauda gulgula, *Franklin*.

There is a Skylark in the Pegu plains, the song of which, as far as my recollection now serves me, is in no way inferior to that of the common English bird. It is common within those limits which I have assigned to *Estrelda amandava*. It seems to be a constant resident, though, of course, in the rains it is not an easy bird to get, and I cannot state positively that it does not

go away for a few months. It very possibly does so, for from June to October the whole country which it frequents in the dry weather is covered with two or three feet of water, rendering even rice cultivation possible only in a few limited tracts. I have shot it during all the months of the dry weather. It breeds commonly, but I have not been able to find the finished nest. On the 26th April I observed a pair building; the female collecting the materials and carrying to the nest, while the male walked about near her, occasionally rising a few feet into the air with a short song. The male, like the English bird, soars singing till it is nearly, if not quite, out of sight.

I give the dimensions of numerous birds :—*Males*—Length, 6·5 to 6·6 ; expanse, 11·3 to 12·0 ; tail, from vent, 2·2 to 2·35 ; wing, 3·45 to 3·5 ; tarsus, ·98 to 1·03 ; bill, from gape, ·65 to ·75; hind claw, ·53 to ·65. *Females.*—Length, 6·05 to 6·55; expanse, 11·0 to 11·5; tail, 2·1 to 2·2 ; wing, 3·1 to 3·3 ; tarsus, 1·02 to 1·06 ; bill from gape, ·61 to 76 ; hind claw, ·51 to ·55.

Looking to the measurements given by Messrs. Sharpe and Dresser of *A. gulgula* in their 'Birds of Europe,' the Pegu bird, while it has a much shorter wing, has a tarsus nearly one-tenth of an inch longer, and occasionally rather more.

It is curious that a Lark, if identical with any Indian race, should occur in a limited area in the Sittang valley and not be found in any portion of the extensive Irrawaddy valley lying between India and the Sittang River. Of some birds I sent to Mr. Hume, he writes :—"I call these *A. gulgula*. If you like you may make a new species of them ; Brooks would, I consider that they ought to stand as *A. gulgula*."

Though, no doubt, merely a variety of *gulgula* it will be convenient to give the Pegu bird a name to distinguish it from the numerous other varieties ; and having regard to its very limited locality immediately round the town of Pegu, I will term it *peguensis*.*

811 *ter*.—Euplocamus Cuvieri, *Temm.*

I have never myself shot the Arrakanese Silver Pheasant, but I have now seen some six specimens, and in all of them the characters which distinguish it from *lineatus* are constant. I cannot think it is a hybrid † between *Horsfieldii* and *lineatus*. If it originally sprung from a cross between these two species, it has

*These Indian Larks are just like the Brambles and Willows (*Rubus, Salix*) that we used to squabble over at home in my boyhood. It would be well if Mr. Oates had pointed out the precise points of difference on which he relies. Those referred to, *viz.*, small differences in the size of wing and tarsus, are worthless, as he would see at once after measuring fifty specimens from any one locality in India.—Ed., S. F.

†ote p. 166—and as to my views in regard to so-called hybrids, see page —Ed.

now, at all events, established itself as a pure species. *Lineatus* occupies exclusively the country east of the Irrawaddy and this river, seldom less than a mile broad, would act as a boundary which no weak-winged bird, like a Pheasant, would care to cross. I have, unfortunately, never seen a Thayet Myo killed specimen of a Pheasant, but it will, I think, turn out to be *Cuvieri*. Captain Feilden shot two, but in those days, when we lived together in Thayet Myo, neither of us knew of the existence of two species closely allied. If he has the specimens still he could easily tell us which of the two birds the Thayet Myo ones are.

824 *ter*.—Arborophila intermedia, *Blyth*.

The Arrakanese Hill Partridge appears to be the only one found in that province. All the specimens I have seen came from that portion of the Arrakan hills lying west of Prome. It extends quite to the foot of the range on the Pegu side, where a specimen was shot by my friend Captain Swetenham near the 24th mile of the military road leading across the mountains from Prome to Tonghoo. I should judge it to be very common everywhere. Unfortunately I never shot it myself, and consequently I am unable to give measurements in the flesh and the colors of the soft parts.

My collector sexed two birds he preserved, a male and a female; and I have seen numerous unsexed individuals which could hardly have been all of one sex. From the examination of these I am pretty certain that the males and females do not differ in plumage.

The following are the dimensions of the two sexed individuals referred to above, the first measurements being those of the male:—Wing, 5·7, 5·5; tarsus, 1·5; middle toe and claw, 2·0, 1·8; bill, from from forehead to tip, ·7, ·65; the 4th and 5th primaries are sub-equal and longest; the 3rd is from ·1 to ·15, the 2nd ·25 to ·5, and the 1st from ·6 to ·9, shorter than the longest primary. The under tail-coverts reach nearly to the tip of the tail.

The coloration of the plumage is intricate and difficult to describe. The throat and under side of the neck, for a distance of 1½ inches from the gape, are black. Below this there is a bright rufous patch which brings us to the breast. This and the upper part of the belly are an uniform dark grey, though, viewed in certain lights, the margins, of the feathers appear to be paler. The ear-coverts, the cheeks, under the eye and the sides of the neck, as far down as the base of the rufous patch, are black. The bases of the feathers are however rufous and shew through conspicuously, giving these parts a mottled appearance; the front of the head, as far back as a l[illegible]

meeting the eyes, pale grey; the top and back of the head rich hair brown, each feather with a narrow mesial line of black. These lines gradually increase in size, and on the upper side of the neck become large terminal drops, above which are narrow crescentic marks of pale buff, causing the tips of the feathers to present something of the appearance of *eyes*. The lores, and a very broad supercilium, extending well over the ear-coverts and having a tendency to meet its neighbour at the back of the head, greyish white; each feather has a central line of black, and these marks, in well preserved specimens, have a tendency to fall into three or four very narrow and somewhat parallel bands, giving the head of the bird a most delicate appearance.

The shoulders, back, rump and upper tail-coverts glossy olive brown, each feather obsoletely edged darker, and, on the two latter portions of the plumage, with a small central lanceolate spot of black.

The sides of the body are rich chestnut, each feather with a large pure grey patch in the middle, within which again there is a long and narrow white streak; the lower part of the abdomen is greyish white; the flanks and thigh-coverts are very pale buff with large black spots; under tail-coverts, black at base and white at the tip; the rectrices are olive brown, mottled and shot with black; and the outer two or three pairs are faintly tipped with white.

The primaries are brown, narrowly edged and tipped with pale buff; the secondaries have a very broad edging on the outer webs and a narrow one at the tip; the tertiaries, scapulars and wing-coverts are an indescribable mixture of rich chestnut, pale fulvous and deep black, the latter colour assuming the form of large transverse oval spots near the tip of the feather; the under wing-coverts are dark brown, tipped with dirty white near the edge of the wing, pure white near the body and brownish-grey lower down where the stronger feathers shew out.

831.—Excalfactoria chinensis, *L.*

The Blue-breasted Quail is common in many parts of the Pegu plains. I first met with it in June, and throughout the rains it continues to be common. I am inclined to think that it comes to Lower Pegu at the beginning of the rains, and leaves as soon as the business of breeding is over, but I am not in a position to state this positively. All I can say is, that I have never seen it in the dry weather. A male in June had the soft parts colored as follows:—Iris, red; bill, bluish black, rather paler at the gape; legs, bright yellow; claws, horn color; eyelids, plumbeous; inside of mouth, flesh color.

873.—Rhynchæa bengalensis, *L.*

The Painted Snipe is uncommon in Burmah according to my experience. I met with four or five once at Wan, 12 miles east of Pegu, late in the evening and shot one. It was a male and measured: Length, 10; expanse, 18·0; tail, 1·6; wing, 5·25; bill, from gape, 1·94; tarsus, 1·87; middle toe and claw, 1·75; rectrices 14 in number.

The iris was olive brown; the eyelids covered with down; basal half of bill olivaceous, the terminal half reddish brown, turning to pure brown at the extreme tip; inside of mouth flesh color; legs, deep olive color; claws, black.

Lieutenant Wardlaw Ramsay wrote to me some time ago that he had found the nest of this bird near Tounghoo.

875.—Limosa ægocephala, *L.*

Numerous flocks of this bird are to be seen during the cold weather on the mud flats of the Sittang River at low water. It is the true *ægocephala* with pure white axillaries.

I have succeeded in shooting only two birds. The difference of size between individuals of the same flock is very startling.

In April, and for what I know perhaps throughout the year, the basal half of the lower mandible is light flesh colour, and that of the upper, dark brown; the terminal halves of both are dark brownish black; the legs and toes are dark sooty brown; the claws black; the iris dark brown; the inside of the mouth flesh color.

The mud-banks at the mouth of the Wan Creek, on the western bank of the Sittang at the village of Gway binzate, are perhaps the best place in all Burmah for waders and sea-birds. Godwits, Curlews, Terns and Gulls are all numerous as soon as the tide falls each day, and in the immediate vicinity immense flocks of Pelicans are generally to be met with. These latter are very wary and require careful stalking. Altogether this place is a most delightful one for a few hours' shooting. All boats proceeding to Tounghoo are obliged to anchor here for some time, varying according to circumstances, to allow the formidable Sittang bore to run by.

915.—Leptoptilos dubius, *Gm.*

Though not so common as *javanicus*, the Adjutant is to be met with all the year round throughout the plains of Lower Pegu. At the end of the rains, when swamps are drying up and fish can be taken in bucketsful, it associates in large flocks, and, with Pelicans, is a special object of aversion to all the fishermen of the district, who after paying Government large rents for

fisheries are obliged to submit to the heavy tolls levied by these voracious birds. No ordinary amount of frightening will drive them away. In a fishery, not more than three acres in extent and a seething mass of fish, I have seen what I computed at the time to be not less than 200 Adjutants of both species and a far greater number of Pelicans.

941.—Threskiornis melanocephalus, *L.*

The White Ibis is tolerably numerous in the plains intersected by tidal creeks. In the hot weather it goes in rather large flocks, but in the rains it is found in pairs. I have not been able to find the nest. A male, shot on the 1st of August, had the long plumes of the tertiaries only half grown. The testes were very large; the iris was brown; the inside of the mouth, dark bluish-black; the bill, black; the lower eyelid, flesh coloured; its edge, the upper lid, and the whole head and neck dark bluish black; legs and toes, glossy black; claws, dull black.

942.—Geronticus papillosus, *Tem.*

This bird is rather rare; a pair only being occasionally seen in some half dry tank or water-course in the Pegu plain.

980.—Larus brunneicephalus, *Jerdon.*

This Gull is not at all uncommon in the Sittang River, during the winter months.

A female, obtained on the 7th April in winter plumage, and a male shot on the 13th of the same month in summer plumage, had the iris stone yellow; the bill, legs, inside of mouth and the edges of the eyelids, deep red; claws, horny black.

In addition to the above sea birds, I have obtained in the Sittang a huge Gull and a Black Tern with long and deeply forked tail. These I cannot identify, and I have not yet been able to send them to Mr. Hume for examination.

982.—Sterna caspia, *Pall.*

On the 3rd of June there was a brisk gale of wind and rain in the Sittang River near Kayasoo, and a pair of these fine Terns passed my boat. I shot them both. They are the only birds of this species I have seen.

Both the birds were males still in winter plumage, that is to say, the whole head was streaked black and white. The testes of both were very small and possibly they were in immature plumage. They measured: Length, 20; 20·2; expanse, 49·5;

tail, 5·4, 5·5; wing, 15·9, 15·4; tarsus, 1·78, 1·68; bill from gape, 3·7, 3·85; the bill was orange, the subterminal portion bluish brown, and the tip yellow; the inside of the mouth, orange; iris, very dark brown; legs, toes and webs, black; claws, black above, white below.

984.—Sterna hybrida, *Pall.*—*Hydrochelidon indica*, Steph. *apud* Jerdon.

I identify with the above a Tern which is very numerous in the Sittang River and neighbouring waters from the beginning of the cold weather to the end of the hot, or from November to May. I have not yet been able to send specimens to Mr. Hume for identification.* It is by far the most abundant Tern in Lower Pegu, with the exception of *S. aurantia*.

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* I take the opportunity of reproducing (vide infra) from the Ibis, two of the late lamented Capt. Beavan's descriptions of supposed new Terns, of which I have never been able to make anything, *viz.*, *Sternula Jerdoni*, and *Gelochelidon innotata*.—

"988.—Sternula minuta, *Little Tern.*

"Should it, however, be a new species, I would propose for it the name S. JERDONI, although perhaps it may be *S. orientalis*, Licht., or that mentioned by Mr. Gould (P. Z. S., 1855, p. 50).

"It agrees tolerably well with Dr. Jerdon's description of *S. minuta*; but all the dimensions are much larger. I procured this specimen in Burmah at Thatong, near Moulmein, but on the Martaban side of the river, on 1st October 1865. Its dimensions were as follows:—Length, 13 inches; wings, 10; tail, 4·37, the outer tail-feathers exceeding the rest by 1 inch; bill from front, 1·62; tarsus, ·75; irides deep brown, nearly black; wing extending ·75 inch beyond tail. This species is found in considerable numbers on the Thatong creek; and some (probably adult birds) have the head pure black. In the present specimen it is pearly grey, slightly tinged only with black, which becomes more conspicuous on the nape, and extends as a black line across the eye and ear-coverts. The bill is yellow, tipped with black, and the feet a deep orange with black claws. After reading my M.S. description of this bird, Dr Jerdon told me, it was allied to *S. javanica*, but was utterly unknown to him.

Another species of Tern, procured in Burmah, also near Thatong, is unknown to me; and as I am unable to refer it correctly to any known species, I will provisionally assign to it the name of

"Sterna innotata, *Sp. N.*

"Its position is somewhere between the genera *Gelochelidon* and *Onychoprion*, as characterized by Dr. Jerdon. Its specific characters are as follows:—Bill black; feet dull dark red; tail not forked, but nearly square in flight; wings long, and exceeding the tail by 2 inches; forehead white; head and nape brown, slightly mixed with white; a white line extends from the base of the bill under the eye to behind the ear-coverts. The under parts are pure white, the back and tail-coverts being a light grey colour, which is also the colour of the tail, but it is tipped with brown; the scapulars are grey, also tipped with brown; the primaries are white, with brown on either side of the shafts, the tips tinted with the same colour. The outermost part of the inner webs of the secondary quills are pale grey; and the tertials are brownish grey, with white shafts, and hoary, or pale grey on their outer webs. The toes are only partially webbed. The irides dark brown. Dimensions as follows:—Length, 9·5 inches; wing, 8·4; tail, 3; tarsus, ·81; bill from front, 1·12. This species was procured on October 4th, 1865, on the Thatong creek, not far from the sea, and within tidal influence. I believe that Dr. Jerdon saw my M.S. account of this species in 1866, but did not at the time refer it to any known species."

It is understood that the types passed into Lord Walden's possession. I wish he would tell us, or get Mr. Howard Saunders to tell us, what they really are.—ED., S. F.

Common as the bird is, I find I have the measurements of one specimen only—a male shot on the 14th March. It is still in winter plumage. The length is 10·8; tail, 3·5; wing, 9·8; tarsus, ·87; bill from gape, 1·75; the tail is forked to the extent of half an inch; the bill is dark blood-brown; the inside of the mouth, flesh color; iris, dark brown; legs and toes dark blood red; claws dark brown.

988.—Sternula minuta, *L.*

The present bird is quite as common as the preceding in the Sittang River and adjacent streams, and is a permanent resident.

The following are dimensions of three specimens, two being males and the third not sexed:—Length, 8·6 to 8·9; expanse, 19·5 to 20; tail, 2·25 to 2·8; wing, 6·6 to 7·1; tarsus, ·7 to ·75; bill from gape, 1·6 to 1·72; middle toe and claw, ·79 to ·8; the tail forked to the extent of from ·6 to 1.

The coloration of the soft parts varies a good deal. Two birds shot on the 15th April, and still in winter plumage, have the whole bill dark brown changing to a darker shade at the tip; the irides are very dark brown; the eyelids greenish, plumbeous; tarsus and toes, reddish brown; the claws black. Another bird shot on the same day, in summer plumage, has the bill yellow, with a quarter of an inch of its tip black; the legs and toes pale orange and the other parts as above. Numerous specimens shot later on, in June, vary a great deal, specially in the color of the bill.

1005.—Graculus carbo, *L.*

The Large Cormorant is very abundant all the year through in the streams of the Pegu plain, not however frequenting either the Pegu or the Sittang Rivers. I have seen the bird in no other part of Burmah.

I was never familiar with the bird in Europe, but I always thought that the white spot on the flanks was, according to all authors, a distinguishing characteristic of this bird. Now I shoot dozens of these birds on each of my marches (for my boatmen and followers think them excellent eating) and I have never seen a bird with a white spot till very lately. Whatever may be the case elsewhere, here certainly it is my impression,* that the white spot is donned at the commencement of the breeding season, say about the 1st of

* This is a well-known and universally acknowledged fact.—Ed., S. F.

September, and is lost again a few months later. On first meeting with the bird I thought I had come across a new local species, for it has fourteen rectrices, and according to Professor Schlegel this number is possessed only by *carbo* and two African species. If not *carbo*, therefore it must be an undescribed species, for the African birds would not be likely to occur in Southern Burmah. Subsequently, however, white spotted birds turned up.

The following are the dimensions of three fine males:—Length, 32 to 32·7; expanse, 51 to 52; tail, 6·8 to 7·5; wing, 13·3 to 13·6; tarsus, 2·3 to 2·4; bill, from gape, 3·85 to 3·95; outer toe and claw, 3·8 to 4·0.

The under surface of the plumage, from the throat to the vent, varies in individuals from glossy black to pure white, and every possible combination of the colors occurs.

Iris, bright green; pouch and under the eye, bright gamboge yellow; eyelids and in front of eye, dusky yellow; the culmen and on either side, dark brown; the tip and margin of the upper mandible, together with the whole lower one, light pinkish horny; legs, toes and claws deep glossy black.

1006.—Graculus sinensis, *Shaw.*

This Middle Cormorant is as common as *carbo*, and the two consort together, and with *melanognathos*, most amicably. I have found it only in the Pegu plains. It has 12 rectrices.

On little or unknown Himalayan Oology, with Notes on the Birds.

By Andrew Anderson, F. Z. S.

Having recently returned from a two months' tour in Northern Kumaon, I am anxious to present the readers of "Stray Feathers" with an account of the more interesting portion of my oological discoveries in this grand country. A full history of all my doings in the Alpine tracts of this must be deferred to a more convenient season; mea

an indication of the field, this country offers to the ornithologist, I may mention, *en passant*, that even in this brief period no less than 250 species of birds came under my observation.

516.—Acrocephalus dumetorum, *Blyth.*

On the fifth day after leaving Naini Tal—ever mindful of my friend Mr. Brooks' parting advice to me (in reference to the part of the country which required to be investigated) "avoid the lower hills as the plague"—I reached Takula, which is the first march beyond Almora on the road to the Pindari glacier, late on the evening of the 10th of May. It rained heavily all that night, so that I was obliged to halt the next day, my tents being far too wet to be struck, and the distance to the next halting place necessitating a start the first thing in the morning.

Takula is at an elevation between 5,000 and 6,000 feet; it is beautifully wooded with a small mountain stream flowing right under the camping ground, and the climate is delightful. All things considered, I was not sorry at having an opportunity of exploring such productive looking ground; and before it was fairly daylight the next morning operations were commenced in right earnest. To each of my collectors I apportioned off a well-wooded mountain slope, reserving for my own hunting ground (as I had not yet got my *hill-legs)* the water-courses and ravines in the immediate vicinity of my camp.

Not more than 20 yards from where my tent stood, there is a deep ravine clothed on both banks with a dense jungle of the larger kind of nettle (*Girardinia heterophylla*,) such nettles too! the hill-dock (*Rumex nepalensis*), and wild rose trees. Wending my way through this dark, damp, and muggy nullah to the best of my ability, I came upon the nest of this interesting little bird; it was placed in the centre of a rose bush, at an elevation of some two feet above the bank and about four feet from where I stood, but yet in a most tantalizing situation inasmuch as it was necessary to remove several thorny branches before an examination of the nest was possible.

The act of cutting away the branches alarmed my sombre little friend (I knew that the nest was tenanted, as the bill and head were distinctly visible through the lateral entrance), and out she darted with such a "*whir*" that any thing like satisfactory identification for a bird of this sort was utterly hopeless. The nest contained four beautiful little eggs, so that to bag the parent bird was a matter of the first importance; all my attempts, however, first to capture her on the nest and next to shoot her as she flew off, were equally futile, her movements being [illegible] and erratic as forked lightning. And here let me give a [illegible]dvice to my brother ornithologists: Never attempt to [illegible]*ary little bird in the act of leaving its nest*, as you only

run the risk, and mortification I may add, of wounding perhaps an unknown bird, in which case she will never again return to her nest, but *lie in ambush* for her with outlying scants, and *make certain of her as she is returning to her nest.* She will first alight on a neighbouring tree, then on one closer, coming nearer and nearer each time; finally, she will perch on the very tree or bush in which the nest is built, and while taking a look round to see that all is well before making a final ascent, you have yourself to blame if you fail to bag her. All this sounds very cruel, but if a bird must be shot for scientific proposes, it is surely preferable to kill it out right than to let it die a lingering death. Thus it was that I eventually succeeded, even at the expense of being devoured alive by midges and mosquitoes; but then was not the satisfaction of feeling that I had become the happy possessor of *authentic* eggs of *Acrocephalus dumetorum* in itself sufficient to repay me for my hill excursion?

I cannot, however, pretend to lay claim to originality in the discovery of the breeding habits of this bird, for Hutton's description* of the nest and eggs taken by him so fully accords with my own experience that it is but fair to conclude he was correct in his identification. I would add, however, with reference to his remarks, that the nest above alluded to was *more elliptical* than *spherical,* being about the size and shape of an Ostrich's egg; that it was constructed throughout of the *largest* and *coarsest* blades of various kinds of dry grass—the egg cavity being lined with grass bents of a finer quality, and that it was domed over, having a lateral entrance about the middle of the nest. The whole structure was so loosely put together as to fall to pieces immediately it was removed.

The eggs, four in number, are pure white, beautifully glossed, and well covered with rufous or reddish-brown specks, most numerous at the obtuse end. Owing to its similarity to a number of eggs, particularly to the Tit-mouse group, it is just one of those that I would never feel comfortable in accepting on trust.

It was a remarkable coincidence that the very day I took this nest my post brought me Part IV. of the P. Z. S. for 1874, containing Mr. Dresser's interesting paper on the nidification of the *Hypolais* and *Acrocephalus* groups; and if I understand him rightly, he is certainly correct in his surmise as to the eggs of *Acrocephalus dumetorum* approaching those of the *Hypolais* group.

My good luck, as regards the Lesser Reed Warbler, did not end here, for on the following day, at Bagesur, at an el

* Nests and Eggs, Rough draft. p. 327.

of only 3,000 feet I again encountered a pair of these birds, finding their nest on the banks of the Surjoo. The position, shape, and architecture of this nest were identical with the one I have above described, but the eggs unfortunately had not been laid. The little birds, on this occasion, were quite fearless, hopping from stem to stem of the dense undergrowth which throughout the Bagesur valley fringes both banks of the river, every now and again making a temporary halt for the purpose of picking insects off the leaves, with an occasional "*tchick*," which Hutton resembles to the "sound emitted by a flint and steel," but all the time enticing me away from the site of their dwelling place. In this way they led me a wild-goose chase several times up and down the river-bank before I was able to discover the whereabouts of their nest.

596.—Anthus maculatus, *Hodgson*.

Pushing on as quickly as possible for the region of the snows, I arrived at Dhakuri Benaik, which is at an elevation of nearly 11,000 feet, on the 15th May. This was reputed to be almost a sure find for Woodcocks, and it was marked off in my chart as one of the chief places to be visited. Great, however, was my grief when I was obliged to quit the place without ever flushing a bird, notwithstanding that I employed an additional staff of coolies, and offered most tempting rewards for even the sight of one.*

But though I had here to take temporary leave of the Woodcocks, I did not leave Dhakuri empty-handed, for the very last piece of cover I drew, out flew a Pipit from a tussock of long grass, under the shelter of which was placed the nest which contained four hard-set† very black-looking eggs of the much disputed (by *European* Ornithologists I should add) Indian or *Green-backed* Pipit, *Anthus maculatus*. The nest was deeply placed in the damp, almost wet, ground; and it was a large massive structure of green moss, lined internally with fine grass stems. The bird, during the time I was engaged in examining the nest and eggs, stood motionless on the grassy

* I may mention that Mr. Buck, C. S., met with the Woodcock and Solitary Snipe at this very place a few years ago; their absence from such fine ground as I went over is probably attributable to the constant heavy rain which occurred during the whole period I was in the interior. Captain (now Colonel) Irby, in his paper on the birds of "Oudh and Kumaon" (Ibis for 1861,) says the Woodcock is common in Kumaon" I should like to know if Captain Irby recorded this statement from personal experience, or on merely hearsay evidence. It is very strange that during my two months' sojourn in the interior, and I devoted my utmost energies to the acquisition of this bird, I should have come across only one solitary example.

[The Woodcock *is* very common in the lower valleys of Kumaon *during the cold* season. In the Lat-ka-panee, below Almora, I shot three one morning (17th Novem- have known as many as six shot in a morning below Lohughat.—Ed.]

† ggs were on the point of hatching, but I saved them by means of carbolic y not be generally known that small eggs can be preserved in this way by sh hole and inserting pieces of cotton wool tightly rolled into small d with the acid; they should thus be *stuffed to the utmost*, and then Eggs prepared in this way, *i.e.*, when they are too far incubated to n, never go bad.

slope, not more than ten yards from where she had been flushed, eyeing me all the while with out-stretched neck, and remained in that position till I shot her.

These eggs are very large for the size of the bird, much more so than the usual run of the eggs of kindred species (*Anthus arboreus* and *A. pratensis*), and larger than a second sitting of fresh eggs which I obtained later on. On the same day several more old birds and two fully-fledged young ones, while in the act of being fed by their parents, were brought to bay.

I next encountered the same species in great abundance at Furkia, on the banks of the Pindar, close under the glacier, at an elevation of 12,000 feet. My camp here was pitched on solid ice, and it snowed heavily during the night; it was indeed an "abode of snow." Here I saw *Aquila chrysætus*, gyrating over the snow-capped peaks, and *Pyrrhocorax alpinus* for the first and only time: *Chaimarrornis leucocephala*, *Ruticilla fuliginosa*, *Enicurus Scouleri* and *Hydrobata asiatica* were my constant companions, and were to be seen enjoying themselves on the spray-covered boulders in the foaming torrent, while my *Paharees* shared the same cave with *Columba leuconota*, and amused themselves by catching Marmots (*Arctomys hemachalanus*.)

Here, with the snow lying several feet deep on the ground, I found my second nest of *Anthus maculatus*; it contained three callow young, but as the nest-architecture differed very materially from the first one, and as the parent birds were so terribly wild, I was necessitated to have the sitting bird noosed on the nest; shooting it was quite out of the question. This nest was composed entirely of grass bents, a very shallow saucerlike affair without the addition of any moss or warm materials, as in the first one.

The third and last nest, containing four beautiful fresh eggs of the same dark type as the first clutch, was taken at Bepulla on the 14th of June; this one, as regards position, size, and materials, was exactly similar to the second one above described.*

To sum up: *Anthus maculatus* affects by preference the more open grassy mountain slopes in the immediate vicinity of woods, at elevations from 7,000 to 12,000 feet; these open glades in Northern Kumaon are thinly covered with trees, and overgrown with beautiful, thick, soft, *velvetty* grass about a foot high, with occasional tussocks, especially in the neighbourhood of sheep pens, sufficiently dense and high to afford cover to a hare. This at any rate during the breeding season is, *par excellence*, the abode of both *Anthus maculatus* and *A. rosaceus*, which are the only two species of Pipits to be met with at so high an elevation.†

* This account entirely confirms mine, see NESTS AND EGGS, Rou —ED.

† I procured a very fine series of *Anthus rosaceus*; they were I must have been too early for them.

The birds on these undulating meadows, at times stretching away for miles, and covering the crest of some of the highest spurs, are extremely lively and very difficult to approach. You have frequently to go on *all fours*, taking advantage of every hollow and irregularity on the ground before you can get within shooting distance of them, and by the time you have bagged three or four you are completely done up, notwithstanding the thermometer registers only 50°. Once flushed, they become doubly wild, and at the first approach of danger rise perpendicularly almost out of sight, with a series of jerky flights, at times poising themselves in mid-air, very much after the fashion of the Sky Lark.

In its nidification it resembles *Anthus arboreus;* the nest, as I have already mentioned, is generally constructed of dry grass blades, and it is well concealed under a tussock of overhanging grass. The eggs, however, are very different from those of the sister species, and resemble very dark varieties of *Anthus pratensis;* in short, they are very like Hewitson's second figure of the Meadow Pipit's egg, a variety which that author says is seldom met with.

Although I explored many miles of good ground where these birds were plentiful, I procured only three nests; the conclusion to be arrived at is that the majority of them are late breeders, say from the latter end of June to all July.

Mr. Brooks, who has been so good as to examine my series of this bird, pronounces them, one and all, to belong to the typical *Anthus maculatus*. The chief specific characters of this species, as has now so frequently been pointed out, consist in the narrow, ill-defined striations on the back, which is an *olive green* color, and in having the posterior half of the supercilium *pure white*. I never once came across *Anthus arboreus*, which would appear to summer much further north, probably from Thibet to Yarkand. *

506.—Chaimarrornis leucocephala, *Vigors*.

Whilst at Furkia *(vide infra.)*, I was so fortunate as to fall in with two nests of *Chaimarrornis leucocephala* and one of *Ruticilla fuliginosa* which may just as well be included in the present notice, the more so, as I can find no allusion to the nidification of the former in any of the ornithological works to which I have access.

I do not know of any better instance of the importance of Oology as an element in the classification of birds than the eggs of these two species, and I might almost add, of *Enicurus maculatus*. Alike in their habits, the situations they fre-

*All the Pipits which were procured in the Yarkand expedition (See "Lahore to Yarkand, p. 226) have been referred by Mr. Hume, to this species, *viz.*, *Anthus arboreus*.

quent, and the style of nest architecture, the perfect similarity in the coloration of the eggs of these two species of Redstarts indicate a close alliance with each other.*

Both nests of the White-capped Redstart were taken by myself on the 20th of May, from a high precipitous moss-covered bank which overlooked the boiling rapid (Pindar), very much to the horror of my *quasi*-shikaree "Kheima," who professed to be my guide and keeper, but in realty was the most arrant humbug I ever met. The nest of this bird is very like that of the European Robin, and is composed outwardly of green moss roots and fibres, the egg cavity being profusely lined with goat's hair; its natural position is in a hollow of a bank on the side of a stream, the entrance being sheltered by overgrowing moss and ferns.

The eggs are three in number (I allowed ample time for a fourth to be laid); and as they are so very like giant specimens of the eggs of *Ruticilla fuliginosa*, as described by Captain Cock and Mr. Brooks,† and the exact counterpart of those taken by myself, any further description is almost superfluous. The ground color of both sets is greenish-white, profusely covered with rufous or reddish-brown spots; the markings in one clutch have a tendency to become confluent at the larger end, somewhat in the form of an irregular cap; in the other the spots and blotches are larger and more equally diffused throughout the surface.

867.—Scolopax rusticola, *Linn.*

On the 30th of June I turned my face towards the snows in another direction, determined to consider my expedition a failure so long as the discovery of the breeding haunts of the Woodcock which was one of the chief objects of my expedition, still remained unachieved. After two days' stiff marching I pitched camp at a place called Kemo, at an elevation of some 10,000 feet, over and against Namick, which is celebrated for its salt springs.

Here my luck culminated; and I have probably to thank my fellow traveller, Dr. Triphook (an ardent sportsman, and quite game to fag all day with his rifle or my collecting-gun as the case might require) for not only the most beautiful clutch of Woodcock's egg I have ever seen, but the first that have as yet been taken in this country.‡

We were following up a huge wounded *Presbytis schistaceus* (I was anxious to compare it with the Central Indian form)

*Hodgson was apparently aware of the affinities of these two birds, as he classed *Ruticilla fuliginosa* with *Chaimarrornis*. Mr. Hume, I notice, has removed the former from the genus *Ruticilla*, and made it the type of his new genus *Nymphorus*.

† Cf. "Nest and Eggs," p. 323.

‡ I think both Mr. Wilson, (Mountaineer) and Captain Duff have separately found these eggs, the former in the neighbourhood of Gungaotri, the latter in Kullu.—Ed.

through a dense undergrowth of Ringalls, when a Woodcock rose close to us, dropping again almost immediately, and disappearing in the cover. A diligent search revealed the long-looked-for prize, four eggs, which were deposited in a slight depression in the damp soil, and embedded amongst a lot of wet leaves, the *thin ends* pointing *inwards* and *downwards* into the ground.

The eggs found (I could see they were hard-set), I told Triphook I had no intention of leaving the place without bagging the bird. It was raining heavily and bitterly cold with the thermometer down to 40° ; but fortunately for us before we had had time to make ourselves comfortable under an adjoining tree, the bird flew back in a sort of semicircle, alighted, and ran on to her nest. No sooner down than she was off again, frightened, as I subsequently learnt, at one of our dogs, but which at first thought alarmed me not a little as I imagined she was removing her eggs.* After having satisfied myself that my suspicions were unfounded, it was decided that, as I had done my duty in finding the nest, shooting the bird should devolve on Triphook, and right well he did it, considering all the disadvantages which militate against having a snap shot in dense cover and in a thick mist. I never do anything but miss on such critical occasions ; at any rate I would rather some one else make a *mull* of it than myself !

The eggs, as before mentioned, are a most beautiful set ; in consequence of the advanced state of incubation it was a full month before they were made into good specimens ; a week later and the chicks would have been hatched. They are far *darker* and *redder* than the usual run of Woodcocks' eggs, all four resembling the *second* figure in Hewitson's work, and in the character of their markings they are not *unlike richly* coloured specimens of some Tern's eggs. They are remarkable for the roundness of their form, and in having none of the pyriform or pear-shaped character which distinguished the eggs of all the allied species.

Owing to the perplexing variations in the size, weight and color of individual examples, I recorded the following from the freshly killed bird : Length, 13· 2 ; wing, 7·5 ; tail from vent, 3·3 ; tarsus, 1·5 ; bill, 3·3. It will be seen that according to the dimensions given both by Yarrell and Jerdon the present specimen is a *very small* one ; and this, considering that the *females* average *larger* than *males*, makes it all the more remarkable. The distinguishing mark between the sexes of the Woodcock, pointed out by the Revd. W. T. Bree (" Loudon's [illegible] of Nat. History, " Vol. III., p. 147], *viz.*, that " the front

* undoubted proof of a *wounded Esacus recurvirostris* removing her eggs.

or outer edge of the first quill-feather of the cock bird is marked alternately with dark and light spots of a somewhat triangular shape, while in the hen the corresponding feather is without spots, and in lieu of them presents a uniform light coloured stripe extending the whole length of the feather," will not hold good as regards my specimen, which though an undoubted female, has the first primary marked exactly as he says it is in the male bird. In reference to this supposed sexual difference Yarrell remarks ("British Birds," Vol. III., p. 16) "the triangular marks on the outer web of the first quill-feather are rather indications of youth than of sex, and are obliterated by degrees." Again Mr. J. H. Gurney, junior, has the following note on the same subject ("Zoologist" for 1870, p. 2345) :—

"Ornithologists have long ago decided that the markings on the outer web of the first quill in the Woodcock are no criterion of sex : I have dissected several, and it does not hold good."

The ovarium of my specimen contained three impregnated eggs, the largest being about the size of an ordinary pill, so that the present brood would hardly have been able to shift for themselves before the mother would be incubating again ; it is evident therefore that in India, as in Europe, the Woodcock has a double brood.

In vain we hunted all we knew for more birds during the remainder of our sojourn in this bleak and inhospitable country, but without seeing another ; and here ends my narrative of the first and only timber doodle (*shum-titar* as it is there called) that we saw during a two months' excursion in Northern Kumaon.

A. ANDERSON.

Hypocolius ampelinus in Sind.

BY W. T. BLANFORD, F.R.S. &C.

So many African birds have been found in Sind that an addition to the number is not surprising. On the 6th of March last a bird was brought to me by my collector, which was not merely new to me, but which puzzled me greatly, for I could not tell the genus nor even the family to which it should be referred. It had a shrike-like bill, but no vibrissæ, and it proved on examination to be frugivorous. Altogether it recalled to my mind the curious Burmese Magpie, *Crypsirhina cucullata*, more than any other bird I knew, but still it was not a Magpie.

The spot where the bird was killed was amongst the l[illegible] hills on the eastern flanks of the great Kirthar rang[illegible] forms the boundary between Sind and Kelat. I was e[illegible]

on the Mazaráni Nai, due west of Lárkána. The man who brought me the bird said that he found it solitary on a stony hill side.

After a time the idea dawned upon me that I had seen a figure in the *Ibis* which somewhat resembled my bird, and when I had an opportunity of comparing the skin with the plate of *Hypocolius ampelinus* (*Ibis*, 1868, Pl. V) I had no difficulty in identifying the two. The only differences are that the Sind bird is greyer, especially on the head, where in the figure the colour is pale isabelline, the head being represented as pale above as it is below on the chin and throat. This difference may be due to age or to the state of the specimen. In the Sind skin too the tips of the first two primaries are more or less dusky, not white, but this may very possibly have been overlooked by Bonaparte and Von Heuglin.

Hypocolius ampelinus was first named by Bonaparte in his "Conspectus" from skins in the Leyden Museum, which skins were supposed to have been brought from California. Von Heuglin subsequently obtained from the coast of Abyssinia, near Mosowah, a female skin, to which he gave the name of *Ceblepyris isabellina*, but of which he published no description. Subsequently Hartlaub appears to have identified Heuglin's specimen with Bonaparte's species, and Heuglin gave a full account and a figure of the bird in the *Ibis*, in which he stated that the Leyden Museum specimens, like his own, were really, from Abyssinia.*

The bird must be very rare, for it escaped both Mr. Jesse and myself, and the Italian party, Messrs. Antinori, Beccari and Issel, who have since collected on the Abyssinian coast, have not met with it. Besides the types the only specimens of which I can find any notice are that obtained by Heuglin, and one skin in the Turin Museum presented by Botta, the Collector of the Leyden specimens (*Ibis*, 1870, p. 539).

Hypocolius is a very curious form. I have already remarked that I felt very doubtful as to its affinities, and both Bonaparte and Heuglin appear to have been equally puzzled.

Bonaparte in his "Conspectus" gives as usual no definition of the genus; he merely says of it: *Genus forsan ad volucres spectans: medium quasi inter Colios et Cotingas.* The *Volucres of* Bonaparte were the *Pici* of some authors (*Scansores* and *Fissirostres* of others) the non-passerine group of the insessorial order. He placed the genus in the family *Ampelidæ*, next to the genus *ampelis*. Heuglin in the *Ibis* referred it to the *Campephaginæ*, but in the "Ornithologie Nord Ost Africa's" he placed it in a separate sub-family *Ampelinæ* with the *Campephaginæ* in the *Ampe-*

* ever is not certain. All that is known is that the skins were obtained by named Botta, who had been in North-eastern Africa. Even Heuglin's re not obtained by himself, but sent to him from Mosowah.

lidæ. That it has affinities with *Ampelis* is probable, there being some similarity in the colouration, while the form of the bill agrees fairly. Gray in the Hand List actually makes it a subgenus of his *Collyrio*, close to *Lanius erythronotus*, *L. vittatus* and *L. hypoleucus*. In this I cannot at all concur, the smooth gape alone shews the difference, and the thick muscular gizzard differs greatly from a shrike's. I think it very probable that *Hypocolius* is allied to *Ampelis*, and it may have some affinities with the *Campephagina*, though I feel doubtful of this, but I do not think it allied to either *Dicrurus* or *Lanius*.

The principal structural peculiarities of *Hypocolius* are the following :—Head subcrested ; the bill is stout and distinctly hooked, almost like that of a Shrike, but the gape is entirely devoid of rectal bristles ; tail of 12 feathers long, rounded at the end ; under tail-coverts long ; wings rather long and pointed ; the first primary rudimentary, the third (or second long,) primary the longest, the second equal to the fifth ; tarsi rather short ; middle toe long ; lateral toes nearly equal, but the outer slightly the longer ; claws long, moderately curved. The following is a description of the species with the synonymy.

Hypocolius ampelinus.

Bonaparte, I., p. 334. Heuglin, *Ibis* 1868, p. 181. Pl. V. Salvadori, *Ibis*, 1870, p. 539. Heugl. Ornith. N. O. Af. I., p. 421, No. 364. Nachtrage, p. xci., No. 379.

Ceblepyris isabellina, Heugl. Sitzungsber. K. Akad. Wien, xix, p. 284.

Collyrio (*Hypocolius*) *ampelinus*, Gray, Hand List, I. p. 392.

Upper parts generally ashy grey, with a slight rufous tinge on the head, which is more marked on the frontal portion where the feathers are rather lighter and more isabelline in tint ; feathers above the nostrils, lower part of the lores, all round the eye, and a band round the nape black, so that there is a black ring all round the head, except in the centre of the forehead ; ear coverts dark silver grey, looking black in some lights in the preserved skin ; primary quills black with rather long white tips, the tip on the first long primary being wholly, and on the second partially, dusky ; outer secondaries black with grey edges, the black diminishing in amount until it disappears completely on the feathers near the body ; tail feathers all of the same colour as the back with black tips about three quarters of an inch long ; chin and throat isabelline ; breast grey, like the back ; abdomen and lower tail-coverts pinkish isabelline ; under wing-coverts light grey ; legs flesh coloured ; bill horn coloured, dusky towards the tip. The bird was not fresh enough when I saw it for the colour of the iris to be [illegible]. Length, before skinning, 10·25 inches ; wing, 4·2 ; tail, [illegible] sertion of central feathers) 4·75 ; tarsus, 1 ; mid toe [illegible]

0·95 ; wing, short of end of tail, 3·6 ; outer tail feathers half an inch shorter than the outer ; culmen, (point of bill from rise of skull) 0·85 ; bill, from front, 0·58 ; from gape, 0·9.

On dissection the stomach was found to be extremely muscular, and its contents Ber (*Zizyphus*) fruits. The cœca were rudimentary, not $\frac{1}{10}$ inch long.

The female is described by Heuglin as slightly smaller, isabelline grey in colour, with an olivaceous tinge, darker above than below, wanting altogether the black marking on the head, and having much less distinct black tips to the tail feathers. The ends of the primary quill feathers, the two first excepted, blackish with white margins.

It is to be hoped that more specimens of this very rare bird will be obtained. The discovery will aid in showing how very cautious it is necessary to be in describing new for supposed new birds from Western India, they being so likely to prove known African forms.

W. T. Blanford.

Notes on Ceylonese Ornithology and Oology, with additions to the Avifauna of the Island.

By W. Vincent Legge, f.z.s., &c.

The following notes contain new discoveries in Ceylonese oology, which, although matter for the second edition of "Nests and Eggs of Indian Birds," ought, I think, to have first publication in an Ornithological Journal like Stray Feathers. The numbers prefixed to the different species are those of Mr. Hume's list. Those which follow the name of the authority are those of Mr. Holdsworth's catalogue.

8.—Falco peregrinus, *Gmelin.* (1).

