BOOK NO.
1076

# STRAY FEATHERS

## A JOURNAL OF ORNITHOLOGY FOR INDIA AND ITS DEPENDENCIES

EDITED BY

ALLAN HUME

1876.

VOL. IV.

611
525



Acc-No- 443
Date - 12/12/06

CALCUTTA:
PRINTED AND PUBLISHED BY A. ACTON, AT THE CALCUTTA CENTRAL PRESS,
5, COUNCIL HOUSE STREET.

598.05
HUM

# CONTENTS OF VOL. IV.

1876.

Nos. 1, 2, & 3.—*January.*


*Page.*

NOTES ON THE AVI-FAUNA OF MOUNT ABOO AND NORTHERN GUZERAT, by Captain E. A. Butler, H. M.'s 83rd Regiment (Continued from Vol. III., page 500) ... 1

A CONTRIBUTION TO THE ORNITHOLOGY OF EASTERN TURKESTAN, by J. Scully, Surgeon, Bengal Army ... 41

ON THE GEOGRAPHICAL DISTRIBUTION OF THE GENUS PERICROCOTUS, by R. Bowdler Sharpe, F.L.S., F.Z.S., &c. ... 205

ANASTOMUS OSCITANS, by C. T. Bingham, Lieut., 33rd N.I. 212

NOVELTIES ?—
Criniger theiodes ... ... ... 214

RECENTLY DESCRIBED SPECIES, Republications.—
Suthora munipurensis, *G.-Aust. and Wald.* ... 216
Sphenocichla Roberti „ „ ... 217
Acridotheres albocinctus „ „ ... *ib.*
Pnœpyga Roberti „ „ ... 218
„ chocolatina „ „ ... *ib.*
Actinura daflaensis, *Godwin-Austen* ... 219

MR. SHARPE'S CATALOGUE OF THE STRIGES, OR NOCTURNAL BIRDS OF PREY ... ... ... ... 220

A THIRD LIST OF THE BIRDS OF TENASSERIM ... 223

NOTES—
Additions to the Avi-fauna of Sindh ... ... 225
Querquedula falcata, in Upper India ... *ib.*

LETTERS TO THE EDITOR—
Remarks on Mr. Brooks' Paper on the Birds of the Bhagiruttee ; Mountaineer ... ... *ib.*
Drymoipus terricolor and Drymoipus longicaudatus.—W. E. BROOKS ... ... 229
Pterocles coronatus and Lichtensteini.—CAPT. WISE ... ... ... ... 230
Plumage of Himantopus candidus.—J. H. GURNEY, Jun. ... ... ... ... *ib.*


Nos, 4, 5, & 6.—*December.*


NOTES ON SOME BIRDS COLLECTED IN SAMBALPOOR AND ORISSA, by V. Ball, Geological Survey ... ... 231

NOTE ON THE SYNONYMY OF SPIZALAUDA, by W. T. Blanford 237

Page.

NOTES ON AND ADDITIONS TO CEYLONESE AVI-FAUNA, WITH A NOTICE OF SOME APPARENTLY NEW SPECIES, by Capt. W. V. Legge ... ... ... ... 242

LIST OF BIRDS COLLECTED IN THE VICINITY OF KHANDALLA, MAHABLESHWAR, AND BELGAW ALONG THE SAHYADRI MOUNTAINS, AND NEAR AHMEDNAGAR IN THE DAKHAN, by the Rev. S. B. Fairbank, M.A. ... ... ... 250

ORNITHOLOGICAL NOTES AND CORRECTIONS, by W. Edwin Brooks ... ... ... ... ... 268

ADDITIONAL NOTES ON THE AVI-FAUNA OF THE ANDAMAN ISLANDS ... ... ... ... 279

NOTES ON BIRDS COLLECTED IN THE RANGOON DISTRICT OF THE IRRAWADDY DELTA, by Dr. J. Armstrong, Marine Survey ... ... ... ... ... 295

A FIRST LIST OF THE BIRDS OF THE TRAVANCORE HILLS ... 351

A NOTE ON PELLORNEUM MINOR, Hume, AND P. TICKELLI, Blyth, by Eugene W. Oates, C.E. ... ... 406

ON THE IDENTITY OF DRYMOIPUS TERRICOLOR AND D. LONGICAUDATUS ... ... ... ... 407

A NEW INDIAN IORA, by Capt. G. F. L. Marshall, R.E. ... 410

THE LACCADIVES AND THE WEST COAST ... ... 413

NOVELTIES?—

Estrelda burmanica ... ... ... 484
Alcippe Bourdilloni ... ... ... 485
Montifringilla Blanfordi ... ... ... 487
Montifringilla Mandelli ... ... ... 488

RECENTLY DESCRIBED SPECIES, Republications—

Suthora daflaensis, *God-Aust.* ... ... 489
Minla Mandelli, *God-Aust.* ... ... 490
Accentor Jerdoni, *Brooks* ... ... 491
Troglodytes neglectus, *Brooks* ... ... 492
Anorhinus Austeni, *Jerdon* ... ... 493
Prionochilus Vincens, *Selater* ... ... *ib.*
Reguloides sub-viridis, *Brooks* ... ... 494

NOTES—

Additional species from Kutch and Kattiawar ... 496
Dromas ardeola and Mergus castor from the Persian Gulf and the Mekran Coast ... *ib.*
A supercilium in Prinia Stewarti and socialis ... 497
Ruticilla nigrogularis doubtfully distinct from R. schisticeps ... ... ... *ib.*
Horeites brunnescens, Horornis fulviventris, &c. *ib.*
Dicæum olivaceum from the Bhootan Doars ... 498
Ixos annectens, Walden, identical with I. Davisoni *ib.*
Harpactes fasciatus in the Forests of Central Provinces ... ... ... ... *ib.*
Dusky type of Passer montanus from Thibet ... 499
The first plumage of Anser indicus ... ... *ib.*
Daulias Goltzii, Cabanis, from the Oudh Terai ... 500

| | Page. |
|---|---|
| Stachyrhis rufifrons from the Bhootan Doars ... | 501 |
| Caprimulgus Unwini, a pale Race of C. Europæus | *ib.* |
| Garrulax albosuperciliaris, Godwin-Austen, identical with G. sannio, Swinhoe ... ... | 502 |
| Occurrence of Larus fuscus within our limits, doubtful ... ... ... ... | *ib.* |
| Propasser Murrayi ... ... ... | 504 |
| Pyctorhis altirostris of Jerdon ... ... | *ib.* |
| Identity of Abrornis chloronotus, Hodgs. and A. maculipennis, Blyth ... ... ... | 505 |
| Motacilla dukhunensis, Sykes, the type ... | 506 |
| Official Ornithology .. ... ... | *ib.* |
| Sturnus nitens, Hume, renamed, S. ambiguus ... | 512 |
| LETTERS TO THE EDITOR— | |
| Glareola pratincola and Cotyle riparia in Sindh.—W. T. BLANFORD ... ... ... | 507 |
| Goat-sucker feigning crippleness to entice from the neighbourhood of her nest.—J. R. CRIPPS ... | 508 |
| Pterocles senegallus 70 miles north-west of Jodhpoor.—CAPT. E. A. BUTLER ... ... | *ib.* |
| Cissa speciosa on the borders of the Dhoon.—G. GREIG ... ... ... ... | 509 |
| Totanus fuscus, in summer plumage.—T. COCKBURN. | *ib.* |
| Micropternus phaioceps, nesting in Ants' nests.—T. GAMMIE... ... ... ... | 511 |
| INDEX— | |
| Species described or discriminated ... ... | i |
| Species noticed ... ... ... | iii |

# PREFACE.

It is always gratifying to find the opinions one has independently formed, and steadfastly adhered to, in the face of the nearly general dissent of our contemporaries, gradually accepted and adopted as established truths by all those best qualified to judge.

It is particularly gratifying to the Editor (who was not a little abused for starting STRAY FEATHERS,) to find now ere the completion of the 4th Vol. an almost universal concurrence as to the necessity of a special ornithological journal for India, and a pretty general admission that despite his own shortcomings, his journal has, thanks to the kind and cordial support of brother ornithologists, rendered important services to Indian Ornithology.

As regards his own shortcomings, the Editor feels that on the present occasion, he has more cause even than in former years to deprecate harsh judgments.

From circumstances entirely beyond his own control, the Editor has been this year compelled to bring out the whole volume in only two numbers, the first of which appeared in January, and the 2nd of which will appear in December.

This he feels is, in truth, a very irregular manner of doing business; all he can plead in mitigation of sentence is that as a fully occupied Government servant, liable to be sent here, there, and everywhere as the exigencies of the public service may demand, and often unable for whole months at a time to look at, or give a thought to, birds, he does his best and can do no more.

No one else can at present be found able and willing to undertake the task; the mere preparation of contributions for the press, correction of proofs, and compilation of indices, involves, in India, an amount of personal labour, of which European Editors have no conception, and when this is coupled with the facts that the press is at Calcutta, that the Editor may, as has happened this year, send a manuscript from Simla, receive a first proof there, a second proof at Jeypoor, and pass the final proof for press at Bombay, and that, again, as has happened this year, large packets of manuscript and proofs disappear altogether in the Post Office, never turning up at the stations where the Editor expected to meet them, indulgent readers will, it is hoped, make allowances for the irregularity with which the journal appears,—an irregularity, be it noted, which was foretold in the opening notice on the cover of the very first number.

*Au reste* the Editor has only to urge once more the great importance of carefully prepared local Avi-faunas and to express a hope that he may soon be favoured with some at least of those which have been now long promised.

ALLAN HUME.

*November 25th*, 1876.

Acc no 443
dt. 12/12/06

STRAY FEATHERS.

Vol. IV.] JANUARY, 1876. [Nos. 1, ~~2 & 3~~.

# Notes on the Ibifauna of Mount Aboo and Northern Guzerat.

By Captain E. A. Butler, H. M.'s 83rd Regiment.

(*Continued from page* 500, *No.* 6.)

**765 bis.—Spizalauda simillima**, *Hume.* J. A. S. B., 1870, p. 120.

The Northern Crown-crest Lark is not very common, but occurs sparingly in most localities, affecting grass land and cultivated ground.

[This species is more or less common throughout the entire region, except Sindh, where it has not yet been procured. Altho' it possibly occurs there I have seen no specimen yet from Aboo itself.

This is the smaller of the two very distinct species of this genus, characterized by the pointed crest and comparatively short hind claw, which we have in India. The larger form common about Ahmednugger and other places in the Dekhan, on the Nilghiris and the Malabar coast, is clearly, I think, Scopoli's *Alauda malabarica*, and as it is *the* lark of this species in the region worked by Col. Sykes, I believe it to be his *S. deva*, but this must be tested by an examination of his types. The smaller species I named *S. simillima*.

When first discriminating this species I had not a sufficient number of specimens at hand to do full justice to the difference in the dimensions of the two species. In *S. malabarica* the wing varies from 3·6 to 4, in adults. The bird, of which I am made in the J. A. S. B. to record the wing as 3·57, has really the wing 3·7, I cannot tell whether the mistake is mine or the printers. In *S. simillima*, the wing varies in adults from 3 to 3·3, in only one out of eighteen now before me does it reach 3·4. There is a nearly equally conspicuous difference in the size of the bill, and besides the usually paler and less rufous character of the upper plumage of *simillima*, I may note that whereas the breast spots of *malabarica* are large and conspicuous, those of *simillima* are small, and less conspicuous, and in some birds are almost entirely wanting.—A. O. H.]

## 767.—Alauda gulgula, *Frankl.*

The Indian Sky Lark is not particularly common. I found a nest near Deesa on the 8th July containing two eggs amongst some tussocks of coarse grass in the sandy bed of a river. The nest consisted of a well-woven pad of fine dry grass placed in a hollow at the root of a small tuft of grass growing on bare shingle. The eggs, which were hard set, were somewhat elongated ovals of a greyish white colour, thickly covered with yellowish brown specks with occasional lavender grey markings. The two colours forming an ill-defined confluent zone at the large end.

[I have not yet seen this, tho' it surely must there occur, from Mount Aboo. Occurs throughout the entire region, but seems rare in Sindh. All the specimens that I have examined from this region were typical *gulgulas*.—A. O. H.]

## 769.—Galerida cristata, *Lin.*

The Crested Lark is not uncommon in the plains during the cold weather, but as I cannot remember meeting with it in the hot weather, I am inclined to think it leaves this part of the country before the breeding season. It frequents open ground, ploughed fields, &c., and is often in company with *Calandrella brachydactyla*.

[Common throughout the entire region, but in many places only during the cold season; not as yet noted from Aboo.—A. O. H.]

## [772.—Crocopus phœnicopterus *Lath.*

Dr. King obtained this species at Aboo; but not in Jodhpoor, though Mr. Adam has sent it from the extreme eastern limits of that state, at Sambhur. I have not received or seen it from Sindh, Cutch or Kattiawar, but Captain Hayes Lloyd records it from the latter, but he does *not* record the next species which I have from Kattiawar, and there *may* be some mistake.—A. O. H.]

## 773.—Crocopus chlorigaster, *Blyth.*

The Southern Green Pigeon occurs throughout the plains in all well-wooded districts. It breeds in April and May, but I have never seen a nest myself, although two or three have been described to me by shikarees, which undoubtedly belonged to this species. I did not observe this bird at Aboo, but I am inclined to think it is to be found there, as it occurs in the jungles at the foot of the hill. The berries of *Ficus indica* appear to be its favorite food.

[Occurs throughout the entire region except in Sindh.—A. O. H.]

**788.—Columba intermedia,** *Strick.*

The Blue Rock Pigeon abounds all over the country, congregating often in countless flocks in wells, sacred edifices, old buildings, &c.

[Obtained at Aboo also. Common throughout the entire region.—A. O. H.]

**792.—Turtur pulchrata,** *Hodgs.*

The Indian Turtle Dove, distinguished from *T. meena*, Sykes, by the white under tail-coverts, is not common. I met with one or two examples at Aboo, but have not observed it elsewhere.

[Occurs nowhere else, so far as I yet know, throughout the entire region, except on its extreme eastern limits near Sambhur, where Mr. Adam obtained one or two stragglers during the course of several years.—A. O. H.]

**794.—Turtur cambayensis,** *Gmel.*

The Little Brown Dove is very common both on the hills and in the plains.

[Very common throughout the entire region.—A. O. H.]

**795.—Turtur suratensis,** *Gmel.*

The Spotted Dove, though not quite so plentiful as the last, is common on the hills and in many parts of the plains. In the immediate neighbourhood of Deesa it is not common.

[Occurs throughout the region, but except in the better wooded tracts, almost exclusively during the rainy season.—A. O. H.]

**796.—Turtur risorius,** *Lin.*

The Common Ring Dove abounds all over the plains, but does not occur in any numbers on the hills, in fact I only met with one or two specimens at Mount Aboo. It is particularly partial to clumps of babool trees, *Zizyphus* bushes and *Euphorbia* hedges, and breeds in great quantities at the end of the rains, commencing to lay about the second week in August.

[Very common throughout the entire region.—A. O. H.]

**797.—Turtur humilis,** *Temm.*

The Ruddy Ring Dove is common in most parts of the plains and on the hills, but in some localities it is seldom or never met with. I took a nest containing one fresh egg on the 8th July near Deesa, and saw several other nests later in the same month and in August and September.

[Occurs throughout the whole region, but nowhere in the same numerical abundance as *risorius*.—A. O. .H]

## 799.—Pterocles arenarius, *Pall.*

The Large Sand Grouse, which is so abundant in the north of Rajpootana during the cold weather, is seldom met with in this part of the country. I have never shot it myself, but have been informed by shikarees to whom I have shown skins that they have occasionally killed specimens and just recently they brought me a fine male killed six miles from Deesa, when in company with 4 others. Measured in the flesh it far exceeds Jerdon's dimensions, *viz.*:—Length, 14·5 ; wing, 9·5 ; tarsus, 5·12 ; bill at front, 0·5 ; bill at gape, 0·75.

[Does not of course occur on Aboo. Very common in Jodhpoor, not uncommon (of course during the cold season only) in most parts of Sindh. Fairly plentiful in the eastern portions of Cutch, all along the eastern shores of the Runn, and in the north-eastern portions of Kattiawar bordering on this latter. It has not yet been received or recorded from the western portions of either Cutch or Kattiawar.—A. O. H.]

## 800.—Pterocles fasciatus, *Scop.*

The Painted Sand Grouse is tolerably common in many parts of the country, breeding in the cold weather as well as in the hot.

[Very common throughout the entire region, except in Sindh, where a distinct but nearly allied species *P. Lichtensteinii* Tem., replaces it. It does not ascends Mount Aboo to any elevation.—A. O .H.]

## [801 *bis*.—Pterocles senegallus, *Lin.* (S. F. I. p. 221.)

Occurs in Northern Guzerat, along the shores of the Runn. I obtained it near Soeegam (about 50 miles due west of Deesa) and Mr. James has recently met with it near Patree. Throughout Sindh it is very common in suitable localities ; it has been sent from Cutch and Northern Kattiawar, but only as yet from the neighbourhood of the Runn. I have never seen or heard of it from Jodhpoor, or from any part of Guzerat inland from the Runn.—A. O. H.]

## 802.—Pterocles exustus, *Temm.*

The Common Sand Grouse occurs in moderate numbers throughout the country.

[Common throughout the entire region.—A. O. H.]

## 803.—Pavo cristatus, *Lin.*

The Common Peacock is very plentiful in most parts of the country, abounding in the jungles at the foot of Aboo. In the neighbourhood of villages it becomes quite domestic in its habits, but in the jungle it is one of the wariest and shyest birds we have.

[Unknown in Sindh, so far as I am at present informed. Throughout the rest of the region more or less sacred in the estimation of the people and consequently very common wherever there is the least cover.—A. O. H.]

## 813.—Gallus Sonneratii, *Temm.*

The Grey Jungle Fowl, one of the finest game birds in India, is common all along the Aravalli range, even in the jungles at the foot of Aboo, where it is so much persecuted. It is not as common at Aboo, that is, actually on the hill, as it ought to be, owing to the merciless way it has been destroyed of late years both by European and Native shikarees, however its fine wild crow may still be heard of a morning and evening in the breeding season in many parts of the hill, and now that game laws, or rather I should say a close season, has been introduced in the Serohi State making the destruction of jungle fowl, spur fowl, partridges, and hares between the 1st May and the 1st September a penal offence, we may expect them to increase again shortly.

[Quite an outlier at Aboo; unknown throughout the rest of the region. Captain Butler says it is "common all along the Aravalli range," but I have never met with it northwards or eastwards of Erinpoora, and I have explored the Aravallis pretty exhaustively.—A. O. H.]

## 814.—Galloperdix spadiceus, *Gmel.*

The Red Spur Fowl is also common all along the Aravallis. It is usually found singly or in pairs and breeds like the last species during the hot weather. I have never seen the nest, but have often seen the chicks with the old birds shortly after they have been hatched in May and June.

[The same remarks apply to this species as to the last. I think it is a mistake to say that this species is common *all along* the Aravallis. I have never seen or heard of this eastwards or northwards of Erinpoorah, but the main portion of the Aravallis lies north and east of this latter place. A. O. H.]

## 818.—Francolinus vulgaris, *Steph.*

The Black Partridge is rare. I had one, sent to me last year for inspection, that was shot within two miles of Deesa, and

have heard of its occurrence in the same neighbourhood on one or two occasions since. Further north in many parts of Rajpootana it is more abundant than the next species, but I do not think it often occurs further south than Deesa, which is very near the imaginary line which is supposed by Mr. Hume (NESTS AND EGGS, Rough Draft, p. 537) to mark the southern boundary of its distribution, *viz.*, from the Runn of Cutch to Gwalior and from Gwalior to Ganjam.

[Common in Sindh, and not uncommon in Cutch. Deesa is about on the line of junction of the two species. I have never myself seen a Black Partridge from any part of Jodhpoor, which is too arid as a rule for these partridges, but Dr. Eddowes shot one at a Marwar village only 6 miles N. W. of Erinpoora. In Kattiawar it is of course the next species that occurs. I have never been able to obtain any further information of the supposed third species from Cutch, and I now believe it must have been an African bird brought over in a cage, but as I have failed to recover the skin it is impossible now to ascertain.—A. O. H.]

## 819.—Francolinus pictus, *Jerd.* and *Selby.*

The Painted Partridge is common in the plains, but does not ascend the hills. It usually affects grass Beerhs, or preserves, and low bush jungle, and breeds from the middle or end of July to the end of September, the greater number laying in August.

[Common in Kattiawar. The whole of the rest of the region lies outside the northern limits of this species which I have however seen from Anadra, Sirohi and Erinpoora.—A. O. H.]

## 822.—Ortygornis pondiceriana, *Gmel.*

The Grey Partridge is very common all over the plains and occurs sparingly on the hills as well. It breeds in the hot weather, laying principally in March, April and May. A few lay again later in the year, as I have seen fresh eggs in August; these are likely to be birds whose first nest has been destroyed.

[Common throughout the entire region.—A. O. H.]

## 826.—Perdicula cambayensis, *Lath.*

The Jungle Bush Quail (I adhere to Jerdon's nomenclature, but see NESTS AND EGGS, Rough Draft, p. 545), supplies the place of the next species on the hills and in thick jungles. It is very common at Mount Aboo, but never occurs out of the jungles, *id est*, it does not affect bare open ground like *P. asiatica*. It is exclusively, I believe, a hill resident; I have never met with it anywhere excepting in hilly jungles and, so far as my experience goes, where this species occurs the next does not. I never had any difficulty in distinguishing it from *P. asiatica*

owing to its coloring being so much brighter, especially about the head. It breeds at Aboo after the rains, but I have never succeeded in finding a nest.

[I have numerous specimens from Aboo obtained by Dr. King, but I have never seen or heard of it from any other part of the entire region, though it might turn up in the Gir jungles.—A. O. H.]

## 827.—Perdicula asiatica, *Lath.*

The Rock Bush Quail is very common in the plains, but does not ascend the hills. Unlike the last species it frequents open, rocky, cultivated and uncultivated ground with low bushes for it to take refuge in when disturbed. It begins to lay about the middle of August, at which time of year they are always found in pairs and lie very close. I have never met with it in thick jungles like the last species.

[Common throughout the entire region, except in Sindh, to which it does not, I believe, extend.—A. O. H.]

## 829.—Coturnix communis, *Bonaterre.*

The Large Grey Quail is very abundant all over the plains of Guzerat in the cold weather,* and occurs though sparingly on the hills as well. In the neighbourhood of Deesa and Ahmedabad two guns or even one good gun might without difficulty shoot 100 brace in the day.

[Common throughout the entire region during the cold season; Dr. King procured it at Aboo.—A. O. H.]

## 830.—Coturnix coromandelica, *Gmel.*

The Black-breasted or Rain Quail is also common in the plains, but I do not fancy it ascends the hills. It breeds in August and September, and the young broods appear on the wing in October.

[Occurs throughout the entire region, but apparently in Western Jodhpoor, Cutch, Kattiawar and Sindh only during the rains. —A. O. H.]

## 832.—Turnix taigoor, *Sykes*; T. pugnax, *Tem.*

The Black-breasted Bustard Quail is not common and does not ascend the hills. I found a nest containing four fresh eggs near Deesa on the 9th August. I laid a horse hair noose on each side of the tuft of grass it was placed under, and on returning to the spot about a quarter of an hour later I found the *cock* bird snared and sitting upon the eggs, probably not knowing

* The first I saw this year (1875) I shot near Deesa on the 27th August, but they do not begin to get plentiful until the middle of September, after which they swarm all over the country. I have not heard of any remaining here to breed.

that he was caught as he did not move off the eggs until I frightened him. The nest consisted of a small saucer-shaped hole scratched under a low tuft of grass growing in an open field with scarcely another blade of grass near it. It was lined with a thin loose pad of short pieces of dry grass and thin bits of stick and fell to pieces in my hand. The eggs are perfect miniature pegtops, being almost round at the large end and very pointed at the small. They are remarkably large for the size of the bird, of a dirty stone color densely covered with brown and yellow specks having good sized blackish spots and blotches sparingly scattered over the shell as well principally towards the large end. A few inky purple markings, as if below the outer surface of the shell, are also visible. An equal mixture of mustard, salt and pepper would give one a good idea of the general color of the egg. They have scarcely any gloss.

[Stoliczka obtained this in Cutch. I have neither seen nor heard of it from Sindh or Jodhpoor, or even Kattiawar, though it is probable that it occurs in the eastern portions at any rate of this latter.—A. O. H.]

## 834.—Turnix joudera, *Hodgs.* *T. Dussumierii,* apud *Jerd* nec *Tem.*

The large Button Quail occurs all over the plains wherever there is long grass and scrub jungle intermixed. It is particularly plentiful in the neighbourhood of Deesa where I had every opportunity of watching it closely and observing its habits. It is almost always found singly except in the breeding season, when it may often be seen in pairs. I found a nest near Deesa on the 15th July 1875, containing four slightly incubated eggs. It was composed of soft blades of dry grass, reminding one of the nest of a field mouse and many half-covered nests which I have seen of *Mirafra cantillans*—the entrance hole being on one side and extending nearly to the top of the nest. It was placed at the foot of a tussock of coarse grass in a preserve, and the old bird allowed me to put my foot within a few inches of her before she flew off. After leaving the nest she fluttered along the ground for four or five yards, and then feigned lameness, broken wings, &c., like other members of the family.

I snared her at the nest when she returned shortly afterwards. The eggs are very handsome and considerably smaller than those of the preceding species. They are of a dirty yellowish white color thickly speckled, spotted and blotched all over with brownish black with occasional spots and markings of inky purple and palish or dingy yellow, the whole

combining in forming quite a dark confluent cap at the large end. The eggs are almost the same shape as the last, being very broad and almost round at the large end, very small and pointed at the other, and the shell is highly glossed.

[Occurs, but very sparingly and locally, throughout the entire region, and all the specimens that I have seen, from Sindh, Cutch, Kattiawar, and Jodhpoor, were obtained towards the close of the rains, in August or September.—A. O. H.]

## 835.—Turnix Dussumierii, *Tem. T. Sykesii*, A. Smith.

The small Button Quail is common in the plains, but like the last does not ascend the hills. I caught a young one near Deesa on the 27th July in some long grass. It was only about half grown, and I took it home and reared it in a cage on white ants. The eggs must have been laid about the second week in June. The note of this species is remarkable, being a mixture of a purr and a coo, and when uttering it the bird raises its feathers and turns and twists about much in the same way, as an old cock pigeon. I have often watched them in the act of cooing within a few yards of me. If an old bird gets separated from one of its young ones it is sure to commence making this peculiar noise.

[Also occurs throughout the entire region, and is not, I believe, rare in suitable spots, though from its small size and indisposition to rise it is usually overlooked.—A. O. H.]

## 836.—Eupodotis Edwardsii, *Gray*.

The Indian Bustard occurs occasionally in this part of the country, but it is not at all common. Further north in Rajpootana in many places it is tolerably plentiful.

[Occurs throughout the entire region, but is very rare in the greater part of Sindh (least so in the Thurr and Pakhur) uncommon in Jodhpoor and Cutch, but very common in Kattiawar.—A. O. H.]

## 837.—Houbara Macqueenii, *Gray*.

The Houbara Bustard, like the last species, is a rare bird. I shot a pair in the cold weather of 1871 at Langrage about 30 miles from Ahmedabad on the Deesa road, and I have heard of one or two instances of its occurrence since.

[Common in Sindh, Cutch and Jodhpoor, occurring as far east even as Sambhur. Rare in Kattiawar, and only found there I believe, as Captain Hayes Lloyd remarks, in the northern and north-western portions. It is of course merely a cold weather visitant.—A. O. H.]

## 839.—Sypheotides aurita, *Lath.*

The Lesser Florican is not uncommon during the rains. It arrives about the beginning of July and lays in August. In the neighbourhood of Deesa although sometimes as many as seven or eight are killed by one party in a day, still four or five is considered a good bag. When they first arrive on account of the scarcity of covert, they are very wild and difficult to approach if you advance direct towards them, but by walking away from them, when you find them out in the open, first of all and then gradually circling in towards them, especially if there are two guns and each goes a different way, you can almost always get within shot of them as they squat, even on a bare fallow, when they see that they are surrounded, and allow you often to walk up to within a few yards of them before they rise. This plan answers equally well with Houbara, Grey Partridges, Sandgrouse, Plovers and many other species of birds that are difficult to approach. If you are shooting alone it is best to send your shikari one way and to go the other yourself, the shikari taking care when circling in not to approach too near the spot where the bird is lying (*i. e.*, within 50 or 60 yards), otherwise it may get up before you are within gun shot. As soon as you find that you are within shot, you should incline quickly towards the bird so as to flush him, and you will almost invariably get a fair shot, as the bird, seeing the shikari upon one side and you upon the other, trusts rather to escaping by concealment than by flight. I have often made a good bag of Grey Partridges in a day by circumventing them in this way, when, from the open nature of the country, it would have been useless to have attempted walking them up in line.

[Common throughout the entire region during the rainy season. They migrate hither from the central table-lands of the peninsular, where they spend the cold and dry season.—A. O. H.]

## 840.—Cursorius coromandelicus, *Gmel.*

The Indian Courier Plover is common all over the plains in the cold weather. It frequents open sandy plains and bare cultivated or uncultivated ground.

I believe it migrates, as I have not observed it in this part of the country, during the hot weather, but after about the 20th September it appears all over the country plentifully.

[Occurs in all the sub-divisions of the region, but in the northern parts of Sindh and the greater portion of Jodhpoor is entirely replaced by the next species. In Cutch it is rare, but

though Stoliczka preserved none I have received specimens thence.—A. O. H.]

## 840 *bis.*—Cursorius gallicus, *Gmel.*

The European Courier Plover or Cream-colored Courser is also common all over the plains during the cold weather, associating in small flocks of from five to twenty or thirty. It is an interesting bird to watch when on the ground, and in its actions much resembles *Chettusia gregaria*. When feeding they run rapidly for a few yards and then stop standing for a second or two very erect; again they dart off in another direction, pick up an insect, and again stand still watching for the next victim. They are easily approached if you walk round them as recommended for Florican, with the exception that it is better to approach these birds alone than to send another person round them, as they don't often squat, and therefore are likely to take wing if you attempt to surround them. On the wing they much resemble *Pterocles exustus*, for which species, I have no doubt, they are often mistaken, as they utter a low clucking note very similar to that bird, and fly in much the same style and at much the same altitude. The flesh is excellent eating. They arrive about the 28th September and often associate with the preceding species.

[Occurs, and I think far more abundantly than the preceding species, throughout the entire region, except in Kattiawar, whence I have seen no specimens, and where if it occurs at all it must, as Captain Hayes Lloyd suggests, occur on the northern shores or the eastern neck of the peninsular. But Kattiawar is outside the southern limits of this species, which I believe may be pretty accurately represented by a line drawn from the south-eastern corner of the Runn to a point on the Jumna a few miles south of Delhi.]

## [844.—Squatarola helvetica, *Lin.*

I obtained this in Northern Guzerat on the shores of the Runn, found it very abundant about the Kurrachee Harbour, and have seen it from other places along the coasts of Sindh, Cutch and Kattiawar. Inland and in Jodhpoor I do not know of its occurring except when migrating in autumn and spring, when stragglers are met with at many large pieces of water. Mr. Adam obtained one in *full* breeding plumage at the Sambhur Lake on the 25th September.—A. O. H.]

## 845.—Charadrius fulvus, *Gmel.*

The Golden Plover is rare, and those I have seen have invariably been single birds or small parties in company with the next species. It arrives about the beginning of October.

[This species does occur in each sub-division of the entire region, but except in Kattiawar, whence numerous specimens have been received, and where Captain Hayes Lloyd says that it is not uncommon, is everywhere apparently so rare that it can only be looked on as a straggler or through migrant. At the Sambhur Lake Mr. Adam has never once met with it. From Jodhpoor I have seen only one specimen from Palee; one from near Erinpoorah; two from Cutch. From Sindh, though we know that it occurs there, I have never yet seen a specimen.—A. O. H.]

## [846.—Cirrepidesmus Geoffroyi, *Wagler.*

I procured this in Northern Guzerat on the borders of the Runn. It is very common during the cold season along the coasts of Sindh, Cutch and Kattiawar. But neither in Sindh nor in Jodhpoor do I know of its occurring inland, except at the time of its migration from the 15th August to 15th September or during April-May, when, as in the case of *Squatarola helvetica*, (which leaves earlier and returns later) it is often met with at large pieces of water inland.—A. O. H.]

## [847.—Cirrepidesmus mongolicus, *Pall.*

The same remarks precisely as in the case of the preceding.—A. O. H.]

## [848.—Ægialophilus cantianus, *Lath.*

Procured and observed in many places in Northern Guzerat, common alike on the shores and inland on banks of rivers, lakes and tanks throughout the entire region.—A. O. H.]

## 849.—Ægialitis curonicus, *Gmel.*

The Common Small Ringed Plover is common in the plains in the rains and during the cold weather, and I am inclined to think that this was one of the species of *Ægialitis* I saw at Aboo which I have previously alluded to. It frequents the edges of tanks and river beds, and runs along the sand at a great pace. It occurs singly some times and at other times in small parties, varying in number from three or four to twenty and upwards.

[Common throughout the entire region, during the cold season; more common inland I think than on the shore.—A. O. H.]

## 852.—Chettusia gregaria, *Pallas.*

The Black-sided Lapwing is very common during the cold weather in the neighbourhood of Deesa (further south it is not so plentiful,) congregating in flocks, varying in numbers from four or five to fifty or sixty. Like the last two species it frequents open

sandy and grass maidans and bare cultivated or uncultivated ground, and does not assume the handsome black and chestnut plumage of the head, neck and abdomen much before February.

I am doubtful whether the adults of this species retain the black crown and abdomen all the year round or not, but am inclined to think that they do not, (Vide Vol. I., p. 232), as *all* of the birds when they first arrive, which is about the 3rd October, appear in what is described by Dr. Jerdon and Dr. Bree as the plumage of the *young* bird, remaining in that garb, a description of which I give below, until February, in which month they begin to assume the gay plumage of the adult birds. Surely *all* of the birds that visit this part of the country in the cold weather cannot be *young* birds?

*Description.*—Forehead, chin and throat, whole of lower parts (excepting breast) including abdomen, flanks and lower tail-coverts, under wing-coverts, axillaries, upper tail coverts, tail and secondaries, white; upper plumage, including wing-coverts, tertiary feathers nearest the body, scapulars and upper back olivaceous brown slightly glossed with green, most of the feathers being edged with pale buff; crown brownish, with dark centres and pale edgings to the feathers; superciliary stripe, extending to the occiput and meeting at the back of the head, buffy white; a dusky line below the white supercilium from the corner of the eye to the occiput; hind neck greyish brown, each feather edged pale; sides of neck and breast greyish white with dark greyish brown central stripes to the feathers, forming a broad pectoral band; first ten quills black, the inner web white at the base of the first eight, and on nearly the whole of the inner web of the ninth and tenth.

A broad black subterminal band on all of the tail feathers, except the two laterals on each side, broadest in the centre and narrowing gradually towards the sides; central tail feathers tipped rufescent or fawn; primary coverts black. A female measured in the flesh:—Length, 12·62; wing, 8; tail, 4; bill at front, 1·44; bill at gape, 1·19. Bill black and irides blackish or very dark brown, legs and feet black very faintly tinged with lake in many specimens, though the lake is scarcely observable. It feeds principally upon coleopterous insects, grasshoppers, small caterpillars, worms, &c., all of which I have myself taken from its stomach.

[Common throughout the entire region during the cold season only. See also Stoliczka, J.A.S.B., 1872, p. 251.—A. O. H.]

## 853.—Chettusia flavipes, *Savign.* *C. leucura*, Licht.

The White-tailed Lapwing occurs in small parties round the edges of many of the tanks between Ahmedabad and Deesa. It is not very common.

[Occurs in *suitable* localities, throughout the entire region, but is absent in the more arid tracts. It is a pity to find Sharpe and Dresser perpetuating in their great work, Jerdon's mistake about this being a *rare* species in India.—A. O. H.]

**855.—Lobivanellus indicus,** *Bodd.*

The Red Wattled Lapwing, "Pity to do it," or "Did-he-do-it" as it is perhaps more generally called, is common both on the hills and in the plains, but I fancy that a great number of them migrate, as they are somewhat scarce in the hot weather, whereas in the cold they are abundant everywhere.

[Common throughout the entire region.—A. O. H.]

**856.—Lobipluvia malabarica,** *Bodd. Sarciophorus bilobus,* Gmel.

The Yellow Wattled Lapwing is not very common in the plains, and does not, that I am aware of, ascend the hills.

[Occurs throughout the entire region, but is very rare in Jodhpoor, (neither Mr. Adam at Sambhur, nor Dr. King in any part of Jodhpoor, procured it) and in the northern portion of Sindh it is virtually unknown.—A. O. H.]

**858.—Esacus recurvirostris,** *Cuv.*

The Large Stone Plover is rare. I shot a pair on a gravelly island in the bed of a river between Ahmedabad and Deesa in 1871, and I have met with it once or twice since.

[Occurs in each sub-division of the region, but *only* in beds of rivers or streams, specially where rocky or stony banks or islands crop up in these.—A. O. H.]

**859.—Œdicnemus crepitans,** *Tem.*

The Stone Plover, or Norfolk Plover, as it is often called, is tolerably common. It is quite nocturnal in its habits, lying as a rule all day under cover of some low thick tree. It seems to be somewhat partial to low babool jungle and low thick bushes in the sandy beds of dry rivers.

[Common enough wherever there is low scrub jungle of any kind on sandy plains, or groves with grass, throughout the entire region.—A. O. H.]

**863.—Grus antigone,** *Lin.*

The Sarus is common all over the country in the plains wherever there is water, and breeds towards the end of the rains.

[Common in Jodhpoor, Cutch, Kattiawar, but very rare in Sindh, indeed does not occur at all, I believe, in Northern Sindh or in the Trans-Indus portion of the province.—A. O. H.]

## 865.—Grus cinerea, *Bechst.*

The Common Crane is plentiful in the plains wherever there are large tanks in the cold weather.

[More or less common during the cold season throughout the entire region.—A. O. H.]

## 866.—Anthropoides virgo, *Lin.*

The Demoiselle Crane occurs in immense flocks all over the plains in the cold weather, arriving about the first week in October. Dr. Jerdon remarks that "it never betakes itself to tanks or jheels during the day;" this is an erroneous impression, as I have seen tanks fringed with a blue margin of these birds at least sixty yards wide, and extending over several acres of ground over and over again. I never could bring myself to appreciate the flesh of this bird, which is generally considered such a delicacy.

[As in the case of Wild Geese all depends on season, and the fare they have been enjoying during the previous 6 weeks—common, during the cold season, throughout the entire region.—A. O. H.]

## 871.—Gallinago scolopacinus, *Bonap.*

The Common Snipe is very plentiful in the plains during the cold weather. I observed a few also on a small patch of marshy ground at Mount Aboo, but it is not common on the hills as a rule.

I shot a couple of full Snipe in excellent condition, and saw two or three others in a marsh near Deesa, on the 12th September 1875. I mention the fact as I have never met with them in this country so early in the season before, although I am aware they do occur even in August.

[Common throughout the entire region.—A. O. H.]

## 872.—Gallinago gallinula, *Lin.*

The Jack Snipe is also common throughout the plains in the cold weather.

[Occurs throughout the entire region.—A. O. H.]

## 873.—Rhynchæa bengalensis, *Lin.*

The Painted Snipe is common in the cold weather, and it is not an uncommon thing at that time of year to find the males and the females congregated in separate flocks. As an illustration of this I may mention that upon one occasion I shot nineteen males in one strip of grass by the side of a tank near Ahmedabad without flushing a single female, and upon several other occasions I have shot a large number of females without flushing a male. They do not arrive in this part of the country

before the end of August or beginning of September, and I have heard of nests being found both in the latter month and in October in the neighbourhood of Ahmedabad and in the neighbourhood of Erinpoora.

I may mention that since writing the above I shot a Painted Snipe, (♀) near Deesa on the 16th September with the ovaries containing eggs in an advanced stage, showing that it would have laid in a few days if it had lived.

[Occurs, though sparingly during the cold season, in all suitable localities throughout the entire region, but is everywhere here more common during the rains.—A. O. H.]

### 875.—Limosa ægocephala, *Lin.*

The Black-tailed Godwit is common in the plains in the cold weather, frequenting tanks and marshy ground in considerable flocks. The flesh is excellent.

[Common throughout the entire region.—A. O. H.]

### 876.—Terekia cinerea, *Gmel.*

The Avoset Sandpiper is very common in most of the large tanks between Deesa and Ahmedabad, associating in flocks ranging in numbers usually from about ten to twenty.

[A coast species common along and for 20 or 30 miles inland from, the coasts of Sindh, Cutch and Kattiawar, but never occurring (except possibly at passage) in Jodhpoor or far in the interior of Sindh.—A. O. H.]

### 877.—Numenius { lineatus, *Cuv.* / arquata, *Lin.*

The Curlew arrives quite as early as July, as I have shot them near Deesa in the middle of that month at the very commencement of the rains.

It is common in the tank country (though rare elsewhere,) frequenting the edges of the jheels in immense flocks often numbering as many as two or three hundred. On the ground they pack very closely together, and with a heavy charge of shot well laid on you may often kill as many as ten or a dozen with a single barrel. Like most of the other of these marsh birds they generally take a long flight over the marshes about dusk and another at daybreak in the opposite direction; (I suppose to and from their feeding grounds).

[Occurs throughout the entire region, though rare in Jodhpoor, where the localities suited to it are few.—A. O. H.]

### 878.—Numenius phæopus, *Lin.*

The Whimbrel is rare. Dr. Jerdon says: "Always found in flocks in marshy ground." I have frequently seen it and shot it alone.

[The Whimbrel also is a good deal of a coast bird according to my experience, and is comparatively rare in India at any great distance from the sea. Mr. Adam never procured it at Sambhur, nor did I see it there or any where in Jodhpoor, or in the interior of Sindh, nor has any of my correspondents sent or recorded it from that entourage. Along the coasts of Sindh, it occurs; is common on those of Cutch and Kattiawar, and thence round the entire coast line to Mergui, and again at the Laccadives, Andamans and Nicobars.—A. O. H.]

## 880.—Philomachus pugnax, *Lin.*

The Ruff occurs plentifully in the marshes between Ahmedabad and Deesa, and is one of the first of our cold-weather visitants to arrive, appearing about the end of July or beginning of August. Like most of the other members of this family it is gregarious associating often in considerable sized flocks. The male is much larger than the female, measuring about 12½ inches with a 7¼-inch wing, whereas the female measures about 10¼ inches with a 6-inch wing. It is an excellent bird for table.

[Very common during autumn, winter and spring throughout the greater part of the region, but is less common in Sindh in the two latter seasons than elsewhere.—A. O. H.]

## [884.—Tringa minuta, *Leisl.*

I procured several specimens of the Common Stint, in the neighbourhood of Deesa. It is common throughout the entire region.—A. O. H.]

## 885.—Tringa Temminckii, *Leisl.*

The White-tailed Stint occurs in small flocks in most of the tanks between Deesa and Ahmedabad during the cold weather.

[Common, though less so than the preceding, throughout the entire region. I cannot understand Mr. Adam's never observing it at Sambhur.—A. O. H.]

## 891.—Actitis glareola, *Gmel.*

The Spotted Sandpiper is common in the plains during the cold weather, frequenting the edges of tanks and marshy ground. I shot a pair of females in the summer plumage by the side of the Lake at Mount Aboo on the 8th May.

[Dr. King also obtained this at Aboo. Common throughout the greater part of the region, but rare in Sindh and in portions of Jodhpoor. At Sambhur Mr. Adam failed during several years to procure it.—A. O. H.]

### 892.—Actitis ochropus, *Lin.*

The Green Sandpiper is common on the hills and in the plains during the rains and in the cold weather. It begins to arrive about the end of July.

### 893.—Actitis hypoleucos, *Lin.*

The Common Sandpiper occurs round the edges of most of the tanks between Deesa and Ahmedabad in the cold weather and in all of the rivers.

### 894.—Totanus glottis, *Lin.*

The Greenshanks is sparingly scattered over the tanks in the cold weather.

[This, as well as the two preceding, occurs throughout the entire region, but the Greenshanks is in many localities far from common.—A. O. H.]

### 895.—Totanus stagnatilis, *Bechs.*

The Lesser Greenshanks, like the last species, is not very common, but occurs sparingly throughout the tank country.

[Not uncommon in suitable localities in Jodhpoor, but not yet received or reported from Sindh, Cutch or Kattiawar.—A. O. H.]

### 896.—Totanus fuscus, *Lin.*

The Spotted Redshanks is not uncommon, occurring along the edges of most of the tanks in the cold weather.

[Occurs sparingly, except in Sindh where it is pretty common, throughout the entire region.—A. O. H.]

### 897.—Totanus calidris, *Lin.*

The Redshanks is not uncommon in the cold weather, but I have never observed it in large flocks as stated by Dr. Jerdon; on the contrary I have almost invariably met with it either singly or in pairs.

[Common throughout the entire region.—A. O. H.]

### 898.—Himantopus intermedius, *Blyth.*

The Stilt or Longlegs is very common in the plains in the cold weather, arriving about the end of July. It occurs also occasionally round the edges of the Lake at Mount Aboo.

[Common throughout the entire region.—A. O. H.]

### 899.—Recurvirostra avocetta, *Linn.*

The Avoset is not common, but may be met with singly and in small parties along the edges of many of the tanks between Deesa and Ahmedabad in the cold weather.

[Occurs throughout the whole region, but is comparatively rare in Jodhpoor, Thurr, and Pakur and Cutch. I once, towards the end of April, saw a flock of fully one hundred in a small village pond, a mere puddle, below one of the bungalows between Deesa and Ahmedabad, and shot ten or twelve with a single barrel. They were perfectly tame. In Upper India they are very much rarer than in this part of the country, very wild, and only seen on the banks of rivers or large pieces of water.—A. O. H.]

## 900.—Metopodius indicus, *Lath.*

The Bronze-winged Jacana is not common as a rule, but I found it plentiful in one or two of the tanks N. E. of Langraij between Ahmedabad and Deesa. It only occurs in tanks overgrown with dense rushes, lotus leaves, weeds, &c. It is not an easy bird to procure, as it runs out upon the top of the masses of floating weeds into the middle of the tank when pursued until out of gunshot, and then either dives or hides amongst the rushes, from which it is not easily flushed.

I tried driving them, but unless you can creep into a "guggur" unobserved, and unless you are completely hidden behind a good screen, this method of getting a shot is of no use as they have a very quick eye and stop when running towards you at about every yard to look and listen, and if once they catch sight of you they invariably take wing and fly back towards the beaters, or dive to re-appear no more until you and your beaters have left the tank. Even when you do knock one over, unless it falls stone dead, it will dive the moment it touches the water, and you will not see it again, so that when a chance does occur you cannot be too careful in taking a steady shot if you want to recover your bird. Out of five I knocked down in one afternoon, four dived the instant they reached the water, and consequently I only procured one.

In habits and actions it closely resembles the Rails, and when on the wing flies like a Coot with its long legs stretched out behind it.

[This species does not belong at all to the region with which we are dealing. Jerdon indeed says that it is found throughout India, but this is a mistake. It does not occur, to the best of my belief, in Sindh, Cutch, Kattiawar or Jodhpoor, or indeed in any part of Rajpootana, or in the Punjaub, or in the greater portion of the N. W. Provinces. In these latter I only know of it, about Jhansi and Lullutpoor, and other places south of the Jumna, in districts east of the confluence of this river and the Ganges, and in the Sub-Himalayan Terais.—A. O. H.]

## 901.—Hydrophasianus chirurgus, *Scop.*

The Pheasant-tailed Jacana is common, being found on most of the tanks throughout the plains during the cold weather. I saw a specimen that was shot in the bed of a river near Deesa in the hot weather in the summer plumage, however this was an exceptional case, as they nearly all leave this part of the country at the end of the cold weather.

[Not uncommon in suitable localities throughout the entire region.—A. O. H.]

## 902.—Porphyrio poliocephalus, *Lath.*

The Purple Coot, though uncommon in most parts, is very plentiful on some of the tanks overgrown with weeds, lotus leaves and dense beds of bulrushes.

In such localities I found the bird tolerably tame, and saw them in dozens sitting on *the top* of the bulrushes, allowing one often to pass within easy shot of them without flying down. When walking, they have a habit of jerking their tails like the Common Waterhen (*G. chloropus*, L), and from the row they make in the rushes cackling and chasing each other through the water I fancy they are very pugnacious.

I remember seeing one once take refuge in a babool tree after being driven out of a thick bed of rushes. No sooner had he settled than an eagle (*Aquila vindhiana*) descended into the tree and seized him. The poor Coot cried out piteously making a noise very like the cries of a domestic fowl when caught to be killed. After waiting a few seconds I approached the tree and the eagle flew off dropping the Coot on the ground as it left the tree. The Coot was in a dying state when I picked it up with a deep wound in the breast inflicted by the eagle's claws. I fancy that the Tawny Eagle seldom attacks a living bird of this size unless wounded? Perhaps on account of its heavy laboured flight it thought the Coot was wounded.

[Common in Sindh and Kattiawar, less so in Cutch where there are not many localities suited to it, and very rare in Jodhpoor. Adam never got it near Sambhur, and I know only one tank in Jodhpoor where it occurs.—A. O. H.]

## 903.—Fulica atra, *Lin.*

The Bald Coot abounds on every tank of any size throughout the country in the cold weather.

[Has been once seen on the lake at Aboo. Common throughout the entire region.—A. O. H.]

## 905.—Gallinula chloropus, *Lin.*

The Water Hen is not common. I have met with it occasionally in the tanks between Deesa and Ahmedabad.

[Also obtained on one occasion at Aboo. Occurs in suitable localities throughout the entire region, but is more common in Sindh than in any other sub-division.—A. O. H.]

## 907.—Gallinula phœnicura, *Penn.*

The White-breasted Water Hen is rare in this part of the country. I shot a fine specimen in a rocky nullah at Mount Aboo on the 21st June.

[I have seen many specimens from Aboo, none from Northern Guzerat or Jodhpoor; Mr. Adam never once saw it near Sambhur. It occurs in Sindh, but only along the courses of some of the canals. In Cutch and Kattiawar it occurs, as I have specimens from both, but it is certainly not common in the former.—A. O. H. ]

## 908.—Porzana akool, *Sykes.*

The Brown Rail occurs on the hills and in the plains, frequenting rocky nullahs, beds of rivers, and marshy grounds. It is seldom seen as it prefers hiding in the long grass or rushes or in a thick bush to taking wing, when disturbed. It runs with great speed, and I have often seen them go to ground under a large stone or in a hole in the bank and remain there for upwards of 15 or 20 minutes before emerging again so as to escape observation. They swim well and closely resemble the common Water Hen in their habits, jerking the tail constantly when walking in exactly the same manner as that species. I have found them in hedgerows, occasionally at considerable distances from the water. It is by no means common, and I do not fancy it migrates, as I shot a specimen at Mount Aboo in the middle of May. Of course it moves from those parts of the country where the rivers and marshes are dry during the hot weather.

[Mr. Adam found it not uncommon about Sambhur, but I have never yet seen or heard of it from Jodhpoor, Sindh, Cutch or Kattiawar; at the same time it is such a skulk that it very likely does occur in all these sub-divisions, although not yet noticed from any one of them. Dr. Eddowes I may note, sent it to me from Erinpoorah.—A. O. H.]

## 915.—Leptoptilos argala, *Lin.*

The Gigantic Stork or Adjutant is a rare bird in this part of the country. I saw three in company with a quantity of vultures (*Otogyps calvus* and *Gyps indicus*,) feeding on the carcase of a dead camel near Deesa on the 20th August. And subsequently later on in the year I frequently observed them in small parties of six or eight fishing the bed of the Burnath River.

Again I saw one Adjutant during a recent trip, and that was sitting upon a low stack of corn in company with a quantity of vultures near a village I passed through on the road to my shooting ground, 28th November.

[Occurs, somewhat sparingly, throughout the entire region, but in the more arid tracts, the greater parts of Jodhpoor and Sindh, is scarcely ever seen except during the rains.—A. O. H.]

## 917.—Mycteria asiatica, *Lath.*

The Black-necked Stork occurs in the plains in most of the rivers and marshes. It is not however very common.

[Occurs in suitable localities throughout the entire region, but is rare as a whole in Sindh, Cutch and Jodhpoor; in Kattiawar Capt. Hayes Lloyd says it is common.—A. O. H.]

## 918.—Ciconia nigra, *Lin.*

The Black Stork is rare, and hitherto I have only met with one specimen, and that was standing alone on an island in the middle of one of the tanks between Deesa and Ahmedabad. I examined it very closely with my field glasses, so that there can be no doubt of its identity.

[Very common in Sindh along the course of the Indus, and has been obtained in Kattiawar, Cutch and Jodhpoor, but is in the latter certainly, (Mr. Adam never saw it near Sambhur) and in the two former probably, a rare straggler.]

## 919—Ciconia alba, *Belon.*

The White Stork occurs all over the plains in the cold weather, frequenting marshy ground, tanks, &c. It is not however very plentiful.

[Occurs in each sub-division of the whole region, and though Mr. Adam failed to obtain it at Sambhur, I do not think it is very rare in other parts of Jodhpoor more suited to its habits, or in any of the sub-divisions.—A. O. H.]

## 920.—Ciconia leucocephala, *Gmel.*

The White-necked Stork is tolerably common in the plains in all of the rivers and marshes. I observed it also at Mount Aboo feeding by the side of the Lake.

[Dr. King also obtained it at Mount Aboo. Mr. Adam notes this as a regular visitant during the rains to the Sambhur Lake. I myself never saw it in any other part of Jodhpoor that I can remember, and I have neither seen nor heard of it thence or from Sindh, Cutch or Kattiawar. I cannot believe that it occurs in none of these, but it is not yet on record thence.—A. O. H.]

**923.—Ardea cinerea,** *Lin.*

The Blue Heron is common all over the plains.

[And in suitable localities throughout the entire region.—A. O. H.]

**924.—Ardea purpurea,** *Lin.*

The Purple Heron, though not so common as the last, is met with in most of the marshes in the plains.

The Purple Heron occurs in every tank where there are thick beds of rushes in which, like the Bittern, it always lies excepting when disturbed, when it flies into the open and settles generally upon some low tree until the covert is quiet again.

[Not uncommon, throughout the entire region, where rushy tanks and streams occur; but not found as a rule elsewhere, hence Mr. Adam never obtained it about Sambhur.—A. O. H.]

**925.—Herodias alba,** *Linn.*

The Large Egret occurs in all of the rivers and marshes.

[Occurs (commonly in Sindh, more sparingly elsewhere) throughout the entire region.—A. O. H.]

**[926.—Herodias intermedia,** *V. Hasselq.*

The Little White Heron is not uncommon in Northern Guzerat. Has been once shot at the lake at Aboo, and is pretty common in every sub-division of the region.—A. O. H.]

**927.—Herodias garzetta,** *Lin.*

The Little Egret is very common in most parts of the plains associating in considerable flocks. It is particularly common in the neighbourhood of Deesa.

[Obtained also at Aboo. Common everywhere throughout the entire region.—A. O. H.]

**[928.—Demiegretta gularis,** *Bosc. Ardea asha,* Sykes.

Occurs in Northern Guzerat, near the Runn. I have a specimen from Patri, killed in August; is common along the coasts of Sindh, Cutch and Kattiawar. Unknown inland in Sindh, and equally so in Jodhpoor.—A. O. H.]

**929.—Buphus coromandus,** *Bodd.*

The Cattle Egret is also common throughout the plains.

**930.—Ardeola Grayii,** *Sykes.*

The Pond Heron is very common everywhere, being found at the edge of every pool of water in the country. I did not observe it at Mount Aboo.

## 931.—Butorides javanica, *Horsf.*

The Little Green Heron occurs sparingly in all of the rivers, tanks and marshes. It sits most of the day upon the lower boughs of some thick tree or bush overhanging the water apparently at rest and seldom moving unless disturbed. It feeds principally, I fancy, in the early morning and in the evening. I have seen it on a few occasions at Mount Aboo.

[929 and 930 are common, and 931 occurs, throughout the entire region—the crepuscular habits of the latter possibly making it appear less common than it really is.—A. O. H.]

## 936.—Botaurus stellaris, *Lin.*

The Bittern is not common, but occurs occasionally in some of the tanks during the cold weather. I had, until recently, only met with the bird once or twice myself, but had heard from reliable sources of the occurrence of others.

During a recent trip however I shot two and saw one other, so that it is not so rare a bird in this part of India as I once thought. It is usually found in beds of long green rush or in high bulrushes, growing in the water and generally rises within easy shot, flapping lazily along for a short distance, and then dropping down into the rushes again.

A few are killed every year in an immense bed of rushes at a place called "Milana" about 18 miles N. E. from Deesa.

[Very common in Sindh, but I have never seen or heard of it from Jodhpoor, Cutch or Kattiawar, though it is pretty certain to occur in the latter.— A. O. H.]

## 937.—Nycticorax griseus, *Lin.*

The Night Heron is common. It spends the day at rest in some thick clump of trees, often in considerable flocks, and sallies forth at dusk making straight for its feeding ground. It has a peculiar and very unmistakeable croaking call, which it utters constantly when on the wing.

[Has been obtained on Aboo. Common throughout the entire region.—A. O. H.]

## 938.—Tantalus leucocephalus, *Gmel.*

The Pelican Ibis is common in all the marshes throughout the plains.

[Common in Jodhpoor, Cutch and Kattiawar, but not yet obtained or reported from Sindh.—A. O. H.]

## 939.—Platalea leucorodia, *Lin.*

The Spoonbill is common, associating in flocks in all of the marshes and rivers. It is an excellent bird for table. (?)

[*De gustibus!*—More or less common throughout the entire region.—A. O. H.]

### 940.—Anastomus oscitans, *Bodd.*

The Shell Ibis is not common, but occurs, singly and in small parties, sparingly in most of the tanks and rivers.

[Not uncommon in Jodhpoor, though Mr. Adam did not obtain it about the lake, but I have not as yet seen or heard of it from either Sindh, Cutch or Kattiawar!—A. O. H.]

### 941.—Threskiornis melanocephalus, *Lin.*

The White Ibis is not very common, but occurs sparingly like the last species throughout the country.

[Not uncommon in any sub-division of the whole region.—A. O. H.]

### 942.—Geronticus papillosus, *Tem.*

The Warty-headed or Black Ibis is common throughout the country.

[Very common throughout the whole region, except of course in the very desert tracts.—A. O. H.]

### 943.—Fallcinelus igneus, *Gmel.*

The Glossy Ibis is the most uncommon of the three species that occur in this part of the country, but it is by no means rare.

[Very common at all the larger lakes in Sindh and Kattiawar, less common in Cutch, and very rare in Jodhpoor. Mr. Adam has never yet seen it near Sambhur.—A. O. H.]

### 944.—Phœnicopterus roseus, *Pallas.*

The Flamingo occurs in considerable flocks on all of the large tanks in the cold weather.

[It is excessively common in Sindh and Kattiawar, less so in Cutch and Jodhpoor, (where however Dr. King procured it at Pallee in October) except at the Sambhur Salt lake, where it is very abundant.—A. O. H.]

### [944*bis*.—Phœnicopterus minor, *Geoffr. St. Hill.* (S. F., I., pp. 31, 258, 400, and II., 339.)

I received one specimen of this beautiful species killed in July in Northern Guzerat on some large swamp, between Deesa and Ahmedabad. We know but little as yet of this species. I ascertained that it occurred in Sindh in the early part of the hot weather. Capt. Fielden shot it in July in Secunderabad. It has been seen in the great Najjufgurh Jheel, 20 miles south of

Delhi, during the cold season, and Mr. Adam has given us full accounts of its occurrence in great numbers, but irregularly, at the Sambhur Lake. We have no record of its occurrence in any other part of Jodhpoor, or in Cutch or Kattiawar. They have now been observed at Sambhur in every month from October to the commencement of July. Do they breed in India? Or do they migrate to us yearly from Africa? It would be most interesting to work out the life history of this species.—A. O. H.]