A fine female shot on the west coast at Putlam on the 15th of February last year ; the gentlemen, a member of the Ceylon Civil Service, who shot it, informs me that it frequented the vicinity of his compound for several evenings, flying about and apparently hawking after insects in the twilight—curious behaviour for a Peregrine, but this is an age of advancement and enlarged ideas, and if Peregrines choose to catch moths instead of pigeons what can it matter to us ! The district, however, of Putlam is not one in which a Peregrine would be looked for ; it is flat, and, like all the north-west coast, covered with low scrubby jungle. I do not know if any previous instance of the actual shooting of *F. peregrinus* has been published. Layard, if *not mistaken in his identification of it*, speaks (An. Nat. Hist., 1854) of its breeding in a Palmyra near Jaffna, and I myself

saw it on the cliffs of this Fort in October 1872, (STRAY FEATHERS, Vol. I., p. 486.) The present example equals North-world birds in size, having a wing of 14·6; tail, 7·8; tarsus, 2; mid toe from joint, 2·3; its claws straight, from above, 0·83. It is evidently fully adult, though perhaps not very old; there are faint fulvous edgings across the back of the neck; the throat and foreneck quite unmarked; the mesial drops present on the chest, at the side of which the feathers are tinged with isabelline; the spottings down the centre of the breast are arrow shaped, and the barrings of the thigh and under tail-coverts pointed at their centres.

18.—Cerchneis amurensis, *Radde*, (4 *bis.*)

Erythropus Vespertinus, STRAY FEATHERS, Vol. I., p. 487. The Redfooted Falcon which I spoke of *loc cit*, must, I am sure, be referable to this species. The specific characteristics are in accordance with those pointed out by Mr. Gurney (*Ibis*, 1868), and the plumage is similar to that described by Mr. Sharpe, Cat. Accipitres, p. 445, as belonging to the *young*. Its occurrence so far south as this is very interesting, and it may not, therefore, be out of place to give the measurement and general description of the example in question, shot at Trincomalie, as noted, *loc cit* on the 6th December 1872. ♀ Juv. Length, 12·2; wing, ·9; tail, 4·75; tarsus, 1·2; mid-toe, 1·; claw, 0·4; bill from gape straight, 0·8. Iris deep brown; cere and basal half of bill, with eyelid and anti-orbital skin orange, apical portion brownish leaden; legs and feet orange; lores and cheeks, a narrow supercilium, widening out behind the eye, and short moustachial streak blackish brown, paling somewhat on the ear-coverts; above cinereous brown, darkest on the hind neck, paling on the rump into ashy brown; the feathers mostly with conspicuous pale edgings, which are ashy on the latter part, giving it a grey appearance; quills dark brown, the secondaries and inner primaries with whitish tips and margins, and the whole with broad transverse bar-like spots not reaching to the edge, on the inner webs; tail grey, darkening towards the tip and with twelve narrow brownish bars; beneath, the chin and throat and side of the neck, reaching up beyond the ear-coverts, pure white; chest, breast and flanks whitish, with large central drops of dark brown almost covering the feather on the chest and changing into bars on the lower flank; abdomen, thigh, and under tail-coverts almost white, a faint tinge of rufous scarcely perceptible.

41.—Polioætus ichthyætus, *Horsf.* (15).

The Fish Eagle of Ceylon deserves, I think, special notice, inasmuch as though it has been assimilated with the Indian

form, *P. ichthyætus*, it appears to me to be intermediate between that and *P. humilis*; as regards size and soft parts, it comes rather close to the latter—the largest female that I have measured having a wing of 18·25, and the largest male one of 17, and the iris of the *adult* being bright clear yellow, tinged with fleshy colour in some and beautifully speckled or mottled with brown in others, but never wholly brown as given by all writers for *ichthyætus*. It is very common in the east and north-east of Ceylon, affecting all estuaries of large rivers and salt lagoons; and every tank in the far interior possesses its pair, waking the traveller in the early morning long before day break with its extraordinary call or *shout*.

A female, which I killed out of the nest to the north of Trincomalie, measured as follows:—Length, 26·5; wing, 18·25; tail, 10 (with a terminal black band of 3); tarsus, 3·5; mid-toe, 2·3; its claw straight, 1·2; claw of inner toe, 1·4; bill from gape straight to tip, 1·95; height of mandible at anterior edge of nostril, 0·7. Iris bright yellow, finely mottled with brown; bill and cere dark horn; gape, and lower part of cere adjacent to it, pale bluish leaden; tarsi and feet whitish with a bluish tint. As regards the colouring of the head and throat, they are cinereous grey, the vertex being washed with brown, and the upper parts as well as the breast are as in descriptions of Indian examples. The light parts of the interscapulary region are dark shafted, and the bases of the white thigh feathers blackish.

December is the breeding season, and one young one only, for the most part, is reared. The nest is an enormous structure, generally built in the fork of a tree close to the water. The nestling is clothed with white down, the head and hind neck feathers coming out buff, and the scapulars and wing-coverts brown, with conspicuous buff tips and terminal centres.

At four months the plumage of the offspring which I reared of the above example was complete and was as follows:—Iris hazel brown; bill dark brownish horn, bluish about gape; the lower mandible lighter than the upper; cere brown; legs and feet fleshy white; forehead, throat, face and above the eye, greyish buff, which colour forms the apical and central portion of the light chocolate brown feathers of the crown and hind neck; back and wings sepia brown, tipped with fulvous grey and with the terminal part of shaft white; the lesser wing-coverts are conspicuously light, the greater coverts having also light bars on the inner webs; quills blackish brown, the innermost secondaries tipped fulvous, and both primaries and secondaries crossed on their inner webs with light bars, showing white on the under surface; under wing-coverts light tawny fulvous; the greater, barred black and tipped fulvous, forming, when the expanded, two dark bands; base of the tail white

(this is concealed by the upper tail-coverts), remainder blackish brown, mottled to within two inches of the tip with greyish; a little above the subterminal band is an indication of a narrow band or bar; the tips of all the feathers are tipped with fulvous grey; beneath, the neck and breast, together with the flanks isabelline or reddish grey, with white mesial lines and buff grey tips; the elongated abdominal feathers are whitish clouded and mottled with darkish grey; under tail-coverts white, washed with light tawny.

The habits of this bird, which died at 6 months in my aviary from an accident, were very interesting; from the very first he exhibited the greatest rapacity, and was extremely querulous or noisy when under the influence of hunger.

57.—Pernis ptilorhynchus, *Temm.* (23.)

I procured two examples of this bird in the Fort here during last November, and a third was got about the same time by a gentleman in the Western Province. One of my birds was frequenting the trees in front of the officers' quarters when it was shot, and the other was flying about with some Kites near the barracks. The Honey Buzzard is evidently a straggler to Ceylon in the cooler season, and it has not fallen to the lot of many to observe it, hence the reason of its being overlooked as a Ceylon bird until Mr. Holdsworth published it as such in his catalogue. My specimens appear to be both immature, but they differ very considerably: that which is doubtless the younger of the two has the forehead, sides of the vertex above the eye, and cheeks white with dark shafts; the lores are blackish grey; the vertex, occiput and crest tawny brown with darker centres and black shafts, the feathers being white at their bases; the two longest crest feathers are much the darkest having the central patch almost black; they are tipped broadly with white, the dark shaft continuing to the apex, the hind neck is whitish washed with pale tawny, and looks as if it had faded from a darker hue; the entire under surface and under wing-coverts are pure white, with about half a dozen of the throat feathers dark shafted, as also three or four of the elongated lower flank plumes; the tail has four black bands (including the apical one) the interspaces being filled in with alternate smoky bands and wavy whitish cross rays.

The head of the second specimen is in general appearance blackish brown, the white forehead and broad supercilium being absent, the feathers are edged yellow brown, and the crest feathers, which are not so long, almost wholly black and untipped with white; the lores and cheeks immediately below the eye are bl[illegible] grey, the ear-coverts are concolorous with the head, and [illegible] neck deep brown broadly edged with yellow brown. T[illegible]

though darker has the same character of plumage as in the light specimen; a black line commences below the cheeks and widens out on the sides of throat, crossing it from where a narrow mesial streak runs up to the chin; the chin, throat, under surface and under wing-coverts are white with dark shafts and longitudinal drops, very narrow on the centre of the breast and widening into patches on the flanks and abdomen; on the chest below the black gorget there is an extensive brown patch. This latter is of the same hue as the under surface of a presumably adult bird which I examined in 1872, shot in the Central Province, showing, as I take it, that the adolescent under surface commences on the chest.

81.—Ninox hirsuta, *Temm.* (33.)

This Owl frequents the jungles round tanks in this part of the island; it has been, until lately, considered both rare and restricted in range as regards Ceylon, but it is neither the one nor the other. It is plentiful in the south-west and also in the jungles at the foot of the Badulla hills; I have no doubt it will prove equally so in the forests of the Eastern Province.

153 *bis.*—Loriculus indicus, *Gmelin.* (66.)

I have lately met with this species in jungles of this district; it is not uncommon in the interior, but it has not been observed before in the northern half of the island, having been supposed, in common with many other peculiar Ceylonese forms (all of which I have lately procured in the wilderness of forest to the eastward of Trincomalie) to exist only in the west and southern part of the country.

164 *bis.*—Yungipicus gymnopthalmos, *Blyth.* (68.)

This little Woodpecker is found sparingly all through the northern central part of Ceylon. It has until now only been recorded from the west and southern half of the island. Is it quite certain that it has been found in Southern India* ?

196 *bis.*—Megalaima flavifrons, *Cuv.* (76.)

The eggs of this Barbet have been at last thoroughly identified. Mr. MacVicar, a gentleman in the Public Works Department, found two nests in the Western Province in the beginning of last May. This is the breeding season of all our Ceylon Barbits. The holes were bored in dead branches of the Jack Tree about 20 feet from the ground, and the eggs laid on the bare wood at the bottom of the cavity. They were two in number, pure white, smooth and glossy, and of a slightly pointed oval shape. They measured respectively 1·06 by ·82; 1·13 by 0·8; 1·13

* Quite so I think. I have numerous specimens from different localities in Travancore undistinguishable from others from Ceylon.—Ed., S. F.

by 0·8; 1:11 by 0·8. The identification of the birds was complete as they were seen and shot.

212.—Coccystes jacobinus, *Bodd.* (86.)

An egg ready for expulsion was found in a bird of this species killed last November at Puttalam, Western Province. It is now in the museum of the R. A. Society of Ceylon, and is of a pale sky blue color, measuring 0·95 by 0·74. Mr. Holdsworth, P. Z. S., 1872, p. 432, supposes it to lay in the nest of *Malacocercus striatus*, and Layard found a young bird under the care of a pair of these Babblers.

214.—Endynamis honorata, *Linn.* (88.)

The eggs of this species have been identified for the first time in this island, during the present year. In May three batches were found near Bolgodde, in the Western Province, all in nests of *C. culminatus*. In one nest there were 4 crows and four koels' eggs, in another 5 crows and 3 koels, and in the third 2 crows and 4 koels. The parasite eggs varied in character considerably, and two nests contained two types. The smallest measured 1·2 by 0·9, and were of a pale green ground color, spotted rather thickly with longitudinally directed markings of olive brown over numerous blotches of pale bluish grey; the darker spots being somewhat confluent at the obtuse end; the largest ranged up to 1·38 by 1·0, and these were of an olive brownish grey, marked all over, mostly at the larger end, with reddish brown over numerous spots of bluish grey; at the obtuse end these expand into blotches. Other eggs were of an olivaceous green, blotched and spotted with two shades of olive brown over numerous smaller spottings of bluish grey; the markings are sparse at the small and confluent at the obtuse end. I have long known the koel to be resident in Ceylon, though a want of knowledge of the range of birds here has induced some to consider it migratory.

298.—Alseonax terricolor, *Hodgson.* (122.)

I notice that the existence of a second species of *Alseonax* in India is doubted, Mr. Hume making *A. latirostris* do duty for the above. In Ceylon there is undoubtedly a flycatcher of this genus most distinct from *latirostris* and answering to Jerdon's *A. ferrugineus*, Vol. I., p. 460—a bird which he considered identical with *Butalis muttui*, Layard. From the description, Jerdon evidently considered this distinct from *terricolor*, and if this latter is not to be allowed why is the former to be suppressed too* ?

* But who proposes to suppress *ferrugineus* ? and what bearing have Mr. Legge's remarks, upon the question of the distinctness or identity of Hodgson's *Himalayan terricolor*, and Raffles' Sumatran *latirostris*?—Ed., S. F.

The following is a description of a male example of this species which I procured eight miles from Trincomalie, in forest on the 26th of last January. Length, 5·5; wing, 2·8; tail, 2·2; tarsus, 0·55; mid-toe, 0·4; its claw straight 0·19: bill to gape, 0·75. Iris hazel; bill, upper mandible dark brown with pale tip; under mandible fleshy yellow; legs and feet *pale yellow*; claws light reddish grey; lores, a circle round the eye and just beneath the gape white; the orbital circle incomplete above the lores; head and upper part of hind neck dark olive brown, changing into the rusty olivaceous of the back, which becomes ferruginous on the rump; wings dark brown; the coverts and tertials rather conspicuously edged with yellowish ferruginous; the quills have a fine edging of the same, as likewise the tail, which is of a lighter brown; chin and throat white, bounded on each side by a *dark check patch*; the chest is brownish, edged fulvous, and the breast and under tail-coverts white; the flanks light yellowish brown, and the under wing-coverts edged with the same color as the upper.

In the absence of Mr. Layard's specimen it is impossible to say whether this is *Butalis muttui*, *A. ferrugineus* apud Jerdon. If new I should propose to style it *A. flavipes*, but in the meantime something must be done towards finding out what *B. muttui* really was.

372 *ter*.—Oreocincla spiloptera, *Blyth*. (135.)

In 1873, I discovered this Thrush affecting the low country forests between Trincomalie and Anoradjapura and secured its nest and eggs, which latter have not yet been published that I am aware of. The Ceylon Spotted Thrush up to this time had only been known from the upland districts, but since this date it has been found to be common in the Western Province low districts, as many as four having been shot in one morning within 12 miles of Colombo. The nest, which I found near a stream in some fine forest 15 miles from Trincomalie, was built in the fork of a small sapling about 3½ feet from the ground, and resembles that of a Blackbird in structure, having a loose exterior of small twigs with a lining of grasses. The interior was tolerably well finished and rather deep. The eggs were two in number, of a bluish green ground freckled and spotted, mostly at the obtuse end, with light red and reddish grey over lilac grey spots.

390 *bis*.—Alcippe nigrifrons, *Blyth*. (137.)

After finding hundreds of the curious dry-leaf structures, mentioned in the *Ibis*, 1874, p. 19*, entirely void of contents,

* The eggs supposed here to belong to this bird, I have since identified as those of *Dumetia albogularis*, called also *Batechia* by the Singhalese.

and having come almost to the conclusion that they were built as roosting places, I at last came on a newly-constructed one containing two eggs, on the 5th of January last; the bird was in the nest at the time, so that my identification of the eggs was certain. The nest of this Babbler is generally placed in a bramble or straggling piece of undergrowth near a path in the jungle or other open spot; it is about 3 or 4 feet from the ground, and is entirely made of dead leaves and a few twigs; the leaves are laid one over another horizontally, forming a smooth bottom or interior. In external form it is a shapeless ball about 8 or 10 inches in diameter, and has an unfinished opening at the side. The birds build with astonishing quickness, picking up the leaves one after another from the ground just beneath the nest. When fresh the eggs are fleshy white, becoming pure white when emptied; they are large for the size of the bird, rather stumpy ovals of a smooth texture and spotted openly and sparingly with brownish red, over bluish grey specks; in one specimen the darker markings are redder than in the other, and run mostly in the direction of the axis. Dimensions: 0·74 by 0.56 and 0·74 by 0·55; this is the first record of the breeding of *Alcippe nigrifrons*.

437 *bis.*—Layardia rufescens, *Blyth.* (143)

The nest and eggs of the Ceylon Rufous Babbler have been identified this year. Mr. MacVicar of the Ceylon Asiatic Society, took a nest at Bolgodde, in the Western Province, on the 22nd May last; it was placed in some creepers against the trunk of a tree a few feet from the ground; it resembled the nest of *Malacocercus striatus*, and contained two fresh eggs very similar to those of this bird. They were deep greenish blue and smooth in texture; oval, somewhat pointed at the small end, and measured 0·92 by 0·74 and 0.95 by 0·75.

456 *bis.*—Rubigula melanictera, *Gmelin*, (148.)

In April 1873, I received from a friend three eggs of this bird, but I was unable to identify them until lately, having had an opportunity of comparing them with a Clutch taken last year in the Western Province, and about which there was no doubt. In the latter case the nest was fixed on the top of a small stump, and was a loose structure of grass and bents; in shape rather a deep cup and contained two eggs of a reddish white ground color, profusely speckled with reddish brown (in one example confluent round the obtuse end, in the other distributed over the whole surface) over freckles of bluish grey. Dimensions: 0·79 by 0·58, 0·78 by 0·57. My nest was made of grass on a foundation of dry leaves and herbaceous stalks loosely lined with fine hair-like tendrils of creepers; the eggs were of a

reddish white ground, thickly covered throughout with brownish red and dusky red spots becoming somewhat confluent round the obtuse end. In form they are regular ovals, and measured 0·78 by 0·6; 0·79 by 0·59; 0·79 by 0·58.

507.—Larvivora cyanea, *Hodgson.* (161.)

This "Chat" is found in the jungle of the North while passing southwards to the hills on its migration. I procured a male in the month of October 1872, a few miles from Trincomalie.

515 ?—Calamodyta brunnescens. *? N.Sp.* (163*bis.*)

In my note on *A. brunnescens*, STRAY FEATHERS, 1873, p. 489, I mentioned that certain differences existed between the bird I shot at Jaffna at the season when our Indian migrants are with us (and which by the bye corresponds exactly with the fine plate in "Lahore to Yarkand") and that which I procured at Hambantotta. Further research has proved the latter variety to be resident in Ceylon, breeding in June and July. Looking to this circumstance, its differences in dimensions and in certain points of plumage which I did not fully go into in 1873, and to the fact that *C. stentoria* retires altogether from the south of India in the breeding season, I think I shall not err in characterising our bird as a distinct species, which, if really new, I propose to call *C. meridionalis.*

Since procuring it at Hambantotta in 1873, I find that it is an inhabitant of the north-eastern districts as well, being very local and only found in tanks entirely overgrown with reeds and other impenetrable vegetation. I have found it in two localities, the one a tank near Trincomalie, which is literally a vast bed of gigantic rushes attaining a height of 8 or 10 feet, the other the celebrated Toparé or Pollnanera tank covered with lotus and other swamp-loving vegetation. Should similar spots exist elsewhere it will, doubtless, be found in them. It is very difficult to shoot, rarely showing itself, and when traced even to a detached clump of rushes, impossible to drive out, even by trampling all over them.

I have as yet procured only three examples; two males and one female. *Dimensions* as follows:—

	Length	Wing	Tail	Tarsus	M. toe	Its claw straight.	H. toe	Claw st.	Bill at front
♂	7·85;	3·35;	3;	1·18;	07;	031;	0·43;	0·45;	0·78
♂	——	3·3	—	1·1;	07;	0·32;	0·4;	0·4;	0·8
♀	——	3	—	1·0;	06;	0·3;	0·4;	0·38;	0·72

(the last two in bad moult, and therefore length and tail not taken).

Soft parts.—Iris brownish or olivaceous yellow; bill, upper mandible dark horn, lower with the base fleshy and terminal part brownish; gape, mouth and tongue orange; legs plumbeous

grey; feet darker. The bill is longer and stouter than that of my *Cal. stentoria*, which likewise has not the inside of the mouth orange *; the tertials are longer than those of the latter bird, falling short in the closed wing of the primaries by 0·6 against 0·7 in the latter.

Lores dark, surmounted by a light streak; head and above olivaceous brown, paling on the rump and quite wanting the rusty † hue which pervades *Cal. stentoria;* feathers of the back pale edged; wings and tail dark brown; the quills and lateral rectrices pale edged; beneath the throat is whitish, darkening into greyish on the neck, which with the chest is striated, each feather having a fine mesial line; centre of the breast greyish white, wanting the fawn hue present in *Cal. stentoria;* flanks greyish brown, without the fulvous wash of the Indian bird; abdomen and under tail-coverts whitish; under wing-coverts pale fawn white.

The female appears to want the striæ on the chest, but is similar in other respects.

The nest of this species, which I found on the 25th June last, was situated about 5 feet from the water, and was built into the fork of one of the tall seed-stalks of the rush, resting only against the three branches of the fork, but worked round the stems of the flower, which sprung from the same point. The structure was composed of various fine grasses and a few rush blades, and was lined with portions of the flower divested of the seed matter; this was the most singular point in the construction of the nest; in shape it was a well-formed and rather deep cup, measuring 2½ inside diameter and 2 in depth. There was unfortunately but one egg laid at the time—0·89 by 0·67, of a pale green ground, boldly blotched with blackish, over spots and markings of olive and olivaceous brown, under which there are again small clouds and blots of bluish grey. The black markings are longitudinal and are most abundant towards the obtuse end.

The song of this Warbler is the usual harsh warble of the family, beginning with measured notes and breaking into variations; it has also a "chet" and a "churr" note when threading its way through the reeds. After taking the nest the tank dried up, and the reeds were burnt by herdsmen, and I then revisited the spot for the purpose of getting specimens; singularly enough, though there were plenty of birds tenanting the few remaining

* This is seasonal. From the specimen sent me I am not at present disposed to concur in the distinctness of this supposed new species. I have compared this specimen with a large series of continental ones. It does not differ structurally; the size of the bill varies a good deal in different examples. As to the plumage, it is merely the faded August plumage. I have a July Cashmere specimen exactly like the Ceylon bird.—Ed., S. F.

† This again is seasonal.—Ed.

clumps, their song had entirely ceased, the only indication of their presence being an occasional "churr" proceeding from the dense cover out of which it was next to impossible to drive them.

760.—Pyrrhulauda grisea, *Scop.* (203.)

This Little Lark is resident throughout the year in all the eastern and north-eastern parts of Ceylon, and also in the dry district of the north-west coast. I found it breeding this year near Trincomalie in May and June. It commences to build at the latter end of April, chosing the barest parts of open wastes, commons, dried up paddy fields, &c. Three nests, which I found on the Esplanade, were constructed in holes scooped in the ground, with the surface of which the top of the structure was flush. They were very loosely put together of dry grass, stalks and roots, bits of rag and pieces of thread and cotton with no particular lining. Round the edge of the nest was placed a neat *little circle of small pieces of tile and brick,* which, in this case, must have been gathered in from some little distance, as the ground, hard by, was quite bare. Two was the number of eggs in these and other nests found. Some were uniform pointed ovals measuring 0·8 by 0·55 and 0·8 by 0·53, and of a greenish white ground, freckled all over with minute spots of yellowish brown, olive brown and slate colour, with some larger markings of the same, forming a zone round the obtuse end. Four other eggs were much smaller, very much resembling those of *Sylvia rufa*, at home; they were somewhat stumpy at both ends, of the same grounds as the above, and more sparingly spotted with larger spots of yellowish brown and bluish grey over minute specks of brown. They measured 0·75 by ·54; 0·73 by 0·55; 0·71 by 0·52, and 0·73 by 0 53.

Another nest, found in July in the same district, was neatly made of fine grass similar to that of *Alauda gulgula*. It contained two young covered with fulvous down.

842.—Glareola orientalis, *Leach.* (224 *ter.*)

I first procured this interesting addition to our Avifauna at Minery Tank, "Ceylon's Inland Sea," on the 10th of July last, and a few weeks afterwards discovered it to be abundant on the flat lands surrounding the great tank at Kandelay. They appear to breed at both localities,—my first example a female had very distended ovæ and the Kandelay birds all had young or eggs —most probably the former, as it was so late in the season. I obtained a perfect series from the young female to the fully adult male; these latter had a length of from 9·3 to 9·2 and the wing from 7·5 to 7·3; an old female had a wing of 7·5, and a young one of 7·2. The young of both sexes had the buff part of the throat, which was almost white, streaked with black,

and the bills had much less red at the base of lower mandible and along the commissure than the adults; the chests which were darker than those of the adults, were edged with fulvous; the breast not so rufescent and the chestnut of the under wing-coverts much duller and almost absent under the primaries. There is a visible difference between the plumage of adults of different ages. A very old bird has the throat more buff, the black gorget broader, and the white interior edge conspicuous; the lores darker, the chest lighter and the breast deeper; the under wing-coverts brighter and more white at the bases of the marginal feathers of the carpus.

I always flushed these birds out of the rank mossy vegetation growing on the dried upshores of the tanks; they would fly off, and then, wheeling round high in the air, would fly back, poising themselves over my head and uttering their pleasant sounding note compounded of the chirrup of a Swallow and the cry of a Tern. I imagine their nests were in the grass as they appeared to take no notice of me while I was traversing sandy and bare localities close by. I was however most probably too late for eggs, and they may have had young concealed in the grass. Unless some one has found the eggs of this Plover this year it would appear that eggs have as yet never been procured, and in searching for them one has no material to work upon.

848.—Ægialitis cantianus, *Lath.* (227.)

This year again I have found a good many nests of this bird watching the hen from the nest, and shooting her when there was not a single other bird near, and I find them all in the same plumage as that sent to Mr. Hume and which he says is a young bird.* Out of a number shot this year only one male has a narrow post-frontal black band.

850.—Ægialitis minutus, *Pallas?* (228 *bis.*)

I have just obtained a Ringed-Plover, new to our Avifauna, but in the present state of the synonymy of these little Plovers will not undertake to say what it is. The Ringed-Plover, which Mr. Holdsworth lays down as *Æ. dubius*, and which as far as my experience goes, stays with us until the middle of May, and then leaves for the north, returning in September, has a black bill of from ·55 to ·6 and a wing of from 4·3 to 4·65. There is no yellow at the base of the under mandible; the legs and feet are yellow, and the eyelid, which is not fleshy, is yellow. During the time it is with us it has the lores, cheeks and ear-coverts, a pectoral band encircling the back of the neck blackish

* I cannot answer for *these* birds, they may belong to a distinct species, but the particular specimen sent to me, was an immature *cantianus*.—Ed.

brown; there is no post-frontal black-band; the tertials are very long, in good feather much exceeding the primaries in the closed wing, and much exceeds the present bird in size. This little Plover, I have just discovered frequenting the large inland tanks of Minery and Kandelay, where it was breeding. I did not succeed in indentifying the eggs or finding a nest, though I searched very hard, and must have been often close to one. I got some doubtful eggs on the island in Kandelay tank, where *Æg. cantianus* was breeding in numbers, but I was unable to trace them satisfactorily to their proper owners. The chief distinguishing features of the bird are its small size, short bill, with the basal half of lower mandible yellow, and a *yellowish* spot at the base of the upper, its enormous carunculated bright-yellow eyelid and its plumbeous legs and feet. As it was in full breeding plumage, and as I have not seen the larger bird in nuptial dress, I cannot speak of differences in coloration. It has in common with the latter the shaft of the first primary white, and an equally large black spot across the apical half of the inner web of the lateral rectrice. Therefore Blyth's description of the "three outer tail feathers white" will not apply to it. Two males measured 6·2 and 6·4 in length had wings of 4·3; tarsi of 1·0 and ·95; bill at front, 0·45; tails from vent, 2·3; mid toe and their claws, 0 7. A female measured 6·2; wing, 4·05; tarsus, ·95; bill at front, 0·45; the iris is dark brown. It has a broad white forehead, a broad post-frontal black-band, black lores and ear-coverts, and a dark line under the eye joining these parts; the broad black pectoral band is continued round the hind neck below the white ring, and the cheeks and throat pure white. There is a yellowish appearance beneath the skin at the centre of the tarsus, and in the dried specimen the leg turns slightly yellow. This is a point to be dwelled upon, as in the dry examples the legs of both the species here would appear yellow. The larger bird frequents, in the cool season, various localities near the coast, but I have never seen the new bird anywhere but on these two great inland tanks, and during the months of June, July and August.

898.—Himantopus intermedius, *Blyth*. (258.)

Great numbers of these birds were breeding at Minery, and Kandelay tanks this year. At the latter place I found many fresh eggs as late as the 4th of August; many others were hard set, but no young were, up to that time, to be found. In the south I have found young as early as the end of [illegible]. The spot chosen, to breed in, at Kandelay is an island [illegible] tank; the ground is partly shingly and partly overlaid with soil, rock cropping out in one or two places. I found the

nests in all situations and very variously constructed; some were holes scooped in the ground and lined with large gravel only; some constructed amidst lumps of flood deposit; some scooped in the ground and scantily lined with small twigs and grass stalks; others made in depressions in rock and built entirely of little sticks and other matter taken from the "flood-wreck." The eggs were mostly four in number, though many nests contained those hard-set; they were for the most part *not* placed point to point, and varied immensely in size and ground colour. In shape they were of course for the most part pyriform, though some were much rounded towards the point, as ovals, while others were stumpy at the small end. The prevailing ground colour in about 50 specimens taken was an olivaceous stone colour; many were darker and may be described as olivaceous; some being of a greener tint than this even; others were yellowish stone color, *cafe au lait*, and brownish yellow. In the darkest eggs the markings of deep sepia* were very large and few in number; in the green variety numbers of blackish or deep sepia spottings, with here and there a scrawl or two, covered the whole egg, lying over spots of inky grey. In one nest the eggs were clouded round the obtuse end and striated there with hieroglyphic pencillings as well. The largest of 45 eggs was 1·97 by 1·3 and the smallest 1·3 by 1·17.

When its breeding grounds are approached the stilt is very clamorous, flying towards the intruder and passing to and fro over his head, with loud harsh cries, but when the vicinity of its nest is reached, it usually retires and alights at some little distance, allowing its nest to be rifled without further manifestations of anxiety.

976 *ter.*—Puffinus——*?* (302 *bis.*)

This remarkable addition to our Avifauna was procured by Mr. MacVicar, Treasurer of the Asiatic Society, on the 15th of last month at Bolgodde Lake, a large sheet of water discharging into the sea 15 miles south of Colombo. A pair were floating on the water at a part where it was brackish and when one was shot the other mounted high in the air and made off. The species would appear to resemble that alluded to by Jerdon at page 826 of his Birds of India as being similar to *Pterodroma macroptera* Smith, but does not nearly equal this in size of wing, 12½. In referring also to Layard's Birds of South Africa, I see that he

* I notice that exception is taken in my description of the eggs of *Rhynchœa bengalensis*, (Nests and Eggs of Indian Birds) to my mention of the marking, as *deep sepia*. Now to my mind the "blackest" markings on waders' eggs are nothing but *deep sepia* in composition. Look at the lighter portions, often present in a deep colour[ed] or rub it with a wet pocket handkerchief, in both cases pure sepia manif[est]. Furthermore the body colour of a cake of sepia when melted on a plate, is a sp[lendid] black.

places this species in the genus Procellaria and gives 13½ as size of wing. My example is a thorough Puffinus; its length in the skin is about 16; wing, 10·6; tail from vent, 5·2; tarsus, 1·85; mid toe with claw, 2·2; inner toe with claw, 1·8; posterior nails, ·15; bill from gape to tip straight, 2·05; the double-tubed nostrils are 0·3 from base of bill; iris dusky brown; legs and feet yellowish fleshy; bill (in the dried skin) brown on culmen and tips; sides of upper mandible and base of lower fleshy; head and above uniform hair brown, darker on the scapulars and wing-coverts than on the back; tertials as the scapulars; quills and tail black, the inner edges of the former paler and the outer webs with an inconspicuous greyish frosting; beneath pale greyish brown; the throat lighter than the rest, and with a faint brownish ashy hue in a strong light; under tail-coverts concolorous with the upper surface and very long, reaching to within ·7 of the tip of the central rectrices.

976.—Thalassidroma ——? (302.)

I observed the species of Stormy Petrel, that has several times been recorded on our coasts, on the 19th of August last, off the port of Batticoloa. It was entirely dark brown with the exception of a white rump, and is possibly *Th. wilsoni*, Bonap. It was a still morning and the lonely little denizen of the ocean wave was coursing backwards and forwards over the wake of our steamer!

979.—Larus ichthyætus, *Pallas*. (303.)

I learn of a pair of these Gulls having been shot at Jaffna last cool season, and I have fragments of an example shot in November last by Surgeon Keith near Colombo. Layard mentions, as Mr. Holdsworth observes in his catalogue, having seen a pair at Pt. Pedro, and I myself have seen it in rough weather on the west coast, but I do not know of any specimens having been actually procured until now. The fragments I have of the bird shot at Colombo testify to it's having been immature. The head is white with a brown anti-orbital spot, the post-orbital region and back of head being mingled with brown; on the back and scapulars many of the newly moulted bluish grey, brown centred feathers are mixed with the faded or reddish brown plumage of the first year; the tail has a black apical band, 2·5 inch wide on the central rectrices, and broader on the laterals, up the outer webs of which it runs slightly; the long feathers of the under tail-coverts have a black subterminal bar diminishing to a small spot on the lateral feathers. Length of bill, from gape straight [illegible]·7; height at angle of gonys, 0·72; the apical half is [illegible] with a light tip and the base pale fleshy; tail 7·5.

984 *bis*—Sterna nigra *Lin.* (310.)

On the 29th of October last, I saw one of these Terns in Kottior Bay, adjoining this port. Mr. Holdsworth added this species to our list in 1866, procuring a specimen at Aripo on the North-west coast.

986 *bis*.—Sterna gracilis, *Gould.* (311.)

A Tern, which I believe to be this species, has visited the coast near Trincomalie in great numbers during this year. In May it was the commonest of all our *Sternæ*, collecting in flocks around the nets of the fishermen and plunging in the most fearless manner on the fish within a few feet of them. I procured the first specimen out of a small flock frequenting the mouth of the Mahawella Gunga in October last, and did not observe any more until the early part of this year. In April and May all I shot were changing plumage and appeared likewise to be in a transition state (probably they were mostly young birds) as regards bill and feet. All possessed a darkish band or wing-edge above the ulna, which was darker in manifestly immature specimens, having fulvous edgings to the scapulars and tertials. In April individuals particularly, the bill was darkish, with a considerable amount of reddish orange at the base of the lower mandible, and the entire inside of mouth red; the feet and legs dusky orange; the webs lighter than the toes. Later on the bills were darker, the red of the mouth confined to the palate and that at the base of lower mandible less in extent; the legs and feet were unsullied red and the wing-edge not so dark. My specimens average about 13 in length; the wings long for the size of the bird, and in good specimens of males as much as 10·2. Bill at front, 1·32; tarsi, 0·8; mid toes with their claws, 0·95; tails, 5·4.

Mr. Holdsworth in his catalogue records a specimen procured at Colombo in July and supposes it to be a winter visitor from Australian seas. I did not notice it here (Trincomalie) between October and April, and I dare say his supposition is correct; at the same time I must mention that there are many favourite localities for Tern which I did not visit during that interval, and in which it may have been present.

986 *ter*.—Sterna Dougallii, *Montague* (312 *bis*.)

This beautiful Tern, quite new to Ceylon, has been very abundant here (Trincomalie) during this monsoon. I first observed them at the end of May, when they were very numerous round the Fort water. Their graceful appearance, with their long parakeet-like tails, attracted my notice, and I speedily bagged a number of specimens. At the first every procured was a male, but about the end of June I noti

in pairs, and as they disappeared almost entirely from the neighbourhood of the Fort a week or two afterwards, I am sure they have some breeding place in the district; as I was away on a trip into the interior in July I failed to find it, and it is therefore left to the lot of some future worker in Ornithology to make this discovery. I obtained one lovely bird with a pure black bill, which, together with the black head and long pointed velvet-black crest, and whole under surface glowing with the most exquisite rose, formed the most beautiful bird-picture I have ever seen. All the other examples I shot had the bill with the apical portion black, changing at the gonys to rich orange on the basal half; the legs and feet very delicate, coral with brownish claws. The largest example measured: Length, 15·8; wing, 9; tarsus, 8; mid toe and claw, ·98; bill at front, 1·5; lateral rectrices 7·7; depth of fork of tail, 4·4; the length from base of bill over head to tip of black crest in this bird was 3·2. The note of this Tern varied, generally, a somewhat musical pipe, but when a pair were together they had a loud and harsh crake.

? *—Sternula sinensis, *Gmelin.* (312.)

I found this little Ternlet breeding on the inland tanks of Minery and Kandelay, at the latter end of July; I obtained a number of eggs on the same island in Kandelay tank on which the Stilt and Kentish Plover were breeding. A great variety of type existed here, as already described in my paper to the Ibis last year, and I found several nests of the same large handsomely blotched eggs referred to therein. I noticed a good number of marsh terns, *H. hybrida*, flying near these nests with the Ternlets, and some few were in summer plumage, but as these could not have been the owners of these eggs, they remain still a puzzle to me.

992.—Sterna† anosthætus, *Scop.* (315.)

Another, hitherto considered, rare Tern which I have found to be tolerably common during the past year. On landing from Australia at Colombo, in August last, I noticed a number of elegant Black Terns sitting on the buoys in the harbour. A week or two afterwards half a dozen examples were

* I hope Mr. Legge will give us further information in regard to some of the species herein referred to. I do not know which species he refers to as *S. sinensis*, Gmel. Mr. Holdsworth treats this as synonymous with *S. sumatrana*, Raffles, but this I think, is usually considered a synonym of *minuta*. I somewhat doubt *both Sterna gracilis*, Gould, and *S. paradisea*, Brun., (*S. Dongallii*, Mont) occurring in Ceylon. Specimens procured at the Andamans were referred by Mr. Saunders to *paradisea*. I feel a little doubtful whether the Ceylon, Laccadive and Maldive bird *is* true *anosthatus*.—Ed.

† Mr. Saunders informs me *in epist.* that the generic term *Onychoprion* as applied to this Tern is a misnomer, having been bestowed by the author of the genus on an example with a claw only apparently pectinated, probably worn in scratching to form its nest.

shot for me; they were all in immature dress with the black of the crown and the dark brownish grey of the back and lower hind neck edged with white; bill and feet black; there is no sign of any orange tint about the legs. The mean measurements of 6 specimens was: Length, 13·6; wing, 8·92; tail (this varies much according to age of feather) 5·43; bill at front, 1·67; tarsus, ·77; mid toe and claw, 1·11. A few weeks later I saw numbers off the Great Basses lighthouse, and found them clustering on the buoys of native vessels in Batticaloa roads. During the cool season, I have several times observed them here and procured specimens. An individual caught in a net on the 6th of December had the scapulars and back very broadly edged with white; there is a small dark spot anterior to the eye; the lateral tail feathers are blackish brown, with a fine white edge to the basal portion of outer web. Those shot in August had the outer web of this feather mostly white, the apical portion darkening into brown. The wing measured 10·05, while the largest wing of the six examples shot at Colombo, was 9·6.

992 *bis.*—Sterna fuliginosa, *Gmelin.* (315 *bis.*)

A flock of these Terns frequented the water beneath the cliffs of Fort Frederick for a fortnight in April last. I procured examples, some with the under surface suffused with smoky grey, and others nearly pure white beneath. A male measured 14·8 with a wing of 10·5 nearly; bill at front 1·7; nearly all the outer web of the lateral rectrices was white, a narrow black line only bordering the shaft near the tip. These Terns fly along close to the water and pick up their food by fluttering on to surface and dipping the bill on.

F. V. Legge.

Trincomalie, Ceylon, 1*st September* 1875.

Additional Notes on the Avifauna of Sindh.*

By Major A. LeMessurier.

Stray Feathers, Vol. I., p. 234, notices that a specimen of 861 *(Dromas ardeola,)* the Crab Plover had been procured in this harbour. I shot one behind Baba Island on the 1st September 1872, agreeing with the description given in Jerdon.

I saw several 3 days ago in the same locality; first a flock of 12, then 5, and finally shot a single bird. The dimensions

* *Vide* previous papers, Vol. I., pp. 41-49; 91-289; 419-421. In these papers 289 species have been enumerated from Sindh; to these the present paper adds 2 additional ones (Nos. 870 and 878), and Mr. Blanford has recently added *Hypercolius ampeliuus.* Our present total stands therefore at 292 species, but I have little doubt that a really complete list will include at least 350 species.—Ed., S. F.

are :—Length, 14¾; wing, 8¼; tail, 3; bill from gape, 2½; tarsus, 3⅝; midtoe and claw, 1¾. I have sent the bird to Mr. Hume; the plumage is evidently changing; the head is white with a black spot in front of the eye; the crown is spotted, each feather edged white with black shaft and blot; the back dirty grey; scapulars steel grey; tail ash grey, tinged rufous; primaries black with white shafts, the inner web shading off into white, secondaries with inner webs nearly all white, and the tertiaries brown grey; lesser coverts white, edged with grey, and the greater coverts of the same type as the Gulls; axillaries white. The birds when seen at once strike you as being strange; their walk is slow with a run like a Curlew's, and they rise on the wing very much as the Gulls. They fly well but slowly with a stroke very unlike the quick short paddle of the Oyster Catcher. I could not discern the pectination of the middle claw described, by Mr. Legge STRAY FEATHERS, Vol. III., p. 223.

I now add some notes which may be of interest.

818.—(*Francolinus vulgaris*). Shot some Black Partridge at the Hubb River on 1st September—the young birds half fledged and able to fly.

829.—(*Coturnix communis*). The Grey Quail were in at the Hubb on 1st September. Bishop and I shot some on the 2nd. The Rain Quail were there at the same time with their young fully fledged and cutting about. Ninety-seven birds were shot near Tatta between 23rd and 26th September; (1 gun in 8 hours) and the Grey Quail were reported as all gone by the 3rd October. Fair bags were also made in the early part of the year between 24th and 28th February.

In 1874, a trying year most monsoony and stormy, Rain Quail arrived in great plenty about beginning of September, and then Grey appeared a fortnight after.

In 1872 Bishop during week reported Quail from Arabia landing at Keamaree. Shot with Braud at Mulleer, 22nd September. Saw plenty and in some instances covies of 6 or 7 rising from one bush—parents and young. Shot at dawn daily —2 brace singled out as being very ashy in color. Another note in the same year is—Lots arrived in Sindh 3rd week in September after hot land winds.

In Upper Sindh the Grey has been known to arrive as early as 16th August.

830.—(*Coturnix coromandelica*). The Rain Quail were in full breeding at Sapoora on 7th August, and the young were running about at the Hubb on the 1st September when the Grey came in.

887.—(*Houbara Macqueenii*). A Tilaor was sent me by Braud on 20th September from Joongshae. A bird had been reported as seen on the hills in the vicinity three weeks previously.

839.—(*Sypheotides auritus*). The Lesser Florikin were shot at Sapoora as early as 1st August, and on 15th August eight were shot, all except one in black plumage.

On the 3rd October, Mulock and Wise got 15 out of 18 in a clump on the other side of the Hubb River, all without exception were in brown plumage and not a black feather amongst them. One was sent to me, a young bird nearly fully fledged—the primaries were less acuminated than in the adult, and measured as much as ⅛th, 3-16th and 5-16th across the 1st, 3rd and 6th quills close to the tip. There was no white on the wing shoulder, and Mulock tells me that the absence of this color was noticed on all the birds secured. Thus between 15th August and the 3rd October the cock birds seemed to have entirely changed.

847.—(*Ægialites mongolicus*). Shot three of the Lesser Sand Plover from a flock of small Sandpipers on 2nd October.

860.—(*Strepsilas interpres*). On 20th August, when returning from bathing in the sea at Chinnee Creek, I picked up a Turnstone in summer plumage on the Keamaree branch line. It had evidently flown against the Telegraph wire, for its breast was cut and the wing broken. I secured 3 more on Baba Island, changing plumage, on the 13th October, and 4 more on the Breakwater on the 15th. The winter plumage is given in STRAY FEATHERS, Vol. I., p. 233.

862.—(*Hæmatopus ostrealegus*). On 23rd October I shot an Oyster Catcher in changing plumage below Manora Point. Jerdon does not mention the white spot under the eye or that the chin and throat are white. The irides were madder brown; the 1st primary is dark brown, with a portion of the shaft white and a white dash on the inner side of the inner web; the 4th had a larger dash of white on the inner web, and a white mark like a spear head running through both webs with the shaft white; the 8th white with brown tip, and more color on the inner web. The secondaries white with brown dash at tip across outer and portion of inner web.

870.—Gallinago sthenura.

I have not shot a Pin-tailed Snipe since 1872. I have the side tail feathers still by me. They are 1⅝ long, stiff and curved, six on each side, of a dusky color, with yellow tips.

871, 872.— *Gallinago scolopacinus et gallinula*). Braud sent me four couples of Common and Jack Snipe from Joongshae on 3rd October.* The birds were very plump.

* As I was correcting the proof of this paper a letter came to hand from Lieut. P. J. Maitland, who, writing from Jacobabad, says:—"The first full Snipe was shot here on the 28th August; the first Jack on the 4th October. It is more difficult to fix the exact date of the Quail, but they are very regular, always arriving during the last week or ten days of August."—ED., S. F.

877.—(*Numenius arquata*). Noticed great numbers of Curlew, solitary or in pairs, on my return from Lahore in August.

878.—Numenius phœopus.

Noticed flocks of Whimbrel for three nights in August, flying from the inner harbour towards Ghizree and the Indus Delta; some came back as if in play flying along the mangrove swamps close to the ground. Tarsus 2½ omitted in Jerdon.

888.—(*Calidris arenaria*). Shot a Sanderling out of a group of seven feeding on the shore about 4 miles beyond Manora. Plumage incomplete, extent 14½; wing, 4·44; tail not fully developed, 2, the central tail feather appearing quite decomposed; bill at front rather more than 1; bill from gape, 1⅛; tarsus nearly 1.

901.—(*Hydrophasianas chirurgus*). Doig sent me a Pheasant-tailed Jacana from the Narra with 2 eggs. The specimens are now in Frere Hall; the description is as in Jerdon, but the under tail-coverts were dark brown and not deep chesnut; the secondaries are white, and the tertiaries brown, with a small pointed spur on wing. I could not trace any sign of a nostril.

903.—(*Fulica atra*). Bishop shot a Bald Coot in the harbour on 22nd October.

956.—(*Tadorna cornuta*). I shot a couple of Shieldrakes when out with Braud one evening in 1872 at Soondra. In the male the cheek was brown and the forehead tinged white, and the feathers in the head were tipped brown. The feathers on shoulder and the wing were edged black, and the inner webs of the specimens were white, tipped black; bill blood red, tipped black; wing, 12⅛. The female wanted the pectoral band, but had the red brown between the shoulders, cheeks and forehead white; bill more red than in the male, with dusky tip. Primaries black; secondaries tipped white; greater coverts forming a faint speculum, bronzed green, edged light brown; tertiaries dull brown; lower plumage white, mottled with dull brown; under tail-coverts pale red.

962.—(*Dafila acuta*). Out with Hart and Bishop to see the Salt Pans at the head of the harbour. On landing, Hart turned off after a Gull (*argentatus?*) that he had wounded, and Bishop and I passed on to the Moach Plain. We saw 3 ducks on a small pool of water in a nullah and by going in different directions managed to secure them all; one was a Blue-winged Teal and the others I afterwards found out to be a young couple of Pintails. The male had the head dusky, minutely spotted increasing on to the neck. Tail of 16 feathers with central feathers pointed but not elongated. There was the pale red bar above the black green speculum with the white edge; tertiaries very broad dark grey, with broad velvet stripe yellowish edging;

back black, with 2 white bars; and central tail black, with yellow stripe; wing-coverts hair brown with white edging; the flank feathers as in the female and not as in the adult male, transversely banded black and white. Length, 24; wing, $10\frac{1}{2}$; tarsus, $1\frac{3}{4}$; mid toe, $2\frac{1}{4}$; Female, with central tail as in young male, but more marked with yellow. Lower plumage altogether more rufous. Length, 20; tarsus, $1\frac{1}{2}$; mid toe with claw, $2\frac{1}{8}$; wing, $9\frac{3}{4}$.

965.—(*Querquedula circia*). Bishop shot three Blue-winged Teal on 1st September in some irrigated fields at the Hubb River. They had probably remained near the river throughout the year; for the flights of duck were not noticed across the harbour till the middle of September. The Mohanas on the Dunds have all their fowling nets ready, but do not expect the birds in any numbers till after the coming full moon, November 13th.

979.—(*Larus ichthyætus*). In STRAY FEATHERS, Vol. I., p. 278, the weight of the Great Black-headed Gull is entered at 2 lbs. Bishop shot one at Pusnee on the Mekran Coast in February last, and found the weight to be $3\frac{3}{4}$ lbs. The specimen has been placed in Frere Hall. He is a great bird and may well be called a Vulture of the sea.

The Gulls generally were changing to their summer plumage at the end of March, they had all left the harbour by the end of April; and their return here for the winter may be fixed for this year as during the first 9 days of September. Their plumage is not yet full, as can be plainly noticed when on the wing.

A. LEMESSURIER.

Nidification and breeding habits of the large Rose-ringed Paroquet in the Eastern Sundurbun.

BY H. JAMES RAINEY.

Of the nidification and breeding habits of this exceedingly pretty species of Paroquet, the local name of which is *Chandana*,* I made some notes several years ago, when residing in that locality, and those notes form the basis of this paper.

From the last-half of the month of March up to the first-half of the month of May, these birds are to be seen flocking to the interior of the forests of the Eastern Sundurbun, especially that portion of it situated between the Haringhátá

* I cannot presume to guess at the correct scientific name of this species. It is what Blyth and Jerdon would have included in *Alexandri*; but their modern ornithologists have shown that this name is not applicable to any Indian species, and Mr. Hume has shown, Vol. II., p. 10, that we have several distinct nearly allied species, three at any rate,—*nicalensis* Hutton; *eupatrius*, Lin; *magairostris*, Ball; and possibly *nipalensis*, Hodgs. I suspect our bird is intermediate between the two latter.

and Bholá rivers on the extreme eastern side of the Jessore district. They at once select suitable trees with convenient hollows in them, some 25 to 30 cubits above the surface of the ground, rather far apart from one another, and away from the banks of rivers and *kháls*. The tree most preferred is, evidently, the *Keurá*, (*Sonneratia apetala*, Buchanan) a large tree, the wood of which is light, and the next in demand is, apparently, the *Sundri*, (*Heritiera minor*, Roxburgh).

They build their nests in the hollows, first scooping them down perpendicularly some two to two and a half feet, so that it requires a long arm to be able to remove the nestlings in them, and many go out on this quest annually at the proper season, as a pair of these birds readily fetch about a Rupee or two shillings in the neighbouring *háts* or fairs, being in great demand by the natives on account of their beauty, and the facility with which they can be taught to imitate the human voice.

The eggs are, usually, two to three, and sometimes four in number, slightly smaller in size than pigeon's eggs, and in color like those of the domesticated fowl, only slightly more whitish. They are deposited in the end of the hollows, the scrapings of the wood being gathered below to form a soft bed for them, and the young when hatched. Both the parent birds perform, alternately, the duty of incubation. The eggs take, I have been told, about four weeks to hatch, but on this point I have no exact knowledge personally.

During the month of June men go out bird-nesting into the interior of the forests of the Sundurbun, generally three or four of them together, and then the young birds are not quite fledged, and therefore unable to quit their nests. Great numbers of them are hauled out of their nests by the several parties who go out for them, and they find, as before stated, a ready sale for the nestlings.

The young are able to leave their nests and fly away in the following month, July, and they then go to the cultivated tracts, roosting on the reed jungle, known in the vernacular as *Nal*, (*Arundo karka*, Linnæus) along the banks of streams; and as vast flocks of them congregate in the same place every night, where they remain for about a month, if undisturbed, before dispersing themselves all over the surrounding country, they are easily caught in large numbers with bird-lime in the following manner:—Slender sticks of split bamboo with their upper ends well smeared with bird-lime are placed in those parts of the *Nal* jungle where the birds are likely to settle for [illegible] night, and the next morning the flocks fly away, leaving [illegible] their companions that have been caught, with the [illegible] to captivity for life. Many are secured in this way,

which is evidently profitable, for one patch of such jungle as they frequent; (another may be miles away,) is leased for this purpose for Rupees 20 and upwards.

Jerdon, I find in "The Birds of India," says the Alexandrine Paroquet breeds elsewhere during the winter, in the months of December and January, and if this information is correct, as I presume* it is, it is noteworthy that they should breed in the Sundurbun in the summer.

H. JAMES RAINEY.

Notes on a visit to the Lucknow Museum.

BY ANDREW ANDERSON, F. Z. S.

I wish to avail myself of the pages of STRAY FEATHERS for the purpose of offering a few remarks on some of the birds in the Lucknow Museum, which, through the courtesy of Dr. Bonavia, I have recently had an opportunity of closely examining.

My visit, however, having been of short duration, I shall confine myself for the present to a notice of the rarer birds of prey, a group which claimed my first attention, and one to which I am rather partial.

18.—Erythropus pekinensis, *Swinhoe.*

The *Indian* Lesser Kestrel (recently separated by Swinhoe from *E. cenchris*, Naum, under which term it was erroneously admitted into Jerdon's work) was represented by three remarkably well set-up specimens, *viz.*, two adult males and one in immature dress. The taxidermist informed me that these examples were captured alive in the neighbourhood of Lucknow, by a shikaree who is in the habit of supplying the museum with birds; and the soiled state of some of their wing-feathers clearly indicates that they were taken with bird-lime.

This pretty little Falcon is decidedly rare in Northern India. Umballa and Delhi are localities cited by Mr. Hume ('Scrap Book,' Pt. 1, p. 105,) where it has been known to occur, and Brooks ('J. A. S.' 1874, p. 239) records the capture of "a mature male, a young male in changing plumage, and an adult female," in April last, near Dinapore. I have now studied the Raptorial birds of the North-Western Provinces generally for some years past, and the present three examples are the only instances known to me of its occurrence in this part of the country. It is just possible, however, that the bird is

* But see Mr. Field's note on this subject, *ante*, p. 329, and Nests and *Draft*, p. 115.—ED.

rare as may be inferred from my remarks; for, at a distance of thirty yards, it would not be discriminated from the Common Kestrel; now, that the bird is known and sure to be looked for, it may turn up just as plentifully as the once mythical *Aquila hastata* has done. Mr. Brooks is of opinion that the Lesser Kestrel passes on its southward migration very early in the season, returning again later than most migratory birds do; and this may be an additional reason why it has hitherto escaped detection.

Dr. Bonavia was so good as to allow me to bring away a couple of his birds; and as I have now had an opportunity of comparing them with Dresser's plates ('Birds of Europe') of the allied form, it may be as well to point out that the *adult* Indian male bird differs from its European ally simply in the *larger amount of grey on the wings which extends right up to the carpal joint.* Messrs. Dresser ('Birds of Europe,') and Sharpe ('Catalogue of Birds,' Vol. 1, p. 437) state that the adult *pekinensis* is *unspotted below*, but this distinction does not hold good in regard to the two Lucknow specimens, which are just as freely spotted as Dresser's plate of *cenchris* is. The immature specimen above referred to has nearly completed the blue cap, but shows *no signs of grey on the wings, as is the case with the adult examples;* the upper and lower plumage generally is very similar to that of a young *Tinnunculus alaudarius*. The claws of all three specimens are *white*, tinged with yellow, as in the allied species.

41 *bis*.—Polioætus plumbeus, *Hodg.*

One specimen, which, from its superior size, is probably a female. This is the second *plains*-killed specimen of the Himalayan Fish Eagle known to me, the first being one that Mr. Brooks obtained at Etawah. I have no doubt this Eagle occurs commonly enough throughout the well-watered parts of Northern Oudh and Rohilkhand* during the winter months, but further south, and more particularly in the Doab, it can only be considered in the light of a rare straggler. Having more the habits of the Osprey than of the larger Fishing-Eagles, and feeding exclusively on fish, it must, I imagine, be looked for more on rivers and lakes than inland jheels.

During my recent tour in Kumaon I found *P. plumbeus* fairly common in the valley of the Surju, up to an elevation of between 4,000 and 4,500 feet. A pair shot off the nest (which contained one young bird about a fortnight old) carefully measured in the flesh, gave the following results:—

Sex.	Length.	Wing.	Tail from vent.	Tarsus.
♂	23·0	17·5	10·0	3·3
♀	24·5	18·0	10·5	3·4

* I have received a *portion* of a specimen from the north of the Kheree district in Oudh.

In both specimens the irides were bright yellow; the *upper mandibles* were blue-black; the cere, gape, and *lower mandibles* were leaden-blue; the legs and feet were white, washed with leaden blue, and the claws were black.

Both birds appear to be fully adult; the whole of the upper plumage, including the wings and tail, is brownish-cinereous, the head and neck being much lighter and tinged with ash; the lower plumage is a little darker, the throat and neck partaking of the same ashy hue; the abdomen, tibial plumes, and under tail-coverts, which latter reach to within 3 inches of the end of the tail, are *pure white*.

The ear-orifice is wonderfully developed, thus accounting for my many hopeless attempts to circumvent the bird while in repose. Not unfrequently I encountered it face to face in a sudden bend of the river; but as a rule I used to see it sitting on a boulder in the middle of the foaming torrent, or on some favourite tree overlooking a sheltered cove, in close proximity to pools and slack water. When disturbed, it has the habit of rising perpendicularly to some height in the air (this is necessary to enable it to clear the tall trees which fringe both banks of the river) with a series of slow owl-like flaps, affording an easy, and at times, a close enough shot, but owing to the nature of the ground they are difficult birds to *bag*; three which I knocked down fell into the boiling torrent, and were never seen again.

As there has been a conflict of opinion relative to the tail of this species,* it may be necessary to state that the *basal three-fourths of the under surface of the rectrices in both of my specimens present a mottled "pepper and salt" appearance, the white really predominating; the terminal portion is of a uniform brown* color, and as it is devoid of any of the white markings, which are so conspicuous in the remainder of the rectrices, the bird on the wing certainly has the appearance of having a "*dark terminal tail band*," as mentioned by Brooks.

It should be noted, however, that this peculiarity is not easy of detection when the *tail is closed*, as the mottled appearance I have above alluded to does not extend to the *upper surface* of the rectrices, excepting to the *inner webs of the lateral ones*, which of course get hidden by the *central tail feathers, and which latter are of a uniform brown color*. The *upper surface* of the *closed tail* presents therefore a "*uniform brown*" appearance, as stated by Hume.

* Jerdon states (*Ibis*, 1871, p. 336) that "on looking over Mr. Hume's collection I was struck by seeing no white on the tail," &c. Hume ('Nests and Eggs,' Pt. 1, p. 43) also alludes to "the barless uniform brown tail which characterizes this species." Brooks, per contra, is the only ornithologist ('J. A. S.,' 1872, p. 73) who maintains that it has a "dark terminal tail band."

56 *bis*.—Milvus melanotis, *Temm* and *Schleg*.

Only one specimen, a very fine adult female, with a 22-inch wing, and having the inner webs of the primaries pure white right up to the end of the emarginations.

I have nowhere found the large migratory Kite a common bird; in the Doab and in Oudh I should be inclined to consider it almost rare.

Besides the above three species (not in 'Jerdon'), there were immature specimens of *Hypotriorchis subbuteo* and *H. severus** said to have been killed in Oudh; a pair, young and old, of *Falco peregrinator*, and a fine series of *F. peregrinus* and *F. jugger*, in various phases of plumage.

Aquiline birds were poorly represented, the most interesting being spotted examples of *Aquila hastata*, which were not apparently discriminated from *A. nævia*, and a pair of beautiful specimens of *A. pennata*; one in mature dress, having the under parts white; the other a young bird, with the corresponding plumage of a uniform brown color.

A good many theories have lately been advanced respecting the plumage of the Dwarf Eagle, but I still adhere to my own conviction, *viz.*, that the assumption of the adult livery is attained by the gradual disappearance of the brown plumage of the underparts, which, in the course of time, presents an unbroken white, tinged with fulvous, or creamy-white appearance, from the throat downwards. In fact, I possess a specimen, a male, (see P. Z. S., 1875, p. 24,) which clearly proves that such is the case; this one, as stated in my paper above quoted, "has some brown feathers on the flanks, clearly indicating that the brown below is the early or first plumage."

I was very much disappointed in not seeing *Falco babylonicus*, the type specimen of which was procured † by Captain (now Colonel) Irby, in October 1858, at Nawabgunge (Bankee,) which is only 16 miles from Lucknow; and in vain I looked for the *true Aquila fulvescens*, *Accipiter virgatus*, and such like rarities.

Circus melanoleucus, *C. cineraceus*, and *C. cyaneus* were also conspicuous by their absence, which is the more strange, seeing that the two former at least are fairly common in northern as well as in parts of Central Oudh.

Amongst the Nocturnal Raptores the best was *Ephialtes griseus*, Jerdon, of which there was a fair series, and one specimen, in a very dilapidated condition, of *E. pennatus*, Hodgson.

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* Colonel Delme Radcliffe records the capture of a "beautiful adult specimen of *F. severus*" (*Ibis*, 1871, p. 366) which he "shot at Futtehgurh in 1866."

† "Rough notes," p. 79.

I am now in a position to prove beyond doubt that the latter is the young stage of *E. sunia* of the same author; for, only a few days ago, a live specimen was brought to me in a transition stage. The ear-tufts of this example have become *red, and the basal two-thirds* of *all the feathers on the neck and back are rufous, the tips only retaining the grey color of the younger stage.** Having now had on opportunity of examining two red, one changing, and three grey birds in *life*, I am forced to the conclusion that the two forms belong to one and the same species; the term "*pennata*" must, therefore, sink into a synonym of "*sunia*" of Hodgson.

Scelostrix candida was a bird that should not have been absent, as it occurs commonly throughout the grass jungles in Northern Oudh, fully fifty miles south of the Sub-Himlayan range. I have seen as many as six on the wing at a time in company with the Short-eared Owl and Pied and Pale Harriers, when shooting Florikin on the banks of the Chouka. While on the subject of the Grass Owl, I may mention that the peculiar *pinkish* or *purplish* facial disc, referred to by Hume (Scrap Book, Pt. II., p. 345) is probably sexual. Two years ago I sexed and measured 4 specimens which were shot in the Kheree district, but as the tickets got mixed up, I cannot now speak with certainty as to whether the *pink-faced* ones were males or females. The *pink-faced* ones (be they males or females) have the breast *buff* † instead of *white;* and I noted at the time that the sexes hardly differed in size, as will be seen from the subjoined table of measurements, which refers to both varieties and to both sexes :—

Length.	Wing.	Tarsus.
13·5	12·0	3·5
13·5	12·0	3·6
14·0	13·0	3·7
13·0	11·5	3·4

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* This, however, will not at all settle the question. *Pennatus* gets rufous up to a certain point, but beyond this, there is a blank in the series, a break in the chain, and no intermediate forms have yet, I believe, been obtained to bridge this over. Again we have just fledged birds as red as red can be, and pure grey birds, with worn bills and claws, obviously quite old birds. I myself incline to the belief that the two belong to the same species, but I am next to certain that age has nothing to do with the variation, but that they are allotropic, exactly as the white and dark slaty forms of *Demi-egretta sacra*, are.—ED., S. F.

† If so, then I think it will turn out that the pink depends on age, as the buff and the white I believe certainly do.—ED., S. F.

Novelties.

Hypotaenidia abnormis, *Sp. Nov.*?

Entire upper surface, (excluding wings,) blackish, without any white bands, but each feather margined with dull olive brown; only the abdomen and sides (and wings) with white bars; chin and throat as far as end of maxilla white; entire sides of head and neck, and breast uniform dark-greyish brown; bill at front, 1·2.

Mr. F. A. de Roepstorff has just sent me a Rail recently obtained at Corbyn's Cove, South Andamans, which appears to me to be undescribed.

At first I made up my mind that it must be the young of *H. obscuriora*, nobis, the Andamanese representative of *H. striatus*, but on further consideration I believe that this is not the case, and that the bird represents a distinct species.

H. striatus is no doubt distinct from *H. obscuriora*; this, after the examination of nearly fifty specimens of each, I believe to be certain; the differences pointed out by me, Vol. II., p. 302, appear to be constant; but they are very nearly allied species, and their various stages of plumage, from youth to age, must be, one has *primâ facie* a right to infer, strictly analogous. Now of *H. striatus*, we have in the Indian and in my own museum specimens of every age, and at no stage, after the birds are fully fledged, do they ever appear to want the white banding or spotting on the upper surface.

The present bird wants this altogether; its upper surface is like that of *Rallus aquaticus*, or *indicus*, only much darker.

I attach less value to the facts, that the bill is *very* much shorter, proportionally deeper, and has the nasal groove prolonged much more nearly to the point; these differences *might* be due to age.

The plumage too is firm and compact as in an adult, but then the whole of the quills and their larger lower coverts are partially still in parchment, conveying to me rather the idea of a young than a moulting bird. It is on the peculiar character of the entire upper surface, so different from that of the young of *striatus*, and the uniform dark greyish brown of the breast, that my belief in the distinctness of the species is chiefly based, though it must be admitted that, taken as a whole, the specimen does not look at all like a young bird.

Dimensions.—(From the *skin.*) Male—Length, 9·0; wing, (primaries still imperfectly developed) 4·5; tail, 1·5; tarsus,

1·5; mid-toe and claw, 1·8; bill at front, 1·2; from gape, 1·3.

Description.—Bill, legs and feet apparently black, with an olivaceous tinge.

Forehead, crown, occiput, back of neck, entire back, rump and upper tail-coverts, black or deep blackish brown, the feathers margined laterally with dull olive brown; scapulars similar, but most of them, with a minute brownish white speck on the outer (and in some few on *both*) webs, near the tip; chin and throat, as far as the end of the maxilla, white; rest of the throat, lores, entire sides of head and neck, and breast a uniform dark grey-brown, or grey with a brownish tinge; wings and tail black, with narrow white bars, in many cases reduced to spots on both webs; the coverts, secondaries and tertiaries margined with dull olive brown, as in the case of the back feathers, and in the case of the quills, with the outer webs, between the white bars, with more or less of an olive tinge, not reaching in any case either to the bars or the shafts; abdomen, vent, lower tail-coverts, sides and flanks, dull dusky olive brown, obscurely barred with brownish white, the white more or less bounded above and below with blackish; lower surface of the wing blackish, more or less banded with white.

Strix De-Roepstorffi, *Sp. Nov.*

Intermediate in colour of upper surface between S. flammea *and* S. candida; *but a typical* Strix, *with comparatively stout tarsi, feathered as in* S. flammea; *wing of male*, 9·8.

This, the smallest of the known members of the restricted genus *Strix.*, I have named after its discoverer Mr. A. de Roepstorff, who shot it on the 1st July 1875 at Aberdeen, South Andamans.

Although following to a certain extent the type of the English and Indian Barn Owls, it is altogether a brighter and more strongly colored bird, and its legs and feet are proportionately stronger.

Dimensions.—(From the skin.) Length, 13·2; wing, 9·8; tail from vent, 4·0; tarsus, 2·45; mid toe to root of claw, 1·4; its claw, straight from root to point, 0·73; bill from gape, 1·65. The 3rd primary is a shade the longest, the 2nd sub-equal, the 1st and 4th, 0·4, and the 5th, 0·95 shorter than the 3rd.

Description.—The feet appear to have been dark pinkish brown; the claws purplish; the bill yellowish white, tinged pinkish towards the base.

The whole circumocular region, inside the disc, silky white, streaked and tinged with chestnut and with a large patch

in front and a broad streak behind the eye of unmixed chestnut; feathers of the disc ring, mostly ferruginous chestnut, those immediately under the aural aperture white, those on the chin and throat tinged or mottled with brown at their tips; forehead and crown between the disc rings, a sort of golden ferruginous; occiput and nape dark brown, freckled with buff, and with small blackish subterminal spots, preceded or followed or both, on the occiput, by whitish spots or specks; visible portion of the feathers of the back, scapulars, wing-coverts and upper tail-coverts dark brown, mottled and freckled with a rich reddish buff, reddest towards the basal part of the visible portion of each feather and paling to a greyish white, at the extreme tips of the longer scapulars and coverts, and each feather with a conspicuous orange buff spot at the tip, more or less black framed; the tail is a dull ferruginous buff, paling at the extreme tips to greyish white, with five narrow transverse brown bands, and a great deal of brown freckling and mottling on the interspaces; the quills are a dull orange buff, similarly paling at the extreme tips, with numerous irregular brown transverse bars, and dense brown freckling and mottling on the rest of the feather. Each quill has a conspicuous buff or buffy white spot (more or less preceded by a black spot or line) at the tip; the entire lower surface a bright golden buff, most of the feathers with a tiny, more or less triangular, dark brown spot near the tip; the greater part of the wing lining and the tibial plumes (these latter spotless) are more ferruginous.

Recently-Described Species.

Republications.

I give precedence, at the particular request of several subscribers to a number* of Major Godwin-Austen's new species from the Eastern Hills (Nagas, Garos, &c.,) and quote from the J. A. S. B. of May 1874.

Sitta nagensis, *Godwin-Austen.*

Was first noticed at Sopvomah in the Naga Hills last winter, and several specimens were obtained on the watershed at about 6,000 feet. It has been described in the P. Z. S., 1874.

Description.—Above slaty blue; wings and centre tail feathers same colour but paler; quills dull pale black; a black streak through lores extending to ear-coverts and down side of neck;

* I reproduce these as requested, but I have not been able to verify them.—Ed., S. F.

beneath dull dirty white, purer on chin and throat, with a few white feathers bounding the ear-coverts; flanks, thighs and under tail-coverts dark rusty chesnut, all the latter with a terminal white spot; outer tail feathers black, a white patch on inner web of the three outer, which are tipped grey and terminally black on outer web, white on middle portion of the outer web of the outermost tail feather.

Bill black above, grey below; irides dark brown; legs green black.

Length, 4·9; wing, 3·0; tail, 1·75; tarsus, 0·68; bill at front, 0·58; spread of foot, 1·2.

Erythrosterna sordida, *Godwin-Austen.*

Three specimens of this bird were shot under Japvo Peak in January; having failed to identify it, I believe it to be undescribed.

Description.—Above dull olivaceous brown, ochraceous on rump and upper tail feathers; tail umber-brown, slightly tinged with ochre on outer web; quills same as tail and pale-edged; the primary and secondary coverts very slightly tipped pale so as to form an inconspicuous bar on the wing; a pale ring round eye; lores and ear-coverts dull grey, with a rufous tinge; beneath dull lutescent, darker on flanks, centre of abdomen and under tail-coverts white.

Length, 5·25; wing, 2·6; tarsus, 2·4; bill at front, 0·23.

It is somewhat similar to *E. leucura*, but the white basal half of the tail feathers in this last-named bird distinguishes it at once.

Paradoxornis Austeni, *Gould.*

At Kuchai, in the Naga Hills, at about 6,000 feet elevation, in April, I obtained two specimens of this bird; I afterwards procured three at Shillong in the summer. They differed so much from my original specimen of *P. flavirostris* shot in the low marshy country at the base of the hills, that I was inclined to consider them distinct. Mr. Gould, to whom I shewed these specimens, and who had figured *P. flavirostris* from the original specimens sent home, pronounced them to be new to him, and has described and figured the species in the 'Birds of Asia,' under the above title. Not having his description, I will only mention that the chief points of difference lie in the pale nearly white colour of the under parts, the paler brown of the back, and a markedly different distribution of the black on side of head and breast.

My specimens measured—

Length, 7·8; wing, 3·3; tail, 4·1; tarsus, 1·05; bill at front, 0·67; bill from gape, 0·4; which dimensions are smaller than those of *P. flavirostris*.

Legs plumbeous with a slight tinge of green; bill yellow.

[Mr. Gould thus describes the species :—*B. of As., Pt. XXVI., pl. IV.*

"Above very pale brown, the tail almost uniform with the back, and showing some slight barring when held away from the light; wings rather darker than the back; the inner webs of the quills deep sepia brown; entire head and hind neck pale sandy rufous; lores, feathers all round and below the eye as well as on the fore part of the cheeks buffy white; ear-coverts black; sides of neck very pale sandy buff; under surface of body buffy white, more fulvous on the sides and flanks, the chin slightly blackish, and the fore neck marked with a few triangular spots of black; under wing-coverts clear fulvous, like the inner lining of the wing."—Ed., S. F.]

Turdinus garoensis, *Godwin-Austen.*

Above pale rufescent brown, rather richer on head, wings, and tail; feathers of head pale-shafted; beneath, all pale fulvous, and whitish on abdomen.

Length, 4·5; wing, 2·4; tail, 2·1; tarsus, 1·0; bill at front, 0·5.

Bill is brown above, pale ochre below; legs pale corneous; tarsus and claws strong, the hind toe and claw long. It was among the birds collected by Mr. Wm. Robert in the Garo Hills, to whom is due the credit of its discovery.

This bird is very similar in coloration to *T. Abbotti;* but the bill differs much in the form of the nostrils, which have, as in *Pnoepyga,* a lunular cover. This and *Turdinus brevicaudatus* would be, perhaps, better placed after *Pnoepyga*, with which they are closely linked through *Pnoepyga longicaudata.*

Garrulax albosuperciliaris, *Godwin-Austen.*

Described in the P. Z. S. for 1874 as follows: "Above head and forehead reddish umber-brown, paling on back of neck into the dull olivaceous brown of the rump and whole of the wing; tail pale red brown; lores, a patch below eye, under ear-coverts, and supercilium which extends backwards for 1½ inches from the lores, white; upper portion of ear-coverts dark brown; chin and throat ruddy brown, paling on the breast into very pale dingy olivaceous, and into pale earthy ochre on abdomen and flanks; under tail-coverts rufous."

Bill black; legs fleshy brown; irides dull red.

Length, 9·0; wing, 3·8; tail, 4·2; tarsus, 1·38; bill at front, 0·7.

One specimen obtained in the Munipur valley, near Kaibi.

This dull coloured *Garrulax* is very similar in coloration to *G. rufifrons,* Sw., from Java, which is a larger bird and has no

white supercilium nor white lower ear-coverts. Another similar form is *P. cinereifrons*, Blyth, from Ceylon.

Garrulax galbanus, *Godwin-Austen.*

Figured and described in P. Z. S. for 1874 as follows: "Above pale pure olivaceous on head, with a brown tinge on the back; tail pale ashy-brown, the four central feathers tipped umber brown and barred, the four outer of the same colour in middle and broadly tipped with white; wing concolorous with back; quills pale umber brown edged grey. Very narrow frontal band, base of lower mandible, lores through eyes and ear coverts rich black; beneath dull yellow, purer on the throat, passing into the olivaceous on the flanks; under tail-coverts white; bill black; legs ash grey; irides red brown."

Length, 9·0; wing, 3·65; tail, 4·1; tarsus, 1·35; bill at front, 0·8.

I first obtained this very handsome bird in the Munipur Valley under the Koupru range, in February 1873. It associates in large flocks of from fifty to eighty or more, very noisy, following each other in a long string through the high grass, which they seem to frequent and prefer to the denser forest. When on the flight the white of their tail-feathers and under tail-coverts makes them very conspicuous. I observed it, also, on the head waters of the Barak and other streams that flow into the Munipur Valley on the north-east. The nearest allied species is *G. gularis*, M'Clelland, which is also yellow on the breast; but is dark slate grey above, with rufous on upper tail-coverts, flanks, abdomen, and vent.

Garrulax merulinus, *Blyth.*

This fine dull plumaged bird was obtained at the head of the Thobal Valley in March; it presents a good deal the character of *Trichastoma Abbotti* in its coloration, and approaches *Turdus* in the spotted breast. No description being included in Jerdon's 'Birds of India' I give one here. It was described by Blyth from Cherra-poonjee.

Above umber, with a rufescent tinge; head darker brown; wings and tail dark brown, both plain, the former having no pale edges; forehead pale grey; a very narrow short white streak above the ear-coverts, commencing just behind the eye; beneath dull pale rufescent ochre; the throat and upper breast spotted dull black; each feather having the black spot at the central extremity; under tail-coverts rusty; inside of wing and underside of tail feathers grey; tarsus very strong; bill thick and blunt, grey horny; legs dull fleshy purple; irides pale reddish brown; nude skin round the eye grey.

[The following was Blyth's original description :—"General colour deep olive brown; the median part of the under parts pale rufescent whitish brown, and spotted with black on the throat and upper part of the breast, much as in *Turdus musicus;* a narrow white streak behind the eye; irides whitish brown; bill dusky plumbeous; legs brown, with albescent toes. Length, 9½ inches; expanse of wings, 12; closed wing, 3½; tail, 3½; bill to gape, 1¼; tarsi, 1⅝. Common in Chera Punji." (Blyth, J. A. S.B., 1851, p. 521). Dr. Jerdon says:—"I procured this rare species on the Khasias in 1862, and have not since had an opportunity of observing it."—Ibis, 1872, p. 303.—Ed., S. F.]

Trochalopteron cineraceum, *Godwin-Austen.*

Described in the P. Z. S. for 1874, with plate.

Above pale ashy olivaceous, greyer on the tail, which is black for 0·7 inches at the terminal end, then tipped broadly white; quills pale black, edged hoary grey; the secondaries tipped black, and their square tips edged white in keeping with the tail; primary coverts near the bastard wing black, forming a wing spot; top of head black, extending in a narrow line down back of neck; lores and a broad band over eyes and ear-coverts dingy white; a few pure white feathers below eyes merging into ear-coverts; a narow black line extends from posterior corner of eye over the ear-coverts, and a moustachial streak of the same colour merges into indistinct spots; chin white with a few black streaks; breast and under parts sullied white, with a slight vinous tinge on the former, and a dash of ruddy rufous on side of the neck, ochraceous on belly and under tail-coverts.

Bill pale yellow, shaded dark above; legs fleshy brown; irides pale ruddy ochre.

Length, 8·75; wing, 3·22; tail, 4·0; tarsus, 1·25; bill at front, 0·68.

In general style of coloration this bird approaches *T. variegatum*, Vigors. Its yellow bill and much smaller weaker legs and feet, make it a very marked form of this genus.

Trochalopteron virgatum, *Godwin-Austen.*

Described in P. Z. S., for 1874, as follows:—

Head dark rufous brown, olivaceous on back, paler and greyer on rump; tail olive brown, with a slight tinge of rusty on basal half, finely and indistinctly barred; wing three first quills grey on outer web, the rest and secondaries pale ferruginous, merging into rich chesnut at their base; coverts of the latter colour, narrowly tipped ochre; feathers of the winglet conspicuously white centred; lores chesnut, a white supercilium; ear-coverts pale rusty; chin and throat rich dark chesnut; breast and abdomen bright ochraceous; under tail-coverts darker

brown. As viewed from below, the tail is grey brown, each feather faintly tipped with white.

All the feathers of the head, upper back flanks, and breast are centred white or pale ochre, and those of head and neck are rigid.

Bill black; legs pinky grey; irides pale brown.

Length, 9·0; wing, 3·5; tail, 4·85; tarsus, 1·3; bill at front, 0·6.

I obtained a single specimen near the village of Razami under the Kopamedza ridge at 5,000 feet in Naga Hills in the month of January. Starting just after sunrise for the peak above the village, I observed first one and then another bird, not familiar to me, cross the path in front into some thick scrub. In this we could only perceive their whereabouts now and then by the moving twigs. Followed about, they became separated, and the specimen in my collection got into a low tree, where it uttered a very sweet call of a few notes, which was answered by its mate; my shikari then managed to get sight of it and shot it. I never saw the species again.

This strikingly plumaged bird is very close to *T. setafer*, Hodgson, with which I have compared it, but it differs materially. *T. lineatum*, Vigors, is another allied form which extends to the N. W. Himalayah, while *setafer* is from Nipal and Bhutan.

Actinodura Waldeni, *Godwin-Austen.*

Described, P. Z. S. for 1874.

Head full crested, extending back for more than an inch, hoary grey, edged pale; back rich brown, with a greenish hue, becoming more rufous on the rump and upper tail-coverts; base of tail feathers chesnut, for half their length narrowly barred with black, then black for terminal inch, the three outer tipped white; quills black, outer web chesnut at base, then barred with black, and the narrow terminal portion grey; primary coverts black, the winglet feathers grey, barred black; ear-coverts hoary; side of head hoary grey; chin, breast and abdomen rufous brown, paler on chin and throat, the whole having a streaky appearance, the feathers being centred with a darker shade.

Bill grey; legs and feet fleshy brown; irides pale grey.

Length, 8·0; wing, 3·48; tail, 3·45; tarsus, 1·2; bill at front, 0·62.

I first shot this bird on the peak of Japvo at about 9,000 feet on the Burrail range, Naga Hills. It keeps to the tops of the forest trees.

This is a small form of *A. Egertoni*, Gould, which occurs in the same locality; every character is repeated in the two forms, modified yet each distinct; no better example of gradual change in size and coloration could well be found.

Malacocircus (Layardia) robiginosus, *Godwin-Austen.*

I have described this in P. Z. S. for 1874: "Above rich rusty brown, darker on the head, with black shafts to the feathers; wings and tail of same colour, the latter distinctly barred; lores white, beneath pale rufescent, nearly white under chin, and pale on centre of abdomen.

Bill black, well curved; legs pale corneous or dull grey brown; irides nearly white.

Length, 9·5; wing, 3·0; tail, 4·8; tarsus, 1·6; bill at front, 0·62.

The first two specimens of this bird I shot in long grass near the Logtak Lake, Munipur, and again obtained specimens near Kaibi in the same valley. It is essentially a grass-bird, with all the habits of *M. terricolor*, Hodgson. It associates about a dozen together, flying through the grass, one after the other, in a scattered line, never abiding long in one place. A near ally of this bird, *M. subrufus* from Malabar, is not so intensely rufous, has no white on the throat, is greyish on the head, and has a yellow lower mandible.

Prinia rufula, *Godwin-Austen.*

Described in P. Z. S. for 1874. I copy the original description from that Journal. Above, head ashy brown becoming more russet on back and pale rufous on rump and upper tail-coverts; tail brown, indistinctly barred, tipped white on the outer tail-feathers with a subterminal dark spot; wing dark brown, with pale rusty brown edgings to primaries and secondaries; lores, round eye and ear-coverts pale ash, below chin sullied white, greyer white on breast; ochraceous on abdomen; flanks and thighs pale brown.

Bill black, both above and below; legs pale corneous, with darker claws; irides ruddy ochre.

Length, 4·75; wing, 1·82; tail, 2·4; tarsus, 0·75; bill at front, 0·4.

This species was common in the Naga Hills and Munipur, and replaces *Hodgsoni*, Blyth, on the Khasi Hills side. It is quite distinct from *P. gracilis*, Franklin, which has a marked pale rufous forehead, and can be distinguished at a glance from the former bird, which is remarkably ashy with dark ear-coverts.

Cisticola munipurensis, *Godwin-Austen.*

Described in P. Z. S., 1874; the original description follows. "Above dark umber brown, feathers margined pale ochre on head, broader and more rufous on back; upper tail-coverts plain rufous brown; the feathers on nape are paler rufous and

dark shafting is subdued; tail dark umber, the two centre feathers margined rufous brown; viewed from below tipped whitish, with subterminal dark spots; white on chin, throat, and centre of abdomen, rufescent on breast and flanks. Pale round eye.

Bill black above, pale beneath; legs fleshy brown.

Length, 4·25; wing, 2·0; tail, 1·65; tarsus, 0·76; bill at front, 0·40.

I obtained four specimens of this species on the reedy sides of the Logtak Lake, Munipur Valley. It differs on comparison with *C. schœnicola* and *melanocephala*, (of Anderson which equals and has priority of *ruficollis*, Walden,) which I also obtained, being intermediate in coloration, and may be known at once by the dark edging along the shafts on the centre tail-feathers which in *melanocephala* are wholly dark, and in *schœnicola* are banded broadly rufous, terminating in black and white. It is very near *C. russica*, Wall., from the Island of Bouroo, Malay Archipelago, which is more rufous on the head and breast.

Reguloides fulvoventer, *Godwin-Austen.*

Above, centre of head, light yellow green, bounded on either side by broad dusky bands; and nape pale greenish ash. Pure ash on back; upper tail-coverts grass green, as well as the two central tail feathers and outer edge of all the others. The two outermost as viewed from below have a narrow pale yellow edging on outer web; shoulder of wing ash grey; coverts ash brown with a narrow white bar; quills dusky brown, the secondaries well marked with grass green; a pale yellow supercilium; ear-coverts pale; chin very pale yellow; throat, breast, and abdomen pale pearly white; under tail-coverts bright yellow.

Length, about 3·75; wing, 2·0; tail, 1·4; tarsus, 0·70; bill at front, 0·4.

Bill above dark brown, below orange; legs and feet grey. This Warbler is so distinct from any I have been able to look over, that I think it is a distinct species. I obtained it when in the low country of the Dunsiri, Assam.

Munia subundulata, *Godwin-Austen.*

Described in P. Z. S. for 1874.

"♂. Above pale umber-brown, darker on the head, pale grey on rump; a few feathers edged paler; the upper tail-coverts dull yellow; tail-feathers olivaceous umber-brown, faintly edged with same yellow tint; quills pale chesnut on outer web, umber brown on the inner, and indistinctly barred; sides of head umber-brown, becoming dark chesnut on chin and throat;

breast and flanks white; feathers very narrowly barred or margined rufous-brown; abdomen and under tail-coverts dull white, the latter sparingly streaked with brown; feathers of the back finely pale-shafted."

Bill dark grey; feet plumbeous; irides red.

Length, 4·3; wing, 2·10; tail, 1·70; tarsus, 0·55; bill at front, 0·45.

The female is a duller brown above, with no white shafts to the feathers, a distinct green tinge upon the tail feathers, otherwise as in *M. undulata*.

Change of coloration in young males commences on the centre of the throat, extending towards the base of bill into the dark chesnut, and towards the breast into the undulated colouring of those parts.

Obtained in the Munipur Valley, both on the Logtak Lake and head of the Barak river. It is very close to, but distinct from, *M. undulata*, Latham, in which the undulations are broad, the general coloration is more rufous, and the tail more pointed. It is also close and intermediate to *M. nisoria* from Java and Malacca; but in that bird the tail-coverts are grey, with no trace of the fulvescent tinge common to the two continental forms. Lord Walden was the first to notice it as distinct, in specimens in his collection received from Burmah, which are identical with my own from Munipur, and he kindly allowed me to describe it.

Bambusicola Hopkinsoni, *Godwin-Austen.*

Male. Description.—Above head plain dull brown, becoming rufous on back of neck; back dull olivaceous grey; the feathers of upper back and scapulars centred with dark chesnut: the secondary coverts more broadly so and terminated in black; the feathers of the back have one or more small white spots on the outer margin, giving the back a well-speckled appearance; the rump feathers are indistinctly barred white with a single black spot and increase in size to the upper tail-coverts where the spots are conspicuous, heart-shaped with chesnut centres; quills ruddy chesnut; the secondaries and tertiaries mottled with dark brown; tail ruddy-brown, feathers narrowly barred with pale ochre, having dark mottled edgings; lores pale buff extending as a supercilium; ear-coverts, chin, and upper throat pale ferruginous; a black streak extends from posterior margin of the eye down side of neck; from lower part of neck for a short distance the feathers are centred rufous, with pale spots on outer margin; rest of breast buff, lighter on abdomen and sides; barred on centre of breast and flanks with black, the barring not shewn, but each feather has a terminal black heart-shaped spot, which is a conspicuous character.

Legs pale grey with green tinge; bill pale horny-black, pale beneath; irides dark brown.

Length, 14·5; wing, 6·25; tail, 5·0; tarsus, 2·1; bill at front, 0·9.

Through the kindness of Dr. J. Anderson, I have examined a specimen of *B. Fytchii* ♀ from the Yunan Hills, and with this the Khasi bird is evidently very closely allied, if indeed it should not turn out to be identical; but between my bird and *B. Fytchii* there are differences which, though perhaps small, separate them, and until birds of the same sex are placed side by side, we cannot well decide whether they are two *good* species or not. To begin the enumeration of the points of difference, the Yunan bird (A) is much smaller than the Khasi one (B):

(A) *B. Fytchii*, tarsus, 1·7; mid-toe, 1·7.

(B) *B. Hopkinsoni*, tarsus, 2·1; mid-toe, 2·1.

In (B) the feathers on the flanks have the black terminal spot invariably heart-shaped, whereas in (A ♀) the corresponding feather is a diamond form (*vide* also the figure of ♂ in P. Z. S., 1871, Pl. XI.

In (A) the whole of the lower back is plain olivaceous, with a few of the longest upper tail-coverts having a black triangular (isosceles-shaped) terminal spot, followed by a white base.