## 945.—Anser cinereus, *Meyer*.

The Grey Goose is rare, and I have only twice been fortunate enough to get within shot of a flock. I was waiting on the first occasion for ducks in the centre of a narrow strip of marshy ground connecting two good-sized tanks, and soon after the coolies entered the tank in front of me to beat I heard the fine trumpet-like call of this species. Shortly afterwards, I saw a flock, consisting of about 30 birds, approaching my screen. To my great delight as they advanced they gradually descended until the leader of the "V," a fine old gander, was within 25 yards of me. I took steady aim of him and fired, and down he came within a few paces of me like a sack of turnips. I wounded another one badly with the left barrel, and recovered it later in the afternoon in some thick rushes about half a mile from the spot. The remainder of the flock, after sailing about in the greatest confusion for some time over the tank behind me, returned eventually, flying over my head at an immense height in the air. Again I fired at the leader, aiming about 1½ feet in front of his head and using an S. S. G. cartridge, apparently this time without effect, however I kept my eye on them, and after proceeding about 300 yards the bird I had shot at commenced a series of such unusual evolutions in the air that I began to suspect that he was wounded. At last he directed his flight upwards, and after rising several hundred feet, closed his wings suddenly and fell to the ground stone dead. On examination it proved to be another fine old gander with one shot hole in the neck just below the chin. I have seen a great number of birds tower, especially Partridges and occasionally Pheasants, but a wild goose under such circumstances is one of those novel and unusual sights that few men ever have a chance of witnessing. On the second occasion during a recent trip, I only saw one flock of Grey Geese numbering seven, of which I bagged two (right and left) as they passed over my head about 35 yards high.

[Very common in Sindh, and has been obtained both in Cutch and Kattiawar, but has not yet been obtained in Jodhpoor; it has not even been observed at the Sambhur Lake,

but *A. indicus has* been shot there by Mr. Adam, and near Jodhpoor by Dr. King, and is tolerably common in Sindh. Dr. Stoliczka saw it, he thought, in Cutch, and it probably occurs there and in Kattiawar, but I have not received it from either locality, nor has it been recorded from any place in Northern Guzerat.—A. O. H.]

## 950.—Sarkidiornis melanonotus, *Tem.*

The Black-backed Goose or Nuktah is not uncommon, but I have never seen more than ten or twelve together in one flock in this part of the country; on the contrary I have generally met with it singly or in small parties of twos and threes.

[Common in Kattiawar and Jodhpoor; less so in Cutch, and does not, *so far as is yet known*, extend to Sindh.—A. O. H.]

## 951.—Nettapus coromandelianus, *Gmel.*

The White-bodied Goose Teal or Cotton Teal is not common, and I have only met with it on one or two tanks surrounded with rushes and overgrown with long grass and weeds. I saw several flocks varying in numbers from four or five to twenty, and shot many specimens as they do not like to leave the tank when flushed but continue flying round and round presenting a quick shot every time they pass you. It is a perfect little goose in miniature and readily distinguished on the wing from other ducks—1*st*, by its small size; 2*nd*, by its conspicuous shining dark green wings broadly banded towards the tip of the primaries with white; 3*rd*, by its low clucking or cackling note which it keeps on uttering as long as it is on the wing. It frequents the rushes and long grass in preference to the open water.

[Although this occurs in Kattiawar it does not pertain properly to the region of which we are treating, and has never yet been obtained at the Sambhur Lake, or in any part of Jodhpoor or in Cutch or Sindh.—A. O. H.]

## 952—Dendrocygna arcuata, *Cuv.*

The Whistling Teal is not very common. I have met with it on comparatively few occasions, and have shot but few specimens.

On a recent excursion to the better watered country south of Deesa I saw two or three flocks varying in numbers from 15 to 30 birds (always on tanks overgrown with weeds and rushes); they generally rise as soon as the beaters commence to beat, and keep on flying round and round the tank at a considerable height in the air, constantly uttering their well-known "sibilant call" as Jerdon appropriately describes it until the drive is over. It is readily distinguished on the wing—1*st*, by

its heavy goose-like flight; 2*nd*, by its very dark color; 3*rd*, by its peculiar shrill note.

[Occurs throughout the entire region, but is very rare, I think, in Sindh and Jodhpoor. Mr. Adam never obtained it at Sambhur.

Although we have no record of its occurrence except on the Eastern Narra and some of the larger lakes in Sindh, I feel sure that 953 *Dendrocyna major*, Jerd., must occur during the monsoon in Guzerat, Cutch and Kattiawar.—A. O. H.]

## 954.—Casarca rutila, *Pall.*

The Ruddy Shieldrake or Brahminy Duck is tolerably common, but one of the wariest ducks that visits our marshes.

[Occurs during the cold season throughout the entire region. —A. O. H.]

## 957.—Spatula clypeata, *Linn.*

The Shoveller and the Gadwall are the two commonest species of ducks in this part of the country, and no one but those who have visited the tanks in the cold weather can form an idea of the abundance of these birds. I remember upon one occasion making an extraordinarily good bag upon a tank about 35 miles north of Ahmedabad. There were two of us out, and we took up our stands at about 2-30 P.M. At 5-30 P.M. we discontinued shooting, and sent coolies into the water to collect the dead and wounded. I laid my birds in rows as they were brought out of the water, arranging them according to species, and a more imposing sight I never saw.

There were eighty birds in all, representing fifteen different varieties, and every one of them was shot separately and on the wing, that is to say, there was no firing into the brown of big flocks closely packed on the water or mud banks, resulting in the death of half a dozen or so at one shot; the birds of which there were thousands were kept constantly on the wing by coolies beating at both ends of the tank, and as they passed our screens, which were erected upon islands in the middle of the tank, we selected single birds to shoot at. We lost a great many wounded birds that dived immediately; they fell on the water and were seen no more. My friend shot 47, which added to mine made a total of 127 ducks in three hours shooting, a bag, which I imagine, few sportsmen have beaten.

[Common throughout the entire region.—A. O. H.]

## 958.—Anas boschas, *Lin.*

The Mallard or Common European Wilduck is one of the most uncommon species we have, and only occurs in small numbers on a few of the tanks.

[Occurs throughout the entire region, but (except in Sindh where, especially in Upper Sindh, they are very common) everywhere sparingly. I have only seen one killed in Jodhpore near Pallee, and Mr. Adam has never yet obtained one near Sambhur.—A. O. H.]

## 959.—Anas pœkilorhyncha, *Pen.*

The Spotted Billed or Grey Duck, which is the largest variety we have except the Brahminy, is tolerably common. It flies as a rule in pairs, but may also often be seen in small parties. I always select this species in a drive to fire at in preference to most of the others, on account of its size and of its being such an excellent bird for table. I believe that they breed in this part of the country, as it is here all through the rains, and I came upon a brood of "flappers" of this species in one of the tanks on the 26th December. They were nearly full grown, but could not fly. One I shot, one I knocked on the head with a stick, two were caught by the beaters and one escaped by diving. The Grey Duck is one of the most difficult of any of the ducks to catch when wounded, if it once reaches the water, as it dives very freely and when it rises seldom shows more than its beak above the water which is by no means an easy object to see amongst weeds or in the rushes. One of the flappers we caught after diving for a considerable distance took refuge in a thick mass of weeds at the bottom of the tank (3 feet deep) from which moist retreat he was extracted by one of the beaters who accidentally trod on him when walking through the water in search of one of the others.

[Common throughout the entire region. It was of course of this species that Stoliczka (J. A. S. B., 1872, p. 255) shot an immature specimen in Cutch (from which I have seen many of this species), and not of either the Gadwall, which does not breed at all anywhere within Indian limits, or of the Mallard, which within these latter only breeds in the Himalayas.—A. O. H.]

## 961.—Chaulelasmus streperus, *Lin.*

The Gadwall, as I have already mentioned, is one of the commonest ducks in the country.

## 962.—Dafila acuta, *Lin.*

The Pintail Duck, although common, is never numerously represented in the bag, owing to its shy nature. It is one of the first birds to take wing when a drive commences, and as it flies very high it is by no means easy to get hold of. I have several times in the cold weather observed immense flocks of

male birds numbering, I should say, at a rough guess two or three hundred without a female amongst them.

[This and the preceding are common throughout the entire region.—A. O. H.]

### 963.—Mareca penelope, *Lin.*

The Widgeon is not common, but occurs in many of the tanks.

[Not uncommon in Sindh, common in Kattiawar, rare apparently in Cutch, and never yet sent from Jodhpoor. Mr. Adam never obtained it at the Sambhur Lake, but I have no doubt that it will prove to occur there, in seasons when the lake is full. Most of our other ducks may be met with on any river, stream, or little pond an acre or two in extent; but the Widgeon is rarely found except on good large pieces of water, and there are few such in Jodhpoor, except the Sambhur Lake, in seasons when the rainfall has been plentiful.—A. O. H.]

### 964.—Querquedula crecca, *Lin.*

The Teal is very common.

### 965.—Querquedula circia, *Lin.*

The Blue-winged Teal, though not as plentiful as the last, is also common.

It arrives at the beginning of September.

[Both the common and Garganey Teal are pretty common during the cold season throughout the entire region.—A. O. H.]

### 966 *bis*.—Querquedula angustirostris, *Menetries.*

The Marbled Duck, though far from common, occurs in may of the tanks.

[Not uncommon in Sindh, but not yet recorded from Jodhpoor, Cutch or Kattiawar, though I should expect it to occur in the latter.—A. O. H.]

### 967.—Branta rufina, *Pall.*

The Red-crested Pochard is another of those wary birds that severely tries the sportsman's patience, taking wing on the slightest indication of danger, and flying up and down the tanks invariably out of gunshot. It is not very common, but occurs on most of the large tanks.

### 968.—Aythya ferina, *Lin.*

The Red-headed Pochard is tolerably common.

### 969.—Aythya nyroca, *Güld.*

The White-eyed Pochard is not very common, but like *Branta rufina* occurs on most of the large tanks.

**971.—Fuligula cristata,** *Ray.*

The Tufted Duck is not particularly common, but occurs in most of the large tanks.

[All these four Pochards occur throughout the entire region, the last only being somewhat rare. Mr. Adam never even observed it at Sambhur, though the first year that I was there I saw several.—A. O. H.]

**973.—Mergellus albellus,** *Lin.*

The Smew is very uncommon. I have occasionally seen it on some of the tanks I have shot over, but never procured a specimen. It is a very handsome bird and its showy black and white plumage causes it to be easily recognized. It is exceedingly shy and consequently very difficult to get within gun-shot of.

[I obtained this species in Sindh, but have no record of its occurrence in Cutch, Kattiawar, or Jodhpoor. The Smew essentially pertains to large pieces of water, such as the Najuffgurh Jheel, (where, before this latter had been so largely drained as it now is, hundreds were always to be seen,) the Manchur Lake, &c. Mr. Adam has never noticed it at Sambhur, but I have no doubt that it would be found there in seasons when unusual rains have filled the Lake.—A. O. H.]

**[974.—Podiceps cristatus,** *Lin.*

I obtained a specimen of the Crested Grebe, in a large tank a few miles off the road from Deesa to Ahmedabad. I have received specimens of this from Kutch, and obtained it in Sindh and also on the western coast of Kattiawar, at Beyt and again in the lagoon at Poorbunder. I have no record of its occurrence in Jodhpoor or arid Rajpootana generally, and it has not occurred as yet in the neighbourhood of the Sambhur Lake.—A. O. H.]

**975.—Podiceps Philippensis,** *Gmel.*

The Dabchick or Little Grebe is common on every tank both on the hills and in the plains.

[Common throughout the entire region.—A. O. H.]

**980.—Larus brunneicephalus,** *Jerdon.*

The Brown-headed Gull is tolerably plentiful in the cold weather.

**983.—Sterna nilotica,** *Hasselq.*

The Gull-billed Tern is common in all of the marshes, tanks and rivers during the cold weather.

### 984.—Hydrochelidon indica, *Steph.*

The Whiskered or Small Marsh Tern is also common in the same localities as the last during the cold weather.

### 985.—Sterna seena, *Sykes.*

The Large River Tern is not uncommon, occurring in most of the marshes in the rains and during the cold weather. In the change from summer to winter plumage the bill becomes dusky brown at the tip for about half an inch.

[All these four species, 980, 983, 984, and 985, are more or less common, the former 3 during the cold season only, in suitable localities throughout the entire region. It is curious that the last has never yet been obtained near Sambhur.—A. O. H.]

### 965.—Rhynchops albicollis, *Swains.*

The Indian Skimmer is rare. I have not met with it myself, but as Dr. Newman shot three or four specimens on the lake at Mount Aboo a year or two ago, I consider that I am justified in including the species in my list.

[The occurrence of this species at the little Lake at Aboo, is so utterly abnormal that I suspect some mistake. The Skimmer is a river bird *pur et simple*. Never in 25 years experience of Indian Lakes and Swamps, have I seen a specimen on any of these and it never ascends rivers to any considerable elevation above the sea. In Sindh it is tolerably common in the Indus. It is not recorded nor have I seen it from any part of Jodhpoor, Cutch, or Kattiawar.—A. O. H.]

### 1001.—Pelecanus onocrotatus, *Lin.*

The European Pelican occurs in immense flocks on some of the tanks during the cold weather and the amount of fish they consume is almost incredible. Upon several occasions I have seen a flock form line on the bank of a small piece of water and swim across in this formation about a yard apart with their heads under water, fishing in the most regular and systematic style. On reaching the opposite bank they would waddle out of the water and either remain to plume themselves and digest their meal or take wing and fly to another tank. I have never seen them fishing in very deep water, they usually select a piece sufficiently deep to swim in, and so that they can touch the bottom with their bills when fishing with their heads under water.

[I obtained this species in Sindh, (where however *P. crispus* Bruch, is much commoner) and Mr. Adam captured a specimen at the Lake, but I have not yet seen or heard of it (though it probably occurs in all of them) from any other part of Jodhpoor, from Cutch, or Kattiawar.

I take this opportunity of noticing that the Swans, which Stoliczka (who was very short sighted) thought he saw (J.A.S.B. 1872. p. 229) on the Runn between Cutch and Pacham, were pretty certainly *P. crispus* which I have seen from this very locality, and which I saw on the Sindh coast, and again on the western coast of Kattiawar. There is not the slightest reason to believe that Swans occur anywhere within Indian limits outside the Himalayas except in the extreme North-West Punjaub. —A. O. H.]

## 1004.—Pelecanus philippensis, *Gmel.*

The Grey Pelican is about as common as the last, and occurs on the same ground.

[Is found throughout the entire region. I myself saw it at the Sambhur Lake, though Mr. Adam has failed as yet to secure any specimen there.—A. O. H.]

## 1005.—Graculus carbo, *Lin.*

The Large Cormorant occurs on all of the large tanks, specially preferring those with wooded islands, upon the trees of which, selecting as a rule those which are either dead or leafless, it delights to sit and bask in the sun with its tail spread and its wings half open. I observed it on the lake at Mount Aboo.

[Common in suitable localities throughout the entire region.—A. O. H.]

## 1006.—Graculus sinensis, *Shaw.*

The Lesser Cormorant is a bird that I am not quite sure about, but as a bird intermediate in size and somewhat different in plumage to either the last or the next species does occur both on the lake at Mount Aboo and in the plains below, I have entered it in my list under that head, and given a full description of it in the hope that some one may point out my mistake if it belongs to any other species. Measurements taken in the flesh as follows:—Length, 24; wing, 9·75, tail, 5·5; bill at front, 2·25; bill at gape, 3 inches. Upper mandible greenish black; lower mandible fleshy; gular skin yellow; legs and feet black; irides green.

*Description*:—Upper parts brownish black, slightly glossed with green; scapulars and lower hind neck silvery earth brown, having many of the feathers, especially of the scapulars, bordered conspicuously with brownish black and finely edged with pale brown.

Wings and tail dark; wing-coverts brown, glossed with green; chin and upper throat white; neck mottled brown and white; from neck to vent brownish black with a good deal of white on the breast and abdomen, the latter almost all white

in the region of the belly; thigh-coverts, like the back, black, glossed with green; lower tail-coverts dark brownish black; under wing-coverts and flanks brownish black.

The specimen I have described was shot at Mount Aboo in May.

[It is uncertain under what name this species should stand. It is probably *fuscicollis* of Stephens. Dr. King notes it from Jodhpoor, but I have seen no specimen thence, nor have I seen or heard of it from Sindh, Cutch, or Kattiawar.—A. O .H.]

## 1007.—Graculus, { javanicus, *Horsf.* / melanognathus, *Brandt.*

The Little Cormorant is not uncommon in the plains, but I did not observe it at Mount Aboo.

[Dr. King shot (and preserved) a specimen on the Lake at Aboo. This species is common in suitable localities throughout the entire region.—A. O. H.]

## 1008.—Plotus melanogaster, *Gmel.*

The Indian Snake bird is common both on the hills and in the plains. Like *Graculus carbo*, with which species it often associates, it delights to sit upon some old dead or leafless tree on an island in the middle of a tank, or on a rock rising out of the water, with its tail spread and wings half open basking in the sun.

[Occurs throughout the entire region, but very sparingly in the more arid tracts.—A. O. H.]

---

[To obtain now a clear conception of the distinctive characters of the Avifauna of Aboo, we must deduct from the 175 species that have so far been shewn to occur there, the following 78 which, elsewhere widely distributed throughout the Indian region, occur alike at Aboo, in northern Guzerat, Sindh, Cutch, Kattiawar and Jodhpoor :—

6.—Neophron ginginianus, *Daud.*
17.—Tinnunculus alaudarius, *Brisson.*
23.—Micronisus badius, *Gmel.*
24.—Accipiter nisus, *Lin.*
29.—Aquila vindhiana, *Frankl.*
33.—Pseudaëtus Bonellii, *Tem.*
48.—Poliornis teesa, *Frankl.*
51.—Circus Swainsoni, *A. Smith.*
54.—Circus æruginosus, *Lin.*
56.—Milvus govinda, *Sykes.*
100.—Cypselus affinis, *Gray.*
117.—Merops viridis, *Lin.*
123.—Coracias indicus, *Lin.*
129.—Halcyon smyrnensis, *Lin.*
134.—Alcedo bengalensis, *Gmel.*
136.—Ceryle rudis, *Lin.*
148.—Palæornis torquatus, *Bodd.*
180.—Brachypternus aurantius, *Lin.*
188.—Yunx torquilla, *Lin.*
212.—Coccystes jacobinus, *Bodd.*
214.—Eudynamys honorata, *Lin.*
217.—Centropus rufipennis, *Illiger.*
234.—Arachnechthra asiatica, *Lath.*
254.—Upupa epops, *Lin.*
257.—Lanius erythronotus, *Vigors.*
260.—Lanius vittatus, *Dum.*
265.—Tephrodornis pondiceriana, *Gmel.*
276.—Pericrocotus peregrinus, *Lin.*
278.—Buchanga albirictus, *Hodg.*
292.—Leucocerca albofrontata, *Frankl.*
323 *bis*.—Erythrosterna parva, *Bechst.*
351.—Cyanocincla cyana, *Lin.*
385.—Pycnorhis sinensis, *Gmel.*
432.—Malacocircus terricolor, *Hodg.*

480.—Thamnobia cambaiensis, *Lath.*
483.—Pratincola indica, *Blyth.*
497—Ruticilla rufiventris, *Vieill.*
514.—Cyanecula succica, *Lin.*
530.—Orthotomus longicaudatus, *Gmel.*
539.—Cisticola schœnicola, *Bonap.*
554.—Phylloscopus tristis, *Blyth.*
581.—Sylvia orphea, *Temm.*
582.—Sylvia affinis, *Blyth.*
583.—Sylvia curruca, *Gmel.*
591 *bis.*—Motacilla dukhunensis, *Sykes.*
592.—Calobates sulphurea, *Bechst.*
593 *bis.*—Budytes melanocephala, *Licht.*
597.—Pipastes arboreus, *Bechst.*
684.—Acridotheres tristis, *Lin.*
690.—Pastor roseus, *Lin.*
703.—Munia malabarica, *Lin.*
706.—Passer indicus, *Jard* and *Selby.*
711.—Passer flavicollis, *Frankl.*
721.—Euspiza melanocephala, *Gmel.*
788.—Columba intermedia, *Strick.*
794.—Turtur cambayensis, *Gmel.*
795.—Turtur suratensis, *Gmel.*
796.—Turtur risorius, *Lin.*
797.—Turtur humilis, *Temm.*
822.—Ortygornis pondiceriana, *Gmel.*
829.—Coturnix communis, *Bonaterre.*
849.—Ægialitis curonicus, *Gmel.*
855.—Lobivanellus indicus, *Bodd.*
871.—Gallinago scolopacinus, *Bonap.*
891.—Actitis glareola, *Gmel.*
892.—Actitis ochropus, *Lin.*
898.—Himantopus intermedius, *Blyth.*
903.—Fulica atra, *Lin.*
905.—Gallinula chloropus, *Lin.*
926.—Herodias intermedia, *V. Hasselq.*
927.—Herodias garzetta, *Lin.*
930.—Ardeola Grayii, *Sykes.*
931.—Butorides javanica, *Horsf.*
937.—Nycticorax griseus, *Lin.*
975.—Podiceps philippensis, *Gmel.*
1005.—Graculus carbo, *Lin.*
1007.—Graculus melanognathus, *Brandt.*
1008.—Plotus melanogaster, *Gmel.*

Also two species equally distributed through the whole region with which we are now dealing, though unlike the preceding, not characteristic of the Indian region generally, *viz*:—

489.—Saxicola picata, *Blyth.* | 716 *bis.*—Emberiza striolata, *Licht.*

Then we may also deduct 17 species common to Aboo, Northern Guzerat, Jodhpoor, Cutch, and Kattiawar, but *not* so far as is yet known extending to Sindh.

4 *bis.*—Gyps pallescens, *Hume.*
5.—Gyps bengalensis, *Gmel.*
85.—Hirundo erythropygia, *Sykes.*
90.—Cotile concolor, *Sykes.*
149.—Palæornis purpureüs, *Mull.*
160.—Picus mahrattensis, *Lath.*
197.—Xantholæma hæmacephala, *Müll.*
205.—Heirococcyx varius, *Vahl.*
436.—Malacocircus Malcolmi, *Sykes.*
462.—Molpastes pusillus, *Blyth.*
467.—Iora zeylonica, *Gmel.*
589.—Motacilla maderaspatana, *Briss.*
687.—Temenuchus pagodarum, *Gmel.*
716.—Emberiza Huttoni, *Blyth.*
738.—Carpodacus erythrinus, *Pall.*
800.—Pterocles fasciatus, *Scop.*
803.—Pavo cristatus, *Lin.*

(It should perhaps be here noticed, that out of the species included in the above lists, four, *viz.*, 432, 467, 721, 937, though occurring in other parts of Jodhpoor, have not yet occurred in its eastern-most portions, in the immediate neighbourhood of the Sambhur Lake).

We may also exclude two species, which, although occurring throughout the whole region, have not yet occurred near Sambhur or been recorded from any other part of Jodhpoor, *viz*:

55.—Haliastur indus, *Bodd.* | 907.—Porzana phœnicura, *Penn.*

and one

674.—Dendrocitta rufa, *Scop.*

which although there can be little doubt that it occurs in both, has not yet been recorded from western Jodhpoor or Cutch.

There remain therefore 75 species only, which can in any sense be considered characteristic of Mt. Aboo: the other hundred belong to the entire country round about and indicate nothing special as regards Aboo.

Now as regards these 75 species, no less than 31 belong exclusively, so far as the region with which we are dealing is concerned, to Mount Aboo, and do not, *so far as is yet known*, extend to either Jodhpoor, Cutch, Kattiawar, Sindh or even Northern Guzerat. I say "so far as is yet known," advisedly, because, as I shall have to notice further on, Jodhpoor, in the Koochawan and Marot hills and jungles, and Kattiawar, in the Girnar and Gir, present us with exact miniatures of Mount Aboo in which several Aboo species, not found elsewhere in the entire region, are already known to occur, and where we may well expect hereafter to meet with some at least of the following species which at present are only known (within the region with which we are dealing) to appear at Aboo.

F. 9.—Falco peregrinator, *Sund.*
H. 13.—Hypotriorchis subbuteo, *Lin.*
S. 35.—Spizaetus cirrhatus, *Gmel.*
W. 57.—Pernis ptilorhynchus *Tem.*
W. 75 *ter.*—Ephialtes bakhamuna *Forst.*
F. 77.—Athene radiata, *Tickell.*
H. 91.—Cotile rupestris, *Scop.*
W. 107.—Caprimulgus indicus *Lath.*,
W. 118.—Merops philippinus, *Lin.*
W. 147.—Palæornis eupatria, *Lin.*
W. 164.—Yungipicus Hardwickii, *Jerd.*
F. 171.—Gecinus striolatus, *Blyth.*
S. 193 *bis.*—Megalaima inornata, *Wald.*
W. 208.—Ololygon passerinus, *Vahl.*
S. 219.—Taccocua Leschenaultii, *Less.* (doubtful.)
W. 261.—Lanius cristatus, *Lin.*
S. 293.—Leucocirca pectoralis, *Jerd.*
W. 307.—Cyornis ruficauda, *Swain.*
S. 342.—Myiophoneus Horsfieldi, *Vigors.*
S. 359.—Merula nigropileus, *Lafr.*
S. 398.—Dumetia albogularis, *Blyth.*
S. 404 *ter.*—Pomatorhinus obscurus, *Hume.*
S. 460 *bis.*—Otocompsa fuscicaudata, *Gould.*
S. 534.—Prinia socialis *Sykes.*
592 *bis.*—Budytes Rayi, *Bonap.* (doubtful.)
S. 648.—Machlolophus Jerdoni, *Blyth.*
W. 688.—Temenuchus malabaricus, *Gmel.*
W. 705.—Estrelda formosa, *Lath.*
S. 813.—Gallus Sonneratii, *Tem.*
S. 814.—Galloperdix spadiceus, *Gmel.*
W. 826.—Perdicula cambayensis, *Lath.* (Jungle Bush-quail)

These specialities alone would give a very distinct character to the Avifauna of Aboo, as contrasted with that of the entire

region north and west of it, but we must also take into consideration 17 species which, except at Aboo, occur within the region under consideration only, in Kattiawar in connection with the Girnar and Gir, and near Sambhur, in connection with the Koochawun and Marot hills.

Aboo and the Gir, &c., W. 306.—Cyornis Tickelliæ, *Blyth.*
F. 472.—Oriolus melanocephalus, *Lin.*

Aboo and Koochawan (Jodhpoor) } F 167.—Chrysocolaptes festivus, *Bodd.*
F. 246.—Salpornis spilonota, *Frankl.*
S. 268.—Volvocivora Sykesii, *Strick.*
H. 301.—Stoparola melanops, *Vigors.*
H. 353.—Orocetes cinclorhynchus, *Vigors.*
H. 356.—Geocichla unicolor, *Tickell*
W. 538.—Prinia Hodgsoni, *Blyth.*
W. 562.—Phylloscopus indicus, *Jerd.*
W. 724.—Melophus melanicterus, *Gmel*
H. 792.—Turtur pulchrata, *Hodg.*

Aboo, the Gir, &c., (Kattiawar) and Koochawan (Jodhpoor) } W. 114.—Caprimulgus monticolus, *Frankl.*
W. 345.—Pitta coronata, *Müll.*
631.—Zosterops palpebrosus, *Tem.*
W. 645.—Parus cæsius, *Tick.*
W. 772.—Crocopus phœnicopterus, *Lath.*

And also 15 other species which occurring also in Guzerat either in connection with Aboo, or with the better wooded and watered central tracts nearer to Ahmedabad, extend in many cases to Kattiawar and Koochawan and its neighbourhood in the same manner as the preceding.

Aboo and Guzerat. H. 98.—Cypselus melba, *Lin.*
W. 102.—Cypselus palmarum, *Gray.*

Aboo, Guzerat & the Gir, &c. (Kattiawar) } F. 144.—Meniceros bicornis, *Scop.*
W. 281.—Dicrurus cœrulescens, *Lin.*
W. 660.—Corvus culmenatus, *Sykes.*

Aboo Guzerat & Koochawun. } W. 199.—Cuculus canorus, *Lin.*

H. 273.—Pericrocotus brevirostris, *Vigors.*
596.—Pipastes maculatus, *Hodgs.*
600.—Corydalla rufula, *Vieill.*
W. 699.—Lonchura punctulata, *Lin.*
W. 908.—Porzana akool, *Sykes.*
W. 920.—Ciconia leucocephala, *Gmel.*
W. 475.—Copsychus saularis, *Lin.*

Aboo, Guzerat, Kattiawar and Koochawun } W. 516.—Acrocephalus dumetorum, *Blyth.*

W. 288.—Tchitrea paradisi, *Lin.*

There remains 12 species which extend more or less into the desert country and occur some in Jodhpoor, some in Cutch, some in Sindh and some in 2 or more of these, as well as at Aboo.

Now of the 63 species, that may be said broadly to characterize Aboo as distinct from *Northern* Guzerat, and the rest of the region with which we are dealing, nearly half appear to be solely absent from the latter, because, pertaining essentially to well-wooded and watered tracts, they find no suitable haunts in these arid Western Provinces. To these I have prefixed the letter W. A good many, and to these I have prefixed the letter S., are essentially southern birds; birds of the Peninsula which for the most part find at Aboo the extreme northern limit of the area of their distribution. A few, (marked F,) are more essentially forest and jungle species, and a few more (marked H,) may be said to be hill birds, for the most part wanderers from the Himalayas to the lower hills of the Continent of India during the cold season.

In fact when we come to analyse it, the Avifauna of Aboo has nothing to surprise us, and looking to the physical conditions of the problem we might almost independently, from our knowledge of the haunts and habits of the species elsewhere, have predicted a distribution such as we now find actually to exist. Only 2 species, *Pipastes maculatus* and *Corydalla rufula*, ought certainly, it would seem from what we know of them, to extend to Jodhpoor generally, Cutch, Kattiawar and Sindh, and though hitherto overlooked in all of these, it is my firm, conviction that they will nevertheless prove to occur there.

It is, I think, rather in the forms absent from Mount Aboo, and that we might reasonably have expected to meet with there, that the Avifauna is at all abnormal.

Doubtless our list is not yet quite complete, but still several of us have collected there, and Dr. King and Captain Butler during lengthened periods, so that we know now tolerably

well what species do habitually occur there, and though a few of the following may eventually be found to visit Aboo as stragglers, the great majority are, I think, certainly absent, though found almost throughout the region we have been considering.

2.—Otogyps calvus, *Scop.*
3 *bis.*—Gyps fulvescens, *Hume*,(? represented by *pallescens.*)
8.—Falco peregrinus, *Lin* (? represented by *peregrinator.*)
11.—Falco jugger, *Gray.*
16.—Hypotriorchis chicquera, *Daud.* (represented by *subbuteo.*)
45.—Buteo ferox, *Gmel.*
59.—Elanus melanopterus, *Daud.*
76.—Athene brama, *Tem.* (represented by *radiata.*)
82.—Hirundo rustica, *Lin.*
84.—Hirundo filifera, *Stephen.*
255.—Upupa nigripennis, *Gould.* (? represented by *epops.*)
256.—Lanius lahtora, *Sykes.*
262.—Lanius arenarius, *Blyth* (? represented by *cristatus.*)
438.—Chatarrhæa caudata, *Dumeril.*
459.—Otocompsa leucotis, *Gould* (represented by *fuscicaudata.*)
481.—Pratincola caprata, *Lin.*
491.—Saxicola isabellina *Rüpp.*
492.—Saxicola deserti, *Rüpp.*
544.—Drymoipus longicaudatus, *Tickell.*
551.—Franklinia Buchanani, *Blyth.*
594.—Budytes citreoloides, *Hodgs.*
602.—Agrodroma campestris, *Lin.*
694.—Ploceus baya, *Blyth.*
756.—Mirafra erythroptera, *Jerdon.*
758.—Ammomanes phœnicura, *Frankl.*
760.—Pyrrhulauda grisea, *Scop.*
761.—Calandrella brachydactyla, *Tem.*
765 *bis.*—Spizalauda simillima, *Hume.*
767.—Alauda gulgula, *Frankl.*
769.—Galerida cristata, *Lin.*
830.—Coturnix coromandelica, *Gmel.*

I do not include the Grallatores and Natatores, because the lake at Aboo is very small, and there is too little water about the rest of the hill to attract these, but most of the species included in the above list ought, one would suppose, to occur on a comparatively low table mountain like Aboo, and that they do not (and I think this is a fact) is very noteworthy.

It is to be hoped that this avowedly imperfect sketch of the leading features of the Aboo Ornis will lead to its being still more thoroughly investigated by those on the spot.

Turning now to Northern Guzerat there is but little in its Avifauna to separate it from the rest of the generally arid region comprised within our limits. A few species already alluded to, such as *Cypselus melba*, *Pericrocotus brevirostris*, &c., and I may add perhaps *Graucalus Macei*, appear to occur in it in connection with, and originally attracted thither by Aboo. Further south in the better watered and wooded regions several species like *Meniceros bicornis*, *Locustella Hendersoni*, *Metopodius indicus*, &c., occur, which are of course unknown in the desert region.

It is the only locality in which as yet the western *Lanius collurio* has occurred, the only one, assuming Capt. Butler to be correct, in which the true *Gyps fulvus* of Europe has been obtained. In it also occur, other purely western forms, such as *Butalis grisola*, *Sylvia cinerea*, *Œdon familiaris*, *Anthus spinoletta*, *Pterocles senegalus*, and *Querquedula angustirostris*, and a few species, such as *Ploceus manyar*, and *Estrelda amandava*, which tho' reappearing in Sindh, are met with nowhere else, within the regions we are discussing but as a whole there is

little to distinguish the Avifauna of Northern Guzerat from that of Jodhpore, Cutch and Kattiawar.

The only birds that I have seen from Jodhpore, not yet included in the Guzerat or Aboo lists, are *Aquila heliaca*, *Bulaca ocellata*, *Taccocua sirkee*, *Budytes flava*, *Tringa subarquata*, *Anser indicus* and *Sterna melanogaster*.

The only Cutch birds are *Falco barbarus*, *Otus vulgaris*, *Cotile obsoleta*, (which also occurs in Sindh) *Planesticus atrogularis* (do.) Stoliczka's *Pratincola macrorhyncha* (of which I confess I am doubtful, but append the original description*) *Certhilauda desertorum* (which also occurs in Sindh) and *Pelecanus crispus*, which also occurs in Kattiawar, Sindh, and even as far eastward as the Ganges Doab, where I have shot it near Etawa.

I know of no species from Kattiawar that has not been included in Capt. Butler's list, or already like *Pterocles senegallus* mentioned in this list, except *Ægialitis minutus*, recorded by Capt. Hayes Lloyd (non vidi) *Strepsilas interpres*, *Tringa cinclus*, *Calidris arenaria*, *Larus leucophæus*, *Pelecanopus Bergii* and *Thalasseus bengalensis*; all coast birds.

In Sindh, on the other hand, a good number of species occur, which have not yet been reported from any other part of the whole region, though doubtless many of the sea-birds will yet be found to occur on the coasts of Cutch and Kattiawar.

---

* "483*bis*. Pratincola macrorhyncha, n. sp.

"I shot at the beginning of 1872 two specimens of a *Pratincola*, (probably female "the sex was unfortunately not determined), which appears to be distinct from any "other yet known. General plumage, above dull brown, all the feathers margined with pale "isabelline or fulvescent whitish, most broadly on scapulars and tertials, narrowly on the "quills; upper tail-coverts nearly entirely uniform pale fulvescent or sandy only "along the centre of a darker hue. Central tail feathers brown, the succeeding also "brown and very pale rufescent fulvous about the basal half of both webs, (not along "the shafts), the rufescent colour gradually, not abruptly, passing into the brown; outer "web of last tail feather wholly sandy or pale fulvescent white, and all have pale tips "which however easily wear off. Lores and supercilium sandy white; ears dusky. "Lower plumage fulvescent white throughout, with a slight shade of cream colour; all the "feathers on their basal halves are dark slaty, which is also the case on the upper plumage "Bill and feet nearly quite black. Total length about 5·2 to 5·5; wing, 2·85 to "2·9; first primary nearly 1 and 1·2 shorter than the second, which is very nearly "equal to the 6th and 0·24 shorter than the fourth, this being the longest; the 3rd "and 5th are sub-equal and very little shorter than the fourth; tail 2·1 to 2.25 "tarsus, 0·95 to 0·97; bill at front, 0·48 to 0·5; from gape 0·72; hind toe and claw 0·57; "hind claw alone 0·3; mid toe with claw 0·72 to 0·73 inch. The size of the bill which is "rather narrow and saxicoline, and the length of the legs readily distinguish this appar- "ently new species; it is not the female of *P. rubetra*, this having the basal half of the tail "white, and the bill shorter and broad at the base. It is also not a female or young of "*P. caprata*, moreover the length and slenderness of the hind claw does not agree "with any *Pratincola*, nor even with *Saxicola*, but strange enough with *Oreicola* "(Rhodophila.)

"One of the two specimens was shot in January near Raipur in the Wagur district, and "the other in February near Bhuj, in both cases in an open desert country with scanty low "bushes. These were the only two specimens which I saw, but possibly the bird may not "be so very rare, for I could never pay undivided attention to any ornithological subject."

F. Stoliczka, J. A. S. B., 1872, p. 238.

These birds are :—

*Lithofalco æsalon, P.*
*Aquila chrysætos, P.*
*Pandion halliætus, E.*
*Haliætus albicilla, E.*
*Milvus major, E.*
*Cypselus apus, P.*
*Coracias garrula, P.*
*Alcedo ispida, S.*
*Picus scindianus, P.*
*Hypocolius ampelinus, S.*
*Chatarrhæa Earlii, E.*
*Laticilla Burnesi, E.*
*Oriolus galbula, S.*
*Pratincola leucura, E.*
*Saxicola alboniger, S.*
*Saxicola monacha, S.*
*Acrocephalus agricolus, E.*
*Calamodyta melanopogon, E.*
*Cettia cetti, S.*
*Blanfordius striatulus, S.*
*Phylloscopus neglectus, P.*
*Reguloides occipitalis, E.*
*Sylvia delicatula, P.*
*Scotocerca inquieta, P.*
*Budytes citreola, E.*
*Ploceus bengalensis, E.*
*Bucanetes githagineus, S.*
*Ammomanes lusitania, P.*
*Pyrrhulauda melanauchen, E.*
*Alaudula Adamsi, P.*
*Palumbæna Eversmanni, P.*
*Columba livia, P.*
*Pterocles Lichtensteinii, S.*
*Pterocles alchata, P.*
*Pterocles coronatus, S.*
*Caccabis chukor, P.*
*Ammoperdix Bonhami, P.*
*Vanellus cristatus, E.*
*Dromas ardeola, E.*
*Grus leucogeranus, E.*
*Gallinago Horsfieldi. E.*
*Tringa crassirostris, E.*
*Tringa platyrhyncha, E.*
*Phalaropus fulicarius, E.*
*Lobipes hyperboreus, E.*
*Porzana maruetta, E.*
*Porzana minuta, S.*
*Ardetta minuta, P.*
*Anser erythropus, E.*
*Dendrocygna major, E.*
*Podiceps nigricollis, S.*
*Puffinus persicus, S.*
*Stercorarius parasiticus, E.*
*Larus occidentalis, S.*
*Larus Lambruschini, S.*
*Larus ichthyætus, P.*
*Larus ridibundus, E.*
*Larus Hemprichii, E.*
*Sterna caspia, E.*
*Sterna cantiaca, E.*

Of this long list, however, a considerable number, though not yet recorded from any other part of the region with which we have been dealing, might well be met with there as they occur elsewhere in India. To these I have affixed the letter E. Many others again belong equally to Sindh, and the North-West Punjab and the Western Himalayahs or Cashmere; these I have marked with the letter P. The rest, (distinguished by the letter S.) occur, so far as we know at present, nowhere else within Indian limits.—A. O. H.]

## A Contribution to the Ornithology of Eastern Turkestan.

By J. Scully, *Surgeon, Bengal Army.*

The origin of the following imperfect paper on the Birds of Kâshgharia is as follows :—

In May 1874, while officiating as Garrison Surgeon at Fort William, and when I was deep in Arabic studies, I had the honor of being appointed Medical Officer to the Kâshghar Political Agency, with orders to start off, at very short notice, to Eastern Turkestan. Although I was not instructed to make any collection of objects of Natural History, I naturally did a little in that direction, for my own satisfaction, during the twelve months I passed in the territory of the Amir of Kâshghar. On my return to Calcutta, towards the end of last year,

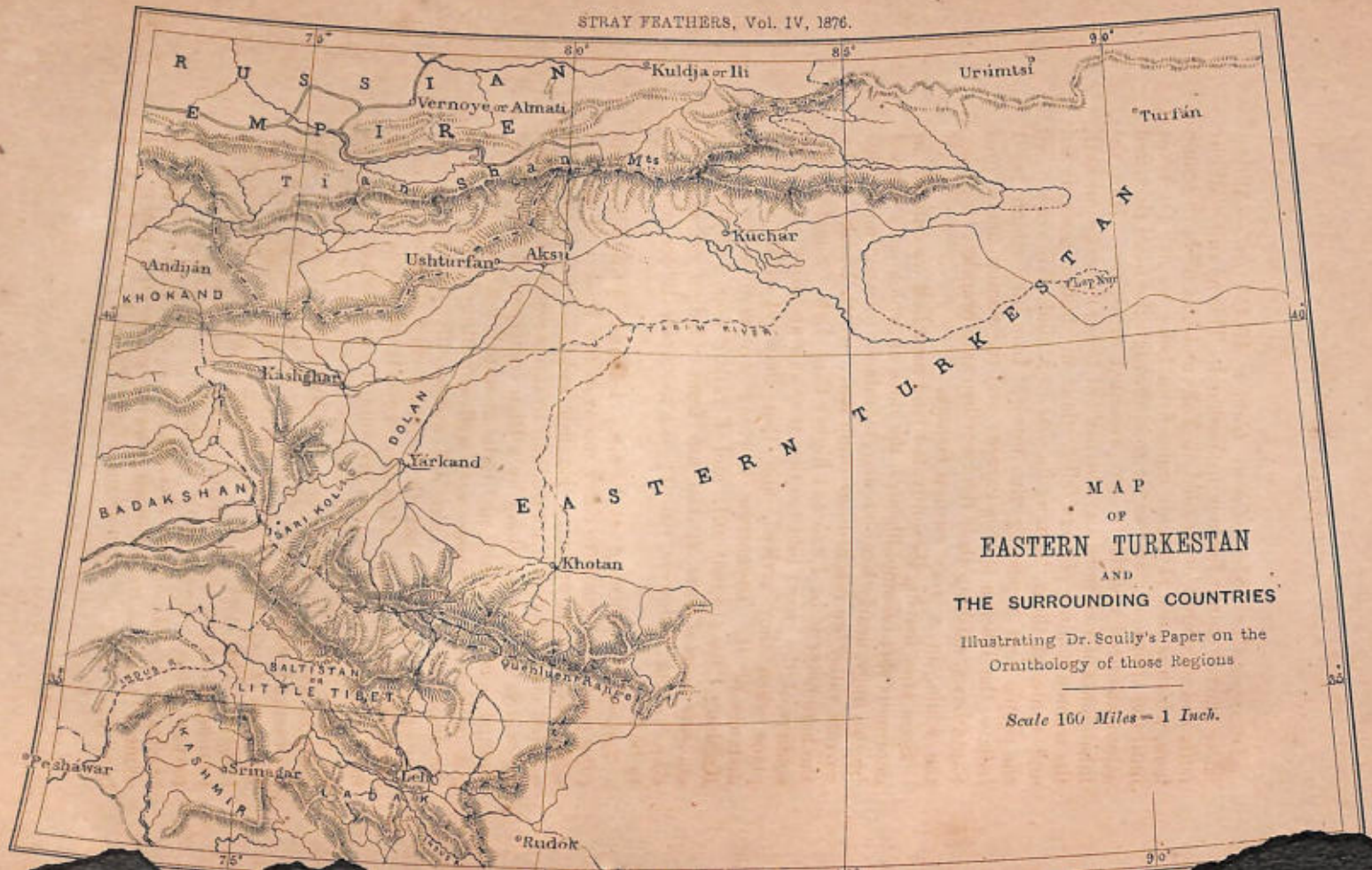
I found that I had, among other things, a collection of six hundred and fifty specimens of birds, a hundred or so of their eggs, sundry nests, and a note-book full of very rough notes which I had made about the Avifauna. On hearing of this, Mr. Hume advised me to write out a paper on the subject; and to enable me to do so, very kindly looked over all my birds and identified them for me. This contribution is the result.

In this account I have given only my own notes and have not referred to authorities. No one can be more conscious than I am that this attempt is not complete; but, at all events, it is "mine own." For the two maps which illustrate this paper, I am greatly indebted to my friend Captain Waterhouse. The larger map of the two illustrates very well the natural features of the country with which I have to deal; while the smaller sketch map shows the position of various distant places which I have to refer to—such as the Lake region of Lob, Kulja, Badakhshan and Khokand, &c.

The first part of my paper consists of either extracts from my diary, or condensations of portions of it; and is intended to give some idea of the country I visited and of the birds *as they came before my view*. While in the second part a systematic list of the birds is given, which of course quite disarranges their seasonal, horizontal, and vertical distribution. I begin Part I from the day we left Leh (Ladak) *en route* for Yarkand.

I owe every apology to the readers of "Stray Feathers" for this crude paper, the shortcomings of which (both as to matter and manner) will be evident to every one who may take the trouble to read any part of it. But in mitigation I may plead two things: First, I am the veriest beginner in Ornithology, and, consequently, unable to go into those critical remarks about the distinctions of species, and their distribution, which are so interesting to ornithologists; while as to the habits of birds, I fear my remarks will prove, as Professor Newton would say, that I have been trying to find out facts for myself which have been long known to my predecessors. Second, that having had but little previous experience in literary work, I have been called upon to get this paper ready in a very short space of time. If after this, the reader says, "Then why publish at all?" I can only reply, "All complaints to be levelled at the Editor of 'Stray Feathers,' at whose instance I prepared this paper."*

* Not expecting that Dr. Scully (who had never previously done any thing in this line) would go at all deeply into the ornithology of the countries he visited, I had intended to embody the results of any work of this nature which he might find time to do in the general work which I have in hand on the Ornithology of Kashgharia and Central Asia, based upon Stoliczka's, Henderson's and other collections. But it appeared to me when I saw how much attention he had bestowed on the subject, that this would not be fair to Dr. Scully and that he ought to publish the results of his observations in the first instance in his own name.—Ed., S. F.


RUSSIAN EMPIRE
Kuldja or Ili
Urumtsi
Turfan
Vernoye or Almati
Tian Shan Mts
Kuchar
Ushturfan
Aksu
Andijan
KHOKAND
Kashghar
Yarkand
BADAKSHAN
DOLAN
EASTERN TURKESTAN
Khotan
BALTISTAN or LITTLE TIBET
Peshawar
Srinagar
KASHMIR
Leh
LADAK
Rudok
MAP
OF
EASTERN TURKESTAN
AND
THE SURROUNDING COUNTRIES
Illustrating Dr. Scully's Paper on the Ornithology of those Regions
Scale 160 Miles = 1 Inch.

I.

*1st September* 1874.—*Camp Ganles*, 13,357 *feet.*—At last fairly started on our journey to Yarkand. This morning all our tents and luggage were loaded on Yaks and sent off to the camp here, which is only about six miles from Leh; we did not leave until the afternoon, and as we rode through the town the usual salute was fired and the troops presented arms, &c. Half the inhabitants of Leh must have turned out to see us make our exit, the women holding platters full of flour and butter towards us, and some of them burning incense in a kind of brazier. All the people kept repeating the words, 'Lam juk,' which is, I believe, the Tibetan for *bon voyage;* and the women made profound bows, clashing their thick earthenware bracelets together the while, in a very curious fashion.

Soon after leaving the cultivated land near Leh we entered an enormous sort of amphitheatre, the sides of which were formed by two huge, nearly semi-circular, moraines; then ascending this narrow valley we reached our camp here, which I make out by the barometer to be 1,825 feet higher than Leh. Some of the soldiers of the escort told me that they saw an Ibex near this place when they arrived, and that they got within shooting distance of it. To-morrow morning we have to cross the Kardong Pass (18,000 ft.), and I rather fear I shall have a *mauvais quart d'heure* at the top from "height sickness" or *dam* as our followers call it; so a moderate dinner and early to bed.

*2nd.*—This morning at 8 A.M., I found a fine black Yak (*Bos grunniens*) ready to carry me over the Pass and saddled with one of my ordinary English saddles. The beast had a wooden ring through his nose, and to this a rope was attached by which he was led along by a Bhot (native of Ladak). My strange steed rather objected to be mounted, but as soon as I got on he trudged along very well—grunting horribly nearly the whole way. The Yaks are wonderfully sure-footed and easy going animals, but they appear to feel the effects of a climb at these great elevations considerably: as we went up the mountain to the pass my animal would often stop, give an extra deep grunt, and then pant vigorously for a few minutes with its tongue hanging out like a dog. Near our camp I observed some ravens (*C. tibetanus*) walking about, a few Hoopoes (*U. epops*) and small flocks of *Montifringilla hæmatopygia*. The road at first lay along a long tongue of debris running down the centre of the valley, and afterwards up a narrow, steep, zigzag path to the top of the Pass, which I reached at 12-30. As we ascended great quantities of a strong scented *Artemisia* were noticed growing among the rocks, and here and there a solanaceous plant (*Scopolia prealta?*) which

was said to be a deadly poison to horses; numbers of Alpine Choughs (*P. alpinus*) and higher up flocks of Red-billed Choughs (*F. graculus*) were seen, and perched on a rock not far from the Pass, a solitary Lammergeyer (*G. barbatus.*)

The pass I found to be a narrow ridge; with a glacier sloping down its north side, across which a narrow path had been roughened for our descent. I remained at the top for about an hour; read the mercurial barometer, took the temperature of the air and the boiling point of water (180°·8 F.) and victimised as many of our followers as possible to find out the state of their pulse, respiration, and bodily temperature. At the end of that time I began to experience a decided feeling of nausea which reminded me at once of what I had felt about a week ago at an elevation of about 19,000 feet; so I decided to get to a lower level as quickly as possible. I walked over the glacier and mounting my Yak soon descended, over very rough stony ground, to a small lake near which our breakfast was prepared. Although I had no headache whatever, I could only manage a cup of tea; so discarding the Yak I mounted my horse and following the valley along the course of a small stream running from the Kardong glacier, rode on for about twelve miles to the village of Kardong here. On my way I noticed numbers of Redstarts (*R. erythrogastra* and *R. rufiventris*) near the stream, and a large flock of Pigeons, all *Columba rupicola* apparently.

The little Tibetan village of Kardong looks very picturesque; it is situated at the mouth of a side valley and has numerous Chortens * dotted about it as usual. I reached camp after six o'clock in the evening and found that many of our followers were suffering from the effects of the elevation of the march, but as we are now camping at a little less than 13,000 feet they will soon get over their troubles.

*3rd.*—A short march to-day from Kardong to the village of Tsatti, where we are encamped; elevation 10,589 feet. From Kardong the valley bends to the right and becomes a narrow gorge, exhibiting in places a high bed of conglomerate which has been deeply cut through by the small Kardong stream. The gorge debouches into the valley of the Shayok, nearly at right angles to the latter, and the small stream from the Kardong glacier there enters the Shayok River which at that point runs from south-east to north-west. The birds noticed near Kardong were flocks of Choughs, a few Ravens and Hoopoes, and a good number of *Montifringilla hæmatopygia;* in the steep descent through the gorge among the willow and tamarisk jungle were numerous Tree Warblers (*Phylloscopus viridanus* and *P. tristis*).

* A Chorten is a monument erected over the ashes of Lamas, or Buddhist monks.

We crossed the river in boats and our baggage was conveyed in the same way, but all the horses and ponies had to swim over. Hares abound in the thick scrubby jungle about here and Chicore (*Caccabis pallescens*) can be heard calling near the hill. The blue Hill Pigeon, tolerably numerous; Sparrows (*P. indicus*), numerous; a few *Carpodacus erythrinus;* and many White-rumped Magpies (*Pica bactriana*), dotted about. Near the river, Wagtails (*Motacilla personata*) and some Crag Martins (*Cotyle rupestris*) flying over head.

*4th.—Tsatti to Taghar, Nubra Valley.*—Got some hare shooting to-day along the road, and the Chikore very plentiful. All the birds noted yesterday were again seen, (with the exception of the Mountain Finch, *(M. hæmatopygia)* and in addition a Redstart (*R. rufiventris*) and a Yellow Wagtail (*Budytes citreola*). Along the first part of the road the evidences of the great cataclysm of the Shayok in 1841 were well marked; the space between the two hill sides being one great expanse of sand and transported debris, without a trace of vegetation. The Nubra Valley seems to be a fine place for the study of what Mr. Drew calls "alluvial fans;" I noticed one to our right, as we rode along, whose base must be over half a mile long. Before reaching our camp here we passed some remarkable sand ridges, looking like long waves at sea, which run across the valley; their leeward surfaces were minutely rippled, I suppose by a cross current of wind which blows down a side valley. Very pleasant weather; temperature in the shade, this morning at eight o'clock, 56°.

I interrupt my diary to explain that at this stage we had got into the Nubra valley in which we remained four days. Its bed is a gravelly plain of river alluvium from one to three miles in width along which the Nubra river runs down from the north to its junction with the Shayok at Tsatti. The elevation of the different villages in this valley, taking them in the order we reached them (*i. e.* proceeding northwards) is as follows:—Tsatti, 10,589; Taghar, 10,333; Panamick, 10,611; and Changlung (where we quitted the valley) 10,911. The district is very pretty and unusually fertile for Ladak. For nearly its whole length there is a dense thicket of Buckthorn (*Hippophae*) scrub, and little swampy grass plains are abundant. The villages are large and thriving, and there is a good deal of cultivation; many willow and poplar trees grow about the villages and a few eleagnus, walnut and other fruit trees. The sacred walls or Manés, Chortens and Gonpas*—are plentiful and seem to be kept in better repair than in any other part of Ladak which I saw. One prominent feature in Nubra I specially noted, *viz.*, the

* A Gonpa is a Buddhist monastery.

innumerable hedges one meets at every step, which tear one's clothes dreadfully when out shooting.

*5th.—Taghar to Panamick.*—More hare shooting this morning. Breakfasted on the road at a village called Yulkam, after leaving which we had to cross a small hill apparently rising in the valley. Passed many large alluvial fans, some of them extending about half way across the valley. Panamick is the largest village in this valley, and is surrounded by extensive cultivation, decidedly picturesque. The following birds were noticed to-day: Raven, Hill Pigeon, Hoopoe, Teal (*Q. crecca*), *Actitis hypoleucus*, Redshank (*T. calidris*), Magpie, Chicore, Sparrow, Crag Martin, several species of *Phylloscopi*, a Wheatear (*Saxicola atrogularis*), *Sylvia curruca* in the Tamarisk jungle, and *Ruticilla rufiventris* near the little streams.

*6th.*—Halted to-day at Panamick. In the afternoon I went out shooting and had capital sport: bagged five hares and two chicores. There is a hot spring near our camp here, to which a great number of our followers went to bathe; temperature of the water 134°F.

*7th.—Panamick to Changlung—about* 12 *miles.*—We got some capital hare shooting this morning after leaving Panamick. About thirty Bhots were collected to beat for us, and we placed two of our men as Jemadars over these Tibetans to make them do their work properly. The coolies formed a long line and were made to walk along steadily through the jungle, beating the bushes with sticks as they went along and making a hideous shouting. We each took one end of the line and walked about thirty yards ahead of the beaters. The hares were numerous and wonderfuly lively, shooting past like arrows, among the bushes and stones, and generally making towards the hill to our right when started. I took the left of the line, near the stream, and managed to bag five hares and a chicore before we reached our breakfast place. Before reaching Changlung we crossed the Sassér stream—a tributary torrent running out through a deep gorge to our right into the Nubra river. Changlung is a very small place—only about a couple of families live here—and the vegetation about it is very scant. It is the last inhabited place we shall see for the next twenty days' march at least. From this not only all the food we shall require for the next fortnight or so has to be carried on for us, but even fuel, and grass for the horses. The only thing we can be sure of finding in the utterly barren region we shall have to cross is—water! From our camp here very lofty snow-capped mountains are visible at no great distance, apparently closing up the north end of the Nubra Valley.

*8th.*—As soon as we left Changlung this morning we began to ascend the hill to our right, *i. e.*, the range bounding the

Nubra Valley to the east. The mountain was very steep and the ascent, by means of a narrow zigzag path, over bare granite sort of rock, very laborious. After ascending about 3,400 feet we reached a small level plateau, probably an old tank bed, and there we breakfasted. From this halting place we ascended for about 900 feet to the top of the Pass, where I remained for some time making observations: the temperature of the air at 12 o'clock was 51°·2 F., and the height, by the mercurial barometer, 15,237 feet. Looked at from the top of the ridge, the country through which our northward route lay appeared very rugged indeed: in front a high range of mountains, an extremely rocky valley below, and away to the left numerous glaciers; certainly the prospect from the Karawal Dewan Pass did not appear inviting for travel. The descent from the Pass was extremely steep, over loose gravel and sand, to the valley below, where we crossed to the right bank of the Sassér stream—the one we saw yesterday running into the Nubra Valley through a gorge. Our road along the Sassér Valley was extremely rough and stony, and many carcases of dead horses were seen near the path. The plant I mentioned before as being poisonous to horses, was met with in considerable amount near the Pass; it is said to have been planted by the Bhots in the hopes of destroying the horses of some past invaders from the north. No one suffered from height sickness to-day, and the Yarkandis who are with us say that this circumstance is very remarkable. Judging only by the steep climb up to the top of the ridge they conclude that it must be higher than the Kardong, and they explain the non-occurrence of 'dam' by saying that a merciful Providence, taking into account the difficulty of crossing the Karawal Dewan, has decreed that no height sickness should be felt there; for if it were otherwise the mountain would be impassable!

The elevation of our camp here (Toti Yailak) is 14,352 feet. Choughs, *Montifringilla hæmatopygia* and Guldenstadt's Redstart common on this side of the Pass.

*9th.*—A short march of about six miles to-day, to our camp here at Sarthang—16,625 feet above sea level. About half a mile above Toti Yailak a large glacier entered the valley through a gorge to the left; it bore an enormous amount of stones and debris, and its terminating cliff was of a slaty black color—looking like some dark kind of rock. In many places on the road to-day there was hardly even a path, and the ground we traversed was very rough and rocky; in one part a number of large stones were very evenly arranged in a pavement sort of fashion—probably the bed of some ancient glacier torrent. To-day we seem to have got into the region of glaciers, for here we are simply surrounded by them. Some of the

glaciers have their surfaces much waved and broken up: this is, I believe, due to their beds being very uneven, and thus producing a sort of ice cascade. To the left of our camp is a large ice-bed whose vertical section shows a number of differently colored strata; something like the appearance presented by some sand banks. This evening we actually *heard* the formation of moraines going on: the sounds of falling stones, which reached us every now and then, indicating that the glaciers were shedding their debris. There is hardly any vegetation in this region, with the exception of a few patches of grass and some small plants growing in the clefts of rocks; the only birds noticed to-day, besides those mentioned yesterday, were some Hill Pigeons (*C. rupicola*) and of course, the friendly Tibetan Raven.

A good many of our followers have suffered to-day from the rarefaction of the air, and some have had bleeding from the nose; every one in camp feels very breathless after comparatively slight exertion. The minimum temperature last night at Toti Yailak was 38°·5 and here to-day at four o'clock in the afternoon the temperature in the shade was 40°·6. Very unsettled weather today—occasional sunshine alternating with slight falls of snow—and very cold; steady fall of snow in the evening.

10*th*.—A considerable amount of snow fell last night, but to-day the weather has been clear and fine. Our task, after leaving Sarthang this morning, was to cross the Sassér—a pass totally unlike any of the others which I have been over. Instead of being the lowest part of a ridge of mountains, the Sassér Pass seemed to me to be made up of a rather confused knot of glaciers and their moraines which had met at one point and jammed up against each other. The ascent was long and gradual over very rough ground; we skirted two glaciers, whose terminal cliffs looked like blue marble and each presented the curious appearance of a huge perpendicular face of ice dipping into a small deep lake.

Thus far we had ridden on horseback, but beyond the second glacier we halted to breakfast, while the saddles were changed on to Yaks. Mounting the latter animals we then proceeded over some very rough ground to a huge glacier which stretched across our path. Over this glacier we had to cross, and we found that the snow which had fallen last night made this—the most difficult part of the Pass—much less slippery than it otherwise would have been. A moraine on one side of the glacier was the highest point of the Pass and there I stopped to make the usual observations. The temperature at twelve o'clock was 31°·2 (minimum last night at Sarthang, 22°·5), and the height of the Pass 17,724 feet; notwithstanding the elevation I did not suffer in the least from the rarefaction of the air.

ZOOLOGICAL GARDENS
1870.
CALCUTTA

The descent was very gradual, along an old moraine, and we soon entered a wide valley through which the Shayok River ran from left to right. Our camp here (Sassér) is 15,224 feet high, on a gravelly terrace about 400 feet above the level of the Shayok River. In front of us there is a range of high and barren rocky mountains, forming the eastern side of the valley; to the left the course of the river can only be seen for a short distance where the Shayok valley seems to be blocked up by an enormous glacier called Kumdan; to the right the Shayok River can be seen flowing along for a distance of about eight or ten miles in a wide shingly plain with high mountains on each side.