In (B) these spots are much larger and broader, and extend up over the rump, and the feathers are more distinctly barred with brown and have a rufous tinge at the base.

In (B), and I think this is the most important difference, all the feathers of the upper back are spotted with white, and this feature extends to the wing-coverts and shoulder of wing. In (A) there is no tendency to this coloration, nor is there any trace of it in the plate in the P. Z. S.

(A) is dark brown on chin; (B) very pale.

(A) tail not distinctly barred; (B) tail well barred and the pale bars edged with black.

(A.) tail beneath dull brown; (B.) tail ruddy brown.

However, whether they be separable or not, and a larger series will decide this, one important point is finding this bird so far to the westward; within Indian limits, it has never before been recorded. My specimen was shot at Shillong on grassy-slopes at 5,000 feet. Before I had seen the bird in hand, I had twice seen it running on the pathway, and noticed its very different flight from that of the Black Partridge, which at first I thought it was. Now that attention is called to it, other specimens will no doubt turn up.

Next follow a number of species described by Lord Walden, for the most part the results of Lieutenant Wardlaw Ramsay's explorations in North-Eastern Burmah.

Glaucomyias sordida, *Walden.*

General color ashy grey, washed with a faint tinge of blue or greenish blue; forehead, supercilium, chin, and lesser shoulder-coverts deep pure blue; under shoulder-coverts, axillaries, vent and under tail-coverts white; tail brown, with a dingy gloss of dark green; bill, legs, and claws black; lores black; wing, nearly 3 inches; tail, $2\frac{6}{8}$; tarsus, $\frac{8}{8}$; fourth and fifth quills equal; third nearly as long; second still shorter than third; first half the length of second; bill lengthened and much hooked.

Four examples of this very distinct species were sent to me from Ceylon. I am not certain that it should not be classed as a *Cyornis*, near to *C. unicolor*, Blyth. At first sight it resembles an immature *G. melanops*, Vigors.—*Ann. and Mag. of Nat. Hist., Ser.* 4, *Vol. V., p.* 218, 1870.

Megalaima inornata, *Walden.*

The Large Green Barbet of South-Western India has hitherto been confounded with that of Central India, *M. caniceps*, (Franklin). That of South-Western India, to which I give the above title, is to be distinguished from all the other known Green Barbets by having the chin, throat, breast, and upper portion of the abdominal region uniform pale brown. Each feather has the shaft, very faintly, paler. The plumage above closely resembles that of *M. caniceps;* but the terminal spots on the wing-coverts and tertiaries are almost altogether wanting. The dimensions of both species are nearly alike, but the bill of *M. caniceps* (ex-Maunboom) is shorter and not so stout. The absence of the broad pale medium streaks on the pectoral plumage readily distinguishes this species.

Described from two Malabar examples, two from Coorg, and three from Candeish.—*Ann. & Mag. of Nat. Hist., Ser.* 4, *Vol. V., p.* 219, 1870.

Geocichla Layardi, *Walden.*

The *Geocichla* of Ceylon is most nearly allied to *G. citrina*, (Lath.), of Northern and Central India, and not, as might have been expected, to *G. cyanota*, (J. & S.) of Malabar. From Latham's bird it is to be readily distinguished by the much deeper orange of the head and nape, these parts being of the same dark shade of orange-brown characteristic of *G. rubecula*, Gould, ex-Java. On the under surface the orange tints are brighter and richer than in *citrina*, yet not so nearly dark as in *G. rubecula;* the blue-grey portion of the plumage is likewise darker than in *G. citrina*, but not so dark as in *G. rubecula*. As to the distribution of the white plumage the three species resemble each other; they appear, along with *G. rubeginosa*,

Müller, ex-Timor, to form a small natural section. Wing, 4⅜ inches; bill, ⅞.

Described from a single Ceylon example.—*Ann. & Mag. of Nat. Hist., Ser.* 4, *Vol. V., p.* 416, 1870.

Ducula griseicapilla, *Walden.*

Chin and throat pure white; remainder of lower surface pale grey, the breast being tinged with lilac; back of neck vinous; interscapulary region brown, with a vinous tinge; wing-coverts brown, like the back, but not so strongly tinted with vinous; quills dark brown, almost black; uropygium and upper tail-coverts dark ash; rectrices above dark brown, with a broad grey terminal band; lower surface of rectrices pale grey; under tail-coverts pale cream-colour; forehead, crown, nape, cheeks, and ear-coverts pure French grey.

Wing, 9·5; tail, 8·5; bill from forehead, 1; tarsus, 1; middle toe, 1·75.

Iris (♀) greyish white; orbits grey-brown; bill reddish plum-colour, pale at tip."—Wardlaw Ramsay.

Described from examples obtained by Lieutenant Wardlaw Ramsay on the Karen hills, at from 4,000 to 4,200 feet. A representative form of *D. insignis* and *D. badia.*—*Ann. & Mag. Nat. Hist.*, 1875, *S.* 4, *Vol.* 16, *p.* 228.

Megalaima Ramsayi, *Walden.*

The broad superciliary stripe composed of silvery-grey-centred feathers, giving a streaked appearance to the supercilium. Otherwise plumage and dimensions of *M. Franklini.*

I have compared a large series of typical examples of *M. Franklini* from Darjeeling and Asalu, with a considerable series of this form obtained by Lieutenant Wardlaw Ramsay, at altitudes varying from 2,000 to 4,000 feet, in the Karen-nee hills. That gentleman records the iris as being "nut-brown;" bill black; basal portion of maxilla and lower part of mandible slate-colour; legs dirty greenish white." Sexes alike.—*A. & M. N. H., June* 1875, *p.* 400.

Æthopyga sanguinipectus, *Walden.*

Above as in *Æ. saturata*, (Hodgs.), the yellow band on the rump being somewhat more developed. Underneath, all the chin, throat, and two streaks diverging from the throat and descending to the breast metallic violet blue; upper part of breast velvety black; remainder of under surface pale yellow, many of the lower breast-feathers being centred and streaked with blood-red. A representative form of *Æ. saturata.* Bill 0·65; wing, 2·12; middle pair of rectrices, 3·25. Desc[illegible] from six examples discovered and obtained by Lieut[illegible]

Wardlaw Ramsay on the Tonghoo hills (Karen-nee) at an elevation of 3,000 feet. *A. & M. N. H.*, *June* 1875, *p.* 400.

Dicæum olivaceum, *Walden.*

Above olive-green; the occipital feathers centred with pale brown, and those of the uropygium a few shades brighter green; rectrices black; below and lores cinereous, with a pale yellowish tinge, and the flanks with pale olive-green; quills brown, edged externally with olive-green of a rather brighter shade than that of the upper plumage. Wing, 1·75; tail, 1·7; tarsus, 0·43; bill from forehead, 0·38.

Described from four examples obtained by Lieutenant Wardlaw Ramsay on the Tonghoo and Karen hills. It only differs from *D. pygmæum* (♀) by having the uropygium and upper tail-coverts brighter yellowish green and the under tail-coverts a purer yellow; from *D. virescens* by wanting the albescent or pale grey throat and breast and the yellow abdomen.—*A. & M. N. H.*, *June* 1875, *p.* 401.

Ixus annectens, *Walden.*

Forehead, crown and nape cinereous brown, each feather edged with golden olive-green, imparting an almost golden olive-green hue to those parts; interscapular region and back cinereous brown, tinged with olive-green, which colour is more intense on the rump; upper tail-coverts golden-olive; major and minor coverts and secondaries dull olive-green; shoulder-edge, under shoulder-coverts, thigh-coverts, ventral region, and under tail-coverts bright yellow; chin and throat cinereous brown, most of the feathers with golden-yellow centres, imparting a streaked appearance, a few descending to the upper breast; flanks and remainder of lower surface cinereous brown; ear-coverts brown.

"Length, 7·7; tarsus, 0·75; wing, 3·3; tail, 3·1; bill, 0·85. Iris pale yellow; bill dark horny; legs leaden brown." (Wardlaw Ramsay) described from an individual obtained by Lieutenant Wardlaw Ramsay at Rangoon. His dimensions were taken from the fresh specimen. It is nearly allied to, though perfectly distinct from, *I. Finlaysonii*.—*A. & M. N. H.*, *June* 1875, *p.* 401.

Drymocataphus fulvus, *Walden.*

Above fulvous brown; feathers of head, nape, and back pale-shafted; lores, chin, throat, breast, thigh-coverts, sides of neck, and under tail-coverts pale rusty fulvous; rectrices, outer edging of primaries and secondaries, and all the tertiary quills, pale liver-brown.

Wing, 2·50; tail, 2·12; tarsus, 1; bill from forehead, 0·65; bill and legs, in dried skin, and claws pale fulvous. A

typical form. Karen-nee at an elevation of 2,500 feet (Wardlaw Ramsay).—*A. & M. N. H., June* 1875, *p.* 401.

Trichastoma rubiginosa, *Walden.*

Underneath lively chestnut red; mesial line from chin to breast, also of abdomen, white; above dingy olive brown, somewhat tinged with ferruginous, remiges and rectrices pale brown, outer edges of quills ferruginous; inner edges of quills pallid rusty; lores grey.

Wing, 3; tarsus, 1·38; tail, 2·50; bill from forehead, 0·94.

"Iris light brown to blackish brown; bill above, pale, (horny), below yellowish at gape; legs dull pinkish white. Karen-nee." (Wardlaw Ramsay).—*A. and M. N. H., June* 1875, *p.* 402.

Actinura Ramsayi, *Walden.*

Under surface from chin to vent clear ochreous buff, somewhat darker on the chin and throat; upper surface cinereous olive; forehead almost ferruginous; crown and crest, with the nape, like the back, but tinged with ferruginous; most of the dorsal feathers traversed by faint, yet distinct, narrow dark brown bands or lines, which on the upper tail-coverts are more closely set together and very conspicuous; lores and cheeks dark brown, almost black; sides of the head behind the eyes and some of the lateral crest-plumes ashy, without any ferruginous tinge; eyelids white; primaries narrowly barred with black on their outer webs up to their insertion, also the minor coverts; all the rectrices olive-brown, like the tertiaries, and distinctly barred with numerous well-defined narrow black bands; all but the middle pair broadly tipped with white; under tail-coverts and flanks somewhat darker than remainder of under surface.

Wing, 3·50; tarsus, 1·12; tail, 5; bill from forehead, 0·89.

"Iris light hair brown; bill horny brown; legs slaty brown ♀ Karen-nee (Wardlaw Ramsay).

This is a representative form of *A. Egertoni*, from which it chiefly differs by its light ochreous under surface, by the coloring of the upper plumage, by the primaries being barred throughout their length, by the minor coverts being barred, and by the distinct barring of the tail.—*A. & M. N. H., June* 1875, *p.* 402.

Pomatorhinus mariæ, *Walden.*

A stripe commencing at the nostril, and which passes back over the eye and down the sides of the neck, white, but partly rusty fulvous near the nostril; above this white stripe, and bordering its length, a narrow black stripe; all the head within the boundaries of the superciliary black stripe and the nape dark rusty olive; rest of upper surface dull olive-brown, with a rusty tinge; lores, cheeks and ear-coverts black; chin and throat

pure white; flanks, thigh-coverts, and under tail-coverts pale earthy brown with a rusty tinge; breast and abdominal region pale creamy white or pale buff, contrasting with the pure white throat; quills and rectrices liver brown.

Wing, 3·50; tail, 4·25; tarsus, 1·12; bill from fore-head, 1·18.

Described from an individual marked a female, and obtained in the Tonghoo hills by Lieutenant Wardlaw Ramsay. *P. Phayrei* is its nearest ally; but in it the entire under surface from the chin is bright ferruginous; it likewise has the entire upper surface of an almost uniform dull olive-brown, with but a faint ferruginous tinge.—*A. and M. N. H., June* 1875, *p.* 403.

Then I have to add a few species described by myself in the *Ibis*.

Acrocephalus macrorhynchus, *Hume*.

In the *Ibis* for 1869, p. 357, I provisionally classed this bird as a *Phyllopneuste*, remarking that it would have to be generically separated. On re-examining the specimen, I do not doubt that it is one of the *Calamoherpinæ*, and may for the present be placed amongst the *Acrocephali*, although it will, I believe, ultimately have to form the type of a new genus. M. Verreaux furnishes the following remarks:—"Except as regards the size, this species much resembles *Arundinax olivaceus*; it certainly is not a *Phyllopneuste*, and has none of the characters of that genus, while it has those of the *Calamoherpinæ*. I have never seen this bird before; it is not contained in our Museum; and I have not been able to find any notice of it anywhere. I think you may describe it as new." I obtained this species in the Sutledge Valley, in the interior of the Himalayas, not far from Rampoor.

Dimensions.—Length, 5·0; wing, 2·3; first primary excessively minute; fourth primary the longest; third 0·05; second 0·12; first 0·4 shorter than the fourth; tail 2·2, much rounded; exterior tail-feathers 0·48 shorter than central ones; all the tail-feathers much pointed; tarsus, 0·85; mid toe and claw, 0·75; hind toe and claw, 0·53, of which the claw is 0·29; bill at front, 0·55, from gape 0·78, width at gape 0·25; length of gonys 0·4; height at front, 0·08. The bill is much depressed, the culmen-ridge well marked.

Description.—Bill, upper mandible dark brown; legs and feet slightly olivaceous brown; claws, which are moderately curved and much compressed, pale brown. *Plumage.*—Whole upper surface (except quills and tail-feathers, which are brown) rich olive brown; chin, throat, middle of abdomen creamy or

dingy yellowish white; the rest of the lower parts more decidedly tinged with pale dingy rufescent brown, the tarsal plumes being very rufous; the wing lining nearly pure white, slightly tinged yellowish towards the edge of the wing.—*Ibis*, 1871, *p.* 31.

Ploceus megarhynchus, *Hume*, (*vide* also *Ibis*, 1869, p. 356, and S. F., Vol. III., p. 153-155.)

With regard to this supposed species M. Verreaux remarks: "I cannot but consider this identical with *P. flaviceps*, Cuv. nec Sw., a bird very common, and varying a good deal in length and size of bill." Dr. Jerdon and myself compared a couple of birds of this supposed new species with specimens of *P. baya*, *manyar*, and *bengalensis*. It certainly does not pertain to either of the three species known as such in India; but this by no means settles the question. The synonymy of this group requires elucidation. Blyth identifies *P. manyar*, Horsf., with *striatus*, Blyth, and *flaviceps*, Sw; but Bonaparte, whom Verreaux follows, identifies *manyar* with *hypoxanthus*, and *striatus* with *flaviceps*, Cuv. It is therefore possible that the species described by Jerdon as *P. manyar*, Horsf., may be *hypoxanthus*, Daud; but this seems very unlikely, as Mr. Blyth was well acquainted with this species. Or, again, Bonaparte may be wrong in uniting *striatus*, Blyth, with *P. flaviceps*, Cuv., in which case my supposed new species may be the true *P. flaviceps*. Under any circumstances this bird is new to our Indian Avifauna, and is quite distinct from either of the three species described by Dr. Jerdon under Nos. 694, 695, and 696, Vol. II., p. 343, *et seq.*

Dimensions.—Length, 6·2; wing, 2·95; tail, 2·3; bill at front, 0·7, from gape 0·84; height at front, 0·24; tarsus, 0·96; mid toe and claw, 1·0; hind toe and claw, 0·78.

Description.—Legs, feet, and claws fleshy brown; bill pinkish brown, whitish on lower surface of under mandible. *Plumage* (winter plumage)—Lores rufescent; head, cheeks, ear-coverts, and nape slightly rufous olivaceous brown; the feathers of the forehead and crown with ill-defined central dark-brown streaks, and traces of the same on the feathers of the nape; upper back and scapulars somewhat paler and less rufous brown, broadly and conspicuously centred with dark hair brown; lower back and rump the same pale slightly rufous olivaceous brown, unstreaked; upper tail-coverts similar, but with ill-defined hair-brown centres; tail hair-brown, the feathers narrowly tipped and margined with pale rufescent; wing-coverts and tertiaries deep hair-brown, broadly margined with pale rufous fawn; primaries and secondaries paler hair-brown, very narrowly margined with the same colour; chin, throat, middle of abdomen, vent,

and lower tail-coverts almost pure white, with only the faintest creamy tinge; the rest of the lower parts a dull rufous fawn, somewhat rufescent on the breast, sides, and flanks.

The tail is much rounded, the lateral tail-feathers being from 0·37 to 0·4 shorter than the central ones. The specimens I possess were procured in December, in the Kumaon Terai, not far from Kaladingú.—*Ibis*, 1871, p. 36.

Caprimulgus Unwini, *Hume*.

This species has the upper three-fourths of the tarsus feathered in front. In both sexes the two outer tail feathers on each side are tipped with white; but the tippings are about 1·55 and 1·0 broad in the male on the outer and penultimate feathers, respectively, and only about 0·75 and 0·44 in the female; and in the latter sex the white is less pure. *Both* sexes have a white spot on the inner webs of the first three, and a corresponding one on the outer webs of the second and third primaries; but here again, while the spots on the inner webs of the male are about one inch broad, those of the female are about half that size.

This species therefore differs in its leading characteristics from all our Indian goatsuckers. In general appearance it most resembles *C. Kelaarti;* but as regards the white on the tail and the extent of the feathering of the tarsus, it belongs to a different group from this species and *C. indicus*. The best description I can give of its plumage is, that it is an excessively pale and grey version of *C. indicus*, and that, while (with the exception of the difference in the size of the white markings on tail and wings) the sexes closely resemble each other, the under tail-coverts of the male are a uniform rufous buff, while those of the female are somewhat paler and are very distinctly barred with narrow bars more than a quarter of an inch apart.

The dimensions of a female measured in the flesh were:—Length, 10·25; expanse, 19·25; tail, 4·75; wing, 6·95. Wings when closed reached to within one inch of the end of tail.

The male (not measured in the flesh) is slightly larger, and has the wing 7·2 long.—*Ibis*, 1871, p. 406.

Trochalopteron simile, *Hume*.

Exactly resembles *T. variegatum*, which it replaces in the far North-West, except that the grey portions of the primaries and tail-feathers are pure French-grey entirely untinged with yellow, olive, or orange.—*Ibis*, 1871, p. 408.

[I quote this as it is often referred to, but it seems likely that the grey type was the one originally described, and that it is the yellow tinged race that should be named.]

Drymoipus rufescens, *Hume*. (*Ibis*, 1872, p. 110, S. F., I., 437.; II., 453.

This species is much larger than most of our Indian *Drymoipi*, some specimens of males falling little short of 7·25. The adults are nearly as dark as the Southern Indian bird, but are much more rufous, quite as rufous as *longicaudata*, but not so strongly tinged with buff beneath. The following are dimensions of seven males:—Length, 6·45 to 7·20; expanse, 7·1 to 8; the tail from 3·3 to 3·9; the wing from 2·3 to 2·62; tarsus about 0·9 to 0·95; bill at front, 0·5 to 0·53. One female measured in the flesh:—Length, 6·7; expanse, 67·5; tail from vent, 2·6; bill at front, 0·47; wing, 0·21; tarsus, 0·85.

Description.—Legs and feet fleshy, light fleshy, or reddish brown; claws dusky; irides brown, light brown, brownish and deep yellow; bill blackish or dusky horny, fleshy or greyish at base of lower mandible. *Plumage.*—Whole upper surface, including tail, and greater median coverts, tertiaries, and outer webs of primaries, and secondaries, rich rufous brown in full plumage, dull, or earthy brown, more or less tinged or overlaid with rufous in young birds; tail very distinctly, and finely but obsoletely barred, much less distinctly however in some specimens than in others; all the feathers except the central ones narrowly tipped with fulvous white, with a more or less distinct penultimate dusky bar; the young birds with a good deal of white on the inner webs of the lateral feathers, which is entirely wanting in adults; thus assimilating them to the young of *insignis*, from which they are scarcely separable, except by the smaller bill, and by the colour of the lower mandible, which in the young of this species is horny white, in that of *insignis* almost entirely black. I may note that in some of the adults also, the dark subterminal bar becomes almost obsolete; lores, and a stripe over the eye fulvous white; ear-coverts, sides of neck, and breast, and sometimes some of the lesser wing-coverts about the carpal joint, a greenish or greyish brown; the ear-coverts at times more or less mottled with fulvous white; lower parts pale fulvous, or buffy, albescent on the chin and throat and middle of abdomen, tinged at times on the breast with grey, more purely buff on lower tail-coverts, and wing lining, and more rufescent on tibial plumes; inner webs of primaries and secondaries hair brown. The young birds are much paler and more albescent on the lower surface.

This is a very distinct species, widely spread over the country. I have it from Mount Aboo, Gurhwal, and Kumaon from Niher, Mahableshwar, from Raipoor, Bundarah, Sumbulpoor, and Nagpoor, from Etawah and two or three other localities. The birds vary very much in size, the young being consider-

ably smaller than the adults, and the females being always smaller than the males; some quite young birds almost entirely lack the rufescent tinge which is so characteristic of this species, and which in the newly moulted adult approaches to that of *Pyctorhis sinensis*. The plumage fades much by exposure; and adults just previously to moulting are met with of a dull, only slightly, rufous brown.

Sturnus nitens, *Hume*. (See also, Lahore to Yarkand, Ornithology, p. 98.)

Dimensions.—Length, 7·75 bill at front, 0·95; wing, 4·75; tail, 2·6; tarsus, 1·1.

Description.—Bill yellow; legs and feet reddish brown. *Plumage*.—Whole bird (adult) absolutely spotless. Face, head and, throat deep purplish blue; ear-coverts with a greenish gloss; neck all round, upper back, and breast a bright very ruddy purple; lower portion of back and upper tail-coverts with a coppery and green gloss; abdomen black, with a green metallic gloss; wing-coverts dark green, with a golden gloss; under tail-coverts black, with a faint purple and green gloss.

This species is allied to *S. unicolor* of Europe, but differs in being much smaller, having a much less compressed and more spatulate shaped bill, much shorter breast-hackles, smaller feet, feebler claws, and in its brilliant plumage, so different from the nearly uniform purplish black of the Sardinian Starling.

Habitat.—Cashmere, Peshawur Valley, and Afghanistan.—*Ibis*, 1871, *p.* 410.

Geocichla tricolor, *Hume*.

Dimensions (dry skin).—Length, 8·5 wing, 4·6; tail from vent, 3·2; bill at front, 0·7; tarsus, 1·1.

Description.—Bill yellow; legs and feet fleshy yellow. *Plumage*.—The whole head, neck, throat, breast, back, wings, upper tail-coverts, and tail dusky blackish slate colour, almost quite black upon the top and back of the head, greyer on back and rump, and brown on quills and lateral tail feathers; wing-lining, lateral portion of upper abdomen, sides and tibial feathers bright orange ferruginous; centre of upper two-thirds of abdomen, whole of lower two-thirds of abdomen, vent, flanks, and lower tail-coverts, and the extreme tip of the chin pure white.

Habitat.—Hill Tipperah.—*Ibis*, 1871, *p.* 411.

Dumeticola cyanocarpa, *Hume*.

Dimensions.—Length, 7; wing, 2·85; tail, 3·4; tarsus, 1·15; bill at front, 0·45.

Description.—Bill, legs, and feet brown, the former dusky [illegible] upper mandible. *Plumage*.—The whole upper surface

a very rich olive brown, more or less tinged with ruddy, especially on the rump and upper tail-coverts; the tail-feathers a somewhat rufous brown, slightly more rufous at the margins; quills hair-brown, margined exteriorly with a ruddy olivaceous tinge; median and larger coverts olivaceous; lesser coverts and carpal joint of the wing more or less pure cyaneous; lower parts, including wing-lining, a sort of fulvous buff, shaded with dusky olive on the sides of the neck and throat and on the sides and flanks; centre of abdomen and vent nearly pure white; lower tail-coverts fulvous, mingled with olive brown; lores and chin, and an indistinct supercilium, dull fulvous.

Although a considerably larger bird than any of the other known species, this is unquestionably structurally a true *Dumeticola*, corresponding in shape of wing, tail, bill, and feet with *Dumeticola affinis*, with a large series of which I carefully compared it. The dull blue patch on the carpal joint would naturally awaken the suspicion that it was a female *Myiomela* or *Brachypteryx;* but it is unquestionably a *Dumeticola*. It was obtained in one of the low valleys in the interior of Sikkim by one of the shikarees employed for me by Capt. Masson.—*Ibis*, 1872, *p.* 108.

Horornis erythrogenys, *Hume*.

Dimensions.—Length, 5; wing, 2·25; tail, 2; tarsus, 0·68; mid toe and claw, 0·7; bill at front, 0·42.

Description.—Bill brown above, fleshy at gape and base of lower mandible; legs and feet pale fleshy, dusky at joints. *Plumage.*—The whole upper surface, including wings and tail, a rich rufescent brown; lores, cheeks, ear-coverts, and a narrow line over the eye rich chestnut rufous; centre of chin and throat and centre of abdomen nearly pure white; sides of neck and breast dull rufescent; sides of abdomen and flanks rufescent brown; wing-lining rufescent white.

This is a typical *Horornis*, if I rightly apprehend Mr. Hodgson's genus. The specimen was shot by Mr. William Masson on the 20th of May, 1870, below Darjeeling. It is very distinct from any species of *Horornis* or *Horeites* described by Messrs. Blyth, Hodgson, and Jerdon.—*Ibis*, 1872, *p.* 108.

Horeites brunnescens, *Hume*.

Dimensions.—Length, 4·25; wing, 2·2; tail, 2; tarsus, 0·82; bill at front, 0·33.

Description.—Legs, feet, and bill pale brown, the latter darker on the upper mandible. *Plumage.*—The whole upper surface, including the wing-coverts and the greater portion of the exterior webs of the quills, olivaceous, tinged with rufous more s[illegible] on the head, and most conspicuously so on the exterior

of the quills; the rest of the quills hair-brown; the tail pale brown, obsoletely barred and slightly tinged at the margin with rufous; a dull white stripe from the nostrils over the eyes and ear-coverts; a dusky stripe under this latter through the lores, eyes, and ear-coverts; lower surface pale dingy fulvous, more albescent on the throat and wing-lining.

This specimen I picked out of a collection made in the neighbourhood of Darjeeling by Mr. Gammie, of the Government Chinchona Plantation.—*Ibis*, 1872, *p.* 109.

Then I give a number of gleanings from Jerdon's additional notes on the birds of India which appeared in the *Ibis*.

Picus Westermani, *Blyth*. (*Ibis*, 1870, p. 163).

Mr. Blyth detected a Woodpecker in the Amsterdam Museum, from the Himalayas, "like *Macei*, but larger, with the median six rectrices black as in *atratus*; wing 4·625." This bore the name of *P. Wagleri*, Hartl., which Malherbe assigns as a synonym of *Macei*, and gives the same name to a Brazilian species; so Blyth has named this bird as above. —Jerdon, *Ibis*, 1872, *p.* 7.

Muscicapula ciliaris, *Hodgson*, apud *Blyth*.

It very closely resembles the last, (*M. astigma*,) having no white on the tail; the white on the throat appears to be more contracted; and there is a distinct white supercilium from the front of the eye to the nape. No particular locality is given on the plate.—Jerdon, *Ibis*, 1872, *p.* 127.

Callene Hodgsoni, *Moore*.

Acrocephalus, apud Moore.

Hodgson's Short-wing.

Description.—Brown above, pale below, albescent on the throat and mid belly; base of tail rufous-tawny.

Dimensions.—Wing, 2¾; tail, 3; tarsus, 1¼.

Hab:—Nepal.

This is probably the female of some species. Blyth has referred it to *Callene*.—Jerdon, *Ibis*, 1872, *p.* 132.

Pomatorhinus hypoleucus (*Blyth*), Journ. As. Soc., Beng., 1844, p. 371.

Pomatorhinus albicollis, Horsf. M. S.; *Gray, Gen. of Birds*, *pl.* 57. The White-bellied Scimitar Babbler.

Entire upper surface, wings, and tail ferruginous brown; chin, throat, middle of the breast, and belly creamy white; feathers on the sides of the breast creamy white, with ashy

edgings; flanks and under wing-coverts ashy, tinged with the hue of the upper plumage; thigh-coverts white, mixed with ashy; under tail-coverts bright ferruginous. Wing 4⅜; bill from nostril, 1⅛; tarsus, 6¾; tail, 4⅜.

This species must be added to the Indian fauna having been sent by Hodgson (?) probably from Sikkim. It occurs also in Assam. Tickell (Journ. As. Soc., Beng., 1855, p. 273) notes that the bill in this species is softer than in typical *Pomatorhinus*, and is sub-cylindrical; the sinciput is flat, the tail broad and fan-like; and it might, perhaps, with *P. erythrogenys* form a peculiar group. It is the type of *Orthorhinus*, Blyth, l. c.—Jerdon, *Ibis*, 1872, *p.* 301.

Pomatorhinus McClellandi, *Jerdon.*

This bird was noted by me (B. of India, Vol. II., p. 32) from specimens procured on the Khasia Hills. I have since found it by no means rare in Assam, down to the level of the river Brahmapootra; and Godwin-Austen got it in Sylhet. I add a brief description.

Above ashy olive, appearing faintly tinged with ferruginous in some lights; forehead distinctly ferruginous; lores, a large spot at the gape, chin, throat, breast and abdomen white; some of the pectoral feathers tipped with pale spots, coloured like the upper plumage; flanks and some of the abdominal plumes dingy ferruginous ash; nareal plumes and ear-coverts ferruginous; thigh-coverts and under tail-coverts bright ferruginous; a broad stripe following the rami of the mandible. Wing, 3½; tail, 3⅝; tarsus, 1 3/16; bill from gape, ⅝.—Jerdon, *Ibis*, 1872, *p.* 302.

Garrulax gularis, *McClelland*, P.Z.S., 1839, p. 159, Gould, B. Asia, pt. XIX., pl. 15.

Description.—Head and nape dark fuliginous ashy; throat, cheeks, and upper breast lemon-colour; chin, lores, streak below the eyes, including the ear-coverts, and a small tuft of feathers on the sides of the mandible near the gape black; upper plumage cinnamon-brown, brightest on the upper tail-coverts; lower breast pale lemon-colour, clouded with ashy; sides of the breast fuliginous ashy, not so dark as the head; abdominal region, under tail-coverts, and under wing-coverts bright ferruginous, deepening into mahogany on the flanks; the two middle pairs of rectrices rich brown, with a broad terminal band of dark brown; remaining pairs uniform bright ferruginous; legs and nares in dried specimens yellow; bill horn-colour. Wing, 4; tail, 4; tarsus, 1⅜; bill from nostril, ⅝.

Gould's figure is taken from a specimen I procured on the Khasia Hills in 1862. Godwin-Austen obtained one in the Cachar Hills.—Jerdon, *Ibis*, 1872, *p.* 303.

Trochalopteron Fairbanki, *Blanford*, Journ. As Soc., Beng., XXXVIII., pp. 175, 177, pl. 17. (1869).

The Pulney Laughing Thrush.

Description.—Head above dark brown, the margin of the colour distinct and not passing into any thing else on the nape, but distinctly contrasting with the olive colouring of the back; lores which are small, and a narrow streak running back from the eye dusky; supercilia and orbital feathers white; back olive, rather brighter towards the rump; wings and tail rather darker; beneath the chin and throat, with the sides of the head below the eyes, rather pale grey; the feathers of the middle of the breast the same, but with dark stripes in the centre; sides of the neck ashy; this colour passing far back close to the dark brown of the head; whole of abdomen and lower tail-coverts ferruginous; flanks and thigh-coverts olivaceous; beak dusky; legs dark plumbeous. Dimensions as in *T. Jerdoni*; wing, 3·4; tail, 3·7; bill at front, 0·7.

This species is very close to *T. Jerdoni*, but differs apparently in the want of the black chin, in the head being darker; the rufous colour of the abdomen is paler; and this colour extends to the under tail-coverts, which are olivaceous in *T. Jerdoni*. It abounds in the Pulney range of hills, in Southern India.—Jerdon, *Ibis*, 1872, *p.* 306.

Sibia gracilis, (*M'Clelland*), P. Z. S., 1839, p. 159.

The Graceful Sibia.

Description.—Entire under surface white; under tail-coverts pale rusty; head dark smoke-brown; back ashy pale smoke-brown; rump and upper tail-coverts more ashy than brown; tail deep brown or black, broadly tipped with pale grey; quills brown, the primaries being edged with glossy greenish black for about half their length, the remainder with a narrow border of pale yellowish white; long tertiary nearest the body pale ashy brown. Wing, 3¼; tail, 3¼; tarsus, 1.

This species replaced *T. capistrata* on the Khasias and other ranges to the eastward, Godwin-Austen having found it tolerably abundant in North Cachar. He observed it hunting for insects in the flowers of the silk-cotton-tree (*Bombax*).—Jerdon, *Ibis*, 1872, p. 308.

Trochalopteron Austeni, *Jerdon* apud *Godwin-Austen*, Journ. As. Soc., Beng., 1870, p. 105.

Description.—Head, nape, and sides of the neck rich rusty brown, each feather with a paler shaft; back and uropygium olive brown, tinged with the colouring of the head but devoid of pale shafts; middle pair of rectrices and outer edges of quills above deep rich ferruginous; remaining rectrices dark brown, tipped with pure white, the central pairs more or less edged with the color of the middle pair. General color of the under surface of the body similar to that of the head, but each feather terminated by an albescent border and a penultimate brown band, most prominent on the breast; ventral feathers almost entirely albescent, with narrow brown terminal edgings; under tail and wing-coverts tawny ferruginous, the former faintly tipped with albescent; major wing-coverts and some of the tertiaries with terminal albescent drops; bill black; legs brown. Wing, $3\frac{3}{8}$; tail, $4\frac{3}{8}$; tarsus, $1\frac{1}{16}$; bill from gape, $\frac{7}{16}$. The pale central streaking of the head and neck-plumage varies in degree in each individual.

This species was detected by Major Godwin-Austen on Hengdan Peak, in the North Cachar hills, at about 7,000 feet of elevation.—Jerdon, *Ibis*, 1872, *p.* 304.

Notes.

Mr. Davison remarks in a recent letter: "It is very curious how in some species the colour of the iris differs persistently in the two sexes.

"This difference has been already noticed in the case of the Singhalese *Phænicophaes pyrrhocephalus*, and I find it equally existing in *Rhodopytes erythrognathus*. In this latter the iris of the male is pale blue, while in the female it is bright yellow.

"Again in *Dichoceros bicornis*, the male has the iris blood red, while in the female it is opalescent white."

It may be well to notice that Mr. Brooks now concurs in the view I have maintained from the first, *viz.*, that *Phœnicopterus Andersoni*, Brooks, described in the Proceedings of the Asiatic Society of Bengal for January 1875, is merely a non-adult stage of *P. antiquorum* or *roseus*, whichever be the name under which the well-known European and African species should stand.

I HEAR FROM HOME that my *Cettia Stoliczkæ*, S. F., Vol. II., p. 520, must stand as *C. albiventris*, Severst. My *Propasser Stoliczkæ*, (*tom. cit.*, *p.* 523,) is admitted to be a perfectly new and distinct species, as is *Podoces Biddulphi*, (*tom. cit.*, *p.* 503), which, with the other three known species of this genus, *Panderi*, *Hendersoni* and *humilis*, has been figured quite recently by Mr. Gould in his Birds of Asia.

Ægithalus Stoliczkæ, (*tom. cit.*, *p.* 521,) is said to be one of Severstov's new *Ægithali*, but it is not certain which.

Turtur Stoliczkæ (*tom. cit.*, *p.* 519,) is, Mr. Sharpe informs me, *T. intercedens*. This I cannot make out. The only *intercedens* of which I can find any record is *Brehms*, which Mr. Gray gives as identical with *risorius*, Blyth, from Ceylon, India, Palestine and Smyrna, but distinct from *risorius*, Lin., which he assigns to E. Africa, China, Persia and Nepal. Now very decidedly the large Yarkand race, which I have named *Stoliczkæ*, occurs nowhere in Nepal, or Ceylon or India, and is, on the contrary, conspicuously distinct from the species which we here call *risorius*, Lin., and which is so common throughout India.—(See also, supra, p. 329, and Vol. II., p. 536.)

AMONGST OTHER birds sent me for identification by Captain Butler, and obtained by him in the neighbourhood of Deesa, are *Aedon familiaris*, Menetries, and *Sterparola cinerea*, Bonap., the occurrence of both of which I had previously recorded, on the strength of specimens collected for me by Dr. King and obtained by myself in the neighbourhood of Aboo and Jodhpoor, and besides these an entire novelty to our Indian Avifauna, *viz.*, *Lanius* (*Enneoctonus*) *collurio*, Lin. This is an important discovery and one on which Captain Butler, one of the most patient and indefatigable of our field ornithologists may be well congratulated. It adds another to the growing list of essentially western forms, that unknown elsewhere in the empire occur at one season or another in Northern Guzerat, Sindh, the desert portion of Rajpootana, and the Trans-Indus Punjaub.

WRITING FROM Hissar, Captain C. H. T. Marshall says: "I have recently shot here, a bird which you say is very rare in the Punjaub, *viz.*, *Glareola orientalis*; I shot four specimens, but have not been able to meet with any more." This is only the second instance (S. F., II. 465) on record of the occurrence of this species in the Punjaub, and I have no knowledge (*see* S. F., II., 285,) of its having been met with in Sindh, Rajpootana, or the Central Provinces, although in all of these it *may* occur as a rare straggler, as we now know that it does in the Punjaub.

In the Annals and Magazine of Nat. Hist. for 1875, p. 236, Mr. Sharpe points out that the bird described by him after consulting Dr. Sclater (*see* P. Z. S., 1874, p. 427; *figured pl. LIV.*) as a new species belonging to a new genus from Jamaica under the name *Phœnicomanes iora*, is no other than the common Malayan species *Jora Lafresnayi*. A good figure and full description of this latter were much needed, and ornithologists may be grateful for the mistake which has given them these. Such mistakes must occur to the best and form no sort of ground for reproach, but when such errors do occur with the first authorities in Europe with the libraries and museums of the world at their backs, and in regard to a species with which we here are as familiar as they at home are with *Turdus musicus*, it is to be hoped that we shall hear no more in future of the very similar and certainly not more serious errors into which field naturalists, out in India, have unavoidably at times fallen.

At page 327, I noted having received two specimens of *Ketupa flavipes*, from the valley of the Bhaghiratti, which was the most westerly locality from which I could remember to have heard of its occurring; but referring to the *Ibis* for 1871, p. 346, I find that Dr. Jerdon notes having obtained a specimen on the banks of the Towy River, on the march from Mussouri to Simla. He adds that he gave this specimen to me, and this is possible, but the label it bears is Great Runjeet near Darjeeling in his own handwriting—but no name, so that the label must have been intended for, or belonged to, some other specimen. Certainly West of Nepal *flavipes* is almost as much of a straggler as *ceylonensis* is in Palestine.

Referring to Mr. Blanford's interesting paper, *supra*, p. 358, on *Hypocolius ampelinus*, I must say that so far as a mere examination of the skin enables me to form an opinion I should consider this species more nearly allied to *Graucalus* than to any other genus *represented in India*.

Many people still seem to doubt the specific distinctness of *Rallus aquaticus*, L. and *R. indicus*, Blyth. As far as I have been able to investigate the question, the European bird always has a longer and much slenderer bill, but then, as far as I can make out, the European bird *also* occurs in India. I am very anxious to work this question out, and specially to ascertain the limits of distribution of both species in India, and I shall be thankful for any information on this subject and any specimens (Indian-killed,) of either species, that can be furnished me.

Letters to the Editor.

SIR,

I REGRET to see that a paragraph from a private letter, never intended for publication, has been inserted in STRAY FEATHERS, Vol. II, p. 533. I should never have dreamt of publicly criticizing Dr. Finsch in the off-hand manner in which one may express oneself in the haste of rapid correspondence with a friend.

THE WRITER OF THE LETTER QUOTED.

SIR,

I DO not see how there can be any question as to the priority of the term *insignis* of Walden over *Feildeni* of Hume for the Burmese *Polihierax*.

On the 7th November 1871, specimens of this bird were exhibited by me at the meeting of this Society, and Lord Walden's name assigned to them—Lord Walden having been himself unfortunately prevented from attending the meeting.* The characters given, although short, are quite sufficient for the recognition of the species. On the other hand, the name *Feildeni* was not published until the issue of the May part of the proceedings of the Asiatic Society, Bengal, in 1872. May I add that it would be a great convenience if references to all names not given by Jerdon, were added to your lists in STRAY FEATHERS.—*P. L. Sclater.*

SIR,

ON the 8th August, when out at Sapoora about ten miles from Kurrachee, Mulock found a nest with four eggs, on the ground, in grass about two feet high.

The eggs varying from 0·9 to 1 inch in length and from 0·7 to 0·8 in breadth, were deposited in a slight hollow with a few blades of grass trained round it. Their color was as a café au lait with a slightly greenish tinge minutely dotted with vandyke brown; some larger spots occurring at the ends.

The eggs appeared too large for a Quail, but a camel-man declared that the bird had risen and settled in the grass about fifty yards off. On walking this patch a Quail got up behind us, and flew back beyond the nest.

To give the bird a chance of returning we walked off to an old kiln, and while waiting examined a Hen Quail that had lately been shot. With very little trouble an egg 1·05 inch long and 0·85 broad was extracted of a size equally large with those in the

*See P.Z.S., 1871, p. 627. N.B. Part III. containing this page was issued April 27th, 1872.—P. L. S.

nest, but so profusely covered with the larger blotches on a lighter ground that we were uncertain whether the egg belonged to the same species as those in the nest.

On returning to the nest after an absence of ten minutes we found that a fifth egg, 1·05 inch long and 0·8 broad, had been deposited dissimilar to those originally found, and more frequently blotched even than the one just extracted.

This fifth egg on being exposed to the sun rapidly changed color, the blotches running into spots, and changing from purple and gold into brown. We again walked the patch where the Quail had previously settled, and Mulock shot a hen bird with evident signs that an egg had just been laid.

Some time afterwards we rejoined Dick Cunyngham, and on explaining the facts to him another bird was taken from the stick, and an egg was extracted. This time, however, the egg broke, and it was of a pure café au lait color without any markings and unglazed.

The eggs * are all sent in a box for your acceptance.

The cry of the Rain Quail, "whit whit" was, continued throughout the day, but at three different times we were puzzled with a soft liquid call of "whit whit whit." We searched very carefully but with no result.

Was this the call of the hen, or, as Mulock supposes, of the grey bird.

No Grey Quail were seen, but specimens of the Larger Button, and the Button Quail, of the Lesser Florikin and the Common Sand Grouse were secured. Two large birds came to look at us, and judging at a distance, from the black head, grey plumage and white below, they may have been Shahin Falcons. Flocks of Rose-colored Starlings were about feeding on a red hairy caterpillar, and we came across the Courier Plover, the Yellow Wattled Lapwing, (856.—LOBIPLUVIA† MALABARICA, *Bodd.*) and the Pied Cuckoo. On the road home we passed the Common Brown and White Scavenger Vultures on the ground in a group, and on the same plain shot three Desert Larks, one in full moult, after mistaking them for Plover.—*A. LeMessurier*

Kurrachee, 16th August 1875.

SIR,

IT may interest your readers to know that in February last at the Kharaghora Salt Works, on the south-east corner of the Runn of Cutch, I saw several large flocks of *Pterocles senegallus* and *Pterocles arenarius*. My friend, the Collector,

* All the eggs sent are unmistakeably those of the Rain Quail, 830.—*C. coromandelica*, GM.—ED.

† This species has not previously been recorded from Sindh, though already I find twice reported; this makes our total 293 species.—ED.

had killed several of each kind the morning I arrived, so I had the opportunity of examining them closely, and I at once recognized them, having frequently killed both in Sind. If I am not mistaken this is the most southern point in India where these birds, which are well known on the Runn, have been found. I am told also that the Desert Lark (*Certhilauda desertorum*) is not unfrequently seen in the Runn, as well as another smaller kind which I cannot recognize by the description. Like the Desert Lark, it is only found in ones and twos, and has a remarkable flight, something like a snipe. I hope to be able to procure specimens in the cold weather.