A herd of Burrel (*Ovis nahura*) was seen feeding on some stunted grass, on the opposite side of the valley, near the river. Although it seemed a hopeless place for a stalk I started off to try and get a shot at the sheep. I forded the river (riding), which opposite our camp runs in half a dozen channels, and then had a long climb up and along the hill side, trying to approach the Burrel unobserved. It was no use, however, and I had to take a running shot at one, at a distance of about four hundred yards, while I was utterly breathless from exertion. Of course I missed, and the herd (13) quietly trotted up the hill side; they stopped every now and then to get a good look at me, in a most tantalising manner.

11*th*.—*Sassèr to Murghu*.—Last night it blew rather hard, and the barometer in my tent was nearly knocked over by a falling table. One of our horses died too (the first that has yet succumbed), from the combined effects of fatigue and the elevation of the march. We commenced our march this morning by crossing the Shayok River, nearly at the point where I forded it yesterday, and then entered a narrow gorge through which a small stream ran down into the Shayok. The ravine was bounded on each side by precipices of dark slaty looking rock, and wound about considerably; at about every fifty yards we had to wade through the small clear stream, whose bed was composed of various beautifully colored pebbles, as it crossed the gorge at every bend, flowing close to the rocky walls. We breakfasted at a place where the gorge windened a little, and then ascended to a wide plain, bounded on each side by high mountains, on which large isolated boulders of rock were lying here and there. The small stream I have mentioned evidently drained this plain to the south. The plain sloped down gently to our camping ground here—a grassy valley, quite boggy in places from the presence of springs, and having high platforms of conglomerate on each side of it.

The birds observed were the Raven, the Red-billed Chough, *Montifringilla hæmatopygia*, *Saxicola deserti* and Guldenstadt's

Redstart. Near our encampment I found large numbers of Hill Pigeons (*Columba rupicola*), of which I shot six in about half an hour.—About sunset I ascended the terrace to our right and bagged a fine blue-rumped hare, among the stones, and another pigeon.

A good many of our people complain of "dam," although the elevation of this place is only 14,870 feet; poor Dr. Stoliczka died here a short time ago on his return journey from Yarkand

12*th.*—*Murghu to Burtsé.*—I woke up once last night feeling a most urgent *besoin de respirer*, and had to sit up for a little while before I recovered from my breathlessness. On waking up this morning I found that it was snowing steadily—a condition of affairs which has gone on all day long, almost without intermission—but the snow not lying much on the ground. We began the march by ascending the platform of conglomerate to the left of Murghu, and after riding a short distance came upon a warm spring gushing up from the ground. The water was collected in a sort of tank which gave off two small streams, and a great quantity of light-green slimy looking weed was growing in it. A little further on we descended into a ravine through which a stream was running down from the north, to find its way ultimately into the Shayok River. We crossed the stream and pursued our way to the right of it, alternately ascending and descending along the face of some very steep slopes composed usually of loose shingle. At last we got down to the stream again and followed its course, walking over huge blocks of stones—the roughest ground I have yet seen. A slight ascent then brought us suddenly into a wide gravelly plain, bounded on each side by very high limestone mountains with sharp peaks and caves here and there in the hill sides, down which a small stream was flowing towards us in several branches. We continued along this plain to our camp here which is 15,690 feet high. Our tents are pitched on a small bank a few feet higher than the gravel plain, and near us there is some "Burtsé" (*Eurotia*) plant growing—almost the only trace of vegetation we have seen during to-day's march. The halting place has been called after this plant.

On the road to-day I got a couple of curious round balls looking like stone, but which are said to be corals.

13*th.*—*Burtsé to Kizil Ungur.*—Rather a heavy fall of snow last night, and a minimum temperature of 21°. A short march to-day as our tents are wet and very heavy for the horses to carry; another of the poor beasts died last night. Our road was along the gravel plain all the way, precisely like the last part of yesterday's march, and hardly a trace of vegetation anywhere. On the way I saw several blue Hill Pigeons and a single solitary Snipe

(*Gallinago solitaria*). Elevation of our camp at Kizil Ungur 16,371 feet.

14*th*.—Several inches of snow fell during the night and the minimum thermometer registered 17° F. Our road after leaving Kizil Ungur lay at first along the usual gravel plain, and then through a gorge composed of coarse red breccia, where we found the little stream frozen on its surface. We emerged from this gorge into a wider stony ravine up which we went by an easy ascent, which however seemed to make the horses pant very much and laid a couple of our followers low with 'dam.'

At the top of the ascent a strange sight met our view, for we found ourselves on an immense undulating plain—the Depsang—which looked like the top of the world. The plain was gravelly and seemed to slope gently eastwards towards some low hills in that direction ; northwards in front of us we saw a few irregular, flat topped—hillocks, they looked like —scattered about ; to the left, the clear blue sky appeared to be the only boundary of our plain ; and to the south-west the distant tops of some fine snowy peaks peeped up above our level. I waited for my barometer at the highest part of the plain and while doing so had occasion to look back in the direction of the route by which we had come. A fine snowy range of mountains met my view, and looked quite continuous ; but, of course, this was a deceptive appearance, as we had passed through this apparent chain without crossing any pass, and without rising to a greater elevation than about 16,300 feet. These limestone mountains and peaks are probably, as Mr. Shaw says, the continuation of the Mustagh Range, but where is the Karakoram Range ? The only thing, seen from the vantage ground of Depsang, that *looked* like a range, we had passed through and left behind us, while the Karakoram *Pass* was distant about twenty-five miles from the Kizil Ungur edge of the plain. The altitude of the Depsang at the point where I read the barometer was 17,817 feet ! From there the road lay across the plain, northwards ; the path being marked out by many carcases of dead horses lying on each side.

The ride over the Depsang was a long one, and a bitterly cold wind blowing across made my nose feel very much like a lump of ice. There was no vegetation whatever on the plain, but I noticed some Ravens, a Hoopoe (*Upupa epops*) *Montifringilla hæmatopygia*, and, near a little streamlet running eastwards, a Wagtail (*Motacilla personata*). From the Depsang we descended into a wide sort of valley covered with bare gravel, and encamped near a shallow stream running westwards, which is, in fact, the upper part of the Shayok River. Our camp here,

Daulat Beg Uldi, *i. e.* "(the place where) Daulat Beg died," is 16,652 feet high.

15*th*.—Very cold last night, the minimum thermometer registering a temperature of 4° F. To-day the weather has been bright and clear, the only clouds noticed being a few cumuli early in the morning. Crossed the stream, which had a thin coating of ice on its surface, and after riding over open shingly ground with low rounded hills dotted about, passed three small shelter huts, built of stones against a hill side—the only evidence of man's handwork I had seen in these regions during the last eight days. Near those huts, bones of horses were scattered in unusual profusion. We then entered a long shingly valley through which a small stream flowed down southwards; the valley widened out gradually as we went along and the ascent up it was very gentle. At about eleven miles from Daulat Beg, we began to ascend slightly along the right side of the valley, then turning sharply to the right, we ascended for a few hundred yards to a small commissure of loose detritus connecting two low hills, and found ourselves on the Karakoram Pass. A howling cold wind was blowing there when I stopped to take some readings: the mercurial barometer stood at 15·334 inches (resulting height of pass, 18,172 feet); water boiled at 179°·6 F. and the temperature of the air at 4 P. M. was 33°·5. The descent, on the north side, was even less than the ascent had been, and altogether the Karakoram Pass reminded one much more of a short embankment, 300 feet or so above the level of the surrounding country, than of what one understands by a "mountain pass." I did not reach our camp here (Balti Brangsa, 16,792 feet) until after sunset. The road from the pass lay through wide shallow valleys with low hills on each side, but I certainly could not see anything like a *range*. After crossing the pass the streams were found to be running *with us*, northwards and eastwards, so we have to-day crosed the water shed of the river-system which runs into the Indian Ocean and that which flows into the Pacific through China.

The rarefaction of the air to-day made exertion very difficult, but I had no headache or other unpleasant experiences even on the pass; height-sickness, like sea-sickness, seems to be subduable by practice. The only birds observed to-day were Ravens and Mountain Finches (*Montifringilla hæmatopygia*).

16*th*.—Minimum temperature last night, 2°·5; the water in a tumbler by my bedside completely frozen. Clear frosty morning, without a vestige of cloud in the sky. Road at first along gravel valleys, with low hills on each side; a stream (one of the sources of the Yarkand river) running northwards. Sides of hills having a northern exposure covered with

snow, but nowhere else. Emerging from the valley we got on to a high tableland where we are encamped at an elevation of 15,822 feet. This place is called Darwaza Sarighot, and there is a scanty crop of yellowish grass growing about here on which our wretched horses are having a feast. From here we can see a long low looking range of mountains (the Kuen Lun) to the north of us, running from about N.W. to S.E. Birds to-day: *Corvus tibetanus*, *Montifringilla hæmatopygia*, *Otocoris penicillata*, and a solitary Hoopoe (*U. epops*).

17*th*.—Camp Chibra, 16,920 feet. I started from Darwaza Sarighot early this morning to try and get a shot at Antelope which had been seen not far from our camp yesterday evening; a fine bright morning, but very cold (minimum last night, 0°· F.). I followed the course of the stream for about a mile and then turned up to right where I got into a succession of rolling downs covered with short yellow grass. Saw four white looking Antelopes with lyre-shaped horns (*Kemas Hodgsonii*), but could not get within shot. A long ride afterwards over fairly level ground, skirting banks of shale to the left, to our camp here on a small plateau at the base of the Kuen Lun.

On arriving here I found the pony which had carried my tent, rolling on the ground, apparently suffering from gripes. Its owner had slit its nostrils and cut out pieces of the nasal cartilages to cure the beast! When a horse is suffering in this way its breathing is much distressed, and hence the nasal cartilages show out prominently at each respiration: the wise horse owner at once jumps to the conclusion that the cartilage is the *cause* of the horse's distress and at once proceeds to free the animal of the supposed offending body—I need scarcely say without benefiting his patient. I gave the pony some brandy and chlorodyne, but it died in a few hours.

18*th*.—On leaving Chibra this morning we entered a long valley, with high hills on each side, which led us by a very gentle ascent to the Suget Pass (17,872 feet), marked by the usual heap of stones. The descent was steep and abrupt, over stony ground covered with snow, into a ravine down which a stream was flowing northwards. I followed the course of this Suget stream, often wading through it, and finding its rocky bed very difficult to travel over, until the valley widened out and began to show signs of vegetation. I soon found myself riding through a stunted willow and *Hololachne* jungle, with lots of grass growing about: a most welcome sight after the arid region we have been going through for the last ten days. Our encampment here, Suget, is amongst the willows (*Suget*—

a willow) growing along the course of the stream; the elevation being only 13,307 feet.

A letter arrived this afternoon from the Dad Khwah of Yarkand (the Governor of that city) welcoming us into Eastern Turkestan. A Yuzbashi, or native Captain, is waiting to meet us, a march ahead of this place.

19*th*.—Shahid-ullah. Pleasant march this morning, at first down the Suget valley, which debouches at right angles into the valley of the Karakash; then along the latter to this place, which is the political boundary between the possessions of the Maharaja of Kashmir and the territory of the Amir of Kâshghar. The Karakash River looked very pretty with its green waters and fringe of Tamarisk and Hololachne jungle; after crossing the river once we saw the frontier fort of Shahid-ullah in a shingly valley to the right, our camp being prepared at a little distance to the left of it. A group of horsemen came galloping forward from the latter place, across the sandy plain, and forded the river just as I got to the bank of a second bend in the stream. The chief of the party, Yuzbashi Mohammed Baba, advanced and shook my hand very warmly, making a little speech in Turki, of which I did not understand one word. Fortunately a Hajji, who had come up with us from Kashmir, was close by and he told me in Arabic, that the Yuzbashi had expressed himself delighted at the meeting, and had conveyed some complimentary messages sent by the Dad Khwah. I made a suitable reply in Arabic which was translated to the Yuzbashi (*Yuz*, a hundred and *bashi*, head or chief—leader of a hundred men or centurion), and then rode on to camp. In the evening I went out shooting; the hares were very scarce, but I bagged several Chicore (*Caccabis pallidus*.)

20*th*.—Halt at Shahid-ulla. The elevation of this place is, I find, 11,732 feet; the weather here is very delightful, 63°·7 in the shade at noon; the minimum temperature last night 24°·2. The journey in the mountains has, I find, touched up the skin of our faces, so that most of us are now peeling freely—as to our noses—much as if were just recovering from scarlet fever; and we have all developed a decided *penchant* for sugar and sweetmeats. Great quantities of *Hololachne Shawiana* grow about Shahid-ullah, in bushes sometimes about four feet high; but the plant does not seem to be now in flower.

Yesterday and to-day we have been introduced to a regular institution of this country—the *Dastarkhwan*. The ceremony has been described before, but as I shall have to put some account of it into all my letters home, I may as well write a few words about the business now: Kâshgharia without a mention of the Dastarkhwan would be like Egypt without the

Pyramids, or India without its palms. We are seated on a carpet in the tent when a servant announces that the Yuzbashi wishes to offer a Dastarkhwan; permission being accorded, our entertainer appears, followed by a train of about twenty attendants, all carrying trays. The Yuzbashi is requested to be seated, and then the foremost attendant advances and spreads a gaudily colored silk or print cloth on the ground before us; and on this the trays are placed. The trays are passed on from servant to servant (after the manner of buckets of water at a fire) until the last one reaches the head attendant who is depositing the good things before us; then all the servants retire and we have a moment to glance at what has been brought. Loaves of fine bread, biscuits, melons, pistachio nuts, Trebizond dates, currants, sugarcandy, dried apricots, loaves of sugar, almonds, bonbons and sweatmeats of many sorts, a kind of white custard called *nishalla*,—but we must begin to eat some of these things. We break a loaf of bread (first saying Bism-illah—in the name of God) and inviting the Yuzbashi to join, proceed to taste anything before us that we have a fancy to. Then tea is brought in and handed round, and in a few minutes we give a sign for the dastarkhwan to be removed; the things being now carried away by *our* servants. Any stray crumb of bread is carefully replaced on the cloth, and as the table (?) cloth is being gathered up we bring our hands up to our faces and stroking our beards, say solemnly and in concert, Allahu Akbar (God is most great). The Yuzbashi retires hurriedly.

21*st*.—*Camp Toghrasu*; *elevation*, 11,255 *feet*.—We started from Shahid-ullah about noon, and after cresting the low hill in front of our camp there, descended into the main Karakash Valley, following the course of the river to this place. Rather a cold afternoon; and just as we reached camp, it began to snow pretty smartly; so we have now got our tents very wet. Saw several Hill Pigeons (*Columba rupicola*) on the way; and near the camp here one of our followers captured a Spotted Land-Rail (*Porzana maruetta*).

22*nd*.—*Kurgan Ali Nazar*.—Soon after leaving last night's camp we forded the Toghrasu, a small stream which came down from the left and entered the Karakash at right angles. Near Toghrasu one of the horses carrying a load slipped down a *khud* and was killed; another horse died during the night. Still following the Karakash River which we had to ford twice to-day; pretty deep at one place. Passed a small fort at the junction of the Kilian route with ours; a Yarkandi lives in the Fort,—to take care of the roads (!) one of my Yarkandi servants says. We met a Kafila, or merchant's party, on the way to India; one of them told me that they had started from

Yarkand only ten days ago. Saw a good many Pigeons (*C. rupicola*) on the road; and here they are very numerous, perching on the sides of the cliffs. Wheatears (*Saxicola deserti*) common about, and I noticed several flocks of Choughs.

*23rd*—*Tarbughoz*, 14,057 *feet*.—After leaving Kurgan Ali Nazar we forded the Karakash River, and then our road lay northwards up a narrow gorge, through which a small rivulet ran to join the Karakash. In this gorge I noticed some blocks looking like marble, here and there many pieces of a coarse kind of jade, and abundance of debris of mica schist. As we proceeded the gorge became narrower and very winding, and we had to go over the very worst ground we have met since leaving India: small steep ascents, over huge boulders and all kinds of loose stone, at every step; on either side tremendous vertical cliffs. Our camping ground here, near the top of the gorge is so very tight, that only a few of the tents can be pitched, and we are all perforce huddled up together. Of course there is neither pasture nor fuel on the spot. *Montifringilla hæmatopygia* seems to be quite at home here, and the Raven (*C. tibetanus*) is pretty numerous.

*24th*.—*Tarbughoz over Sanju Pass to Kichik Yailak*.—Clear bright morning on starting from Tarbughoz; the horses could neither carry men nor loads across the Sanju Pass, so we had to indent on the Kirghiz for yaks. There was a difficulty about getting a sufficient number of the yaks to take all our party across the pass, so some of our followers and things had to be left at Tarbughoz; they will rejoin us to-morrow, however. Very few Kirghiz about, to lead the yaks we got, so I had to trust very much to the tender mercies of the beast I rode to take me wherever he chose. On leaving Tarbughoz we turned sharp to the left up a very narrow rocky gorge, covered with shingle, and whose small streamlet had a sheet of ice on its surface. This gorge soon widened out, becoming steeper and steeper and disclosing to our view splendid snow-covered mountains ahead and on each side of us. A great many carcases of dead horses were lying about, near which the Ravens (*C. tibetanus*) were assembled in parties; flocks of Red-billed Choughs (*Fregilus graculus*) were flying about, uttering their desolate sounding cry; and the Mountain Finches (*Montifringilla hæmatopygia*) were running about on the ground.

As we proceeded the gorge seemed to vanish and we began to ascend the mountain side towards the ridge ahead of us, whose top was covered with snow. I heard many Snow Pheasants (*Tetraogallus tibetanus*) calling, and so dismounted to try and find them; I soon saw a party of four of these birds, one of

which I knocked over with a charge of BB shot. It is a fine bird and our servants call it a big Chicore; it is certainly much more like a Chicore than a true Pheasant. The ascent to the top of the ridge was very steep along a narrow path in the snow. Here and there we passed over bits of ice which were very slippery; even the yaks came down on their knees several times, but were up again in a moment. Near the Pass we passed two horses which had been abandoned; the poor beasts stood knee-deep in the snow, facing the abyss down which they were soon to fall; they kept their eyes shut and their breathing did not seem to be in the least embarrassed. The Pass was very narrow, barely a path, and here I stopped to make the usual observations. Although not very high, the Sanju Pass is certainly the most difficult of all we have crossed. The temperature at noon was 27·5°, water boiled at 182·8°F. and the reading of the mercurial barometer was 16·353 (deduced height 16,558 feet). The weather was too hazy to admit of one getting much of a view of the country to the north, but immediately below the ridge a succession of rolling downs could be seen, covered with fine green grass. Near the top of the Pass I saw several huge Lammergeyers (*Gypætus barbâtus*) flying about, and while descending I saw some of these birds and a Vulture (*Vultur monachus?*) perched on some jutting rocks; but of course just because I happened to want it, my rifle was a long way behind.

The descent, although winding a good deal, was fearfully steep. I rode down much against my will: I incautiously mounted my yak on the Pass before I could well make out what the road down would be like, and once started the beast would not stop, but scampered down as fast as he could. Pulling at the rope which passed through his nose was no use; indeed it only made the yak go faster. As the beast was usually *led* by this string, he looked on any traction of it, no matter from what direction, as an intimation to him to increase his speed; fortunately the yak was, as usual, wonderfully sure-footed. The country below consisted of extensive undulating ground, covered with short grass, on which herds of yaks belonging to the Kirghiz were feeding. Here I saw a great number of Marmots; as one got near them they uttered a long melancholy howl and immediately disappeared into their holes.

Our camp here (elevation 12,054 feet) is just in front of the summer camping ground of the Kirghiz, the name Kichik Yailak signifying "small encampment;" the round felt tents or "*Akoi*" of these nomads are very comfortable. The Kirghiz are very familiar, but as to the question of whether they are to be

looked upon as friendly and good-natured or simply cheeky, why I suppose that is a sort of thing which depends very much on the state of one's liver. The casualties among the horses have been heavy to-day, although the animals crossed unloaded; five ponies dead or abandoned, besides a horse belonging to a trooper of the escort, which tumbled over the cliff and was killed.

25*th*.—We did not start from Kichik Yailak to-day until 3 P.M., as we had to wait for the members of our party left yesterday at Tar-bughoz. In the morning I went up a side valley at Kichik Yailak, and had some good sport with the Snow Pheasants (*Tetraogallus tibetanus*). There were hundreds of the birds on the grassy hill sides, and when started they seemed to close their wings and shoot down towards the bottom of the valley like lightning. I had one bird "halaled" (or made lawful for a Mussulman to eat, by having its throat cut), and afterwards presented it to the Yuzbashi. *Ruticilla erythrogastra* was common near the small streams, and I observed numbers of Choughs (*Fregilus graculus*), Ravens (*C. tibetanus*), *Montifringilla hæmatopygia*, and a few Pigeons (*C. rupicola*).

The road from Kichik Yailak was at first along the grassy downs, the hillocks having parallel paths worn on their sides; then following a small stream which we had to ford several times in a narrowish gorge, we reached our camp here, Tam, on the bank of the Sanju river. The elevation of this place is only 8,875 feet; there are a couple of mud huts here, and, strange sight to us, evidences of cultivation about.

26*th*.—*Tam to Kewis*.—Rather a long march to-day and a most watery one, as we were constantly crossing and recrossing the Sanju river, which is pretty deep in places and has large boulders in its bed. After leaving Tam we passed a large tree, the first we have seen for many a day, and the remains of a wall said to have been built by the Chinese for defence; the Yarkandis do not seem to object to talk about their late masters and in conversation one hears constant references to the *Khatai wakt* or time of the Chinese. As we approached Kewis we got into flat country and saw some fields of corn. Behind our camp here are some hills of desintegrating rock up which I had a fruitless climb after Partridges (*Caccabis pallidus*) which seem to be plentiful. On the road to-day I saw—I may safely say—thousands of Pigeons (*C. rupicola*), out of which I shot some for a pie. Numbers of *Podoces humilis* running about in the fields here and regularly perching on the bushes. Several pairs of Magpies (*Pica bactriana*) seen near our camp, which is only 7,487 feet above sea level. There are only low hills near us now and at last we seem to be getting rid of the mountains through which we have so long been struggling.

27*th.*—*Sanju.*—Our road to-day from Kewis lay along the course of the Sanju stream in a broad sort of valley with only low banks on each side. As we rode along the view rather reminded one of Baramulla in Kashmir, only I could satisfy myself that at last we had got out of the mountains. It seems to me that I entered the hills, from the Indian side, at Barakau on the 25th of June last; that I reached the 'top' on the Depsang plains on the 14th of this month; and that to-day I have emerged on the Central Asian side of the hills into the plains of Eastern Turkestan. I cannot believe that I have crossed more than *one* great system of mountains, whatever endless sub-divisions into ranges Geographers may choose to adopt.

As we approached Sanju our eyes were gladdened by the sight of cultivated fields, neat hamlets and jolly looking Turk peasants. And as to Sanju itself!——trees, green fields, and human habitations! It seemed to me, after my experience of the mountains, to be the most lovely and fertile place I had ever seen. The Beg (or Governor) of Sanju met us on the road and great were the hand-shakings and interchanges of complimentary speeches. The Beg had gone over to India a few years ago, and I believe got as far as Lahore: he seemed to be astonished that he had not met me there! When we reached Sanju we found a lot of carpets spread out for us under a fine old walnut tree, and, of course, we had a splendid dastarkhwan on the spot. The birds I noticed to-day were: the White-rumped Magpie (*Pica bactriana*), near Kewis only; Wagtails (*Motacilla alba?*); *Galerita magna*, numerous about Sanju; the Black Crow (*Corvus culminatus*); thousands of young Sparrows (*Passer montanus*) flying up from the corn fields into the trees; several Kestrels (*Tinnunculus alaudarius*); and the Common Hoopoe (*Upupa epops*).

28*th.*—*Halt at Sanju.*—Our camp here is on a grassy green, which slopes down to the stream behind us. There is a long wall in front of my tent which separates us from a cluster of houses all built of unburnt bricks or mud. Sanju seems to be a sort of district rather than a town; the houses and hamlets extend along the course of the stream for six or seven miles; the Beg's house here is a large building with a courtyard in front, and, for the place, looks quite imposing. The elevation of Sanju is, I find, 6,302 feet above the sea, and the weather is at present delightful: 61° F. at noon to-day and minimum last night 42°·5. The place abounds in trees: Poplars, Walnuts, Willows and Eleagnus, the latter being simply loaded with fruit (Trebizond dates). There are smiling fields in every direction, corn, Indian hemp, barley and Indian corn; the

fields being regularly fenced off from each other, sometimes by low mud walls. A gourd plant has been trained along the wall opposite to me; the gourds being of a curious elongated shape. The Turks seem to make great use of these gourds for storing water and carrying it about. The people have a decided Tartar type of countenance, with expanded cheek-bones, and are very fair as compared with natives of the Panjab; some of the children look just like rosy-cheeked English urchins. The women wear long loose robes of a coarse undyed cotton, and the men a similar garment, but with long sleeves rolled up at the wrist, fastened round the waist by a belt; both sexes wear long top boots! The head dress of the women is a villanous kind of hat, globular, and covered usually with blue silk. The men wear a cap lined with fur and turned up at the sides; only the swells appearing to affect the troublesome turban. The weekly fair was held here to-day (Monday), a long row of stalls having been permanently erected in the Bazar for this purpose. The people strike one as being all very comfortable and well off: if there is no great wealth here there is certainly no squalid poverty.

*29th.—Sanju to Sulik Aziz Langar.*—On starting from Sanju we crossed the river and halted for breakfast and a dastarkhwan in an orchard; there we bade farewell to the Beg of Sanju, who promised that our mail bags to and from India should receive his special care and attention. We then ascended the sandy cliff, on the north side of the valley, for several hundred feet, and found ourselves on an undulating sandy desert, stretching forward as far as the eye could see. Here and there were a few hillocks and in places the sand had been blown into ridges; scant stunted bushes, however, were growing sparingly on this ground. After riding for but a short while on the desert, I saw a sand-colored bird——a little larger than a Blackbird, running away from the path. I dismounted, and after running for a little distance, so as to cut the bird off, I got a shot at it as it ran across my path; it turned out to be *Podoces Hendersoni*. In the next twelve miles over the desert I saw a dozen of these birds and managed to bag altogether six of them. Capital fun; something like hare-shooting as the birds would hardly ever fly; but they ran most swiftly. About fifteen miles from Sanju we descended a steep bank for about a hundred feet or so to our little oasis ("precious water stage"). Sulik Aziz Langar is a little fertile strip of land, on the bank of a small stream which comes down from the distant mountains and runs across the desert. There is a large tank here; a few trees; and some cultivated fields, as there are a few families living at the place. This is a capital

spot for birds; I have, since coming in, shot three specimens of *Monticola saxatilis*, two of *Saxicola Hendersoni* (both these were found in the fields) and a Rose-colored Starling (*Pastor roseus*) which was flitting about amongst the Eleagnus trees.

30*th*.—*Koshtak*.—Before leaving Langar this morning I shot a specimen of *Planesticus atrogularis*, which was flitting about amongst the trees growing near the tank; *Monticola saxatilis*, *Saxicola Hendersoni* and *Passer montanus* were plentiful. Then we made a short march of eight miles or so over the same sort of desert ground as we passed over yesterday; there were a few burnt up stunted bushes growing about, and the sand was largely intermixed with scales of mica. I shot two *Podoces Hendersoni* on the way.

Koshtak (elevation 6,052 feet) is another valley-oasis in the desert, but much larger than Sulik Aziz Langar. There are many houses here and a good deal of cultivation; and crowds of patients came to me to be treated, every sick person being accompanied by about four sympathising friends. The birds here are, *Corvus culminatus*, the Crested Lark (*Galerita magna*,) the Tree Sparrow (*Passer montanus*,) *Monticola saxatilis*, and *Saxicola Hendersoni*. Hazy weather to-day; temperature in the shade at 4 p. m., 58°; miminum last night 38° F.

1*st October*.—*Koshtak to Uï Toghrak*. Very hazy morning again. On leaving Koshtak we passed through a fringe of reeds, and then rode for some distance over ground covered with low bushes. Where the bushes ceased I shot a *Podoces Hendersoni*. Then we crossed the Kilian stream, flowing eastwards towards Guma, and fringed with a Tamarisk jungle; and the rest of the road to Uï Toghrak was over a waste of shingle and sand without a trace of vegetation or animal life. The desert was composed of a series of flat plateaux at slightly different elevations: probably an ancient lake bed where there has been irregular drainage, and consequent sinking in places. Shortly before reaching Uï Toghrak—another oasis, sunk below the level of the desert, and much resembling Koshtak—we were met by Tash Khoja, a second Yuzbashi sent by the governor of Yarkand to welcome us. He is a hearty sort of fellow, fat and red cheeked, and reminds me very much of a friend I knew at home. Tash Khoja, who is a native of Khokand—not a Yarkandi—talked most volubly in Persian, and was accompanied by a party of soldiers carrying queer muskets to which were attached rests used in firing, in shape like two-pronged forks.

Weather tolerably warm, but not unpleasantly so even in crossing the desert; the temperature in the shade here, at 4 P. M., was 63°. Birds at Uï Toghrak: Hoopoe; Tree Sparrow;

*Galerita magna; Corvus culminatus;* Wagtails (*Motacilla personata?*) near the streams; and some Kestrels (*T. alaudarius*) perching on the poplars.

*2nd.—Toghrak to Bora.*—A short march to-day over pretty much the same sort of desert as we crossed yesterday. There were a few stunted bushes growing about, however, and I saw five *Podoces Hendersoni*, of which I managed to bag two. The valley of Bora is 5,524 feet above sea-level and is much more fertile than Uï Toghrak; there are plenty of trees here and a good deal of cultivation—many fine fields of Indian corn. All the birds noted yesterday, again observed to-day.

*3rd.—Karghalik.*—We started from Bora early this morning, as we had a march of about twenty-five miles before us. After leaving the fertile valley of Bora we passed through a perfect nest of small hills, then over sandy ground, covered with pebbles, and having small bushes growing in it. Soon after this our road lay through a nearly flat desert, devoid of vegetation and covered with small stones; while crossing this part we saw a perfect mirage of trees, running deer, &c. After riding for twenty miles, we were glad to reach the oasis of Besharik—a little belt of trees and cultivation along some small streams. After a dastarkhwan at Besharik, a five miles ride across another strip of desert brought us to Karghalik, the first town we have seen in this country.

Karghalik seems to be a large and flourishing place; all the houses are one-storied and built of unburnt bricks, and the streets are clean and tidy—some of them being covered with lattice-work on which vines grow. We passed through one bazar, with long rows of stalls on each side for the weekly fair, and as we rode along, the inhabitants bowed very courteously; the people all looked cleanly dressed, in thin long robes, and many of them had large goitres. We are installed here in a sort of Royal Rest-house, and, for the first time since leaving Kashmir (more than two months and a half ago), I am not living in my tent. The rooms are large and comfortable, have each a very neat fireplace, and the windows are closed by tasteful lattice-work, over which transparent country paper is pasted; for window glass is unknown in Eastern Turkestan. In the middle of the building there is a large quadrangular court, neatly laid out in the centre with roses and asters. The most noticeable bird about Karghalik is a large Ring-dove (*Turtur Stoliczkæ*), which is numerous and apparently very tame; these Doves walk about on the house tops and fly off to perch on the walnut trees.

*5th.—Posgam.*—Yesterday we halted at Karghalik, and we have had a longish march of about twenty-two miles, to-day,

to this town. About Karghalik many farmsteads and orchards are scattered about, and the neighbourhood seems to be intersected with water-courses for irrigation. The roads are lined with mulberry and willow trees, and there is cultivation everywhere; I noticed fields of Indian corn, rice and cotton (the plants of the latter seem to be stunted, not more than a foot and half high usually). As we rode out of Karghalik we met great numbers of people coming in for the weekly fair; they were all well dressed and nearly every one was mounted, on ponies or donkeys. The road near Karghalik was well watered and I noticed that water-channels were carried under the roads by means of the sort of syphon arrangement, which I have seen before both in Egypt and India. Every now and then we met 'Fakirs,' or 'Dewanahs' who on receiving a few coppers would repeat the Fatiha with outstretched hands, ending with Allahu Akbar and the usual beard-stroking. A little further on the cultivation became more thin, with patches of marshy ground overgrown with reeds in places, until we passed through Yakshamba Bazar (Sunday market place) consisting of a long row of houses on each side of the road. About five miles beyond Yakshamba Bazar we forded the Tiznaf river, a stream running north-eastward over a pebbly bed between low sandy banks. Seven or eight miles further on we reached Posgam, a smaller town than Karghalik and situated in a cultivated plain with farmsteads and orchards dotted about.

The elevation of our camp here is 4,249 feet, and there are a good patches of marshy and waste ground about. Posgam seems to be the head-quarters of goitre in this country, nearly every soul in the place seeming to have this disease to a greater or less extent; this afternoon I have been quite besieged by crowds of patients. On the road the Hoopoe was common, the Crested Lark (*Galerita magna*) was very numerous, and I saw hundreds of Swallows (*Hirundo rustica*) sailing about and clinging to the mud banks; *Sylvia curruca* too was common in waste ground. We had cloudy weather this afternoon, with strong gusts of wind bringing clouds of dust; at 10 P.M. there was a slight fall of rain. The cultivated country we have now got into forms a striking contrast to the desert we traversed after leaving Sanju.

6*th.*—*Posgam to Yarkand.*—Lovely clear morning after the rain last night which must have been very slight; fine ridges and peaks of mountains, snow capped, were visible away to our left as we rode along. After going through fine lanes, with rich cultivation on each side, we crossed the Yarkand river—an operation which consisted in fording about half a dozen streams to which the river is at the present season

reduced. Then our road lay over a well-cultivated plain with hamlets and farmsteads dotted about, and, here and there, bits of marshy ground. About seven miles from Yarkand we were met by a gorgeously dressed Yuzbashi, Mohammad Yakub, who gave us a dastarkhwan and afterwards rode on with us to our abode here.

The first glimpse I got of Yarkand was in the shape of an embrasured mud wall peeping through the trees which seemed to screen it on the southern side; not at all the bare sort of ground in which I expected to find the city. We crossed an extensive bit of swampy ground in which the Lapwing (*Vanellus cristatus*) was very plentiful, and then got into a suburb where the streets were very dirty; pools of black stagnant water and all sorts of rubbish lying about. Riding on we entered one of the gates of the city of Yarkand and after passing through a number of streets crowded with people, we emerged at another gate, called Altun Darwaza, and saw the Yangi Shahr (Fort or Cantonment of Yarkand) divided from the city by a dusty bit of ground about 450 yards across.

The gate of the Fort was guarded by about twenty or thirty Yarkandi soldiers, not dressed with any attempt at uniformity; and the streets of the Yangi Shahr were a repetition on a small scale of those we had just seen in the city. We soon turned into the Residency here, which has a large compound, with a tank in the middle, and a couple of court-yards with suites of rooms round them; and found our quarters very comfortable. Then, after a dastarkhwan, we proceeded to dress in uniform for a visit to the Dadkhwah of Yarkand, but I must leave the description of the rest of the events of the day until to-morrow.

*11th October—Yarkand.**—For the last five days we have been occupied making visits and receiving them; giving the presents sent by our Government and receiving many in return; regaling ourselves with innumerable dastarkhwans; and altogether we have been treated most hospitably. It has been arranged that we shall start for Kashghar to see the Amir; but as His Highness intends soon to set out on a tour to some distant part of his dominions, we are to leave our heavy luggage and a number of our followers at Yarkand, to which we expect to return very soon.

The weather has been uniformly fine, but every day there has been a haze of fine dust, which has made it impossible to see any hills or ranges, or indeed, objects at any con-

* The position of Yarkand (Yangi Shahr) has been fixed by Captain Trotter at N Lat. 38° 25′ 1″, and Longitude 77° 15′ 55″ E. of Greenwich.

siderable distance. The maximum temperature in the shade has varied from 63° to 72°·4; the minimum from 44°·5 to 40°·8; and the temperature of the sun's rays from 108° to 122°5. The mean reading of the mercurial barometer has been 26·040 (resulting height of Yarkand 4,015 feet.)

The City of Yarkand is of a very irregular shape, and surrounded by a thick mud wall, about thirty feet high and tapering towards the top, where it is from ten to fifteen feet wide; the city has five gates. The houses are principally one-storied and built of mud and unburnt bricks; except the Colleges or Madrasas (and a large serai) which are built of burnt bricks and many of them look quite imposing. The drinking water of the city is got from numerous tanks in it, supplied from the canals; these tanks are usually in a filthy condition, and indeed the sanitary arrangements of Yarkand are decidedly bad.

The Fort is square, and is surrounded by a deep ditch; there is only one entrance to it now and its mud walls are enormously thick. In it are the Dad Khwah's palace and the residences of all the soldiers of the place, with their families; the houses, as usual, being built of unburnt brick.

The soil about Yarkand is light colored and sandy, but seems to be wonderfully fertile when irrigated. Orchards of fruit trees are numerous, and there is extensive cultivation about with many irrigation streams and canals; some of the latter very neatly bridged over. The principal trees seem to be poplar, willow, mulberry and eleagnus; some old poplars (*P. alba*) in a *Mazar* or shrine close by, have attained a great height.

The people of Yarkand are, of course, all Muhammadans but, as far as I can judge, not at all bigoted in their ideas; the few Chinese who have remained in the country have adopted the religion of their conquerors. I rather think that a little *gentle* persuasion, in the shape of throat-cutting, was used to bring about this conversion; but that took place some time ago. The women are not very particular about hiding their faces, but they are certainly not 'bonny;' they seem to be mostly moulded on the Rubens type of beauty. A marked characteristic of the Yarkandis—men, women and even children—is a great aversion to walking, however short a distance; but they are extremely fond of riding ponies or donkeys, whichever they can get.

Then as to birds: *Passer montanus* is *the* common Sparrow about here; *Galerita magna* is met with at every step away from houses; *Turtur Stoliczkæ* is very common—we have a

resident colony in our compound; the Hoopoe (*Upupa epops*) is constantly seen by the roadside; Starlings (*Sturnus vulgaris*) in fair number; the Black Crow (*Corvus culminatus*) is to be seen wherever there is a heap of rubbish for it to peck at; the Lapwing (*Vanellus cristatus*) abounds about marshy ground in common with many other waders; and every now and then we see a flock of mallard (*Anas boschas*) flying overhead.

12*th.*—*Kokrabat.*—Our goods and chattels, for the Kashghar trip, were started off this morning from Yarkand in three 'arabahs,' only the more fragile things being carried along by four ponies. The 'arabah' is the cart of this country: a covered vehicle on two wheels and drawn by four horses; of which there is only one wheeler, the other three being harnessed abreast in front. We did not leave the Fort until about 2 P.M., and were accompanied at starting by the three Yuzbashis, Muhammad Yakub, Baba and Tash Khoja. The first left us very soon, the second one also disappeared after giving us a *dastarkhwan* a few miles out, and Tash Khoja goes on with us to Kashghar. Our road lay westward through rich cultivation for about four miles or so, when we crossed the Urpa canal by means of a capital bridge with two spans having brick-built towers at each end, and entered the district of Sughuchak. About a couple of miles further on, we entered a tract of sand hills covered with reeds and coarse grass, and after traversing this for some time we came upon marshy ground with pools of water on each side of the path. In this swamp I shot three waders, two specimens of the Curlew Stint (*Tringa subarquata*) and a Sanderling (*Calidris arenaria*), and saw some flocks of Ducks (*Anas boschas.*) After this we had a long ride over a stony desert plain, passing a crescent-shaped hill of drift sand on our right. We did not reach Kokrabat (more than twenty miles from Yarkand) until dark, so I have not been able to see much of the village. We are installed in a couple of native houses here, as we have left our tents at Yarkand.

13*th.* *Kizil.*—Fine 'mackerel' sky this morning, and a cold north wind blowing. On leaving Kokrabat we rode across a flat desert stony steppe where the wind was cold and piercing, a sort of aggravated edition of an east wind at home. On this ground the Horned Lark (*Otocoris penicillata*) was very common. After travelling for about twelve miles we reached Akrabat—a little oasis with two wells—where a Yuzbashi, sent by the Amir to attend us, presented us with a dastarkhwan. Then another ride of about thirteen miles over a desert waste, without a trace of vegetation, brought us to the village of Kizil (*i. e.*, Red) so called from the red color of the soil which contains a large amount of iron.

Shortly after we got into our quarters here, an Afghan merchant, who spoke most musical Persian, came in and after a few minutes' conversation said that he had living with him a Darwish of our nation! and that the said Britisher wished to see a doctor, but did not like to come openly to our quarters. As this news promised to be very interesting, if true, I took up my gun and strolled out into the village as if looking for birds; and having noted the house into which the Afghan merchant entered, I quietly returned to it when I found that no one was looking my way. I found that as to color and features the Darwish, Ghulam-ur-rasul (slave of the Prophet) would pass very well for an Englishman; and, in fact, he carried on a most interesting conversation, of nearly an hour's duration, in somewhat broken English. I fear I rather played the part of a newspaper correspondent interviewing a distinguished personage, as I was anxious to find out all the man's history. It is too long a tale to go into here completely, but I may mention the purport of his answers to my principal questions.

His name is John Campbell; he was born in Cabul during the period our army occupied Afghanistan; his parents were killed there and he was brought up by some Afghans who subsequently told him the secret of his birth. He ran away from his home and after many wanderings found himself in Teheran where the British Ambassador there took charge of him and sent him to India; he was placed in a school at Bombay and subsequently sent to England. Returing to India he seems to have got tired of a settled life and wandered away as a Fakir, or Mussulman mendicant, to Central Asia, where he has been roaming about for the last seven or eight years. He showed me his hands, which are white, with fingers long and tapering, and informed me that he had been told he was "an Englishman of the highest caste." He spoke gratefully of the kindness shewn him by some persons, but seemed to think that in the civilized world people were too busy about their own affairs to take much heed of such a waif as he was. Describing a scene in some office he said: "The people were bustling about; railways here and telegraphs there; so no one had time to think much about an orphan like me."

It appears that my friend 'Ghulam-ur-rasul' is the hero of a book, published some time ago, entitled "Lost among the Afghans." But the most remarkable point about the man is this: although very grateful to me for the medicines I have given him, he does not seem to care about taking money. I pressed him to take a sufficient sum of money to supply his wants for some time, but I have only been able to induce him to accept *five tangas*, that is to say exactly one rupee! He

says that if he is found with much money about him, the people of this country will take it away from him.

14*th.*—*Yangi Hissar.*—A long march to-day—fully thirty miles. On leaving Kizil we passed a large graveyard to our left, where the soldiers who fell in a battle with the Chinese about seventeen years ago were said to be buried; most of the graves were simply marked by raised mounds of earth, while the rest were like the ordinary graves to be seen in any Muhammadan country. Our road lay in a N.W. direction, parallel with a distant range of mountains to our left. We passed at first through a fertile and well-cultivated country, where I noticed a ruined Chinese *urtang* (posting house) whose walls were decorated with figures and designs. Further on we came on ground covered with small hillocks and long grass, and then to a perfectly green bit of country—reminding one of the description of a prairie. We passed the villages of Toblok and Kalpin, and finally reached a number of low sand hills, to our right, which we crossed slantingly. These hills were composed of gravel and sand, distinctly stratified, and in some places of a stony consistence. Then we crossed the Yangi Hissar River, over a bridge (the water was there dammed and turned off to drive a mill), and ascending the rather steep bank of the river found ourselves in a richly cultivated country with lots of trees. The sand hills cropped out every now and then, and at last cresting one of them by a sort of miniature Pass, we saw below the fertile plain of Yangi Hissar: rich cultivation, farmsteads and orchards as far as we could see. We descended rapidly, and rode through the streets of the town where a most active dyeing industry appeared to be going on. The rest house, where we are quartered here, is quite detached from the town of Yangi Hissar and is surrounded by fine and extensive grounds. To-day I noticed the Hooded Crow (*Corvus cornix*) which I remember last seeing in Egypt.

15*th.*—*Sughlok.*—On leaving Yangi Hissar this morning we passed between the town and the fort or Yangi Shahr; the latter is rather an imposing looking square structure, surrounded by the usual thick mud wall, and about 700 yards north of Yangi Hissar. As we rode along to-day we could see dimly, away to the left, a tremendously high, snow-capped mountain peak, apparently rising straight out of the plain and towering up to the sky; this is the Tagharma peak over 25,000 feet above sea level. In the trees, lining the lanes through which we passed to-day, great numbers of Starlings (*Sturnus vulgaris*) were collected; the specimens I shot are in the purple white-tipped stage of plumage. *Corvus culminatus, Corvus cornix, Passer montanus* and *Galerita magna*

were all common. Sughlok is a charming little country house with capital grounds and fine trees about it; in the centre of the main courtyard there is a Masjid (or praying place for the faithful) of painted wood with inscriptions from the Koran on it in several places. The Ring Dove (*Turtur Stoliczkæ*) is flying about among the trees.

16*th.*—*Yepchan.*—Short march again to-day, mostly over sandy soil overgrown with long grass; in many places, marshy ground with long weeds. I saw a Buzzard (*Buteo* sp.) hunting over a marsh, but failed to secure it. About half way passed a large jheel, where there were hundreds of Ducks (*Anas boschas*) and Teal (*Q. crecca*); the green Sandpiper (*Actitis ochrophus*) was also very numerous there and proved a great nuisance, warning all the other birds of one's approach by its shrill cry. On a sand bank near this swamp I saw a party of large birds—White Storks (*Ciconia alba*) apparently. Our house here is something like the one at Sughluk, but not so nice; a couple of Kestrels (*Tinnunculus alaudarius*) seem to have taken up their abode here; they fly about from the rafters of the verandah to the poplar trees just outside my room.

17*th.*—*Kashghar.*—At last we have reached the point towards which we have been so long travelling; we are now comfortably installed in the Residency quarters at Kashghar, the capital of Eastern Turkestan.

Cool fresh morning at starting from Yepchan, the Tian Shan Range—or celestial mountains—being clearly visible ahead of us, to the N.W. The length of our march to-day was only about 14 miles, but as we made several long halts on the way, we did not get in until after sun-set. The country we passed through was well cultivated, but there were many marshy tracts in places; and we crossed a number of streams and canals. About four miles from here we got a good view of the Yangi Shahr or Fort, which seems to be larger than the one at Yarkand. The road led us up to the S.E. angle of the Fort, and then along its east side, through a small suburb or Bazar, where the people all seemed to have a decidedly Chinese type of countenance. Then we turned the N.E. angle of the Fort and found the Residency—a large oblong building—nearly opposite the north gate of the Yangi Shahr, and quite detached.

The birds observed to-day were the following: *Corvus culminatas*, the Hooded Crow (*C. cornix*) and the Rook (*C. frugilegus*) often associated together, on the road-side and on bare fields; the Jackdaw (*Colœus monedula*), flying about in flocks; a few Starlings (*Sturnus vulgaris*); *Passer montanus* and *Galerita magna*—both very common.

31*st*. *October.—Kashghar.*—During the last fortnight we have had two interviews with the Amir ; have taken several rides about the neighbourhood in various directions ; and have generally been making ourselves acquainted with this place and its people. We have been treated with every sign of hospitality, and 'dastarkhwans,' presents of game, &c., come in daily. Living at Kashghar, I find, reminds one, in one respect, of a cantonment in India : nearly every morning musketry or artillery firing is heard, and troops, principally cavalry, are often seen moving about.

The weather, even during the last fortnight, has been getting perceptibly colder. We have had seven days of more or less clear bright weather, on two of which we got good views of the hills north and west of us ; three days of hazy weather, overcast in the afternoon, with one slight dust storm ; and four days of very hazy weather, with sky quite overcast. On the forenoon of the 27th snow fell at intervals, but so lightly as to melt at once on reaching the ground. The maximum temperature in the shade has varied from 71°·8 (on the 19th) to 44°·4 (on the 27th) ; the minimum, from 47°·2 to 26°·7 (on the 29th). The minimum thermometer on grass has registered as low as 19°·5 ; while owing to the hazy and cloudy weather the temperature of the sun's rays has, as a rule, been under 100° F. The extreme range of the mercurial barometer in the period under consideration has been 0·696 inches.

Owing to the extreme dryness of the climate and the sandy nature of the soil, the roads are very dusty ; but there is extensive cultivation everywhere around this place, with many gardens and orchards full of large trees. The principal trees are the willow and eleagnus, along the streams ; and the poplars, *Toghrak* (*P. balsamifera)* and *Terek* (*P. alba*), usually near habitations. The country is intersected by irrigation canals, one of which runs close to the north side of the presidency ; and the main streams here are the Tuman and Kizil rivers. There are also numerous springs, surrounded by marshy ground—called Kara Su (black water). I have been collecting plants and birds, but of course have not got as many specimens of either as I wish. I have engaged a curious old Chinese bird-catcher, who promises to bring me all the birds of the place ; so far, however, he has only brought a rather ingenious cage-trap in which were a number of specimens of *Erythrospiza obsoleta ;* these birds sing very sweetly and so attract their fellows to the cage where they are at once caught by the falling of a trap door.

And now for an enumeration of the birds of Kashghar which I have obtained or seen, so far.

*Passer montanus* is exceedingly numerous everywhere about houses. *Erythrospiza obsoleta* is quite common about hedges, &c., and often comes into our courtyard. Wagtails (*Motacilla personata*) also daily visit our quarters, and are to be seen outside near the streams. Then the Black Crows (*Corvus culminatus* and *C. corone*), the Hooded Crow (*C. cornix*) and the Rook (*C. frugilegus*) are pecking about by every roadside. Either associated with the Crows near some rubbish heap, or going about the bare fields in small flocks, we are sure to find the Jackdaw (*Colœus monedula*). *Turtur Stoliczkæ* is quite common and seems to keep near the houses. The White-rumped Magpie (*Pica bactriana*) keeps to the trees by the road side, or is found in the gardens. The Starling (*Sturnus vulgaris*) is not very numerous, but is to be seen picking up its food in the fields and perching on the trees. The commonest bird on the road is the Crested Lark (*Galerita magna*) ; a little further away from the houses we come upon *Alaudula pispoletta*, while *Otocoris penicillata* is numerous further away in waste ground. The Hoopoe (*U. epops*) is seen every now and then near the road or the walls of the fort, but is not very common. The Kestrel (*Tinnunculus alaudarius*) is common, often perching on the top of a poplar tree ; the Hen Harrier (*Circus cyaneus*) is often seen hunting over the reeds ; and I have once or twice observed a Buzzard (*Buteo— ? japonicus*). The Goshawk (*Astur palumbarius*) is the favourite bird used here for hawking, but I have not seen it about in the free state. A day or two after arriving at Kashghar I caught a Swallow (*Hirundo rustica*) ; the bird was evidently dead beat after a very long flight, and I let it go to pursue its travels ; no Swallows are now to be found about here. The Long-eared Owl (*Otus vulgaris*) is common in long grass ; the Kashgharis call it *Mashak Yapalak* "The Cat Owl." Near the streams and some of the swamps, the Lapwing (*Vanellus cristatus*) appears to be the commonest wader in these parts ; *Actitis ochrophus* is tolerably common ; less so are *Totanus canescens* (*glottis*) and *Tringa cinclus*. The Coot (*Fulica atra*) is very common, and numbers are sent to us with the dastarkhwans ; its flesh is very good eating. Among the Duck tribe, the Mallard (*Anas boschas*) is found here in great numbers ; less numerous are the Shoveller (*Spatula clypeata*) and *Mergus castor*.

Kashghar, 3*rd November*.—*A visit to the Shrine of Hazrat Afak*.—This morning, at 11 A. M., we started from the Residency to pay a visit to the mausoleum of Hazrat Afak, a celebrated Saint-King of this country. The weather was cool and pleasant, but hazy as usual, as we rode past the Fort and proceeded in a N. W. direction to the City of Kashghar, which

is exactly one 'tash,' or five miles, from the former place. We crossed several canals and marshy places, neatly bridged over, and soon came to a broad semi-macadamized road, sufficiently wide to drive three coaches abreast on it; this part of the road was regularly staked off on each side, where small streams of water ran. Then we crossed the Kizil River, which runs between the Fort and the Old City, noticing, by the way, some old shrines and a ruined fort, built of red brick. Numbers of 'arabahs,' or carts, drawn by one horse, passed us on the way; these vehicles often contained a whole family of Kashgharis, probably returning from a day's fairing. Near the roadside, at one part, we saw a curious pounding machine, worked by water power: a couple of long hammer-like pestles were rising and falling alternately, pounding saltpetre for the manufacture of gunpowder. As we neared the City, rows of trees lined the road on each hand, and among these I noticed a number of Magpies (*Pica bactriana*) flitting about. Near the City the ground was uneven and much broken up; sudden depressions in the clayey soil and small nullahs reminding one somewhat of the character of the ground in some parts of the Punjab (Rawul Pindi and Hassan Abdal). Kashghar is surrounded by the ordinary thick mud wall, peeping above which we noticed a pagoda-roofed building at one part; the fortifications seem to be a good deal out of repair. Arrived at the north gate of the City we turned sharply to our right and rode for some little distance through a crowded bazar, a suburb outside the walls of Kashghar.

The people of Kashghar are certainly much more healthy and robust than those of Yarkand; instead of the usual pale anœmic appearance of the Yarkandis we here see bright looking faces and ruddy cheeks. But the most marked contrast between precisely the same race of people, living only a little more than a hundred miles apart, is the absence of goitre. While in Yarkand it is rule to see the inhabitants with goitres of various sizes, here the disease seems to be unknown: a careful inquiry will prove that the few stray cases of bronchocele one occasionally sees at Kashghar, are referable either to natives of Yarkand, or to persons who have lived for some time in that province. In the Bazar I noticed several cradles containing chubby-faced infants; and an affectionate father, carrying a baby in one of these cradles, on horseback in front of him.

Passing out of the Bazar we crossed the Tuman river by a good bridge, and went along a road flanked on each side by innumerable graves. The graves seemed to be arranged in plots, and many of them were covered with dome-roofed chambers, which a whole host of Fakirs had taken possession of as

dwelling places—regular "dwellers among the tombs." Along this road, too, were numerous mulberry trees, quite leafless and giving a rather weird and winter-like appearance to the scene. About two miles from the City of Kashghar we reached the shrine grounds, near which were a number of hamlets; there we dismounted, a whole crowd of Kashghar boys eagerly offering to hold our horses.

We passed in by a large gateway which forms the entrance to the extensive grounds of the 'Mazar' or shrine, where numerous large trees were growing; some fine poplars (*P. alba*) being conspicuous by their height. Turning to the right we walked a little way, and then passed under another gateway, ornamented with blue glazed tiles covered with inscriptions, and found ourselves in a large court with two big ponds, in which a number of Swans were disporting themselves. These Swans are called *Koday*, and this species, I am told, is found in great numbers in the Lake district of Lob,—a region away in the desert to the east of Kashghar. The custodian of the Mazar, a quiet, pleasant mannered Hajji, met us near the second gate and conducted us to the sacred mausoleum—a handsome oblong building, covered with glazed tiles, blue and white, variously decorated with designs and inscriptions in Persian character. The doors of this building were made of metal lattice-work and the space in front of the doors was paved with stone flags. Passing the shrine to our left we turned down an avenue of trees to a Masjid, or place for prayers, made of painted wood; here we went through another gate ornamented in a similar manner to the one already mentioned. Here I may mention what struck me as a curious decoration for a Muhammadan shrine: over all the gateway were stuck numerous horns of the Pamir wild sheep (*Ovis Polei*); tails and horns of Yaks and sometimes white flags on sticks, singularly like those used in the Buddhist monasteries in Ladak. We now found ourselves in a large court in which there was another Masjid, the wooden pillars and roof of which were curiously carved. Past this, a number of carpenters were busy at work with their long adzes; and at the south end of the court we saw a large new building of moderate height, the new Mosque, which, it is expected, will be completed in a few days. This Mosque, which is being erected by the Amir, forms three sides of a square and is built of burnt bricks; it has a large central dome, and about nineteen other smaller ones, which form the roofs of the cloisters opening into one another, of which the interior of the building is made up.

This inspection over the Hajji invited us to a dastarkhwan and gave us some information about his charge. The shrine

was built by Hazrat Afak, a King of Kashghar, one hundred and eighty-six years ago, over his father's grave. Hazrat Afak himself died eleven years after the completion of the building, and was buried there. Formerly there were many books in the place, histories of the shrine, &c.; but the Hajji said that the place had been so often sacked and *looted* that very few remained. I suppose this referred to depredations committed by the 'friendly and good natured Kirghiz,' as the Chinese would hardly trouble themselves about such matters. The Hajji himself was a descendant of Hazrat Afak and had been to Constantinople, &c. The grounds of the shrine are all rent-free, and it contains orchards, vineyards, a college for the training of Mullahs, and a short of alms-house for poor Mullahs and their families.

Our ride back to our quarters, through the country and not by the way we went to the Mazar, occupied an hour and a half very pleasantly. On the way I noticed the method adopted in the construction of the tire of a wheel for an arabah: a thickish main branch of a poplar or willow is laid on the ground, one end bearing against the trunk of a tree, while the other end is gradually forced round by means of a stake driven into the ground and brought nearer and nearer to the tree at stated intervals.

*Kashghar, 30th November.*—During this month the weather has become decidedly wintry. We have had seven days of cloudless sky; fourteen days of partial cloud, and haze; and nine days of gloomy weather, the sky being quite overcast. On three days a cold raw wind was blowing; but the rest of the time the air has been generally still, so that the cold has not been felt as much as might have been expected. During the first half of the month the mean of the daily maximum temperature was 53°·1; the mean of the daily minimum temperature, 27°·6; and the mean grass minimum, 19°·4. During the latter half of the month, the mean maximum has been 41°·7; the mean minimum, 18°·6; and the mean grass minimum, 12°·9; but on the 25th the maximum for the day did not exceed 26°·6 F., while on the 27th the minimum in the shade fell as low as 10°·8 and the grass minimum as low as 4°·9 F. On the 18th, ice, two inches thick, formed on the surface of a tank inside the Residency: and to-day (30th) numerous fields outside are covered with sheets of ice, due to the freezing of the layer of water which had been allowed to flow over them. Although vegetation cannot yet be said to be dormant, it is more or less, going to sleep.

Here, at Kashghar,* we are in the north-west corner of Eastern Turkestan, at an elevation of 4,124 feet. To the north

* Captain Trotter has fixed the position of Kashghar (Yangi Shahr) at N. Lat. 39° 24′ 26″, and Longitude 76° 6′ 47″ E. of Greenwich.

we have the Tianshan mountains; some low hills running down to within ten miles of us. To the west the Kizil Tagh range (or Pamir mountains) runs away southwards. To the north-east we hear of forest regions in the neighbourhood of Maralbashi, while towards the east the country seems to be principally an open sandy plain.

As to the Birds this month, I may preface my enumeration by a few words about the celebrated *Birkut*—the trained Golden Eagle *(Aquila chrysaetus)*. On the 13th one of these birds was brought for sale, and to show that the Eagle had been trained, a little rehearsal took place in the large courtyard in front of our quarters. A cat with a fox's tail tied to it was to have been the Birkut's quarry, but 'puss' looked so nice that she was spared the ordeal, and a cock had the dangerous fox tail tied to its leg and was allowed to run about. The Eagle was then unhooded and spreading out its wings it made at once for the fowl, swooping with horrible croakings. The unfortunate cock screamed with fear as soon as it saw the enemy, and blindly ran up against a wall where the Birkut at once caught it in its claws. The men immediately ran up and averting the Eagle's head gave it some raw meat; while a couple of men, with the greatest difficulty opened its claws and allowed the cock to get away. The latter got up and shook himself, apparently little the worse of the encounter, except in being minus the greater portion of his feathers.

*Passer montanus*, *Galerita magna*, *Turtur Stoliczkæ*, *Erythrospiza obsoleta*, *Corvus corone*, *C. culminatus*, *C. cornix*, *C. frugilegus*, *Coleus monedula*, *Pica bactriana*, *Otocoris penicillata*, *Alaudula pispoletta*, *Circus cyaneus*, *Otus vulgaris*, *Tinnunculus alaudarius*, *Motacilla personata*, *Vanellus cristatus*, *Actitis ochrophus*, *Anas boschas*, *Spatula clypeata* and *Mergus castor* are as common as during the latter half of last month. *Fulica atra* seems to be getting scarce, while *Upupa epops* and *Sturnus vulgaris* are decidedly so. The additional birds obtained, or observed this month, and not noted in October, are the following:—

*Accipiter nisus* and *Falco barbarus*, neither very numerous; *Athene bactriana*, common, living in holes of mud banks; *Planesticus atrogularis*, also common, feeds on the *Jigda* or Eleagnus berry, and is hence called *Jigdachuk*; *Phasianus Shawi*, numerous in high grass; *Squatarola helvetica*, two specimens obtained; *Totanus calidris*, tolerably common; *Ardea cinerea*, *Ardea alba* and *Botaurus stellaris*, are common; *Querquedula crecca* not numerous; *Podiceps minor* and *Xema brunneicephala* are rarely met with. Besides the above I have also got *Accentor Huttoni* and *Caccabis pallescens*; I fancy the cold must have driven these two species down to the low hills, which are near us.