For the last three weeks game of sorts has been brought into the Bombay market. Goanese shikarries kill many Whimbrel, which are very fat and good to eat, though some are rather fishy. Teal (both the common and blue-winged kind) are also to be got now, and Golden Plover in rich plumage.

Have you ever thought that there are more than one kind of the common teal. Specimens vary so very much both in size and plumage that I cannot but think there are more* sorts in India than Jerdon gives.—H. E. M. JAMES.

BOMBAY, 20*th September* 1875.

SIR,

LOOKING at the sun this morning I saw birds very frequently pass the disk. Some were in focus with the sun itself, the wings being quite sharp against the disc and must have been several miles high, but some were much nearer, and I estimate their distance from me at about 2 miles by the focus required to see them. These last must however have been quite a mile above the earth's surface, and of course many were a great deal higher.

I suppose they were kites, but the appearance there was rather as though the wings were long and narrow like those of Swallows, whereas I should have expected the points to be blunted by the irradiation.

The estimated distance between the tips might be a couple of feet.

Possibly this may interest some of the readers of STRAY FEATHERS.—J. TENNANT, R. E.

ROORKEE, 23*rd September* 1875.

[Many of these birds must have been quite invisible to the naked eye. I have no doubt that Vultures, Kites and Eagles often soar for hours at heights at which they are thus invisible to us, though we and our doings are quite within the grasp of their far-seeing gaze. This would help to account for the marvellous manner in which, when an animal is killed in the plains, an apparently speckless sky becomes in an incredibly short space of time crowded with "an heavenly host."—ED.]

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* I have had reason to suppose that *Querquedula glocitans* occurs both in Sindh and Guzerat, and that in its winter plumage it is generally overlooked. I have never yet however *seen* an Indian-killed example of this species and greatly desire to obtain one.—ED., S. F.

My Dear Sir,

If I permitted myself to remark your fragmentary knowledge of the Asiatic Avifauna north of the Thian-Shan (or rather Tian-Shan) there was no reproach involved which you need excuse. I think that when the materials for the Avifauna of the country between the Ural, the Altai and the Tian-Shan are almost *quite unpublished*, as those of Karelin, or published only in Russian, as those of Eversmann and mine, an English ornithologist cannot profit much by them. I only constated the fact, and nothing more. And despite all this, and the hurried work, and the incomplete literary materials, your view on the geographic delimitation of the Central Asiatic ornithological province appeared to me very correct, and I delighted in the reading of your work.

You ask now whether I will continue publishing my investigations about the Avifauna of Russian Turkestan and Kirghis Steppes in another language than Russian—certainly, and my next work, if it be even in Russian, will contain Latin diagnoses and indications of the geographical range of the described species; but I don't know when I can publish it, because now I am working out the physical geography of the Tian-Shan for our Geographical Society from information obtained from my own travels and other sources. You have my travel book in Russian; it is just translated in German, in the last "Ergänzungsheft zu Petermann's Geographischen Mittheilungen;" and my first journey to the Tian-Shan (1864) was translated into English by Mr. Mitchell. You have also the general part of my "vertical and horizontal distribution of the birds in Russian Turkestan" in Cabanis' Journal. All this general part is translated, but not having received the journal for the last two years, I don't know whether the whole translation containing a complete catalogue of the Avifauna of Russian Turkestan, is already printed. I have made for this German edition many additions and corrections to my original Russian text; and the geographical distribution of the birds, as well as the signs indicating it in the synoptic tables, are explained.

And last year, May-December 1874, I made a new excursion to the Oxus and Jaxartes, from whence I brought many interesting ornithological specimens; I promised also for Cabanis Journal descriptions of my new species, but they are not ready. For you I can give diagnoses in this letter—for your work on the collections of Stoliczka, which I am impatient to read, and therefore ready to serve you by this, though imperfectly.

I begin by unpublished corrections of my Russian text, which I have not at hand, from my note-book here. I wrote them when comparing this text with some collections abroad, perticularly at Berlin.

1. *Gyps nivicola*—figured in my work; much larger than *fulvus*, 50 to 53 inches long, 9 to 10 feet in the spread

wings (all the measures in English feet and inches); lower coverts of the wing snowy white (adults)—but here my English forsakes me.

Adultus.—Cinerascens, albo-fulvescens, striis scapalibus ferè albis; remigibus tectricibus majoribus alæ et rectricibus nigro-fuscis, dorso postico toto albido, tectricibus inferioribus alæ niveis.*

Medio veste.—Colore saturatior, cano-fulvescens; maculis scapalibus albicantibus; dorso postico et uropygio albofulvescentibus, tectricibus inferioribus alæ albis, margine dilutè canofulvescentibus, remigibus et rectricibus nigricantibus.

Junior.—Intensè fuscus, striis scapalibus, præsertim infra, dilutè fulvescentibus; præter remiges, rectricibus et tectricibus majoribus unicoloribus nigricantibus; ferè ut Aquila imperialis variegatus.

The middle plumage most resembles *Gyps fulvus*, but the young and adult are very different; and the *linear collar feathers never change their form by age*. Lives in the Alpine regions, near the eternal snow. It is I find your *Gyps Himalayensis* which name has precedence.

2—4. *Aquila minuta, pennata*, and *guttata*, Brehm., differ by their variation from age, thus :—

2—4. *Aquila minuta, pennata*, and *guttata*,

2.—*Aquila minuta.*—Omni ætate fusca, supra et subtus : margine carpali et metacarpali alæ unicolore fusco : Junior ab adultâ ægre distinguenda, sed adultæ striæ scapales nigræ subtus, aliquot intensiores.

3.—*Aquila pennata*, Gm :—subtus fusca, ut *Aq. minuta*, sed margine carpali et bracalis† aliquot albo-variegatis.

Medio veste.—Abdomine etiam albo-variegato, vel subtus intensè fulvo; bracalis† semper albo-variegatis, distinctior quam primo veste.

Adulta.—Pectore dilutè fulvo, abdomine albo, scapis infra ubique fuscis. Bracalis transversim colore fusco-flavescente fasciatis.

4.—*Aquila guttata*, Jun.—Subtus albo-fulvescens, fasciis scapalibus fuscis, crebris, tenuissimis.

Medio veste.—Subtus, ut junior, ochraceo-alba, sed fasciis scapalibus, ut seniori, maculis etiam guttæformibus bracalarum.

Adulta.—Subtus a gulâ tota nivea, pectore *non*-fulvescente : striis scapalibus pectoris longioribus et latioribus quam juniori, abdomine tenuissimis; bracalis fusco guttatis, non transversò fasciatis, ut *A. pennatæ*.

* These Latin diagnoses are all written in such an abbreviated form, that I have had to supply case endings, &c. If there is any error it is I, and not Herr Severtsov, who is to be blamed.—Ed.

† I don't know this word—I should have thought it should be *braccis*, but Herr Severtsov, writes it thus several times distinctly and in one case explains it as *hosen*, which, I suppose, means tarsal plumes.—Ed.

wings (all the measures in English feet and inches); lower coverts of the wing snowy white (adults)—but here my English forsakes me.

Adultus.—Cinerascens, albo-fulvescens, striis scapalibus ferè albis; remigibus tectricibus majoribus alæ et rectricibus nigro-fuscis, dorso postico toto albido, tectricibus inferioribus alæ niveis.*

Medio veste.—Colore saturatior, cano-fulvescens; maculis scapalibus albicantibus; dorso postico et uropygio albofulvescentibus, tectricibus inferioribus alæ albis, margine dilutè canofulvescentibus, remigibus et rectricibus nigricantibus.

Junior.—Intensè fuscus, striis scapalibus, præsertim infra, dilutè fulvescentibus; præter remiges, rectricibus et tectricibus majoribus unicoloribus nigricantibus; ferè ut Aquila imperialis variegatus.

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In short, *A. minuta* almost *not varying by age*, always brown; the old only with much much larger pens (? feathers) on the lower parts than the young.

A. pennata.—Young all brown, with nice difference (but slightly differing?) from the preceding; but old with light breast and white belly; *most varying by age.*

A. guttata, Brm., (*A. albipectus*, Sev.) at *every age white or whitish on the lower parts;* almost not varying by age in its ground colour, but varying by age in its markings very like *A. pennata.*

Are these races or allied species? Opinions may differ, but, even if races, they deserve particular names, and must not be confounded.

5, 6, 7.—*Aquila orientalis*, Cab.; *A. bifasciata*, Gray (sen. *A. raptor*, Afr., Brehm); *A. Glitschii*, Sev., are again co-allied but distinct forms, much varying all the three; I am not quite settled about them, and cannot yet write succinctly. They are curious, as is the whole difficult group *Morphnaëtos*, nob, (*A. imperialis, Adalberti, orientalis, bifasciata, Glitschii, rapax, fulvescens, clanga, nævia, &c.*) for illustrating Darwin's theory: species in different stages of their formation and separation, and require an elaborate monography. Pray describe accurately in your new work the specimens of *bifasciata*, Gray, *punctata*, Gray, *fulvescens*, Gray, of different ages which you have observed; from your notes on Henderson's birds I see that you must have large sub-Himalayan collections, I have not yet compared all my specimens, the greater part being just now brought from Tashkent, where I left them in a former expedition.

8.—I mistook some Turkestan (Russian) Kites with blackish ear feathers for the true *Milvus govinda.* My specimens are *M. ater.*

Milvus glaucopus, Eversm., differs thus from *niger*: Junior pedibus albo-glaucescentibus, striis scapalibus infra latis, pallidis dilute fulvis, distinctissimis; I shot two such, but saw nothing corresponding among the old; it is a rare *individual* variety.

9.—My *Astur* (*Micronisus*) *cenchroïdes* is the pale Cabul and Punjab race of *A. badius;* these Cabul specimens, which I saw at Berlin, and compared with mine from the vicinity of Tashkent, being intermediate between the Turkestan *A. cenchroïdes* and the true Bengal *A. badius*, somewhat smaller than the first of them. Yet is the *A. badius* of Punjab identical with the Bengal one? The Punjab form connects still more my *cenchroïdes* with the African *A. sphenurus.* My *A. brevipes* figured by Sharpe and Dresser, is certainly distinct from *badius* and *cenchroïdes.*

10.—My *Falco Tscherniaïevi* is a larger and less brilliantly coloured northern race of *F. babylonicus*, Gurney.

11.—What is your *Corvus Lawrencei?* Not described by you in Lahore to Yarkand. I suspect it to be my *C. subcorax*, found by me already in 1857, on the Syr-Darya, published December 1872. Of this I have no diagnosis at hand, but some lately collected specimens, and pray you for the description and figure of yours.

12.—The Turkestan *Corvus corone* appears to me to be *C. intermedius*, Adams (*culminatus* (?) Sykes); it is *C. orientalis*, Eversm., and may differ from the European, with which, however, specimens of the Oxus may be identical. I must yet compare them.

13.—Our Russian and Turkestan Jack-daw is *Colœus collaris* Drumm, so I judge from its marked white collar.

14.—*Cleptes bactriana* differs from the common Russian Magpie only by its blue (instead of yellow) naked spots on the cheeks; but the Russian Magpie is *Cleptes leuconota*, Brm., not quite like the English. The differences of these local forms of Magpies appear to me somewhat slight, except perhaps *P. mauritanica*.

15.—Of *Podoces* I have only *P. Panderi*, and am very curious to see your *Podoces Biddulphi*.

16.—*Parus flavipectus:* like *cyaneus*, but with yellow breast and much smaller white markings on the wings and tail. Young above greenish grey and more resembling to *cæruleus*, but with a light grey head. Intermediate between *cæruleus* and *cyaneus;* is found in mountain deciduous forests not in the pines, Tianshan; figured.

17.—*Poecile songara*, Sev., allied to *P. lugubris*, Natt; but *the black* of the nape and occiput *covers also the whole hind parts of the neck and descends in a narrow black point on the back, whose middle feathers are largely striped with black* along the shafts; the *whole body dirty yellowish brown*, darker on the back, lighter on the belly, and lightest near the black on the back and throat; whitish cheeks, dark greyish brown wings and tail, with lighter edges—as in the other species of *Poecile*. Quills: 1st abortive, yet double length of its coverts;

4=5=6 7 7 7 3 7 8 7 9 7 2 7 10.

18.—*Parus piceæ*, Sev., (*rufipectus*, Sev.,) like *P. ater*, but with a rufous band across the back, and light rufous underparts, coloured more like *P. rufonuchalis* yet without any trace of a crest and intermediate between *ater* and *rufonuchalis*.

19, 20, 21.—My new *Ægithali*, *A. atricapillus; A. coronatus*, *A. macronyx*, may be readily distinguished by the figures. I can only remark, that *A. coronatus* is possibly a variety of *atricapillus*—yet having obtained no transitional forms I prefer for the present to retain them as distinct. As for *A. macronyx* and *rutilans*, the former is the younger in second plumage; this I have now ascertained by collecting them in moult on the Oxus.

The first dress of *A. macronyx* (the name to be kept, as fitted for all stages of plumage) differs from the young *A. pendulinus* only by the horizontally flattened beak, not by the colour. The nest is very different, being woven of narrow strips of grass-leaves (reed-leaves?) and not of willow-down. This agrees with the difference in the beak, and shows a species produced by natural selection if we also consider the identity of colour in the young age.

22.—*Erythrospiza incarnata*, Sev.—Closely allied to *E. githaginea*, yet different. Beak horny yellow, not red, and somewhat less rounded in profile, less bullfinch-like in its form. Upper parts sandy, with a brown spot on the middle of each feather—which spots are wanting in *E. githaginea*; greater wing-coverts and wing-quills edged with white, and these white edges in their turn edged with red; *E. githaginea* without white on the wing. This bird is described also by Mr. Swinhoe, in the Pro., Zool. Soc 1870, as *Carpodacus mongolicus*, I found it in 1864, Mr. Swinhoe in 1865.

23.—What is *Acanthis* (*Linota*) *pygmaea*, Stoliczka, not yet described?

24.—*Carduelis orientalis*, Eversm., is *C. caniceps*, Vig.

25.—My *Passer* (*Pyrgita*) *pulverulentus* is *Fringillauda nemoricola*, Hodgs., or rather F. *sordida*, Stol., *Leucosticte altaïca*, Eversm.

26.—*Emb. Huttoni* is wrongly named in my catalogue (Russian edit.) *E. caesia.*

27.—*Calandritis leucophaea*, Sev., differs from *Alaudula cheelensis*, Swinh., only by a more greyish color; it is exactly your *A. Adamsi.*

28.—The *Alauda cristata* of my catalogue (Russ. edit.) is your *Galerida magna*, Hume.

29.—The breeding *Alauda arvensis* in Turkestan of my catalogue, (Russ. edit.), is *A. triborhyncha*, Hodgs. The true *arvensis* only passes by Russian Turkestan during its migration. My *Al. inconspicua* is *A. coelivox*, Swinh = *A. gulgula*. Frankl., (compared with your figure, "Lahore to Yarkand.")

30.—My *Budytes flavifrons* resembles much *B. Rayi*, but is widely separated in its geographical range, breeding only in Eastern Russia and Western Siberia, and passing through Turkestan; it differs also by the *pure yellow* forehead of the male, which colour however gradually passes into the greenish of the occiput. Further comparison is still necessary.

31.—My *Cettia fusca* is *Lusciniopsis luscinioïdes.*

32.—My *Cettia scalenura* and *C. albiventris* are only varieties of *C. Cettii*, by comparison with original specimens of the last. *C. scalenura* only somewhat darker, *C. albiventris* (*C. orientalis* (Tristr.), larger but varying in size. This last is identical with your Sindh specimens.

33.—*Salicaria capistrata*, Sev., differs from *S. arundinacea* by its blackish-brown vertex; the tail as long as the wing (that of *S. arundinacea* shorter); remiges: 4 longest., 3=5, 2=8; the 1st abortive, not longer than its coverts; *S. arundinacea*, remiges: 3=4 7 5; 2=6; 1st abortive longer than its coverts.)

The European *S. obscurocapilla*, Dub., *S. fruticeti*, Naum.), also with dark crown (vertex), has a still more pointed wing than *S. arundinacea;* rem. 3 7 4, 2=4. My *S. capistrata*, I have just found out=*S. agricola*, Jerd.

34.—*Salicaria microptera*, Sev., (*brevipennis*, Sev., nec Dohrn.), differs from the Algerian *brachyptera*, Zaub., by its more greyish colour, and pure-white, not rufous, wing-edge. Remiges: 3=4, longest; 2=7: the 1st, abortive, twice longer than its coverts.

35.—*Salicaria magnirostris*, Siljeb.—Olive-brown, below fulvous-white, sides lighter olive-brown; wings and tail brown with rufous-olive edges to each feather; pale superciliary band long, reaching behind the eye, but faintly marked. 1st abortive quill=its coverts; 3=4 7 5 7 2 7 6; wing, 2·4; tail, 2; beak, 0·5, larger and broader than that of *S. palustris*.

36.—*Salicaria eurhyncha*, Sev.—As the preceding, but the superciliary band very marked, ochreous white; the wing more rounded, the whole colouring lighter. 1st abortive quills shorter than its coverts, 3=4 7 5 7 6 7 2 7 7; or 4 7 3 7 5 7 6 7 2 7 7; or 3=4=5 7 6 7 2 7 7. These individual differences in the wing very small, the quills 3, 4, 5 being *always* almost or quite equal.

37.—*Salicaria macronyx*, Sev.—Like both preceding, voice different, wing longer, no light superciliary band at all, only a very small whitish spot above each eye. The bill is smaller than that of *magnirostris;* the nails much larger, but not larger than those of *eurhyncha* the hind nail equalling in length its toe. 1st abortive quill shorter than its coverts, 3=4, 2=5. Wing, 2·6; tail, 2·2.

38.—*Salicaria sphenura*.—Tail feathers pointed; frish (?) mucronated; bill short and broad; colour of the preceding, but without any superciliary band or spot; only *before the eye*, a dark stripe between 2 light-fulvous stripes to the beak. Remiges, 3 7 4 7 5 7 6=2; or 3 7 4 7 5 7 2 7 6; abortive quill shorter that its coverts; wing, 2·6; tail, 2·25.

Salicariae fruticicolae (gen *Herbivox*, Swinh.) (*a*) Beak compressed before the nostrils, like *Phyllopneuste*.

39.—*Salicaria pallida*, Eversm. nec Ehrb.; beak small, tarsi with 7 scutæ, rectrices almost equal, only the outmost 0·1 shorter; quills 3 7 4 7 5 7 6 7 2 7 7; the 3rd, 4th, 5th, almost equal; the 1st abortive, twice longer than its coverts. Colour [illegible] grey-brown or greyish fallow(?), superciliary stripe whitish [illegible] the beak to the hind edge of the eye, not further behind;

lower part pure white, tinged with fulvous on the breast and sides; wings and tail olive-brown with pale edges.

40.—*Salicaria obsoleta*, Sev., differs from the preceding by having *ten* scutæ on the tarsi, and sharper wings; quills: 3 7 4, 2=5; 1st abortive, twice longer than its coverts; colour dirtier, above dusty light grey-brown; wings and tail somewhat darker; under parts, except the pure white throat, fulvous greyish white, as the superciliary stripe.

41.—*S. modesta*.—Large-headed, tarsi with 8 scutæ; 1st abortive quill scarcely longer than its coverts; Remiges; 3=4, 2=7. Colour of the preceding, only the light superciliary stripe extending 0·2 behind the eye.

42.—*S. scita* Eversm.—Beak small, laterally compressed; abortive quill 2¼ times longer than its coverts; Remiges; 3 7 4 7 5 7 2=6. Colour almost of the following, but the head not darker than the back, and the under wing-coverts pure white.—Kerghi Steppe, Ural River.

43.—*S. scitopsis*.—Smaller than the preceding, or small as *Phyllopneuste trochilus*; beak still thinner; tail shorter; abortive quill twice longer than its coverts; Remiges 3=4=5, 6 7 2 7 7; tarsi with 8 scutæ. Above greyish olive-brown, nape, wings, and tail darker olive-brown, lower parts very pale, fulvous-white tinged with olive, lower wing-coverts pale fulvous-olive.

(*b*). Beak *depressed* on its whole length, shaped like *Hypolais*.

44.—*S. gracilis*.—Beak short, relatively stout; colour above with the wings and tail, dust olive-brown; the same colour, but much lighter, on the flanks and breast; throat and belly whitish; superciliary band white, reaching from the beak only to the half length of the eye. Quills.* 1st, abortive longer than its coverts, 3=4=5 7 7 7 2 7 8, or 2=8. Wing, 2·3; tail, 2·2 to 2·3; beak, 0·37 to 0·4.

45.—*S. concolor*.—Lighter than the preceding, above pale greyish brown; wings and tail like the back; lower parts all whitish; superciliary band reaching 0·2 behind the eye. Tail shorter, all its feathers equal, except the outermost, which are shorter. Quills: 1st abortive, somewhat longer than its coverts, 3=4, 2=6. Wing, 2·5; tail, 1·9; beak, 0·4.

46.—*S. tamariceti* differs from *S. gracilis* by its considerably longer beak, shaped just like that of *Hypolais;* colour lighter,

*For the tail feathers you may read in Russian "*Rulevoïya perya*" = rectrices; "*krai*" = edge; "*krainiya*" = lateral; "*Sredniya*" = middle; "*makhovoïya*" = remiges; "*nedorodayashchiye*" = abortive; "*ravno*" = equal; "*kroyuschiya*" = coverts. *See.* [The above is how I read the words, but it is the first time I have seen Russian manuscript and Herr Severstov's writing is *taut soit peu* difficult to read. We have no Russian type and I have therfore been compelled to give the equivalent so far as I am able in the Roman character, and if I have made any mistake I apologize. The English text I have corrected, to the best of my ability, most carefully,—but some word remain of which I cannot guess the meaning and I have therefore let them st Ed., S. F.

almost that of the preceding, but the wings and tail darker than the back, with lighter edged feathers; the whitish superciliary band reaching to the hind edge of the eye. Quills: the 1st abortive, twice longer than its coverts, 3=4, 2=7; sometimes 2=8, or even 2=9; a more variable bird than the preceding, especially in the form of the wing, or rather in the length of the 2nd quill, but constantly different by its large beak and long abortive quill. Wing, 2·4 to 2·5; tail, 2·0 to 2·1; beak, 0·45 to 0·5; the total length of *S. eurhyncha* and *sphenura* reaches to 6, *S. scitopsis* less than 5, the other 5¼-5½; *S. scita* 5-5¼. It is I find *S. rama*, Sykes, possibly also my 39-41, and 44-45.

47.—My *Sylvia magnirostris* is *Hypolais languida*, Ehrb.; one of the greyish *Hypolais* for which I propose the generic name *Eleophonus*,* olive-singer, from the dwelling of some species on olive-trees. These greyish *Hypolais* have the same relation to *Salicaria* as the green *Hypolais* to *Phyllopneuste*.

48.—*Phyllopneuste obscura*, Sev. (*?lugubris*, Blyth.)—Beak long and slender, nails small, wings exceedingly rounded: 1st abortive quill 1½ times longer than its coverts, 2=9, 3=6, 4=5; longest tail-feathers equal, except the outermost, one on each side, which are 0·1 shorter. Upper parts dark greyish olive in autumn, not lighter, but more greyish in the spring; wings and tail still darker, with lighter feather-edges; lower parts sulphur yellow, shaded with ochre; flanks greyish olive, lighter than the back; lower wing-coverts ashy, with greyish-yellow ends; superciliary band reaching the ear, bright lemon-yellow. Length, 5¼; wing, 2½; tail, 2·1 to 2·5; beak, 0·43, male; 0·38 females.

49.—*Phylloscopus Middendorffi*, Meves., Öfversigt uf Kongl. Vitenskaps Akademiens Förhandlingar, p. 58, tab XV., fig. 1. Above olive-green, wings and tail darker, olive-brown, with greyish feather edges; across the wing a narrow yellowish white band, made by the ends of the greater coverts; superciliary band and lower parts yellowish-white, tinged with olive, shape of the beak individually varying from that of *Phyllopneuste* to that of *Hypolais*; my 20 specimens show all the intermediate, slightest gradations between these extreme forms. The form of the wing also variable, 3=4, 2=7; or 3=4 7 5 7 6 7 7 2 7 8; or 4=5, longest, 3=6, 2=9; all these variations in May specimens, with full-grown quills; tail short. Length, 4¾-5; wing, 2·4—5; tail, 1·7—9; beak, 0·4 male; 0·38 female. I first named the varieties of this species

* Lfest, *thought* to propose. A name exists: Iduna, Keys. et Blas; type *Iduna caligata*=*T. scita*; Eversm.

Phyllopneuste intermedia, (to *Reguloides*), and *Hypolais graminis*, from the difference of beaks, but afterwards saw that the characters of beak which distinguish *generally Phyllopneuste* from the green *Hypolais* are here only *individual*.

50.—My *Phyllopneuste fulvescens* is *Ph. tristis*, Gould.

51.—My *Accentor fulvescens* is described and figured by Gould, Birds of Asia, part XXIII, as the female of *A. montanellus*—but wrongly. I have got males and females of *A. fulvescens*, without any sexual difference in colour; but it may be *montanellus*, Var., *fulvescens*, subtus concolor, maculis nullis. Collected by Stoliczka and Biddulph.

52.—*A. atrogularis*, Brdt.=*A. Huttoni*, Moore.

53.—*A. altaïcus*, Brdt.=*A. variegatus*, Blyth.

54.—*Lusciola Hafizi:* larger than the European *L. luscinia;* above olive-brownish grey, not rufous brown; only rump and tail rufous. Wing more rounded; quills 2=5, 3=4 longest, or 3 7 4 7 2 7 5; or 2=5, 3 7 4; or 3=4 7 5 7 2 7 6; In the nightingale the quills 2=4 7 3. Song also different, much plainer. Length, 7·6; wing, 3·6½; tail, 3·1½. Tail-coverts reaching above and below to the middle of the tail. It is *L. philomela*, Pall, *nec* Bechst, and differs *constantly* from *L. luscinia* by size, colour, and song; and *generally*, though not without intermediate specimens, by a more rounded wing. The difference is just as great as between the European *L. luscinia* and *L. philomela*, Bechst. *nec* Pall. (*L. œdon*, Pall).

55.—*L. Goltzii*, Cab.: Larger than my *R. Hafizi*, darker, with longer tail and longer tail coverts, upper and lower. I have not here in London, either specimens, or my note-book with comparative diagnoses; but I found both on the Lower Oxus, and observed that they cease to sing at different times. *L. Goltzii* before moult in July, and *L. Hafizi* conserving a very shortened, but real song some time still after moult, to the end of August.

56.—*Pyrophthalma mystacea*, Men., is allied to *Curruca subalpina*, and has the same pure white moustach-band; but the head *black*, not grey, and lighter rosy-vinaceous throat and breast. *P. mystacea* is a true *Pyrophthalma* by its swollen bright orange eye-lids.

56*bis*.—The Turkestan *Sylvia orphea*, by its long bill, is identical with *Sylvia Jerdoni* of India.

57.—*Ruticilla cæruleocephala*, Gould = *R. lugens*, Sev. In autumn with pure cinereous, dusky-tipped crown instead of the slightly greyish *blue* of the spring-plumage; all the black also with large dusky tips; these autumn birds were just my *Ruticilla lugens;* now I have also typical spring-specimens from the Tian-shan mountains.

57*bis*.—*Calliope Ballioni*, Sev., is *C. pectoralis*, Gould.

58.—*Saxicola salina*, Eversm., is only a somewhat less rufous variety of *S. deserti*; another synonym is *S. gutturalis*, Licht.

59.—*S. melanogenys*, Sev., called by me also *melanotis*, is *S. cittata*, Ehrb. et Hempr.

60.—*S. lugens*, Sev. = *S. morio*, Licht, = S. *Hendersoni*, Part, Hume.
60*bis*.—*S. leucomela*, Sev. = S. *Hendersoni*, Hume, *jig.* = *S. pleschanka*, Lepechin.
} Wing lining black, both differing by the tail-tips.

60 *ter*.—My *Saxicola talas* appears to me now to be the second, after nest-feathers, plumage of *S. morio*.

61.—*S. monacha*, Sev., = *S. lugens*, Licht = S. *leucomela*, Pall, Zoogr, (specimen described, white wing lining); the account about manners and range confounds this, *S. morio*, and S. *pleschanka*.

62.—*S. syenitica*, Sev., ex Heugl. = *Dromolæa opistholeuca*, Strickl.

63.—*Pratincola indica*.—You deny the specific difference; so did I, till Mr. Cabanis shewed it to me; a rather trifling, but constant difference. *P. rubicola* has *always* blackish markings along the feather-shafts of the white rump, *P. indica* never; the form of the black centres of the dorsal feathers is also different; the general blackness and the size of *indica* varying. *P. indica* has its western limit on the Volga, and is much sent from Sarepta as *rubicola*; European, *P. rubicola* (vera) has its eastern limit on the Dneiper. In the intermediate region neither occurs; on the Ural, in central Asia and south Siberia we find only *P. indica*.

64.—*Turdus mystacinus*, Sev., is long ago described as the female and young of *T. atrogularis*, but I have also collected old males in that plumage; *gulâ albo.-fulvescente*, inter duas *strias*, mystacinis atris, ingluvie cinerascente, nigro variegatâ, *cætera ut T. atrogularis*, and *young* females of *T. atrogularis*, *gulâ* nigro-fuscâ, plumis fulvescente limbatis. Both forms are closely connected by intermediate specimens of females and young; yet their difference is independent from age and sex. *T. mystacinus* deserves a particular name as a beautiful illustration of Darwin's theory; it is an old form which, having given already, as transformed derivates, *T. fuscatus*, *T. Naumanni*, *T. ruficollis*, is transforming itself into *T. atrogularis*; of this I shall prepare a more elaborate monography. The gradual transformation, during myriads of generations, is done by sexual selection.

65.—*Lanius isabellinus*, Hempr. = *L. arenarius*, Blyth.

65.—*L. phœnicurus* of my catalogue is not the true *phœnicurus* of Pallas (which is *L. cristatus*, L., a very improper name); it is a *new species*, *L. phœnicuroides*, Sev., described in my work

(under the name of *phœnicurus*,) page 144. It is closely allied to *L. isabellinus*, but:

L. Phœnicuroides.	L. Isabellinus.
10 Middle rectrices equal, only the two outmost shortened speculum album alare remigibus primariis 2-10. General colour more reddish, above greyish rufous or reddish-grey, below rosy-whitish remiges 3=4 ∠ 5 ∠ 2 ∠ 6; or 2=5, 3 ∠ 4.	Only 4 middle rectrices equal, the 8 outer (4 on each side) gradually shortened, speculum alare remigibus primariis, 5—8. General colour more fulvous, above sandy, belows pure fulvous white, tinged with ferruginous.
Size smaller, length 7½—8″.	Remiges, 3=4 ∠ 5 ∠ 2 ∠ 6; or 4 ∠ 3 ∠ 5 ∠ 6 ∠ 2; or 2=6. Size larger, 8—8½.

I have compared above 50 specimens of each form, old and of young, both sexes.

67.—My *Lanius major*, Pall, is correct; young named by Eversmann *L. mollis*. It is a north-east Siberian form, closely allied to the North-American *L. borealis*; in Turkestan it occurs only in winter, and very rarely.

68.—My *Lanius excubitor*, Var., *leucoptera* is the *L. Homeyeri*, Cab., differing from the true *excubitor* by a pure white (not grey) rump, complete white edges on the inner web of secondary quills, as in *L. lahtora*, joined to the large white crossbar of *excubitor*, more white on the tail, and a light pinkish tinge on the underparts; this last not constant. I have shot it on the Upper Naryn, on its way to Kashgar, and seen in London a specimen from Kashgar.

69.—My *Certhia tæniura* is *Certhia himalayana*.

70.—A new species of *Caprimulgus* will appear in the *Ibis* for October, *Caprimulgus arenicolor*, Sev., from the Oxus.

71.—Also a new Woodpecker, *Picus, leptorhynchus*, with a white-winged variety, *Var. leucoptera* (*P. leucopterus*, Salvad.); I have Turkestan specimens and saw some from Kashgar. In my list *P. leptorhynchus* is misnamed *P. Cabanisi*, Sev., nec Malh.

72, 73.—Besides *Cuculus canorus*, not in the least different from the European, there are in Turkestan two smaller Indian Cuckoos allied to *canorus*. One of them is quite the same with a specimen from Etawah, given to me by Mr. Dresser and labelled by Mr. Brooks as *Cuculus micropterus*; lower parts with very thin and numerous cross-bars; the other wider striated, perhaps *C. saturatus*, Vig., if not *C. striatus*, which is still more likely.

74.—My *Columba livia* is not the true; it is your *C. neglecta*; and my *C. livia*, Var., *cyanotus* is *Col. intermedia*, Strickl., different

from the true Egyptian C. *cyanotus*, Alfr. Brehm., which is smaller, and with lighter bluish grey rump than C. *intermedia*.

75.—*Columba fusca*, Pall., standing under this name in my list, is C. *Eversmanni*, Bonap; but the name of Pallas is to stand, as prior.

76, 77.—Two new Turkestan Pheasants described by me for the *Ibis*: *Ph. semitorquatus*, allied to *mongolicus*, I am not quite sure yet whether the differences on which I have founded this species are constant or not, and *Ph. chrysomelas*, resembling the Yarkand *Ph. insignis*, but certainly different from any known species.

78.—My *Falcirostra longipes* is *Ibidorhynchus Struthersi*; *F. Kaufmanni* perhaps also, perhaps different; I will soon make it out.

79.—*Ciconia alba*, Var., *orientalis* will stand as *C. mycteriorhyncha*, Sev., allied to *C. Boyciana*, Swinh., but with a red bill, somewhat recurved towards the tip, and lower mandible thicker than the upper—like *C. Boyciana* and *C. nigra*, but *inverse* of *C. alba*. It is also larger; male 4 feet long, above 7 feet in the spread of wings; female about 44-45 inches long, and thus larger than even the male *C. alba*.

Here I conclude this letter, grown to a paper for "STRAY FEATHERS," as "Notices on some Turkestan birds." Begun in May, at St. Petersburgh; finished 18th September, London, on the very eve of my departure. Meanwhile I have arranged and studied my new collection, attended the Paris Geographical Congress, compared Turkestan birds with Indian specimens of the same, in London, seen many collected by Forsyth's Mission, and identified specimens with my own Turkestan ones, writing my corrected synonyms, as in this letter, on the labels. These Mr. Sharpe will communicate to you; of your birds *Propasser Stoliczkæ* is most thoroughly verified as really new, as is also *Podoces Biddulphi* and some others.

Yours most truly,
N. SEVERTSOV.

[I cannot sufficiently express my obligations to Herr Severstov for having so kindly responded to my enquiries. There is much in the above letter, specially where the *Salicarias* are concerned, in which I am unable to concur, but it is impossible to overestimate the value as a whole to *us out here* of the information thus so unselfishly and obligingly communicated to us.—ED., S. F.]

STRAY FEATHERS.

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Phasianus Shawi and Phasianus insignis, Elliot.

By J. Scully.

During my residence in Eastern Turkestan I had abundant opportunities of observing the Yarkand Pheasant; I saw at least from thirty to forty of these birds alive, kept some in confinement for months, and have lately been looking over a series of twenty-four skins—nine in my own collection and fifteen belonging to Mr. R. B. Shaw. While in Kâshgharia I often tried to make out whether there were two species of Pheasants there, but as I was not aware of the precise grounds on which Mr. Elliot had separated the birds, I could not very well decide; my impression, however, was certainly in favor of one species only. I heard that the distinction was supposed to be the extent to which the breast feathers were edged with green, but as hardly two birds could be found exactly alike in the matter of this edging, I felt satisfied that the species must have been founded on something much more definite and constant than that character.

On going over my specimens a few days ago with Mr. Hume, that gentleman expressed his opinion that all my skins belonged to one species; although he pointed out that one of the birds had less green on the chest than the others. I then examined Mr. Shaw's collection, and found that three of his birds corresponded with the one noted by Mr. Hume, and this determined me to look at Mr. Elliot's work to see what he had said about the matter.

The first point that struck me in regard to the plates of *Phasianus insignis* and *P. Shawi* in Mr. Elliot's magnificent work was that both the birds were erroneously represented as having conspicuous red lappets or wattles, which the Yarkand Pheasant certainly never has at any season; the head should have been represented like that of *P. colchicus*, with a bare crimson orbital skin always at a lower level than the feathers of the cheek. The second piece of information I derived from the [illegible]s was that the bird, having the green of the neck sharply [illegible]at the upper breast, was the one called *P. Shawi*,

while the one having the green reflections extending all down the chest was *P. insignis*. I tried to find out from the text whether Mr. Elliot pointed out any distinction between his two species, but as this was not obvious on a first reading I copied down his descriptions of the corresponding parts of *P. insignis* and *P. Shawi* in opposite columns, underlined the discrepancies, and sat down to study the subject with my specimens before me. So far then I had ascertained what form was called *insignis* and what *Shawi*, and with the two collections of twenty male Pheasants I could roughly set aside sixteen which would be called by Mr. Elliot *Phasianus insignis*, and four which I presume he would have accepted as *P. Shawi*. The next point was to put down in words what the distinctions between the two sets really were. To take Mr. Elliot's description first, I found that what he said would apply generally to birds in both series, and indeed could only fix on six salient points:

a. *Insignis* more brilliant than *Shawi;* nothing could be made out of this, for in the twenty birds not even three could be found exactly alike in this respect: some of the specimens were most gorgeous and the worst were never dull.

b. The tippings of the feathers of the back, scapulars, breast and flanks *green* in *insignis*, *blue* in *Shawi;* a careful comparison of the birds showed that this would not hold at all, some of the latter series having the tippings quite green and many of the former series very blue.

c. Centre of abdomen and thighs, in *insignis*, black, in *Shawi*, brownish black; this also would not hold; some *Shawi* had the abdomen black or greenish black, and one or two *insignis* brownish.

d. *Insignis* has the tips of the under tail-coverts washed with green; my *Shawi* series was certainly devoid of this character, but on the other hand in at least seven of *insignis* also not a trace of it was present.

e. In *P. Shawi* the rump has greenish reflections; but so had the majority of my specimens of *insignis*.

f. Lastly: feet and tarsi of *insignis* blackish brown, of *Shawi* greyish; this does not hold good—some of my *Shawi* series had darker feet and tarsi than *insignis*, and many of the latter had the legs and feet lightish grey.

Having failed to discover that Mr. Elliot's description would help us to uphold two species, I next ventured to try if I could not find something distinctive myself. I started several points: the wing coverts, the edgings of the feathers of the lower back, the colours of the thighs, &c., but they really would not answer; the series were alike in these respects. The following three points were the last and promising:

(1.) Three specimens of *P. insignis* had a narrow half collar of white almost continuous at the back of the neck. This was interesting as bearing on Mr. Elliot's statement that the bird was allied to *P. mongolicus*; but was of no value as a distinctive character, as it was not constant, and besides one of the *Shawi* series showed the beginning of this white streak also.

(2.) The shaft of the tail feathers in one *P. Shawi* was alternately dusky and yellowish white; in *P. insignis* it was dusky throughout. Now I thought if this be only constant throughout the two series it will, taken with

(3.) *The one marked point*—the abrupt termination of the green of the neck, so well shown in Elliot's figure of *P. Shawi*, though not exactly mentioned by him in words—satisfy one that there are two species of Pheasants in Yarkand.

To test this I began to draw the birds out of their covers: the first had the shaft variegated, and on turning it round to look at the breast it proved to be *Shawi;* the second gave a like result; the third showed the shaft of the tail feathers dusky throughout, and the characters of *insignis* as to breast (this became exciting); the fourth had the shaft dusky and yellowish and the breast————Eh! What? *insignis* or *Shawi*? I rushed to the window to get a good light on the subject: mortifying result! It was impossible to tell by its breast whether it were *Shawi* or *insignis*—it was intermediate. Another specimen was tried; it had the tail shaft dusky throughout and it was also intermediate as to the breast. It must be given up! I have only one species represented by my entire series of specimens.

It seems scarcely possible that there should be really two species of Pheasants in Yarkand, and that during a residence of ten months there I should only have come across one of them; besides, as I have explained above, I really think that I *have* some of the birds in the slightly different states of plumage which are shown in Mr. Elliot's two plates. Now I know by the dates on the tickets of my specimens that this slight variation is not due to season, and I can therefore only suggest that it may be a question of age—a view which the length of the spurs seems to confirm. The heads of the birds are alike, so are the measurements, and intermediate forms occur; but as I feel sure Mr. Elliot must have had some weighty reason for making two species out of the skins he received, I should be glad to know what the distinctions on which he relies really are. If there really are two species I can only say that they so closely resemble each other as to make it impossible to discriminate them without being told in

what points they differ; that they are both found in the same localities in a small tract of country, and that the natives (who are exceedingly good at discriminating species, as I know from personal experience) have only one name for them—*Kirghaul*. The majority of the specimens I have seen approximate most to the plate of *P. insignis*, but if, as I believe is the case, there be only one species of Pheasant in Yarkand, I feel sure that Mr. Elliot will be the first to agree that it should stand as *Phasianus Shawi* in honor of Mr. R. B. Shaw, who was the first to introduce this beautiful Pheasant to the notice of Europeans.

J. S.

A Note on the genus Dendrophila.

By R. Bowdler Sharpe, F.L.S., F.Z.S., &c.

I recognise three species of this genus, *viz.*, *D. azurea* (Less.), *D. frontalis* (Horsf.) and *D. corallina* (Hodgs). The first of these is of course extremely well characterised, but the last two have generally been united as one species. An examination of the series in the British Museum, however, shews they are not specifically the same, but that the Himalayan bird is larger and is always to be distinguished by its white throat; in the true *D. frontalis* of Java, the under surface is more richly coloured and the throat is lilac brown like the breast. I believe the following to be the correct geographical distribution of the three *Dendrophilæ*, to which *Hypherpes corallirostris* of Madagascar is closely allied.

1. Dendrophila azurea.

Hab. Java (*Mus. Brit.*): "inhabits the woods on the slopes of the Gedée mountains, Java" (*Bernstein*).

2. Dendrophila frontalis.

Hab. Java (*Horsfield*): Sumatra (*Raffles*): Borneo; Sarawak (*Doria, Beccari, Wallace*), Bangermassing (*Schierbrand*).

3. Dendrophila corallina.

Hab. "This lovely little Nuthach is found over the greater part of India in suitable localities. I have found it on the Malabar coast, on the summit of the Neilgherries, in Central India, in Goomsoor, and also on the Himalayas. It is also found in Ceylon, Assam, Burmah, and Malayana. On the Himalayas I have only found it in the warmer valleys and not common;" (*Jerdon*); "found in great abundance in the dense woods of the

Neilgherries. I have seen it, though rarely, below the Ghats, also in thick forest jungle" (*Jerdon*) : Kankarjur near Dampára in Dholbhúm (*Tickell*) : Nepal (*Hodgson*) : Behar (*Hodgson*) : Darjeeling (*Webb. Mus. Calc.*) : Ceylon (*Layard*) : a hill species, common at all seasons at Nuwara Elirja and on the Upper Hills : sometimes in the low country (*Holdsworth*) : Assam (*Mc' Clelland*) Arrakan (*Barry. Mus. Calc.*) : not uncommon in the suburbs of Moulmein (*Mason, Beavan*) : right bank of Tapeng River (*Anderson*) : Arakan hills : Bassein, Pegu (*Blandford*) : Pegu Hills, very common (*Oates*) : Tenasserim, as far south as Tavoy (*Hume*).

Notes on the Avifauna of Mount Aboo and Northern Guzerat.

By Captain E. A. Butler, H. M.'s 83rd Regiment.

In compliance with my friend, the Editor's request I have made out a list of all of the birds that I have met with during the two years I have been in this part of the country, and although I fear that it is very far from complete, I still trust that it may prove useful to the readers of Stray Feathers, and give them a good general idea of the Avifauna of Mount Aboo and the plains of Northern Guzerat.

The tract of plains country, to which my observations refer, lies between Ahmedabad and Mount Aboo *via* Deesa, a distance of about 140 miles, and consists of a vast sandy plain, for the most part perfectly level, with the exception perhaps of slight undulations, and a few nullahs and river beds. In some parts it is bare and desolate, in others extensively cultivated, with almost every sort of crop. Then again in some places the country is beautifully wooded, and after the rains, when the grass comes up, presents quite a "park-like" appearance. Between Ahmedabad and Sidpoor wide marshes, abounding with almost every kind of waterfowl, occur formed by a long chain of tanks extending for miles on both sides of the road. In many other parts the country is much confined by thick jungle, principally *Zizyphus, Acacia* and *Calotropis*.

The roads and cultivated grounds are generally enclosed with tall hedges of prickly Cactus-like *Euphorbia*, often 8 feet or 10 feet high and 12 feet or 15 feet wide, which afford good cover for game after the crops are cut.

The climate is healthy enough, excepting perhaps immediately after the rains, during which period a good deal of

fever prevails, but the heat is almost intolerable in the hot weather, when the thermometer often rises in Deesa in the day-time to over 110°, and is seldom lower at night than 96°. In the cold weather the temperature varies in the day-time from 75° to 80°, and the nights are quite chilly, the thermometer occasionally going down as low as freezing point (32°), but the average temperature throughout the year is about 81°.

The monsoon sets in about the middle of July and lasts until about the middle or end of September. The rainfall averages about 30 inches; however this year about 37 inches have fallen in this neighbourhood.

Mount Aboo is a large hill about 50 miles in circumference detached from the Aravalli range. The plateau upon which the station is built is about 4,500 feet above the level of the sea, but at Oriar, the highest peak, the elevation is about 5,650 feet. The ascent* from Anadra,† a small village at the foot of the hill on the western side, is very steep and the road narrow and zig zag. Most of the hill is composed of rock overgrown from the base to summit with impenetrable jungles, principally of bamboo, in which of course many birds occur that are not found in the plains; though I must confess I was much surprised and disappointed when I came to explore them in not finding more species. The climate of Aboo is very healthy, and the average daily temperature throughout the year about 69°. In the hot weather the thermometer seldom rises over 90°, and in the cold weather the nights are often frosty. The monsoon generally sets in about the first week in July and lasts until about the middle or end of September, dates varying according to season. The average rainfall is about 65 inches, however this season over 100 inches have fallen, causing immense floods all over the plains below.

Mount Aboo and the neighbourhood of Deesa both contribute largely to my list, as well as the marshes between Ahmedabad and Sidpoor, in which most of the "Grallatores" and "Natatores" were obtained.

I propose now to point out the different families in which I know that my list is specially wanting; having met with other representatives of those families besides those which I have included, which, either from not having been fortunate enough to secure specimens, or from not having been able to identify birds that I have seen in the field at long distances, I have been obliged to omit.

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* Distance about four miles.

† Originally *Asa-adra*, the gate of honor. The magnificent marble Temples on Mount Aboo, have for centuries attracted innumerable Pilgrims. Hence the name of the hamlet that guarded the ascent in olden times,—*Ed.*

The orders, families, genera, &c., are arranged after Dr. Jerdon's work, the numbers are those of the latter and of Mr. Humes' Catalogue. The latter gentleman has kindly corrected the nomenclature and identified all species that I sent to him as doubtful or unknown.

1*st Raptores.*—This order is, I fear, the most incomplete of all, most especially in the families,

Falconidæ and Strigidæ.—Of the former I have not included several species which I have seen, from not having obtained them and settled the question of identity. In the first place, I saw a bird at Aboo that I feel sure was *Astur* or *Lophozpiza trivirgatus*, Temm. and I have seen two or three eagles which I have not yet been able to make out; *Aquila pennata*, Gmel., is probably one; *Nisaetus Bonelli*, Tem. another; *Limnætus cristatellus*, Tem. another; *Spilornis cheela*, Daud another; and *Pandion haliætus*, Lin. another. All of these, I feel confident, I have seen either in the plains or on the Aboo range, and hope to secure specimens at some future time. Of the family *Strigidæ* an Owl occurs at Aboo, which I fancy must be *Syrnium indranee*, Sykes. It has a loud hooting call resembling the words too-whoo, too-whoo, &c., repeated several times consecutively, and is about the same size as the Brown Wood Owl. A Scops Owl also occurs at Aboo, probably *Ephialtes pennatus*, Hodgs., but I did not get a specimen although I saw it on two or three occasions.

2*nd, Insessores.*—Of this order first of all the *Hirundininæ* are not complete, as I have not included *Hirundo daurica*, Lin., which I am sure must visit us in the cold weather, nor *Hirundo fluvicola*, Jerdon, a colony of which have been observed by a friend of mine about 20 miles from Deesa, but unfortunately he did not shoot me a specimen, and consequently I cannot include the species only having identified it from his description. Of the family *Bucerotidæ* I believe that at least two other species occur in the Aboo jungles besides the one I have mentioned, namely, *Hydrocissa coronata*, Bodd, and *Tockus griseus*, Lath. Of the family *Megalaimidæ* I have a specimen of *Megalaima viridis*, Gmel., shot in Rajpootana, but have omitted the species, not knowing the exact locality in which it was procured. Of the family *Sylviadæ* a few omissions have been made in the sub-family *Phylloscopinæ*.

In addition I must mention that I have observed certainly two if not three species of Reedwarblers in the dense beds of rushes which I failed to procure and so cannot speak for certain of their identity.

3*rd, Grallatores.*—Of the family *Charadriadæ*, sub-family *Charadrinæ*, I have not mentioned the genus *Ægialitis*,* one or

* Since the above was written I have identified *Ægialitis curonicus*, Gmel; and [illegible] the list.

two species of which occur both in the plains and at Aboo, probably *Ægialitis cantianus*, Lath., and *Ægialitis minutus*, Pallas, but at present, I cannot include them, not being *sure* that the birds I have met with belong to these two species. Of the family *Scolopacidæ* one or two species of the sub-family *Tringinæ* have been omitted, probably *Tringa minuta*, Leisler, for one. Of the family *Rallidæ* I feel sure that some of the sub-family *Rallinæ* have been passed over, although hitherto I have only met with the species I have mentioned.

4*th*, *Natatores*.—Of the family *Anseridæ* I believe I have seen the Barred-headed Goose, *Anser indicus*, Gmel., on one or two occasions in the tanks between Ahmedabad and Sidpoor, but never having shot a specimen have not included the species. Of the family *Laridæ* no doubt some of the sub-families *Larinæ* and *Sterninæ* have also been overlooked.

In conclusion, I may mention that although I feel sure my list contains most of the species found in this part of India, still I am confident that several species have yet to be included to make it complete. In fact the hills are so steep and rugged, and the jungles so dense and impenetrable on the Aboo range, that it is quite impossible to explore the whole of them, and consequently doubtless a few species have escaped notice. Then again I have no doubt that a few species of marsh and aquatic birds have also been passed over owing to the difficulty of penetrating the dense beds of rushes which border so many of the large jheels. However further observation may yet enable me to supply many of these deficiencies, and I trust to be able, upon some future occasion, to publish addenda containing most, if not all, of the species omitted in the present paper should any such escape our Editor. For I may mention that Mr. Hume has kindly promised to add in all species not recorded by me, but shot by himself at Aboo, or about Deesa or Ahmedabad, or by Dr. King at Aboo, as also to note in regard to each species whether he has obtained it as yet in or from Jodhpore, Kattiawar, Kutch, or Sindh, either or all, and to add lists of species occuring in these not yet observed by any of us*

* What with the distractions consequent on H. R. H. the Prince of Wales' visit and other constant work, I have only been able to perform my part of the undertaking very imperfectly.

The region I deal with to illustrate the peculiar character of the *ornis* of Aboo, comprises Sindh, Cutch, Kattiawar, and Jodhpoor, to its extreme eastern limits at the Sambhur Lake. For this my materials were far from scanty. I have myself collected largely, at Sambhur, Ajmere, various places in Jodhpoor, Aboo, Northern Guzerat, Sindh and the extreme western part of Kattiawar. At Sambhur Mr. Adam has constantly collected for now 4 years, and he has presented my museum from time to time with the pick of all his collections, probably 1,200 specimens. We have also his paper and subsequent note on the birds of this locality. Dr. King collected at Aboo and Jodhpoor for nearly two years, to him I am indebted for the pick of all his collections, and for two valuable manuscript lists of species obtained respectively at Aboo and in the plains of Jodhpoor in both spring, summer and Autumn. From C[illegible] I owed to Dr. Stoliczka the pick of his collection, I have also a collecti[illegible]

in the tract which I have specially worked, and to which this paper primarily refers.

1.—Vultur monachus, *Lin.*

I saw one specimen of the Great Brown or Cinereous Vulture feeding on the carcase of a Pelican-ibis, (*T. leucocephalus*) on the edge of a tank about 20 miles north of Ahmedabad in the cold weather of 1870. I have not met with the species since in this part of India. The bird was by no means wild, allowing me to approach to within 30 or 40 yards without shewing any signs of alarm.

[I have not yet received or heard of this species from Jodhpoor, Cutch, Kattiawar or Sindh, and though it doubtless may occur within this vast tract, it can only be as a rare straggler. At Sambhur though very rare it does occur. I even saw it once at Ajmere, and further north in Rajpootana it is not uncommon. —A. O. H.]

2.—Otogyps calvus, *Scop.*

The Black Vulture, though not so common as *Gyps indicus* and *Gyps bengalensis* and being of a much more solitary nature owing probably to its pugnacious disposition, is usually to be found wherever there is a dead carcase both on the hills and in the plains.

[Jodhpoor, Cutch, Kattiawar, Sambhur and Rajootana generally, but not as yet from Sindh.—A. O. H.]

3.—Gyps fulvus,* *Gmel.*

The Large Tawny Vulture is not uncommon in the plains.

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my own people, and lastly Dr. Stoliczka's paper. J. A. S. B. 1872. From Kattiawar I have a few specimens obtained by myself on its western shores from Beyt to Poorbunder, a considerable collection made for me, and Captain Hayes Lloyd's paper in the Ibis for 1873. From Sindh I have received numerous specimens since I myself collected there from Major Le Messurier, Mr. James, Captain Wise, &c. These, with the specimens sent me from time to time by Captain Butler from northern Guzerat, a collection made by Dr. Eddowes at Erinpoora, which he kindly sent me to see and out of which he gave me several specimens, and some minor contributions constitute as a whole a tolerably broad, though still certainly very far from complete basis for generalizing.

I have added in my remarks and comments in brackets.—Ed.

* Gyps Fulvus and Gyps Fulvescens.—I have entered *G. fulvus*, Gmel., and *G. fulvescens*, Hume, separately, although it is possible they belong to the same species, as the two birds I refer to are so totally different in the coloration of plumage as well as in other respects. *G. fulvus*, Gml., of this part of the country corresponds almost, if not exactly in size and plumage, with *G. fulvus*, of Europe, of which, I have shot and examined many specimens in the south of Spain. *G. fulvescens*, Hume, in my opinion, judging from the specimens I have seen, is a smaller bird and has the lower plumage almost of a chestnut red and the upper far darker and more rufous than any *G. fulvus* I have ever met with. I have carefully read over Mr. Hume's remarks upon these two species in "Rough notes on the Indian Raptores," pages 12 to 21, and "Stray Feathers," Vol. I., pages 148 to 150 on the same subject and fully concur with him in thinking that these two species are entitled to a specific separation.

[See Captain Butler's note; I have never yet seen an Indian-killed example of the European *G. fulvus*, and if Captain Butler's identification is, as I have no reason to doubt, correct, then this bird straggles eastwards just within the western limits of the British Empire, being replaced elsewhere in our territories by *G. fulvescens*, and will doubtless occur in Sindh, Kutch and Kattiawar, from neither of which however have I yet seen it.—A. O. H.]

3 *bis.*—Gyps fulvescens, *Hume.*

The Bay Vulture is not common. I have met with it on a few occasions in the neighbourhood of Deesa feeding on putrid carcases in company with *Gyps indicus* and *Gyps bengalensis.*

[This I have myself shot at Deesa and Jodhpoor. I have it from Cutch, Kattiawar, Sindh. From Ajmere, Sambhur, &c.—A. O. H.]

4 *bis.*—Gyps pallescens, *Hume.*

Gyps indicus, Scop.— The Long-billed Brown Vulture, like the next species, is very common.

[This is not the so-called *indicus* of Scop., so common in the eastern portions of our Empire; it is the pale cliff breeding western species fully described in my Rough Notes, pp. 21-26, under Scopoli's name, but which I discriminated and renamed *pallescens*, St. F., I., p. 150. This breeds on Mount Aboo (N. and E, p. 6) and I have it from Jodhpore, Cutch and Kattiawar, but not Sindh as yet.—A. O. H.]

5.—Gyps bengalensis, *Gmel.*

The White-backed Vulture is very common both on the hills and in the plains.

[Observed throughout the entire region save only in Sindh whence it has not yet been recorded.—A. O. H.]

6.—Neophron ginginianus, *Daud.*

The White Scavenger or Egyptian Vulture is another very common species occurring both on the hills and in the plains.

[Throughout Sindh, Cutch, Kattiawar, Jodhpoor and Rajpootana. I have not yet been able to settle the question of the distinctness or otherwise of the Indian race, S. F., I., 160.—A. O. H.]

[8.—Falco peregrinus, *Lin.*

I saw a pair and shot a female some 16 miles west of Deesa on the road to Sooegam, and I am almost certain I saw one at a swamp on the road from Deesa to Ahmedabad. I have it from

Cutch, shot by Stoliczka, and obtained it near Dwarka in Kattiawar. In Sindh though rare I saw it both north and south, and have had several specimens sent me. It is always about the lake at Sambhur during the cold season, but I do not know of its having been shot in Sirohee, Godwara, Jodhpoor proper or Balmeer.—A. O. H.]

9.—Falco perigrinator, *Sund.*

The Shaheen Falcon is by no means common. I shot a fine specimen (♂) at Mount Aboo on the 10th April 1875, and met with it on one or two occasions afterwards at the same place, but have not observed it in the plains.

[I have no specimen from, and no record of the occurrence of this species in, either Sindh, Cutch, Kattiawar, Jodhpore, Sirohi, &c., nor has it been obtained at Sambhur.—A. O. H.]

11.—Falco juggur, *Gray.*

The Laggar Falcon, though not very common, is to be found in most parts of the plains. It is generally met with either singly or in pairs, and more than one pair seldom take up their abode in the same neighbourhood. In the cold weather of 1874, I used often to amuse myself in the early morning, watching a pair of these fine Falcons persecuting a flock of the Black-sided Lapwing (*Chettusia gregaria*). The poor Plovers, frightened almost out of their lives when they saw their enemies approaching, used to rise in a flock closely packed together to an immense height in the air wheeling and darting in all directions. It was of no use however trying to escape; the two Falcons would follow them up until an opportunity occurred, and then one of them with a velocity beyond description would make a stoop into the midst of them and strike its victim, descending with it in its claws slowly to the ground. Both Falcons would then take part in devouring the dainty morsel.

[Sindh, Cutch, Kattiawar, Balmeer, Jodhpore and Rajpootana generally; never as yet observed on Aboo.—A. O. H.]

13.—Hypotriorchis subbuteo, *Lin.*

The European Hobby is tolerably common at Mount Aboo at the end of the rains, and during the cold weather arriving about the 14th September. I have not however met with it in the plains below. It feeds in the early morning and in the evening, and may be seen then in most parts of the hill. It seems particularly partial to low swampy ground and the vicinity of water, and usually flies with considerable rapidity close along the ground. On seizing an insect, which in nine cases out of ten is a dragon fly, it rises into the air like a Kite to a height of 30 or 40 yards, sailing slowly round in circles and devouring

its prey on the wing from its claws. One specimen I shot on Aboo measured as follows :—Length, 16 inches ; wing, 11½. The inside of the skin was so plastered with grease as to render skinning it without soiling the feathers almost an impossibility.

[Not yet obtained, or noticed in Sindh, Cutch, Kattiawar or any part of Jodhpoor.—A. O. H.]

16.—Hypotriorchis chicquera, *Daud.*

The Turumti or Red-headed Merlin is not very common, but appears to be distributed pretty generally throughout the plains. It hunts with almost the audacity of the Peregrine. Upon one occasion I remember shooting into a small flock of *Cursorius gallicus* wounding two and killing a third. One of the wounded birds before falling flew "pump handling" for some distance close to the ground and the other one towered. One of these beautiful little Merlins at once appeared on the scene and followed in pursuit of the towering bird to a height of 300 or 400 feet. As soon as the Courier became aware of his presence, he closed his wings and dropped to the ground like a stone, followed of course by the *Turumti*, who stood erect by his side on my arrival, staring at him as if it was the first bird he had ever seen. On my approaching the spot, the Courier again took wing, followed by the Merlin, and thinking he might fly some distance I shot him. Instead of flying away, frightened by the shot, the Merlin took no notice whatever of the report of the gun, but made a stoop at the falling bird and accompanied it to the ground. I then walked up to the spot and drove him away.

After picking up the Plover I turned round, and to my unutterable surprise saw the Falcon on the top of the other wounded bird. I ran up to them and found a desperate struggle going on, and it was not until I nearly knocked the plucky little fellow over with a stone that I induced him to leave his intended meal. Upon another occasion, when pigeon shooting in Poona, I saw a *Turumti* descend suddenly and seize a pigeon which had fallen wounded close to the trap within 30 yards of a large crowd of spectators. Upon this occasion however the poor little Falcon paid dearly for his temerity, as he was shot by one of the by standers as he was endeavouring to rise with the pigeon in his claws.

[Common throughout all the sub-divisions with which I am dealing, but not as yet recorded from Aboo.—A. O. H.]

17.—Tinnunculus alaudarius, *Brisson.*

The Kestrel is very common all over the plains in the cold weather. It is found also on the hills.

It arrives about the 6th September.

[Common throughout the entire region.—A. O. H.]

23.—Micronisus badius, *Gmel.*

The Shikra occurs in most parts of the country, though not very abundantly, excepting during the cold weather, at which season it is common. It ascends the hills.

[We have this from all the sub-divisions, but it is, I believe, very locally distributed, never occurring in the more barren and arid tracts which form so large a proportion of the area of most of them.—A. O. H.]

24.—Accipiter nisus, *Lin.*

The European Sparrow Hawk occurs sparingly in the plains and on the hills during the cold weather; it is however by no means common. The much more slender claws and tarsus renders it at a glance distinguishable from the preceding species.

[I have the European Sparrow Hawk, from Kutch (shot by Stoliczka), and have myself procured it at Sambhur, Ajmere, Sirohi and Sindh, but it is nowhere more than a chance straggler. In Jodhpoor and Kattiawar, it also occurs, but is apparently very rare there.—A. O. H.]

[25.—Accipiter virgatus, *Tem.*

A young male of this species was obtained at or near Aboo by Dr. King. Stoliczka obtained a couple of young birds in Cutch. Adam two or three, also young ones, at the Sambhur Lake. These are the only instances I have on record of its occurrence in any part of the whole region with which I am dealing, and, indeed, this is quite outside its province, and I doubt whether adults ever find their way so far, it being only birds of the year, and these few and far between, that turn up there from time to time.—A. O. H.]

28.—Aquila nævia, *Gmel.*

The Spotted Eagle is not uncommon about the tanks between Ahmedabad and Deesa. I shot several specimens myself, and upon one occasion I saw a native throw a "boomerang" at one on a low tree and knock it down. Most of the birds I have seen have been in the deep umber brown plumage, with purple reflections on the upper parts, agreeing exactly with one or two of the birds described by Mr. Hume in his "Rough Notes on the Indian Raptores," pages 168 to 172. It is not a very shy bird, and generally when not on the wing sits on some low tree near the water. It is a considerably smaller bird than *Aquila imperialis* Bechst: the female only measuring 27 or 28 inches.

[Occurs throughout the entire region, but as a rule, only in the neighbourhood of tanks, jheels and canals. In all the more desert portions of the country, it is very rare or absent,

thus Mr. Adam has never yet met with it near the Sambhur Lake.—A. O. H.]

29.—Aquila vindhiana, *Frankl.*

The Indian Tawny Eagle is common everywhere.

[Not uncommon in suitable localities throughout the whole region.—A. O. H.]

[33.—Pseudaëtus Bonellii, *Tem.*

I twice saw Bonelli's Eagle soaring over the upper plateau of Mount Aboo, and I shot one between Anadra and Sirohi. I have it from Jodhpoor, Kutch, Kattiawar, Sindh and Sambhur.—A. O. H.]

[35.—Spizaetus cirrhatus, *Gmel.*

I obtained a fine adult female of the Crested Hawk Eagle near Anadra, at the foot of the ascent to Mount Aboo.

This species does not occur so far as I know, in Sindh, Kutch, Kattiawar, Jodhpoor or Northern Rajpootana. It is a Peninsular species, and a line drawn from Aboo to Etawah and thence by Shergotty to Calcutta indicates very fairly its northern limits. Etawah, where I myself shot an immature female is, I believe, about the very most northerly point it reaches—specimens, assigned to this species, from Oudh, the Punjaub, the North Western Provinces and Bengal, north of the line, I have indicated are, according to my experience, invariably immature *nipalensis*, recognizable at once by the feathering of the first joint of the midtoe. I do not know whether I have elsewhere recorded that an adult specimen of *nipalensis* was sent me from the Nilghiris.—A. O. H.]

38.—Circaetus gallicus, *Gmel.*

The Common Serpent Eagle occurs sparingly in the jungles of the Aravally range, but I do not think that it is common in the drier portions of the plains, as I have only occasionally met with it, and never at any great distance from the hills.

I saw several of them, however in the tank country, and shot one or two fine specimens. Like *A. nævia* they often descend and perch upon some low tree showing only their heads above the foliage uttering a shrill squeal in their descent just before or just as they settle.

[I did not see Jean le blanc in Sindh, nor did Stoliczka meet with it in Cutch, nor has Adam ever found it at Sambhur, but I took its nest and saw several specimens in Jodhpoor, and Capt. Hayes Lloyd says it is common in Kattiawar, whence however, I have received no specimen.—A. O. H.]

42.—Haliæetus Macei, *Cuv.*

The Indian Ring-tail or Fishing Eagle occurs sparingly throughout the plains in the well-watered districts. I have noticed it often sailing over the tanks between Ahmedabad and Deesa, and have lost many a wounded duck by one of these birds swooping down and carrying it off almost before it touched the water.

[Occurs in *suitable* localities throughout the region with which I deal, but is rare in Jodhpoor, Sirohi, &c., where there are but few tanks such as it affects and no rivers worthy the name.—A. O. H.]

45.—Buteo ferox, *Gmel.*

The Long-legged Buzzard is not very common, and does not ascend the hills. I saw one of these birds make a stoop at a hare that I was running by scent with terriers near Deesa, and frightened her so that she was compelled to take refuge in a bush, from which the dogs eventually dislodged and killed her. I have only observed this species in the cold weather.

It arrives about the 12th September.

[Occurs during the cold season, throughout the region I am dealing with. Capt. Hayes Lloyd does not mention it from Kattiawar, but it is common on the northern coast of the Peninsular at any rate. Mr. Adam omits it from his Sambhur list, but I have still by me no less than six specimens, all shot at the lake and preserved by myself.—A. O. H.]

48.—Poliornis teesa, *Frankl.*

The White-eyed Buzzard is common both in the plains and on the hills. I am inclined to think that it is migratory, as I seldom noticed the species in this part of the country in the hot weather. They first appear about the 20th August.

[Common throughout the whole region.—A. O. H.]

51.—Circus Swainsoni, *A. Smith.*

The Pale Harrier is common on the hills and in the plains during the cold weather.

It makes its first appearance in the plains about the 2nd August, on which date I shot a pair (♂ and ♀) in adult plumage this year, 1875, near Deesa.

[As in 48.—A. O. H.]

54.—Circus æruginosus, *Lin.*

The Marsh Harrier, though not as common as the preceding species, is by no means rare, occurring, so far as I have observed, in the plains only.

Young birds in the dark blackish brown plumage, with buffy white heads, appear about Deesa at the beginning of July. Where are these bred ?

[Common in the cold season, about all swamps and jheels throughout the whole region. Dr. King obtained one specimen at the lake at Aboo. Many instances of the occurrence of both old and young birds in the plains of India, during the hot weather and rains, have come under my notice, and though the majority seem to migrate, a few pairs certainly remain to breed in Southern, Central and Northern India.—(See NESTS AND EGGS, Rough Draft, p. 51.)—A. O. H.]

55.—Haliastur indus, *Bodd.*

The Maroon-backed or Brahminy Kite is not a common bird in the drier portions of Northern Guzerat. I have however found it tolerably common in the tank country between Deesa and Ahmedabad, and I saw one once at Aboo sailing over the station amongst a number of *M. govinda.*

[Common enough in Sindh and about the coasts of Cutch and Kattiawar, but almost (if not quite) unknown in the dry, riverless, inland regions of Rajpootana. Adam never obtained it about Sambhur, and at Ajmere I only once remember seeing it at the Ana Sagar. Dr. King does not appear to have observed it in any part of Jodhpoor.—A. O. H.]

56.—Milvus govinda, *Sykes.*

The Pariah Kite is abundant everywhere. I have not yet seen a specimen of *Milvus major*, Hume.

[Abundant throughout the whole region of which we are treating, whereas, except in Northern Sindh, no instance of the occurrence of *major* within these same limits has come to my knowledge. Nowhere in Guzerat did I see it; at Bombay it is of exceptional rarity. I recently spent several days knocking about the Bombay harbour which is *infested* with Kites. I dare say there were several thousands. I scrutinized every bird I saw, and could only find one *major* distinguishable at once by its larger size and conspicuous buzzard-like white under-wing patch, and this single bird after some trouble I succeeded in shooting. I still adhere, subject to correction, to the views expressed, S. F., I., 160, *et seq.*—A. O. H.]

57.—Pernis ptilorhynchus, *Tem.*

The Crested Honey Buzzard, though not a common bird, occurs in the jungles of the Aravalli range. I killed one and saw others at Aboo in the jungles at the foot of the hill.

[This is one of the Aboo out-liers, Dr. King also obtained this species there. I have no record of its occurring elsewhere than on the slopes of the Aravallis within the region we are dealing with, except at the extreme eastern margin at Sambhur, where one or two rare stragglers have been seen.—A. O. H.]

59.—Elanus melanopterus, *Daud.*

The Black-winged Kite, though not a very common species, occurs all over the plains, but does not, as far as I know, ascend the hills. It is generally found singly or in *pairs*. Its "*modus volandi*" is very varied. Sometimes it flies lazily along very like a Gull, at other times it sails round and round in circles, often stopping to hover in the air like a Kestrel, as recorded by Dr. Jerdon. Then again when hunting it flies with quite the swiftness and in quite the style of a Falcon.

I have seen one of these birds stoop and carry off a wounded Quail with quite the rapidity and dash of a Peregrine.

[Occurs throughout the whole region; Stoliczka, though he omits it in his list, obtained a young male, which he gave me with many other of his Cutch specimens; in fact I named the whole collection, and he allowed me to pick out everything I wanted before he wrote his paper, and he did not sufficiently note what I took. In some cases I am to blame. e.g., he enters *Falco babylonicus* in his Cutch list, and this is how I named the Falcon he gave me, but later (see Vol. I., p. 20) I discovered that it was a specimen of *F. barbarus*, and this name should be substited for the other in his list.—A. O. H.]

60.—Strix Javanica, *Gmel.*

The Indian Screech Owl is not at all common as far as my experience goes. I have met with it in the neighbourhood of Deesa and in one or two other localities. I did not observe it at Aboo.

[I have no specimen or record of this from either Cutch, Kattiawar, or Jodhpoor, but I found it in Sindh and at Ajmere, and it occurs at Sambhur and, though rare, will probably prove to occur throughout the whole region.—A. O. H.]

68.—Otus brachyotus, *Gmel.*

The Short-eared Owl is very abundant in some places. It usually lies in long grass, and occasionally in the cold weather, when beating for small game, I have met with several dozens, all apparently belonging to the same flock. They rise singly or in pairs, sometimes as many as four and five at a time, fly lazily for about 40 or 50 yards, and then drop down suddenly

into the grass again. They settle also sometimes upon trees (*Mimosa*, *&c.*) or even on open ground without any cover, such as ploughed land, but, as a rule, I think they prefer the long grass.

[Does not I believe ascend Aboo. I have never seen this in, or obtained it from any portion of, the whole region, except near Sambhur; but Capt. Hayes Lloyd records it from Kattiawar, and Stoliczka got 67.—*Otus vulgaris* (another bird that I have not heard of elsewhere throughout the whole region) in Cutch.—A. O. H.]

69—Urrua bengalensis, *Frankl.*

The Rock-horned Owl is not very common. I never saw one on the hills, and have only met with a few examples in the plains. I saw one sitting on the bank of a river near Deesa, and another in a deep nullah about 15 miles north of Ahmedabad.

[Throughout the whole region, but very rare in Sindh, Jodhpoor, and its dependencies, and entirely wanting in the more desert tracts, as at Sambhur, on the extreme eastern margin of the region.—A. O. H.]

70.—Urrua coromanda, *Lath.*

The Dusky-horned Owl is an uncommon species. I have observed it in the jungles below Aboo and also in one or two other localities in the plains.

[Occurs throughout the region (excluding Cutch and Kattiawar whence I have seen no specimen), but is not common in any part of it.—A. O. H.]

[75*ter*.—Ephialtes bakhamuna, *Forst. E. griseus*, Jerd.

A female of this species now in my collection was shot by Dr. King at Aboo. I never saw it there and as Capt. Butler has not seen it, it must be rare. I have no knowledge of its occurrence elsewhere in the whole region. It is an outlier of less arid and better wooded tracts.—A. O. H.]

76.—Athene brama, *Tem.*

The Spotted Owlet is very common in the plains, but does not ascend the hills.

[Common throughout the whole region; tho' most abundant in tolerably well-wooded districts, you will meet with it in almost absolute desert.—A. O. H.]

77.—Athene radiata, *Tickell.*

The Jungle Owlet is not uncommon in the jungles at the foot of Mount Aboo, elsewhere I have not met with it.

[Occurs, so far as I know, nowhere else, within the whole region, though there are jungles in Kattiawar where I should not be surprised at its turning up. At Aboo it is like *E. bakhamuna*, an outlier.—A. O. H.]

82.—Hirundo rustica, *Lin.*

The Common Swallow is common in the plains during the cold weather, arriving about the 1st August and leaving towards the end of February.

[The species referred to is common during the cold season throughout the whole region, but Dr. King never obtained it at Aboo, nor does it apparently ascend the Hill there. Many of these birds belong to the somewhat smaller Eastern race, separated as *H. gutturalis*, Scop. Whether this latter is a valid species, and if so whether any of the Sindh birds are true *rustica*, I have not as yet a sufficient European series to enable me to assert. A fine male, recently sent me from Deesa by Captain Butler, measured L. 8; W. 5: Tl. 4·75; Bill from gape, 0·55; at front 0·28. This, at any rate, I presume is to be considered a true *rustica*.—A. O. H.]

84.—Hirundo filifera, *Stephens.*

The Wire-tailed Swallow, one of the most beautiful species of the genus, seems partial to particular localities. In some places, though not very plentiful anywhere, it may be seen in pretty considerable numbers; in others it does not occur at all. I never saw one at Aboo.

[Common throughout the whole region but I also never saw it at Aboo; and Dr. King, who collected there for two years, neither preserved a specimen nor recorded it in his MSS list. This is the more remarkable, because it ascends the Himalayas to an elevation of at least 5,000 feet.—A. O. H.]

85.—Hirundo erythropygia, *Sykes.*

Very abundant at Aboo, where it breeds during the rains in June and July, fixing its curious retort-shaped nest usually to the roof of a cave, and laying two or three pure white eggs. I am doubtful whether it occurs in the plains during the hot weather, but I am inclined to think it does not. My opinion is that most of them pass the hot weather on the hills where they abound at that season, and breed in the rains returning to the plains again about the end of September, soon after which they disappear entirely on the hills, and become very common all over the plains.

I have not yet identified *H. daurica*, Lin.

[Common during the rains in Jodhpoor, rare in the hot season, perhaps not a permanent resident, but it certainly is so

a little further east in Rajpootana. I have specimens from Cutch, and we saw it on the Runn and the northern shores of Kattiawar, but it has not yet been recorded from Sindh.

I have not ever seen a specimen of *H. daurica*, from any portion of the whole region, and though it doubtless *may* occur there, it can only be as an accidental straggler.—A. O. H.]

[86.—Lagenoplastes fluvicola, *Jerd.*

I shot several Indian Cliff Swallows a few miles from the foot of Mount Aboo. It does not, I fancy, ascend the hills, and must even in the plains be there a rare straggler, as neither Dr. King nor Capt. Butler appear to have observed it. I have seen a single specimen from Cutch, and Capt. Hayes Lloyd reports it as a straggler in Kattiawar. From Sindh it has not yet been sent. Eastward from Aboo, it becomes more common, and at Ajmere there are large colonies, and again southward in the environs of Ahmedabad.—A. O. H.]

87.—Cotile riparia, *Linn.*

The European Sand Martin (if I correctly identified the species, and tho' I have no specimens now at hand, I think I I did so) is not uncommon during the cold weather in some parts of the plains. I have observed it in the neighbourhood of Deesa, sometimes flying singly, sometimes in small parties, and often in company with *H. rustica*, which corroborates Dr. Jerdon's remarks.

[I have seen no specimen, either from Deesa or from any other part of the British Empire in Asia. Nor have I seen any reason yet to modify the remarks I made, Vol. I., p. 164. When I see an Indian-killed specimen of *riparia*, I will believe in its occurrence. I may mention that specimens of supposed *riparia*, kindly sent me last year from Sindh, proved to be *C. obsoleta*, Cabanis, (= my *Ptionoprogne pallida*, Vol. I., p. 1.)—A. O. H.]

[89.—Cotile sinensis, *Gray.*

The Indian Sand Martin was not included in Capt. Butler's list. On my asking him for specimens of *riparia* he sent me a skin of the present species, but with the following remarks :—

" Now regarding the Sand Martin's skin I have sent you which is undoubtedly *Cotile sinensis*, I must tell you that I am almost positive that the bird I shot last year from which I entered the species *Cotile riparia* in my list was correctly identified. I have not got the skin with me now as it was amongst those I sent home, but so far as I can remember it corresponded exactly with the European Sand Martin,—a bird I have snared scores of in my younger days along the banks of the Thames and other

rivers. The bird I now send you would never have struck me as belonging to the European species, *C. riparia*, as it is a smaller bird in the first place, secondly has not got the white chin and throat bordered with a *bold* pectoral band like its European ally.

"No doubt *Cotile sinensis* which hitherto *on the wing* I have (*since* I entered the species in my list) mistaken for *C. riparia* is the common species of Sand Martin in this part of the country; but, as I said before, I believe firmly that I shot a specimen of *C. riparia* here last year *also*, and shall watch vigilantly in future and try and get another. *Cotile sinensis* I have no doubt breeds here as those I shot the other day were flying to and from some holes in the river bank and had the sexual organs well developed. There are more left and I shall watch for their eggs."

It must therefore be left to the future to decide, whether *C. riparia* does really occur in Northern Guzerat, &c.

The present species, besides being common, as Capt. Butler tells us, in the last mentioned district, occurs in suitable localities in Sindh, Cutch, Kattiawar and Jodpoor, being, however, comparatively rare in the three latter.—A. O. H.]

90.—Cotile concolor, *Sykes*.

The Dusky Crag Martin is common in the hills, breeding at Mount Aboo in June and July. It is not so common in the plains. In the neighbourhood of Deesa it breeds in August and September, building an open nest like *H. rustica*, which it fixes to the wall under the eaves of houses and laying two or three eggs.

[Has not been yet observed in Sindh. Elsewhere throughout the whole region not uncommon.—A. O. H.]

91.—Cotile rupestris, *Scop.*

The Mountain Crag Martin is not uncommon at Mount Aboo in the cold weather. It delights in high inaccessible rocks, and may generally be seen in company with *C. concolor*.

[Nowhere else throughout the whole region. Stoliczka's supposed *rupestris* from Cutch is *C. obsoleta*, Cab. I misnamed the species, which I did not discriminate till later.—A. O. H.]

98.—Cypselus melba, *L.*

The Alpine Swift arrives in large numbers at Mount Aboo about the beginning of September, and remains during part of the cold weather.

I have also observed large numbers of these Swifts in the neighbourhood of Deesa. The first noticed was on the 14th August, after which they were very plentiful for about a month when they disappeared. They fly to the hills every evening

just before dusk to roost, returning again in the morning between the hours of 6 A.M. to 9 A.M.

[Occurs, so far as I know, nowhere else within the whole region. During the latter portion of their stay at Aboo they make descents during the daylight to the plains. I have one shot near Sirohi for instance, but they belong essentially to the special Aboo ornis.—A. O. H.]

100.—Cypselus affinis, *Gray*.

Common on the hills and in the plains. Hundreds of the Common Indian Swift breed in the celebrated Dilwarra temples at Mount Aboo. I can corroborate Dr. Jerdon's statement that it is a bird of local distribution, as I have noticed its absence in many places myself.

[Common throughout the whole region.—A. O. H.]

102.—Cypselus palmarum, *Gray*.

The Palm Swift is rare. I saw one pair at Mount Aboo at the beginning of the hot weather, but never saw the species there afterwards.

I also once saw a small party consisting of about a dozen of these birds flying round and round a solitary Palm tree near a village about 20 miles south of Deesa.

[Unknown, I believe, throughout the whole region. I did not see it at Aboo. Neither did Dr. King.—A. O. H.]

107.—Caprimulgus indicus, *Lath*.

The Jungle Night Jar is tolerably common at Mount Aboo and breeds upon the hill in all probability about March, April and May, as I observed and shot young birds which had quite recently left the nest in the middle of June. In colour the young birds are much lighter than the adults, and the scapulars, as well as other parts of the upper plumage and the tail, are conspicuously marked with rusty buff. I am very doubtful whether this species remains at Aboo the whole year, and am inclined to think it does not, as I do not recollect seeing it except in the hot weather. They appear about the middle of May, so that *if* migratory they probably arrive about that period. They are very noisy, commencing to call as soon as it begins to get dusk. The note is loud and peculiar, resembling the words "chŭck chŭck chŭr-r-r" repeated several times continuously. On sallying forth in the evening they usually fly straight to the nearest road or to some open sandy piece of ground, and settle and dust themselves. I have often seen as many as four or five together within a few yards of each other thus engaged.

Of course if migratory, my suggestion that they breed at Aboo falls to the ground. I have never seen it in the plains.

[This species does not belong to the western desert country. I have never seen it from, or had any record of its occurrence in, either Sindh, Cutch, Kattiawar, Jodhpoor, or anywhere thence to Sambhur. I did not get it at Aboo myself, but Dr. King notes having done so.—A. O. H.]

112.—Caprimulgus asiaticus, *Lath.*

The Common Indian Night Jar is tolerably common all over the plains. It lies a good deal at the bottom of the big *Euphorbia* hedges, as well as in low tree (*mimosa*) jungle. It breeds, I fancy, twice a year, as I flushed a cock and a hen bird near Deesa with a young one just fledged on the 20th July, and found on dissecting the hen that she was about to commence laying again. I did not observe this species at Aboo.

[Neither did I; Dr. King notes a single male from Aboo, very possibly killed by his men low down the hill but not improbably it is a mistake, as he does *not* note, *C. monticolus* of which his collection contained a specimen. It occurs throughout the whole region with which I am dealing.—A. O. H.]

[113.—Caprimulgus Mahrattensis, *Sykes.*

I obtained a specimen of Sykes Goat Sucker in Northern Guzerat, between Deesa and Sooegam, some few miles from the latter place. It occurs in every subdivision of the entire region, but has not yet been obtained by Mr. Adam in the immediate neighbourhood of the Sambhur Lake.—A. O. H.]

[114.—Caprimulgus monticolus, *Frankl.*

Very common at Aboo, and it is strange that it should have escaped Captain Butler, who has obtained almost every bird that either Dr. King or myself met with.

I do not know of its occurring in Sindh, Kutch or Jodhpoor; eastwards it is not uncommon in the Aravallis, up to Ajmere and in the Hills at Sambhur, and Captain Hayes Lloyd reports it from Kattiawar, whence however I have not received it.—A. O. H.]

117.—Merops viridis, *Lin.*

The Common Indian Bee-eater occurs in abundance all over the plains. I noticed it also in considerable numbers at Aboo, but I do not think that it remains on the hills in the hot weather.

[common throughout the whole region.—A. O. H.]

[118.—Merops philippinus, *Lin.*

The Blue-tailed Bee-eater often occurs at Aboo, and I wonder that it has escaped Captain Butler. I shot two myself at Aboo, and Dr. King has several in his list. At Aboo it is an outlier, I have no record of its occurring in any portion of the plains region with which I am dealing, where it is replaced by *ægyptius*.—A. O. H.]

120.—Merops ægyptius, *Forsk.*

The Ægyptian or Blue-cheeked Bee-eater is somewhat rare. I have one specimen that was shot by a friend of mine about 20 miles north of Deesa, and I observed it in small parties on several occasions myself in the immediate neighbourhood of Deesa. It has a fine wild note, which it usually utters on the wing, much resembling the note of its European ally, *M. apiaster*, Lin.

It is particularly fond, like all the other birds of this genus, of sitting upon telegraph wires.

[I have specimens or records now of this species, but only as a summer visitant, from both northern and southern Sindh, from Cutch, Kattiawar and Jodhpoor, and indeed the whole of Rajpootana, (*supra*, p. 326.) Being complimental to *philippinus*, it does not, to the best of my belief, ever occur at Aboo.—A. O. H.]

123.—Coracias indicus, *Lin.*

The Indian Roller is common all over the plains, and at Aboo. I believe, however, that it leaves the hills in the hot weather, as I do not recollect seeing it during that season.

[Throughout the entire region.—A. O. H.]

129.—Halcyon smyrnensis, *Lin.*

The White-breasted Kingfisher is common on the hills and in the plains.

[Entire region.—A. O. H.]

134.—Alcedo bengalensis, *Gmel.*

The Common Indian Kingfisher is common on the hills and in the plains.

[Entire region.—A. O. H.]

136.—Ceryle rudis, *Lin.*

The Pied Kingfisher is common in every tank and river, both on the hills and in the plains.

[Entire region, but rare in Sambhur and most parts of Rajpootana.—A. O. H.]

SKETCH MAP

of a portion of

NORTH PEGU

Scale 12 Miles = 1 Inch.

12 9 6 3 0 12 Miles.

...shew where Mr. Oates ...e chiefly made.

SKETCH MAP

On the Scale of 128 Miles = 1 Inch.

Showing the General Position of the Tract referred to, which is colored red

THAYETMYO

Allanmyo

Yattoun

Sakhangheo

Nyohla

Thmagan

Boutlay

Palow

PROME

Shwaydoun

Engmah Swamp

Pounga

Thhpwoon

MYANOUNG

TONGHOO

Kaboun R.

Yaw R.

Sittoung River

Pegu R.

Pegu Yoma Mts.

The Hills & the Plains

Irrawaddy River

Yaw R.

Thayetmyo

Ramree

Cheduba I.

Prome

Pantanaw

Sandoway

Bassein

Donabew

Syriam

RANGOON

Martaban

Martaban Mountain

Cape Negrais

Alguada Reef

Light House

Mouths of the Irrawaddy

Gulf of Martaban

Irrawaddy River

95° 30′ 96° 96° 30′ 97°

19° 30′ 19° 18° 30′

20° 16°

144.—Meniceros bicornis, *Scop.*

The Common Grey Hornbill occurs in all of the big jungles on Mount Aboo, and is not uncommon in the wooded parts of the country between Deesa and Ahmedabad.

[Occurs nowhere, so far as I know, within the whole plains region with which we are dealing, but just as it occurs at Aboo, an outlier from "more hospitable climes," so also Captain Hayes Lloyd notes it from the Girnar and forests round about in Kattiawar.—A. O. H.]