*Kashghar, 9th December.*—We had a good view of the Transit of Venus to-day, from about nine o' clock to noon. Yuzbashi Tash Khoja took great interest in the business: at first he declared he could see the planet at some distance from the Sun, but, being told he was mistaken, he looked through the telescope very carefully and then triumphantly drew a diagram on the wall, showing the Sun with Venus on its surface in the correct position.

I have now got a room full of live birds; let us pay them a visit and see how they are getting on. The first and most striking is a magnificent Snowy Owl (*Nyctea nivea*) which was captured a few days ago near the low hills to the north of Kashghar. The bird seems to prefer sitting on the ground, rather than on the perch which I have for it; it looks very quiet as it sits there with its great bright yellow eyes following me about the room, and its beak almost hidden by the long white nareal bristles; but if one pretends to look away in another direction it will stealthily seize the thongs round its legs by the bill, and by violent tugs endeavour to set itself free. This morning one of the Chicores (*Caccabis pallescens*) which I have in the room was missing, and on looking near the Owl I found the vestiges of the Partridge, in the shape of a head, wings, feet and feathers only! The simple Chicore had evidently been beguiled by the staid and innocent appearance of the great Owl to rashly trusting itself within reach of the latter's powerful claws, which by the way, are as sharp as needles.

The next bird is a female *Falco Hendersoni*, called in Turki *Italghu;* it is rather wild, and quite untrained. Then, seated on their respective perches, we have a *Lachin* (*Falco barbarus*) and a *Karghai* (*Accipiter nisus*). Next to these are two very pretty Merlins (*Lithofalco æsalon*) called here, *Turumtai*. One of these, which I am having trained, got loose the other night and flying over to that cage in the corner, in which I have half a dozen specimens of (*Erythrospiza obsoleta*) managed to kill one of the little birds through the bars. Those two curious looking little Owls (*Athene bactriana*) are called *Chaghundak*, and the Grey Shrike over there is *Lanius Homeyeri*. Then flying about in the room are a couple of Magpies (*Pica bactriana*), one of which is very tame and amusing; it delights to get a piece of meat and hide it away under the mat for future consumption. Walking about on the floor in company with the Chicore are about half a dozen Snow Pheasants of two species, *Tetraogallus himalayensis* and *Tetraogallus tibetanus;* these birds are tame enough, but very stupid; in company with the Chicores, the cold seems to have driven them down to the warmer climate of the low hills at this season.

To complete the list of birds in my room, I have also one specimen of the Little Bustard (*Otis tetrax*)—probably only a straggler at this season in Kashghar—and one Little Grebe (*Podiceps minor*). As I close the door upon my happy (?) family, I can hear the cry of the Golden Eagle or *Birkut* (*Aquila chrysaetus*) in another room; and a *Karchighah* or Goshawk (*Astur palumbarius*) has just been brought in.

28*th December—Kashghar.*—Four days ago the Amir sent over a present of three heads of the *Ovis Polei*, and one of an *Ibex*; the heads had just been freshly severed from the trunks of the respective animals. The largest *Ovis Polei* head weighed (with flesh and skin) 38 lbs; the smallest head, which I skinned, has the horns very perfect; its horns measured 38 inches along the greater curvature, 15 inches in circumference at the base, and the spread of the horns is 34 inches, measured across from point to point. Christmas day, as may be supposed, passed off very quietly, and yesterday a lot of fine presents were sent by the Amir, a sure sign that we should soon get our *congé*. This morning we had a very satisfactory interview with His Highness, and the rest of the day has been occupied in packing up: for to-morrow we start off on the return journey to Yarkand, where we are to spend the rest of the winter.

The list of birds this month comprises the following Raptores:—*Falco Hendersoni, Falco barbarus, Lithofalco æsalon, Accipter nisus, Astur palumbarius* (all scarce); *Tinnunculus alaudarius, Circus cyaneus, Otus vulgaris, Athene bactriana* and *Nyctea nivea*.

*Lanius Homeyeri* has not been very numerous. The Crows, *culminatus, corone, cornix* and *frugilegus* have been as common as ever; as has also been the case with *Golœus monedula* and *Pica bactriana*. *Passer montanus, Turtur Stoliczkæ, Erythrospiza obsoleta* and *Galerita magna* are permanent residents, and have all been plentiful. Almost daily a Wagtail (*Motacilla personata*) has visited our courtyard. *Caccabis pallescens, Tetraogallus himalayensis* and *Tetraogallus tibetanus* have been obtained from the hills quite close. *Planesticus atrogularis, Alaudula* [illegible] and *Otocoris penicillata*, and *Phasianus Shawi* have [illegible]ear us the same as last month. Only a few stray [illegible] (*S. vulgaris*) and Hoopoes have been seen; while *Fulica atra* and *Podiceps minor* have been occasionally seen.

Among waders, *Herodias alba, Ardea cinerea, Botaurus stellaris* are common, the White Heron especially so. *Actitis ochrophus*, very common; *Vanellus cristatus* less numerous than last month. *Otis tetrax* and *Ægialites fluviatilis* have been obtained, but they were both probably stragglers.

Among Ducks, the Mallard (*Anas boschas*) has been very common, but I am not sure about the other species of this tribe.

*Mergus castor* is occasionally seen, and *Xema brunneicephala* has been obtained.

29*th December*—*Yepchan.*—We started rather late to-day from Yangi Shahr, Kashghar, and did not reach this place until dark. Near the Fort a number of carts and camels were collected, for some reported movements of troops, I believe. The camels were all of the Bactrian or two-humped species; very nice looking animals, with handsome heads. A miserably cold day and most bleak prospect as we rode along. The streams and every bit of water, except a few springs, all frozen; the trees leafless; and altogether the scene presented the greatest contrast imaginable to what we had found this bit of the country two months and a half ago. The people now all wear thick long robes, of a darkish color and well padded; huge felt stockings inside their long boots; and the head dress of the women is a large sort of pork-pie hat, lined with fur. The Crested Lark (*Galerita magna*) running about on the road looked as if it ought to have warm stockings on in this weather; its bare fleshy feet giving one the impression that it could be feeling at all comfortable. *Otocoris penicillata* very numerous to-day.

30th—*Sughlok.*—Another cold bleak day; the boys sliding about on the ice near the villages. Near the jheel on the road, I saw many Ducks (*Anas boschas*) and a solitary Gull (*Xema brunneicephala*). As we neared Sughlok a Harrier (*Circus cyaneus*) flew close passed me, and I observed several Kestrels (*T. alaudarius*), and a Grey Shrike (*Lanius Homeyeri*) perched on a small leafless trees in bare ground. Sughlok is very much changed, the trees about looking very bare and ghostly; on my arrival I saw three or four Starling flitting about amongst these trees. The forty days of great cold recognized by the Kashgharians is said to begin about this time.

1*st January* 1875.—*Yangi Hissar.*—We are halting here to-day to celebrate the New Year, and to write letters, &c. It is very cold out of doors, and the sky is quite overcast; but inside my room here, with a capital wood-fire burning in the fireplace, and a long fur robe on, one feels very comfortable.

I take this opportunity of giving a sketch of the weather during the last month (December), which may be taken as the first month of real winter in this country. We had five days only of clear blue sky during which we could see the mountains north and west of Kashghar clearly; fifteen days of partial cloud and haze; and ten days of dull gloomy weather with the sky completely overcast. Snow fell slightly on the morning of the 5th, but had all melted by 10 A. M., except on the ice-covered bits of water; on the 9th snow fell on the

hills. A bitterly cold wind was blowing on the 22nd, but on the whole the air has been still, with a moderate breeze only on a few days.

During the first half of the month the mean maximum temperature was as low as 39°·8, the highest temperature on the 6th being 34°·2; the mean minimum temperature (in the shade) was 17°·7; the mean maximum temperature of the sun's rays was 80°·8, on the 6th not rising above 47°·7; and the grass minimum thermometer on two occasions registered 8°·5. In the latter half month the minimum on grass was 6°·6 on the 18th; the minimum in the shade, 7°·5 on the 30th, at Yepchan; while for the last five days of the month the maximum temperature has not risen above freezing point.

*2nd.—Toblok.*—From Yangi Hissar to-day our road lay over the ground I have already described. Near the village of Kalpin, I started a Hare (*Lepus yarkandensis*), called in Turki *Toshkan*, in a bit of uneven loëss ground. We are putting up here at a farmer's house; and as there is a good deal of iron-smelting going on in Toblok, we went out this afternoon to witness the operation. The furnace was low and round, with an opening in the middle for the escape of the smoke; five men and women were seated round the furnace, each blowing a pair of bellows—so that there were altogether ten bellows at work. 400lbs of ore with 200lbs of charcoal are said to yield from 100 to 120lbs of iron if the ore be good; if the ore is bad or inferior the same quantity will yield from 70 to 80lbs. No flux seems to be used; and the slag always forms at the bottom, the iron being found above this.

*3rd.—Kizil.*—The sun was shining out to-day, and the haze being less than usual we could distinguish the mountains on our right, towering up to an apparently stupendous height. After leaving Toblok we went over a number of hillocks formed of yellowish clay, and on the flat steppe the ground seemed to slope gently down towards us from the mountains. The birds noticed to-day were *Galerita magna* and *Otocoris penicillata*, both numerous; *Corvus culminatus* and *C. cornix;* and several Grey Shrikes (*Lanius Homeyeri*), one of which I shot.

*4th.—Kokrobat.*—A longish ride to-day: starting from Kizil at 9 A.M. I did not get in here until 5 P.M.; but then there were two halts to be allowed for, one for breakfast at a solitary mosque in the desert—said to have been built by Jengiz Khan,—and one for a dastarkhwan at Akrabat, presented by our old friend Mahammad Baba, the Yuzbashi who first met us at Shahidullah. On the bare steppe I again saw numbers of the Horned Lark (*Otocoris penicillata*); a couple of Kestrels (*T. alaudarius*); and near the villages the Common Crow (*C. culminatus*).

*5th.—Yarkand.*—A cloudy morning and rather a cold wind blowing as we started from Kokrobat; during the day however the weather got warmer than we have experienced it for some time. Yarkand is, no doubt, warmer than Kashghar. After leaving Kokrobat there were many low sand hills and a good of scrub-jungle on each side of the road. At a small hamlet on the way, where we breakfasted, I noticed a number of Thrushes (*Planesticus atrogularis*) and a few Starlings (*Sturnus vulgaris*) among the trees; and on the road I saw the Common Crow, the Rook (*Corvus frugilegus*) and the Hooded Crow (*Corvus cornix*). After this we rode for a long way among low sand hills, covered with long grass; the Yarkand Pheasant (*Phasianus Shawi*) was common in this ground, and one of the party purchased a couple of male birds of this species, which had been captured by some peasant. A number of people sent by the Dad Khwah to receive us, met us a short way out of Yarkand, and rode in with us; and on entering the Residency we found our followers, who had been left behind, all drawn up *en grande tenue*. It is pleasant to get back to our old quarters here, but the space is decidedly much more confined than at Kashghar.

*6th.—Yangi Shahr, Yarkand.*—To-day we paid a visit to the Dad Khwah, who received us with his usual cordiality; he talked very learnedly about the ancient and modern systems of medicine, and in conversation alluded incidentally to the disagreement that had arisen between China and Japan with reference to Formosa, which he pronouced *Pormosu*. I find we have a Peacock and Peahen (*Pavo cristatus*) in our compound here; and some of the Hindu servants have taken an ancient Chinese terrier under their protection. A colony of Ringdoves (*Turtur Stoliczkæ*) seems to be permanently established near one of the rooms.

*23rd.*—To-day has been devoted to shooting birds. The Yuzbashi brought several trained Goshawks which he said would be very useful for our sport, but as this proposal did not smile to me, I kept steadily away from the hawking party, who secured about half a dozen ducks during the day. The weather was dull and cloudy throughout, and very cold; the maximum temperature during the day being below freezing point. Of course, the first bird noticed, on riding out of the Fort, was the ubiquitous Tree Sparrow (*P. montanus*), as lively as ever in this semi-arctic weather; and the Ringdove (*T. Stoliczkæ*) perching on the house tops. In the open space between the Fort and City, the Crested Lark (*G. magna*) was running about on the road; and the Hoopoe (*U. epops*) was common—evidently much more numerous here than at Kashghar.

I rode through the city of Yarkand, passing the large Serai where the goods of the Central Asian Trading Company were stored, and passed out at the South gate; the Bazars struck me as being very dirty, and in the streets I noticed a number of Indians and Afghans who seemed to make a point of salaming very respectfully.

On getting into the ground on the south side of the city the first familiar birds seen by the road side were the Black Crows (*Corvus culminatus* and *corone*), the Hooded Crow (*C. cornix*) the Rook (*C. frugilegus*) and the Jackdaw (*Colœus monedula*); all these birds were very numerous, and frequently associated together near the same heap of rubbish. Then flying about among the small bushes and leafless willow trees, we found *Erythrospiza obsoleta* and *Emberiza schœnicola*, the latter very numerous. *Herodias alba* and *Ardea cinerea* were both very conspicuous near the streams; but with the exception of a Bittern (*Botaurus stellaris*), which we started from a rush grown marsh, I saw no other waders during the whole day. Approaching marshy ground—which is now everywhere frozen, the ice every now and then breaking under foot and letting one down into the slush—I noticed *Emberiza pyrrhuloides*, which is called in Turki *Karabash kuchkach* or 'black-headed bird'; and there too *Anthus aquaticus* was common, running about on the ice among the rushes. But the most striking feature of the Avifauna to-day consisted in the great number of Buzzards—of the three species *Buteo vulgaris*, *Buteo japonicus*, and *Buteo ferox*—which were hunting everywhere over the rush-grown frozen marshes. These Buzzards were so intent on the work they had in hand, that they often seemed to disregard one's presence, and approached so close as to be easily shot. I noticed one species (*Buteo ferox*) often plunging down among the rushes, almost head foremost; perhaps it is this habit which has gained for it the name of *Tokhmak Sá* "the Mallet Buzzard," among the Yarkandis.

In the long reeds growing in waste ground, both the Long-eared Owl (*Otus vulgaris*) and the Short-eared Owl (*Otus brachyotus*) were very common; and the Kestrel (*T. alaudarius*) was often observed during the day, usually perching on trees. I saw a couple of Hen Harriers (*Circus cyaneus*) sailing away over the fields, and very difficult to get at; only the male birds were noticed. Then near the loëss banks we saw *Athene bactriana*, apparently very wide-awake in the broad day-light. *Planesticus atrogularis* was found among some trees lining a frozen water course; and a solitary Woodpecker (*Picus leucopterus*) was seen in a clump of tall white poplars. The

Mallard (*Anas boschas*) formed the *pièce de resistance* to-day in the way of sport. The Ducks were exceedingly numerous, but very wild; and the nature of the ground, which was flat and mostly bare, rendered it very difficut to get at them.

The two Yuzbashis, Muhammad Yakub and Tash Khoja, dined with us to-night (how shocked an Indian Mussulman would be at the bare thought of such a proceeding) and made themselves very agreeable. The first stuck manfully to his knife and fork and helped himself religiously to every thing presented to him by the waiters; the other was bewildered at the multiplicity of plates and dishes, and I fancy did not think much of our civilized ways of eating. Of course the Turki manner of eating is usually out of a common dish, and with the fingers only.

31*st January, Yarkand.*—During this month we have had eleven days of 'blue sky,' never, however, quite free from haze; thirteen days of partial cloud and haze; and seven days of dull gloomy weather, with the sky quite overcast. On the 15th snow fell very lightly, and at intervals, for several hours; but there was not more than half an inch of snow lying on the ground at any time.

The maximum temperature in the day has usually been below freezing point; on the 15th the temperature never rose above 25·6°. The minimum temperature in the shade during the month has never been higher than 19°·7; and on the 20th it fell to 2·7°F. or 29° below freezing. For about half the month the minimum thermometer on grass has registered lower than 0°F.; on the 20th of the month it fell to 8°·8, or nearly 41° below freezing. Notwithstanding the severity of climate, indicated by the above readings, we have felt the cold wonderfully little. This is to be explained partly by the dryness of the air; but is principally due to the fact that the air has been so remarkably *still*. This kind of climate is of course very healthy, and we all feel well and in good spirits.

The following is my list of birds for this month:—

*Aquila chrysaetus* (specimen shot near Yarkand to-day); *Tinnunculus alaudarius; Circus cyaneus; Buteo vulgaris; Buteo japonicus; Buteo ferox; Otus brachyotus; Otus vulgaris; Athene bactriana.* With the exception of the Golden Eagle, which is only seen rarely, all these species of Raptores are common here.

Then, *Passer montanus; Erythrospiza obsoleta; Emberiza schœnicola; Emberiza pyrrhuloides; Upupa epops; Planesticus atrogularis; Corvus culminatus; C. corone; C. cornix; C. frugilegus; Colœus monedula; Galerita magna; Alaudula pispoletta; Otocoris penicillata; Anthus aquaticus; Turtur Stoliczkæ;*

*Phasianus Shawi*—are all common. *Melanocorypha torquata* has been obtained this month, but is not common. *Lanius Homeyeri* and *Sturnus vulgaris* are rare about here. Of *Picus leucopterus* a solitary individual has been seen; and a stray *Motacilla personata* has been noticed now and then. *Tetraogallus himalayensis* has been brought in alive. It will be noticed that *Pica bactriana* is not included in the above enumeration; this Magpie has not been seen, in the wild state, since leaving Kâshghar.

Among waders I have only to record *Ardea cinerea*, *Herodias alba*, and *Botaurus stellaris*. I dare say there are others about, but I have not come across them.

Then among *Natatores* I have *Anas boschas* and *Querquedula crecca*.

*Beshkant, 3rd February.*—I left Yarkand this morning on a three days shooting trip, accompanied by a Panjabashi (leader of fifty) with several Yarkandi soldiers sent by the Dad Khwah, and a couple of troopers of the "Guides" as an escort. We formed quite an imposing little cavalcade as we rode through the old city of Yarkand, and then cantered along in a south-easterly direction. Leafless trees, bare fields, and frozen marshes gave a very wintry aspect to the scene, heightened by the subdued reddish color of the sun. In conversation with the Panjabashi, he told me that he was a native of Bokhara, that he had taken service in Khokand about 18 years ago, and that he had now been in this country for 12 years. As is usual with his class he praised the two former countries very highly and seemed to sigh to revisit them.

Riding along I noticed all the common birds I enumerated on the 23rd January, but in addition we came across the Blackbird (*Merula vulgaris*) in some thorny bushes; curiously enough the name of this bird in Turki appears to be *Maina*. We found the Yarkand river completely frozen over and we easily rode across on the ice; then a short ride through scrub jungle and over rough fields brought us to the village of Igarchi or Yangi Bazár. Here there were many houses; and a long street with sheds on each side, which are used for the weekly fair. After leaving Igarchi we passed a large concourse of people who were assembled for some holiday or other. Seeing a stranger passing along, the people trooped down to the road to have a good stare at us, but at a word from the Panjabashi a Yarkandi soldier rode towards the holiday-makers, whip in hand. At the sight of the latter, the people who evidently seemed to divine at once his kind intentions towards them, scampered away as hard as they could.

We reached the village of Beshkant about two o'clock, and I was received by the Sirkar or headman, and conducted to his house.

We passed through a large courtyard into an inner court where I found a Birkut, or Golden Eagle, and a Karchighah (Goshawk) seated on their perches. Then I entered the room which had been prepared for me—a capital place nicely carpeted with a good fire burning in the fireplace and the wells decorated with stag's antlers and the inevitable dastarkhwan was brought in, *cela va sans dire*.

The Panjabashi now wanted me to wait for some trained hawks which were expected to come from Igarchi, but as the time of their arrival was quite uncertain and I did not in the least want any hawks with me, I started off shooting outside, where nearly every bit of water was frozen. I found hundreds of Ducks and got some fair shooting. One Duck that I shot expired before it could be 'halaled,' *i. e.*, have its throat cut in the orthodox fashion, and the Panjabashi said it was a great pity as it would have to be thrown away; I consoled him by explaining that its skin would make a good specimen for my collection of birds.

For to-morrow I am promised good sport, Ducks, Hares, Pheasants (*P. Shawi*) and even wild Boars being mentioned; but I dread the baneful influence of those Goshawks and Eagles.

*4th.—Beshkont.*—We started off this morning accompanied by a hawking party of five men, headed by the Sirkar, my host, carrying two *Birkuts (Aquila chrysaetus)* and three *Karchighah* (*Astur palumbarius*). As the shooting place was reported to be some distance off, we rode out of Beshkant. This I afterwards found was a great mistake and marred the day's shooting considerably; for having our horses, we virtually degenerated into a hawking party.

The Goshawks were carried by the hawkers on the right hand, which was covered by a glove; the *Birkut* rested on the wrist, a thick gauntlet protecting the forearm from the Eagle's claws, and the right hand resting on a crutch fixed to the front of the saddle. Of course without this crutch it would be impossible to support the heavy *Birkut* even for a few minutes; and even with this contrivance I wonder how the men managed to carry the Eagle the whole day long without feeling very tired. All the hawkers were mounted on strong ponies.

At first we passed a clump of big poplars, where I got a Woodpecker *(Picus leucopterus)*; a little further on several Ringdoves *(Turtur Stoliczkæ)* were bagged; for to-day it was a case of shooting anything we could find. Near the edge of marshy ground we got *Anthus aquaticus* and *Troglodytes pallidus*; the latter called in Turki *Bir toghram* "a morsel." The next victims were *Herodias alba* and *Ardea cinerea*, both of

which were common throughout the day; as was also the Kestrel (*T. alaudarius,*) a specimen of which was shot by one of the sowars. Then getting on to marshy ground all frozen over, but the ice often giving way under the ponies, we saw a large flock of Ducks (*Anas boschas.*) The son of the Sirkar, carrying a Goshawk, rode up gently to within about a hundred yards of the flock, and then sending his horse at a gallop over the slippery ice, as confidently as if he had been riding on smooth turf, cast the hawk at the ducks as they rose. The *Karchighah* struck one of the ducks very cleverly, and immediately landed with it on the ice. The hawker then dismounted and having released his duck from the claws of the Goshawk, he cut its (the duck's, not the Goshawk's) throat, *secundem artem*, tied it by the legs to the saddle, and proceeded to look for more game. After shooting a few ducks at that place we rode on to a large bit of waste ground overgrown with stunted reeds, where we found a fair number of hares (*Lepus Yarkandensis*), but neither so numerous nor affording such good sport as the hares of Nubra in Ladak. The hawks seemed to catch these hares very readily, but the disappointing part of the business was that the party was scattered all over the place, and one could hardly tell was going on; when a halt was called, hares and ducks would be found attached to the hawker's saddles without any attention having been called to the fun at the time the capture took place.

After getting a few specimens of *Emberiza pyrrhuloides* at this stage, we rode across some open waste ground where we came across a fine Eagle-Owl (*Bubo maximus.*) I dismounted at once to try and get a shot, but I was anticipated by a Birkut being thrown off at it. The Eagle had an excellent chance of striking, but whether it did not fancy the game or was too clumsy I can't tell, for it made only one swoop, and failing to catch the Owl, at once squatted on the ground. I followed the Eagle-Owl for sometime, but could not get a shot; principally because the bird was followed by a number of Crows (*C. culminatus*) who seemed to be tormenting it, and yet gave their enemy warning of my approach by flying up when I got at all near.

The next step in the proceedings consisted in getting into ground covered with long reeds and rushes, which was reported to be a good place for Pheasants. The first bird bagged there was a Bittern (*Botaurus stellaris*); and then as we went beating along we started great numbers of both *Otus vulgaris* and *Otus brachyotus*. These Owls fell very easy preys to the Goshawks, who seized them every time they were thrown off for the purpose. The Pheasants (*P. Shawi*) did not prove

to be so numerous as I expected. A hawk was flown at a cock-pheasant, but the latter took only a short flight and settled among the long reeds; whither the Goshawk followed, but of course did not manage to strike. A little beyond this in a small piece of open ground I saw a fine Golden Eagle (*Aq. chrysaetus*) I could not manage to get within shot, but I have no doubt whatever about the identification. On the way back we came upon a lot of ducks again. I had a shot at one flying past me at a considerable distance, and thought I had missed as the bird seemed to go straight on, however, as the duck settled not far off I walked up to the spot and found it quite dead.

The Panjabashi, who has been indefatigable to-day, says he is *desolé* that he has not been able to show me better sport to-day: so I assured him that I was perfectly satisfied. My host the Sirkar has presented me with a young *Sai kik* (*Antilope gutturosa* ?); this Antilope is said to be common about three days journey from here.

5*th*.—*Yarkand*.—After leaving Beshkant this morning we had some more hare and duck shooting, and got, in addition to yesterday's birds, the common Teal (*Querquedula crecca*), and a specimen of the Smew (*Mergellus albellus*). Presents and robes were given to the Sirkar of Beshkant and his son and we bade them gosd shortly after crossing the Yarkand river. As we rode back to our quarters here, numbers of unfortunate Crows and Jackdaws were captured by the trained hawks; but I noticed that the Karchigha did not seem to be a match for tame pigeons, which doubled and dodged for too quickly for the Goshawk. Instead of passing through the city I skirted its south wall and so reached the Fort. A silk robe to the Panjabashi elicits a solemn 'Allahuakbar,' and so my little expedition is at an end.

28*th February*.—List of birds for the month.—*Aquila chrysaetus* (rare). *Tinnunculus alaudarius, Circus cyaneus, Buteo ferox, Buteo vulgaris, Buteo japonicus, Otus vulgaris, Otus brachyotus* and *Athene bactriana* (all common). *Bubo maximus* (not numerous).

*Passer montanus, Galerita magna, Upupa epops, Merula vulgaris, Planesticus atrogularis, Anthus aquaticus, Corvus corone, C. culminatus, C. Cornix, C. frugilegus, Colœus monedula, Troglodytes pallidus, Emberiza schœnicola, Emberiza pyrrhuloides, Erythrospiza obsoleta, Turtur Stoliczkæ* and *Phasianus Shawi* (all more or less common. *Sturnus vulgaris*, pretty numerous towards the end of the month. *Melanocorypha torquata, Picus leucopterus* and *Lanius Homeyeri* appear to be rare. *Otocoris penicillata* and *Alaudula pispoletta* not numerous. *Coturnix communis* has been obtained; and *Tetraogallus himalayensis* and

*Caccabis pallescens* have been brought in. Among waders *Ardea cinerea*, *Herodias alba* and *Botaurus stellaris* are all common. *Anser cinereus* was first seen flying over the Fort on the 23rd of this month; and a specimen has been obtained. *Anas boschas*, exceedingly common. *Querquedula crecca* and *Mergellus albellus* (not numerous).

The climatic elements of the month may be briefly summarized as follows:

During the first half of the month the mean of the maximum daily temperatures, was 36°·9; the mean of the daily minimum temperatures in the shade was 13°·4; and the mean of the minimum on grass was 7°·7, the lowest temperature occuring on the 1st of the month when the grass minimum thermometer registered 3°·5 or 28°·5 belowing freezing.

During the latter half of the month the weather has been getting sensibly less cold: the mean maximum temperature being 46°·8, the thermometer registering as high as 60° in the shade on the 27th; the minimum temperature was 14°·6 on the 17th, and 31°·7 to-day, the mean for the period being 22°·9; the mean grass minimum has been 16°·8, rising to 26° on the 28th; the lowest reading during the latter half of the month being 9° on the 21st.

In the whole month we have had seven days of blue sky, eight days of partial cloud and haze, thirteen days with the sky completely overcast. There has been neither rain or snow, and, as usual, the air has been comparatively still.

31*st March.—Yarkand* (*Yangi Shahr*).—Little of special interest to record for this month. The medical practice is going on famously: usually a daily attendance of over 250 Yarkandi patients. An old Hindu who has been living in this country for many years pretends to know the exact whereabout of a large treasure buried by the Chinese inside this Fort before they were massacred by the Tunganis; but the present authorities do not seem inclined to institute a search. A Chinese convert to Islam has shown us a number of legerdemain tricks, some of them exactly like those done by the "Professors" at home, and gave us the details of conjuring trick described in Yule's Marco Polo. On the 11th (market day) some of our followers saw the punishment of mutilation inflicted on a couple of thieves before the assembled multitude in the Bazar. One of the criminals had his hand hacked off, and the other his foot. In our compound we have now two young stags, called *Bugha* a female Ibex (*Kizil Kik*) and a couple of young *Saikik* (*Ant. gutturosa*). All these animals are tame enough, but the stags are most perniciously inquisitive about the nature of my meteorological instruments. One of the beasts walked into my

room, one day, and smashed a mercurial barometer; and on a subsequent occasion it was discovered calmly crunching the grass minimum thermometer. The Ibex is exceedingly amusing; and the way it manages to jump up on the roof and run along narrow walls is simply wonderful.

The advent of spring has been very noticeable this month: on the 19th I noticed the young leaf buds on the willows, and the unfolding of the leaves has since gone on so rapidly that the trees are now beginning to look quite green. Wheat has been sown this month for the summer crop; and the autumn sowings of wheat and lucerne, which have been lying dormant during the winter, are now beginning to sprout.

The weather during the month has been markedly different to what we had in February. There have been 5 days of fairly clear weather, with a blue sky; 14 days of partial cloud or haze; and 12 days of sky completely overcast by clouds or a dense dust haze. The air has not been so still as in the previous month; and on the afternoon of the 27th we had a dust-storm from the north-east. This dust-storm exactly resembled in character (though not in intensity) those prevalent in the Panjab at a certain season: that is to say, a high dark cloud of dust could be seen approaching for some time before we felt the first puff of dust-laden wind. Since that, for the last five days, the sky has been obscured by a most dense haze of dust, so that sometimes objects even 400 yards off are barely visible.

Rain fell on the 13th and 14th, but the total amount collected in the rain gauge did not indicate a fall of more than 0·12 inch.

In the first half of the month the mean minimum temperature in the shade was 33°·4; the minimum being just below freezing point on the first five days of the month, while on the 12th the temperature in the shade did fall below 40°·2. The mean on the minimum temperatures on grass was 28°·5; the thermometer registering 20°·2 on the 5th and 38°·8 on the 12th.

In the second half of the month the maximum temperature in the shade was 77°·5; the mean minimum in the shade was 39°·6 (on the 31st not lower than 48°·4); and the mean of the minimum on grass was 35°·3.

Turning now to our birds this month several important additions have to be mentioned.

*Falco peregrinus* and *Falco Tscherniaïevi* have been obtained; both these species appear to be rare. *Tinnunculus alaudarius* is as common as ever. *Buteo vulgaris*, *Buteo ferox* and *Buteo japonicus* are, I think, getting more scarce. *Circus cyaneus*, *Otus vulgaris* and *Otus brachyotus* are as common as before. *Bubo maximus* has been seen; and *Athene bactriana* is still common.

*Upupa epops* is common. *Cyanecula suecica* has just arrived. *Motacilla personata* is now common. *Budytes citreola* is a fresh arrival. *Anthus aquaticus*, still common. *Ampelis garrulus?* has been obtained, but this is quite a hill bird, and is not seen about the plains here. *Calamophilus biarmicus* has been seen among the reeds. *Corvus corone*, common. *Corvus cornix* getting scarce towards the end of the month. *Corvus culminatus*, common. *Corvus frugilegus* and *Colœus monedula* common during the greater part of the month. *Sturnus vulgaris* is very numerous. *Passer salicicolus* has been obtained; it does not seem to be very common. *Passer montanus*, *Emberiza schœnicola*, *Emberiza pyrrhuloides*, *Erythrospiza obsoleta*, *Alaudula pispoletta*, *Galerita magna*, *Turtur Stoliczkæ*, *Phasianus Shawi and Coturnix communis* are all common. *Caccabis pallescens* continues to be brought in, but of course this is not a bird of the plains.

Among waders, *Ægialophilus cantianus*, *Ægialites fluviatilis*, *Vanellus cristatus*, *Actitis ochrophus*, *Totanus calidris*, and *Fulica atra* have all arrived. *Ardea cinerea*, *Herodias alba* and *Botaurus stellaris* are still about.

*Anser cinereus* has been coming in. *Casarea rutila* has arrived. *Anas boschas* continues to be common, and both *Dafila acuta* and *Aythya nyroca* has been added to our list in March.

*Yarkand*, 30*th April*.—In this month we have fairly got into spring. Around us many fields are green with the growing corn and lucerne, and the trees are all in full leaf. Wheat, barley, Indian corn and rice have been sown during the month, and also cotton and flax.

In the first part of the month, the weather was mild and pleasant; but latterly we have had a few very warm days, the heat however being soon tempered or dispelled by breezes usually carrying clouds of dust.

The maximum temperature in the shade occurred on the 22nd, when the thermometer registered 92°·1, but the mean maximum for the month has been 78°·2. The mean minimum in the shade has been 50°·5; and the mean grass minimum 44°·6—not a single frosty night. We have had nine days of fairly clear weather, with a blue sky; nine days of partially cloudy weather; and twelve days of overcast sky, principally due to dense dust haze. The prevalent direction of the wind has been from the north-west; on two days a strong wind blew from that direction, bringing clouds of dust. A few drops of rain fell on two days during the month. Corresponding with the change in the climate, the movements among the birds have been considerable: many familiar birds have left us, and a good many new arrivals have to be mentioned.

Among the birds of prey, the Kestrel remains as plentiful as ever: I doubt whether this species means to move at all. The Buzzards (*Buteo vulgaris*, *B. ferox*, and *B. japonicus*) have moved away northwards; the last of this genus that I saw was on the 20th of the month. The Hen Harrier (*C. cyaneus*) is still common and is probably a permanent resident in these plains. Towards the end of the month the Kite (*Milvus melanotis*) has made its appearance; it is not numerous. Both *Otus vulgaris* and *Otus brachyotus* left early; probably to repair to the forest region in the north of this country. Of the Eagle Owl (*Bubo maximus*) I have obtained three fine specimens and an egg; so this species lays, in this country, in April. The Little Owl (*Athene bactriana*) has not been so common this month as last.

Turning to the *Insessores*, I have to mention the arrival of the Swallow (*Hirundo rustica*) and the Swifts (*Cypselus acuticanda* and *Cypselus pekinensis*); these birds arrived about the 10th of the month and now form a common feature in the Avifauna. The familiar Cuckoo (*Cuculus canorus*) arrived about the middle of the month. *Upupa epops* is very common, and may, I think, be set down as a permanent resident. The Desert Shrike (*Lanius arenarius*) came in in the early part of the month, and is now common in waste, desolate places. Another new arrival is the Oriole (*Oriolus kundoo*), which has just come in. *Saxicola isabellina* arrived about the middle of the month. *Cyanecula suecica* is now common. The Reed Warbler (*Acrocephalus arundinaceus*) has been observed for the first time this month. The Lesser Whitethroat (*Sylvia curruca*) is another fresh arrival, and is tolerably numerous. *Motacilla personata*, *Budytes citreola*, *Anthus aquaticus* and *Calamophilus biarmicus* are all common. The Black Crows (*Corvus corone* and *C. culminatus*) are as numerous as ever; but the Rook (*C. frugilegus*), the Hooded Crow (*C. cornix*) and the Jackdaw (*Colœus monedula*) have all left us. *Sturnus vulgaris* is very common; *Passer salicicolus*, tolerably common; the perennial *Passer montanus* is as plentiful as before; and *Emberiza pyrrhuloides* is still with us. A new arrival, *Euspiza lutéola*, has just come in. To complete this order—*Erythrospiza obsoleta*, *Alaudula pispoletta* and *Galerita magna* show no signs of changing their abode.

The Ringdove (*Turtur Stoliczkæ*), the Yarkand Pheasant (*P. Shawi*) and the Quail (*Coturnix communis*) are as common as ever. Among the waders *Ægialophilus cantianus*, *Ægialites fluviatilis*, *Vanellus cristatus*, *Actitis ochrophus*, *Totanus calidris*, and *Fulica atra* are all common. The Herons (*Ardea cinerea*

and *Herodias alba*) seem to have moved away from our neighbourhood. The Bittern (*Botaurus stellaris*) is less common than last month. And a new arrival is the White Stork (*Ciconia alba*).

Of the Duck tribe *Casarca rutila*, *Anas boschas*, *Querquedula circia* and *Aythya nyroca* are all common.

The last distinguished visitors I have to enumerate this month are the Terns (*Sterna fluviatilis* and *Sternula minuta*.)

*Yarkand*, 31*st May*.—The weather this month has been so decidedly warm that I have availed myself of the pleasantest part of the day—the early morning—to go out for rides about the country. I usually leave our quarters at 5 A.M., and, accompanied by a single servant—also riding and carrying my gun— have a canter through the neighbourhood in various directions, generally for about a couple of hours. The aspect of the country about Yarkand is now very delightful, and the vegetation strikes one as being remarkably luxuriant; but perhaps this impression is, in a great measure, due to the contrast now afforded to the dreary prospect during the winter. All the trees are now radiantly green and the mulberries which line many of the lanes are loaded with fruit. The orchards and vineyards are in full luxuriance of growth; the great number of fruit trees in the former affording a dense and grateful shade from the heat of the sun. Smiling green fields meet the eye in every direction, the most noticeable crops being wheat, fine purple-flowered lucerne, and the growing melon plants. Among the garden produce one meets with fields of radishes, turnips, carrots and onions; with, here and there, a plot of tobacco. A few days ago I was greatly astonished at receiving a present of some fine potatoes; these had been brought from Aksu where the plant is cultivated, and we learn that the potatoe was commonly grown near Yarkand when the Chinese held the country.

On the 13th a Russian merchant arrived in Yarkand on his way from Kashghar to Khoten; he remained here only a very short time, and we did not see anything of him. The Dad Khwah left for Kashghar on the 14th, on a visit to the Amir and for the purpose of paying the annual tribute; for the Dad Khwah is not a paid servant, but holds this province as a Satrap of the Amir of Kashgharia. During the absence of the Governor of Yarkand his son and brother officiate as joint rulers of the province. Of course on the 24th we celebrated the Queen's birthday as became loyal subjects.

Among the birds I have several additions to mention this month; and I now propose to go through the list *seriatim*, even at the risk of being thought tedious.

First then, the Hobby (*Hypotriorchis subbuteo*) is now a common bird here; hunting over the fields and perching on the poplar trees. The Kestrel is as common as ever; and the Sparrow Hawk (*Accipiter nisus*) seems to be plentiful near the foot of the hills south of Yarkand, in the Karchung valley. The Hen Harrier (*Circus cyaneus*) still keeps in our neighbourhood; and more numerous than it, we have this month the Marsh Harrier (*Circus æruginosus*), called by the natives *Akbash Sa*—White-headed "Sá." The Kite (*Milvus melanotis*) is now common; but the Eagle Owl (*Bubo maximus*) and *Athene bactriana* are rarely seen here. Both the latter birds are probably devoting themselves to family matters at some distance from the environs of Yarkand.

The Swallows (*H. rustica*) are exceedingly numerous; and the Swifts (*Cypselus acuticanda* and *C. pekinensis*) are to be seen, morning and evening, flying over the Fort and City.

The Cuckoo (*Cuculus canorus*) is plentiful, and its well-known cry is heard in every lane and orchard. The Hoopoe is very common; and *Lanius arenarius* (in great numbers) continues to be the only Shrike in the neighbourhood of Yarkand. The mellow whistle of the Oriole (*O. kundoo*) is heard every day near orchards and tanks, and I have got many specimens of the bird. I notice that the wing of these birds is decidedly longer than what I find recorded about *Oriolus kundoo* got in India; and as *O. kundoo* breeds in India why should the same bird visit Central Asia for that purpose? Can our bird be a distinct species? and shall I hereafter have the supreme felicity of writing about *Oriolus Yarkandensis, nobis!?*

*Saxicola isabellina, Cyanecula suecica* and *Acrocephalus arundinaceus* continue to be common. *Suya albosuperciliaris* has been obtained in long grass; it is called by the natives *Suram*. Two other novelties to my list are *Phyllopneuste rama* and the Barred Warbler (*Nisoria undata*). Both these birds frequent orchards and vineyards; *P. rama* sings sweetly, but the melodious song of *Nisoria undata* is far superior, and has gained for the bird the name of *Bulbul* in Eastern Turkestan. *Sylvia curruca, Motacilla personata, Budytes citreola, Calamophilus biarmicus, Corvus corone, Corvus culminatus, Sturnus vulgaris, Passer salicicolus*, and *Passer montanus* I need only mention as common. *Emberiza pyrrhuloides* is now only seen at the edge of marshy ground overgrown with rushes. *Euspiza luteola* is very numerous near all the fields, and has a very pleasant note; and *Erythrospiza obsoleta* now haunts the orchards and close clumps of trees, which it enlivens with its song. *Alaudula pispoletta* seems steadily to prefer arid sandy

ground, away from cultivation; and *Galerita magna* is as numerous and familiar as ever.

Among the Pigeon order, *Columba œnas* has been often seen, but it is not numerous. The Turtledove (*Turtur auritus*) is a common bird this month, and I hear its beautiful note every morning in my rides. The Ringdove is always about; its coo sounding quite harsh in comparison with that of the Turtle-dove.

Of game birds, *Phasianus Shawi* seems to be buried away among the reeds and long grass; but the Quail (*C. communis*) is heard in almost every field.

As to waders I need only enumerate, *Ægialophilus cantianus*, *Ægialitis fluviatilis*, *Vanellus cristatus*, *Actitis ochrophus*, *Totanus calidris*, *Fulica atra*, and *Ciconia alba*. The additions in this order during the month are the Black Stork (*Ciconia nigra*) and the Stilt (*Himantopus intermedius*.) *Casarca rutila*, *Anas boschas*, *Querquedula circia* and *Aythya nyroca* are all common, and I have to add this month, the Red-crested Pochard (*Branta rufina*) which is numerous. Lastly, *Sterna fluviatilis* and *Sternula minuta* are very numerous. I believe that every one of the birds I have just enumerated breeds in our neighbourhood.

The weather in May:

1. *Temperature.*—Mean maximum temperature in the shade 84°; highest temperature in the shade, 97°·6 on the 21st. Mean minimum temperature in the shade 55°·2; lowest minimum 37°·2 on the 16th. Mean grass minimum 48°·1; lowest temperature on grass 28° on the 16th. Mean maximum in sun's rays 137°·5; highest temperature of sun's rays 159°·5 on the 4th.

2. *Serenity.*—Seven days of cloudless sky; seven days of partial cloud and haze; and seventeen days of overcast sky, due to clouds, or more frequently, a dense dust haze.

3. *Rain.*—A few drops of rain on the 12th and 13th; on the 14th it rained from 8 A.M. to 6 P.M., but the total fall did not amount to more than 0·1 inch, the wind during the day blowing from S. E. round by north to north-west.

4. *Wind.*—Winds have been a prevailing feature of this month's weather. On seven days we had heavy winds, bringing clouds of dust (once accompanied by a little thunder) and strewing the ground with broken branches of trees; and on four days we had very heavy winds, generally from the N. W. The last of these (yesterday) had the effect of blowing over a number of trees growing round the tank in our compound. The two kinds of dust storms met with in this country have been well illustrated this month: In the first class the wind begins without dust, and after a short while

brings clouds of particles of earth and sand with it; in the second class the dust and wind arrive together, as in the Punjab, and in the manner I have before described. The result is equally unpleasant in both cases: everything in one's room gets covered with a layer of fine dust, owing to the very clumsy misfits of the doors and windows.

*Yarkand, 30th June.*—In addition to my daily morning rides, I have this month devoted several entire days to shooting excursions in the directions of Sughuchak, Taskhama, Tokkuz Kubruk, &c. On these occasions, although the weather has been hot, I have marvelled at the slight effect produced by exposure to the direct rays of the sun. On two occasions when I was out the whole day long, the black bulb thermometer in vacuo registered the maximum heat of the sun's rays at 149°; yet, although my head was only protected by a thin felt cap, I experienced no inconvenience whatever; and the same may be said about the servants and horses. Of course in India, where the heat of the sun acts very much more powerfully than in this country, an exposure to the sun, such as I have indicated, would have been fraught with danger to every European. The enormous number of water-fowl met with this month in the lakes at Sughuchak, has been very striking. Ducks, Blue-winged Teal, Brahminy Ducks, Pochards, Grebes and Coots swarm in hundreds; but as no boat could be obtained, I have, for the most part, only been tantalized by the sight of these birds, without being able to get well at them. Waders too have been particularly numerous, especially the Redshanks and the Stilt; the latter frequenting the small salt lagoons—I may safely say in thousands—and being, of course, very easily shot on the wing. Then the Terns, with their harsh cry, swarm everywhere over rice fields, marshes, and lakes.

On the 6th a young Turkish Effendi from Constantinople paid us a visit. He did not know the Turki dialect spoken in Eastern Turkestan, nor yet Persian; but as he could speak Arabic I acted as interpreter, and we had a long conversation. He had left Stamboul about three months ago to travel in Central Asia—the aim of his life being the acquirement of learning. He was captured by Turkomans—who, he said, were all vile thieves—and liberated again, had visited Tashkend, Samarcand and Bokhara; and then passing through Khokand had arrived in Kashghar. He seemed to have been greatly disappointed in his search for learned men: "In Bokhara," he said, "there is little learning, none in Khokhand, and as to this miserable country (Kashgharia) the people are too much occupied in trying to escape having their heads cut off to devote any time

to the attainment of knowledge!" "Why," he added energetically "there is not a Mullah in this country who knows Arabic *even* as well as you do." I suppose this was intended as a compliment to me, but it sounded like very faint praise. The Effendi amused us very much by expressing his surprise at hearing that I had not been on a pilgrimage to Mecca, as I was not a Mussalman. He added that he intended to start at once for India, and hoped to find many learned people in Kashmir! After his departure we heard that our friend the Turk had 'tightened' the Mullahs of Yarkand very considerably, *i.e.*, had made their lives a burden to them by his searching enquiries about their erudition.

The Dad Khwah returned from his trip to Kashghar on the 18th, and a very important matter, as affecting us, was decided on the 21st: the Agency is to return to India, and we shall probably start in about a month's time. The arrangements about carriage and food for the journey will take some time to complete, but I have already begun packing up; the birds especially have to be very carefully stowed away.

An old Chinese woman, who has often come to me as a patient is most anxious to go to India with our party. She is a Christian—a convert of some of the Jesuit fathers in China—who was deported to this country some forty years ago. The old lady is very comfortably off and seems to be treated with respect by the Yarkandis; she says she has made up her mind to die in a Christian land and so is determined to go to India (!) for that purpose. She is much too old to stand a journey across the mountains; but when I told her so she burst into tears and said could ride a horse as well as any one else and that nothing should prevent her from accompanying us. It is difficult to know what is to be done about her.

The weather during this month has been decidedly hot, but not oppressively so. The mean maximum in the shade has been 91°, the highest temperature occurred on the 7th when the thermometer registered 97°·8. The mean minimum temperature in the shade has been 62°; the mean grass minimum, 54°·4; and the mean maximum temperature in the sun's rays, 145°·5. We have had five days of fairly clear weather, with a blue sky; thirteen days of partial cloud and haze; and twelve days with the sky completely overcast—chiefly by dense dust-haze. On three days a few drops only of rain fell, and on the 10th there was a little rain (0·03 inch) accompanied by thunder and sheet lightning towards the west. Grateful breezes from the north-west have usually blown every evening; and on three days we have had heavy winds either bringing or accompanied by clouds of dust.

With reference to the Birds this month, there has been no change with regard to the species enumerated in May; and here I will only mention the additions to my list in June.

I have heard a good deal about the Shunkar (*Falco Hendersoni?*); although I have offered to give any reasonable price for one of these birds, I have not succeeded in getting a specimen. The *Giyah* (*Haliætus leucoryphus*) I have seen on several occasions, but I have not yet been able to shoot one of these birds. In the marshes I have seen a Yellow Wagtail, differing from *Budytes citreola*, and very numerous. *Corydalla Richardi*, called by the natives *Sairam*, has been obtained in moist ground overgrown with short grass. A few days ago I purchased a caged specimen of *Carpodacus mongolicus*; it is a sweet songster and is only a winter visitant to Eastern Turkestan. *Palumbæna Eversmanni* I found very numerous in a large clump of poplars (*P. balsamifera*) at Taskhama. Among the waders I have to add the following species to the list given in May, viz., *Gallinago scolopacinus*, *Gallinula chloropus*, *Porzana pygmæa* and *Rallus aquaticus*. The Grebes (*Podiceps cristatus* and *Podiceps minor*) in the Sughuchak lake, and the Cormorant (*Graculus carbo*) seen once near the Yarkand river, complete the list of novelties this month. Nestlings or quite young birds of all the following species have been either obtained or observed this month: *Tinnunculus alaudarius*, *Milvus melanotis*, *Cuculus canorus*, *Upupa epops*, *Lanius arenarius*, *Oriolus kundoo*, *Saxicola isabellina*, *Suya albosuperciliaris*, *Nisoria undata*, *Sylvia curruca*, *Motacilla personata*, *Budytes citreola*, *Calamophilus biarmicus*, *Corvus culminatus*, *Sturnus vulgaris*, *Passer montanus*, *Euspiza luteola*, *Galerita magna*, *Palumbæna Eversmanni*, *Turtur auritus*, *Vanellus cristatus*, *Gallinago scolopacinus*, *Totanus calidris*, *Fulica atra*, *Anser cinereus*, *Casarca rutila*, *Anas boschas*, and *Aythya nyroca*.

*Yarkand*, 1*st July*.—If continuous drilling can make good soldiers, the garrison of Yarkand should be most efficient; I see the troops hard at work every morning (except on Fridays) for more than three hours. This morning they had a sort of field day; over a thousand men being assembled on the ground between the Fort and City. Infantry, Cavalry, and Artillery (represented by two guns) went through various evolutions under the command of the Dad Khwah in person.

By order of the Dad Khwah, the Yuzbashi, our Mihmandar, invited us to camp out for a few days in a large bagh or orchard, about three miles from the Fort. Our tents were sent out in the morning and in the afternoon I rode out to the fine bagh, belonging to one Hassan Jan Bai, which I had before visited in search of birds. Here I found the tents pitched

to the crops about Yarkand: The barley was cut a week ago; the wheat is now yellow, and will be cut in about a fortnight; the Indian corn is about a foot and a half high; and the flax (grown only for the sake of the oil expressed from its seed) is about nine inches high. Cucumbers are now ripe and in good condition; the peas are inferior, small and hard; fields of cotton, tobacco, and onions are plentiful about; and the melons, for which Yarkand is famous, are not yet quite ripe.

15*th*.—Yesterday we came out to a bagh here N.E. of the City and in the evening the *Naghmachi* or musicians were in full force. We were, in addition, entertained with a regular Punch and Judy show—everything complete from the "call" down to the unfortunate policemen (called Osman Bai) who is thumped and pounded by all the marionettes available.

This morning I started at 5 A.M. on a shooting excursion, from which I did not return until dusk. About six or seven miles from the bagh a number of villagers came out to say that a wild boar had been seen last night, and so we went in for a hunt after the beast. The villagers mustered strong with dogs, sticks and *montures* of sorts, but we searched vainly for our boar. At length, greatly to the regret of the Yarkandis—who appeared most anxious to get the pig killed, I decided to devote my attention to birds. I did not find anything very interesting in that line however, for, being in a region of extensive swamps and marshes, the principal birds met with were Brahminy Ducks, Stilts and Waders of sorts, and thousands of Coots. Whatever they may be in structure, these Coots are certainly in habit as much water birds as any Ducks.

In the evening we had more music, and a number of buffonery tricks were gone through by some Yarkandis, which reminded one strangely of some phases of the burlesques at home.

28*th July—Yarkand*.—To-day we had our farewell interview with the Dad Khwah, as we leave to-morrow *en route* for India. As this is our last day in this place, I may make a few remarks about certain points which I have noted in my diary this month; and give a list of the birds for the same period.

Owing to the great heat the people now go about very lightly clad; and the children either dispense with clothes altogether, or wear a thin cotton robe, open all the way down in front, which cannot be said even to save appearances. There is a curious custom practised by these people in summer; that of indulging in sand baths. Men and women often repair to a place called Karakum, west of Yarkand, and there taking off all their cloths, they bury themselves in the sand up to the neck and remain in that position for some hours. The practice is supposed to be very healthy, but I cannot discover exactly in what way. A short time ago,

*Richardi, Calamophilus biarmicus, Corvus corone, Corvus culminatus, Sturnus vulgaris, Passer salicicolus, Passer montanus, Emberiza pyrrhuloides, Euspiza luteola, Erythrospiza obsoleta, Alaudula pispoletta* and *Galerita magna.*

It will suffice also just to mention *Palumbœna Eversmanni, Columba œnas, Turtur auritus, Turtur Stolizkæ, Phasianus Shawi* and *Coturniæ communis.*

*Ægialophilus cantianus, Ægialitis fluviatilis* and *Vanellus cristatus* have been common. *Gallinago scolopacinus,* not numerous. *Actitis ochrophus, Totanus calidris, Himantopus intermedius* and *Fulica atra*—extremely numerous. *Gallinula chloropus,* common. *Porzana pygmæa,* rare. *Rallus aquaticus,* numerous. *Ciconia nigra* and *Ciconia alba,* common. A young Bittern (*Botaurus stellaris*) has been brought in.

Finally, *Casarca rutila, Anas boschas, Querquedula circia, Branta rufina, Aythya nyroca, Podiceps cristatus, Sterna fluviatilis, Sternula minuta* and *Graculus carbo* have been common during the month.

Yangaghlik, 29*th July.*—There was a great scramble this morning to get all our things sent off from Yarkand; my goods and chattels alone required twelve horses to carry them. We did not leave the Fort until about 5. P.M. and then rode out accompanied by Yuzbashi Yakub (who, by the way has lately been promoted to the rank of Pansadbashi),* and another Yuzbashi—Zarif—who is to accompany us nearly to the Karakoram Pass. The Pansadbashi soon bade us goodbye, and we passed through the city, where a number of beggars put in their claims for alms. The weather was rather hot at first, but in a short time it became very pleasant, and we had a delightful ride along the winding Posgam road, with its rows of willow and eleagnus trees on each side. The Indian corn is now in ear, the cotton plants about a foot high, and the rice fields look beautifully green and fresh.

Our camp here is only about seven miles from Yarkand, as it was thought advisable not to attempt too long a march before we get into marching trim again. There is an extraordinary fact to note as an effect of the weather to-day: two Golden Eagles, a Sparrow-hawk, and several Yarkand Pheasants died to-day from the short exposure to the sun between Yarkand and this place.

30*th.*—*Igarchi or Yangi Bazar*—At 5 o'clock this morning I saw the first real mist we have had in this country; and a good deal of dew seemed to have fallen during the night. A ride of a few hundred yards from our camp at Yangaghlik brought us to the bank of the Yarkand

* Pansadbashi—Chief of five hundred.

River, where everything had to be taken across in boats. An ancient bank of the river could be seen about 60 yards from the present border of the stream and the intermediate ground was terraced. The river was about 300 yards wide at the crossing point; and the current very rapid—forming regular waves in mid-stream. The large flat-bottomed boats were poled across the river, the steering being managed by four men armed with paddles which they used by levering against the side of the boat.

As soon as I got across I left the road and went in for some shooting. *Sylvia curruca* was common in the scrub jungle on the bank of the river; and on the sandy banks the small Plovers (*Ægialophilus cantianus* and *Ægialitis fluviatilis*) were numerous. The country beyond consisted principally of extensive marshes overgrown with rushes. There the Lapwing (*V. cristatus*), the Stilt (*Himantopus intermedius*), *Actitis ochrophus* and the Terns (*Sterna fluviatilis* and *Sternula minuta*) were all common. At the edges of these marshes I saw *Emberiza pyrrhuloides* and *Calamophilus biarmicus* flitting about among the rushes. The Marsh Harrier (*C. æruginosus*) was plentiful during the day hunting over the swamps; and I got a long pot shot with my carbine rifle at a Giyah (*Haliætus leucoryphus*) but unfortunately missed it. On riding on to Igarchi we saw both the Storks, *Kara sokan* (*Ciconia nigra*) and *Ala sokan* or *Laglag* (*Ciconia alba*), but both the species were much too wary to allow one even to get within shot of them.

We are putting up here for the night in a large serai, with very comfortable rooms. In the evening again I went out shooting, and found that as at Yarkand all the following species of birds were common: *Circus cyaneus*, hunting over the rice fields; *Upupa epops*; the Crows (*C. corone* and *C. culminatus*); *Motacilla personata and Budytes citreola*; *Hirundo rustica*, flying about in great numbers; the Turtledove and the Ringdove; the Common Starling; and of course our familiar friends the Tree Sparrow and Crested Lark (*G. magna*).

After dinner, a huge big fish, which had been caught in the Yarkand river, was brought in: it weighed 45lbs and measured in length 4 feet, 3 inches.

31*st*.—*Posgam*.—Extensive meadow ground on the march today, in which I saw numerous specimens of *Corydalla Richardi*. The distance from Yangi Bazar to this place is about 14 miles, and we have got our camp pitched in a fine orchard which seems to be much affected by both *Oriolus kundoo* and *Erythrospiza obsoleta*. In addition to the birds I have just mentioned all the birds enumerated yesterday have again been met with today.

I now propose to say a few words about the weather in July—the hottest month of the year in this country.

The highest temperature in the shade this month has been 102°·6; on eleven days the maximum was over 100°F.; and the mean maximum temperature for July is 96°. The mean minimum in the shade has been 68°·5; the mean grass minimum, 63°; and the mean temperature of the solar radiation, 146°·8, the highest temperature registered by the black bulb thermometer *in vacuo* during the month being 157°·5.

If these figures be compared with some of those previously given for the winter months, when the maximum in the shade was often not higher than freezing point, it will be seen how enormous is the range of temperature met with in the truly continental climate of this country.

During the month we have had 8 days of fairly clear weather; 11 days of partial cloud and haze; and 12 days with the sky completely overcast, by cloud and dense dust haze in equal proportion.

Rain fell on the night of the 14th to the extent of 0·2 inch. There was drizzling rain on the 16th, and on three subsequent days we had a few drops of rain. The total rainfall for the month, however, only amounts to 0·28 inch.

The humidity of the air in July has been high for this usually dry climate. On several days the air has felt quite "muggy," and on one occasion I noticed a difference of only 2° between the readings of the dry and wet bulb thermometers.

The winds during the month have been generally slight, and this condition has intensified the feeling of heat; many nights, especially, being hot and close. The breezes from the north and north-west have been very grateful; and we have had no dust storms.

*1st August.—Yak Shamba Bazar.*—A short march to-day over well-cultivated country; weather very hazy and the sky quite overcast; maximum temperature in the shade 98°·8. On riding out of Posgam, the Starlings, Orioles, Ringdoves and Tree Sparrows were seen in considerable numbers; and on the road the Swallow, Crested Lark and Black Crow (*C. culminatus*) were common. Near our present halting place I left the road and going off to the left, passed through a lot of cultivation, where I found the Blue-breast (*Cyanecula suecica*) common in the fields of wheat and Indian corn. In a clump of poplars there were great numbers of *Palumbæna Eversmanni*, of which I shot a couple; and I also observed *Columba œnas*. Then, riding over a wide stretch of soft efflorescent ground, I saw *Alaudula pispoletta;* and near a lagoon,

latter bird breeds here in the cave-like holes of the surrounding loëss banks. *Circus æruginosus* was again particularly numerous at this spot, and one youngish bird of the species, which I shot, is in a beautiful stage of plumage. The weather having got decidedly hot, I left Tungtash, and rode off to Karghalik, noticing by the way the Crow (*C. culminatus*), the Hoopoe, the Ringdove and the Wagtail (*M. personata*).

At Karghalik I found a fair going on, with crowds of people about the streets, and was glad to get into the cool shade of the old quarters we occupied on our way up last year.

*3rd.—Halted at Karghalik.*—Occupied all the morning in writing letters, &c., and spent the afternoon at Tungtash. In addition to all the birds mentioned yesterday I found the Cormorant (*Graculus carbo*) quite common, and bagged a couple. *Gallinula chloropus* too was numerous amongst the rushes, and I noticed *Budytes citreola*, *Ægialophilus cantianus*, *Ægialitis fluviatilis* and a large species of Duck called by the natives *Palbash aurdak*, of which I have no specimen.

*5th.—Besharik.*—Yesterday we halted for a second day at Karghalik and to-day we have come on a short march of about five miles to this little oasis of "five streams." On riding out of Karghalik I heard Quail calling in the fields, and *Saxicola isabellina* was tolerably numerous just where the cultivation ceased. In a little bit of loëss ground, before getting on to the stony desert, I found *Saxicola deserti* very numerous, and shot five of the birds there.