147.—Palæornis eupatria, *Lin.*

The Rose-band Paroquet is very rare. I have one good specimen given to me by Dr. Newman, by one of whose servants it was shot at Mount Aboo. There is no doubt as to the locality it came from, as the man who shot it told me the exact spot where it was killed. I have not met with another example.

[This specimen, which I owe to Capt. Butler, is nearer the Singhalese, than the Sub-Himalayan form. Neither *eupatria* nor *sivalensis*, occur anywhere else to the best of my belief throughout the whole region. It was said to have occurred near Hyderabad, Sindh, but I do not *now* believe this.—A. O. H.]

148.—Palæornis torquatus, *Bodd.*

The Rose-ringed Paroquet is very common both on the hills and in the plains. I took a nest in Deesa on the 14th February 1875, containing four fresh eggs, which is somewhat early for this species to lay, as at that time of year they are still to be seen in immense flocks. This pair I look upon however as an exceptional couple, as I had noticed them at work clearing out the holes in which the eggs were subsequently deposited for at least three months before the eggs were laid, during which period they never joined any of the numerous large flocks which abound in that neighbourhood during the rains and in the cold weather. I had to push the hen bird off the nest with my hand, and even then she would not leave the hole, although there were no less than three entrances by which she might have escaped. Eventually after taking the eggs I left her to mourn the loss of her penates sulking in one of the passages leading from the nest.

[Throughout the entire region.—A. O. H.]

149.—Palæornis purpureus, *Müll.*

The Rose-headed Paroquet is found both on the hills and in the plains wherever there is tall tree jungle. It is particularly abundant in the jungles at the foot of the Aravalli hills.

[Throughout the entire region except Sindh, where, as yet I have no record of its occurring.—A. O. H.]

160.—Picus mahrattensis, *Lath.*

The Yellow-fronted Woodpecker occurs sparingly on the hills and in the plains. It frequents low tree jungle (*Babool*, &c.)

[Same as 149.—A. O. H.]

[164.—Yungipicus Hardwickii, *Jerd.*

Dr. King, obtained specimens, of this species at Anadra. I did not myself see them, and they may possibly have been rather referable to *Y. gymnopthalmus*, Bly.

No *Yungipicus* has as yet been observed in either Sindh, Cutch, Kattiawar or Jodhpoor, but I should not be surprised to hear of its occurrence, about the Koochawun Hills in the latter or the Gir in Kattiawar. A. O. H.]

167.—Chrysocolaptes festivus, *Bodd.*

The Black-backed Woodpecker is rare. I saw the skin of a specimen killed at Sullotear in a dense jungle about 20 miles from Deesa, where I am informed there are a few. I have not heard of it elsewhere.

[Dr. King shot this in the jungles at the foot of Aboo. I got it in similar jungles further up the Aravallis, and Adam obtained it in similar jungles again near Koochawun, which is near the north-west extremity of the Sambhur Lake. It is quite foreign to the plains region of which we are treating, and is unknown in Sindh, Cutch, Kattiawar, Jodhpoor, &c. It belongs to Central India, but wherever the Aravallis rise to any considerable height, and can still boast lower slopes densely clad in low thorny jungle, there the Black-backed Woodpecker occurs, though sparingly. I should expect it to occur about the Girnar in Kattiawar, but I have received no specimen thence, and Captain Hayes Lloyd does not notice it.—A. O. H.]

171.—Gecinus striolatus, *Blyth.*

The small Green Woodpecker is not uncommon in the jungles at the foot of the Aravalli range.

[But occurs nowhere else so far as we know throughout the whole region.—A. O. H.]

180.—Brachypternus aurantius, *Lin.*

The Golden-backed Woodpecker is found in most of the Tall-tree jungles both on the hills and in the plains.

[Common throughout the whole region, for I cannot hold that Sindh specimens are entitled to the separate specific name conferred on them by Blyth, *c. f.* I., p. 171.—A. O. H.]

188.—Yunx torquilla, *Lin.*

The Wryneck is not uncommon, tho' often overlooked owing to its habit of hiding itself in the middle of dense bushes and low trees, and there remaining perfectly motionless. I shot one near Deesa in January 1875, and others again recently, and I believe I saw one on the wing once at Mount Aboo. The former was in low Milk bush (*calotropis gigantea*) jungle. I believe it only occurs in the cold weather.

[Dr. King never obtained this, either in Jodhpoor or at Aboo, but it occurs as a straggler throughout the whole region with which I am dealing. It is however very locally distributed; it is unknown in the more desert tracts, but occurs, occasionally, perhaps as a passing visitant, where there are thickets of Jhand (*Prosopis spicigera*) or acacia and the like. From Kattiawar I have noted a specimen from Burda killed in April. From Cutch one obtained in March near Bhooj itself. I got specimens myself in April at Pallee in Jodhpoor and Sirohee. Mr. Adam got a few specimens near the Sambhur Lake. It does not belong properly to this arid region, but still it occurs there, here and there, at the close of the cold season at any rate.—A. O. H.]

193 *bis*.—Megalaima inornata, *Wald.*

The Western Green *Barbet* (identified for me as above by Mr. Hume) is common at Mount Aboo in the jungles above and below the hill. I took a nest on the 8th April 1875, containing four fresh eggs of a dull white colour. The nest hole, which was a fresh hole and made by the birds themselves, was drilled upon the under side of a broken-off branch of a mango tree, about 20 feet from the ground, and the eggs were deposited upon a quantity of wood dust that had fallen into the hole during the operation of boring, about 12 inches or 15 inches from the entrance. The old birds evinced great anxiety during the time I was enlarging the hole to procure the eggs, hopping from bough to bough within a few yards of me the whole time. On the 4th May 1875, I saw another nest, with half-fledged young ones, the hole was bored in the trunk of a dead tree about 30 feet from the ground.

[For a description of this species see above, p. 401. This species is very common at Aboo, and this is the extreme northern limit of its range. It occurs nowhere else throughout the entire region with which we are dealing, but I have it from the ghats the whole way from Mahabuleshwar to Khandeish, and from the

western portions of the Vindya and Satpoora Ranges. It is a very closely affined, but I think sufficiently distinct, species.—A. O. H.]

197.—Xantholæma hæmacephala, *Müll.*

The Crimson-breasted Barbet is generally scattered over the country, though not particularly common. I observed it at Aboo.

[Common throughout the whole region, except Sindh, from which, though it may occur there, it has not yet been reported.—A. O. H.]

199.—Cuculus canorus, *Lin.*

The European Cuckoo arrives at Mount Aboo in considerable numbers towards the end of May. When they first arrive they are remarkably noisy, enlivening the hill with their familiar notes for about two months, after which they are silent. I particularly noticed that they were without exception in the slate coloured plumage at that season. About the beginning of October, however, I see by my notes that a number of young birds in the hepatic plumage made their appearance on the hill, so I think we may safely conclude that they breed at Aboo during the rains. I am under the impression that they only call in the pairing season. The young birds referred to had but recently left the nest.

It is also common in the neighbourhood of Deesa and in other parts of the plains during the rains, and in the cold weather, though I never heard one call at that season. Mr. Hume kindly identified a skin I sent him from Deesa.

[Pertains strictly to Aboo and its skirts, and the less arid regions southwards; it is, so far as I know, unknown in the greater portion of the region with which we are dealing, Sindh, Cutch, Kattiawar, Jodhpoor, but stragglers from the better wooded and watered districts eastwards of the lake, have been met with at Sambhur.—A. O. H.]

205.—Hierococcyx varius, *Vahl.*

The Common Hawk Cuckoo is found on the hills and in the plains. It is not particularly common.

[Scarcely belongs to the plains region with which we are dealing at all, but still, excepting Sindh, whence it has not yet been reported, it has been sent or recorded from all the other sub-divisions, but only as a monsoon visitant or perhaps more correctly straggler.—A. O. H.]

208.—Ololygon passerinus, *Vahl.*

The Indian Plaintive Cuckoo is not uncommon at Mount Aboo. It arrives about the beginning of June, and its mournful ventriloquistic note soon makes one aware of its presence.

[Occurs nowhere else throughout the whole region. Mr. Adam recorded it I. 404, from Sambhur, but this was a mistake as pointed out by himself, II. 337.—A. O. H.]

212.—Coccystes Jacobinus, *Bodd.*

The Pied Crested Cuckoo is very common both on the hills and in the plains, arriving just before the monsoon. It lays freely in July, during which month, in the neighbourhood of Deesa, I have seen a great number of the eggs. Most of them were laid in the nests of *Chatarrhœa caudata*, but I have seen eggs also in the nests of *Malacocircus terricolor*.

[Occurs, but very sparingly for the most part, and only during the rains, throughout the whole region.—A. O. H.]

214.—Eudynamys honorata, *Lin.*

The Indian Koel is tolerably common in most parts of the plains. I did not find it very plentiful at Mount Aboo.

[Throughout the whole region, but in the more arid tracts scarcely seen, except during the rainy season.—A. O. H.]

217.—Centropus rufipennis, *Illiger.*

The Common Coucal is tolerably common both on the hills and in the plains.

[Common enough at Anadra, much less so I think up the Hill. Occurs throughout the whole region, but chiefly in the less arid tracts. In huge semi-desert patches of country many hundreds of square-miles in extent, it is never seen. It should be noted that Coucals from Sindh appear to belong to a very distinguishable race of the *eurycercus* type, See. I. 353.—A. O. H.]

219.—Taccocua Leschenaultii, *Lesson.*

The Southern Sirkeer is also tolerably common both on the hills and in the plains. I am inclined to think that this and the last species migrate during the cold weather and return again at the commencement of the rains, as I do not recollect seeing either species during the hot weather.

[I have seen no Aboo specimens, and Capt. Butler's identification, as above, *may* be correct, but specimens obtained by Dr. King in Jodhpoor during the rains and at Erinpoora, and that I have received from Cutch, Kattiawar, Ajmere, and Sambhur are *T. sirkee*, Gray. No Sirkeer at all has as yet been reported from Sindh.—A. O. H.]

234.—Arachnecthra asiatica, *Lath.*

The Purple Honey Sucker is common on the hills and in the plains. I have never seen a specimen of *Leptocoma zeylonica* in this part of the country. I am somewhat puzzled with the irregular changes of plumage of this species, as no particular season seems to be fixed for moulting. Even in the month of December, when nine out of ten appear with yellow breasts and dark stripes, I have seen odd specimens in full breeding plumage. Perhaps they breed the whole year round?

[Common and a permanent resident throughout the whole region.—A. O. H.]

246.—Salpornis spilonota, *Frankl.*

The Spotted Grey Creeper is very rare. Dr. King shot a specimen at Mount Aboo, and I have heard of its occurrence in other parts of Rajpootana further north. I have not seen a specimen in the flesh myself.

[Unknown in the plains portion of our region. Distribution precisely the same as that of 167.—*C. festivus*, *q. v.*, except that this present species also extends to the Sub-Himalayan jungles which *festivus* does not.—A. O. H.]

254.—Upupa epops, *Lin.*

The European Hoopoe is very common in the plains during the cold weather. It also occurs at Mount Aboo, though not in any great quantities. It arrives in the neighbourhood of Deesa about the 14th August.

[Common throughout the whole region.—A. O. H.]

255.—Upupa nigripennis, *Gould.*

The Indian Hoopoe is not common.

[Also throughout the region, except Sindh, from which I have never yet seen it. I have seen no specimen as yet from Mount Aboo.—A. O. H.]

256.—Lanius lahtora, *Sykes.*

The Indian Grey Shrike is common in the plains, but does not occur, that I am aware of, on the hills. It breeds in June and July, during which months I have found many nests. I saw one of these Shrikes once catch a small field mouse and impale him on the thorn of a *euphorbia* underparts uppermost. Shortly afterwards I visited the place and found the eyes and half of the body eaten, the remainder being left, I suppose, for another meal.

[Throughout the entire region.—A. O. H.]

257.—Lanius erythronotus, *Vigors.*

The Indian Rufous-backed Shrike is not uncommon. It commences nidification at Mount Aboo about the third week in May. I took several nests about Deesa in June and July. The eggs of the Aboo birds are much larger than the eggs I have from the plains, more pointed at the small end and the spots are smaller and more confined to the large end; but I fancy that this difference is merely attributable to local variation.

[Throughout the entire region.—A. O. H.]

260.—Lanius vittatus, *Dum.*

The Bay-backed Shrike is not very common. It occurs sparingly on the hills and in the plains.

[Throughout the entire region.—A. O. H.]

260 *ter.*—Lanius collurio, *Pennant.*

The European Redbacked Shrike, a specimen of which I forwarded to Mr. Hume for identification, is, I think, not very uncommon in the neighbourhood of Deesa during the latter part of the rains arriving about the 1st September. It appears, however, hitherto to have escaped observation, as Mr. Hume informs me that the bird I sent him is the first he has heard of being shot in India. The female is very like the bird figured in Morris's British Birds, Vol. I.

[As yet we have no other record of this bird's occurrence in the Indian empire, but it doubtless will prove to occur also in Southern Sindh, Cutch and Kattiawar. There is no mistake as to the species, as both Mr. Brooks and myself compared Capt. Butler's specimen with European examples.

The following are the dimensions, recorded in the flesh, and a description of the female (?) specimen, shot at Deesa on the 20th September 1875:—

Length, 7·5; wing, 3·5; tail, 3·5; bill, at front, 0·56; from gape, 0·81; tarsus, 0·96.

The irides were dark; legs and feet black; bill black, paler at base of lower mandible.

A conspicuous black streak from the nostrils, widening so as to include the whole of the lores, eyes and ear-coverts. The forehead and the whole top and back of the head, between the black stripes, pale grey, darkening on the occiput and nape. Scapulars and interscapulary region brownish chestnut; lower back duller and more rusty; rump and upper tail-coverts light grey, the feathers just perceptibly darker shafted. Wings hair brown; primaries and their coverts very narrowly; and secondaries and tertiaries and their coverts very broadly margined with dull pale and bright rusty chestnut respectively.

The tail black, all but the central tail feathers, white at their bases, and the external feathers on either side, 0·4 shorter than the others, narrowly tipped white and with nearly the whole of their outer webs white. The entire under parts white, but the breast, abdomen, sides and flanks with a rich vinaceous tinge. There is a small white spot at the base of the fourth long primary on the outer web, only visible however when the larger coverts are somewhat deranged.—A. O. H.]

261—Lanius, cristatus, *Lin.*

The Brown Shrike is not uncommon on the hills and I think I have seen it in the plains. It arrives after the rains, about the 1st September.

[Aboo is quite on the confines of the area of distribution of this species, which occurs nowhere else (except just perhaps for a short distance round about the base of the hills towards the close of the rains) throughout our whole region, in which the next species replaces it; c. f. Lahore to Yarkand, p. 31, and S. F., I., 175.—A. O. H.]

262.—Lanius arenarius, *Blyth, L. isabellinus,* Hemp. and Ehr.

The Desert Shrike is common all over the plains in the cold weather, arriving about the same date as "*L. cristatus,*" *i.e.*, about the beginning of September. It frequents open plains overgrown with low bushes, and it often occurs also on open cultivated ground perching on low bushes amongst the crops.

[Common throughout the whole region, but during the cold season only. I do not think that it ascends Aboo.—A. O. H.]

265.—Tephrodornis pondiceriana, *Gmel.*

The Common Wood Shrike is somewhat common at Mount Aboo, but is less often seen in the plains.

[Occurs throughout the entire region, but only where there is some pretence for trees or brushwood.—A. O. H.]

268.—Volvocivora Sykesii, *Strickl.*

The Black-headed Cuckoo Shrike is not common. I obtained a few specimens at Mount Aboo, elsewhere I have not met with it.

[Unknown throughout the whole of the region, but Mr. Adam did obtain a couple of young ones on its eastern limits near Sambhur, and this is much the most northern locality at which this species has, as yet I believe, been noticed.—A. O. H.]

270.—Graucalus Macei, *Lesson.*

The Large Cuckoo Shrike is not common. I have observed it near Deesa and in one or two other parts of the plains, but

have not met with it on the hills. It is usually met with singly, or in pairs, and flies much like the English Missel Thrush (*Turdus viscivorus*, Lin.)

[Capt. Hayes Lloyd says it is common in Kattiawar, whence however, I have not seen it; it is as yet unrecorded from Sindh, Cutch, Jodhpore or even Sambhur.—A. O. H.]

273.—Pericrocotus brevirostris, *Vig.*

The Short-billed Minivet occurs occasionally in this part of the country in the cold weather. I got two good specimens, male and female, at Mount Aboo, and have seen it once or twice in the plains.

[Occurs also similarly at Sambhur and the southern portions of Jodhpoor, but *not*, so far as is yet known, in Cutch, Kattiawar or Sindh.—A. O. H.]

276.—Pericrocotus peregrinus, *Lin.*

The Small Minivet is common on the hills and in the plains.

[Found in every sub-division of the whole region, but of course not in the desert tracts.—A. O. H.]

277.—Pericrocotus erythropygius, *Jerdon.*

The White-bellied Minivet is rare; I have once or twice met with small parties near Deesa in low bush jungle, and have one or two good specimens from that neighbourhood in my collection. Further north in parts of Rajpootana, Ajmere for instance, I am informed that it is not uncommon.

[Does not I think ascend Aboo. Not yet recorded from Sindh, but found throughout the rest of the region, though as a rule sparingly and only in spots where there is a good deal of tree or scrub jungle.—A. O. H.]

278.—Buchanga albirictus, *Hodg.*

The Common Drongo Shrike or King Crow is very common in the plains, but somewhat scarce on the hills. I took several nests in the neighbourhood of Deesa in the month of July, but in no two instances were the eggs alike, most of them were of the oriole type, and in no one instance did I obtain a pure white egg.

[Common throughout the whole region, but not in actual desert.—A. O. H.]

281.—Dicrurus cærulescens, *Lin.*

The White-bellied Drongo is rare in the plains, but not uncommon at Mount Aboo. It has a loud, rich oriole-like note, which can be heard at a considerable distance.

[Extends apparently to Kattiawar from Guzerat, but is unrecorded from any other part of the region, Sindh, Cutch, Jodhpoor; it does not occur even so far to the east as Sambhur; it is essentially a bird of treeclad regions, of groves and cultivated country, and is only attracted out of its natural province by Aboo and Girnar.—A. O. H.]

288.—Tchitrea paradisi, *Lin.*

The Paradise Flycatcher is not uncommon at Mount Aboo, though I never met with one in the white plumage. It also occurs, though somewhat sparingly, in the plains in well-wooded districts.

[Much the same may be said of this as of the preceding *D. cærulescens*, but the Paradise Flycatcher does occur at Sambhur and Ajmere.—A. O. H.]

292.—Leucocirca albofrontata, *Frankl.*

The White-browed Fantail is tolerably common in the plains, but does not, to the best of my belief, ascend the hills.

[Certainly rare on Aboo, but I obtained a specimen there, and Dr. King includes it in his list; in the plains it is common throughout the whole region.—A. O. H.]

293.—Leucocirca pectoralis, *Jerdon.*

The White Spotted Fantail is very common at Mount Aboo, but does not occur, that I am aware of, in the plains below. It breeds in March and April, during which months I found many nests, all of the same type, *viz.*, a very neat cup made of fine dry grass stems thickly coated exteriorly with cobwebs, many of which are fastened to neighbouring twigs to give the nest support. The lower part often terminates in a fine tapering point, which is sometimes fastened to the bough, the nest rests upon, by cobwebs also. The nest is usually placed in the fork of one of the small branches of some low thick bush about 3 feet from the ground, (sometimes 6 feet or 7 feet,) often overhanging a small stream or dry nullah running through a thick clump of trees. The eggs, usually three in number, are large for the size of the bird. They are rather round ovals of a buffy white color, surrounded at the large end with a zone of lavender and olive brown spots and blotches. The hen bird, during the period of incubation, often turns round and round in the nest, as if on a pivot, spreading her fan-shaped tail in the same way that these restless little birds do when engaged in the pursuit of insects. When the nest is being robbed, the old birds evince the greatest possible anxiety flying from bough to bough in great excitement, and approaching almost near enough to be caught in the hand.

[This is another outlier. It is entirely unknown in the whole region, and belongs altogether to more southern, better-wooded and better-watered localities.—A. O. H.]

[299 *bis*.—Butalis grisola, *Lin.*

Dr. King was the first to obtain this species, the Spotted Grey Flycatcher or Cherry Chopper, which I discriminated in his collection. It occurs, but rarely, during the latter part of the monsoon, throughout the whole region extending even as far eastwards as Sambhur. I do not know that it actually ascends Mount Aboo; my specimen is from near Anadra, obtained late in August; others from Jodhpoor on 8th and 16th September, one from Sambhur in the 28th August, two from Cutch in September, one from Kotree, Sindh, "end of August," and Captain Hayes Lloyd says he got one specimen near Rajkote, Kattiawar, during the cold season.

Not being included by Dr. Jerdon and not having been previously described in STRAY FEATHERS, I reproduce my description from Lahore to Yarkand, p. 33.

DIMENSIONS (the females are slightly the smallest. Length, 6 to 6·3; expanse, 10 to 10·5; wing, 3·25 to 3·45; tail from vent, 2·75 to 3; tarsus, 0·6.

DESCRIPTION.—Bill black, dark fleshy at base of lower mandible; legs and feet blackish-brown; iris deep brown; interior of mouth orange.

Plumage.—The lores and feathers immediately above the nostrils dingy fulvous white; head, nape, cheeks, ear-coverts, back and scapulars, pale earthy or greyish brown; the feathers of the head with darker brown central streaks not extending to the tips, and those of the forehead tinged with the fulvous colour of the lores; the rump in some uniform with the back, in others slightly darker; wings and tail brown, paler and greyer on the tertials and laterals; all the feathers margined with brownish white, the greater secondary coverts and tertials most broadly so; the tail feathers except the exterior lateral ones very inconspicuously so; lower parts white, tinged with fawn color towards the vent, and with narrow inconspicuous grey-brown streaks on the breast; axillaries and wing lining very pale rufous fawn, sides and flanks tinged faintly with the same colour and dull fulvous.—A. O. H.]

301.—Stoparola melanops, *Vigors.*

The Verditer Flycatcher is rare. I have never seen it in the plains, and have only observed it on one or two occasions at Mount Aboo during the rains. It arrives in September.

[Unknown throughout the whole region, save on its ex- eastern limits, where at Sambhur one or two stragglers been obtained.—A. O. H.]

306.—Cyornis Tickelliæ, *Blyth.*

Tickell's Blue Redbreast is somewhat common at Mount Aboo, but I have not met with it in the plains below. It remains on the hills the whole year round, but I never succeeded in finding a nest.

[Like *Dicrurus cærulescens*, this species also occurs in the hilly tracts of Kattiawar, but nowhere else within the region I am dealing with so far as is yet known. In regard to this species and *Jerdoni*, I quote the following from my (still unpublished) museum catalogue.

"In separating my specimens of the two supposed species *Jerdoni* (*banyumas* apud Jerdon) and *Tickelliæ*, I was surprised to find that in *every* case in which the sex had been carefully ascertained and noted, the *Jerdonis* were males, and *Tickelliæs* females. With a series, such as I possess, the sexes ascertained by so many different observers, I was led to conclude that *Tickelliæ* must be the female of *Jerdoni*. Subsequently my attention was called to Mr. Blanford's letter in the *Ibis* for 1870, p. 533, in which he shows that all the four specimens of *Tickelliæ* which he dissected were females, and to a letter of Captain Hayes Lloyd (*Ibis*, 1872, p. 97), in which he remarked that in the southern districts of Kattiawar, he was surprised to find *C. banyumas* and *C. Tickelliæ* in equal numbers and both very common, that he had frequently shot them off the same tree and within a few minutes of each other, and he adds: "Subsequent close observation has satisfied me that *C. Tickelliæ* is only the female of *C. banyumas*. Throughout the hot weather, I have had daily opportunities of observing them. There is not a tree under which I have rested that has not been the resort of these pretty little birds; and I have found as an unvarying rule at this season that when an individual of one species is seen, the other is sure to be found in the immediate neighbourhood. Jerdon does not describe the female of *C. Tickelliæ*, and states that the female of *C. banyumas* is probably olive-brown, but if this were so, I cannot but think that I should have met with it; yet notwithstanding the number of blue birds I have observed, and that I am constantly on the watch for the supposed female, it has not yet fallen to my lot to see any but blue individuals of *C. Tickelliæ* and *C. banyumas*, the former of which I believe to be really the female of the latter." Under these circumstances, I have now no hesitation in uniting these two supposed species. Long ago I suspected this, but was completely put off the scent, by the following incident: Mr. Nunn found the nest at Hoshungabad and caught on the nest an unmistakable *C. Tickelliæ*; he also obtained at the same time in the immediate neighbourhood of the nest another *Tickelliæ*; the s[illegible] of these two birds were not ascertained at the time, but [illegible]

were concluded to be a pair, and hence my former conclusion, which Dr. Jerdon quotes in his supplementary notes, that the sexes are alike, I having shown him the two birds, eggs and nest."

Of course true *banyumas* of Horsfield is a different bird and does not occur in India, while *Jerdoni*, Blyth's name for the male, must give place to his prior title of *Tickelliæ*, also assigned by him, but to the female.—A. O. H.]

307.—Cyornis ruficauda, *Swains.*

The Rufous-tailed Flycatcher occurs sparingly at Mount Aboo during the rains and in the cold weather, but not in the plains so far as my observations go.

[Unknown throughout the whole of the rest of the region.—A. O. H.]

323 *bis*.—Erythrosterna parva, *Bechst.* ?

The White-tailed Robin Flycatcher is one of the commonest birds at Mount Aboo in the cold weather, making its first appearance about the beginning of September. Jerdon says that the red breast is assumed by the end of March or beginning of April. I shot specimens at Aboo, though not common at that season, in the months of September and October, with the red breast, ashy lores, side of neck, &c.

It is not uncommon in the plains, and arrives about the 20th September. At Aboo it appears quite at the beginning of September.

[Captain Butler put this down as *leucura*, Gmel, but as it was certainly not this, I have entered it as *parva*. I have seen no specimens recently from this part of the country, and none in full breeding plumage that I can remember at any time, and the species may be *hyperythra*, *Cab.* One or other or both species is common throughout the whole region, but I cannot now get at my specimens to examine, and when my catalogue was prepared, *hyperythra* had not been discriminated.—A. O. H.]

342.—Myiophoneus Horsfieldi, *Vigors.*

The Malabar Whistling Thrush is rare. I saw a pair at Mount Aboo in a ravine half way down the hill in thick jungle, and have not met with it upon any other occasion. I recognised the well-known whistle long before I saw the birds.

[Entirely unknown in the rest of the region. This is (25° N. Lat.) much the most north-westerly locality where this species occurs. In the Central Provinces it gets to about 22°30′ N. Lat., and eastwards in Chota Nagpore to nearly 23° 30′ N. Lat.—A. O. H.]

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[Entirely unknown in the rest of the region. This is (25° N. Lat.) much the most north-westerly locality where this species occurs. In the Central Provinces it gets to about 22°30′ N. Lat., and eastwards in Chota Nagpore to nearly 23° 30′ N. Lat.—A. O. H.]

345.—Pitta coronata, *Müll.*

The Indian Ground Thrush is very rare. I shot a pair at the foot of Mount Aboo, but have not met with the species upon any other occasion.

[Dr. King got several specimens on the slopes of Aboo, but I have seen none from any other portion of the whole region, but Captain Hayes Lloyd thinks he saw it in Kattiawar, (in the Gir) and Mr. Adam tells me that he has just heard of a specimen obtained near Sambhur, and this bird is such a thorough wanderer and migrates for breeding purposes in such numbers and to such distances, that though probably only occurring at Aboo as a regular visitant, stragglers might well turn up in the localities indicated.—A. O. H.]

351.—Cyanocincla cyana, *Lin.*

The Blue Rock Thrush is common at Mount Aboo in the cold weather, but I have not often observed it in the plains. It arrives on the hills about the first week in September, and does not leave until quite the end of April.

[Throughout the entire region.—A. O. H.]

353.—Orocetes cinclorhynchus, *Vigors.*

The Blue-headed Chat Thrush is rare. I have only met with one example in this part of the country, and that I shot at Mount Aboo in the month of September, about which time it makes its first appearance.

[At Aboo I have known of several being killed, but the bird is unknown throughout the entire region, only at Sambhur Mr. Adam once shot a young one in September on its way, doubtless from the Himalayas to the forests of Central India, where they are common during the cold season.—A. O. H.]

356.—Geocicha unicolor, *Tickell.*

The Dusky Bush Thrush is also rare. I shot a single specimen(♀) at Mount Aboo in the cold weather; elsewhere I have not observed it. It arrives in September.

[Virtually almost unknown throughout the whole region, though a specimen is said to have been killed at the extreme north-west of Sindh, and Mr. Adam in four years has obtained one near Sambhur; even to Aboo it is a mere straggler.—A. O. H.]

359.—Merula nigropileus, *Lafr.*

The Black-capped Blackbird is common at Mount Aboo, but I have never met with it in the plains. I am inclined to think that it is migratory, as I lost sight of it during the cold weather,

and did not see it again until May, when it reappeared in considerable numbers. It has a fine loud rich note, much resembling the whistle of the English Song Thrush (*T. musicus.*) It breeds at Aboo in the rains, commencing nidification towards the end of the hot weather, but I was never fortunate enough to find a nest.

[This is quite the most northerly point attained by this species; it is unknown throughout the whole region with which we are dealing. *No* one has yet taken the nest.—A. O. H.]

385.—Pyctorhis sinensis, *Gmel.*

The Yellow-eyed Babbler is common on the hills and in the plains. It breeds in the plains during the monsoon, and I saw several nests near Deesa in July and August.

[Throughout the whole region.—A. O. H.]

398.—Dumetia albogularis, *Blyth.*

The White-throated Wren Babbler is not uncommon at Mount Aboo, but I have seldom seen it in the plains. It prefers thick jungles, and excepting in the breeding season is usually found in small parties. It flies from bush to bush keeping out of sight as much as possible. In the plains I have generally found it skulking about in the big *Euphorbia* hedges.

[So far as we know occurs nowhere else in the whole region; Aboo is by far the most northerly point reached by this species.—A. O. H.]

404 *ter.*—Pomatorhinus obscurus, *Hume.* St. Fea., I., 7.

Mr. Hume's Scimitar Babbler is not uncommon at Mount Aboo, but does not occur in the plains. It is very closely allied to *P. Horsfieldi*, Sykes; in fact without specimens to refer to, it is not easily distinguished from that species. I give the measurements of four specimens in my collection taken in the flesh, shot at Mount Aboo.

Sex.	Length.	Wing.	Tail.	Bill at front.	Bill at gape.
♂	9·5	3·87	4·5	1·2	1·4
♂	9·5	4			
♂	9·5	3·5	4·5	1·32	1·4
♀	9·5	3·92	4	1·32	1·4

Irides dark reddish brown; legs olivaceous slate; bill ivory yellow, horny at base of upper mandible.

There is one characteristic of this species in which it differs from *P. Horsfieldi*—it is not gregarious, and so far as I have observed it always occurs singly or in pairs, generally the latter, whereas *P. Horsfieldi* is generally met with in small parties. The note is much the same as that of *Horsfieldi*, the cock calling first and the hen answering at the end of his call.

[Unknown throughout the rest of the region. This is the most northern point reached by this species, the main home of which appears to be the Vindhya and Satpoorah ranges as far east as Seonee, Central Provinces.—A. O. H.]

432.—Malacocircus terricolor, *Hodgs.*

The Bengal Babbler is one of the commonest birds in this part of the country, occurring abundantly both on the hills and in the plains. I have entered it as *terricolor*, as the many specimens I have shot, both at Aboo and in the plains, agree with Dr. Jerdon's description of that species better than with any of the others; however I might be wrong and the bird I allude to might possibly be *M. malabaricus*, but I do not think that is likely. I have taken the nests about Deesa in July, containing occasionally an egg of *Coccystes Jacobinus*.

[Specimens from Aboo, Cutch, Kattiawar, Sindh and Jodhpoor are, as a rule, not very typical examples of this species; they almost all exhibit a *leaning* (see Vol. I., p. 180) towards *malabaricus*, but I have never seen a specimen from any of these localities, which could be accepted as this latter species.—A. O. H.]

436.—Malacocircus Malcolmi, *Sykes.*

The Large Grey Babbler, readily distinguished from other species by its larger size, blue forehead and nearly white lateral tail feathers, is not nearly so common as the last. It seems, however, to be generally distributed over the plains, occurring generally in parties varying in number from five to nine or ten. It lays about Deesa during the rains, and I have taken the nests in July.

[Does not, so far as I know, extend into Sindh, but is more or less common, at Sambhur and throughout the less desert portions of Jodhpoor, Cutch and Kattiawar. Dr. King obtained it at Aboo. A. O. H.]

438.—Chatarrhæa caudata, *Dumeril.*

The Striated Bush Babbler is common all over the plains, but does not, I believe, ascend the hills. It is particularly partial to low bush jungle, and breeds in July and August during which months the nests, which are usually built in low thick bushes (*Zizyphus jujuba*) or clumps of Sarpat grass, abound. I have found as many as a dozen nests in one afternoon in the month of July in the neighbourhood of Deesa, many of which contained an egg of *Coccystes Jacobinus* as well the eggs of the Babbler. Four seems to be the normal number of eggs laid, though I have often taken nests with five.

[Common, throughout the entire region.—A. O. H.]

459.—Otocompsa leucotis, *Gould.*

The White-eared Crested Bulbul is a bird of local distribution, and I have only observed it in certain places. It frequents low bush jungle growing out in the open plains, and generally occurs in pairs. I have seen a few pairs near Deesa. Further north in parts of Rajpootana I am informed that it is common. I never saw it on the hills.

[Pretty common throughout the entire region, except only in the purely desert tracts.—A. O. H.]

460 *bis.*—Otocompsa, fuscicaudata, *Gould.*

The southern Red-whiskered Bulbul is very common at Mount Aboo, but does not occur, so far as my experience goes, in the plains. It breeds in March, April, and May, in each of which months I have taken nests. It builds a neat cup-shaped nest of fibrous roots and dry grass stems lined with fine grass, and occasionally a few horse hairs. It is placed usually in some low bush (*Carissa carounda* very often) about 4 or 5 feet from ground, and has almost invariably a few lumps of some woolly substance like spiders' nests stuck round the edge and about the outside. The eggs which are very beautiful, are fully described NESTS AND EGGS *Rough Draft*, p. 288. The lateral tail feathers (N & E. *loc cit.*) have no white tippings as in *O. emeria*, Shaw.

[Unknown throughout the rest of the region. This is quite the most northern point to which this species attains.—A. O. H.]

462.—Molpastes pusillus, *Blyth.*

The Common Madras Bulbul abounds all over the hills and in every part of the plains that I have visited. I have seen nests at Aboo in every month of the hot weather.

[Common at Sambhur and in the eastern portions of Jodhpoor very common in Cutch and Kattiawar. In western Jodhpoor, occurs for the most part only in the rains, and does not, so far as is yet known, extend to Sindh at all.—A. O. H.]

467.—Iora zeylonica, *Gmel.*

The Black-headed ÆGITHINA (I do not pretend to discuss the question of the distinctness or otherwise of this and *tiphia*, Lin.), is rare in the plains and by no means common on the hills. I did not often meet with it at Aboo.

[The same remarks apply *precisely* to this species as to 462. *M. pusillus.*—A. O. H.]

470.—Oriolus kundoo, *Sykes.*

The Indian Oriole is very common in the plains during the monsoon, at which season it breeds, commencing about the end of June. At other seasons, although met with both on the hill and in the plains, it is not very plentiful. The young birds are easily reared by placing them in a cage hung near the spot from which the nest was taken when the old birds will continue to feed them through the bars until fully fledged.

[Common in the eastern, rare in the western portions of Jodhpoor—not yet recorded or received from Kattiawar, Cutch or Sindh; partially represented in the latter by *O. galbula.*—A. O. H.]

[472.—Oriolus melanocephalus, *Lin.*

I saw this at Aboo, about the end of April and Dr. King procured several specimens there.

Unknown throughout the rest of the region, except about the Girnar (Hayes Lloyd, I have received no specimen) in Kattiawar, which, with the Gir, represents in this province, Aboo and its slopes.—A. O. H.]

475.—Copsychus saularis, *Lin.*

The Magpie Robin is not very common. I observed it at Aboo as well as in the plains. It is usually found in the vicinity of gardens.

[Unknown in the greater part of the region, which is too arid for it. Occurs, though not common, at Ajmere and Sambhur. Has not been received or reported from the western portion of Jodhpoor, from Cutch, Sindh, or Kattiawar, except in the latter from the Gir and Girnar.—A. O. H.]

480.—Thamnobia cambaiensis, *Lath.*

The Brown-backed or Northern Indian Robin is common both on the hills and in the plains. I have never seen *T. fulicata* in this part of the country, closely as I have watched for the species.

[Common throughout the whole region, but specimens from Sindh, Cutch, Kattiawar and Western Jodhpoor, and the neighbourhood of Aboo, Deesa, and Ahmedabad, are mostly of an intermediate form, darker than true *cambaiensis*, but not so dark as *fulicata*. c. f. S. F. I., 182; J. A. S., 1872., p. 237; *Ibis*, 1873. p. 411.—A. O. H.]

481.—Pratincola caprata, *Lin.*

The White-winged Black Stone Chat or rather Bushchat, is not common in the plains, and as I did not observe it at Aboo,

I do not think it ascends the hills. It arrives about the 14th September.

[Neither did Dr. King get it on Aboo. It is common and is in most places a permanent resident throughout the plains portion of the whole region, always excepting the more desert tracts.—A. O. H.]

483.—Pratincola indica, *Blyth.*

The Indian Stone Chat or Bushchat is common on the hills and in the plains during the cold weather. It arrives about the 5th of September.

[Common in the cold season throughout the whole region.—A. O. H.]

488.—Saxicola (Dromolæa) opistholeuca, *Strickl.*

The Indian White-tailed Wheatear is sparingly scattered over the plains in the cold weather. I did not observe this species at Aboo. It arrives about the first week in October.

[Has never been observed at Aboo, but it occurs here and there throughout Jodhpoor, stretching away eastwards far into the North-Western Provinces, but I have no record of its occurrence (though surely it *must* occur there) in Sindh, Cutch or Kattiawar.—A. O. H.]

489.—Saxicola (Dromolæa) picata, *Blyth.*

The Pied Stonechat is common on the hills and in the plains in the cold weather. The first I saw this year (1875) was on the 5th August near Deesa. They soon become common after that date.

[Occurs together with *capistrata*, Gould throughout the region we are dealing with. Notwithstanding what has been said at home, the absolutely perfect chain of link forms that I possess, compel me to maintain the identity of these two supposed species. Which is the adult and which the young, I do not yet pretend to say with certainty, but I notice that *picata* extends its migrations further than *capistrata*, and that everywhere southwards, and eastwards towards the borders of the area of distribution of *picata*, *capistrata* becomes more and more rare, and there is a belt of from 100 to 200 miles wide where *capistrata* is rarely seen. On the other hand, in the extreme north-west, *capistrata* is *much* most common, and then there is an intermediate zone in which both seem equally plentiful. *Primâ facie* this *looks* as if *capistrata* should be the old bird, though this was not my original idea.—A. O. H.]

491.—Saxicola isabellina, *Rüpp.*

This Wheatear occurs in the plains during the cold weather. It arrives about the 3rd of October.

[Common during the cold season throughout the entire region, but not as yet recorded from Aboo.—A. O. H.]

[491*bis*.—Saxicola Kingi, *Hume*. (*I. p.* 187.)

Though I am not aware that this ascends Aboo, I have it from close to the base of that hill, and from various localities in Sindh, Cutch, Kattiawar (Moorvee), and Western Jodhpoor, but it has not yet been observed as far eastwards as Samblur, nor apparently about Deesa, nor in Southern or Central Kattiawar. This species may possibly be identical with *S. chrysopygia*, of De Filippi, but the description given by the latter scarcely to my mind establishes the fact and he preserved no specimen.—A. O. H.]

492.—Saxicola deserti, *Rüpp.*

The Black-throated Wheatear, like *isabellina* is very common in the plains during the cold weather, but does not ascend the hills. It arrives about the 5th of October.

[Common throughout the entire region.—A. O. H.]

492 *ter*.—Ædon familiaris, *Menetries*.

Is a very uncommon species, and hitherto I have only met with one specimen which I shot about 10 miles north of Deesa in a grass field overgrown with babool, jujube bushes, &c.

The broad white terminal band of the tail is very conspicuous when the bird is flying, and when perched on a low bush, &c., it has a habit of raising its tail frequently half spreading it and lowering it again similar to "*Copsychus saularis*."

[I had only previously obtained this species from Sirohi, about 12 miles north-east of Aboo, and from Jodhpoor, when Captain Butler sent me his Deesa specimen to identify. All the specimens I have seen have been killed in September.

This is one of the western forms that straggle within our limits towards the close of the monsoon, and I have no doubt that it will turn up in Sindh, Cutch and Kattiawar, though not yet recorded from either of these sub-divisions.

This species is not included in Jerdon, and I subjoin a brief description, (and measurements recorded in the flesh by Dr. King,) of two of my Jodhpoor specimens : *Male*. (*juv*) Length, 6·5 ; expanse, 9·75 ; tail, from vent, 2·62 ; wing, 3·3 ; tarsus, 0·97 ; bill to forehead, 0·77 ; from gape, 0·87. *Female*.—Length, 7·5 ; expanse, 10·62 ; tail, 2·62 ; wing, 3·5 ; tarsus, 1·03 ; bill to forehead, 0·8 ; from gape, 0·93 ; mid toe and claw, 0·87 ; hind toe and claw, 0·56.

The first quill is about 0·75 long ; the 3rd quill is longest the 2nd and fourth which are nearly equal, about 0·06 shorter,

the 5th about 0·25 shorter; tail somewhat rounded; outer tail feathers about 0·35 shorter than those next the central pair, which latter are shorter than those next them by about 0·15. The frontal feathers are prolonged over the base of the bill extending laterally quite to the nostrils.

Legs and feet dusky or livid fleshy; irides dark brown; bill, upper mandible and tip of lower a somewhat fleshy but dusky brown; rest of lower mandible and base, yellowish fleshy.

A broad superciliary stripe, from the nostrils, over the eyes and some little distance behind the eyes, dull white or yellowish white; a brown stripe from the nostrils to the anterior angle of the eye, continued backwards, though not conspicuous, for some distance from the posterior angle; forehead, crown, occiput, sides of neck, entire back and wings dull earthy brown, paler and more drabby in some; quills and coverts margined and narrowly tipped with dull yellowish or brownish white, with usually a slight rufescent tinge on the margins of the primaries. Rump brownish chestnut; upper tail-coverts and tail chestnut; central tail feathers more or less brown on one or both webs; all the other tail feathers, with a conspicuous subterminal dark brown band (which in the outer feather runs some distance down the outer web), and tipped, the two pairs next the centre narrowly with rufescent, and the other three successively more and more broadly with pure white. Chin and throat sordid white, with an indication of a darker line at the angle of the gape. Ear coverts and the rest of the lower parts, similar, but tinged with a faint brownish shade usually. Wing lining and axillaries with a *very* faint yellowish salmon tint; inner margins of inner webs of quills, on the lower surface, with a decided buffy salmon tinge.—A. O. H.]

494.—Cercomela fusca, *Blyth.*

The Brown Rockchat is very common at Mount Aboo, but I have never seen it in the plains. It breeds in the hot weather, commencing about March. The nest is here usually built in holes of rocks, buildings or stone walls, and when in the former is often supported (vide NESTS & EGGS, *Rough Draft*, p. 321) by a heap of small stones and pellets of dry earth, forming an embankment that extends from 6 to 10 inches beyond the side of the nest, and is evidently intended to make the nest rest horizontally. I have noticed it in so many cases that I look upon it now rather as the rule than as an exception.

During the period of incubation both birds are extremely pugnacious and vigorously attack any small birds, squirrels, rats, lizards, &c., that venture to approach the nest. The eggs, varying in number from three to four, are pale blue, with small reddish brown spots thinly scattered over the whole shell,

and formed into a narrow circle round the large end. It is usually found singly or in pairs sitting upon buildings or stone walls or rocks in the vicinity of human habitations.