Here at Besharik the Tree Sparrow, Swallow, Hoopoe, Turtledove, Ringdove, Crow (*C. culminatus*), *Galerita magna* and the two Saxicolas mentioned above—are common. No Starlings or Orioles are to be seen about. In the evening I went out for a walk over the gravelly steppe, which extends in its dreary barrenness as far as the eye can reach. Here I saw the Large Sand-grouse (*Pterocles arenarius*), but the birds were so wild and the country so flat and open that I was not able to get a shot. On the way back to camp I saw a Harrier (*Circus cyaneus*). Maximum temperature in the shade to-day 94·2°; in the sun's rays 140·5°.

*6th.—Bora.*—Started at half past five this morning, to avoid the heat on the desert, and reached this valley-oasis at 11 o'clock. First part of road over rough gravel, evidently, I think, a very large low angle alluvial fan. Came across several small streams with bushes and reeds growing along their banks, and saw three Sand-grouse (*P. arenarius*)—very wild. I saw one *Podoces Hendersoni*, but it ran so swiftly and dodged so in amongst the bushes that I could not get a shot at it. *Alaudula pispoletta* and *Sylvia curruca*, common near

gun in the afternoon, but was not fortunate enough to come across the bird in question. In my walk I saw the Kestrel, Kite, Crow (*culminatus*), Tree Sparrow, Crested Lark, Ringdove, Swallow, Swift, Wagtail (*Personata*), and Hoopoe; and also *Cyanecula suecica*, *Sylvia curruca*, *Saxicola isabellina*, *Saxicola deserti*, and a bird which I believe to be *Pratincola indica*, and which is called by the Yarkandis *Jingsa*.

*9th*—*Sulik Aziz Langar*.—Sky quite overcast this morning, with a considerable dust haze, and a northerly wind blowing. A few drops of rain fell in the morning and evening, and, during the day, great dust clouds were seen floating away towards the direction of Sanju. The road from Koshtak lay over a flattish sandy plain all the way; and in this desert I saw a couple of *Podoces Hendersoni*, of which I managed to bag one. *Saxicola deserti* is tolerably numerous near the bushes fringing the stream of this oasis; and *Lanius arenarius*, *Upupa epops*, *Cuculus canorus* (young birds of the year,) *Passer montanus* and *Galerita magna*, are common about the little cultivation that is to be seen here. In the afternoon I also saw several Kites (*M. melanotis*), two or three Kestrels, a pair of *Hypotriorchis subbuteo* which had a nest containing two very young birds, in an Eleagnus tree; and numbers of Swifts (*Cypselus acuticauda*?)

*10th*.—*Sanju*.—Last night a fair amount of water came down in the Sulik Aziz or "precious water" stream (which was previously dry) to the great satisfaction of the family living at the oasis; rain must have fallen on the hills during the night.

On leaving our camp at Langar we ascended at once to the undulating sandy plateau which lies between that oasis and the Sanju Valley. In the early morning we had a good view of the hills, several fine snow-capped peaks being seen away to the west, and the sky was of a beautiful deep blue color, with large cumuli floating along, every now and then obscuring the sun. The first bird I saw on the desert was *Saxicola deserti*, in fair numbers. A little further on we came upon the Horned Lark (*Otocoris penicillata*) in considerable numbers. Many of the birds were quite young, and it seems probable that the species had bred in the locality at an elevation of 6,200 feet above the sea. After 8 A.M. the weather became very hot, and there was a great glare from the white colored sand. Going along I saw altogether four *Podoces Hendersoni*; they came down to the path to pick up the horse dung, in the way I described before, and I managed to shoot two of the birds, after a few exciting runs. The last four miles or so of the desert, the road lay through numerous sand hillocks, and

as we reached its edge we went through little hills of breccia, conglomerate and fine gravel.

At last we came to a gap, where we saw the valley of Sanju lying below us. It looked very fertile and pretty with its long green sward, through which the Sanju stream ran over a rocky bed, and with its orchards dotted about and fine white poplars towering up majestically. A steep descent to the valley, and we found ourselves riding along jolly green lanes leading to the Sanju river which we forded; the stream runs in three channels, with a rapid current. Our camp is on precisely the same ground that we encamped on last year, and we are to halt here for three days.

12*th.*—*Sanju.*—Yesterday the maximum temperature in the shade was 86,° the minimum 55°·3, and the temperature of the suns's rays 148°·5; to-day it has been rather cooler, and in the evening the sky was obscured by a dust haze coming from the north.

*Passer montanus*, *Corvus culminatus*, *Galerita magna*, *Hirundo rustica* and *Cypselus acuticauda* are all common here. *Motacilla personata* is numerous and keeps near the streams. Amongst the trees and in the orchards we find *Cuculus canorus*, *Oriolus kundoo*, *Erythrospiza obsoleta* and the Scarlet Bullfinch (*Carpodacus erythrinus*). About the cultivated fields the Blue-throat (*Cyanecula suecica*) is very numerous, particularly near fields of Indian corn; and *Euspiza luteola* is also found near the same places. *Upupa epops* is sure to be met with about the bare fields; while the Desert Shrike (*Lanius arenarius*) is to be found perched on the little bushes growing in bare places. *Saxicola isabellina* and *Saxicola deserti* are common near the borders of cultivation. Both the Kestrel and the Hobby (*H. subbuteo*) are found perching on the poplars; the former often on the very top of the tree. The Kite (*M. melanotis*) is pretty common, soaring about over the settlement, and away from habitations. *Athene bactriana* is common among the numerous mud banks which are found about Sanju. The Beg or Governor of this place has some Red-billed Choughs (*Fregilus graculus*) which are quite tame; but none of these birds are found here in the wild state, nor have I seen any Magpies or Starlings.

A specimen of the European Roller (*Coracias garrula*) has to-day been brought in to me from Sulik Aziz Langar; the native who captured the bird did not know of any Turki name for it, and said that the species was very rarely seen at the oasis where he lived.

14*th.*—*Sanju to Kizil Aghil.*—Yesterday we halted at Sanju, where it rained nearly all day. This morning we did not start until after 10 A. M., to give the tents a chance of getting a

18*th.*—*Tadlik to Kichik Yailak.*—Last night the stream was much swollen and consequently we started rather late this morning. Cold day with dull leaden sky, and rain began at 12 o'clock and continued steadily all the afternoon. In the first part of the road I noticed all the birds enumerated yesterday; then as the valley broadened out and we began to ascend to Kichik Yailak I saw *Columba rupicola* and *Montifringilla Adamsi*. On the broad grassy slopes of our encampment the birds I have noticed this afternoon are *Montifringilla hæmatopygia*, *Fregilus graculus* and *Ruticilla erythrogastra*, all of which are common about. The Kirghiz are encamped here, in their felt tents or Akois, on precisely the same ground we found them on last year. At 7 o'clock snow began to fall, but did not lie on the ground; Kichik Yailak looks much greener than when we saw it before in September.

19*th.*—Halted to-day at Kichik Yailak. Cold damp weather and very cheerless; minimum last night, 32°·5. The tops of the grass covered hills around us are shrouded in a dense white mist. After breakfast I secured the services of a friendly Kirghiz and started up the old side valley in quest of Snow Pheasants (*T. tibetanus?*) which I had heard calling. Near the camp I saw a Harrier (*Circus Swainsoni*) sailing about, but failed to secure it. Soon after getting into the valley I saw a number of *Podoces humilis* running up the hill-side and at once started off in pursuit. After having climbed up to a considerable height and shot three of these birds, my attention was attracted to some of our camp ponies which had strayed up nearly to the top of the hill while browsing on the grass. There was a slight scuffle going on between them and one unfortunate beast got a slight kick which caused it to lose its footing on the steep and slippery hill, and it came tumbling down, just a little to one side of us. At first the pony pitched sideways on the hill, but it soon began to turn somersaults lengthways—its head catching the hill side every time, until it reached the bed of the valley below. If the poor beast had had as many necks as hairs in its mane it must have broken them all in that terrible fall,* but strange to say it still appeared to have some life in it when the Kirghiz hurried up and converted it into lawful food by cutting its throat as promptly as possible. After this little incident, I lost no time in getting down to less dangerous sort of ground, to the great satisfaction of my Kirghiz, who seemed to be greatly afraid that the Yuzbashi would hold *him* responsible in some way for the pony's death. After shooting another *Podoces humilis*, a couple of *Montifringilla hæmatopygia*

* "Had he as many necks as hairs,
He had broken them all down those perilous stairs!" INGOLDSBY.

little dry, and then, instead of following the course of the Sanju stream to Kewis and Tam by the way we came last year, we turned off to the left by a new route which will enable us to avoid the Sanju river—at this season too much swollen to ford comfortably. On leaving Sanju we passed a number of mud banks, in the neighbourhood of which I saw the Kestrel and *Athene bactriana*, and then ascending to a wide sandy ridge, where I found one *Podoces Hendersoni*, got regularly into the mountains. We followed a small stream (*Arpalak*) upwards, along a narrow valley, fording at a place called Chamban, where there were a few cultivated fields. The Crag Martin (*Ptionoprogne rupestris*) was now observed flying about in great numbers; and the Indian Redstart (*Ruticilla rufiventris*) was very common along the stream. I also saw many Chicore (*Caccabis pallidus*) on the hill-side followed about by their young. As we went along, flocks of Alpine Choughs (*Pyrrhocorax alpinus*) were seen, an occasional Kite (*M. melanotis*) would fly past, and I observed one Harrier (*Circus Swainsoni*?) At last we reached Kizil Aghil which consists of a patch of cultivation with some large trees and one resident family on the bank of the stream. Here, strange to say, we found that the mulberries were only just ripe; the elevation is about 7,500 feet.

In the afternoon I went about shooting birds and found that the following species are now to be met with here: The Kestrel, Kite, and Harrier previously mentioned; *Ptionoprogne rupestris*, *Upupa epops*, *Motacilla personata*, *Acrocephalus macrorhynchus*, *Ruticilla rufiventris*, *Cyanecula suecica*, *Pyrrhocorax alpinus*, *Saxicola deserti*, *Passer montanus*, *Euspiza luteola*, *Columba rupiola* and *Caccabis pallidus*.

15*th*.—*Kizil Aghil to Mazar*.—Fine weather to-day until 3 P.M., when the sky became overcast with clouds, and the day dull and chilly; but we have escaped from the perpetual haze of the plains. We followed the stream up to the higher mountains from which it flows, often fording from side to side, but the road on the whole was good. The Crag Martin, Yellow-billed Chough, Hill-Pigeon (*C. rupicola*), *Ruticilla rufiventris* and the Chicore—were all common. I also noticed *T. alaudarius*, *Milvus melanotis*, *Upupa epops*, *Lanius arenarius*, *Motacilla personata*, *Corvus culminatus* and *Actitis hypoleucus*. *Parus cyanus* was found among the Tamarisk bushes, flying about in small flocks; a few *Acrocephalus macrorhynchus* were seen, and a pair of Magpies (*Pica bactriana*).

16*th*.—On leaving Mazar this morning we ascended for six or seven miles through a narrowy rocky valley, whose stream was fringed here and there with Buckthorn bushes. In this valley I saw a pair of *Carpodacus rubicilla*, of which I shot the

and three *Ruticilla erythrogastra* it came on to rain so hard that I was forced to give up my intention of looking up the Snow Pheasants, and returned to the shelter of my tent. A good deal of snow must have fallen on the Sanju Pass to-day, and I expect that to-morrow we shall have rather a job to get across. Our provisions were sent over the Pass to-day, but all our luggage will be carried with us, on Yaks, to-morrow.

20*th*.—Started from Kichik Yailak this morning, all mounted on Yaks. Followed the course of a small stream trickling down between the rolling grassy downs, noticing by the way *Ruticilla erythrogastra*, *Podoces humilis*, *Montifringilla hæmatopygia*, the Red-billed Chough (*Fregilus graculus*) and the Raven (*Corvus tibetanus*). A few Snow Pheasants (*Tetraogallus tibetanus?*) were heard calling, and the Marmots every now and then uttered their melancholy sounding cry. About 1,500 feet below the top of the pass we got on stony ground, covered with snow about a foot deep. The climb up by the zigzag path was very difficult, and made more so by the string of cattle, carrying the baggage, which blocked the way. To get on at all quickly, we had frequently to leave the path and scramble up the steep hill side; my Yak came down on his knees several times, and often stopped to refresh himself by taking several mouthfuls of snow. Near the top of the pass it was snowing slightly, and the mist was so thick that we quite lost sight of the people and animals immediately below us. At 10 A.M., on the Sanju pass the mercurial barometer stood at 16·456 and the temperature of the air was 30°.

The descent was tremendously steep just at first, but afterwards the road was so winding that our way became comparatively easy. The Tibetan Raven was collected, in considerable numbers, about the carcases of horses which lined the way down; I asked the Yuzbashi whether the bird was called Kargha (Crow) in Turki. He replied, "Oh no, this is called Khuzghun, and is quite distinct from the Black Crow; it lives for a thousand years!" Rested for a short while at our old camping place Tarbughoz, and then followed this gloomy narrow gorge to a rather wider part, where we are encamped at an elevation of about 13,000 feet, with high vertical cliffs on each side of us. *Ruticila erythrogastra*, *Montifringilla hæmatopygia*, and *Columba rupicola* are common here near our camp.

21*st*.—*Kurgan Ali Nazar*.—Short march to-day, the first five miles over very bad road, through the narrow gorge which led into the valley of the Karakash, where we encamped on the bank of the river. Fine blue sky this morning, and the temperature in the shade 64°·8 at mid-day; but in the afternoon a violent wind blew from the north, and brought with it clouds

of dust. Birds to-day: *Milvus melanotis*, *Ptionoprogne rupestris*, *Ruticilla erythrogastra*, *Montifringilla hæmatopygia*, *Carpodacus rubicilla* and *Columba rupicola*.

*22nd.—Toghrasu.*—On leaving Kurgan Ali Nazar (or Mazar Ababakr) we went up along the Karakash river to a point where the deep stream runs close against the rocky hill-side. There we crawled along across the rocks, the baggage being carried by men the same way; but the horses had all to ford the stream and take up their loads further on. A ride of an hour and a half brought us to a place called Pilataghach, which is sometimes used as a camping ground. There, along the banks of the river there is a bush jungle of tamarisk and buck-thorn with a good deal of long tufty grass. In these bushes I first saw and obtained *Leptopœcile Sophiæ*, which was numerous; and I also observed *Parus cyanus* and many *Phylloscopi*. Then going on up stream for about eight miles, we reached our camping ground here, where the grass called *Chigh* is abundant. Brushwood all the way along the banks of the river, and sides of valley formed by high bare hills. The birds observed to-day, in addition to those just mentioned, are:—The Crag Martin, Hoopoe, Raven (*C. tibetanus*,) *Ruticilla erythrogastra*, *Columba rupicola*, and *Carpodacus rubicilla*—the latter getting quit ecommon.

*23rd.—Toghrasu to Oibuk.*—On leaving camp this morning we crossed the Tograsu stream, and then a short march along the bank of the Karakash, which winds about a good deal in this neighbourhood and is densely fringed with bushes all the way, brought us to our camp here, a little short of Shahidullah. The road to-day lay principally over a great number of 'alluvial fans' which came down from the little side valleys their bases having been cut away by the stream. Weather fine; maximum temperature in the shade, 71°; in the sun's rays, 139°·5. All the following birds were common to-day: *Ptionprogne rupestris*, *Ruticilla erythrogastra*, *Leptopœcile Sophiæ*, *Phylloscopus tristis*, *Phylloscopus viridanus*, *Accentor fulvescens*, *Corvus tibetanus* and *Columba rupicola*. A few *Acitis hypoleucus* were seen near the edge of the stream. While riding along I saw a *Saxicola*, about the size of *S. deserti*, but quite *grey*: it had the rump and tail white, the latter being terminated by a broad velvet-black bar*. I had a good look at the bird which was perched on a stone quite close to me, but before my servant could come up with my gun, it flew away to the other side of the river.

*25th.—Oibuk to Balakchi.* Yesterday we halted at Oibuk, and to-day we came on past Shahidullah, crossed the Karakash river, and then instead of turning up to the right by the Suget

* Probably *S. œnanthe*, Lin, in breeding plumage.—A. O. H.

valley to the pass of that name, by which we entered the country last year, we have kept along the Karakash valley, where we are now encamped at a place called Balakchi. All the birds mentioned on the 23rd have continued to be common, except the Grey Saxicola which has not been again seen, and I have in addition to note the following species as occurring in this locality: *Tinnunculus alaudarius*, *Upupa epops*, *Saxicola deserti*, *Motacilla personata* *Carpodacus erythrinus*, *Calandrella brachydactyla*, *Caccabis pallidus*, and *Totanus calidris*.

26*th.*—*Balakchi to Gulgun Shah Mazar.*—Pleasant weather, now; maximum in the shade 75·5°; and minimum last night, 50°. Road along Karakash valley—up stream—with numerous grassy plots and bits of bush jungle by the way. Birds: Kestrel, Hoopoe, *Motacilla personata*, *Budytes citreola* (a few only), Guldenstadt's Redstart, *Phylloscopus tristis*, *P. viridanus*, *Leptopœcile Sophiæ*, *Accentor fulvescens*, *Corvus tibetanus* (a party of these Ravens seem to have attached themselves to our camp), *Saxicola deserti*, *Carpodacus erythrinus* (not numerous), *Linota brevirostris* (common), *Calandrella brachydactyla*, *Cacabis pallidus*, *Ardea cinerea* (one flock), *Actitis hypoleucus*, *Totanus calidris*. Plenty of blue-rumped hares on the road. We had to cross the river to reach our camp here, which is in a wide side valley, on perfectly flat ground covered with fine green grass. We halt here for three days, in order that the horses may feed up well before facing the barren Karakoram region.

30*th.*—*Gulgun Shah to Portash.* Our three days halt had the usual effect of putting us out of proper marching trim: nearly all one's thing seem somehow to get unpacked on these occasions, and the sudden change from the hard exercise of the march to the complete rest of a halt, at these high elevations, brings on a number of dyspeptic troubles in most people. The birds about our camp at Gulgun Shah Mazar were the following: *Upupa epops*, *Monticola saxatilis*, *Motacilla personata*, *Ruticilla erythrogastra*, *Saxicola deserti*, *Corvus tibetanus*, *Fregilus graculus*, *Linota brevirostris*, *Montifringilla hæmatopygia* *Columba rupicola*, *Ægialitis fluviatilis* and *Actitis ochrophus*. A few Terns (*Sterna fluviatilis*) were seen, and a specimen of *Coracias garrula* was found lying dead and quite dessicated among the stones of the hill side.

On leaving Gulgun Shah we forded the Karakash River, and passed by some extensive swampy ground where *Ægialites fluviatilis*, *Actis ochrophus* and *Totanus canescens* were common. Then a long ride up the valley, passing many of the curious round salt pits which abound in this locality, and we forded the river again and turned up a side valley to the right, at the end of which we are encamped—elevation about 12,600 feet. The

Chicore were very plentiful to-day, and both their nestlings and eggs were obtained. A nestling of *Linota brevirostris* was captured close to our camp here; and *Phylloscopus tristis*, the Hoopoe and Raven have all been common to-day.

31*st.*—*Across Portash Pass.*—On leaving camp this morning we began a steep climb over loose stones, and soon found ourselves riding over gently sloping ground, formed apparently by a series of moraines. Near last night's encampment I saw *Columba rupicola* flying about, and *Linota brevirostris* was common in the little bushes; but on the bare shingly ground of the pass only the Raven, *Montifringilla hæmatopygia* and *Ruticilla erythrogastra* were seen—the latter bird being particularly numerous. The advance party of the camp saw a herd of the Ky'ang or wild ass, and the blue-rumped hare was tolerably numerous during the day.

The rise along the broad flat-looking valley, with its low bare hills on each side, was so very gradual that it was difficult to determine the highest point of this very easy pass without several experiments by means of the barometer. When we did find the highest part of the Portash ("rotten stone") pass at 12 o'clock, the mercurial barometer stood at 16·176 (resulting height, a little over 17,000 feet above sea-level); the temperature of the air was 48°; and the wind was blowing along the valley, from the south-west. From that point we had a long ride over flattish ground, scarcely decreasing our elevation at all. Yuzbashi Zarif rode along with me, conversing on many topics; but I could well have spared his company, as the rarefaction of the air affected me, and I began to suffer from headache which gradually became intense.

At last we reached a point where a pile of stones indicated what the traders who have travelled this way consider to be the pass (but which was found to be really lower than the point I have previously mentioned), and from there a short but steepish descent, over soft sandy ground, landed us at our camp, Akin—elevation about 16,600 feet. Violent headache increased by the slightest movement.

1*st September.*—*Darwaza Sarighot* 15,900 *feet.*—Fearful sufferings during the night at Akin. This morning I was so prostrated that I could not ride, nor even dress. Came along on a *charpai* which was carried by a couple of horses attached fore and aft. Yuzbashi Zarif took his leave of us this morning; in bidding me good-bye he said very solemnly that he entrusted me to God's care. The only birds noticed on the road were the attendant Ravens and Guldenstadt's Redstart.

2*nd.*—*Balti Brangsa*, 16,800 *feet.*—Sufficiently recovered to be able to ride the march to-day, and in the evening I hardly felt

any headache except on moving. At this elevation even the exertion of dressing is felt to be a tremendous effort. Both *Montifringilla hæmatopygia* and the Horned Lark (*Otocoris penicillata*) were common to-day.

*3rd.—Karakoram Pass.*—A fine frosty morning as we rode up to the top of the pass. *M. hæmatopygia* was numerous near the camp, and I got one quite young bird; so it would seem that this species breeds in these inhospitable regions and at such great heights. Near the pass I saw a Hoopoe, apparently quite at home; and the Tibetan Raven seems to fly about here as easily as if it were at an elevation of 10,000 feet instead of over 18,000. At 12 o'clock on the Karakoram Pass the barometer stood at 15·386, and the temperature of the air was 33°·5. Many of our followers suffering from the rarefaction of the air, but I felt not the slightest inconvenience.

Here on the watershed between India and Eastern Turtestan, I bring this tiresome diary to an end: the birds on the other side do not now concern us. I may mention that from the day we left Yarkand to the day we reached the Karakoram Pass, I had, (single-handed,) shot, measured, and skinned or carbolized, one hundred and thirty birds—and that in regions and under conditions little favorable for such pursuits.

## II.

In the following detailed list of Birds of Eastern Turkestan, the numbers prefixed to each species are those used in Dr. Jerdon's Birds of India and Mr. Hume's Catalogue. One hundred and fifty-six species are enumerated, the number belonging to each order being as follows:—

| | | |
|---|---|---|
| Raptores | ... | 25 species. |
| Insessores | ... | 78 „ |
| Gemitores | ... | 5 „ |
| Rasores | ... | 7 „ |
| Grallatores | ... | 24 „ |
| Natatores | ... | 17 „ |
| Total | ... | 156 „ |

No birds shot south of the Karakoram watershed are here included. Unless the contrary is expressly stated all the measurements, and of course the colors of soft parts, are from the fresh bird. Under each species I have given all the information about it which I was able to collect; and I have endeavored to make quite clear what statements are made as the result of personal observation, and what on the faith of native accounts. I may mention that I was surprised to find the

Yarkandis knowing so much about birds and clearly discriminating between nearly allied species as they do; with reference to the names of birds I never accepted the unsupported statement of any one individual, but cross-questioned as many people as possible about the matter, so that I believe the names I have given are quite accurately applied. About migration I noticed that the Yarkandis spoke of birds moving towards Aksu and Kulja (North), Mazan Daran in Persia (West), Hindoostan (South), or Lob and Bajin—China—(East).

## 1.—*Vultur monachus, *Lin.*

This Vulture is found, though rarely, in the hills bordering Eastern Turkestan and a few stragglers are occasionally seen in the plains. The only specimen I got was captured in July 1875, by one of my Yarkandi servants, at Sughuchak—about fifteen miles from the city of Yarkand.

The bird had somehow fallen into a lake and was secured while thoroughly wet and unable to fly. On dissection it proved to be a young female and had evidently sustained some injury to its leg; for I found a mass of spongy callus, about one inch in diameter, attached to the head of the right tarso-metatarsal bone. The following measurements and particulars were noted at the time from the fresh bird: Length, 44†; expanse, 113·3; wing, 31·2; tail, 16·2; tarsus, 4·3; bill, from gape, 3·5; wings fall short of tail, 2·4; weight, 33lbs. 12·5 ounces. Bill black above—the sides and lower mandible blueish grey. Cere blueish plumbeous; edges of gape pink. Irides dark brown. Orbital skin and bare skin of head and neck, very pale greenish. Legs and feet, greenish cream colour; claws black. The Turki name for this species is *Salwar.*

## 7.—Gypaetus barbatus, *Lin.*

The Lammergeyer was often noticed on the journey through Ladak, but I only saw it once in Eastern Turkestan, *viz.*, on the Sanju Pass, and between the Pass and Kichik Yailak, on the 24th September 1874. The Sanju Pass though only 16,600 feet above sea level is perhaps the most difficult on the road from India to Yarkand, and is strewn on both sides with the carcases of dead horses. Marmots abound too above Kichik Yailak, and the Bearded Vulture is said to prey on them besides feeding on carrion. The Turki name of this species (no specimen of which was obtained) is *Ghiji.*

* As I am entirely responsible for the identification of the species included in this list, I desire to explain that I have been able to give very little time to the matter and have had to name the collection without other specimens for comparison and with very few books to consult, so that it is only too probable that some of the names here given may have, on fuller investigation, to be altered.—Ed., S. F.

† All measurements are given in English inches and decimals of inches.

## 8.—Falco peregrinus, *Lin.*

A few stragglers of the Peregrine Falcon are occasionally seen near the city of Yarkand during the winter. The Yarkandi falconers say that this bird is commonly found near the hills north of Eastern Turkestan in the neighbourhood of Ushturfan, Aksu and Ili (Kuldja): and that many breed near Maralbashi, the nest being usually placed among reeds! They also add that in the wild state the Peregrine always preys on ducks, teal and various waders. The male is considered useless for sport, but the female is held in great esteem for the purposes of falconry; it is trained to strike herons, geese, ducks and bitterns. The name given to this Falcon in Turkestan is *Bahri*—an Arabic word meaning 'of the river' or 'of the sea"—thus implying that the Peregrine is a water haunting species.

Dimensions, &c., of a male obtained at Yarkand in March 1875: Length, 15·5; expanse, 38; wing, 12·2; tail, 6·6; tarsus, 2; bill, from gape, 1·2; wings fall short of tail, 0·5; weight, 18 ounces. Bill, very dark blue at tip, light slaty blue at base; cere and orbital skin, yellow; irides, dark muddy brown; legs and toes, light yellow; claws, black.

## 10 *bis.*—Falco Hendersoni, *Hume.*

Dimensions of a female purchased at Kashghar, November 1874, skinned at Yarkand, February 1875:

Length, 21·5; wing, 15·6; tail, 9·5; tarsus, 2·25; bill, from gape, 1·5; tarsus feathered for, 1·0; weight, 2lbs. 7·25 oz. Bill light slaty blue, darker at tip. Cere light yellow. Orbital skin pale yellowish. Irides dark brown. Legs light yellow; toes yellow with a greenish tinge. Claws black. The ovarium contained three ova, the size of small peas.

The Turki name of this bird is "*Aitalgu*," and all competent authorities in such matters in Kashgharia assert positively that it is the female of the famed "*Shunkar*." The bird is rare in Eastern Turkistan, but is said to be a permanent resident and to breed there. I heard that it was occasionally obtained in the Dolan forest region—in the direction of Aksu; from the district of Lob; from the hills near Sanju; and from the neighbourhood of Karchung, south-west of Yarkand. The "*Shunkar*" is the most highly prized of all the falcons, and whenever one is caught it is at once taken to the Amir, the Dad Khwah of Yarkand, or the Governor of the district; the "*Aitalgu*" is not at all prized, and is considered hardly worth training. An experienced old Yarkandi bird-catcher in looking at the pictures in my copy of 'Lahore to Yarkand' one day,

fixed on the plate of Falco Hendersoni and said at once that it was a representation of the *Shunkar*. Perfectly white *Shunkar* (albinos) were mentioned to me.

## 12 *bis*.—Falco barbarus, *Lin.*

♀. *Kashghar, 13th December.*—Length, 14·8; wing, 11·55; tail, 6·2; tarsus, 1·65; bill from gape, 1·1; closed wings exceed tail.

Bill dark blue at tip, greyish at junction with cere; irides brown; legs and feet yellow; claws brownish at bases, black at tips.

♀. *Yarkand, 26th February.*—Length, 15·3; expanse, 33; wing, 11; tail, 6·3; tarsus, 1·7; bill, from gape, 1·15; weight, 1lb 4·1oz.

Bill plumbeous blue, darker at tip; cere light yellow; orbital skin, pale waxy yellow; irides brown; legs very pale yellow; feet yellow; claws brownish horny at bases, black at tips.

♂. *27th August.—Gulgun Shah.*—Length, 14.8; expanse, 34; wing, 10·7; tail, 6·2; tarsus, 1·6; bill, from gape, 1·1; closed wings fall short of tail, 1·0; weight, 12.8oz.

Bill dark blue at tip, greenish yellow near cere; cere and orbital skin, greenish yellow; legs and feet, yellow; claws, dusky blackish.

This Falcon is said to inhabit the hills of Kizil tagh and Kugiar, and to breed there in summer. It visits the plains of Kashgharia about the beginning of winter, but not in great numbers. It is said to prey chiefly on Pigeons (*Col. rupicola*) and "*Beghitak*" (*Pterocles arenarius*). This species is often trained for hawking, for which sport it is considered to rank next to the Goshawk in point of excellence.

## 12.— { Falco babylonicus, *Gurney.* / Falco Tscherniaïevi, *Severtsov.*

♀. *6th March, Yarkand.*—Length, 17·4; expanse, 41·5; wing, 13·75; tail, 7·3; tarsus, 1·85; bill, from gape, 1·3; closed wings exceed tail, 0·3; weight, 1lb 10·5oz.

Bill light yellowish green near cere, dark blue at tip; cere greenish yellow; orbital skin, saffron yellow; irides, dark brown; legs and feet, orange yellow; claws, black.

The Turki name for this species is *Boz Lachin*, *boz* meaning grey and *Lachin* being the ordinary name applied to *Falco barbarus*. The only specimen obtained was purchased at Yarkand. I have no notes about the distribution of this Falcon in Eastern Turkestan and only know that it is trained for hawking.

## 13.—Hypotriorchis subbuteo, *Lin.*

♂ *Yarkand, 23rd May.*—Length, 12·0; expanse, 32; wing, 10·8; tail, 5·9; tarsus, 1·2; bill, from gape, 0·85; closed wings reach to end of tail; and weight, 7 oz. Bill dark blue—light grey at junction with cere; cere, gape, and orbital skin, yellow; irides, dark brown; legs and toes, yellow; claws, black.

♀ *Sheikh-ul-mazar, near the Urpa canal, Yarkand, 20th June.*—Length, 13; expanse, 32·5; wing, 11·15; tail, 6·3; tarsus, 1·1; bill, from gape, 0·85; closed wings exceed tail, 0·4; weight, 9·5 oz. Bill bluish black at tip, greenish yellow horny at junction with cere; cere, greenish yellow; irides, dark brown; legs and feet, light yellow; claws, black.

♀ *Sulaghz Langar, 9th August.*—Length, 12·5; expanse, 30·8; wing, 11·1; tail, 6·3; tarsus, 1·2; bill, from gape, 0·85; closed wings exceed tail, 0·5; weight, 8·3 oz. Bill dark blue at tip, greyish blue at base; cere, gape, and orbital skin, greenish yellow; irides, dark brown; legs and feet, yellow; claws, black.

*Nestling obtained at Sulaghz Langar, 9th August.*—Covered with a perfectly white down; allantois as large as a hen's egg; weight 2·6 oz. Bill, grey borny; irides, black; legs and feet, pale yellow; claws, livid horny. The stomach contained the heart of a starling.

♂ *Shot at Sanju, 11th August.*—Length, 12; expanse, 30·8; wing, 10·7; tail, 5·9; tarsus, 1·3; bill, from gape, 0·75; closed wings exceed tail 0·2; weight, 6·25 oz. Bill dark blue at tip, bluish grey at base; cere and orbital skin, greenish yellow; irides, dark brown; legs and feet, yellow; claws, black.

The Hobby is a seasonal visitant to the plains of Eastern Turkestan, where it breeds. It arrives in the neighbourhood of Yarkand in May, but not in any considerable numbers, and migrates—it is supposed, towards India—in October, when the trees begin to loose their leaves. The nest is usually placed high up in poplar trees (Populus alba), generally near mazars. At Sulaghz Langar, on the 9th August, a nest of this bird was found placed in a "*Jigda*" tree (*Eleagnus latifolia*) about 20 feet above the ground. The nest contained two very young nestlings (one of which is noticed above) and the hinder part of the body of a young starling—a bird of the year. As there were no starlings within at least 15 miles of Sulaghz Langar, the parent bird must have undertaken a trip of 30 miles, over the desert and back again, to provide its young with a breakfast. The Hobby shot at Yarkand in May was holding in its claws a sparrow (*P. montanus*), which it had just captured; and on another occasion I saw one hawking dragon flies over some marshy ground.

I have also seen it swooping at a Swallow (*H. rustica*) and sometimes hovering above fields of corn and lucerne.

On the return journey to India in August this species was observed on five different occasions at our various halting stages, but was not seen after leaving Sanju on the 14th August. The Turki name for the Hobby is "*Jaghalbai.*"

## 15.—Lithofalco œsalon, *Gmel.*

♂ *Kashghar, 27th December.*—Length, 11·6; wing, 7·9; tail, 5·0; tarsus, 1·4; bill, from gape, 0·75. Bill plumbeous blue, yellowish at base; cere, pale yellow; irides, brown; legs and feet, yellow; claws, black.

♀ *Kashghar, 10th December.*—Length, 12·9; wing, 8·7; tail, 5·6; tarsus, 1·45; bill, from gape, 0·86. Bill plumbeous blue, basal half of lower mandible, yellowish horny; cere, pale yellow; irides, brown; legs and feet, yellow; claws, black.

The Turki name for the Merlin is "*Turumtai,*" and it is said to live and breed in the hills of Eastern Turkestan. It visits the plains about Kashghar and Yarkand, in small numbers only, in winter; principally during the months of November and December, I think. A few birds are trained to capture Quails and Larks, and in this sport the *Turumtai* is said to afford great 'tamasha.'

## 17.—Tinnunculus alaudarius, *Briss.*

♂ *Yepchan, 16th October.*—Length, 14; wing, 10·25; tail, 7·1; tarsus, 1·5; bill, from gape, 0·87. Bill bluish black at tip, bluish grey about the middle, yellow horny at base: cere, greenish yellow; irides, brown; legs and feet, yellow; claws, black.

♂ *Juv. Yarkand, 30th June.*—Length, 12·6; expanse, 28·4; wing, 9·15; tail, 6·8; tarsus, 1·6; bill from gape, 0·85; weight, 6 oz. Bill: upper mandible white at extreme tip and tooth, dark blue in the middle and light grey at cere; lower mandible, slaty grey; cere, greenish yellow; eyelid and orbital skin, yellowish green; irides, dark brown; legs and feet, yellow; claws, dusky blackish.

♀ *Yarkand, January.*—Length, 14·8; wing, 10·6; tail, 7·5; tarsus, 1·6; bill, from gape, 0·91. Bill, dark blue at tip, greenish about middle, and yellowish horny at base; cere and orbits, greenish yellow; irides, brown; legs and feet, yellow; claws, bluish black.

♀. *Beshkant, 6th February.*—Length, 13·5; wing, 9·9; tail, 7; tarsus, 1·52; bill, from gape, 0·85. Bill greyish blue, lower mandible yellowish horny at base; cere, greenish yellow; irides, brown; legs and feet, yellow; claws, black.

♀ *Yarkand*, 15*th July*.—Length, 13; expanse, 29·5; wing, 9·8; tail, 7·1; tarsus, 1·25; bill, from gape, 0·8; weight, 7 oz. Bill dark blue at tip, light bluish grey near cere and below; cere and orbital space, greenish yellow; irides, dark brown; legs and feet, yellow; claws, black.

The Kestrel is a permanent resident in Eastern Turkestan; it is common throughout the plains during the whole year and I have observed it in the hills of the country also, up to an elevation of about 12,000 feet. It feeds chiefly on mice, lizards and grasshoppers; the Yarkandis add frogs, and in winter, sparrows. In the stomach of a Kestrel killed at Yepchan in October, I found, among other things, a rat's tail 6 inches long. This species seems to breed in April, May and June; towards the end of the latter month great numbers of the young birds are captured by the Yarkand boys. In the hills the nest is placed in the crevices of rocks, but in the plains on high "*terek*" (poplar) trees, near villages. The Turki name for the Kestrel is *Kurganak*; it is considered quite worthless for hawking and is never trained.

## 21.—Astur palumbarius, *Lin.*

♂ *Kashghar*, 14*th December*.—Length, 21; wing, 13·2; tail, 10; tarsus, 2·95; bill, from gape, 1·42. Bill black, lower mandible light horny at base; legs and feet, pale greenish yellow; claws, black.

The Goshawk is the bird most commonly used for hawking in Kashgharia, for which purpose it is highly esteemed; the Turki name for the species is *Karchighah*. It is said to live principally near the hills in the neighbourhood of Aksu, and only visits Yarkand about the beginning of winter when it is supposed to be following the water-fowl then migrating towards Hindostan. The *Karchighah* is caught by means of a trap, to which a live pigeon is usually attached as a bait; the price of the trained bird varies from fifty to a hundred *tangas* (ten to twenty rupees).

I saw a good deal of hawking as practised in Kashgharia and may here say a few words about the subject. The hawkers are always mounted on the strong ponies of the country, and carry the Goshawk on their gloved right hand. A leather thong is attached round the neck of the bird, the end of which hungs down over its breast. This thong is seized by the forefinger and thumb of the hawker's right hand, when he is about to throw the bird off; the object of this being to keep the Hawk's body well forward, and so prevent it from being tilted backwards, by the resistance of the air, when it is cast at the quarry. The Goshawk seems to have no chance of

striking birds unless it can be thrown at them before they have fairly got off the ground; and if it once misses its prey it commonly gives up the chase at once and perches on a branch of some neighbouring tree, where the hawker has to follow and coax the bird to return to him by repeated cries of *Kelang, Kelang* (come, come). I have often seen it strike hares (*Lepus Yarkandensis*), which it seems to do rather cleverly; and occasionally when there is a dearth of game it is thrown at Crows (*C. intermedius*) and Owls (*Otus vulgarus*) which fall easy victims. Pigeons escape from it readily, and the only occasion on which I saw this Hawk flown at a Pheasant (*Phasianus Shawi*) the quarry escaped by settling at once among the rushes. The method of hawking Ducks (*Anas boschas*) as practised during the winter, is as follows. When a flock of Ducks is seen on some frozen stream or marshy ground, the hawker endeavours to approach as near as he can under cover; and when concealment is no longer possible he gallops his horse over the frozen ground right at the flock. His right arm his held straight away from his body, the Goshawk sitting on his gauntleted hand with its neck thong held between the man's fingers to keep the bird's body well forward. The alarmed quarry now begins to rise from the ground, and at this moment the Hawk is cast forward above the flock, one of which it generally manages to strike. The Goshawk having seized its prey comes to the ground and proceeds to give the Duck a violent wrench, by elevating one foot and depressing the other; then craning its neck, as if in exultation, it begins at once to tear up and eat the quivering victim.

## 24.—Accipiter nisus, *Lin.*

♂. *Kashghar, 28th November.*—Length, 12·6; wing, 8·2; tail, 6·4; tarsus, 2·2; bill, from gape, 0·8. Bill dark blue at tip, brownish and yellowish horny at base; cere, greenish yellow; irides, yellow; legs and feet, yellow; claws, brownish black.

♂. *Kashghar, 19th December.*—Length, 12·8; wing, 8·5; tail, 6·75; tarsus, 2·25; bill, from gape, 0·8. Bill dark bluish, light horny at base below; cere, greenish yellow; irides, yellow; legs and feet, pale yellow; claws, brownish black.

The Sparrow-hawk is found in great numbers in the hills south of Yarkand, where it breeds. It visits the plains in considerable numbers, in the beginning of winter. It is rather prized for hawking and is trained to capture Larks, Quail and Pigeons (*C. œnas*); in the hills it is said also to hunt Chicore. Two specimens were preserved at Kashghar in November and December, and I have seen others procured from the

Karchung valley in May. The Turki name for the Sparrow-hawk is *Karghai*.

## 26.—Aquila chrysaetus, *Lin.*

♂. *Yarkand, 27th February.*—Length, 33·2; expanse, 83·5; wing, 25; tail, 15·4; tarsus, 4·75; bill, from gape, 2·6; closed wings fall short of tail, 2; weight, 6lbs. 6 oz. Bill dark blue—light slate color near cere; cere and edge of gape, greenish yellow; cartilaginous shelf above eyes, slaty grey; irides, brown; feet yellow, soles dirty whitish; claws, slaty black.

♀. *Yarkand, 29th July.*—Length, 38; expanse, 86·5; wings, 25·5; tail, 15·5; tarsus, 4·4; bill, from gape, 2·4; weight, 13lbs. 6 oz. Bill dark blue at tip, greyish blue near cere; cere, yellow; irides, brown; feet, light yellowish; claws, slaty black.

This species is the celebrated "*Birkut*"—the name by which the Golden Eagle is known in Khokand and Western Turkestan generally; in Kashgharia however it is called "*Karakush*," *i.e.*, black bird. The trained bird is very common in Eastern Turkestan, every governor of a district or town usually having several. It is said to live and breed in the hills south of Yarkand and near Khoten, where the young birds are caught, to be trained for purposes of falconry. A few stragglers occasionally visit the plains in winter: I saw one a few miles from Yarkand in January and another near Beshkant in February. In the wild state this Eagle's prey is said to consist of the Stag, the "Kik" (*Ant. gutturosa*), the wild cat, the fox and the wolf. The trained *Karakush* is always kept hooded when it is in-doors, except when about to be fed, and the method of carrying it to the chase is the following: The man who is to carry the Eagle is mounted on a pony and has his right hand and wrist protected by a thick gauntlet. A crutch, consisting of a straight piece of stick carrying a curved cross piece of horn or wood—the concavity being directed upwards—is attached to the front of the saddle; the man grasps the cross piece of the crutch with his gloved hand, and the Eagle then perches on his wrist. I have ridden about for four or five hours attended by men carrying Birkuts in this way, and they never complained of feeling tired. I never saw the Karakush do much in the way of sport in Kashgharia: on one occasion I saw it very fairly cast off at an Eagle Owl (*Bubo maximus*); but it clumsily missed its quarry, at once gave up the pursuit and settled on the ground.

I bought an untrained bird at Yarkand for a tillah (Rs. 5), but a good *Karakush* would be worth considerably more.

## 42.—Haliaetus leucoryphus, *Pallas.*

This bird is well known in Kashgharia, where it is called "*Giyah.*" I noticed it on several occasions a few miles from the city of Yarkand in June and July; and in August at Igarchi, and at Tungtash, about 7 miles east of Karghalik. It was always seen in the neighbourhood of water, usually sitting motionless on the bank of a stream or on some mud cliff near marshy ground. On one occasion I saw it feeding on the carcase of a dead horse, about five miles south of Yarkand. The Yarkandi shikaris say that the "*Giyah*" feeds principally upon fish and carrion, but that it sometimes strikes crows and hares.

No specimen of this species was preserved.

## 44.—Buteo vulgaris, *Bechstein.*

♂. *Yarkand, January.*—Length, 21·5; wing, 17·73; tail, 10·0; tarsus, 3·0; bill, from gape, 1·9.

Bill bluish black, lower mandible yellowish below; cere, greenish yellow; legs and feet, yellow; claws, bluish black.

This Buzzard was common during the winter in the neighbourhood of Yarkand, where it was frequently seen hunting over the long rushes growing in marshy ground. It disappeared in the beginning of spring, migrating, I was told, northwards to the hills about Kuldja. The Yarkandis call it *Sà.*

## 45.—Buteo ferox, *Gmel.*

♂. *Yarkand, January.*—Length, 22·4; wing, 16·45; tail, 9·7; tarsus 3·2; bill from gape, 1·8.

Bill bluish black, lower mandible brownish below; cere, greenish yellow; legs and feet, lemon yellow; claws, black.

♀. *Yarkand, February.*—Length, 23·4; wing, 17·7; tail, 10·1; tarsus, 3·3; bill, from gape, 1·92.

Bill bluish black; lower mandible brownish plumbeous at base; cere, fine lemon yellow; legs and feet, greenish yellow; claws, black.

This species was also very common in the plains of Eastern Turkestan during the winter, and in common with the other two species of Buzzard found in the country, disappeared in the spring. I kept one of these Buzzards alive for some time, and found its disposition anything but gentle: when I went close up to it, it would throw itself on its back and strike out violently with its claws. It got loose one night, in a room in which I had a number of other birds, and committed dreadful havoc; killing at least half a dozen birds, among the number a Kestrel. The Yarkandi shikaris called this Buzzard *Tokhmak Sa*, the Mallet "Sā," but I don't believe they could really distinguish it from the other two species (*B. vulgaris* and *B. japonicus.*)

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

*Three females, shot at Yarkand in January.*—Length, 20·5 to 21; wing, 15·3 to 16·7; tail, 8·9 to 9·1; tarsus, 2·85 to barely 3·0; bill, from gape, 1·55 to 1·75.

Bill, plumbeous black; cere, legs, and feet, greenish yellow; claws, black.

Common near Yarkand during the winter. A dark specimen was called *Kara Sa*, the Black "Sā;" but this species was really not discriminated from the preceding two. Never met with in the plains after the winter was fairly over.

## 50.—Circus cyaneus, *Lin*.

♂. *Yarkand, 17th January.*—Length, 17; expanse, 39·5; wing, 13·4; tail, 8·76; tarsus, 2·5; bill, from gape, 1·15. Bill, bluish black; cere, greenish yellow; irides, light yellow; legs and feet, bright yellow; claws, black.

♀ *Yarkand, 18th March.*—Length, 20; expanse, 44; wing, 14·65; tail, 10·5; tarsus, 2·75; bill from gape, 1·35; closed wings fall short of tail, 2·1; weight, 15·6 oz. Bill, plumbeous black; cere, gape, and edges of eyelids, greenish yellow; irides, straw color; legs and feet, yellow; claws, black.

The Hen-Harrier is a permanent resident in the plains of Kashgharia and breeds there; the nest is said to be placed in long grass jungle. I often observed this bird sailing low, over rush-grown marshes and bare fields, with a wonderfully long sustained flight. It never seems to tire and always appears keenly intent on looking for its prey; every now and then suddenly dropping down among the reeds, as if shot, but soon rising again to resume its hunting. The male bird is called by the Yarkandis *Kok Sa*—the Blue "Sa," and the female, *Kilati Sa*; the word *Sa* being a sort of generic name applied to all Buzzards, Kites and Harriers, an added second word (usually having reference to color or shape) marking the species.

## 51.—Circus Swainsonii, *A. Smith*.

A single male bird of, (I believe,) this species was seen at Kichik Yailak (12,054 feet) on the 19th August. It sailed slowly over our camp, regularly quartering the place, so I had a good opportunity of observing it. The bird was somewhat larger than *Circus cyaneus*, but had no bluish tinge whatever about it: it was greyish white below, above pale grey, with the wings a little darker. I watched it for some time and at last got rather a long shot at it, but missed. The Kirghiz called it *Boz Sa*—the Grey "Sā."

* Mr. Sharpe considers this species identical with *B. Plumipes*, Hodgs. I suspend my opinion of this point.—A. O. H.

## 54.—Circus æruginosus, *Lin.*

♀. *Sughuchak, 26th July.*—Length, 22·4; expanse, 52·5; wing, 16·2; tail, 11·2; tarsus, 3·4; bill, from gape, 1·6; closed wings fall short of tail, 2·5; weight, 1lb 5oz. Bill, dark blue; edge of gape, plumbeous blue; irides, light brown; cere, greenish yellow; legs and feet, yellow; claws, black.

♀. *Tungtash, 2nd August.*—Length, 22; expanse, 55; wing, 17; tail, 10·5; tarsus, 3·4; bill, from gape, 1·65; closed wings fall short of tail, 1·3; weight, 1lb 9·75oz. Bill, dark blue; lower mandible, grey at base; cere, greenish yellow; irides, very light yellow; legs and feet, yellow; claws, bluish black.

♂. *Tungtash, 2nd August.*—Length, 19·5; expanse, 48·8; wing, 15·2; tail, 9·65; tarsus, 3·4; bill, from gape, 1·5; closed wings fall short of tail, 1·7; weight, 1lb 1·2oz. Bill, dark blue; base of lower mandible and edge of gape, greenish yellow; cere, yellow; irides, hazel; legs and feet, yellow; claws, bluish black.

The Marsh Harrier is tolerably common in Eastern Turkestan where it is often seen during the summer, hunting over the long rushes and reeds which grow in marshy ground or on the banks of lakes. It was never seen in winter. This species is said to feed chiefly on frogs, rats and lizards; occasionally also on the Reedling (*Calamophilus biarmicus*). It breeds in Kashgharia, where it is called by the natives *Akbash Sa*, the White-headed "Sā."

## 56 *bis.*—Milvus melanotis, *Temm.* and *Schleg.*

(1). ♂. *Taskhama, near Yarkand, 27th June.*—Length, 24·2; expanse, 60; wing, 19·9; tail, 13; tarsus, 2·2; bill, from gape, 1·8; closed wings fall short of tail, 0·5; weight, 1lb 10oz. Bill, dark slaty blue; cere, yellow; irides, yellowish hazel; legs and feet, pale greenish yellow; claws, black.

(2). Nestling of above obtained at the same time and place.

(3). ♀. *Juv. Yarkand, 20th July.*—Length, 23; expanse, 60; wing, 18·75; tail, 11·4; tarsus, 2·2; bill, from gape, 1·8; closed wings fall short of tail, 0·2; weight, 1lb 8·25oz. Bill, bluish black; cere and edge of gape, very pale greenish yellow; irides, hazel; legs and feet, pale greyish; claws, bluish black.

(4). ♂. *Karghalik, 2nd August.*—Length, 24; expanse, 59·4; wing, 18·8; tail, 12·25; tarsus, 2; bill, from gape, 1·73; wings short of tail, 1·1; weight 1lb 12·5oz. Bill, bluish black; cere, pale yellow; irides, orange brown; legs and feet, pale grey; claws, black.

(5). ♂. *Hills between Kigil Aghil and Mazar, 15th August.*—Length, 23; expanse, 60; wing, 18·9; tail, 11·5; tarsus, 2·25;

bill, from gape, 1·8; weight, 1lb. 13·25oz. Bill, fuliginous black; the base of the lower mandible, greenish yellow; cere and gape, yellow; irides, light brown; legs and feet, yellow; claws, greyish black. The closed wings reach to the end of the tail.

This* was the only species of Kite observed in Eastern Turkestan, where it is tolerably common, especially in the plains, although it does not occur in anything like the enormous swarms of allied species of Kite seen in Kashmir and the parts of India which I have visited. It was first noticed near Yarkand in April and the last specimen seen in the country was near Shahid-ullah about the end of August. The natives say that it is a permanent resident, but I certainly never noticed any kites during the winter, and believe they only arrive about March or April. This species breeds in Kashgharia, and, in the plains at all events, the nest seems always to be placed on high trees. On the 27th April I found a nest at Kichik Taskhama (about ten miles or so east of Yarkand) in a clump of *Toghrak* or poplar trees (*Populus balsamifera*,; it was in the form of a rude sort of platform, made up of sticks and twigs about 2 feet square, placed on three strong horizontally growing branches, about 30 feet above the ground. The nest contained one young bird (No. 2, *supra*) not able to fly. The parent birds appeared to be much disturbed by my presence near their nest and soared about anxiously, thus giving me an opportunity of shooting one of them, which proved to be a male (No. 1, above). I noticed that the female had the tail much less forked than her companion, probably because it had become much frayed while she was hatching. This kite is said to feed on frogs, fish, carrion nd refuse generally, occasionally carrying off a chicken. It is called *Achak Koyruk Sa*, 'the Fork-tailed Kite' or occasionally *Mizan Sa* 'the Balance Kite,' in allusion to the manner in which it poises while soaring.

## 67.—Otus vulgaris, *Flem.*

♂. *Kashghar, 31st October.*—Length, 14·3; wing, 11·7; tail, 5·6; tarsus, 1·35; bill, from gape, 1·05. Bill, black—light horny at tip; irides, orange; claws, brownish black.

♂. *Yarkand, February.*—Length, 14·9; wing, 11·75; tail, 5·9; tarsus, 1·4; bill, from gape, 1·1. Bill, bluish black; irides, orange yellow; claws, horny black.

*Two females, shot near Yarkand in February.*—Length 14·8 to 15·2; wing, 12·25 to 12·3; tail, 6·2 to 6·5; tarsus, 1·45 to 1·6; bill, from gape, 1·15 to 1·25. Bill, slaty black—brownish at tip; irides, orange; claws, black, brownish or pale at tips.

* These specimens, though clearly very closely allied to *M. major*, appear to me all markedly smaller than this latter.—A. O. H.

♀. *Yarkand, 11th March.*—Length, 14·25; expanse, 35·8; wing, 12·25; tail, 6·4; tarsus, 1·35. bill, from gape, 1·2; closed wings exceed tail, 1·4; longest feather in ear tuft, 2·0; weight 8 oz. Bill and claws, black; irides, golden orange; soles of feet, yellowish white; ends of toes, dusky.

The Long-eared Owl was common about Kashghar and Yarkand during the winter; about the beginning of April it migrated, probably towards the forests of Maralbashi and Aksu, where I was told that it was known to breed. Near Beskant, in February, it was often flushed while beating for Pheasants (*P. Shawi*) and hares in long grass; on these occasions, when the sport was flagging, the Yarkandis would throw off their Goshawks to strike the Owls, *pour passer le temps.* This species was also observed roosting on trees and frequenting old ruins. In Turki it is called *Mashak Yapalak* or 'Cat Owl.' Four of these birds were placed for a night in a large hamper; in the morning only one Owl was found alive, the other three had been killed, and two of them partially devoured by the survivor!

## 68.—Otus brachyotus, *Gmel.*

♂. *Yarkand, January.*—Length, 14·7; wing, 12·3; tail, 6; tarsus, 1·5; bill, from gape, 1·1. Bill, slaty black, horny at tip; irides, yellow; claws, black.

*Two females, Yarkand, February.*—Length, 15·2 to 15·3; wing, 12·4 to 12·6; tail, 6·3 to 6·4; tarsus, 1·6 to 1·65; bill, from gape, 1·05 to 1·1. Bill, black, horny at tip; irides, yellow; claws, brownish black.

♂ *Yarkand, 1st March.*—Length, 15; expanse, 36·5; wing, 13·2; tail, 6·4; tarsus, 1·8; bill, from gape, 1·15; closed wings exceed tail, 0·5. Bill, bluish black; irides, yellow; toes, yellowish; claws, black.

The Short-eared Owl was very common near Yarkand during the months of January, February and March, frequenting long grass and rushes, where it was said to prey, principally on frogs and mice: this bird also was often flushed while beating for pheasants and hares. About the end of March or the beginning of April it migrated northwards, to the forests near Maralbashi or Aksu, where it was reported to breed. The Turki name for this species is *Yapalak.*

## 68 *bis.*—Nyctea nivea, *Daudin.*

♀. *Kashghar, December.*—Length, 26·9; tail, 10·7; tarsus, 2·45; bill, from gape, 1·9; from forehead straight to point, 1·76. Bill, slaty black; irides, bright yellow; claws, bluish black, grey horny at their bases.

A single specimen of this splendid bird was obtained, alive, at Kashghar in December. It was caught by a native while committing some depredations on his poultry yard, and it remained in my possession for more than a month before it died, and was skinned to enrich my collection. It was stated to live and breed in the hills north of Kashghar; its prey, I was told, consisting of Chicore, hares, hedge-hogs! &c. The Turki name for the Snowy Owl is *Bai kush, i. e.*, 'the noble bird.' While in confinement it did not seem to care about feeding on raw meat like the Falcons and Hawks, but preferred the carcase of some dead bird to devour at leisure.

## 70 *bis*.—Bubo maximus,* *Sibbald.*

(1). ♂. *Yarkand, 3rd April.*—Length, 24·5; expanse, 64; wing, 19; tail, 10·4; tarsus, 2·6; bill, from gape, 2; closed wings fall short of tail, 2·3; weight, 3lbs. 14·5 oz. Bill, dark slate color; irides, bright golden orange; soles of feet, dirty white; claws, dusky at their bases and below; dark blue towards the tips.

(2). ♂. *Karghalik, 18th April.*—Length, 25·5; expanse 65·5; wing, 18·8; tail, 11·2; tarsus, 2·8; bill, from gape, 2; closed wings fall short of tail, 1·8; weight, 3lbs. 7·25oz. Bill, dark slaty blue; irides, golden orange; claws, dusky at base —dark blue at tips; soles of feet, dirty white.

(3). ♀. *Yarkand, 3rd April.*—Length, 26·75; expanse, 68·75; wing, 18·5; tail, 11·0; tarsus, 3·3; bill, from gape, 2·2; closed wings fall short of tail, 2·5; weight, 5lbs. 8·5 oz. Bill, dark slate color; irides, bright golden orange; claws, dusky at bases and beneath, black at tips; soles of feet, dirty white.

This fine Owl, called in Turki *Hui kush*—the "hui" bird, was first seen, in open waste ground, near Beshkant on the 4th February. It was attended by a flock of Crows (*C. intermedius*) who seemed to be tormenting it—flying after it and surrounding it when it settled on the ground, but always keeping at a respectful distance. The bird was again met with at Tungtash near Karghalik in August sitting among long grass and reeds, overlooking water where hundreds of Coots (*F. atra*) and Ducks (*Aythya nyroca* and *Casarca rutila*) were swimming about with their young; these young birds as well as the Moorhen (*G. chloropus*) which was common about, might be expected to fall an easy prey to the concealed but watchful Eagle Owl. I noticed on the occasions when I saw this Owl that he was very wary and would never allow one to get within shot of him.

The three birds whose dimensions I have given above were brought to me alive: they were bad tempered; snapping their

* These belong to the pale form *B. sibiricus*, Eversm.—A. O. H.

mandibles quite ferociously when approached, and their food, raw meat, had almost to be forced down their throats. The males were considerably smaller than the female, but had the ear tufts somewhat longer: the longest feather in the tufts of the males measuring respectively 3·7 and 3·5 against 3·4 in the female. The ovary of the latter contained two ova as large as nuts, the feathers of the middle of the breast and abdomen were wanting, a considerable collection of fat being found under the skin in this region, so that the bird must have been incubating about the time it was captured.

No. 2 above (a male) was captured on its nest, which at the time contained one egg, whose contents I found to be quite fluid. I did not see the nest myself, but the place was pointed out to me afterwards at Tungtash. It was a small cave in a mud (loëss) cliff about 10 feet above the ground. The floor was flat and the egg was said to have been found lying on a bed composed of hair and fur of animals. The egg is pure white, of a roughish texture, and has no gloss. In shape it is a short oval and measures 2·3 in length by 1·95 in breadth.

## 76 A.—Athene bactriana,* *Blyth? Hutton.*

♀. *Yarkand, January.*—Length, 9·3; wing, 6·3; tail, 3·65; tarsus, 1·1; bill, from gape, 0·85. Bill, pale lemon yellow; irides, yellow; claws, dusky.

♀. *Yarkand, February.*—Length, 9·15; wing, 6·33; tail, 3·55; tarsus, 1·0; bill, from gape, 0·87. Bill, lemon yellow; irides, yellow; claws, dusky and brownish horny.

I first got this species at Kashghar in November, two birds having been brought to me alive. They were put into a room, loose, but escaped during the night by butting their way through the paper covering the window; transparent paper being made to do duty for window glass in Kashgharia. This little owl was common near Kashghar and Yarkand during the whole winter and was observed at Sanju in August. It is a permanent resident, and breeds in the country, living principally in holes in mud banks and feeding on mice, lizards and beetles. I have seen it flying about freely in the day time, but its habits were reported to be chiefly nocturnal.

The Turki name for this species is *Chaghundak*, and it is said to be greatly in demand in Yarkand, where its flesh is mixed with a number of ingredients to form some nasty compound supposed to be a sovereign remedy for a serious disease! I was told that it had been so much hunted for this purpose that it had taken to building its nest in high poplar trees.

* This is doubtless *A. plumipes*, Swinh.—A. O. H.

## 82.—Hirundo rustica, *Lin.*

*Two males shot at Yarkand in April.*—Length, 8·1 to 8·9; expanse, 12·85 to 12·9; wing, 4·7 to 4·9; tail, 4·8 to 5·23; tarsus, 0·43 to 0·45; bill, from gape, 0·5 to 0·6; closed wings fall short of tail, 1·9 to 2·65; weight, 0·6 oz. Bill and claws, black; legs and feet, brownish black and dusky brown.