[Is common alike in Eastern and Western Jodhpoor, and not rare in Cutch, but does not seem to extend to Sindh, Kattiawar or even Northern Guzerat.—A. O. H.]

497.—Ruticilla rufiventris, *Vieill.*

The Indian Redstart is common on the hills as well as in the plains during the cold weather. It arrives about the 5th September.

[Common throughout the entire region.—A. O. H.]

514.—Cyanecula suecica, *Lin.*

The Red-spot Blue-throat is not uncommon. I have met with it on one or two occasions at Mount Aboo, and have often observed it in the plains.

It is common wherever there is cultivation, and more especially so round the edges of the tanks and in swampy ground. It is seldom however you meet with one with a full blue breast. On one or two occasions lately I have observed specimens with the blue on the breast well developed, but in most cases the birds appear to be in immature plumage.

[Occurs throughout the whole region, but to judge from the dates on which my specimens were procured, in the more desert portions of Jodhpoor, in Cutch and Kattiawar it is chiefly towards the close of the rains that it is met with.—A. O. H.]

515.—Acrocephalus (Calamodyta) brunnescens, *Jerdon.*

The Large Reed Warbler, which so closely resembles its European ally *Salicaria turdoides*, Selby, is only a cold weather visitant, and is by no means common in the drier portions of north Guzerat. In these parts I have usually met with it in sugar cane fields, ricecrops or in beds of bulrushes or Reed grass growing on swampy ground, by the side of tanks or rivers.

It is not uncommon however in the tank country. There it frequents the long sedge and high rushes growing in and by the side of the water and I often had excellent opportunities of studying the birds habits and movements when waiting for duck in such places.

[This scarcely belongs to the region with which I am dealing. It is found indeed in those portions of Sindh where large broads and reedy canals abound, but not in the more desert portions, and I have no record of its occurrence

Jodhpoor, except on the extreme east near Sambhur, nor in Cutch or Kattiawar. It does not occur, I believe, at Aboo.—A. O. H.]

516.—Acrocephalus dumetorum, *Blyth.*

The Lesser Reed Warbler is not uncommon at Mount Aboo, but I have not met with it in the plains. It frequents tall trees (willow principally) overhanging water or wet or dry nullahs, though by no means strictly aquatic in its habits, as I have often met with it in high trees at a considerable distance from any water. Since writing the above I have shot specimens near Deesa, in low bush jungle. It arrives about the 10th or 12th of September and is not uncommon.

[Not as yet met with in Sindh, Cutch or Jodhpoor, except on the extreme east at Sambhur. But Captain Hayes Lloyd found it very common during the cold season in Kattiawar, and I have little doubt that it *will* be found in the better watered tracts in all the sub-divisions, though it may be rare in some.—A. O. H.]

520.—Locustella Hendersoni, *Cass.*

Henderson's Locustelle is not at all common, and I have only observed it on one or two occasions. It frequents low swampy ground overgrown with long grass and thorny bushes, jujube, babool trees, &c., and I have only met with it hitherto in the rainy season.

[Correctly described by Dr. Jerdon, but under the name of *L. certhiola*, Pallas, a quite distinct species. I have no record of this species occurring either at Aboo, or in any one of the sub-divisions of the whole region. It is however a bird that moves about greatly (one week a swamp is full of them, a week later, and the swamp having become a little wetter or drier, not one is to be found), and that it is only too easy moreover to overlook ,so that negative evidence in a case like this goes for little.—A. O. H.]

530.—Orthotomus longicaudatus, *Gmel.*

The Indian Tailor bird is common both on the hills and in the plains.

[Common throughout the entire region.—A. O. H,]

534.—Prinia socialis, *Sykes.*

The Ashy Wren Warbler is very common at Mount Aboo but not very plentiful in the plains. It nests in the plains during the monsoon. A specimen, which I shot in Deesa (♀) has a whitish line on each side of the head, running from the nostrils to the centre of the upper eyelid. My specimens from Aboo are slightly larger than those from the plains, measur-

ing $\frac{3}{8}$ inch longer in the body. I have mentioned the white superciliary line of the specimen referred to above, as it is not mentioned in Jerdon's description, and not having observed it before I am anxious to ascertain whether it is constant or not. I saw a nest of this species in July fixed to the outside of a *Euphorbia* hedge. It was a bottle-shaped neatly built structure composed chiefly of silky vegetable down with a small entrance near the top on one side. I saw the old birds working at it several times, but unfortunately a heavy shower of rain washed it away before the eggs were laid. It reminded me more of the nest of *Cisticola schœnicola* than any other, except, as I said before, that the entrance was upon one side.

[The Aboo specimens, of which I have several, may fairly be classed as *socialis*, although rather smaller than typical specimens from further south. The plains specimens are doubtless the smaller northern race *P. Stewarti*, which occurs, though it seems nowhere common in any locality, in Jodhpoor and Kattiawar. I have obtained it even at Sambhur, though Mr. Adam does not include it in his list. As regards the race, with the very conspicuous whitish line above the lores, which Captain Butler has sent me a specimen, I have not at hand a sufficient number of true *Stewarti* to decide upon the value of this character. Two, that I have examined, exhibit only a trace of this line.—A. O. H.]

536.—Prinia gracilis, *Frankl.*

Franklin's Wren Warbler occurs sparingly at Mount Aboo, but I have not met with it in the plains.

[A species often overlooked, which may account for our having no record as yet of its occurrence anywhere within the whole region, except in Cutch, whence I have specimens obtained by Stoliczka.—A. O. H.]

538.—Prinia Hodgsoni, *Blyth.*

The Malabar Wren Warbler occurs sparingly on the hills and in the plains. It is readily distinguished from any of the other members of this family by its much smaller size and by the conspicuous ashy slate pectoral band. It breeds in the plains during the rains as proved by dissection, but hitherto I have not succeeded in finding a nest.

[Does not belong properly to the region we are treating of. It occurs at Aboo, and in the plains south-westward, but is as yet unknown in Sindh, Cutch, Kattiawar, and the greater part of Jodhpoor though it is not uncommon in the hills near Koochawun, which like the Girnar (and Gir) in Kattiawar (where I dare say it will also be found to occur,) are close represen-

tatives in their respective regions of Aboo and its *enceinte*.—A. O. H.]

539.—Cisticola schœnicola, *Bonap.*

The Rufous Grass Warbler is not very common on the hills, but plentiful in the plains wherever there is long grass. It breeds in the plains during the monsoon, making a long bottle-shaped nest of silky white vegetable down, with an entrance at the top in a tuft of coarse grass a few inches from the ground. The eggs are white, slightly tinted with pink before they are blown, with numerous specks, spots and small blotches of reddish chestnut brown and in some instances with a few stains of pale inky purple towards the large end, the whole forming a well marked zone. Dr. Jerdon, in writing of this species, says that "when put up it takes a short jerking flight for a few yards and then drops down into the grass again." This description is quite correct, but I might add that "before descending it usually hovers for a few seconds in the air as if looking out for a blade of grass to settle upon." It often also pauses in its flight to hover, proceeding on the wing afterwards without alighting.

[Occurs throughout the entire region, Sindh, Cutch, Kattiawar, Jodhpoor, being of course absent in absolute desert, and less common in the semi-desert tracts.—A. O. H.]

543*bis*.—Drymoipus terricolor, *Hume.*

The Earth-brown Wren Warbler is very common in the plains, frequenting low scrub jungle and long grass studded with low bushes (*Calotropis*, *Zizyphus*, &c.) It breeds during the monsoon, commencing to build in July, during which month and August in the neighbourhood of Deesa I must have examined some three or four dozen nests. There are two distinct types of nests and there may be two species of this genus in this part of the country, but I must confess that after shooting a large number of specimens of both sexes, and after examining an immense series of the eggs, I have failed to make out more than one species, and that Mr. Hume informs me is his *D. terricolor*. The nests alluded to vary as follows—one type is very closely and compactly woven as described of *D. terricolor* (NESTS AND EGGS, *Rough Draft*, p. 349,) with the entrance almost at the top. The other type is built of the same material, with the exception that the grass is rather coarser, but is more in shape like a Wren's nest, and the grass is somewhat loosely put together instead of being woven, and it has the entrance with a slight canopy over it upon one side. The eggs four, and not uncommonly five, in number, were exactly alike

in both types, as also were the specimens of the birds themselves that I obtained.

I give Dr. Jerdon's description below, with a few additions of my own, in the hope that my observations may prove of use to ornithologists who may dispute the distinctness of the 3 supposed species *D. inornatus*, Sykes, *D. fuscus*, Hodgs., and *D. terricolor*, Hume. I offer no opinion on the subject myself.

Description.—Head and back greyish brown, the feathers of the head having the centres darker, giving the head an indistinct appearance of striation; wings brown, edged pale rufous on both webs, most conspicuous on the inner webs of the secondary feathers; carpal joint edged with white exteriorly; tail brown, darkest in the centre and paling laterally, the short outside feathers being almost entirely white, the next having the inner webs whitish and the outer webs whitish brown; the whole, except the outer two which have no dark spot, being narrowly tipped with white and having a subterminal dark spot; the whole of the tail is obsoletely barred most conspicuously on the central feathers; supercilium, lores, chin, throat, and abdomen white, remainder of lower parts including breast and flanks silky white, slightly tinged with very pale fulvous; thighs pale ferruginous, buff or fawn. In the male the bill and gape are black, the former paling to bluish horn at the base of the lower mandible. In the female the upper mandible is horny brown and the lower mandible, excepting at the tip, is carneous. The gape is fleshy instead of black. In both sexes the legs are fleshy and the irides yellowish brown. Measurements as follows :—

	♂	♂	♂	♀
Length	5·5	5·5	5·1	5
Wing	2	2·12	2	1·87
Tail	2·37	2·37	2·62	2·37
Bill at front	0·47	0·4	0·44	0·44
Bill from gape	0·62	0·62	0·59	0·55

These four specimens were all shot near Deesa in the breeding season. Nearly all of the nests I have seen have been built on the outside of Ber bushes (*Z. jujuba*) at heights varying from 2½ feet to 5 feet from the ground.

[I have no record of this occurring at Aboo. Specimens, both from Guzerat and Kattiawar, appear to belong to the same species that occurs so commonly about Agra, (straggling westwards to Sambhur,) which I have called *terricolor*. A much more rufous race occurs about Bombay, Poona, &c., which I presume to be Sykes' *inornatus*, as his description applies better to it than to the Northern bird. I have as yet observed no race of this Wren Warbler in or from Sindh, Cutch, or Jodhpoor.—A. O. H.]

544.—Drymoipus longicaudatus, *Tickell.*

The Long-tailed Wren Warbler is tolerably common all over the plains, but I did not observe it at Aboo. As regards Mr. Brooks' remarks (S. F., III., p. 295,) uniting this species with *D. inornatus*, Sykes, I am *at present* inclined to agree with him, and my chief reason for believing that his conclusions are correct is as follows: During the hot weather and rains *Drymoipus inornatus*, Sykes, (or *D. terricolor*, Hume, to be more exact) is very common in this neighbourhood, and in fact throughout the plains generally, but I do not recollect a single instance of the occurence of *D. longicaudatus*, Tickell, at that season. Later on about the beginning of November *D. inornatus*, Sykes, disappears altogether, and *D. longicaudatus*, Tickell, appears to take its place during the cold weather. Now it seems to me evident from the above facts that either *D. inornatus*, Sykes becomes *D. longicaudatus*, Tick. in its winter dress or else that the two species are distinct, and *D. inornatus* migrates about October and is replaced during the cold weather by *D. longicaudatus*. I do not think the latter supposition is probable, and consequently as I said before for the present I concur with Mr. Brooks' opinion. My specimens of both species exactly correspond with the description Mr. Brooks has given of the two birds, but there are two important structural differences which I do not exactly know how to explain. Firstly in *D. inornatus* the bill, in addition to being black, is decidedly stouter and longer as the measurements given below will show, *viz* :—

D. longicaudatus				♂
Bill at front				0·38
Bill from gape				0·56
D. terricolor, Hume				♂
Bill at front	0·41,	0·42	and	0·44
Bill from gape	0·62,	0·62	and	0·59

All of these specimens were killed at Deesa.

Secondly, the great difference in the length of the tails, *viz*:—

D. longicaudatus				♂
Tail				3·12
D. terricolor, Hume				
♂ Tail	2·38		2·38	2·62
♀ Tail	2·38			

However time, study and further observation may prove that these points are not of as much importance as they appear to be at present.

[I attach less importance to the length of the tails, but the difference in the size of the bills, which I believe to be a fact, ...ludes my uniting the two species at present. I have one

specimen of *longicaudatus* now before me killed early in July. My catalogue shows that we have specimens from Jodhpoor, Cutch, Kattawar and Sindh, and Adam records it as common at Sambhur, but as I cannot now consult the specimens I cannot say in what months all my many examples have been procured; but I firmly believe that I have killed *longicaudatus* in every month of the year. Of course all these *Drymoipi* are very much paler in the hot weather and early part of the rains, and much browner and more rufescent immediately after the autumn moult, and I have no doubt that *D. terricolor* in bright autumnal plumage is often erroneously accepted as *D. longicaudatus*, but the two species are I believe distinct. —A. O. H.]

544*bis*.—Drymoipus rufescens, *Hume*.

I do not fancy that this species, the Great Rufous Wren Warbler, is very common, unless it has been overlooked by me. I observed it sparingly at Mount Aboo, and have met with it also occasionally in the plains. I see that Mr. Adam does not include it in his paper on the birds of the Sambhur Lake, although he enters *D. longicaudatus* as common. Possibly he referred to the present species. Mr. Hume kindly identified my bird.

[As to the distinctness of this species, see above, I., 437, II., 453, and III., 408. Mr. Adam has made no mistake; he has not obtained this species as yet at the Sambhur Lake. The whole of his extensive collections, have through his kindness passed through my hands, and he has presented my museum with specimens, and in many cases large series, of every bird he has obtained from first to last. This species, I have both from Cutch and Kattiawar, but not from Sindh or any part of Jodhpoor as yet.—A. O. H.]

545*bis*.—Drymoipus insignis, *Hume*. S. F., I., 10.

The Great Wren Warbler is not uncommon at Mount Aboo and is common in the high grass about Deesa. It has a soft melodious, ventriloquistic triple note which it repeats continuously from the summit of a rock, from a dead or leafless bough or from the top of some isolated tree or bush. As soon as it has finished it descends hurriedly into the jungle below with a quick jerky flight. It has also a peculiar habit of rising into the air for a short distance and making a noise with its wings like a diminutive cracker, returning afterwards often to the same perch, sometimes to a fresh one. I have noticed this peculiar habit in other members of this family also, *Drymoipus terricolor* and *Prinia socialis* for instance. The gape, as in the male of the preceding species, is black in both sexes.

I found a nest near Deesa on the 14th August 1875. It was placed in the middle of a tussock of coarse grass on the side of a nullah on a bank overgrown with grass and bushes, and my attention was attracted first of all to the spot by the incessant chattering and uneasiness of the two old birds, one of which had a large grasshopper in its mouth. After hiding behind a bush for a few minutes, I saw the hen bird fly to the nest, which led to its discovery. The nest was dome-shaped with an entrance upon one side and composed exteriorly of blades of rather coarse dry grass, and interiorly of similar, but finer material.

It contained four young birds almost ready to leave the nest. I saw another batch of four young ones about the same age near the same place on the 19th August and another nest building in a similiar situation to the one already described on the 17th August. I sent both of these nests to Mr. Hume—the latter, to my great disappointment, was forsaken before it was finished, so that I did not obtain the eggs.

[Mr. Adam got this at Sambhur, I have had it sent from Erinpoora and near Ajmere. Dr. King got it during the spring at Jodhpoor, but I have neither obtained nor heard of it from Sindh, Cutch or Kattiawar.—A. O. H.]

550.—Burnesia gracilis, *Rüpp.*

The Streaked Wren Warbler is not common. I have usually found it in long grass growing in the beds of rivers. I found a nest in a tussock of coarse grass in the sandy bed of a river amongst a number of tamarisk bushes on the 8th July 1875 in the neighbourhood of Deesa. It was composed of fine dry fibrous roots and grass stems exteriorly, and lined with silky vegetable down. It was a long bottle-shaped structure with a small entrance on one side. The nest, eggs, situation, locality, &c., all agree so exactly with the descriptions quoted by Dr. Jerdon and with Mr. Anderson's note in NESTS AND EGGS, *Rough Draft*, (p. 357.) that I should have found it difficult to avoid copying these two gentlemen in describing my own nest. As *Blyth* observes, "It inhabits low scrub intermixed with coarse sedgy grass and tamarisk bushes growing in sandy places in the beds of rivers." The eggs, as Mr. Hume says, are pale greenish white, thickly covered with bright reddish brown spots forming a zone at the large end.

The nest I have mentioned contained three hard set eggs and one young one just hatched.

[Does not ascend Aboo so far as I know, but occurs more or ...ss sparingly (except in the immediate neighbourhood of rivers ...re it is more plentiful,) throughout the entire region, Sindh, ...h, Kattiawar, and Jodhpoor to Sambhur.—A. O. H.]

551.—Franklinia Buchanani, *Blyth.*

The Rufous-fronted Wren Warbler is common in the plains frequenting similar haunts to *D. terricolor*, *viz.*, long grass studded with low bushes and scrub jungle. I found nests up to the end of August, but I fancy, from the number of deserted nests I came across in that and the preceding month that the greater number of them breed in May and June.

[Does not ascend Aboo. More or less common throughout the entire region.—A. O. H.]

553.—Phyllopneuste rama, *Sykes.*

Whether Sykes' Warbler is the bird I refer to I cannot say, as there appears to have been more than one species confounded by Dr. Jerdon under this head; the bird before me, however, certainly belongs to one of them, as Mr. Hume has identified a skin which I forwarded to him for inspection. It is common at Mount Aboo, disappearing at the close of the cold weather.

It is also common in the plains, arriving about the 10th August, much earlier than most of our cold weather visitants.

[The synonymy of this little group of Grey Warblers is at present, to me at any rate, inextricably confused. We have at least two species in India, one rather larger and greyer, the other smaller and more rufous; I myself believe the former to be *rama*, of Sykes, and to be identical with *Iduna caligata*, which is *scita* of Eversm. The smaller bird I named *agricolensis*, and I believe that this name ought to stand. But some of the best authorities at home differ as to which bird was Sykes', *rama*, and even as to which is *caligata*.

The specimen sent to me from Aboo was the larger and greyer bird. Of this I myself procured specimens from Ahmedabad, south of Deesa. I have it from Cutch and Kattiawar, but have no knowledge of its occurrence in Sindh or Jodhpoor. The smaller bird I have not yet seen from any one of these localities or even from Jodhpoor, though a little further east, at Ajmere and near Sambhur, it is not very uncommon.—A. O. H.]

554.—Phylloscopus tristis, *Blyth.*

The Brown Tree Warbler is tolerably common at Mount Aboo during the rains and in the cold weather. It also occurs in the plains, arriving with most of the other winter visitants about the beginning of September.

[Occurs throughout the entire region.—A. O. H.]

562.—Phylloscopus indicus, *Jerdon.*

The Olivaceous Tree Warbler is also common at Mount A[illegible] arriving about the beginning of September and leaving tow[illegible]

the end of the cold weather. It frequents rocky ground overgrown with either low or high tree jungle or even low-bush jungle.

[Occurs nowhere, so far as I yet know, throughout the entire region, though a straggler has been obtained on its extreme eastern limit near Sambhur by Mr. Adam.—A. O. H.]

581.—Sylvia orphea, *Temm.*

The Black-capped Warbler is tolerably common in the plains and affects the same localities precisely as *Otocompsa leucotis*, but I did not observe in at Mount Aboo. It arrives in September, and I have a fine specimen (♂) shot on the 26th of that month in a low babool jungle near Deesa this year (1875) and another (♀) shot near the same place about a fortnight later.

[This should probably appear as *Sylvia Jerdoni*, Blyth (J. A. S., XVI., 439). At the same time I am not prepared to assert that the slightly longer-billed Asiatic form, that winters in India and breeds in Central Asia, really deserves specific separation, and hence I allow Captain Butler's title to stand.

This species was not common about Ahmedabad. Very rare about Jodhpoor itself and the neighbourhood of Sambhur; more common in Cutch, and more so in the neighbourhood of the larger rivers, in Sindh. From Kattiawar, I have one specimen from the foot of Mount Girnar.—A. O. H.]

582.—Sylvia affinis, *Blyth.*

The Allied Grey Warbler is common on the hills and in the plains during the cold weather. I saw it at Mount Aboo as late as the beginning of May.

It arrives about the 8th of September.

I may mention that I do not understand Mr. Brooks' remark "S. F.," Vol. II. p. 332, on the subject of White Throats: "Your six-inch birds must have been abnormal monsters," as from my experience 6 inches is about the average length of *Sylvia affinis*, Blyth, as the following measurements taken by myself in the flesh will prove:

Sex	Length;	Wing;	Tail;	Bill at front;	Bill from gape.
♂	6	2·75	2·75	0·42	0·62
♀	5·75	2·44	2·62	0·34	0·59
♀	6	2·5	2·75	0·37	0·56

[We have specimens of both supposed species, *affinis* and *curruca* from each sub-division of the whole region. I have already discussed (I., 197) the extreme difficulty that exists in separating these two which clearly run into each other, and of both of which, as well of intermediate forms, specimens may be obtained, where *ever*, in India at any rate, the species occurs at all.—A. O. H.]

582*bis*.—Sylvia cinerea, *Bonap.*

This large species of Grey Warbler is not uncommon at Mount Aboo in the rains and at the commencement of the cold weather. I did not recognize the bird at first, but Mr. Hume kindly identified skins for me, and so I became enlightened. It occurs also in the plains, arriving about the 8th September.

[This is one of the Western forms that strays into Western India chiefly, I believe, during the month of September. I first received this from Aboo many years ago from Dr. King, and later he procured other specimens at Jodhpoor itself and near Pallee. I have never yet received it from Sindh, Cutch or Kattiawar, but have little doubt that it will prove to occur in all. It should be looked for at the close of the monsoon.

This species is not included by Dr. Jerdon, and I therefore subjoin a description of Captain Butler's specimen as I have no other by me here.

A female, killed by Dr. King at Aboo, measured in the flesh: Length, 6; expanse, 8·5; tail, 2·32; wing, 2·85; the closed wing reached to within 1·32 of the end of the tail.

The present specimen also a female measured: length, 6·25; wing, 2·87; tail, 3·0; bill at front, 0·44; from gape, 0·62. The legs and feet are yellowish brown; the bill dusky above, fleshy at base of lower mandible; the irides yellowish brown.

The entire upper surface is a moderately dark, I should say somewhat *reddish sooty*, many would say *reddish ashy* brown, more cinereous on the head, and with the tertials and their greater coverts, (and this is *the* recognizable feature) rather broadly margined, with pale dull ferruginous. The lores are albescent or greyish white, with traces of a greyer line through them; chin, upper throat and eyelid feathers pure white; ear-coverts silky brown; lower throat, breast and middle of abdomen white, tinged with pale vinaceous buff; sides and flanks tinged with brown; first primary very minute, second primary longest, or second and third equal and longest. Tail a good deal rounded; exterior feather 0·4 shorter than longest, a paler brown than the rest and margined with white; next feather tipped with brownish white; quills and greater coverts and tail feathers all paler margined; axillaries greyish white; tibial plumes buffy white; tarsi stout, 0·87 in length.—A. O. H.]

583.—Sylvia curruca, *Gmel.*

The Lesser White Throat is very common in the cold weather both on the hills and in the plains, arriving early in September.

[Throughout the entire region—See remarks on No. 582.—A. O. H.]

589.—Motacilla maderaspatana, *Briss.*

The Pied Wagtail is not very common. I observed a pair or two about the lake at Mount Aboo, and I have met with it occasionally in the plains round the edges of tanks, river beds, &c. It delights in a large rock standing out by itself in the water at some distance from the shore to settle, and run about, upon. In the absence of a rock an old dead stump suits its habits and answers the purpose equally well.

[I did not meet with this in Sindh, nor has it been sent me thence or from Western Kattiawar, but from the Eastern portion of the Peninsular I have it, Stoliczka brought me specimens from Cutch, and Adam got many at Sambhur. About Jodhpoor itself and the country round about the base of Aboo, it occurs, but, I think, sparingly.—A. O. H.]

591 *bis.*—Motacilla dukhunensis, *Sykes.*

Sykes' Wagtail is common at Mount Aboo and in the plains during the cold weather only. It assumes the summer plumage in February and March. The Wagtails are a very puzzling family to deal with, owing to the close resemblance many of the members bear to each other and the various changes of plumage they undergo at different seasons. Under these circumstances I have confined myself to this one species, of the identity of which I am quite certain, although I feel sure in doing so that I am omitting one if not two other species that occur in this part of the country. However I prefer omitting a species altogether to including one that I am not sure of under a wrong denomination.

[Is common during the cold season, throughout the whole region.—A. O. H.]

592. Calobates sulphurea, *Bechst* (= *C. boarula*, Penn.) If distinct, *C. melanope*, Pall.

The Grey and Yellow Wagtail is common during the cold weather in the plains as well as on the hills. It arrives about the beginning of September and remains until quite the end of April. The black patch below the chin does not appear before March.

[Same as 591 *bis.*—A. O. H.]

[592 *bis.*—Budytes Rayi, *Bonap.*

I obtained a single specimen at Aboo years ago, which, after careful comparison with several English specimens, I assigned, when my catalogue was prepared, to this species. I cannot now get at the specimen which is in my museum, but I believe that my identification was correct. If so, it is the only instance on

record of this species occurring within the limits of British India, and it was this that made me hesitate before recording the specimen as I did.—A. O. H.]

593 *bis.*—Budytes melanocephala, *Licht.*

The Black-cap Field Wagtail is common in the plains, but does not ascend the hills. I dare say that other species occur, but all the specimens I sent to Mr. Hume proved to belong to this species.

[Same as 591 *bis.*—A. O. H.]

[594.—Budytes citreoloides, *Hodgson.* (*?-B. calcaratus*, Hodgs.)

I have specimens of this I find from every sub-division of the whole region, and one from not far from Deesa itself, but I have not seen it yet from Aboo.—A. O. H.]

596.—Pipastes maculatus, *Hodgs.*

The Indian Tree Pipit is common during the cold weather on the hills and in the plains.

It arrives about the 5th September.

[I have never observed this in Sindh or seen it from that province, Jodhpoor, Cutch or Kattiawar, and yet it must, I think, occur in these latter, as Captain Butler found it common in the plains of Northern Guzerat, and Mr. Adam has sent many specimens from Sambhur.—A. O. H.]

597.—Pipastes arboreus, *Bechst.* (*P. plumatus*, Muller.)

The European Tree Pipit is not uncommon in the plains during the cold weather. It so closely resembles the last species that until Mr. Hume kindly pointed out the difference to me I confounded the two species. It arrives about the 13th September.

[Dr. King obtained this on Aboo also. I found this, though rare, in Sindh and have it from every sub-division of the whole region.—A. O. H.]

600.—Corydalla rufula, *Vieillot.*

The Indian Tit Lark is common in the plains during the cold weather, but does not ascend the hills to my knowledge.

[Dr. King noted this from Aboo itself, but I have no specimen thence. Mr. Adam found it very common at Sambhur and so I did both there and at Ajmere, but I have no specimen or record of it from Sindh, Cutch, Kattiawar or Jodhpoor.—A. O. H.]

602.—Agrodroma campestris, *Lin.*

The Stone Pipit is very common in the plains during the cold weather, frequenting sandy plains and bare open ground. It arrives about the 8th September.

[I do not know that this ascends Aboo, but I have it from every sub-division of the whole region.—A. O. H.]

604—Agrodroma Jerdoni, *Finsch. A. griseo-rufescens* Hume ; *A. sordida* apud Jerdon nec Rüpp).

The Brown Rock Pipit is not uncommon in the neighbourhood of Deesa in the cold weather. It is terrestrial in its habits as a rule, but generally perches upon a low bush, if there is one near, when flushed. It runs along the ground with great speed and is by no means shy. It frequents sandy plains overgrown with long grass and studded with low bushes of Zizyphus, Calotropis, &c., upon which, as I said before, it often perches when disturbed.

[Very rare, I believe in Sindh, and I have no record of its occurring any where else throughout the entire region, nor have I seen it from Mount Aboo itself.—A. O. H.]

[605 *ter.*—Anthus spinoletta, *Lin*, (c. f. S. F., I., 204.)

I procured this species years ago in Jodhpoor, and also on the slopes of Aboo, and I also had a specimen from Dr. King, but did not at the time discriminate them ; and have only comparatively recently done so when going over cases not examined for four years. I found this not uncommon in Sindh, but (though it probably occurs there) I have no record of it from Cutch, Kattiawar or the plains portion of Northern Guzerat.—A. O. H.]

631.—Zosterops palpebrosus, *Tem.*

The White-eyed Tit is common at Mount Aboo, but I have not observed it in the plains.

[Dr. King also obtained it at Aboo and on its flanks, but neither he nor I procured it in Jodhpoor, though at the extreme east of this region, Mr. Adam once saw it at Sambhur. I have never seen it in or from Cutch or Sindh, nor have I specimens from Kattiawar, but Captain Hayes Lloyd reports it as common there, probably as pertaining to the Girnar region, which in Kattiawar represents Aboo. —A. O. H.]

645.—Parus cæsius, *Tickell.*

The Indian Grey Tit occurs sparingly at Mount Aboo, but I have very seldom met with it in the plains below.

[This species is one of the Mount Aboo outliers, and it occurs in the representative localities, the Gir and Girnar

month birds may be seen sitting on their nests in every garden.

[Common throughout the entire region.—A. O. H.]

674.—Dendrocitta rufa, *Scop.*

The Common Indian Magpie is common on the hills, but varies in its distribution in the plains, in some localities being tolerably plentiful, in some rare, and in others absent altogether.

[Common in Sindh and Kattiawar and Northern Guzerat, but unrecorded from Cutch or any part of Jodhpoor, except on its extreme eastern limits, where at Sambhur Mr. Adam occasionally saw it.—A. O. H.]

681.—Sturnus vulgaris, *Linn.*

The Common Starling occurs in the plains in the cold weather, but I have never observed it in large flocks as in England, neither is it very common.

[Very common in most parts of Sindh and Jodhpoor, and not *un*common I should say in Northern Guzerat; it does not, I believe, ascend Aboo, and strange to say, I have never seen nor heard of it from either Cutch or Kattiawar.—A. O. H.]

684.— Acridotheres tristis, *Linn.*

The Common Myna is very common both on the hills and in the plains, and breeds during the monsoon, laying in July and August.

[Common throughout the entire region.—A. O. H.]

685.—Acridotheres ginginianus, *Lath.*

The Bank Myna is very common in the plains, but does not ascend the hills. It breeds principally in June in banks and old wells.

[Common throughout the entire region.—A. O. H.]

687.—Temenuchus pagodarum, *Gmel.*

The Black-headed Myna occurs on the hills and in the plains. It is somewhat locally distributed, being plentiful in many places and rare in others. It is common at Mount Aboo.

[Except in Sindh, to which it is not yet known to extend; it is pretty common in each sub-division of the whole region but is, apparently, very rare in the portions of Cutch and Kattiawar nearest Sindh.—A. O. H.]

688.—Temenuchus malabaricus, *Gmel.*

The Grey-headed Myna is common at Mount Aboo in the hot weather, congregating in considerable flocks in May and June. I have not observed it in the plains.

[This is another Aboo speciality and occurs nowhere else (so far as is yet known, for it *may* turn up in the Gir) throughout the entire region.—A. O. H.]

690.—Pastor roseus, *Lin.*

The Rose-coloured Pastor is very common in the plains during the cold weather, arriving at the beginning of the rains. It also occurs, though not so plentifully, on the hills. It is usually in large or small flocks.

[Common during the cold weather throughout the whole region.—A. O. H.]

694.—Ploceus baya, *Blyth.*

The Common Weaver Bird is very common in the plains during the cold weather, and breeds in July and August. I am inclined to think that it is migratory, as it seemed to me to disappear during the hot weather. I do not think that it ascends the hills, but am not quite sure.

[Dr. King did not obtain this species above Anadra, so that I think it is pretty clear that it does not ascend Aboo. Throughout the rest of the region (except in Sindh, whence it has not yet been recorded) it is common during the rains, and occurs, tho' less plentifully and more locally, during the rest of the year.—A. O. H.]

695.—Ploceus manyar, *Horsf.*

The Striated Weaver Bird occurs in suitable localities in the plains, though by no means common. I have generally observed it in the beds of rivers, frequenting the rushes and long grass in and by the side of the water. A specimen I shot near Deesa on the 10th July, a male in full breeding plumage, has the bill pale leaden blue, and not black or horny fleshy, as described by Jerdon.

The bills of several others which I saw in a cage that had been caught by a bird-catcher in the same neighbourhood in the same month were blue also.

[Seems common in Sindh, but has not yet been sent or recorded from Cutch, Kattiawar or any part of Jodhpoor.—A. O. H.]

699.—Lonchura punctulata, *L.*

The Spotted Munia is common at Mount Aboo, associating in large flocks during the hot weather. It is by no means common in the plains. I found nests at Aboo in September usually in low thorny bushes, but I have seen nests in Palm trees 30 or 40 feet from the ground.

[Occurs, so far as I know, in no other part of the whole region, but on the extreme eastern limits of this latter, at Sambhur Mr. Adam once saw a specimen during the rainy season.—A. O. H.]

703.—Munia malabarica, *Lin.*

The Plain Brown Munia is very common both on the hills and in the plains. It nearly always roosts in company in deserted nests in low thorny bushes or in *Euphorbia* hedges. I have often of an evening seen as many as four or five all huddled up together in one nest.

[Very common throughout the entire region.—A. O. H.]

704.—Estrelda amandava, *Lin.*

The Red Waxbill is another instance of local distribution. In some places it is not uncommon, but in most places it is rare or absent altogether. I saw one specimen at Aboo, but probably, as it was the only one I came across, it had escaped from confinement. It is not uncommon in the neighbourhood of Deesa, frequenting the long Pampus or Sarpat grass so common in most of the river beds.

[Dr. King never procured this at Aboo, nor has it been sent or recorded from any part of Cutch, Kattiawar or Jodhpoor, but I obtained it in Sindh, and know that it is common there during the inundation. It belongs essentially to well-watered regions, just as *malabarica* does to arid tracts, though each at times intrudes, on the province of the other.—A. O. H.]

705.—Estrelda formosa, *Lath.*

The Green Waxbill is common at Mount Aboo, but I have not observed it in the plains below, although I believe it does occur in some localities.

[Is another Aboo speciality and occurs nowhere else throughout the entire region, but this is not the most northern point reached by this species. In Central India it is common at Jhansi, which is some 30 miles further north than Aboo, and then skipping the comparatively dry intervening region reappears it is *said*, (*non vidi*) in the moist sub-himalayan districts of Oudh and the North-West Provinces.—A. O. H.]

706.—Passer indicus, *Jard.* and *Selby.*

The Indian House Sparrow is so common and so well known both on the hills and in the plains that it is not necessary to make any remarks upon the species.

[Throughout the entire region.—A. O. H.]

711.—Passer (Gymnoris) flavicollis, *Frankl.*

The Yellow-throat Sparrow is common in the hills and in the plains. It is very abundant at Mount Aboo and breeds there in April, in which month I took nests containing fresh eggs and others containing incubated ones.

[Occurs throughout the entire region; but is only a seasonal visitant to Sindh and Kattiawar I believe.—A. O. H.]

716.—Emberiza Huttoni, *Blyth.*

The Gray-necked Bunting occurs at Mount Aboo during the cold weather, though not very common. I have not observed it in the plains. It prefers rocky ground, alighting on trees or bushes when flushed. My specimens rather exceed the measurements given by Dr. Jerdon, *viz.*, length, from 6·5 to 6·75 inches; wing, 3·56 inches, tail, 3 inches; bill at front, 0·44 inches; bill at gape, 0·56 inches.

[This species has not yet been recorded from Sindh. In Cutch and Kattiawar it is common; in Jodhpoor, it is found chiefly on and in the neighbourhood of outliers of the Aravalli range. Where does this species breed? A. O. H.]

716*bis.*—Emberiza (Fringillaria) striolata, *Licht.*

I have not met with this species in the plains, but observed it occasionally at Mount Aboo in the cold weather. It is not at all common.

[The Striolated Bunting is found more or less abundantly in suitable localities throughout the entire region. Plains, wide expanses of level country, it as a rule eschews, its home is in the low rocky semi-barren hills, slenderly clad in withered grass, cactus-like Euphorbias, and low scrubby jungle, that form so characteristic a feature in the scenery of Western India.—A. O. H.]

721.—Euspiza melanocephala, *Gmel.*

The Black-headed Corn Bunting is common in the plains. I saw a few small flocks also in Mount Aboo, and shot specimens there as late as the middle of April. It arrives in the plains in immense flocks about the 8th September and frequents corn fields (especially Bajra, *Pencillaria spicata*,) generally in company with the next species, as long as the crops are standing.

[Common during the harvest time in Lower and Central Sindh, Cutch, Kattiawar, and in Western Jodhpoor. At Soojut, in Jodhpoor, I saw simply *millions* at the time of the spring harvest, but it does not extend to the eastern portions of that state, as during four years Mr. Adam never even saw a specimen, either at the lake or any where in its neighbourhood. Dr. Jerdon says

by some *lapsus calami*, that this species "is found in India only in the North-West Provinces, most abundant in the Dukhun and thence extending to the upper provinces of Hindustan." As a fact, this species never occurs in the North-West Provinces *at all*, nor in the Punjaub nor I believe in Upper Sindh nor in any part of Rajpootana except the extreme south-west corner.—A. O. H.]

722.—Euspiza luteola, *Sparrman.*

The Red-headed corn Bunting is common in this part of the country, arriving about the middle of September. I am informed that it is plentiful also in many localities further north in Rajpootana. It associates with the preceding species, congregating in the Bajra crops in immense flocks. I did not observe it at Mount Aboo.

[This species is not uncommon in parts of Jodhpoor, and Mr. Adam observed it often about the Sambhur Lake, and I procured it at Soojut, Pallee and many other places. Further east in Jeypoor and the Doab, to neither of which *melanocephala* extends, it is common, but I have no record of its occurrence in Sindh, Cutch or Kattiawar. This is the more noteworthy, because at Soojut and other neighbouring localities I found this species so closely associated with *melanocephala*, that every shot into a flock of the latter always brought down a certain percentage of the present species. As a fact I presume that *luteola*, visits us from the north, and *melanocephala* from the west; and that their respective areas of distribution, which have not yet been completely worked out, only partially coincide.—A. O. H.]

724.—Melophus melanicterus, *Gmel.*

The Crested Black Bunting is one of the commonest birds at Mount Aboo, but I do not think it occurs in the plains, at all events at any distance from the foot of the hills. It breeds during the monsoon in June and July, during which months I have often noticed the nests, which are generally placed in a hole on the side of a bank, or at the foot of a rock under cover of a tuft of grass or ferns. See also NESTS and EGGS, *Rough Draft*, *p.* 467.

[Found nowhere as yet throughout the entire region (as a rule tho' stragglers *may* occur anywhere,) except at and about Aboo and the representative *locale*, the Koochawan Hills, of Jodhpoor. However it will probably turn up in the Gir.—A. O. H.]

738.—Carpodacus erythrinus, *Pall.*

The Common Rose Finch is very plentiful at Mount Aboo during the cold weather, and it is not uncommon in the plains below, frequenting babool jungles, &c. It is very fond of the

watery nectar contained in the flower of the Indian Coral tree, *Erythrina indica*, upon which tree it may always be found, when the tree is in blossom. It arrives about the 15th September.

[Neither received nor reported as yet from any part of Sindh, but occurring throughout the rest of the region and obtained at Sambhur by Mr. Adam.—A. O. H.]

756.—Mirafra erythroptera, *Jerdon.*

The Red-winged Bush Lark is tolerably common in the plains, wherever there is grass studded with low bushes or scrub jungle.

[Neither received nor recorded from Sindh, but common enough in Cutch, Kattiawar and Jodhpoor. Not observed as yet on Aboo.—A. O. H.]

757.—Mirafra cantillans, *Jerdon.*

The Singing Bush Lark is also common in the plains, frequenting the same kind of ground as the last species. I found a nest on the 22nd July near Deesa under a tuft of grass containing three eggs, about to hatch, of a greyish white color thickly freckled and speckled with inky brown, darkest at the large end, with a few yellowish specks as well. The whole combining in forming a dense dark cap at the large end. The old bird (♀) sat very close, allowing me to capture her on the nest with a horse hair noose fastened to the end of a thin rod. The nest was almost spherical, with a hole near the top for ingress and egress. It was made of dry grass, somewhat massively put together and neatly lined with similar material of a finer quality.

[Does not, so far as I know, ascend mount Aboo. Not observed as yet in Sindh, Cutch or Kattiawar, though it probably occurs sparingly in the eastern portions of these, as it does in the western parts of Jodhpoor. In the eastern portions of the latter, as towards Sambhur, it is not uncommon.—A. O. H.]

758.—Ammomanes phœnicura, *Frankl.*

The Rufous-tailed Finch Lark is not very common. It affects bare cultivated ground after the crops have been removed, as well as dry grassy plains, but does not ascend the hills as far as I know.

[Common throughout the entire region, except Sindh, where it is replaced by *A. lusitania*, Gmel.—A. O. H.]

760.—Pyrrhulauda grisea, *Scop.*

The Black-bellied Finch Lark is very common in the plains, frequenting bare sandy plains, ploughed fields, &c., apparently preferring open ground to any other.

[Common throughout the entire region; not yet noted from Aboo.—A. O. H.]

761.—Calandrella brachydactyla, *Tem.*

The Short-toed or Social Lark is very abundant in some parts of the plains in the cold weather. In the neighbourhood of Deesa it swarms, congregating in the early part of the year in flocks of thousands upon every maidan.

[Common throughout the entire region, but not recorded as yet from Aboo.—A. O. H.]

(*To be continued.*)

Note.

REFERRING to my remarks (p. 188) as to the colour of the legs and feet of *Rallina fusca*, Lin., I wish to note that I have now myself procured more than a dozen specimens of this species in the neighbourhood of Calcutta, during the latter part of last month and the course of the present one (December). The legs alike in old and young are *red*, somewhat dusky on joints and feet, but not a trace of green about them.

Jerdon says "bill green reddish at the base," "legs and feet pale green." As a matter of fact the bill varies from blackish horny to brown with a greenish tinge and is not that I can find out ever reddish at the base, and the legs and feet are at all seasons red, (shaded dusky on toes and joints,) brightest colored in the breeding season and dullest in mid winter. I believe that the Calcutta printers must have, as usual, muddled Jerdon's text.

I should not call the rufous portions of this bird "*deep ferruginous*;" they are, to my notion, "*vinous chestnut.*"

Jerdon does not describe the young. These entirely want the rufous tint and have the entire chin and throat white, and the rest of the lower surface dull earthy olive brown, mottled or imperfectly barred with brownish white. Towards the end of November they begin to assume the rufous tint, (which in their case is ferruginous and lacks the rich vinaceous hue of the adult) which first appears on the lores, cheeks, and ear-coverts and then spreads in spots on to the lower throat, breast, &c.

The following are the dimensions of several specimens:—

	Length.	Exp.	Wing.	Tail.	Tarsus.	Mid toe & claw.	Bill at front.	Bill from gape.
1 ♀	8·6	13·3	4·	2·2	1·55	1·7	0·9	1·0
2 ♀	8·5	13·5	3·9	2·2	1·4	1·7	0·8	0·9
3 ♀	8·7	14·5	4·2	2·1	1·5	1·75	0·88	1·0
4 ♀	8·5	13·25	3·8	2·2	1·4	1·62	0·83	0·98
5 juv.	8·4	13·3	3·9	2·1	1·4	1·6	0·8	0·91

A. O. H.

End of Vol. III.

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