♂ *Juv. Yarkand, 3rd July.*—Length, 5·9; expanse, 12; wing, 4·35; tail, 2·65; tarsus, 0·43; bill, from gape, 0·65; closed wings fall short of tail, 0·45; weight, 0·6 oz. Bill greyish black, yellowish at base and gape; irides, dark brown; legs, feet and claws, black.

*Two females shot at Yarkand in April.*—Length, 7·35 to 7·6; expanse, 12·5 to 13·2; wing, 4·82 to 4·9; tail, 3·7 to 4·0; tarsus, 0·4 to 0·45; bill, from gape, 0·6 to 0·62; closed wings fall short of tail, 1·0 to 1·15; weight, 0·65 oz. Bill and claws, black; legs and feet, dusky and brownish black.

The Common Swallow is found in great numbers in the plains of Eastern Turkestan, from Sanju to Kashghar, for six months in the year. The birds arrive about the middle of April and migrate towards the end of October, not a single bird of this species being ever seen in winter. They breed during May and June; many young birds, just able to fly, being found in the early part of July. The Yarkandis call the bird *Ūī Karloghach*—House Swallow—and say that it always makes a mud nest on the roof of houses, the number of eggs laid being from three to five; and that two broods are raised in the season. Unlike the Swift this species was frequently seen perching on trees, and settling on the ground and on sand banks.

## 91.—Ptionoprogne rupestris, *Scop.*

♂. *Kizil Aghil, 14th August.*—Length, 5·75; expanse, 13·4; wing, 5·3; tail, 2·7; tarsus, 0·45; bill, from gape, 0·6; closed wings exceed tail, 0·95; weight, 0·7 oz. Bill, black; irides, dark brown; legs and feet, fleshy; claws, black.

♀. *Toghrasu, 22nd August.*—Length, 5·2; expanse, 12·9; wing, 4·9; tail, 2·4; tarsus, 0·5; bill, from gape, 0·6; closed wings exceed tail, 0·85; weight, 0·6 oz. Bill, black; irides, brownish black; legs and feet, fleshy; claws, dusky.

This Crag Martin was first observed in Eastern Turkestan, in August, between Sanju and Kizil Aghil. After that it was seen every day along the Arpalak stream and the Karakash river. It flew about hunting over the water and perched on the high rocks near the streams. At Kizil Aghil I was informed by the inhabitants that this bird left them when the leaves fell off the trees and reappeared again in spring when the trees began to

blossom; they said that the nests were placed in the clefts of rocks, near the river. The Turki name for this species is *Tagh Karloghach*—'Mountain Swallow,' and I need scarcely add that it was never seen in the plains.

## 99A.—Cypselus,? pekinensis, *Swinhoe.*

♂. *Yarkand, 3rd May.*—Length, 6·5; expanse, 15·7; wing, 6·7; tail, 2·6; tarsus, 0·4; bill, from gape, 0·65; closed wings exceed tail, 1·7; weight, 1·2 oz.

Bill, black; irides, dark brown; legs and toes, dusky; claws, black. Testes, large.

♀. *Yarkand, 5th May.*—Length, 7·0; expanse, 15·8; wing, 6·8; tail, 3·1; tarsus, 0·4; closed wings exceed tail, 1·0; bill, from gape, 0·75; weight, 1·35 oz.

Bill, black; irides, dark brown; toes, dusky; claws, black. Ova, very small.

This Swift was first noticed flying over the Fort at Yarkand on the 10th April; after that it was seen daily near the Fort and City until the end of July when it seemed to have disappeared. These birds always kept near their roosting places in the holes and crevices of the mud walls of the City and Fort, circling and flying about in the mornings and evenings, and repairing to their nests during the heat of the day and for the night. Their flight was strong and rapid, and when breeding they often made a shrill screaming noise. I caught one of the Swifts in its roosting place, and placed it on level ground to see how it would be able to fly off. It took an awkward tumbling run for a few yards, and then got on the wing pretty easily. On the 31st May I found a nest of this species containing two eggs. The nest was in a narrow hole, so small that one's hand could with difficulty be introduced into it, in the thick mud wall on the north side of the Residency compound. The hole was about twenty feet above the level of the ground, and ran back horizontally for about a foot. The eggs were placed on a sort of cushion composed of feathers, hair and wool. One egg was taken, the contents of which were found to be quite fluid; it was spotless white with a faint roseate tinge before it was blown, and had no gloss. In shape it is a long narrow oval, pointed at one end and measures 0·99 in length by 0·6 in breadth. The Turki name for this Swift is *Kirich Karloghach* 'the Sabre Swallow.'

## 99 *bis.*—Cypselus acuticauda, *Blyth.*

♂. *Yarkand, 8th July.*—Length, 6·55; expanse, 15·5; wing, 6·3; tail, 2·9; tarsus, 0·37; bill, from gape, 0·78; closed wings exceed tail, 1·1; weight, 1·4 oz.

Bill, black; irides, brown; feet, fleshy; claws, dusky.

♂. *Sanju*, 11*th August*.—Length, 6·4; expanse, 15·2; wing, 6·2; tail, 3·0; tarsus, 0·45; closed wings exceed tail, 1·2; bill, from gape, 0·75; weight, 1 oz. Bill and claws, black; irides, brownish black; feet, fleshy.

This Swift was not discriminated from *Cypselus pekinensis* at the time I obtained it, but the point which Mr. Hume considers distinctive, *viz.*, the black feet of *Cypselus pekinensis* against the flesh colored feet of this species was certainly noted by me from the fresh birds. I can only say, about the Swift under consideration, that a specimen was obtained at Yarkand in July and another at Sanju in August, and that this species must have been associated with Mr. Swinhoe's Swift—at the former place, at all events. Curiously enough, the name given to the bird preserved at Sanju was *Yar Karloghach, i. e.*, Bank Swallow and not *Kirich Karloghach*. Of course I do not mean to say that the Yarkandis were aware that they had two species of Swift in their country. I put down in my notes at the time that "the Swift is called Kirich—(sometimes Yar) Karloghach."

## 112A.—Caprimulgus {ægyptius, *Licht.* / arenicolor, *Severtsov.**

♀ *Ijitku, Dolan District*, 28*th July*.—Length, 10·1; expanse, 22; wing, 7·4; tail, 5·15; tarsus, 0·63; bill, from gape, 1·33; closed wings fall short of tail, 0·8.

Bill, black at tip, brownish at base; irides, darkish brown; legs and feet, fleshy; claws, brownish black.

This Goatsucker was never met with in the immediate neighbourhood of Kâshghar or Yarkand, and the only specimen I obtained was captured in the forest region of the Dolan about thirty miles from the city of Yarkand. The following is the account given of this species by the Yarkandi Shikaris: The name of this bird is *Ayagh siz.*, ('footless' or 'without feet'); it is only found in the forest of the Dolan among the Toghrak (poplar) trees, and it lives there permanently. It sits still on the branches during the day time, but at night it flies about, making a noise like the croaking of a frog and catches its prey (moths, insects) while on the wing, like a Swallow. The male bird is of a lighter color than the female. Breeds in May and June; the young birds often seen flying about towards the end of July.

## 125.—Coracias garrula, *Lin.*

1. ♂. *Sulaghz Langar*, 12*th August*.—Length, 12·5; expanse, 25·4; wing, 7·4; tail, 5·4; tarsus, 0·8; bill, from gape, 1·73; closed wings fall short of tail, 2·0; weight, 3·5 oz.

* I feel no certainty that I have correctly identified this species.—A. O. H

Bill, blackish, extreme tip of upper mandible whitish horny; lower mandible and sides of upper brownish at base; legs and feet, dirty yellow. The testes were small, and the stomach contained more than one dismembered beetle.

2. Specimen found lying dead and perfectly dessicated amongst stones near the Karakash river at Gulgun Shah.

This species is said to be common in Khokand and Western Turkestan, where it is called *Kok Kargha*, the 'Blue Crow;' it only passes through Eastern Turkestan.

The first specimen was obtained at Sulaghz Langar in August and appeared to be quite unknown to the natives. Later in the same month, a second specimen was found dead near the Karakash river; both birds had evidently been migrating southwards.

## 158A.—Picus leucopterus, *Salv.*

♀. *Beskant, 6th February.*—Length, 8·1; wing, 5·05; tail, 3·5; tarsus, 0·82; bill, at front, 1·17. Bill, legs, feet, and claws, black.

This Woodpecker was seen near Yarkand during the winter only and then was far from common.

It frequented large trees growing near *Mazars* (shrines) and the only specimen I collected was shot at Beshkant in February. In the summer it is said to move up northwards to the forest region in the neighbourhood of Aksu. The Turki name for this species is *Sokochak*, *i. e.* 'the Striker.'

## 199.—Cuculus canorus, *Lin.*

(1). *Four males, shot in May at Yarkand, measured and weighed.*—Length, 12·8 to 13·85; expanse, 23 to 24; wing, 8·5 to 8·9; tail, 7 to 7·7; tarsus, 0·8 to 1·0; bill, from gape, 1·15 to 1·3; closed wings fall short of tail, 1·85 to 2·0; weight, 3·2 oz. to 3·7 oz. Bill, upper mandible and tip of lower, black; base of lower mandible, greenish; irides, yellow or yellow straw color; edges of gape and eyelids, yellow; legs and feet, yellow; claws, yellowish horny.

(2). ♀ *Yarkand, 25th April.*—Length, 14; expanse, 24·4; wing, 8·75; tail, 7·1; tarsus, 0·95; bill, from gape, 1·32; closed wings fall short of tail, 1·5; weight, 4·5 oz. Bill, upper mandible and tip of lower, black; lower mandible, greenish yellow at base; interior of mouth, red; irides and edges of eyelids, yellow; legs and feet, yellow; claws, brownish horny.

(3). *Two females, in immature ferruginous plumage, shot in June near Yarkand, measured and weighed.*—Length, 12·3 to 13·2; expanse, 22·8 to 23·5; wing, 8 to 8·5; tail, 6·6 to 6·9; tarsus, 0·9; bill, from gape, 1·15 to 1·2; closed wings fall

short of tail, 1·3 to 1·6 ; weight, 2·8 oz. to 3·8 oz. Bill, upper mandible, horny black; lower mandible, greenish yellow, dusky at tip; irides, straw color; eyelids, grey ; edges of gape and eyelids, yellow ; legs and feet, yellow or orange yellow; claws, yellow horny, some of them dusky.

(4). *Juv. Yarkand, 8th June.*—Length, 7·8 ; expanse, 15·4 ; wing, 4·5 ; tail, 2·6 ; tarsus, 0·85 ; bill, from gape, 0·9 ; closed wings fall short of tail, 1·1 ; weight, 2·5 oz. Bill, dusky ; edges of gape, orange red ; legs and feet, fleshy ; claws, dusky.

(5). ♀ *Juv. Taskhama, 29th June.*—Length, 8·6 ; expanse, 15 ; wing, 5·3 ; tail, 3·7 ; tarsus, 0·9 ; bill, from gape, 1·1 ; closed wings short of tail, 1·4 ; weight, 1·9 oz. Bill dusky at tip and above ; lower mandible, livid horny ; mouth and edge of gape, deep orange ; irides, hazel ; legs and feet, light fleshy ; claws, light horn color, purplish at their bases.

The Common Cuckoo arrives in the plains of Eastern Turkestan about the middle of April, and leaves about the beginning of August. In May and June their well-known cry may be heard in every orchard about Yarkand, but towards the end of July the birds seem to get scarce and are never heard calling ; young birds of this species were seen near Karghalik on the 3rd August, so they are probably somewhat later in migrating than their parents. I often noticed at Yarkand that the Cuckoo before beginning its usual note, gave a prolonged sort of cry, somewhat resembling that of the Toad (*Bufo viridis*), but much louder. A young bird, picked up in a clump of poplars at Taskhama, was very ferocious—biting at one's hand vigorously ; its head looked curiously large for its body, and when about to be fed it opened its mouth so very widely as to remind one at once, of one of those square-mouthed travelling bags. This young bird had evidently sustained some injury to its right wing (which was an inch and half shorter than the left one) probably by falling out of its nest.

The Yarkandis have curious accounts to give about this species. In the first place they are well aware of the parasitic habits of the bird, and of the young Cuckoo ejecting its foster-brothers from the nest; they say that the eggs are deposited in the nests of *Lanius arenarius*, *Euspiza luteola*, *Erythrospiza obsoleta* and *Cyanecula suecica*, but never more than one egg in any nest. Then they say that all Cuckoos are of the female sex, and not very particular in their choice of husbands—*Lanius arenarius*, *Nisoria undata* and frogs (!) even being selected indifferently !

The Turki name for the bird is *Kakkok*, which is, I think, a better imitation of the cry than that conveyed by our English name, Cuckoo.

## 247.—Tichodroma muraria, *Lin.*

♂. *Tadlik, 18th September.*—Length, 6·4; expanse, 11·9; wing, 4·1; tail, 2·4; tarsus, 0·9; bill, from gape, 1·2; closed wings fall short of tail, 0·35; weight, 0·7 oz. Bill, black; irides, blackish brown; legs, feet, and claws, black.

This species was not noticed in the plains, and was first met with in the hills in September. At Tadlik, below the Kirghiz encampment at Kichik Yailak, I saw two of these birds, one of which I shot. They flew from the bank of the stream to the hill side, up which they ran pretty nimbly.

## 254.—Upupa epops, *Lin.*

♀. *Yarkand, April.*—Length, 12·25; expanse, 18; wing, 6·2; tail, 4·4; tarsus, 0·8; bill, from gape, 2·5; closed wings fal short of tail, 2·1; weight, 2·4 oz. Bill, dusky; legs and feet, fleshy; claws, dusky. Longest feather in crest, 2·7.

♀. *Yarkand, April.*—Length, 11·75; expanse, 18; wing, 5·8; tail, 4; tarsus, 0·9; bill, from gape, 2·3; closed wings fall short of tail, 1·0; longest crest feather, 2·3; weight, 2·25 oz. Bill, dusky, black at tip; legs and feet, dusky; claws, black.

The Hoopoe is a very common bird in Káshgharia, where it is a permanent resident. It was met with in all sorts of places: in the fields about Kashghar and Yarkand; near villages; at the little oases in the desert, between Karghalik and Sanju; in the valley of the Karakash; and it seemed perfectly happy in the barren region near the Karakoram pass at an elevation of over 18,000 feet. The Yarkandis call it *Hüpüp* (a good imitation of the sound it makes), and say that it hybernates (!) for forty days in the depth of winter. This species breeds from the middle of April, until about the end of June; I saw a young bird not able to fly more than a few yards, on the 10th July.

On the 10th June the nest of a Hoopoe was found in a hole in the old wall about four feet above the ground; it contained four eggs which were lying on a bed of grass, feathers, and some small pieces of felt. On the 15th June, I found another nest in a deep hollow of a willow tree; the eggs could not be reached by the hand. Two eggs which I took at Yarkand are of a pale greyish blue color, without any spots; they are rather elongated ovals, smaller at one end, and have a slight gloss. The eggs measure respectively 1·1 in length by 0·72 in breadth, and 1·0 by 0·73.

## 256 A.—Lanius Homeyeri, *Cabanis.*

♂. *Kashghar, 19th December.*—Length, 9·9; wing, 4·7; tail 5·1; tarsus, 1·1; bill, from gape, 1·12. Bill: upper mandible

black, edge whitish at gape; lower mandible black at tip, whitish horny at base; legs, feet, and claws, black.

♀. *Kashghar, 24th November.*—Length, 10; wing, 4·8; tail, 4·9; tarsus, 1·08; bill, from gape, 1·06. Bill: upper mandible brownish black; lower mandible black at tip—whitish horny at base; legs, feet, and claws, black.

♀. *Kizil, 4th January.*—Length, 10·1; wing, 4·65; tail, 4·7; tarsus, 1·1; bill, from gape, 1·04. Upper mandible brownish black; lower black at tip, greyish livid horny at base; legs, feet, and claws, black. This specimen has numerous faint cross bars on the chest, and the rump is more grey than in the other two specimens.

This Shrike was tolerably common near Kâshghar and Yarkand in winter; it was never seen in spring or summer, as it had then migrated northwards. It chiefly affects bare places with a few small trees scattered about, but is occasionally seen near villages. Near Kizil in January I saw some of these Shrikes perched on small leafless trees, sitting very motionless and apparently not alarmed when one approached them even pretty closely. This Shrike is occasionally trained to capture small birds—such as Sparrows, &c. I had one trained while living at Kâshghar, and the bird seemed to learn very readily; it would fly from a distance of a few yards towards one, when a piece of raw meat was held towards it, then perching on the hand it would begin to tear the meat very much after the manner of a Merlin. This species was often seen tamed and carried about on the hand by the people, a string being attached round the neck to prevent it flying away. It is the winter shrike of Káshgharia and *Lanius arenarius* is the summer one. The Turki name for the species is *Ala ghurulai*—the variegated Shrike.

**262.—Lanius arenarius,** *Blyth.*

*Six males, shot near Yarkand from April to June, measured and weighed.*—Length, 7·5 to 7·75; expanse, 10·5 to 11·5; wing, 3·5 to 3·75; tail, 3·0 to 3·65; tarsus, 0·85 to 1·0; bill, from gape, 0·8 to 0·9; closed wings fall short of tail, 1·8 to 2·1; weight, 0·9 to 1·2 oz. Bill, black or bluish black; irides, dark brown; legs and feet, dusky black, dusky and greyish or greenish dusky; claws, black.

*Two females, shot in April and August.*—Length, 6·8 to 7·2; expanse, 10·5 to 10·10; wing, 3·3; tail, 3 to 3·35; tarsus, 0·9 to 1·0; bill, from gape, 0·8 to 0·83; weight, 1 oz. Bill, black, whitish at base; legs and feet, dusky or grey dusky; irides, brown; claws, black.

*Three young birds obtained at Yarkand in May and June.*—Length, 5·0 to 6·7; expanse, 9·3 to 11·0; wing, 2·95 to 3·2; tail, 1·9 to 2·7; tarsus, 0·9 to 0·93; bill, from gape, 0·8 to

0·85; closed wings fall short of tail, 1·1 to 1·5; weight, 0·65 to 1·1 oz. Bill, horn color or slaty grey; irides, dark brown; legs and feet, slaty grey; claws, dusky.

The Desert Shrike is very common in the plains of Kâshgharia, where it breeds. I obtained my first specimen of this species near Yarkand on the 14th April, and from that date it was observed continuously up to the 15th August, where I saw the last of this Shrike, north of the Chuchu Pass, at an elevation of about 10,000 feet. Its was not observed at all during the winter, and with the exception of possibly a few stray stragglers, the bird no doubt migrates from Eastern Turkestan about October; and this agrees exactly with the native account of the matter. This Shrike was usually found in waste ground, perching on thorn bushes, and in the neighbourhood of swamps and small lakes; its cry was harsh and chattering.

The bird breeds in May and June, great numbers of nestlings being captured by the Yarkand boys during the latter month. On the 13th June a nest containing four eggs said to belong to this species, was brought to me; a Shrike said to have been captured on the nest was brought at the same time. The nest was found in a thorn bush, and the contents of the eggs in it were found to be quite fluid. The nest is a circular shallow structure, coarsely made up of rush and fibres, the egg cavity lined with horse-hair. It is about three inches in diameter and 1·7 deep; the walls one inch thick. There is a regular notch in one portion of the side wall, down to the level of the egg cavity. The eggs vary in shape from a moderate oval, compressed a little at one end, to a blunt broad oval, very slightly smaller at one end, The eggs have no gloss and the ground color is pale pinkish creamy, sparsely sprinkled over with reddish spots; at the large end there are reddish spots and blotches, with fainter livid blotches, forming a zone round the egg. In length they vary from 0·85 to 0·95 and in breadth from 0·69 to 0·7. The average of the four eggs is 0·895 by 0·697. The Turki name for the Desert Shrike is *Ghurulai*.

From the account given in 'Lahore to Yarkand' I expected to find *Lanius cristatus* and not *L. arenarius*, and so went on shooting Shrikes in the hopes of getting the former, but in vain. All the birds I saw were certainly of one species, and Mr. Hume unhesitatingly refers all the thirteen specimens* I brought back to *L. arenarius*. The Yarkandis were positive that only one kind of Shrike was to be found in their neighbourhood in summer; and it is *L. arenarius* which they call

* Since writing the above Mr. Hume has informed me that one of these is a young bird about which he hesitates to pronounce certainly; but even this, he thinks, is also probably *arenarius*.—J. S.

*Ghurulai*, and which they often tame and carry about on their hands. Such being the case, it seems possible that there may have been some mistake* in referring the specimens obtained by Dr. Henderson at Yarkand to *L. cristatus*.

## 333 A.—Troglodytes pallidus,

♀. *Beshkant, 6th February.*—Length, 3·8; wing, 1·86; tarsus, 0·7. Bill—upper mandible brown, lower yellowish horny; legs and feet brownish fleshy; claws, brown.

This Wren was tolerably common in winter in the neighbourhood of Yarkand. At Beshkant in February I saw several of this species running about on frozen marshy ground and near the roots of trees. The Turki name for this bird is *Bir toghram*, 'one morsel' or 'one mouthful!'

## 351 *ter.*—Monticola saxatilis, *Lin.*

*Three males, shot 29th September, measured and weighed.*—Length, 7·2 to 7·6; expanse, 14·3 to 14·7; wing, 4·75 to 4·9; tail, 2·2 to 2·5; tarsus, 1·0 to 1·05; bill, from gape, 1·12 to 1·15; closed wings fall short of tail, 0·5 to 0·65; weight, 1·75 oz. to 2 oz. Bill, dusky; lower mandible and edge of upper, yellow at the base,—and in one specimen, lower mandible grey horny at base; irides, brown; legs, feet, and claws, black.

♀. *Gulgun Shah, 28th September*—Length, 7·1; expanse, 14·0; wing, 4·7; tail, 2·4; tarsus, 1·0; bill, from gape, 1·05; closed wings fall short of tail, 0·6; weight, 1·7 oz. Bill, dusky; lower mandible greyish at base; gape and interior of mouth, greenish yellow; irides, brown; legs, feet, and claws, black.

Eight specimens of this species were preserved: four at Sulaghz Langar and Koshtak on the 30th September 1874; and four at Gulgun Shah on the 28th August 1875.

This species was first noticed about the end of September at some of the small oases in the desert ground between Sanju and Karghalik, elevation about 6,000 feet. The birds were tolerably numerous, hopping about in cultivated fields. After that these birds were never observed until the following year, when they were met with on the banks of the Karakash at an elevation of about 12,000 feet. They frequented grassy ground near the river, and when alarmed flew up and perched on the neighbouring rocks.

## 361 *bis.*—Merula vulgaris, *Ray.*

Two specimens of the Black bird, male and female, were obtained at Yarkand in February. It was said to be not uncom-

* I hardly think that there can have been any such mistake as Dr. Scully supposes; Dr. Henderson's birds were certainly not *arenarius*, the only question at the time was, were they *cristatus* or some very nearly allied species. I came to the conclusion that they were *cristatus*, and I feel sure that they were *not arenarius*.—Ed., S. F.

mon, during the winter, near Kâshghar and Yarkand, and it seemed to keep principally among *Eleagnus* trees and thorn bushes in the vicinity of unfrozen bits of water. It migrated northwards in spring, repairing, I was told, to the hills and to the country about Maralbashi. It is said to feed principally on berries, &c., and its Turki name is *Maina*.

♂. Length, 10·5; wing, 5·46; tail, 5·15; tarsus, 1·3; bill, from gape, 1·28. Bill, yellow—tip of upper mandible brownish; legs and feet, dark brown; claws, black.

♀. Length, 11·3; wing, 5·4; tail, 5·6; bill, from gape, 1·35. Bill, brownish black; legs and feet, blackish brown; claws, black.

## 365.—Planesticus atrogularis, *Temm.*

This species was first met with at Sulaghz Langar in September, and was a common bird in the plains, in the neighbourhood of Kashghar, Yarkand, &c., during the winter. It was usually seen about trees lining water-courses or growing near tanks. The bird disappeared entirely in spring, migrating in a north-easterly direction, towards the hills and the Lob district it is said, where it was reported to breed. It feeds chiefly on *Eleagnus* berries—called *jigda* in Turki and commonly known as 'Trebizond dates'—hence its name *Jigda chuk*, *i.e.*, 'jigda-eater.'

♀. *Kashghar, 29th November.*—Length, 10; wing, 5·6; tail, 4·25; tarsus, 1·2; bill, from gape, 1. Bill, brownish black; base of lower mandible, yellow; irides, brown; legs, ashy brown; feet, brown; claws, brownish black.

♀. *Sulaghz, Langar, 30th September.*—Length, 9·8; wing, 5·45; tail, 4·1; tarsus, 1·27; bill, from gape, 1·1. Bill, blackish brown; base of lower mandible and gape, yellow; irides, brown; legs, yellowish brown; feet, brown; the soles, yellow; claws, brown horn.

*Two females, shot at Kashghar, 29th November.*—Length, 9·9 to 9·95; wing, 5·15; tail, 4 to 4·05; tarsus, 1·2 to 1·26; bill, from gape, 1 to 1·1. Bill, brownish dusky, black at tip, and yellow or brownish yellow at base of lower mandible; irides, brown and dark brown; legs, dark ashy or brown; feet, brown; claws, brownish dusky and brown horny.

## 470.—Oriolus kundoo, *Sykes.*

*Six males, shot at Yarkand in May and June, measured and weighed.*—Length, 9·3 to 9·8; expanse, 16·7 to 17·7; wing, 5·7 to 5·9; tail, 3·7 to 4·1; tarsus, 0·75 to 0·9; bill, from gape, 1·2 to 1·35; closed wings fall short of tail, 1·1 to 1·5; weight, 1·9 oz. to 2·5 oz. Bill, brownish red; irides, blood red; legs and feet, dark blue and slaty blue; claws, black.

♀. *Shot at Yarkand, 8th June.*—Length, 9·85; expanse, 17·2; wing, 5·8; tail, 3·8; tarsus, 0·9; bill, from gape, 1·3; closed wings fall short of tail, 1·3; weight, 2·6 oz. Bill; brownish red; irides, ruby red; legs and feet, bluish grey; claws, black.

*Juv. Yarkand, 27th May.*—Expanse, 17·5; wing, 5·8; tarsus, 0·8; bill, from gape, 1·25. Bill, brownish red; irides, blood red; legs and toes, dark blue; claws, black.

It will be noticed from the above measurements that the wings of the Yarkand birds are decidedly longer than those of Indian specimens.

*Nestling.—Yarkand, 29th June.*—Length, 6·2; expanse, 12·4; wing, 3·4; tail, 1·1; tarsus, 0·9; bill, from gape, 1·05; closed wings short of tail, 0·6; weight, 1·7 oz. Bill livid fleshy, tip of upper mandible white; irides, hazel; legs and feet, bluish grey; claws, greyish horny.

This Oriole is a seasonal visitant to the plains of Eastern Turkestan, arriving about the end of April and migrating in September; it is never seen in winter. It frequents trees growing in orchards or over tanks, and its call is a pleasant mellow whistle which may be imitated by pursing the lips and drawing in the breath—something like *Su—fu—fia.* This species breeds in May and June, during which months I have seen it pluckily attack large birds and drive them away from its nest. On the 31st May I saw a Crow (*S. intermedius*) prying about the nest of this species, when the Orioles (male and female) had a great fight with the intruder flying up under the Crow as it beat a retreat and pecking at it furiously; and on another occasion I saw a female Oriole boldly attack a large Kite (*Milvus melanotis*) which had dared to approach her nest. The Yarkandi name for the Oriole is *Sopia-* evidently given in imitation of its call; in Khokand the bird is called *Zarghaldak.*

On the 8th of June I found a nest of this bird in a walnut tree, suspended about 15 feet above the ground. The nest was placed between a fork at the extremity of a bough, and the bird sitting on it was quite concealed from view The nest is a very neat structure, purse like, the materials of which it is composed being wound round the two prongs of the fork from which it is suspended. The nest is made up of fine twigs, grass and some soft wool, bound together by strips of thin bark woven round and round. The egg cavity is a circular cup about 3·5″ in diameter and 2″ deep; it is neatly lined with fine grass stems. The side walls of the nest are about 0·7 thick, and the base about 1 inch in thickness. This nest contained three freshly laid eggs. On the 31st May I saw a simi-

lar nest in a walnut tree, but it did not then contain any eggs; and on the 12th June I found another Oriole's nest, in a poplar tree, about 10 feet above the ground, in which there were three eggs.

The eggs are moderately elongated ovals, not tapering much towards the small end. They are pure papery white, with a moderate gloss; dull purplish black spots, from the size of a pin's point to that of a pin's head, being sparingly scattered over the surface of the egg—chiefly at the large end. The large spots run into each other, here and there, and are surrounded by a faint brownish halo. The eggs vary in length from 1·04 to 1·14 and in breadth from 0·8 to 0·82; the average of the three eggs being 1·08 by 0·81.

## 483.—Pratincola indica, *Blyth.*

*Shot between Tam and Tadlik, 17th August.*—Length, 5·4; expanse, 9·3; wing, 2·95; tail, 2·2; tarsus, 1·0; bill, from gape, 0·68; closed wings fall short of tail, 1·0; weight, 0·6 oz. Bill, brownish dusky; tip of lower mandible, yellowish; irides, dark brown; legs, feet, and claws, black; soles of feet, yellow.

*Shot between Tadlik and Kichik Yailak, 18th August.*—Expanse, 8·9; wing, 2·86; tarsus, 0·95; bill, from gape, 0·7; weight, 0·6 oz. Bill, legs, feet, and claws, black; irides, blackish brown.

*Shot between Tadlik and Kichik Yailak, 18th August.*—Length, 5·2; expanse, 9; wing, 2·9; tail, 2·1; tarsus, 0·95; bill, from gape, 0.7; closed wings fall short of tail, 1·1; weight, 0·5 oz. Bill, black; lower mandible, brownish at base; irides, brownish black; legs, feet, and claws, black.

This species was met with in August, in bushes of willow and buckthorn fringing the Sanju stream, at elevations of from 9,000 to 11,000 feet. It was not numerous. I believe I saw this bird also in the plains, at Koshtak in August. The Yarkandi name for the species is *Jingsa.*

## 491—Saxicola isabellina, *Rüpp.*

*Three males, shot in April, May and August.*—Length, 6·35 to 7·0; expanse, 12 to 12·75; wing, 3·9 to 4·1; tail, 2·3 to 2·6; tarsus, 1·1 to 1·2; bill, from gape, 0·9 to 0·95; closed wing fall short of tail, 0·9 to 0·95; weight, 0·9 oz. to 1·2 oz.

Bill black, in one specimen yellowish at base below; irides, dark brown; legs and feet, black and brownish black; claws, black.

♀ *Yarkand, 20th May.*—Length, 6; expanse, 11·4; wing, 3·7; tail, 2; tarsus, 1·05; bill, from gape, 0·82; closed wings

fall short of tail, 0·8. Bill, black; irides, dark brown; legs, feet, and claws, black.

*Three young birds (not sexed), Yarkand, 20th May.*—Length, 6 to 6·2; expanse, 11·4 to 11·9; wing, 3·7 to 3·85; tail, 2·1; tarsus, 1·1 to 1·2; bill, from gape, 0·82 to 0·9; closed wings fall short of tail, 0·9.

Bill dusky, horny below; irides, dark brown; legs and feet, dusky blackish; claws, black.

This species was common in the plains of Eastern Turkestan, at elevations of from 4,000 to 6,300 feet, from the middle of April to the middle of August; it was never met with during the winter, nor in the hills at any season. It probably arrives in the country towards the end of March, and leaves certainly not later than October. The bird frequents waste ground, usually on the borders of cultivation, and at Besharik and Bora in August it was found associated with *Saxicola deserti*. In the neighbourhood of Yarkand it breeds in April and May; three quite young birds were obtained there during the latter month. The Turki name for all Wheatears is *Chikit*, a word having some reference to the black and white tail; the present species is distinguished as *Boz chikit*, *i. e.*, 'the Grey Wheatear.'

## 492.—Saxicola deserti, *Rüpp.*

*Seven males, shot in August.*—Length, 6·2 to 7·05; expanse, 10·8 to 11·6; wing, 3·45 to 3·9; tail, 2·6 to 2·95; tarsus, 0·95 to 1·0; bill, from gape, 0·8 to 0·9; closed wings fall short of tail, 1·0 1·35; weight, 0·7 oz. to 0·8 oz.

Bill, legs, feet, and claws, black; irides, brown, dark brown and blackish brown.

*Four females, shot in August.*—Length, 5·8 to 6·32; expanse, 11 to 11·15; wing, 3·5 to 3·85; tail, 2·4 to 2·9; tarsus, 0·91 to 0·96; bill, from gape, 0·75 to 0·82; closed wings fall short of tail, 0·8 to 1·3; weight, 0·7 oz. Bill, legs, feet, and claws, black; irides, brown to dark brown.

*Specimen shot at Balakchi, 26th August.*—Length, 6·2; expanse, 11·3; wing, 3·7; tail, 2·55; tarsus, 0·95; bill, from gape, 0·75; closed wings fall short of tail, 0·95; weight, 0·7 oz.

Bill, black—brownish at base below; irides, brown; legs, feet, and claws, black.

The last specimen is doubtfully referred to this species by Mr. Hume. It differs from the others in having less black on the tail, and in the tail feathers being broadly tipped with fulvus.

This species was common in the plains of Kashgharia at elevations of 4,500 feet and upwards, and in some portions of the hills up to an elevation of 12,300 feet. It was never observed during the winter. In the plains it was found in the

desert ground between Sanju and Karghalik, hopping about among the little sand banks; and was common between Shahidullah and Gulgun Shah in the Karakash Valley. It probably breeds in the localities I have mentioned during the months of June and July. The Turki name for this species is *Ala chikit*, 'Variegated Wheatear.'

**492 *bis*.—Saxicola Hendersoni, *Hume*.**

*Three females shot at Sulikaziz Langar and Koshtak on the 29th and 30th September.*—Length, 5·8 to 5·9; wing, 3·65 to 3·75; tail, 2·3 to 2·4; tarsus, 0·9 to 0·94; bill, from gape, 0·74 to 0·76.

Bill, black, in one specimen brownish at the base below; legs, feet, and claws, black.

This species was found in September, in the plains of Kâshgharia, at an elevation of about 6,100 feet. It was met with at the desert oases of Sulikaziz Langar and Koshtak, running about in stubble fields, where it was tolerably numerous. The Yarkandis, who know the bird well, say that it breeds in the country and disappears entirely in winter. The Turki name for the species is *Kara chiket*, 'Black Wheatear.'*

**497.—Ruticilla rufiventris, *Vieill*.**

*Four males measured and weighed.*—Length, 5·2 to 6·0; expanse, 9·4 to 9·9; wing, 2·9 to 3·3; tail, 2·2 to 2·4; tarsus, 0·85 to 1·0; bill, from gape, 0·65 to 0·7; closed wings fall short of tail, 0·9 to 1·4; weight, 0·4 oz. to 0·6 oz. Bill, black, or brownish dusky with base of lower mandible yellowish; irides, brown and brownish black; legs and feet, black or dusky brown; claws, black.

*Three females measured and weighed.*—Length, 5·5 to 5·7; expanse 9·85 to 10·2; wing, 3·25 to 3·4; tail, 2·4 to 2·6; tarsus, 0·95; bill, from gape, 0·68 to 0·7; closed wings fall short of tail, 1·0 to 1·1; weight, 0·45 oz. to 0·5 oz. Bill, black—brownish at base; irides, brown to blackish brown; legs and feet, black or brownish dusky; claws, black.

This species was observed in great numbers, in August, frequenting mountain streams at elevations of from 7,000 to 10,000 feet. It was very common along the course of the Arpalak River, hopping about among the stones and bushes and moving its tail incessantly. Nearly all the specimens obtained were young birds, and no doubt this Redstart breeds in the low hills of Eastern Turkestan.

**499.—Ruticilla erythrogastra, *Guld*.**

Eight specimens of this species were preserved: two adult males, in summer and autumnal plumage; four young males, in immature plumage; and two nearly adult females.

* Which it *is* in breeding plumage. See S. F., II, 526.—A. O. H.

*Five males, shot in August, measured and weighed.*—Length, 6·3 to 6·9; expanse, 11·3 to 12·2; wing, 3·7 to 4·25; tail, 2·7 to 3·0; tarsus, 1·0 to 1·05; bill, from gape, 0·7 to 0·8; closed wings fall short of tail, 0·8 to 1·45; weight, 0·75oz. to 1oz. Bill, black; in one specimen yellow at tip, sides and base of lower mandible; irides, brown, dark brown, and blackish brown; legs, feet, and claws, black.

*Two females, collected in August, measured and weighed.*—Length, 6·5 to 6·75; expanse, 11·6 to 11·7; wing, 3·95 to 4·0; tail, 2·9 to 3·15; tarsus, 1·0; bill, from gape, 0·7 to 0·72; closed wings fall short of tail, 1·0 to 1·2; weight, 0·85oz. Bill, black; in one, gape and interior of mouth yellow; irides, brown and dark brown; legs, feet, and claws, black.

This Redstart was very common during the months of September and August, in the mountains at elevations of from 10,000 to 18,000 feet, but was never met with in the plains of Eastern Turkestan. In frequents the neighbourhood of streams generally, hopping about on the stones, and amongst the small bushes. The Kirghiz at Kichik Yailak say that this bird breeds, during the months of June and July, in the high mountains near their encampment, and their name for it is *Kizil kurgenak, i. e.*, Red Kestrel!

## 514.—Cyanecula suecica, *Linn.*

*Five males*, shot at Yarkand in April and May.*—Length, 5·9 to 6·1; expanse, 8·5 to 9·2; wing, 2·8 to 2·95; tail, 2·2 to 2·6; tarsus, 1·0 to 1·1; bill, from gape, 0·7 to 0·8; closed wings fall short of tail, 1·0 to 1·4; weight, 0·6oz., to 0·65oz. Bill, black; interior of mouth, yellow; irides, dark brown; legs and feet, black and brownish black; claws, black.

This species is a seasonal visitant to the plains of Eastern Turkestan, arriving about the end of March and leaving in September. It was very common during the summer, frequenting reeds, long grass and fields of Indian corn, always somewhere near water. It did not seem to perch, but moved about pretty rapidly on the ground picking up insects, and every now and then spreading out its tail widely, thus showing its rufous color; and in my experience hardly ever allowing one to get a sight of its beautifully colored breast. It breeds in the neighbourhood of Yarkand, laying in May, and the nest being generally placed in long grass. Two eggs obtained on the 15th May, measure 0·76 in length by 0·56 in breadth, and 0·75 by 0·57. In shape they are moderate ovals compressed at one end, and have a very slight gloss. The ground color is pale greyish green; abundantly blotched and spotted, with

* All belong to the red throat-spot race. A. O. H.

light greyish brown; the whole surface of the egg having these markings pretty evenly distributed over it.

The Turki name for the Blue-throat is *Chaghchi*, an appellation given to it because it is said to make a sound resembling the noise of the spinning-wheels used by the women of Yarkand.

**515** *ter.*—**Acrocephalus arundinaceus,** *Lin.*

♂. *Yarkand, 23rd June.*—Length, 8·3; expanse, 11·2; wing, 3·8; tail, 3·15; tarsus, 1·0; bill, from gape, 0·95; closed wings fall short of tail, 1·85; weight, 1·1oz. Bill: upper mandible brownish black above, tip and edge grey horny; lower mandible, greyish horn color, dusky towards tip. Irides, straw brown; interior of mouth, orange; legs and feet, greenish fleshy; claws, dusky horn color.

This species was often heard among the reeds and rushes growing in marshy ground, but it was so difficult to get sight of it, that I only succeeded in obtaining one specimen. Its song is most peculiar—a pleasing sort of whistle at the beginning suddenly breaking into a harsh croak, so loud as to give one the impression that it must proceed from a bird much larger than this one really is. The Yarkandi Shikaris gave me the following information about this Reed Warbler. "The Turki name of the bird is *Kanaichi*. It is a seasonal visitant, arriving about March, and leaving at the beginning of winter, when the water begins to freeze. It breeds in this country (Yarkand) making its nest in the *Yekan* (reeds) where it lives, and laying four eggs about the beginning of June. It does not migrate to Hindustan, but westwards—to Mazan Daran (an extensive forest region in Persia near the border of the Caspian.)"

Four eggs, said to belong to this species, were brought to me on the fourteenth June; the man who brought them had never been told to get me the eggs of this species, but of course, I cannot vouch that they are authentic; the embryo was found to be formed within them. In shape they are moderately elongated ovals, compressed at one end. The ground color is greyish creamy; the small end is unspotted, but over the rest of the surface a few brown spots are sparingly scattered about, and at the widest part of the egg, brown spots and dull purplish blotches are found, forming a broadish zone round the egg at that part. In length the eggs measured from 0·93 to 0·95, and in breadth from 0·68 to 0·7. The average of the four eggs is 0·94 by 0·692.

**517** *bis.*—**Acrocephalus macrorhynchus,** *Hume.* S. F., III., 305.

♀. *Kizil Aghil, 14th August.*—Length, 5·8; expanse, 7·6; wing, 2·4; tail, 2·4, tarsus, 0·9; bill, from gape, 0·75; closed wings fall short of tail, 1·45; weight, 0·5 oz.

Bill: upper mandible black, lower mandible dusky at tip, yellow at base. Irides hazel brown; legs and feet, yellowish fleshy; claws, brown horny.

The specimen whose dimensions, &c., I give above is very doubtfully referred to this species by Mr. Hume, who has not yet been able to compare it with the type. I found the bird between Kizil Aghil and Tam at elevations of from 7,000 to 9,000 feet, in August. The bird occurred in long grass (called *chigh*) near the Arpalak and Sanju streams; it seemed to be very restless, continually flitting from blade to blade, and only one specimen was obtained. In Turki it is called *Chighchi*, in allusion to the grass which it frequents.

## 546 *bis.*—Suya albosuperciliaris, **Hume.*

♀. *Yarkand*, 16*th June*.—Length, 6·5; expanse, 8·0; wing, 2·55; tail, 3·3; tarsus, 0·96; bill, from gape, 0·68; closed wing fall short of tail, 2·65; weight, 0·6 oz. Bill dusky greyish above, lower mandible fleshy; irides, dark brown; legs and feet, greyish fleshy; claws, grey horny.

♀. *Yarkand*, 13*th June*.—Length, 6·6; expanse, 7·8; wing, 2·4; tail, 3·0; tarsus, 0·9; bill from gape, 0·65; closed wings fall short of tail, 2·3; weight, 0·65 oz. Bill, brownish black above; lower mandible, fleshy; irides, dark brown; legs and feet, flesh color; claws, brownish horny.

*Two young males, Yarkand*, 17*th June*.—Length, 5·8 to 6·0; expanse, 8·0; wing, 2·5; tail, 2·5 to 2·85: tarsus, 0·95 to 1·0; bill, from gape, 0·63 to 0·64; closed wings fall short of tail, 1·8 to 1·9. Bill, grey horny, brownish or dusky above; irides, dark brown; legs and feet, fleshy; claws, brownish horny.

This species is tolerably common in the plains of Eastern Turkestan, where it is said to be a permanent resident. It has a rather sweet plaintive note and frequents long grass and bushes growing near rivers and streams. It breeds in May and June; some young birds were obtained about the middle of the latter month. The Turki name for the species is *Suram*.

## 553.—Phyllopneuste rama, *Sykes*.

*Three males shot at Yarkand in May and June*.—Length, 5·3 to 5·45; expanse, 7·2 to 7·6; wing, 2·23 to 2·5; tail, from vent, 2·2 to 2·3; tarsus, 0·85 to 0·9; bill, from gape, 0·6 to 0·65; weight, 0·4 oz.; closed wings fall short of tail, 1·1 to 1·4. Bill: upper mandible, dusky brown or black; lower mandible, yellowish horny; irides, light brown or hazel; legs, fleshy and brownish fleshy; feet, fleshy or greenish; claws, black.

* It has been suggested that this must stand as *Rhopophilus pekinensis*, Swinh.—A. O. H.

This species is a seasonal visitant to the plains of Kashgharia, where it breeds ; I got the first specimen of it in May, and it was never observed in winter. The birds were found in orchards and among the vines, singing very sweetly and incessantly hopping about. The Turki name for this Warbler is *Koktalghu*.

## 554.—Phylloscopus tristis, *Blyth*.

♀. *Between Toghrasu and Oibuk, 23rd August.*—Length, 4·5 ; wing, 2·25 ; tarsus, 0·8 ; bill, from gape, 0·46 ; weight, 0·25 oz. Bill : upper mandible, dusky ; lower mandible, dusky at tip, yellow at base ; irides, dark brown ; legs, feet, and claws, brownish dusky.

*Specimen shot between Toghrasu and Oibuk, 23rd August.*—Length, 4·4 ; expanse, 7·0 ; wing, 2·3 ; tail, 1·85 ; tarsus, 0·75 ; bill, from gape, 0·52 ; closed wings fall short of tail, 0·85 ; weight, 0·3 oz. Bill, brownish dusky, yellow at base below ; irides, dark brown ; legs and feet, dusky brown ; claws, brown, yellow at tip.

*Specimen shot at Oibuk, 24th August.*—Length, 4·2 ; expanse, 7 ; wing, 2·3 ; tail, 1·9 ; tarsus, 0·8 ; bill, from gape, 0·45 ; closed wings fall short of tail, 0·9. Bill, dusky brownish ; base of lower mandible and gape, yellow ; irides, dark brown ; legs, brownish black ; feet and claws, dusky ; soles of feet and under surface of claws, orange yellow.

This species was very common in August along the Sanju stream and in the Karakash Valley at elevations of from 9,000 to 14,000 feet. It frequented the tamarisk and hololachne bushes growing along the banks of the streams, and no doubt had lately been breeding in the localities in which it was observed, as the specimens procured were immature. The cry of this bird consists of a single plaintive sort of note, regularly repeated.

## 560.—Phylloscopus viridanus, *Blyth*.

♂. *Shot between Tam and Tadlik, 17th August.*—Length, 4·3 ; expanse, 7·15 ; wing, 2·34 ; tail, 1·8 ; tarsus, 0·81 ; bill, from gape, 0·53 ; closed wings fall short of tail, 0·9 ; weight, 0·35 oz. Bill : upper mandible, dusky brown, lower mandible, yellowish brown ; irides, dark brown ; legs and feet, brownish grey ; claws, brown horny.

This species was noticed among the tamarisk and willow bushes fringing the Sanju stream, and along the banks of the Karakash River. It seemed very restless, continually flitting from spray to spray, and its note was a weak sort of chirp frequently uttered.

## 567.—Reguloides viridipennis, *Blyth.*

*Specimen shot between Tam and Tadlik, 17th August.*—Expanse, 6·9 ; wing, 2·25 ; tail, 1·6 ; tarsus, 0·8 ; closed wings fall short of tail, 0·65 ; weight, 0·25 oz. Bill, dusky above, edges of gape orange yellow ; irides, dark brown ; legs, dusky ; feet, greenish brown ; claws, dusky—yellow at tips.

This species was very numerous in the small bushes near Tadlik ; elevation about 9,000 feet.

## 581 A.—Nisoria undata, *Bonap.*

*Two males shot at Yarkand in June.*—Length, 6·85 to 7·0 ; expanse, 10·8 to 10·85 ; wing, 3·6 ; tail, 3 to 3·15 ; tarsus, 0·9 ; bill, from gape, 0·66 to 0·73 ; closed wings fall short of tail, 1·5 to 1·6 ; weight 0·8 oz. to 0·9 oz. Bill, dusky or greyish black ; the lower mandible, yellowish horny at base ; irides, golden yellow ; legs and feet, light yellowish ; claws, dusky.

*Nestling preserved at Yarkand, 14th June.*—Length, 4·4 ; expanse, 8·4 ; wing, 2·55 ; tail, 1·3 ; tarsus, 1·0 ; bill, from gape, 0·7 ; closed wings fall short of tail, 0·65 ; weight, 0·5 oz. Bill, black ; lower mandible grey at base ; edges of gape, yellowish ; legs and feet, light grey ; claws, dusky horny.

The Barred Warbler arrives about the neighbourhood of Yarkand in May, and probably migrates about September ; it is never seen in the country during the winter. It is a very restless bird, and has a great knack of concealing itself, as a rule, only taking short flights ; it frequents orchards, vine "baghs," and generally places where trees or bushes grow thickly together. This species has a beautiful and melodious song and is hence called by the Yarkandis *Bulbul.*

*N. undata* breeds in May and June, the nest being placed in rose or thorn bushes ; it lays four or five eggs, the latter being the more usual number and apparently the full complement. On the 31st May I found a nest of this species in a thick rose bush about two feet above the ground, and completely screened over by the upper leaves of the bush which was about three feet high ; there were numerous other nests near in the same sort of situations, one only about a yard from the one I removed. The nest is roughly made up of twigs and fibres, and measures about 4·8 by 4·5. The egg cavity is a neat oval cup three inches in length by 2·5 in breadth. It is neatly lined with fine fibres closely interwoven. This nest contained five eggs. Subsequently I got three other nests which contained—the first, four eggs ; the second, five ; the third, four. These nests are of an oval shape, about 4 inches in length by 3·5 in breadth ; the egg cavities are deepish oval cups about 3 inches in length by from 2 to 2·5 in breadth, and from 1·3 to 1·5 in depth.

The nests are made up of fine twigs and fibres of plants, loosely put together externally. The egg cavities are lined with fine fibres with which horse hair and a little wool is interwoven.

The eggs vary in shape from a broadish almost perfect oval to a longish oval moderately compressed at one end, and have a little gloss. The ground color is stone grey, and sparingly scattered over the surface are bluish grey spots, streaks, and cloudings (all rather faint) which unite to form a bluish grey zone or cap at the larger end of the eggs.

In length the eggs vary from 0·8 to 0·88 and in breadth from 0·6 to 0·65, but the average of fifteen eggs is 0·83 by 0·61.

## 583.—Sylvia curruca, *Gmelin.*

♂? *Shot at Koshtak, 8th August.*—Length, 5; expanse, 7·5; wing, 2·45; tail, 2·4; tarsus, 0·8; bill, from gape, 0·53; closed wings fall short of tail, 1·3; weight, 0·4 oz. Bill, brownish black, greyish at base below; irides, hazel; legs and feet, greyish dusky; claws, black.

*Two nestlings captured at Sughuchak in June.*—Length, 3·2 to 3·4; expanse, 6·0 to 6·3; wing, 1·5 to 1·95; tail, 1·1; tarsus, 0·75 to 0·8; bill, from gape, 0·45 to 0·5; closed wings short of tail, 0·7. Bill, dusky; yellow or horny at base; edge of gape yellow; irides, brown; legs and feet, greyish fleshy; claws, dusky.

The Lesser Whitethroat arrives in the plains of Kâshgharia about April, and migrates southwards towards the end of October. I shot a specimen on the 5th of the latter month in a field near Posgam. It is a very common bird and seems chiefly to frequent short bushes growing in waste ground, but I never observed it in trees. This species breeds in May and June: two young nestlings, unable to fly, were captured in waste ground near Yarkand on the 20th June.

## 591.—Motacilla personata, *Gould.*

*Three males, Yarkand, March and April.*—Length, 7·9 to 8; expanse, 11·5 to 11·75; wing, 3·75 to 4; tail, 3·7 to 4·2; tarsus, 0·95 to 1·0; bill, from gape, 0·7 to 0·75; closed wings fall short of tail, 2·5 to 2·6; weight, 0·7 oz. to 0·8 oz. Bill, legs, feet, and claws, black; irides, dark brown and brown.

*Two females, Yarkand, March, Ui Toghrak, August.*—Length, 7·6; expanse, 11·1 to 11·4; wing, 3·6 to 3·7; tail, 3·7; tarsus, 0·95 to 1·0; bill, from gape, 0·7 to 0·75; closed wings fall short of tail, 2·4. Bill, black—in the August specimen brownish at base; irides, brown and dark brown; legs, feet, and claws, black.

A nestling was preserved on the 16th June

This species is the Common Wagtail of Eastern Turkestan, where it is found in great numbers throughout the plains, generally near habitations and streams of running water. It is most numerous from March to September, but some of these birds are certainly to be seen throughout the year. This Wagtail breeds in May, and is called in Turki *Kok Sunduk*—Blue Wagtail.

## 591 *ter.*—Motacilla alba, *Lin.*

♂ *Sanju, 28th September*, 1874.—Length, 7·75; wing, 3·66; tail, 3·72; tarsus, 0·93. Bill, brownish black; legs, feet, and claws, black.

I have only one specimen of this species: a bird I shot near a small stream at Sanju on first entering Eastern Turkestan. It was not discriminated from *M. personata*, which is certainly the common species of Wagtail found in Kashgharia. The Turki name for this Wagtail is *Sunduk*, and it is said to disappear entirely from Eastern Turkestan in winter.

## 594 *bis.*—Budytes citreola, *Pallas.*

*Four males, shot near Yarkand in April and June.*—Length, 6·6 to 7·2; expanse, 10·4 to 10·5; wing, 3·33 to 3·5; tail, 2·95 to 3·2; tarsus, 0·95 to 1·0; bill, from gape, 0·7 to 0·75; closed wings fall short of tail, 1·5 to 1·9; weight, 0·6 oz. to 0·7 oz. Bill, black; legs and feet, greyish dusky to black; claws, black.

*Three females, shot near Yarkand in April.*—Length, 6·25 to 7; expanse, 9·25 to 10·4; wing, 3·0 to 3·35; tail, 2·7 to 2·9; tarsus, 0·9 to 1·0; bill from gape, 0·7 to 0·9; closed wings fall short of tail, 1·8 to 2·2; weight, 0·65 oz. to 0·75 oz. Bill, black and blackish brown; irides, dark brown; legs, feet, and claws, black.

♀ *Belackchi 26th August.*—Length, 6·7; expanse, 10; wing, 3·18; tail, 3·0; tarsus, 1·0; bill, from gape, 0·7; closed wings fall short of tail, 1·7; weight, 0·6 oz. Bill, black; basal half of lower mandible, brown; irides, dark greyish brown; legs, feet, and claws, black.

This species was very common in the plains from March to August and was met with in the valley of the Karakash at an elevation of about 12,000 feet near the end of the latter month; it was never observed in winter. The bird was never seen near houses, but always in swampy ground and about marshes. It breeds probably about the month of May as quite a young nestling was obtained on the 15th June. The Turki name for this species is *Sarik Sunduk, i. e.*, the Yellow Wagtail.

## 599.—Corydalla Richardi, *Vieill.*

♀ *Shot near Yarkand, 25th June.*—Length, 8; expanse, 12·9; wing, 3·95; tail, 3·3; tarsus, 1·3; bill, from gape, 0·85; closed wings fall short of tail, 1·87; weight, 1·1 oz. Bill, dusky above, light horny below; irides, brown; legs and feet, brownish fleshy; claws, dusky horny.

This species is a seasonal visitant to the plains of Eastern Turkestan where it breeds; it was observed on several occasions in June and July, but was never met with in winter. The bird frequents undulating damp ground covered with short grass, and is very shy. It runs about very swiftly in the uneven ground which it affects, and its flight is strong and undulating. Its note, which it utters as it rises, is a sweet soft twitter. It probably hatches about the beginning of July, as on the 31st of that month some young birds of this species were seen between Igarchi and Posgam. The Turki name for this bird is *Sairam*, which means "singing."

## 605 *ter.*—Anthus aquaticus, *Bechst.*

*Three males, shot at Yarkand in March and April, measured and weighed.*—Length, 6·75 to 7·2; expanse, 11 to 11·25; wing, 3·55 to 3·8; tail, 2·6 to 2·9; tarsus, 0·9 to 1·0; bill, from gape, 0·65 to 0·8; closed wings fall short of tail, 1·45 to 1·7; weight, 0·7 to 0·9oz. Bill, brownish black, brown at base below; irides, dark brown; legs and toes, dusky; claws, black.

♀ *Yarkand, 9th March.*—Length, 6·75; expanse, 10·9; wing, 3·3; tail, 2·25; tarsus, 0·9; bill, from gape, 0·7; weight, 0·7oz. Bill: upper mandible black; lower yellowish, dusky at tip; legs and toes, dusky; claws black.

In addition to the above three other specimens were preserved at Yarkand or Beshkant in January and February.

This species was common in Kashgharia in winter; I shot several of these birds near Beskkant, in the beginning of February, where they were running among the rushes in frozen marshy ground. In the spring the birds frequented moist meadow ground and the vicinity of running water, feeding on insects and small worms. I procured one specimen at Yarkand on the 7th April in full summer plumage. The Turki name for the bird is *Boz sunduk*—the Ashy Wagtail.

## 608 *bis.*—Ampelis garrulus, *Lin.*

♀ *Yarkand, March.*—Length, 7·52; expanse, 12·0; wing, 4·4; tail, 2·5; tarsus, 0·9; bill, from gape, 0·6; closed wings fall short of tail, 0·9.

Bill, legs, feet, and claws, black; irides, red.

This bird was purchased for Mr. Shaw in the bazar of Yarkand, where it was being carried about perched on a man's finger. It appeared to be very quiet in confinement, and was never heard to utter any sound. It soon died however, and I recorded the above measurements from the fresh bird before I skinned it; before we left Yarkand Mr. Shaw gave me the skin as I had not been able to procure a specimen. When alive the bird had a beautiful appearance: its dense glossy feathers gave it rather the look of a perfect wax model than a living bird. I heard from several sources that this species was common in the hills near Aksu, and I also heard of its occurrence in Sarikkul; the bird is never seen in the plains of Eastern Turkestan unless it be in captivity. The Yarkandis have an absurd legend about this bird being the grand sire of the common Hoopoe! A Yarkandi bird-catcher told me that its name was *Tagh hüpüpi* 'the Mountain Hoopoe;' but this designation was no doubt evolved out of his inner consciousness.

## 633 A.—Leptopœcile sophiæ, *Severtsov.*

♂. *Pilataghach, 22nd August.*—Length, 4·4; expanse, 6·2; wing, 2·05; tail, 2·25; tarsus, 0·8; bill, from gape, 0·46; closed wings fall short of tail, 1·2; weight, 0·27oz. Bill, black; angle of gape, orange; irides, straw color; legs and feet, brownish dusky; claws; black, yellow at tips.

♂. *Balakchi, 26th August.*—Length, 4·35; expanse, 6·5; wing, 2·1; tail, 2·3; tarsus, 0·75; bill, from gape, 0·44; closed wings fall short of tail, 1·3; weight, 0·25oz. Bill, black, yellowish at extreme tip; irides, light hazel; legs and feet, brownish dusky; claws, black, yellowish at tips.

♀ *Pilataghach, 22nd August.*—Length, 4·25; expanse, 6·1; wing, 2·05; tail, 2·1; tarsus, 0·75; bill, from gape, 0·46; closed wings fall short of tail, 1·15; weight, 0·25oz. Bill, black; angle of gape, orange; irides, dark straw color; legs and feet, brownish dusky; claws, black, yellowish at tips.

*Juv. Pilataghach, 22nd August.*—Length, 4·2; expanse, 6; wing, 2·05; tail, 2; tarsus, 0·75; bill, from gape, 0·42; closed wings fall short of tail, 1·2; weight, 0·25oz. Bill, brownish black; angle of gape, orange yellow; irides, light hazel; legs and feet, brownish dusky; claws, black, yellowish at tips.

This pretty little species was met with in Kashgharia, in August, along the banks of the Karakash river, at Pilataghach, Toghrasu, Oibuk, Shahid-ullah, Balakchi and Gulgun Shah, at elevations of from 10,800 to 13,000 feet. The birds were numerous and continually hopping about or flitting from

place to place in the Tamarisk, Buckthorn and Hololachne bushes growing on the banks of the river; they uttered a pretty loud, sweet, chirping cry. I don't know which was most difficult: to see these bird, to shoot them, or to find them when shot, in the dense bushes which they frequent.

## 636 A.—Calamophilus biarmicus, *Lin.*

*Five males shot near Yarkand in April, June and July.*—Length, 6·3 to 6·75; expanse, 6·9 to 7·3; wing, 2·25 to 2·4; tail, 3·0 to 3·55; tarsus, 0·75 to 0·85; bill, from gape, 0·45 to 0·5; closed wings fall short of tail, 2·25 to 2·75; weight, 0·35oz. to 0·45oz. Bill, orange; irides, greyish and cream color; legs, feet, and claws, black.

*Two young males shot near Yarkand in June.*—Length, 6·0 to 6·3; expanse, 6·95 to 7·0; wing, 2·2 to 2·6; tail, 2·93 to 3·15: tarsus, 0·7 to 0·8; bill, from gape, 0·43 to 0·5; closed wings fall short of tail, 2·2 to 2·3; weight 0·35oz. to 0·4oz. Bill, orange yellow and dusky; irides, whitish and yellowish white; legs, feet, and claws, black.

*Two females shot near Yarkand on the 13th April.*—Length, 6·25 to 6·5; expanse, 7·1 to 7·15; wing, 2·3; tail, 2·9 to 3·0; tarsus, 0·73 to 0·75; bill, from gape, 0·42; closed wings fall short of tail, 2·25 to 2·4; weight, 0·38oz. to 0·4oz. Bill, orange, dusky above; legs, feet, and claws, black.

The Bearded Reedling was exceedingly common in the plains of Eastern Turkestan, among the reeds and rushes growing in marshy ground and on the borders of lakes. I did not observe it in winter, but it was said to be a permanent resident in the country. These birds take short wavering flights, in small flocks usually, and as they fly make a curious sound which is sought to be imitated by the Turki name given to the species—*Jingjing*. Near Yarkand this bird breeds in April and May.

## 646 A.—Parus cyanus, *Pallas.*

♂. *Shot between Kizil Aghil and Mazar, 15th August.*—Length, 5; expanse, 8·45; wing, 2·7; tail, 2·43, tarsus, 0·75; bill, from gape, 0·45; closed wings fall short of tail, 1·3; weight, 0·4 oz. Bill, dusky, extreme tip of upper mandible, whitish; irides, dark brown; legs and feet, bluish plumbeous; claws, plumbeous.

*Two young birds, shot between Tam and Tadlik, 17th August, measured and weighed.*—Length, 4·6 to 4·65; expanse, 7·8; wing, 2·6 to 2·65; tail, 2·15 to 2·2; tarsus, 0·7 to 0·73; bill, from gape, 0·4 to 0·43; closed wings fall short of tail, 1·0 to 1·1; weight, 0·43oz to 0·45oz. Bill, bluish black or dusky; yellowish

or grey horny at tip, sides and base of lower mandible; irides, blackish brown; legs and feet, slaty blue; claws, dusky, lightish at tips.

This pretty little species was met with, in small flocks, among the Tamarisk bushes which grow on the banks of the Arpalak, and Sanju streams. It had evidently been breeding in those places.

## 655.—Accentor Huttoni, *Moore.*

♂. *Kashghar, 28th November.*—Length, 6; wing, 2·9; tail, 2·7; tarsus, 0·74: bill, from gape, 0·54. Bill, black, yellowish at gape; irides, brown; legs and feet, fleshy.

This bird was brought to me at Kashghar and was said to have been captured in the neighbouring hills. I kept it alive for a few days.

## 655 *bis. (A).*—Accentor { montanellus, *Pallas.* / fulvescens, *Severtsov.*

♂. *Shahid-ullah, 25th August.*—Length, 5·7; expanse, 9·3; wing, 3·0; tail, 2·5; tarsus, 0 8; bill, from gape, 0·6; closed wings fall short of tail, 1·4; weight, 0·65oz. Bill, black, brownish at base below; irides, very dark brown; legs and feet, fleshy; claws, dusky, yellowish at tips.

♂. *Balakchi, 26th August.*—Length, 6·2; expanse, 9·3; wing, 3·1; tail, 2·65; tarsus, 0·75; bill, from gape, 0·6; closed wings fall short of tail, 1·5; weight, 0·65oz. Bill, black; irides, brown; legs, fleshy; feet, brownish fleshy; claws, blackish, yellow at tips.

♀. *Oibuk, 23rd August.*—Length, 5·6; expanse, 9·2; wing 3·1; tail, 2·6; tarsus, 0·85; bill, from gape, 0·6; closed wings fall short of tail, 1·2; weight, 0·6 oz. Bill, dusky, yellow at extreme tip; gape, orange; irides, greyish brown; legs and feet, fleshy; claws, dusky brown.

This species was observed pretty frequently between Toghrasu and Gulgun Shah at elevations of from 11,000 to 13,000 feet. The birds kept in pairs usually and frequented the bushes growing near the banks of the Karakash river. This bird probably breeds in the localities where it was seen in August.

## 658.—Corvus tibetanus, *Hodgson.*

♂. *North of Karakoram Pass, 3rd September.*—Length, 27; expanse, 55·5; wing, 18·7; tail, 11·25; tarsus, 2·5; bill, from gape, 3·15; closed wings fall short of tail, 1·0; weight, 2 lbs. 11 oz. Bill, legs, feet, and claws, black; irides, dark brown.

♀. *Shot at the same time and place.*—Length, 25·5; expanse, 54·6; wing, 18·1; tail, 10·65; tarsus, 2·5; bill, from gape,

2·9; closed wings fall short of tail, 0·6; weight, 2 lbs. 6·75 oz.; Bill, legs, feet, and claws, black; irides, dark brown.

On the return journey, in August, this Raven was met with below Kichik Yailak, and was very numerous about the Sanju Pass, where it was observed feeding on the carcases of dead horses. From the last place a number of these fine birds accompanied our party all the way over the Karakoram Pass into Ladak; they were very fearless, and made themselves quite at home in the camp, walking about in a very stately fashion. On one occasion a pony carrying some of my luggage tumbled down the side of a gorge and injured itself so severly that it had to be killed on the spot; our Ravens seemed to understand perfactly what was going on; for they settled on the neighbouring rocks in anticipation of a fine feed, cawing in a hoarse and exulting manner. As these birds fly their wings make a kind of creaking noise very like the rustling of a satin dress; and their caw is a deep, hoarse, clucking sort of sound. The Turks speak of the Raven as a fine old bird, and say that it lives for a thousand years! The name given by the Kirghiz and Andijanis to this species is *Kuzghun*.

## 659.—Corvus corone, *Lin.*

♂. *Yarkand, February.*—Length, 18·3; wing, 12·4; tail, 7·8; tarsus, 2·25; bill, at front, 2·03; nareal bristles reach to within 1·05 of tip of bill. Bill, legs, feet, and claws, black.

♂. *17th June, Yarkand.*—Length, 18·8; expanse, 36·5; wing, 12·1; tail, 8·5; tarsus, 2·3; bill, from gape, 2·25; closed wings fall short of tail, 2·0; weight, 13oz.

Bill, dark slaty grey; irides, dark brown; legs and feet, greyish black; claws, black.

Mr. Hume considers that the two specimens noted above must be referred to *C. corone* and not *culminatus;* my own impression is that the second * bird whose dimensions, &c., are given above is the young of the latter species. If the Crow under consideration be really distinct, it is a permanent resident in the plains of Eastern Turkestan, and is associated with *Corvus culminatus.*

## 659 *bis.*—Corvus cornix, *Lin.*

Two specimens of this species were preserved at Kâshghar: a female in October and a male in November. It was very common in the plains during the winter, when it was seen daily at Kâshghar and Yarkand associating with the Rook (*C. frugilegus*) and with the Black Crows (*C. intermedius* and *C. corone*). It was first observed near Yangi Hissar in October, and it migrated from Yarkand about the end of March, to repair, it is

* The Bill is broken; I am not at all sure.—A. O. H.

said, to the hills near Aksu, where it is reported to breed. The Turki name for this species is *Ala Kargha*, the Variegated Crow.

♂. *Kashghar*, 1*st November*.—Length, 19·3; wing, 13·3; tail, 8·4; tarsus, 2·25; bill, from gape, 2·24. Bill, legs, feet, and claws, black.

♀. *Kashghar*, 23*rd October*.—Length, 18·2; wing, 11·75; tail, 7·4; tarsus, 2·1; bill, from gape, 2·0. Bill, legs, feet, and claws, black.

## 660.—Corvus culminatus, *Sykes? C. intermedius*. Adains.

*Two males, Yarkand, February*.—Length, 18·8 to 19·9; wing, 13·35 to 13·6; tail, 8·2 to 8·7; tarsus, 2·15 to 2·2; bill at front 2·35 to 2·37; nareal bristles short of tip of bill, 1·6 to 1·12.

Bill, legs, feet, and claws, black; irides, dark brown.

This Crow is very common throughout the plains of Eastern Turkestan, where it lives permanently and breeds. It is not nearly such a noisy and insolent bird as *C. splendens* is in India. I have seen this species pursue and torment both the Eagle Owl (*Bubo maximus*) and the Kite (*M. melanotis*); and it seems to have a great predilection for the eggs of small birds.

On the 21st April a nest of this Crow was seen placed very near the summit of a high poplar tree (*P. alba*). The nest was coarsely made of sticks, twigs and fibres, and had a sort of lining of dry grass and horse hair; it contained four eggs. One of these eggs measures 1·71 in length by 1·2 in breadth; in shape it is a moderately broad oval, not much pointed at the small end. It is of a close texture and has a considerable gloss. The ground color is a pale clear bluish green, abundantly covered over with spots, streaks and blotches of sepia brown; the blotches are largest and most crowded together at the large end of the egg.

The Turki name for this species is *Kara Kargha*, the Black Crow.

## 664.—Corvus frugilegus, *Lin.*

The Rook was common about Kashghar and Yarkand, and in the plains generally, during the winter, when it was constantly seen near the roads picking away at heaps of rubbish representing the dry earth system of conservancy. It was very commonly associated with the Black Crow and *C. cornix*. This bird disappeared from the vicinity of Yarkand in the beginning of April, migrating to the north, where it is said to breed in the hills near Aksu. Its Turki name is *Portumchuk kargha*, *i. e.*, 'the Rotten-beaked Crow,' in allusion to the rough scabrous skin covering the base of the bill. A specimen was preserved at Kashghar in December and another at Yarkand in January.

♂. *Kashghar, 26th December.*—Length, 20; wing, 13; tail, 8; tarsus, 2·1; bill, from gape, 2·6.

Bill, black; its base covered with a rough whitish skin; legs, feet, and claws, black.

♂. *Juv. Yarkand, January.*—Length, 19·7; wing 12·3; tail, 7·6; tarsus, 2·1; bill, from gape, 2·7; at front, 2·45; nareal bristles reach to within 1·43 of tip of bill. Bill, black, rough and greyish at gape; legs, feet, and claws, black.

## 665.—Coleus { monedula, *Lin.* / daurica, *Pallas.*

Three specimens of this Jackdaw were preserved: two males in January and one female in February, all at Yarkand. It is a winter resident only, about Kashghar and Yarkand, and migrates northwards, to the Aksu forests, it is said, in the beginning of April. I was told that it bred near Aksu. The Jackdaw was generally seen in the fields or by the road sides, frequently associated with the Rooks and Crows, picking at some heap of rubbish. I kept several of these birds in confinement and found their pranks very amusing; but they never equalled the Magpies in this respect. The Turki name for this species is *Tukhunák kargha.*

♂. *Yarkand, January.*—Wing, 9·1; tarsus, 1·75; bill, from gape, 1·5. Irides, white; bill, legs, feet, and claws, black.

♂. *Yarkand, January.*—Length, 13·2; wing, 8·96; tail, 5·2; tarsus, 1·7; bill, from gape, 1·45. Bill, legs, feet, and claws, black.

♀. *Yarkand, February.*—Length, 12·8; wing, 8·8; tail, 5·1; tarsus, 1·63; bill, from gape, 1·43. Bill, legs, feet, and claws, black.

## 668 *bis.*—Pica bactriana, *Bonap.*

This Magpie was first observed, within the limits of Kashgharia, at Kebis (elevation 7,500) on the 26th September 1874. After that it was not seen until we reached Kashgar in October, and there it was common in gardens and on road side trees during the months of November and December. The bird appears to be almost unknown at Yarkand, where only a few stragglers are occasionally seen in winter. On the return journey in August it was seen on two occasions, in pairs, near Kizil Aghil and the Chuchu Pass. In summer this species appears to inhabit all the hills round Eastern Turkestan, *viz.*, north of Aksu and Kashghar, Sarikkul, and south of Yarkand and of Sanju, descending to the borders of the plains in winter. I preserved two specimens of this Magpie at Kashghar, and kept several alive in confinement. They were most amusing

birds, and I had one so tame that it would hop about my table while I was writing, dip its beak into the inkstand and then wipe the ink off on the tablecloth, and finally, as a climax of impudence, perch composedly on the top of my head!

The Turki name for this species is *Saghizghán*, and the Andijanis call it *Akkah*.

♀. *Kashghar, 22nd November.*—Length, 18·3; wing, 8·32; tail, 10·4; tarsus, 1·95; bill, from gape, 1·55. Bill, legs, feet, and claws, black.

♀. *Kashghar, 13th December.*—Length, 16·5; wing, 7·6; tail, 9·7; tarsus, 1·75; bill, from gape, 1·6. Bill, legs, feet, and claws, black.

## 679—Fregilus graculus, *Lin.*

The Red-billed Chough was first met within the limits of Eastern Turkestan on the Sanju Pass in September 1874. The bill of a specimen which I then shot measured 2 inches straight from forehead to tip. On the return journey in August 1875, I found that the Beg of Sanju had a couple of tamed birds of this species which were allowed perfect liberty, but showed no disposition to steal away to the hills. When we got into the hills they were seen every day and were very numerous about Kichik Yailak at an elevation of 12,000 feet. Some Turks told me that this species had acquired a red bill by persistently drinking the blood of dead animals, and there seems to be a general impression among the Kirghiz that the bird often feeds on carrion. The Turki name is *Kizil tumchuk Kargha*, the Red-billed Crow.

♂. *Between the Sanju Pass and Kichik Yailak, 24th September.*—Length, 14·6; wing, 11·2; tail, 6; tarsus, 1·9; bill, straight from forehead to point, 1·94.

Bill, orange red, base of lower mandible, blood red; legs, orange; feet, orange red; claws, black.

## 679 *bis.*—Podoces Hendersoni, *Hume.*

♂. *Shot between Koshtak and Sulikaziz Langar, 9th August.*—Length, 11·4; expanse, 18·2; wing, 5·75; tail, 4·4; tarsus, 1·6; bill, from gape, 1·8; closed wings fall short of tail, 2·1; weight, 4·9 oz. Bill, black towards tip, greyish black at base; irides, dark brown; legs, black; feet, greyish black; claws, black. The testes small.

♂. *Juv. Shot in the desert ground between Sulaghiz Langar and Sanju, 10th August.*—Length, 11·2; expanse, 17·3; wing, 5·5; tail, 4·2; tarsus, 1·5; bill from gape, 1·7; closed wings fall short of tail, 2·3; weight, 3·4 oz. Bill, legs, feet, and claws, black; soles of feet, grey; irides, dark brown. The testes very small.

♀. *Shot in desert ground between Sulaghiz Langar and Sanju, 10th August.*—Length, 11·4; expanse, 17·35; wing, 5·5; tail, 4·3; tarsus, 1·6; bill, from gape, 1·7; closed wings fall short of tail, 2·3; weight, 4·2 oz. Bill, black, greyish at base; irides, brown; legs, feet, and claws, black; soles of feet, grey. The ova very minute.

Four males—three shot in desert between Sanju and Langar, 28th September, and one between Langar and Koshtak, 30th September:—Length, 11·5 to 12; expanse, 17·8 to 18·7; wing, 5·6 to 5·85; tail, 4·3 to 4·5; tarsus, 1·65 to 1·7; bill, from gape, 1·8 to 1·89; weight, 4·4 oz. to 5·2 oz.

Five females—three shot between Sanju and Langar 29th September, one shot between Langar and Koshtak 30th September, and one between Koshtak and Uï Toghrak 1st October:—Length, 10·9 to 11·4; expanse, 17·1 to 17·5; wing, 5·3 to 5·6; tail, 3·9 to 4·2; tarsus, 1·55 to 1·67; bill, from gape, 1·6 to 1·69; weight, 3·5 oz. to 4·5 oz.

Bill, legs, feet, and claws, black; irides, brown.

This species was only met with in the desert country which intervenes between Sanju and Karghalik—an arm of the great Takla Makan Desert—which we crossed on entering and leaving the plains of Eastern Turkestan. It was never seen or heard of near Kashghar, Yarkand, or the country which lies between those two cities. Altogether I saw about thirty-five of these birds, out of which I shot and preserved fourteen. As I was aware that little was known about the habits of these *Podoces* I made all the notes I could at the time about them and may perhaps be excused for giving a rather detailed account of what I observed about this species.

*Podoces Hendersoni* inhabits desert sandy ground, in which very stunted little bushes grow sparsely, and which is intersected by a few small streams, usually at a distance of a day's march from each other. The birds move about singly, seldom in pairs; and even when two birds are found together and they are alarmed they fly away in different directions; thus showing that their bond of union was very slight indeed. The birds are always very much on the alert and run as swiftly as hares at the least sign of danger. They never take to the wing except when very hard pressed, and then they fly only for a short distance, soon settling on the ground again to scuttle off as hard as their legs will carry them. When pursued they are very fond of running for some distance and then hiding closely behind a bush; and I have sometimes surprised them peering round the corner of a bush to see if the foe had been circumvented. Their flight is short and wavering—something like that of a Hoopoe—and as they fly the large white patch on their wing shows out very

conspicuously. The birds were usually observed coming down to the path along which the horses had gone, to feed on the dung; they were in such a hurry over this business that they had not time to pick the grain out only, but swallowed the stuff wholesale with which their stomachs were found to be filled. When there are no horses passing their way I suppose they must subsist on insects of some sort. The shooting of these birds affords capital exercise, for as they generally begin to run before one can get within shot the only plan is to run also—not exactly after them—but so as to cut them off at a point within shooting distance; after that it is very much like hare shooting.

The Yarkandis do not consider the *Podoces* good eating in the ordinary acceptation of the term, but believe that the flesh of the bird has wonderful tonic properties in a certain direction. These birds were never heard to utter any cry nor did I observe them laving their feathers in the sand. The Turki name for this *Podoces* is *Kil yurgha*, which has reference to the bird running in the trail of horses; it is also, though rarely, called *Kum saghizghani* or 'Sand Magpie,' but *Kum tokhi* (*i.e.*, sand fowl) is the name applied to the Little Bustard (*Otis tetrax*) and not to this species. Our bird is a permanent resident in Eastern Turkestan; it is said to breed in May and June, making its nest on the ground under the shelter of the little bushes; the eggs are said to be a little larger than those of a starling.

I don't think that the plate in Lahore to Yarkand gives a good idea of the bird; a characteristic picture should represent the *Podoces* running on a sandy waste, with head erect; and I am sure no better trivial name could be proposed for the bird than "Swiftfoot." *Apropos* of this species Mr. Shaw tells me of a Turki proverb which he has heard: "Run not like the *Kil-yurgha*, nor let thy tongue run like that of a woman."

### 679 *ter.*—Podoces humilis, *Hume.*

♂. *Kichik Yailak, 19th August.*—Length, 7·1; expanse, 12·0; wing, 3·82; tail, 2·8 tarsus, 1·2; bill, from gape, 1·08; closed wings fall short of tail, 1·2; weight, 1·65 oz.

Bill black, with a greyish bloom at base; irides, dark brown; legs and feet, black, greyish at the joints; soles of feet, ashy grey; claws, black.

♂. *Kichik Yailak, 19th August.*—Length, 6·85; expanse, 119; wing, 3·85; tail, 2·8; tarsus, 1·3; bill, from gape, 1·0; closed wings fall short of tail, 1·15; weight 1·5oz.

Bill, black towards tip; greenish brown at base, especially at sides, and below; irides, blackish brown; legs and feet, black, with a brownish tinge; claws, black.

♂. *Juv. Kichik Yailak, 19th August.*—Length, 6·55; expanse, 11·2; wing, 3·7; tail, 2·6; tarsus, 1·2; bill, from gape, 0·95;

closed wings fall short of tail, 1·05; weight, 1·55oz. Bill, brownish black at tip; greenish brown at base; irides, blackish brown; legs and feet, brownish black; claw, black.

♂. *Kichik Yailak, 19th August.*—Length, 6·85; expanse, 11·8; wing, 3.73; tail, 2·75; tarsus, 1·25; bill from gape, 0·95; closed wings fall short of tail, 1·2; weight, 1·6oz. Bill, black, with a greyish bloom at base; irides, darkish brown; legs and feet, black, with a greyish bloom in parts; claws, black.

This species was first observed and a specimen shot at Kewis (elevation 7,487 feet) on the 26th September 1874. The birds were running about in the fields and perching on twigs and bushes. At Kichik Yailak, in August 1875, they were numerous, and frequented the grassy hill sides which abound there; they would seldom fly but ran up hill very nimbly, making it rather difficult to bag them, considering that the elevation was about 13,000 feet in the valleys. The Kirghiz say that this species, which they call *Zungak*, is a permanent resident near their encampment, and feeds on worms and insects, never on grain or seeds. They add also that the bird makes its nest in holes about the hill sides, breeding in June or July, and that the young birds are able to fly about the end of September.

## 680.—Pyrrhocorax alpinus, *Vieill.*

The Alpine Chough is common in the hills on the south side of Eastern Turkestan at elevations of from 8,000 to 16,000 feet; often associated with the Common Chough, but descending, I think, to lower elevations than that bird. A specimen was preserved at Tam (8,800 feet) in September 1874, and it was seen in great flocks near the Chuchu Pass in August 1875, where it struck me at the time that the name of the Pass might have been given in imitation of the cry of these Choughs which is very like 'chu chu.' The Turki name of this species is *Tagh karghasi*, the Mountain Crow.

♀. *Tam, 26th September.*—Length, 15·3; wing, 10·2; tail, 6·9; tarsus, 1·63; bill, from gape, 1·5; bill, from forehead straight to point, 1·35. Bill, yellow; irides, brown; legs, bright orange; claws, black.

## 681.—Sturnus vulgaris, *Lin.*

*Five males, obtained at Yarkand in February, March and April.*—Length, 8·75 to 9·2; expanse, 15·1 to 15·5; wing, 5·0 to 5·35; tail, 2·65 to 2·9; tarsus, 1·2 to 1·25; bill, from gape, 1·3 to 1·5; weight, 2·35oz. to 2·6oz.

Bill, yellow, dusky at base; irides, dark brown; legs and feet, reddish brown; claws, black.

*Two females. Yarkand, 14th March.*—Length, 8·75 to 8·9; expanse, 14·75 to 15·15; wing, 5·05 to 5·25; tail, 2·7 to 2·9;

tarsus, 1·2; bill, from gape, 1·35 to 1·4; closed wings fall short of tail, 0·9; weight, 2·53oz. to 2·6oz.

Bill, yellow, dusky at tip; irides, dark brown; legs and feet, reddish brown; claws, back.

Three males and one female obtained at Kâshghar in October are in the purple, white tipped stage of plumage.

♀ *Juv.* (*in immature, brownish dusky plumage*) *Yarkand, 9th June.*—Length, 8·1; expanse, 14·4; wing, 4·65; tail, 2·5; tarsus, 1·1; bill, from gape, 1·25; closed wings fall short of tail, 1·0; weight, 2·25oz.

Bill, greyish black, yellow at extreme tip; edge of gape, whitish; irides, brownish black; legs and feet, reddish dusky; claws, black.

The Starling is a very common bird in the plains of Kâshgharia. From about the end of February to the beginning of August the bird literally swarms in the neighbourhood of Yarkand, but it was never observed south of Karghalik; in the depth of winter it appears to migrate south-eastwards, but a few Starlings were seen even in January, between Kâshghar and Yarkand. This species was generally found near inhabited places, perching on trees, feeding in fields, and often following the plough and picking up grubs; the stomach of one specimen I shot contained a caterpillar over an inch long. The numerous holes and crevices in the huge mud walls of the Fort and City of Yarkand were favorite roosting places for these birds; and during an early morning's ride many Starlings could be seen at the entrance of their nests, preening their feathers and making their morning toilette, before starting off for their day's foraging. The Starling is a great favorite with the Yarkandis who frequently place gourds in the trees near their houses for it to lay its eggs in; great numbers of the young birds are caught by the boys, who tame them and carry them about on their hands, or in little cages. In June flocks of young Starlings were often seen, taken about by their parents to forage; one old bird leading the way and the other one bringing up the rear.

The Starling breeds in May and June making its nest in the holes of trees and walls and in gourds and pots placed near houses by the Yarkandis for the purpose. It seems to make only a simple lining for its hole, composed of grass and fibres. The eggs vary in shape from a broadish oval to an elongated oval slightly compressed at one end; they are glossy, but in a strong light the surface looks pitted. The eggs are quite spotless, but the color seems also to vary good deal: from a deep greenish blue to a very pale light sea-blue. In size they vary from 1·1 to 1·22 in length, and from 0·80 to 0·86 in breadth; but the average of nine eggs is 1·19 by 0·83.

The Tarki name for the Starling is *Kara Kuchkach, i.e.*, 'black bird.'

## 690.—Pastor roseus, *Lin.*

♀. *Shot at Sulaghz Langar, 30th September.*—Length, 9·4; wing, 5·1; tail, 2·9; tarsus, 1·2; bill, from gape, 1·15. Bill horny, brown on culmen and at base of lower mandible; irides, dark brown; legs and feet, flesh color.

A single specimen of the Rose-colored Starling was obtained in Eastern Turkestan in September; it was flying about, perching on the branches of Eleagnus trees, and was the only specimen ever seen in the country. It is said to be common in Khokand and Badakhshan where it feeds on mulberries; and the Yarkandi bird catchers say it only occurs as a mere straggler in Kashgharia, a few birds being occasionally seen in the summer after the prevalence of strong north-west or westerly winds. Its Turki name is *Sách.*

## 707.—Passer salicicolus, *Vieill.*

*Two males shot at Yarkand.*—Length, 6·53 to 6·6; expanse, 10·2 to 10·4; wing, 3·2 to 3·3; tail, 2·5 to 2·6; tarsus, 0·8 to 0·85; bill, from gape, 0·65 to 0·7; closed wings fall short of tail, 1·5; weight, 1oz. to 1·1oz. Bill, greyish black and dusky; legs and feet, brownish or yellowish fleshy; claws, dusky.

♀. *Yarkand, 11th March.*—Length, 6·3; expanse, 10·0; wing, 3·3; tail, 2·5; tarsus, 0·8; bill, from gape, 0·55; closed wings fall short of tail, 1·4; weight, 0·9 oz. Bill, dark fleshy, dusky above and at tip; irides, dirty brown; legs and toes, dark flesh color; claws, dusky.

This species is tolerably common in the plains, and is, I believe, a permanent resident in Eastern Turkestan. It frequents reeds growing near marshes, poplar trees, and I shot one once near a corn field where it was flying about in the midst of a flock of the common Turkestan Sparrow—*Passer montanus.* The note of this bird is very distinct from that of *P. montanus.* It breeds in May and June, making its nest in trees and laying four or five eggs; but I never heard of its breeding in colonies, nor did I ever see it frequenting willow trees. The Turki name for this species is *Tarachi.*

## Passer? Propasser?

*Nestling from Terek Langar, 24th July.*—Length, 5·2; expanse, 8·4; wing 2·6; tail, 1·95; tarsus, 0·8; bill, from gape, 0·55; closed wings fall short of tail, 1·2; weight, 0·7 oz.

Bill, livid fleshy, light at the tip and yellow at gape; irides, very dark brown; legs and feet, fleshy; claws, livid horny at bases, lighter in color at the points.

The species of which this specimen was said to be the young was called by the Yarkandis *Toghrak kuchkachi, i.e.*, Poplar bird. It was said to be found in the Dolan forests and to have the head and breast of a reddish color. The young bird described above had a single sweet sort of note.

Mr. Hume thinks that this bird must be a *Passer* or *Propasser* of some sort but cannot pronounce certainly without careful comparisons, which he has not here the materials for making. It certainly is not the young of *Passer montanus*. But Mr. Hume remarks that it is very like the young of *Passer indicus;* the only difficulty about this is that *P. indicus* does not occur in Eastern Turkestan.

## 710.—Passer montanus, *Linn.*

♂. *Shot at Kizil Aghil, 14th August.*—Length, 5·6; expanse 9·1; wing, 2·9; tail, 2·4; tarsus, 0·7; bill, from gape, 0·55; closed wings fall short of tail, 1·45; weight, 0·75 oz. Bill, black, yellow at base below; irides, light brown; legs and feet, yellow fleshy; claws, brownish horn color.

*Nestling, Yarkand, 25th July.*—Length, 4·8; expanse, 8·4; wing, 2·5; tail, 1·7; tarsus, 0·7; bill, from gape, 0·52; closed wings fall short of tail, 0·95; weight, 0·6 oz. Bill—upper mandible, brownish; lower, yellow horn color; irides, dark brown; legs and feet, yellow fleshy; claws, light horn color.

This species is the common Sparrow of Eastern Turkestan, where it is a permanent resident. It abounds everywhere near inhabited places and cultivated fields, up to an elevation of about 7,500 feet. It is not nearly so troublesome as the Indian House Sparrow (*Passer indicus*), seldom coming into one's room; but in the depth of winter, when their food was scarce, flocks of these birds would assemble on the windows and peck away at the paste which had been used to fasten on the transparent paper, producing quite a deafening noise.

The Tree Sparrow breeds from May to August, rearing, I think, two broods in the year; the nest is placed in the holes of walls, under the eaves of houses, and in trees. On the 3rd of June I found a nest in a hole of a wall, near my room, in the Residency at Yarkand. The hole was pretty deep, not wide enough to admit the hand and about six feet above the ground. Three eggs were found, one a good deal incubated, lying on a confused mass of feathers, hair, straw, twigs, &c. The female bird was sitting and could with difficulty be induced to come forth from her nest. On the 18th July I noted that many birds were building in my verandah; the nests were clumsy masses of straw, grass, leaves and wool, piled together in such a slovenly manner that portions of them were continually falling down and

making a mess. On the 25th July I saw a Sparrow of this species collecting willow leaves for its nest: it seized the leaf by the stalk, close to the branch, and by a sudden bend nipped it off very cleverly.

The only egg I now have by me is in shape a moderate oval, very little pointed at one end. It is beautifully glossy and measure 0·81 in length by 0·57 in breadth. The ground color is grey, streaked and blotched with greyish brown; the blotches dense and dark in a cap at the broad end. The Turki name for the Tree Sparrow is *Ak kuchkach*, *i.e.*, 'the white bird;' in Khokand, and by the Andijanis, it is called *Chumchuk*, but a Yarkandi would not understand what was meant by the latter name.

### 720 *bis.*—Emberiza schœnicola, *Lin.*

This species was common near Yarkand in winter, and four specimens were preserved in January and February. It frequented hedges and small trees and was said by the Yarkandis to be a permanent resident, but I never observed it in summer. The Turki name for this bird is *Cha kuchkach.*

♂. *Yarkand, February.*—Wing, 3·3; tarsus, 0·82; bill, from gape, 0·43. Bill: upper mandible, brownish black; lower, horny. Legs, brown; feet, dusky brown; claws, black.

*Three females; Yarkand, January.*—Length 5·9 to 6·1; wing, 3·3 to 3·4; tail, 2·8 to 3·0; tarsus, 0·8 to 0·83; bill, from gape, 0·4 to 0·44. Bill: upper mandible, brownish horny; lower mandible, lighter horn color; legs, brownish fleshy or brown; feet, dusky brownish; claws, black.

### 720 *bis.* A.—Emberiza pyrrhuloides, *Pall.*

*Two males, shot at Yarkand in April, measured and weighed.*—Length, 6·5; expanse, 9·8; wing, 3·05 to 3·3; tail, 2·85 to 3·0; tarsus, 0·8; bill, from gape, 0·43 to 0·65; closed wings fall short of tail, 1·8; weight, 0·7 oz. Bill, dusky horny; legs, brownish; toes, dusky; claws, black.

♀. *Beshkant, 6th February.*—Length, 6·7; wing, 3·2; tail, 2·8; tarsus, 0·8; bill, from gape, 0·5. Bill, dusky; legs, brownish; feet, dusky brown; claws, brownish black.

♀. *Yarkand, 13th April.*—Length, 6·75; expanse, 9·5; wing, 3·15; tail, 2·75; tarsus, 0·75; bill, from gape, 0·5; closed wings fall short of tail, 1·6; weight, 0·65 oz. Bill, dusky; legs, brownish; claws, black.

The first specimen of this species was shot at Beshkant, in the beginning of February, in waste ground overgrown with small bushes; three other specimens were obtained near Yarkand in April. This bird frequents the edges of marshy ground and rice

fields, breeds in Káshgharia and is probably a permanent resident. The Turki name for this Bunting is *Karabash kuchkach*, 'the black-headed bird.' The Yarkandi Shikaris say that the nest of this species is always placed in '*Yekan*,' *i. e.*, reed beds.

## 722.—Euspiza luteola, *Sparr.*

*Five males shot at Yarkand in May and June.*—Length, 6·5 to 6·9; expanse, 10·8 to 11; wing, 3·4 to 3·7; tail, 3·0 to 3·1; tarsus, 0·8 to 0·85; bill, from gape, 0·6 to 0·65; closed wings fall short of tail, 1·6 to 1·7; weight, 0·8 to 0·9 oz. Bill, slaty grey, dusky above; irides, dark brown; legs and feet, fleshy, yellow fleshy, and brownish; claws, dusky and brown horny.

♂. *Juv. Sanju, 11th August.*—Length, 6·2; expanse, 10·2; wing, 3·3; tail, 2·8; tarsus, 0·8; bill, from gape, 0·55; closed wings fall short of tail, 1·5; weight, 0·75 oz. Bill, grey horny; irides, blackish brown; legs and feet, fleshy; claws, brown horny.

*Nestling, Yarkand, 25th June.*—Length, 3·6; expanse, 7·3; wing, 1·9; tail, 0·5; tarsus, 0·8; bill, from gape, 0·55; closed wings fall short of tail, 0·75; weight, 0·5 oz. Bill, grey; edge of gape bright yellow; legs and feet, fleshy; claws, light horn.

This species is a seasonal visitant to the plains, arriving about the end of April and leaving in September. The birds were numerous from the end of May to July near Yarkand, where they were often seen, generally in pairs, perching on small trees (mulberries and willows) and chirping away merrily. These birds were always near cultivation and appeared to prefer the vicinity of corn, barley and lucerne fields. This Bunting breeds in May and June: a nestling was obtained on the 25th of the latter month; on the 2nd July a young bird was caught (just able to fly) in which only the lower tail-coverts showed a tinge of yellow; and a young male of the year was shot at Sanju on the 11th August.

At least half a dozen nest of this species were seen in May and June. The nest is usually placed either in small bushes (*Kara uk*) about a couple of feet above the ground, or touching the ground at the edges of corn fields, and sheltered over by a small shrub (*Buyah*). The nest is round, from 4·5 to 5·5 in diameter, the side wall about 1 inch thick, the bottom 1·5. Externally it is made up of coarse fibres, leaves and twigs loosely put together, but the egg cavity is lined with fine fibres wound round and round, the egg commonly lying on a bottom lining of horse hair. In the fresh nest the egg cavity is circular, cup shaped, about 3 inches in diameter and 1·5 deep. By the time the eggs are nearly ready to hatch off the shape of the nest is often a good deal altered; the egg cavity is flattened out, and instead of being cup-shaped becomes saucer-like, and often quite shallow.

The number of eggs is from three to four; and the latter seems to be the full complement.

Four eggs, obtained on the 13th June, vary in length from 0·82 to 0·85 and in breadth from 0·63 to 0·65; but the average of the four eggs is 0·835 by 0·642. In shape they are moderate or broadish ovals, slightly compressed at one end; they have a slight gloss. The ground color is pale greenish grey, with numerous spots, streaks and blotches of sepia brown. The markings are generally more profuse at the large end; but in some, the small end and lesser half of the egg show the most numerous and crowded blotches. The Turki name of this species is *Sarik kuchkach*, 'yellow bird.'

## 732 *bis.* A.—Erythrospiza obsoleta, *Licht.*

*Two males measured and weighed.*—Length, 6·35 to 6·4; expanse, 10·5 to 10·8; wing, 3·5; tail, 2·7 to 2·8; tarsus, 0·73 to 0·75; bill, from gape, 0·46 to 0·5; closed wings fall short of tail, 1·05 to 1·4; weight, 0·8 oz. to 0·85 oz. Bill, black or greyish dusky; irides, brown; legs and feet, brownish fleshy; claws, dusky or black.

♀. *Yarkand, 24th April.*—Length, 6·3; expanse, 10·25; wing, 3·35; tail, from vent, 2·65; tarsus, 0·64; bill, from gape, 0·5; closed wings fall short of tail, 1·3; weight, 0·8 oz. Bill, dark horn color; legs and feet, dark fleshy; claws, dusky.

Nine specimens were preserved.

Numerous in the plains of Kashgharia where it is a permanent resident. This species was common at Kashghar in winter where it frequented hedges, often in company with the Sparrow (*Passer montanus*). Near Yarkand in summer it was found about trees, in orchards and in clumps of poplars. It has a very sweet song and feeds entirely on seeds. The Turki name for the species is *Tumochuk*.

It lays in May, the nest being usually placed in high trees, often in the poplar (*P. balsamifera*). A nest, obtained on the 13th June, contained five eggs in which the embryo was found to be formed. The nest is of a broad oval shape, 5·75 in length by 4 in breadth; thickness of side walls about 0·5. It is made up of twigs and fibres. The egg cavity is oval 3·5 by 2·5, lined with fine vegetable fibres and some horse hair; depth of cavity 1·25. The eggs are moderate ovals, smaller at one end, and are fairly glossy. The ground color is pale bluish grey, with fine purplish brown spots and streaks, sparingly scattered at the small end, but accumulating to form nearly a cap or zone at the large end. In size they vary from 0·76 to 0·78 in length, and from 0·57 to 0·58 in breadth; the average of four eggs is 0·77 by 0·575.

**732 *bis* A.—Carpodacus mongolicus,** *Swinhoe* (Erythrospiza incarnata, *Severtsov.*)

♂. *Yarkand, 29th June.*—Expanse, 10·2; wing, 3·4; tarsus, 0·63; bill, from gape, 0·41; weight, 1 oz.

Bill, light yellowish horn color; irides, dark brown; legs and feet, yellow fleshy; claws, dusky.

This species is only a winter visitant to Eastern Turkestan, and even then is not common; it is said to migrate Eastwards, towards China, in the spring. Near Yarkand it frequents a sort of desert bush called *Kamghak* on the seeds of which it appears to feed. It is rather a favourite cage-bird with the Yarkandis on account of its sweet song, and to this circumstance I am indebted for my specimen—purchased in June at Yarkand. The Turki name for the species is *Tagh Tumochuk*, 'the mountain Tumochuk'—the latter being the name of *Erythrospiza obsoleta*; so that the Yarkandis would appear to be *d'accord* with M. Severtsov as to the genus to which the bird belongs.

**737.—Carpodacus rubicilla,** *Guld.*

*Two males measured and weighed.*—Length, 7·4 to 7·5; expanse, 12·6 to 13·7; wing, 4·35 to 4·5; tail, 3·4 to 3·5; tarsus, 0·85 to 0·9; bill, from gape, 0·65; closed wings fall short of tail, 1·5 to 1·7; weight, 1·5 oz. Bill, grey horny, with the upper mandible brownish above, the lower yellowish horny at base with a pink tinge in one specimen; irides, brown; legs and feet, brown or dusky brown; claws, dusky brown and dusky blackish.

♀. *Shot between Mazar and Chuchu Pass, 16th August.*—Length, 7·4; expanse, 12·7; wing, 4·3; tail, 3·6; tarsus, 0·85; bill, from gape, 0·67; closed wings fall short of tail, 1·55; weight, 1·25oz. Bill grey horny, top of upper mandible slaty; irides brown; legs, feet, and claws, dusky brown.

*Two young males, shot at Tograsu 22nd August, measured and weighed.*—Length, 6·0 to 6·7; expanse 11·9 to 12·4; wing, 3·8 to 4·0; tail, 2·55 to 2·8; tarsus, 0·85 to 0·9; bill, from gape, 0·6; closed wings fall short of tail, 1·1 to 1·45: weight 1·4 oz. to 1·48 oz. Bill grey horny, plumbeous above and in the older bird yellowish at base of lower mandible; irides, brownish black; legs and feet, brownish dusky and brown fleshy; claws, light brownish and brown.

A pair of this fine species was first observed in a rocky gorge between Mazar and the Chuchu Pass; they hopped from the buckthorn bushes growing by the side of a small mountain stream and mounted up the hill side. After that, this species was often seen along the banks of the Karakash from

Kurgan Ali Nazar to Oibuk (elevation 10,700 to 11,700.) The arrival of our camps at Toghrasu on the 22nd August, greatly disturbed a family of this Rose Finch: the male bird specially was very excited, flying backwards and forwards along the hill side and crying shrilly to its two youngsters to follow it out of the reach of danger. Nearly all the birds of this species which I shot were found to have the bills stained a sort of pink color. This was probably due to the birds having been feeding on some kind of berry, as the color rubbed off on wetting.

## 738.—Carpodacus erythrinus, *Pall.*

♂. *Sanju, 12th August.*—Length, 6·; wing, 3·3; tail, 2·75; tarsus, 0·8; bill, from gape, 0·5; closed wings fall short of tail, 1·3; weight, 0·75 oz. Bill greyish horny, top of upper mandible dusky; irides, hazel brown; legs, feet, and claws; brownish.

♀. *Shahid-ulla, 25th August.*—Length, 5·7; expanse, 10·; wing, 3·25; tail, 2·35; tarsus, 0·8; bill, from gape, 0·5; closed wings fall short of tail, 1·2; weight, 0·75 oz. Bill, fuliginous horny, upper mandible dusky; irides, dark brown; legs and feet, livid fleshy; claws, brown.

This species was first observed at Sanju where it was flitting about among the trees; was seen on several occasions in the hills among the bushes; and was tolerably numerous in the *Hololachne* bushes on the banks of the Karakash river near Shahid-ullah. It had a tolerably loud, sweet note.

## 751 *bis.*—Linota brevirostris, *Gould.*

*Two males, one shot between Mazar and Chuchu Pass, 16th August, the other between Balakchi and Gulgun Shah, 26th August.*—Length, 4·9 to 5·05; expanse, 8·9 to 9·1; wing, 3·0 to 3·1; tail, 2·35 to 2·5; tarsus, 0·63 to 0·64; bill, from gape, 0·4 to 0·42; closed wings fall short of tail, 1·05; weight, 0·4 oz. Bill, yellowish horny, brown on culmen; irides, brown; legs and feet, brown and dusky brown; claws, dusky, and black with yellowish tips.

*Three females, one shot between Mazar and Chuchu Pass, 16th August, the other two near Gulgun Shah on the 27th August.*—Length, 4·95 to 5·05; expanse, 8·8 to 9·0; wing, 3·0; tail, 2·3 to 2·5; tarsus, 0·6 to 0·65; bill, from gape, 0·4 to 0·42; closed wings fall short of tail, 1·0 to 1·15; weight, 0·38 oz. to 0·47 oz. Bill grey horny, yellowish at base; irides, dark brown to light brown; legs and feet, brown fleshy to brownish dusky; claws, dusky brown.

♂ ♀ *Juv. Shot between Balakchi and Gulgun Shah, 26th August.*—Length, 5·65; expanse, 9·35; wing, 3·2; tail, 2·8;

tarsus, 0·63; bill, from gape, 0·43; closed wings fall short of tail, 1·5; weight, 0·5 oz.

Bill, brownish at tip, grey on culmen, yellowish at base; irides, brown; legs and feet, dusky brown; claws, dusky yellow at tips.

*Nestling. Portash, 30th August.*—Tarsus, 0·65; bill, from gape, 0·4; weight, 0·25 oz. Bill, greenish yellow, grey horny on culmen; irides, brownish black; legs and feet, brownish fleshy; claws, dusky whitish at tips.

This species was fairly numerous in the hills on the south side of Eastern Turkestan, at elevations of from 8,000 to 13,000 feet. It was first observed near the Chuchu Pass, and was quite common near Gulgun Shah in the Karakash valley, where a young nestling was obtained, thus proving that the bird breeds in that locality—probably in July and August. The birds flew about in pairs or in small flocks, perpetually twittering, generally perching on the small bushes; but sometimes running among the stones and on efflorescent ground, in a very similar manner to *Calandrella brachydactyla*. Only one of the specimens I obtained (a male shot near the Chuchu Pass on the 16th August) has the pink color on the rump; and the bird I shot between Balakchi and Gulgun Shah, if it be correctly referred to this species, seems to be abnormally large: length (in the flesh) 5·65; tail, 2·8.

## 752. *bis.*—Montifringilla hæmatopygia, *Gould.*

♂. (*Three birds shot in August at elevations of from* 12,000 to 14,000 *feet.*)—Length, 6·75 to 7·1; expanse, 13·45 to 13·8; wing, 4·6 to 4·75; tail, 3·1 to 3·4; tarsus 0·78 to 0·9; bill, from gape, 0·53 to 0·55; closed wings fall short of tail, 0·65 to 0·85; weight, 1 to 1·1 oz. Bill, brownish dusky—yellow at base below; irides, brown; legs, feet, and claws, black.

♀. *Tarbughoz*, 14,060 *feet*, 20*th August*.—Length, 6·5; expanse, 12·6; wing, 4·5; tail, 3; tarsus, 0·8; bill, from gape, 0·5; weight, 1oz.; closed wings fall short of tail, 0·85. Bill, dusky, yellowish at base below; irides, brown; legs and feet, brownish dusky; claws, black.

A young bird shot at Balti Brangsa (16,800 feet) north of the Karakoram Pass on the 3rd September had the lower mandible of the bill entirely yellow, the upper grey horny.

This species was observed in great numbers at Kichik Yailak (12,060 feet) picking the grain out of the horse dung lying about our camp. It was seen daily in August and September the whole way from the Sanju Pass into Ladak, and appeared to be quite at home at elevations of nearly 19,000 feet. The Kirghiz say that it remains near their encampments the whole year, and give it the name of *Purbash*, 'rotten head.'

## 752. *ter.*—Montifringilla Adamsi, *Gould.*

♂. *Shot on the Chuchu Pass, 16th August.*—Length, 6·3; expanse, 12·3; wing, 4·25; tail, 2·6; tarsus, 0·9; bill, from gape, 0·62; closed wings fall short of tail, 0·6; weight, 1oz. Bill—the upper mandible dusky, yellowish along it on edge and at the sides near the base—lower mandible orange yellow, dusky at tip; irides, hazel; legs and feet, brownish dusky; claws, blackish brown.

♀. *Chuchu Pass, 16th August*, 1875.—Length, 6·25; expanse, 12·25; wing, 4·2; tail, 2·5; tarsus, 0·9; bill, from gape, 0·6; closed wings fall short of tail, 0·7; weight, 1oz. Bill, orange yellow, dusky above and at tip; irides, hazel; legs, yellowish fleshy; feet, brownish dusky; claws, black.

This Finch was met with on the return journey on the Chuchu Pass at an elevation of 11,700 feet. It flew about in flocks on the grassy hill sides feeding on small seeds. Further on in the hills of Eastern Turkestan it was seen in suitable localities, but at heights of about 14,000 and above, it seems to be entirely replaced by *Montifringilla hæmatopygia*.

## 753 *bis.*—Fringilauda sordida, *Stol.*

♂. *Shot at Tadlik, 18th August.*—Length, 5·85; expanse, 11·0; wing, 3·73; tail, from vent, 2·7; tarsus, 0·85; bill, from gape, 0·55; closed wings fall short of tail, 0·95; weight, 0·8oz.

Bill, grey horny, darker at tip and above; irides, light hazel; legs and feet, brownish; claws, dusky.

This species was observed near the course of the Sanju stream between Tam and Kichik Yailak, at elevations of from 8,900 to 12,000 feet. The birds flew about in small flocks and were seen eating grain and seeds.

## 761.—Calandrella brachydactyla, *Temm.*

♀. *Balakchi, 25th August.*—Length, 5·7; expanse, 11·3; wing, 3·6; tail, 2·45; tarsus, 0·8; bill, from gape, 0·6; closed wings fall short of tail, 0·9; weight 0·8 oz. Bill, dusky, yellow horny at sides and below; irides, brown; legs and feet, brownish fleshy; claws, dusky brown.

*Two young birds, shot at Balakchi, 25th August, measured and weighed.*—Length, 5·45 to 5·5; expanse 11·05 to 11·1; wing, 3·6 to 3·7; tail, 2·05; tarsus, 0·75 to 0·8; bill, from gape, 0·58 to 0·6; closed wings fall short of tail, 0·45 to 0·7; weight, 0·7oz. to 0·8oz. Bill, dusky, yellow horny at sides and base of lower mandible; irides, dark brown; legs and feet, brownish fleshy; claws, brown, or black with yellow tips.

This species was only observed at Balakchi and for a short distance along the Karakash river (elevation 12,000 ft.) where it had evidently been breeding. The birds were numerous on the alluvial fans between Shahid-ullah and Balakchi, and they ran about swiftly among the stones, flying off in flocks when alarmed. They uttered a clear twittering note and their flight was wavy, somewhat resembling that of a wagtail.

### 761 *ter.*—Melanocorypha torquata, *Blyth.*

♀. *Yarkand, 2nd March.*—Length, 7·1; expanse, 14·25; wing, 4·5; tail, 2·35; tarsus, 1·1; bill, from gape, 0·8; closed wings fall short of tail, 0·5; weight, 1·8oz. Bill, brownish horny; lower mandible yellowish horny at base and gape; legs and feet, fleshy yellow; claws, dusky.

♀. *Yarkand, 2nd March.*—Length, 6·9; expanse, 13·7; wing, 4·25; tail, 2·2; tarsus, 1·05; bill, from gape, 0·75; closed wings fall short of tail, 0·6; weight, 1·52oz. Bill, blackish horny above; lower mandible greenish at tip, yellow at base; irides, brown; legs and feet, yellowish fleshy; claws, dusky.

Three specimens of this bird were obtained at Yarkand in February, but it was not seen after that, except some cage birds. It is said to be very plentiful in the neighbourhood of *Ili* (Kulja) and only to visit Kashghar and Yarkand in January and February. This species is a very favorite cage bird with the Kashgharians on account of its sweet song; a specimen was brought to me in June which sang most beautifully and the owner wanted twenty tangas (Rs. 4) for it. Its Turki name is *Ili toghai*, 'the Ili lark.'

### 762 *bis.*—Alaudula pispoletta, *Pallas.*

♂. *Kashghar, 30th October.*—Length, 6·3; wing, 3·7; tail, 2·8; tarsus, 0·83; bill, from gape, 0·6. Bill, grey horny—brownish on culmen and yellowish at base of lower mandible; legs and feet, fleshy; claws, livid, yellowish at the points.

♂. *Besharik, 5th August.*—Length, 6·45; expanse, 11·2; wing, 3·65; tail, 2·85; tarsus, 0·75; bill, from gape, 0·53; closed wing fall short of tail, 1·1; weight, 0·75oz. Bill, grey horny, yellowish at tip and base of lower mandible; irides, brown; legs and feet, buff fleshy; claws, livid at bases, yellow horny at the tips. Testes largely developed.

♂. *Juv. Yakshamba bazar, 1st August.*—Length, 5·5; expanse, 10·2; wing 3·3; tail, 2·35; tarsus, 0·8; bill, from gape, 0·53; closed wings fall short of tail, 1; weight, 0·6oz.

Bill, greyish horny; irides, brown; legs and feet, yellowish fleshy; claws, yellowish horny— livid at bases.

♀. *Sughuchak*, 10*th June*.—Length, 6; expanse, 11·3; wings, 3·55; tail, 2·5; tarsus, 0·75; bill from gape, 0·55; closed wings fall short of tail, 1·2; weight, 0·75oz.

Bill, fleshy—brownish on culmen; irides, dark brown; legs and feet, fleshy; claws, light horn color.

This species is a permanent resident in the plains of Kashgharia, where it breeds. It is much less common than *Galerita magna* and is rather shy. It is usually found at some distance from habitations frequenting waste sandy tracts and ground covered with efflorescence. It is a very whitish, desert-looking sort of bird; and a sweet songster, rising high in the air and remaining fixed in one spot while it utters its note. In June, when this species breeds, it was usually noticed about in pairs. The Turki name for this species is *Chulan toghai;* the word *Toghai* meaning Lark.

## 763.—Otocoris penicillata, *Gould.*

♀. *Desert between Sulik Aziz Langar and Sanju*, 10*th August*.—Length, 7·4; expanse, 13·6; wing, 4·5; tail, 3·3; tarsus, 0·9; bill, from gape, 0·7; closed wings fall short of tail, 1·3; weight, 1·2oz. Bill, dusky; base of lower mandible greyish; irides, hazel; legs, feet, and claws, dusky.

♀. *Juv. Same place and date*.—Length, 6·9; expanse, 12·8; wing, 4·1; tail, 2·7; tarsus, 0·75; bill, from gape, 0·65; closed wings fall short of tail, 1·1; weight, 1·1oz.

Bill, upper mandible, and tip of lower, slaty brown; rest of lower mandible, grey horny; irides, brown; legs, feet, and claws, dusky.

Besides the above, seven specimens were preserved from Yarkand, Kashghar, and the intermediate plains country, during the cold weather season—from October to February.

This species was common in Eastern Turkestan in winter, frequenting the open bare steppes. When riding out of Kashghar, on the journey to Yarkand for instance, *Galerita magna* would at first be very numerous about habitations, &c.; then on the borders of cultivation *G. magna* and the present species would be found together, overlapping as it were; while a little further on, on the stony steppe *G. magna* would cease and be replaced entirely by *Otocoris penicillata*. At the approach of summer the species under consideration quits the plains for the surrounding hills whither it repairs to breed. On the return journey the Horned Lark was met with in the desert between Sulik Aziz Langar and Sanju, at the foot of the hills; and in the mountains it was observed in some most desolate places even at elevations of about 17,000 feet.

The Turki name for this species is *Kara kash toghai, i. e.*, 'Black-browed Lark.' It is also sometimes called *Sai toghai*—'Steppe Lark.'

**769 *bis*.—Galerita magna, *Hume*.**

♂. *Yarkand, 11th April.*—Length, 7·9; expanse, 14·5; wing, 4·75; tail, 2·95; tarsus, 0·95; bill, from gape, 0·9; closed wings fall short of tail, 1·0; weight, 1·6oz. Bill, dusky above, fleshy below and at gape; legs and feet, flesh color; claws dusky.

♀. *Yarkand, 10th March.*—Length, 7·8; expanse, 14·3; wing, 4·6; tail, 3·0; tarsus, 1·0; bill, from gape, 0·86; bill, at front, 0·75; closed wings fall short of tail, 1·0; weight, 1·65oz. Bill: upper mandible, dusky; lower, dusky at tip, light horn color at base; irides, light brown; legs and feet, fleshy; claws, dusky.

This species is one of the commonest birds in the plains of Kâshgharia, where it is a permanent resident. It is a very tame bird and frequents fields, roadways and the vicinity of habitations generally. It is occasionally caged on account of its rather sweet song. This Lark breeds in May and June, making its nest on the ground in cultivated fields or in low grass. The Turki name for the bird is *Kapak toghai;* sometimes called *Popochek toghai, i.e.*, 'Crested Lark.'

**787.—Palumbœna Eversmanni, *Bonap*.**

♂. *Yak Shamba Bazar, 1st August.*—Length, 11·0; expanse, 23·4; wing, 8·1; tail, 4·2; tarsus, 1·1; bill, from gape, 0·9; closed wings fall short of tail, 0·35; weight, 6·8oz.

Bill, greenish yellow, horny at tip, grey at base; orbital skin, yellow; irides, orange yellow; legs and feet, pale reddish fleshy; claws, livid horny. (This specimen had the testes very large.)

♀. *Yak Shamba Bazar, 1st August.*—Length, 10·8; expanse, 22·5; wing, 7·6; tail, 4·1; tarsus, 1·0; bill, from gape, 0·9; closed wings fall short of tail, 0·65; weight, 6·7oz.

Bill, greenish yellow, horny at tip, fuliginous at base; orbital skin, yellow; irides, golden yellow; legs and feet, pale reddish fleshy; claws, brownish.

*Two young female birds shot at Taskhama on the 27th June.*—Length, 10·5 to 10·7; expanse, 21·1 to 22·4; wing, 6·8 to 7·45; tail, 3·8 to 4·3; tarsus, 0·9; bill, from gape, 0·83 to 0·85; weight, 6·25oz. to 6·4oz.

Bill, grey purplish; irides, dark brown; legs and feet, pale reddish; claws, dusky horny.

This Pigeon was first obtained in a large clump of poplars (*Populus balsamifera*) at Taskhama in June. There they were in great numbers, but so wild that it was difficult to get specimens; I shot two young birds however, so that there can be no doubt about this species breeding in Eastern Turkestan. In August again, at Yak Shamba Bazar, I shot a couple of these birds in a clump of poplars and saw many about. The Yarkandis say that this species always haunts Toghrak (poplar) jungles, and that the nest is always placed on those trees. The Turki name for this Pigeon is *Kügan*. *P. Eversmanni* is probably only a seasonal visitant to Kashgharia, migrating in winter.

## 788A.—Columba œnas, *Lin.*

♂. *Yarkand, 2nd June.*—Length, 13·3; expanse, 26·0; wing, 8·9; tail, 5·4; tarsus, 1·2; bill, from gape, 1·0; closed wings fall short of tail, 1·5; weight, 11·25oz.

Bill, pinkish horny; tumid base of bill, purple; irides, very dark brown; legs and feet, reddish pink; claws, blackish horny.

This specimen had the testes very largely developed.

This species was frequently seen in the neighbourhood of Yarkand during the months of May, June, and July, perching on high trees and feeding about on the ground near cultivation. It breeds in Eastern Turkestan, the nest, as I was informed, being usually placed in high poplars (*P. alba.*). The Turki name for the Stock Pigeon is *Koshkal*.

## 789.—Columba rupicola, *Pallas.*

♂. *Tarbughoz, 20th August.*—Length, 12·2; expanse, 25·5; wing, 8·95; tail, 5·05; tarsus, 1·1; bill, from gape, 0·9; closed wings fall short of tail, 0·6; weight, 9·75 oz.

Bill, dull black; irides, blood red—straw color at pupillary margin; legs and feet, red; claws, black.

♂. *Oibuk, 23rd August.*—Length, 12·1; expanse, 26·0; wing, 8·9; tail, 4·7; tarsus, 1·1; bill, from gape, 0·9; closed wings fall short of tail, 0·5; weight, 8·8oz.

Bill, dull black, with an olive tinge about the middle; irides, reddish straw color; legs and feet, red; claws, black.

♀. *Near Chuchu Pass, 16th August.*—Length 12·0; expanse, 25·5; wing, 8·63; tail, 4·4; tarsus, 1·1; bill, from gape, 0·9; closed wings fall short of tail, 0·5; weight, 9·2oz.

Bill, dull black; irides, brick red—dark straw color at pupillary margin; legs and feet, pale red; claws, black.

This Pigeon was common in the hills on the south side of Eastern Turkestan, during the months of August and September, at elevations of from 8,000 to 16,000 feet. The birds

seemed to be very fond of rocky cliffs, and usually flew about in small flocks or parties. The Turki name for this species is *Yáwá Kabtar*—Wild Pigeon.

### 792 *bis.*—Turtur auritus, *Ray.*

*Six males, shot at Yarkand in May and June.*—Length, 11·1 to 11·3; expanse, 20 to 20·9; wing, 6·9 to 7·05; tail, 4·6 to 5·3; tarsus, 0·8 to 0·85; bill, from gape, 0·85 to 0·9; closed wings fall short of tail, 1·5 to 1·8; weight, 4·4oz. to 5·4oz.

Bill, greyish black; irides, orange yellow; edge of gape and orbital skin, purple; legs and feet, purple and purplish red; claws, black, blackish horny, and dusky horny.

♀. *Yarkand, 28th May.*—Length, 11; expanse, 19·7; wing, 6·8; tail, 4·7; tarsus, 0·85; closed wings fall short of tail, 1·6; weight, 4·2oz.

Bill, greyish black; orbital skin, purple; irides, orange yellow; legs and feet, purplish red; claws black.

The Turtle Dove is a seasonal visitant to the plains of Eastern Turkestan, arriving in May and migrating towards the end of September or the beginning of October; it was never observed in winter. This Dove frequents trees, and orchards; and in May and June its beautiful, soft, musical note could be heard every day about the neighbourhood of Yarkand. It lays in May and June; and on the 15th of the latter month, I saw two very young nestlings of this species. On the 28th of May I found a nest of this species. It was a loose kind of cup, composed of twigs, and placed in the fork of a willow tree, about seven feet above the ground. It contained only one egg, the contents of which were found to be quite fluid; the female bird was sitting on the nest at the time, and only flew away, when I got close to it. On the 12th June a nest of the Turtle Dove, containing two eggs, was found in a thorn bush. On the 25th June I found another nest, containing one egg—much incubated to judge by the color. A thick main branch of a willow tree had been cut off, and on the horizontal face of this cut stump—which was slightly concave—a few twigs were arranged in a concentric manner forming a thin shallow cup in the centre of which the egg rested. The twigs of this bedding were so loosely put together, that the wood of the tree could be seen through them.

The three eggs of this Dove, which I have, are pure white and glossy. In shape they be may described as regular oval, a somewhat pointed oval, and a longish narrow oval. They measure 1·36 by 0·91; 1·28 by 0·9; and 1·18 by 0·89. Average of the three eggs 1·27 in length by 0·9 in breadth.

The Turki name of the Turtle Dove is *Turulghu*, evidently a sort of imitation of the bird's coo.

## 796 A.—Turtur { Stoliczkæ, *Hume.* / ? intercedens, *Brehm.*

*Two males, shot at Yarkand in March, measured and weighed.*—Length, 13·7 to 13·75; expanse, 21·25 to 21·5; wing, 7·25; tail, 6·2 to 6·6; tarsus, 0·9 to 1·0; bill, from gape, 0·9 to 1·0; closed wings fall short of tail, 3·5; weight, 6oz. to 7·25oz. Bill, black; irides, dark red; lower eyelid, slaty grey; legs and feet, purplish red; claws, dusky or black.

♂. *Yarkand, February.*—Length 13·5; wing, 7·2; tail, 6·1; tarsus, 0·96; bill, from gape, 0·92. Bill, black; irides, dark red; legs and feet, reddish purple; claws, black.

*Two females, shot at Kashghar in October and at Yarkand in February.*—Length, 13·1 to 13·2; wing, 6·7 to 6·9; tail, 5·6 to 5·9; tarsus, 0·9 to 0·95; bill, from gape, 0·9 to 0·91.

Bill, black; irides, dark red; legs and feet, purplish red; claws, dusky, and black with brown tips.

This Dove is one of the commonest birds in the plains of Eastern Turkestan; it is at least three times more numerous than *Turtur auritus* (when the latter is in the country,) and is a permanent resident throughout the year. It is always to be found near villages and houses; perching on trees, or running about on the ground and picking up grain and seeds. The birds are very tame, and in winter, they would come right up to the door of my room at Yarkand, to be fed. A regular colony of these Doves lived about the compound of the Residency at Yarkand, so I could have easily secured any number of specimens had I known that the bird was supposed to be a new species. A favorite trick of the Yarkand boys is to capture one of these Doves, and smear its feathers all over with soot mixed up with oil. The bird is then allowed to fly away, and after a few days, when the feathers have shaken into their ordinary positions, the Ringdove presents quite a natural appearance. Only as it moves about with its fellows, it looks truly a dove in mourning.

This species begins to lay in April, often making its nest on the top of walls, and laying two pure white eggs. On the 15th June, I saw one of these birds making its nests in the fork of a truncated poplar tree about eight feet from the ground; the nest was not well sheltered, and did not then contain any eggs.

The Turki name for this Dove is *Pakhtak*; c f. *Fakhtah*.—a Dove (Persian).

## 799.—Pterocles arenarius, *Pallas.*

While I was at Yarkand, I often heard of a bird called by the natives "*Beghitak*" which was said to inhabit sandy desert ground and often gravelly steppes. It was described as somewhat smaller than a Chicore, of a yellowish brown color like the back of the Turtledove, and having the legs feathered and the three toes partially joined together. The *Beghitak* was said to breed in the country, and its blood was reputed a specific for consumption. On the 5th August I first saw this bird near Besharik in open desert ground: two birds rose, a long way off before I saw them on the ground, and as it was after sunset the only points I learnt about them on that occasion were that they were very wild, had long pointed wings, a powerful flight and made a clacking noise like *tuk, tuk, tuk*, frequently repeated.*

Next day I saw three of these birds in waste ground where a few stunted bushes were growing; they appeared to be yellowish brown above, the breast dove color, abdomen dark or black, and lower tail-coverts white. Another of these birds was seen on a subsequent occasion in the desert, but this Sand Grouse (as I believe it to be) was always so wild and wary that I could not manage to get within shot of it.

## 809 A.—Phasianus Shawi, *Elliott.*

♂. *Kashghar, 17th November.*—Length, 27·2; expanse, 28·5; wing, 9·63; tail, 14·8; tarsus, 2·6; bill, from gape, 1·32; spur, 0·4; weight, 1lb 14·5 oz.

Bill, upper mandible, grey horny; lower mandible, whitish horny; irides, straw color; legs, grey; feet, brownish grey; claws, dusky horny; spur, dusky, whitish at extreme tip.

♂ *Kashghar, 17th November.*—Length, 25·4; expanse, 27·4; wing, 9·45; tail, 13; tarsus, 2·65; bill, from gape, 1·35; spur, 0·35; weight, 2lb 1oz.

Bill, grey horny; irides, straw color; orbital skin, crimson, with small dark depressions; legs and feet, brownish grey; claws, dusky; spur, blackish.

♂. *Beshkant, 6th February.*—Length, 34·2; expanse, 30·7; wing, 9·72; tail, 19·2.; tarsus, 2·62; bill, from gape, 1·45; spur, 0·4; weight, 2lbs.

Bill, grey horny; irides, yellow straw color; orbital skin, crimson, with small black pits dotted over its surface; legs, brownish grey; feet, somewhat darker than legs; claws, brownish horny; spurs, dusky blackish.

♂. *Yarkand, 3rd March.*—Length, 29; expanse, 28·25; wing, 9·6; tail, 15·25; tarsus, 2·6; bill, from gape, 1·45; spur, 0·35; weight, 2lb 1·25 oz.

* It seems possible that these were *Syrrhaptes paradoxus*.—A. O. H.

Bill, light horn color; irides, straw yellow; eyelid, bluish grey; orbital skin, red, with small black pits; tarsus, dusky grey; toes, dusky, blackish near the claws; claws, dusky; spurs, black.

♂. *Yarkand, 10th March.*—Length, 29·5; expanse, 30·75; wing, 9·6; tail, 14·6; tarsus, 2·65; bill, from gape, 1·45; spur, 0·35; weight, 1lb 15·5 oz.

Bill, light horn; irides, straw yellow; legs, silver grey; toes and claws, dusky; spurs, blackish.

♂. *Yarkand, 25th March.*—Length, 32; expanse, 31·5; wing, 9·75; tail, 18; tarsus, 2·75; bill, from grape, 1·3; spur, 0·37; weight, 2lbs 4oz.

Bill, light horn; irides, light yellowish; orbital skin, crimson with black depressions; lower eyelid, grey, with black spots; legs, ashy grey; toes, darker ashy grey; claws, dark horn color; spurs, black.

♂. *Yarkand, April* (specimen belonging to Mr. R. B. Shaw, measured by me, in the flesh).—Length, 34·8; expanse, 31·0; wing, 9·75; tail, 20·75; tarsus, 3·0; bill, from gape, 1·35; spur, 0·4; weight, 2lbs 5·25oz.

♂. *Yarkand, 20th May.*—Length, 34·0; tail, 18·7; tarsus, 2·4; bill, from gape, 1·4; spur, 0·45; weight 1lb 13·25oz.

Bill, horny; irides, straw color; lower eyelid, slaty grey; orbital skin, dark red, with numerous fine black depressions; legs and feet, silver grey; claws and spurs, dusky.

♀. *Yarkand, February.*—Length, 23·4; wing, 8·5; tail, 11·6; tarsus, 2·1; bill, from gape, 1·2; weight, 1lb 4oz.

Bill, light horny, grey on culmen; irides, light yellowish; tarsi, grey; toes, a darker shade of grey; claws, dusky.

♀. *Yarkand, 3rd March.*—Length, 23·5; expanse, 28; wing, 8·75; tail, 11; tarsus, 2·5; bill, from gape, 1·25; weight, 1lb 8oz.

Bill, light horn color, the upper mandible slightly greenish; irides, light yellow; skin at outer and inner canthi, red; tarsi, silver grey; toes, a little darker than tarsi; claws, dusky.

This fine Pheasant is a permanent resident in the plains of Eastern Turkestan, frequenting long grass jungle and reeds growing in waste ground. It is said to occur most plentifully in the Dolan jungle; Makit and Maralbashi being mentioned as places where it is particularly numerous. However it is common enough near Kashghar and Yarkand; I know of two rather good places for this Pheasant, one between Yarkand and Kokrabat, and another near Beshkant. The flight of this bird is rather slow, and it commonly goes over the long grass only for a short distance and then drops down. When alarmed the male bird utters a harsh shrill cry.

These Pheasants are the most untameable birds it is possible to conceive. In confinement they knock their tails to pieces and wear all the feathers off their heads in insane attempts at escape; so that a dozen of these birds after they have been captives for awhile become the most ragged crew imaginable. Even after being kept in a pheasant-house for months, whenever one approached with a dozen yards of them, they were so alarmed that they would almost knock themselves to pieces, tumble over each other and fly straight upwards with shrill cries, against the roof of their house. The Yarkandis said that even when caught young these birds could not be tamed.

The flesh of this Pheasant is of course very good eating, but in my humble opinion does not come up to that of *Tetraogallus tibetanus*.

This species is said to make its nest in long grass jungle, laying from twelve to fifteen eggs; the young birds are said to attain full size in about five months. On the 29th May nine eggs belonging to this Pheasant were brought to me by a grateful patient who lived a few days journey from Yarkand, in the Dolan. I tried to get some of these eggs (and others subsequently received) hatched, one lot by a fowl, and some by a hen pheasant of this species. The latter of course would not sit, but the domestic hen did most perseveringly and without result.

The eggs I have vary in length from 1·61 to 1·88 and in breadth from 1·35 to 1·47; but the average of twelve eggs is 1·805 in length by 1·4 in breadth. The eggs are mostly a broad oval, slightly compressed towards one end, in fact very much resembling a hen's egg in shape; but they seem to vary a good deal, some being much broader and shorter than others. The color too varies considerably: pale café au lait, pale buff, and greyish stone color; eggs much incubated are green in parts. The eggs are spotless, have a considerable gloss, and in a good light the surface is seen to be covered with minute little depressions.

## 816.—Tetraogallus himalayensis, *Gray*.

♀. *Brought into Yarkand from the hills near Kugiar, 26th February.*—Length, 23·5; expanse, 33·6; wing, 10·8; tail, 7·4; tarsus, 2·5; bill, from gape, 1·4; weight, 3lbs. 2oz. Bill, slaty above, yellowish horn color at sides and below; nostril scale, dark orange; membrane covering base of bill, bright yellowish orange; lower eyelid, slaty blue; irides, dark muddy brown; legs and feet, dirty orange color; claws, black.

This species was first met with about the Sanju Pass in September 1874, and numerous specimens were obtained alive at

Kashghar in November and December, and at Yarkand during the rest of the winter. These live birds had, of course, been captured in the neighbouring hills. The Snow Pheasant is very tame and stupid in confinement, and, in common with the next species, is called *Ular* by the Kâshgharians.

## 816 *bis.*—Tetraogallus tibetanus, *Gould.*

I shot my first specimen of this species on the 24th September 1874 near the top of the Sanju Pass, at an elevation of 16,000 feet. Next day I saw hundreds of the birds in a side valley near Kichik Yailak where they afforded me good shooting. They associated in coveys of about ten to twenty, and were not very shy. When approached from below they moved leisurely up hill, stopping every now and then to look at one, but when shot at or alarmed they flew downwards very swiftly, uttering a pleasant musical whistle. I found their flesh most delicious eating.

Numbers of these birds were brought in to us, alive, during the winter, at Kâshghar (where a specimen was preserved) and at Yarkand; they were very tame in confinement. Both this species and the preceding one had evidently sought the lower hills near the plains when winter set in. The Turki name for the bird is *Ular*, and they are said to be found in all the hills which bound Eastern Turkestan on the north, west and south.

♂. *Kâshghar, 5th December.*—Length, 21·5; wing, 10·1; tail, 6·5; tarsus, 2·1; bill, from gape, 1·35. Bill, orange, dusky above at base; legs and feet, orange red; claws, black.

## 820 *bis.*—Caccabis pallescens, *Hume.*

♂. *Yarkand, 13th March.*—Length, 15·1; expanse, 22·8; wing, 6·65; tail, 4·2; tarsus, 1·75; bill, from gape, 1·1; closed wings fall short of tail, 3·4; weight, 1lb. 3oz.

Bill, crimson, brownish red on culmen; eyelid, grey, edges, crimson; irides, hazel; legs, pinkish red; claws, brownish dusky.

♀. *Yarkand, 27th July.*—Length, 13·8; tail, 4·1; tarsus, 1·6; bill, from gape, 1·1; weight, 13·6oz.

Bill, bright red, darker on culmen; lower eyelid, light grey; edges of eyelids, red; irides, hazel; legs and feet, greyish red; claws, dusky brownish.

Three females preserved at Kâshghar and Yarkand, November and February, (*measurements from the skins*):—

Wing, 5·9 to 6·7; tarsus, 1·4 to 1·6; bill at front, 0·93 to 0·96; from anterior margin of nares to point of bill, 0·5 to 0·61.

Chicore seem to abound in all the hills which surround the plains of Kâshgharia on the north, west and south. In the winter the birds seem to come down to lower elevations than they frequent in summer; numbers of Partridges are then caught and brought into Yarkand and Kâshghar for sale.

This species is rather prized by the Yarkandis on account of its fighting propensities; I have seen some battles between Chicore which I kept—not for fighting I need scarcely say—the birds appearing to be decidedly pugnacious. The Turki name for the Chicore is *Keklik*.

### 820 *ter.*—Caccabis pallidus,* *Hume.*

♀. *Shot between Kizil Aghil and Mazar, 15th August.*—Length, 13·3; expanse, 21·0; wing, 6·2; tail, 3·7; tarsus, 1·75; bill, from gape, 0·95; closed wings fall short of tail, 2·9; weight, 14·25oz.

Bill, darkish red at base and nares—lighter at tip; irides, reddish brown; legs and feet, red; claws, brown horny.

♀. *Juv. Ui Toghrak, 7th August.*—Length, 10·5; tail, 3·1; tarsus, 1·4; bill, from gape, 0·9; weight, 5·5oz. Bill, brownish black; irides, hazel; legs and feet, orange red; claws, dark horny; lower eyelid, grey; edge of eyelids, red.

♀. *Younger than the last, Mazar, 15th August.*—Length, 8·8; expanse, 16; wing, 4·9; tail, 2·7; tarsus, 1·25; bill, from gape, 0·8; closed wings short of tail, 1·2; weight, 4·2oz.

Bill, black, brownish at tip; edges of eyelids, brick red; lower eyelid, grey; irides, hazel brown; legs and feet, pale orange red; claws, brownish horny.

Two nestlings obtained on the 28th and 30th August at an elevation of over 12,000 feet:—

Weight, 2·4oz. Bill, black—grey or yellowish at extreme tip; irides, brown; legs and feet, pale reddish and orange reddish; claws, brown. Length, 7; wing, 3·8; bill, from gape, 0·7.

The birds noted above were obtained in the hills bounding the plains of Kâshgharia on the south, at elevations of from 6,000 to over 12,000 feet. There the birds were numerous near willow bushes and streams. On the 30th August, near Gulgun Shah, at an elevation of about 12,500 feet, found a nest of this species containing only three eggs. The nest was composed of a few leaves and fibres, placed in a slight depression on the ground, and covered over by a bush. One of the eggs is an elongated oval, moderately pointed towards the small end, and glossy. The ground color is pale greyish café au lait, spotted

* It is extremely doubtful whether this and the preceding are distinct.—A. O. H.

all over—except at point of small end—with sepia colored dots; at the broad end the brown sepia spots are more distinct, and there are a few blotches of the same color here and there. It measures 1·78 in length by 1·25 in breadth.

## 829.—Coturnix communis, *Bonaterre.*

*Four males, collected at Yarkand, in May and June.*—Length, 7·1 to 7·4; expanse, 13·7 to 14·2; wing, 4 to 4·35; tail, 1·4 to 1·95; tarsus, 0·9 to 1·05; bill, from gape, 0·6 to 0·65; closed wings fall short of tail, 0 35 to 0·6; weight, 1·75oz. to 2·3oz. Bill, black or dusky; irides, brown, light brown and hazel; legs and feet, fleshy; claws, light horny and dusky horn.

The Quail seems to be a permanent resident in the plains of Kâshgharia: I got two birds at Yarkand in February and the Shikaris were positive that the bird was to be met with throughout on the winter. In the summer the birds were common in the fields about Yarkand, though not very numerous. The Turki name for this species is *Budinah*, but the common people generally call it *Watwalak*.

## 839 *bis.*—Otis tetrax, *Lin.*

♀. *Kashghar, 8th December*—Length, 16; wing, 9·65; tail, 3·5; tarsus, 2·4; bill, from gape, 1·6.

Bill, dusky, yellowish at base; irides, light brown; legs dirty yellow,—the toes, somewhat darker; claws, dusky.

A single specimen of the Little Bustard was obtained at Kashghar in December. The bird is not at all common near Kashghar or Yarkand, but on the road from Karghalik to Sanju, in August, I heard a good deal about it; and at Koshtak had the characteristic foot prints of this bird pointed out to me on the sand. The Turki name for this species is *Kum tokhosi, i.e.*, 'the Sand Fowl'; it is said to frequent open plains chiefly, sometimes long grass jungle, and to be a vegetable feeder.

## 844.—Squatarola helvetica, *Gmelin.*

♂. *Kashghar, 29th November.*—Length, 11·65; wing, 7·9; tail, 3·35; tarsus, 2·0; bill, at front, 1·36. Bill, black; irides, dark brown; legs and feet, greyish black; claws, black.

♀. *Kashghar, 22nd November.*—Length, 11·12; wing, 7·3; tail, 3·2; tarsus, 1·8; bill, at front, 1·25. Bill and claws, black; irides, blackish brown; legs and feet, greyish black.

Two specimens of the Grey Plover were shot near running water, between the Fort and City of Kashghar, in November. It was never noticed in the country at any other time, and I have no information about it. In common with several other Plovers it is called in Turki *Chullok*.

## 848.—Ægialophilus cantianus, *Latham.*

♂. *Yarkand, 26th April.*—Length, 6·7; expanse, 13·7; wing, 4·4; tail, 2·2; tarsus, 1·2; bill, from gape, 0·8; closed wings reach to end of tail; weight, 1·35oz.

Bill, black; irides, dark brown; legs and feet, greyish black; claws, black.

*Three females, Sughuchak and Yarkand, April, June and July.*—Length, 6·2 to 6·7; expanse, 13·8 to 14; wing, 4·2 to 4·5; tail, 1·9 to 2·2; tarsus, 1 to 1·13; bill, from gape, 0·8 to 0·85; closed wings fall short of tail, 0·2 to 0·4; weight, 1·2 oz. to 1·5 oz. Bill, black; irides, dark brown; legs, plumbeous to dull black; feet, dull black; claws, black.

The Kentish Ring-Plover is a seasonal visitant to the plains of Eastern Turkestan, arriving about the end of March and disappearing entirely in winter. It frequents stony ground and efflorescent wastes, always in the neighbourhood of shallow pools of water. When disturbed it appears to take only short flights, but runs very nimbly over the ground. On the 25th April my shikari found three eggs in a slight depression on the ground, near a little salt pool at Sughuchak; he set a trap close to these eggs and captured two birds (male and female of this species) which he brought to me alive, with the three eggs. These eggs measure respectively 1·24 by 0·92, 1·22 by 0·91 and 1·21 by 0·93. In shape the eggs are broad ovals compressed at one end; they have no gloss whatever. The ground color is buffy café au lait, with spots, streaks, and blotches of dark or blackish purple, closely gathered together at the large end; the small end only sparsely marked.

The Turki name given to this species is *Chullok;* it is also sometimes called *Sai Yamghurchi, Yamghurchi*, being the exact Turki aquivalent of *Pluvialis*, and *Sai* meaning a stony steppe.

## 849.—Ægialitis fluviatilis, *Bechst.*

♂. *Juv. Kashghar, 14th December.*—Length, 6·2; wing, 4·2; tail, 2·1; tarsus, 0·95; bill, from gape, 0·6; Bill, black; irides, blackish brown; legs and feet, orange yellow; claws, black.

♂. *Yarkand, 25th April.*—Length, 6·5; expanse, 13·8; wing, 4·5; tail, 2·4; tarsus, 1·05; bill, from gape, 0·6; closed wings fall short of tail, 0·3; weight, 1·15 oz. Bill, black, yellowish at base below; edges of eyelids, yellow; legs and feet, dusky fleshy; claws, black.

♀. *Yarkand, 24th April.*—Length, 7·0; expanse, 14·7; wing, 4·75; tail, 2·25; tarsus, 1·05; bill, from gape, 0·65; closed wings fall short of tail, 0·4; weight, 1·7oz.

Bill, black, reddish at gape below; edges of eyelids, yellow; legs and feet, fleshy; claws, black.

This species, like the last, is, I believe, only a seasonal visitant to the plains; however I can't quite make out how the young bird I got at Kashghar in December came to be there at that time. This Plover arrives towards the end of March and migrates about September; it was common in the neighbourhood of Yarkand in summer, and was found in the Karakash Valley at an elevation of about 12,000 feet towards the end of August. It was usually seen in small flocks, feeding on insects, in the vicinity of swampy ground. The bird breeds in May, laying, I was informed, three or four eggs, on the bare ground at some distance from water. This species is called by the Yarkandis *Shaiarak Chullok*.

## 851.—Vanellus cristatus, *Meyer*.

♀. *Yarkand, 9th April.*—Length, 12·6; expanse, 29·1; wing, 9·2; tail, 3·7; tarsus, 2·0; bill, from gape, 1·25; closed wings fall short of tail, 0·2; weight, 8·4 oz. Bill and claws, black; irides, dark brown; legs and feet, dull red.

*Juv. Yarkand, 2nd June.*—Length, 9·2; expanse, 2·3; wing, 6·3; tail, 2·6; tarsus, 1·7; bill, from gape, 1·0; closed wings fall short of tail, 0·5; weight, 3·3 oz. Bill and claws, black; legs and feet, purplish black; irides, dark brown.

The Lapwing was exceedingly common in the plains, from March to December, but was not observed in January or February. It frequented marshy ground and the vicinity of streams, generally in flocks. It breeds in April and May; and I noticed in the beginning of June that these birds often circled round and round over one piece of grass, uttering their plaintive cry and evidently solicitous about their young.

Four appears to be the full complement of eggs for this species; a clutch was obtained on the 22nd April and another on the 23rd, both in the marshy ground south of the City of Yarkand: the eggs were much incubated. The eggs are in shape broadish ovals, compressed at one end; they have no gloss. The ground color is pale greenish olive, in some buffy or café au lait; abundantly spotted, blotched and smeared, especially towards the large end with purplish inky or brownish black; some fainter secondary blotches are seen here and there. The eggs vary from 1·79 to 1·87 in length, and from 1·29 to 1·36 in breadth; the average of eight eggs is 1·84 in length by 1·31 in breadth.

The Turki name for the Peewit is *Cheman* (*c.f. Chaman*, Persian—walking haughtily).

## 871.—Gallinago scolopacinus, *Bonap*.

♂. *Yarkand, 3rd July.*—Length, 11·2; expanse, 17; wing, 5·1; tail, 2·7; tarsus, 1·3; bill, from gape, 2·63; closed wings

fall short of tail, 1·1; weight, 3·5 oz. Bill, black at tip; basal half of upper mandible, brown; basal quarter of lower—greenish; irides, dark brown; legs and feet, yellowish green, dusky at joints; claws, black. Testes large.

♂. *Yarkand, 7th July.*—Length, 12; expanse, 17·5; wing, 5·35; tail, 2·5; tarsus, 1·35; bill, from gape, 2·7; weight, 3·8 oz.

Bill, dull black at tip, brownish at base; legs and feet, greenish; claws, black.

♀. *Yarkand, 16th July.*—Length, 10·8; expanse, 17-5; wing, 5·3; tail, 2·5; tarsus, 1·3; bill, from gape, 2·8; closed wings fall short of tail, 0·65; weight, 2·5 oz. Bill, black at tip, brownish green at base; irides, dark brown; legs and feet, greenish; claws, black.

The Common Snipe was tolerably numerous in the neighbourhood of Yarkand in summer, where it was ascertained to breed; the bird was never observed in winter. It was found in the neighbourhood of marshy ground and inundated fields. This species breeds in May and June: the eggs—a good deal incubated—were obtained on the 12th June, and two young nestlings on the 16th of the same month.

Two eggs measured 1·58 in length by 1·11 in breadth, and 1·55 by 1·13. In form they are like a broad oval, suddenly pinched and pulled out to form the small end of the egg. They have a slight gloss and the ground color is dirty olive green. The small end is unspotted, the constricted portion of the egg has some largest spots of brownish, and the large end is nearly covered with confused blotches of brown and brownish black.

The Turki name for the Snipe is *Mahramchi*, "the solitary one."

## 882.—Tringa subarquata, *Gmelin.*

Two specimens of the Curlew Stint were shot, in October, in marshy ground west of Yarkand, where it was common. It breeds in Eastern Turkestan, but migrates, towards India, it is said, in winter. In common with so many other waders it is called *Yamghurchi*, and by natives of Khokand, *Kugnak*.

♂. *Sughuchak, 12th October.*—Length, 8·5; wing, 5; tail, 2; tarsus, 1·2; bill, from gape, 1·6. Bill, black; irides, dark brown; legs and feet, greenish black; claws, black.

♀. *Sughuchak, 12th October.*—Length, 8·4; wing, 5; tail, 2·1; tarsus, 1·15; bill, from gape, 1·45. Bill, dull black; legs and feet, plumbeous black; claws, black; irides, dark brown.

## 883.—Tringa cinclus, *Linn.*

This species was obtained at Kashghar, where it was not very common, in October. It is said to breed in Eastern Turkestan

and to disappear entirely in winter, migrating, it is believed, to India.

♂. *Kashghar, 25th October.*—Length, 8; wing, 4·7; tail, 2·15; tarsus, 0·97; bill, from gape, 1·3.

Bill, black; irides, dark brown; legs and feet, plumbeous black; claws, black.

## 888.—Calidris arenaria, *Temm.*

♀. *Sughuchak, 12th October.*—Length, 7·8; wing, 4·73; tail, 1·95; tarsus, 1·0; bill, from gape, 1·1. Bill, legs, feet, and claws, black; irides, dark brown.

A specimen of the Sanderling was shot at Sughuchak, near Yarkand, in October; about half a dozen of these birds were observed on the same day on the borders of swamps, associated with *Tringa subarquata.*

The bird is called *Yamghurchi* by the Yarkandis, and is said to breed in Kashgharia, migrating southwards in winter.

## 892.—Actitis ochrophus, *Linn.*

♀. *Yarkand, 14th March.*—Length, 9·4; expanse, 18·5; wing, 5·95; tail, 2·6; tarsus, 1·43; bill from gape, 1·7; closed wings exceed tail, 0·3; weight, 2·9 oz.

Bill, black; lower mandible, greenish at base; irides, dark brown; legs and toes, slaty green; claws, black.

♀. *Yarkand, 6th July.*—Length, 9·65; expanse, 18·0; wing, 5·55; tail, 2·4; tarsus, 1·35; bill, from gape, 1·6; closed wings reach to end of tail; weight, 3·3 oz. Bill, dull black; irides, dark brown; legs and feet, grey plumbeous; claws, black.

♀. *Gulgun Shah,* 30th *August.*—Length, 8·9; expanse, 17; wing, 5·6; tail, 2·6; tarsus, 1·35; bill, from gape, 1·55; closed wings exceed tail, 0·4; weight, 2·2 oz Bill, distal half brownish black, basal portion, plumbeous; irides, dark brown; legs and feet, plumbeous; claws, black.

Besides the above, four specimens were preserved at Kashghar in October, November, and December.

This species was very common near Kashghar during the first half of the winter, and was often seen at Yarkand, near streams, pools and swamps, from March to August. During the latter month it was met with, in suitable localities, in the hills up to about 13,000 feet. In common with so many other waders it is called by the Kashgharians *Yamghurchi*, "the rainy one" (*Pluvialis*), but the professional bird-catchers of the country distinguished it as *Zagharak.*

## 893.—Actitis hypoleucus, *Linn.*

♀. *Shot at Oibuk, 24th August.*—Length, 7·6; expanse, 13·5; wing, 4·2; tail, 2·25; tarsus, 0·9; bill, from gape, 1·15;

closed wings fall short of tail, 0·75; weight, 1·4 oz. Bill, brownish black; base of lower mandible, brownish yellow; irides, blackish brown; legs and feet, dull greenish; claws, black.

*Young bird shot in marshy ground near Gulgun Shah, 30th August.*—Length, 6; expanse, 12; wing, 3·8; tail, 2·2; tarsus, 0·75; closed wings fall short of tail, 0·35; weight, 0·7 oz. Bill, brownish black; base of lower mandible, greenish; irides, dark brown; legs and feet, dull greenish; claws, black.

The Common Sandpiper was not obtained in the plains of Kashgharia, but was often observed, on the return journey in August, near the pebbly banks of the Arpalak and Sanju streams. Further up, in the mountains, it was seen daily along the banks of the Karakash river and on small swamps near that stream. The occurrence of the young bird, noted above, at Gulgun Shah, seems to prove that this species breeds in Eastern Turkestan.

## 894.—Totanus canescens (glottis), *Gmel.*

A specimen of the Greenshanks was obtained at Kashghar, in October; its bill, from gape to tip, measured 2·6 inches. Another specimen was shot on the 30th August 1875 on swampy ground near the Karakash river at Gulgun Shah; it was a solitary bird, and the following particulars were noted on its ticket at the time:

♀. Length, 13·35; expanse, 23·3; wing, 7·65; tail, 3·75; tarsus, 2·35; bill, from gape, 2·45; weight, 4·85oz.

Bill—basal half plumbeous, distal half black; irides, brown; legs and feet, slaty grey and greenish yellow in different parts; claws, black; the closed wings reach to the end of the tail.

The Yarkandi bird-catchers give the following account of this species: It is always found either near running water or near pools and swamps; it disappears entirely in winter, but breeds in Eastern Turkestan in summer; the nest is placed in short grass in the midst of water and the eggs are nearly as large as a pigeon's.

The Turki name for the Greenshanks is *Mashak yamgurchi*, which may be rendered in French by *Chat pluvier*.

## 897.—Totanus calidris, *Linn.*

(1.) *Three males, shot at Yarkand in March and April, measured and weighed.*—Length, 11 to 12; expanse, 19·5 to 21; wing, 6·45 to 6·55; tail, 2·9 to 3; tarsus, 1·85 to 2·05; bill, from gape, 1·83 to 2; closed wings exceed tail, 0·2 to 0·3; weight, 3·85oz. to 4·5oz.; middle toe, 1·15 to 1·2; its claw, 0·2 to 0·25. Bill, black, orange at base; legs and feet, orange to orange red; claws, black; irides, brown.

(2.) ♂. *Juv. Oibuk* (11,500 *feet*), *24th August.*—Length, 10·9; expanse, 18·5; wing, 5·9; tail, 2·8; tarsus, 1·9; bill,

from gape, 1·8; closed wings fall short of tail, 0·9; weight, 4·2oz. Bill, brownish black, base of lower mandible, deep orange red; irides, dark brown; legs and feet, dull reddish orange; claws, black.

(3.) *Two females, shot near Yarkand in April and June, measured and weighed.*—Length, 11·75 to 11·9; expanse 20·25 to 20·8; wing, 6·35 to 6·5; tail, 2·7 to 3; tarsus, 1·9 to 2·1; bill, from gape, 1·85 to 2·0; closed wings fall short of tail, 0·2 to 0·3; weight, 4·75oz.

Bill, black, red at base; legs and feet, orange red; claws, black.

(4.) ♀. *Juv. Yarkand, 14th June.*—Length, 10·8; expanse, 19·4; wing, 5·9; tail, 2·5; tarsus, 2; bill, from gape, 1·65; closed wings fall short of tail, 0·45; bare portion of tibia, 1·1; weight, 3·8oz. Bill, black at tip, greenish slaty at base; irides, dark brown; legs and feet, greenish yellow; claws, black.

A younger specimen than the above had the bill black at tip, dusky grey at base, the irides very dark brown and the legs and feet dull orange fleshy.

The first specimen of the Redshank was obtained at Kashghar in November, where it was tolerably common. After that it was not met with until March; and in May and June this species swarmed everywhere near water in the vicinity of Yarkand. The bird was also found in the valley of the Karakash, towards the end of August.

This species breeds from April to June. On the 22nd April three of its eggs were obtained, which seem very large for the size of the bird: they measure 1·8 by 1·23; 1·78 by 1·22; and 1·76 by 1·21. In shape they are moderately broad ovals, a good deal compressed and lengthened out at one end. They have a very faint gloss. The ground color is grey stone; with spots, a few streaks, and numerous blotches of blackish brown and sepia, scattered pretty evenly over the whole surface of the egg, except at the point, where the spots only occur sparingly.

## 898.—Himantopus intermedius, *Blyth.*

*Three males measured and weighed.*—Length, 14·8 to 15·2; expanse, 28·5 to 31·6; wing, 9·6 to 10·2; tail, 2·9 to 3·3; tarsus, 4·8 to 5; bare portion of tibia, 3·3 to 3·5; bill, from gape, 2·7 to 3·0; closed wings exceed tail, 2·1 to 2·3; weight, 4·5oz. to 6·5oz. Bill, black; irides, blood red; legs and feet, red and pinkish red; claws, dusky black.

*Three females measured and weighed.*—Length, 14·0 to 14·9; expanse, 28 to 29; wing, 9·0 to 9·5; tail, 3·0 to 3·5; tarsus, 4 to 4·7; bare portion of tibia, 2·5 to 2·8; bill, from gape, 2·6 to 2·8; wings exceed tail, 1·3 to 2·0; weight, 5oz. to 5·5oz.

Bill, black; irides, dark red and blood red; legs and feet, pinkish red and red; claws, dusky black.

The Stilt is a seasonal visitant to the plains of Eastern Turkestan, where it breeds. It arrives in May and probably leaves about the end of September: it was never seen in winter. Near Yarkand, in summer the birds were found in enormous numbers, frequenting small salt pools, little lakes, and marshy ground. In June I noticed that when these birds were disturbed they used to hover over one and could therefore be very easily shot. The cry of this bird is a kind of plaintive, but shrill sound, something like *crèk, crèk;* in flying about they were often mixed up with the Terns, *Sterna fluviatilis* and *Sternula minuta*. The Turki name for this species is *Kakhshal pachak*, "Stilt (?) leg."

## 903.—Fulica atra, *Linn.*

*Three males measured and weighed.*—Length, 16·1; expanse, 28·5; wing, 8·6 to 8·65; tail, 2·1 to 2·6; tarsus, 2·2 to 2·4; bill from gape, 1·3 to 1·6; closed wings fall short of tail, 0·8; weight, 1lb to 1lb 15oz.

Bill and frontal shield, milky white, with a pink tinge near the nares; irides, red or dark red; legs, greenish plumbeous, with an orange and green garter below feathered portion of tibia; toes, plumbeous; the webs, dusky at their free margins; claws, black.

♂. *Juv. Tungtash, 4th August.*—Length, 11·5; expanse, 12; wing, 2·3; tail, 1·1; tarsus, 1·65; bill, from gape, 1·17; closed wings fall short of tail, 3·9: weight, 9oz. Bill, dusky, grey at tip; irides, reddish brown; legs and feet, dusky greenish; claws, dusky.

♀. *Yarkand, 14th June.*—Wing, 7·9; tarsus, 1·9; bill, from gape, 1·4. Bill, white, tinged with rose color; frontal shield, pure white; legs, greenish, with patches of orange yellow; feet, grey dusky; claws, black.

♀. *Juv. Soghuchak, 15th July.*—Length, 15·4; expanse, 26·5; wing, 7·5; tail, 2·2; tarsus, 2·2; bill, from gape, 1·3; closed wings fall short of tail, 1·6; weight, 1lb 4oz. Bill, dusky; frontal shield, grey; irides, light hazel; legs and feet, grey plumbeous, dusky in parts; claws, black.

The Coot is exceedingly common in the plains of Kashgharia from March to October; very few of the birds are to be seen during the winter It is found on all lakes and jheels; often near springs and small streams. When alarmed it scuds across the water, seldom flying up, but flapping the surface of the water until it can hide among the rushes; it is also a wonderfully good diver. This species breeds, in Turkestan, in May, June and July. On the 10th June, the nest of a Coot, containing

seven eggs, was found at Sughuchak. The nest consisted of a mass of rushes and weeds placed amongst '*Yekan*' (rush) in water about a foot deep. The eggs are broadish oval, moderately compressed towards one end, and have little or no gloss. The ground color is dull café au lait; the surface of the egg is speckled over with fine purplish-black pin point spots, and in addition to these larger spots of purplish black, mostly smaller than a pin's head, are scattered about over the egg. The average of three eggs is 2·07 in length by 1·39 in breadth. Two of the eggs taken on the 10th June were placed under a hen and were hatched; but the young Coots soon died, as, I suppose, their foster mother did not know how to feed them properly. These nestlings (two days old) have a white horny tip to their bills. The forehead and lores are deep red, and on the chin, all round the neck and down the back, are long hair-like feathers of a beautiful orange color. The general plumage, beneath the orange clothing, is greyish black.

The Turki name for this species is *Kashkaldak*, *i. e.*, "Bald brow."

## 905.—Gallinula chloropus, *Linn.*

♂. (*In immature plumage*) *Yarkand, 20th July.*—Length, 12·3; expanse, 21; wing, 6·55; tail, 2·9; tarsus, 1·87; bill, from gape, 1·23; closed wings fall short of tail, 1·0; weight, 6·4 oz. Bill, brownish dusky above, dusky greenish at tip and below; irides, green; legs and feet, dark shining green; yellowish above tarsal joint, claws, black.

♂. *Juv. Yarkand, 19th July.*—Length, 12·8; expanse, 19·6; wing, 5·8; tail, 3·2; tarsus, 1·7; bill, from gape, 1·1; closed wings fall short of tail, 1·4; weight, 6 oz. Bill, dusky at base, dusky green at tip; irides, greenish brown; legs and feet, dusky shining green; claws, brownish black.

♂. *Juv. Yarkand, 20th July.*—Length, 10·5; expanse, 16·5; wing, 4·4; tail, 2·1; tarsus, 1·9; bill, from gape, 1·05; closed wings fall short of tail, 1·6; weight, 5·25 oz. Bill, dusky, greenish at tip; irides greyish brown; legs, green; feet, dusky green; claws, black.

♀. *Yarkand, 17th July.*—Length, 12·2; expanse, 21·3; wing, 6·9; tail, 3·2; tarsus, 1·8; bill, from gape, 1·05; closed wings fall short of tail, 0·6; weight, 6·2 oz. Bill, greenish yellow at tip, base and frontal shield dark crimson red; irides, dark red; legs and feet, fine bright green, with an orange garter round bare portion of tibia; claws, black.

♀. *Juv. Tungtash, 4th August.*—Length, 12·5; expanse, 18·5; wing, 5·45; tail, 2·9; tarsus, 2; bill from gape, 1·1; closed wings fall short of tail, 2·35; weight, 6·5 oz. Bill, dusky

black, greenish at tip and below; irides, brownish grey; legs and feet, dark green; claws, black.

*Nestling, in deep greenish black plumage, Yarkand, 19th July.*—Length, 6; tarsus, 1·1; bill, from gape, 0·96; weight, 1·2 oz. Bill greenish, plumbeous above and at tip; irides, very dark greyish; legs and feet, dusky brownish; claws, brown horny.

The Water-hen was tolerably common in the plains in summer, where it breeds; it was never met with during the winter. It frequented jheels and swamps, running about with great ease on the fallen rushes floating on the surface of the water; it was often noticed flirting up its tail and thus showing the white feathers in it, very conspicuously. The Turki name for this species is *Kodan*, and it is sometimes also called *Kharonah* (*c.f. Kharun*, Persian—a restive horse.)

## 909.—Porzana maruetta, *Briss.*

A single specimen of the Spotted Rail was captured at Toghrasu on the 21st September, elevation 11,265 feet. The bird was probably migrating southwards.*

## 910.—Porzana pygmæa, *Naum.*

A single specimen of this species was obtained in marshy ground near the city of Yarkand, on the 29th June. The bird was shot by a soldier of the escort and the skin given to me by Mr. R. B. Shaw. This species was not at all common near Yarkand, but it is probable that a few birds breed there.

Length, 7·3; wing, 3·6; tarsus, 1·1; bill, from gape, 0·85. Bill, dark green; legs and feet, greenish brown; claws, brown horny.

## 914 *bis.*—Rallus aquaticus, *Linn.*

*Four males (Yarkand, July) measured and weighed.*—Length, 11·7 to 12·1; expanse, 16·6 to 16·7; wing, 4·85 to 4·9; tail, 2·5 to 2·8; tarsus, 1·55 to 1·6; bill, from gape, 1·8 to 1·9; closed wings fall short of tail, 1·2 to 1·35; weight, 3·1 oz. to 4·1 oz. Bill: upper mandible brown above, greyish horny at tip, orange red at sides of base; lower mandible, greyish or brownish horny at tip, orange red for the rest of its extent. Irides, brick red; legs and feet, fleshy brown; claws, livid horny.

♀. *Yarkand, 20th July.*—Length, 11; expanse, 15·6; wing, 4·6; tail, 2·35; tarsus, 1·6; bill, from gape, 1·7; closed wings fall short of tail, 1·0; weight, 3 oz. Bill, dusky brown above and at tip, orange red below, and at sides of base; irides, brick red; legs and feet, fleshy brown; claws, brownish horny.

* It is very remarkable that the only specimen of this Rail obtained by Dr. Henderson was caught at the karatagh Lake, at an elevation of 16,000 feet, just 52 miles south of Toghrasu, on the 24th September.—Ed. S. F.

♀. *Juv. Yarkand, 17th July.*—Length, 10·6; expanse, 15·6; wing, 4·5; tail, 2·5; tarsus, 1·5; bill, from gape, 1·65; closed wings fall short of tail, 0·85; weight, 2·3 oz. Bill, dusky brown, lower mandible, brownish orange at base; irides, greenish straw color; legs and feet, greyish brown; claws, livid.

The Water-Rail* was tolerably common near Yarkand in summer; it was never observed in winter, but some of the Shikaris there said that the bird was a permanent resident. It was found in marshes, among the rushes, where it was said to breed. The Turki name for this species is *Yekan Tokhisi, i. e.*, the Rush Fowl.

## 918.—Ciconia nigra, *Linn.*

♀. *Tarim Langar, 28th July.*—Length, 39·5; expanse, 73; wing, 20; tail, 9·6; tarsus, 7·2; bill, from gape, 7·2; closed wings fall short of tail, 1·0; weight, 5lbs. 13·8oz.

Bill, mahogany color—lighter towards the tip; legs and feet, dark red, with black scales down the front of the tarsi; claws, dusky brownish.

The Black Stork is a seasonal visitant to the plains of Eastern Turkestan, arriving in spring and disappearing entirely in winter. It is said to build its nest in high poplar trees on the borders of the Dolan forest country. This species was often seen at Sughuchak, Taskhama, and near Karghalik, frequenting marshy ground; it was very shy and wary. Its Turki name is *Kara Sokan, i. e.*, Black Stork.

## 919.—Ciconia alba, *Belon.*

♂. *Taskhama, 1st July.*—Length, 44·75; expanse, 88·5 (7 feet 4½ inches); wing, 24·2; tail, 9·4; tarsus, 9·2; bill, from gape, 8·85; closed wings exceed tail, 1·0; bare portion of tibia, 5·0; weight, 8lbs. 3·3oz.

Bill, fine dark red; gular pouch vermilion opposite gape, black in anterior portion; legs and feet, reddish pink; claws, black.

♀. *Juv. Tugutatar, 24th July.*—Length, 37; expanse, 76·6 (6 feet 4·6 inches); wing, 19·8; tail, 8·4; tarsus, 8·15; bill, from gape, 6·1; bare portion of tibia, 3·85; closed wings reach to end of tail; weight, 6 lbs. 0·5oz.

Bill, dull yellowish orange, dusky in parts; gular pouch dusky in front, orange at gape; orbital skin, dusky; irides, greenish brown; legs and feet, pale yellowish, becoming orange in parts; claws, yellowish horny.

The White Stork was common in the plains, during the summer, from April to August; on the 13th of the latter month,

* All the specimens are true *Aquaticus*, cf. Vol. III., p. 416.—Ed. S. F.

I saw a flock of these birds, evidently migrating, flying over Sanju. The birds appeared to be going rather slowly, but were high up and moving in a *south-easterly* direction; the flock was flying in the form of a very wide V, with the point forwards. From what I saw of the young birds of the year, however, I should imagine that a great number of these birds could not leave Kashgharia before the end of September; in fact I saw some of these birds near Kashghar about the middle of October 1874. In June and July the White Stork was common within eight or ten miles of the City of Yarkand, frequenting waste and marshy ground, singly, in companies of three or four, and sometimes as many as fifteen or twenty birds standing in line in front of tall grass and all facing the same way.

On the 5th July my Shikari found a nest of this species at Tugutatar, about seven miles from Yarkand. The nest was placed in a high poplar tree (*P. alba*) about thirty feet above the ground; it was a sort of platform about five feet in diameter, made up of branches, sticks and twigs, and some portions of a thorny bush. This platform was covered with pieces of felt, wool, &c., which formed a sort of very shallow cup. In this nest *five* young birds, two of which he brought to me, secretly stowed in a large bag. I doubted the story of *five* young storks being found in one nest and next day a soldier of the escort went out with the Shikari to see the place. The soldier told me that he saw the nest, that there were no others about, and he certainly found it to contain three young birds. The Shikari wished to bring the latter away, but the Yarkandis living about the place would not hear of this, averring that it was a sin to meddle with the young of the Stork, as this bird was well known to go on a pilgrimage to Mecca every year!

I kept the young birds for about a month and found that they grew rapidly. They were very tame, but exceedingly voracious, eating as much raw meat as one would give them, and never appearing to be satisfied. When angry at missing a piece of meat they would throw their heads back and clatter their mandibles loudly—as if gnashing their teeth through rage; but occasionally they would begin a clattering match together apparently only for amusement. When they wanted to be fed they made a shrill whining sort of noise. They were very weak on their legs at first, but about a fortnight after I got them they began to practise short flights, only managing at first to raise their legs a few inches off the ground. About the end of July one of the birds was put on the roof of a house and managed to fly off for about three hundred yards. The Turki name for this Stork is *Laglag*, but its local name about Yarkand is *Ala Sokan*, *i. e.*, Variegated Stork.

## 923.—Ardea cinerea, *Linn.*

Four specimens of this species were preserved at Yarkand in January and February. This Heron was common about Kashghar and Yarkand during the whole winter, frequenting swampy ground and the neighbourhood of unfrozen bits of water. It was not seen near Yarkand from April to August, but in the latter month numbers of these birds were met with at Tungtash, near Karghalik, among reeds growing near water. Again on the 26th August a flock of these birds (? migrating) was seen near the Karakash river below Gulgun Shah.

The Yarkandis say that this bird is a permanent resident in the country, moving northwards in summer to the country about Maralbashi, where it breeds; and that it feeds chiefly on frogs and fish. The Turki name for the species is *Ukar* or *'Ukar*.

*Dimensions from skins—Two males, shot at Yarkand in January.*—Wing, 18 to 18·2; tarsus, 6·0 to 6·5; bill, from gape, 6·3 to 6·5; at front, 4·85 to 5·23; bare portion of tibia, 2·8 to 3·7.

*Two females, shot at Yarkand, January and February.*—Wing, 17·7; tarsus, 6·25 to 6·3; bill, from gape, 6·15 to 6·25; at front, 4·8 to 4·83; bare portion of tibia, 3·1 to 3·2.

## 925.—Herodias alba. *Linn.*

♂. *Kashghar, 26th December.*—Wing, 17·6; bill, at front, 5·05; from gape, 6·6; bare portion of tibia, 5·0; tarsus, 7·7.

Bill, yellow; the upper mandible black at extreme tip, the lower mandible greenish below; orbital skin, greenish yellow; legs, feet, and claws, black; the bare portion of the tibia, fleshy in parts.

♀. *Kashghar, 6th December.*—Wing, 16·4; bill, at front, 4·85; from gape, 6·4; bare portion of tibia, 3·9; tarsus, 7·2.

Bill yellow, upper mandible dusky at extreme tip; orbital skin, yellowish green; legs, feet, and claws, black.

(The above dimensions are taken from the skins.)

In winter this species was more common about Kashghar (where four birds were shot) and Yarkand than *Ardea cinerea*. It was never seen in spring or summer, having then, it was reported, migrated northwards, towards Aksu, to breed. It frequented marshy places and the banks of small streams, feeding on fish. The Turki name for this species (which Mr. Hume informs me is the large European form, and not the Lesser White Heron of India) is *Ak Ukar*, 'White Heron.'

## 936.—Botaurus stellaris, *Linn.*

Four specimens of the Bittern were preserved: a female at Kâshghar in December, a male at Beshkant in February, and

two males at Yarkand in the same month. This species was tolerably common near Kâshghar and Yarkand during the winter frequenting swampy ground covered with rushes. It was not noticed in spring or summer, but Mr. Shaw purchased a young bird of the year about the middle of July, which would seem to prove that this bird does not breed far from Yarkand, at any rate. I kept several of these birds in confinement and found that their favorite attitude was with the beak directed straight up in the air, the eyes looking very vacant and the whole body kept very still and unmoved; when made to walk about the room they would shake out their neck feathers and look very fierce. The natives said that one required to be very careful in handling these birds, as they were very fond of making a peck straight at one's eye; a wild hare, kept in the same room with a Bittern, died one night, and next morning one of its eyes was found very neatly picked out; my servants looked on this incident as a striking confirmation of the eye-extracting tendencies of the bird.

The Yarkandis call this species *Kul bughasi*, the 'Stag of the Lake' and say that it is a permanent resident in the country, breeds in long grass jungle, and makes a very loud booming noise *by sticking its bill into a reed!*

*Dimensions from skins: three males.*—Wing, 13·7 to 13·75; tarsus, 3·75 to 3·95; bill, from gape, 3·9 to 4·2; at front, 2·85 to 2·96.

*Female.*—Wing, 12·4; tarsus, 3·6; bill, from gape, 3·8; at front, 2·63.

## Cygnus olor, *Gmel.**

The Swan was often mentioned to me as being plentiful in Lob and towards Aksu; captive individuals of this species were seen at Káshghar in November, swimming in a pond at the Shrine of Hazrat Apak. The Turki name for the species is *Koday*.

## 945.—Anser cinereus, *Meyer*.

♀. *Yarkand, 28th February.*—Length, 31; tail, 6; tarsus, 3; bill, from gape, 2·7. Bill, reddish fleshy, the tip whitish; irides, brown; legs and feet, reddish fleshy.

♀. *Juv. Yarkand, 6th July.*—Length, 30·5; expanse, 60·25; wing, 16·5; tail, 6·3; tarsus, 3; bill, from gape, 2·65; weight, 5lbs. 15·75 oz. Bill, reddish fleshy; irides, brown; legs and feet, red flesh color; claws, dusky at tips.

The Grey Lag Goose is a seasonal visitant to Kâshgharia, where it breeds. The first specimen of this species which I got was shot near Yarkand on the 28th February; in the early part of March they were often seen flying over the Fort at Yarkand and going straight north. The bird is said to breed plentifully

* I am not certain that I have correctly identified the species; no specimen was preserved.—J. S.

near Maralbashi, but not in the immediate vicinity of Yarkand; young birds were captured about the beginning of June.

Two eggs of *Anser cinereus* (laid by a captive bird with cut wings) were obtained on the 1st and 12th June. They are spotless white, with an ivory tinge; glossless or faintly glossy in parts; and of a compact texture. In shape they are moderately long ovals, broadest about the centre, and measure 3·37 by 2·33 and 3·21 by 2·21.

It was curious to observe how readily birds of this species got tame; even old birds, who had only had their wings broken by a bullet, soon became quite friendly and familiar. The Turks call this Goose by the Persian name *Ghaz*.

## 954.—Casarca rutila, *Pallas*.

♀. *Yarkand, 9th March.*—Length, 24; expanse, 44·75; wing, 13·75; tail, 5·8; tarsus, 2·25; bill, from gape, 2; weight, 2lbs. 13·5 oz. Bill, legs, feet, and claws, black; irides, dark brown.

♀. *Yarkand, 11th April.*—Length, 23; expanse, 43·5; wing, 13·25; tail, 5·5; tarsus, 2·0; bill, from gape, 2·1; closed wings fall short of tail, 0·25; weight, 2lbs. 4·75 oz. Bill, legs, feet, and claws, black; irides, very dark muddy brown.

All the toes of the left foot were wanting in this specimen, and the tarsus terminated in a rounded stump, smoothly covered over by white cicatricial tissue. This condition was evidently the result of some injury sustained a long time before I got the bird.

♀. *Juv. Yarkand, 18th June.*—Length, 19; expanse, 27; wing, 6; tail, 3·7; tarsus, 2·3; bill, from gape, 1·9; closed wings short of tail, 4; weight, 1lb. 3oz. Bill, greenish dusky; irides, dark brown; legs, yellowish green; feet, mixed dusky and greenish; claws, dusky.

The Ruddy Shieldrake was observed in the plains of Kashgharia in the beginning of winter, and from March to August it was exceedingly plentiful in the lakes and swamps of Sughuchak, near Yarkand. Many young birds, unable to fly, usually swimming about with the old female bird. In July I saw a party of about ten of these Ducks among some rushes; they had a sentinel bird placed at some little distance from the main flock and on seeing me approach he gave a sort of warning cry which seemed to put his party on the alert; when I got a few steps nearer the watcher gave a loud scream and flew up, followed by the rest of the party. This bird seems to walk very easily on dry land and always in a curiously erect manner. The Yarkandis say that this species migrates to India in winter, and that the eggs are laid in some dry place, away from water; as soon as the young bird emerges from the egg, the mother seizes it and puts it into the water. The Turki name for the Brahminy Duck is *Hangghut*, pronounced *Hangat*.

## 957.—Spatula clypeata, *Linn.*

Two specimens of the Shoveller, a female and a male, were preserved at Kâshghar in November and December. According to Yarkandi accounts very few of these birds remain in the country during the winter, the vast majority of them migrating to India. They breed during the summer in the north of Kashgharia, about the neighbourhood of Maralbashi, and are said to collect, for a short time, near Yarkand, when the cold sets in, previous to their migration southwards. The Turki name for the species is given as *Kanak Aurdak*.

♂. *Kashghar, 18th December.*—Length, 19·8; wing, 9·3; tail, 3·3; tarsus, 1·4; bill, from gape, 2·85. Bill: upper mandible, brownish dusky; lower, pale yellowish orange; legs and feet, orange yellow; claws, brownish horn.

♀. *Kashghar, 1st November.*—Length, 17·5; wing, 8·35; tail, 3·1; tarsus, 1·25; bill, from gape, 2·65. Bill: upper mandible, brown; lower, yellowish; legs and feet, pale orange yellow; claws, brown horny.

## 958.—Anas boschas, *Linn.*

♀. *Yarkand, 10th April.*—Length, 21·5; expanse, 35; wing, 10·7; tail, 4·1; tarsus, 1·7; bill, from gape, 2·5; closed wings reach to end of tail; weight, 2lbs 6·75 oz. Bill, black above, reddish yellow below; irides, dark brown; legs and toes, yellowish red; webs, dusky; claws, black. Oviduct contained an egg larger than that of a common fowl.

♀. *Juv. Yarkand, 22nd July.*—Length, 19·7; expanse, 31; wing, 8·3; tail, 4·3; tarsus, 1·6; bill, from gape, 2·2; closed wings fall short of tail, 2·2; weight, 1lb 5oz. Bill, greenish dusky above, orange yellow below; irides, light brown; legs and toes, dark orange; webs, dusky; claws, brownish dusky.

♂. *Juv. Yarkand, 22nd July.*—Length, 21·5; expanse, 31·4; wing, 7·4; tail, 4·5; tarsus, 1·6; bill, from gape, 2·5; wings short of tail, 3·2; weight, 1lb 9·2oz. Bill, greenish, dusky at tip and culmen, sides yellow; irides, brown; legs and feet, dusky orange; claws, blackish.

♂. *In post nuptial plumage, Yarkand, 26th July.*—Length, 23·5; tail, 4·8; tarsus, 1·6; bill, from gape, 2·5; weight, 2lbs 3·5oz. Bill, yellowish green; nail, black; irides, dark brown; legs and feet, orange; claws, brownish black.

Besides the above, seven other specimens were preserved, at Kashghar or Yarkand, during the winter months.

The Mallard occurs in great numbers in Kashgharia during the whole winter, when it is decidedly the commonest of the Duck tribe. In spring and summer it seemed to be less plentiful; but this may perhaps have been because it was cast into the

shade by the great variety of other Ducks and Teal then breeding about Yarkand. In winter it was usually found near unfrozen springs and streams, and in summer in lakes and swamps associated with other species of Duck. The condition of the bird obtained in April (noted above) and the occurrence of the two young birds preserved in July, prove conclusively that this Duck breeds near Yarkand. The Yarkandis say that of the twenty odd species of Duck which they discriminate, the Mallard is the only permanent resident in the vicinity of Kashghar and Yarkand; that it lays in April, the number of eggs varying from ten to fifteen; and that the nest is placed amongst *Yekan*, *i.e.*, rushes.

A couple of Mallards, kept in confinement in a tank inside the Residency at Yarkand, formed a great friendship with a Red-crested Pochard (*Branta rufina*) and a Coot, who were also captives; but they would never associate with tame Ducks, always driving the latter away when they approached. The Turki name of the Mallard is *Aurdak*, which means simply Duck; and it is sometimes distinguished as *Sun* or *Suna aurdak*.

## 962.—Dafila acuta, *Linn.*

♀. *Yarkand*, 15*th March*.—Length, 21·75; expanse, 28·25; wing, 10; tail, 4·8; tarsus, 1·5; bill, from gape, 2·35; closed wings fall short of tail, 1·8; weight, 1lb 8·5oz. Bill, black above, slate color below; irides, dark muddy brown; legs and toes, slaty green; webs, dusky; claws, black.

The Pintail Duck was occasionally seen near Yarkand in March, but only one specimen (a female) was obtained. Two experienced Yarkandi bird-catchers gave me the following information about this species:—The male bird is *ala*, *i.e.*, pied, black and white; it is a seasonal visitant only to Eastern Turkestan, arriving in spring and migrating to Hindostan at the beginning of winter, and it breeds in the neighbourhood of Maralbashi laying from ten to twelve eggs. It is called in Turki *Cha sughsu aurdak*.

## 964.—Querquedula crecca, *Linn.*

The Common Teal was only obtained at Kashghar in November, at Sughuchak near Yarkand, by Mr. Shaw, in January, and at Beshkant, in the beginning of February. I was told that it migrated northwards to breed, and that it laid from eight to ten mottled eggs. The Turki name given for this species was *Ala bash kurak aurdak*, which means 'the mottle-headed patchwork duck!'

♂. *Kashghar, 29th November.*—Length, 14·3; wing, 7·25; tail, 3·25; tarsus, 1·2; bill, from gape, 1·72. Bill, black; legs and feet, dusky brown; claws, brownish black.

♂. *Sughuchak, January.*—Length, 14; wing, 7; tail, 2·9; tarsus, 1·17; bill, from gape, 1·7. Bill, black; legs and feet, dark brown; webs, dusky; claws, brownish black.

## 965.—Querquedula circia, *Linn.*

♀. *Yarkand, 26th April.*—Length, 15·1; expanse, 24·75; wing, 7·3; tail, 3·4; tarsus, 1·0; bill, from gape, 1·7; closed wings fall short of tail, 1·4; weight, 12·75oz. Bill, black, reddish brown at gape; legs, toes, and webs, purplish slate color; claws dark brown.

♂. *Yarkand, 27th April.*—Length, 16; expanse, 24·8; wing, 7·5; tail, 3·2; tarsus, 1·1; bill, from gape, 1·9; closed wings fall short of tail, 1·7; weight, 15·3oz. Bill, dull black, brownish below; legs and toes, grey slate color; webs, dusky; claws, black.

♀. *Yarkand, 27th April.*—Length, 15·5; expanse, 24·75; wing, 7·25; tail, 3·0; tarsus, 1·1; bill, from gape, 1·8; closed wings fall short of tail, 1·35; weight, 14·75oz. Bill, black above, brownish below; legs and toes, grey slate color; webs, dusky; claws, black.

This Teal was common near Yarkand, in summer, where it doubtless breeds. The Turki name given to it is *Karak aurdak* or Patchwork Duck.

## 967.—Branta rufina, *Pallas.*

♂. *Yarkand, 24th July.*—Length, 21·1; tail, 4·0; tarsus, 1·6; bill, from gape, 2·4; weight, 2lbs. Bill, fine vermilion red; nail of bill, pink—light horny at tip; irides, red; legs and feet, mixed buff and dusky; webs, dusky; claws, brownish dusky.

♀. *Juv. Yarkand, 29th July.*—Length, 19·4; expanse, 33; wing, 8·9; tarsus, 1·4; bill, from gape, 2·1; weight, 1lb 4·75oz. Bill, dusky above, brownish below; legs and feet, dusky, yellowish green in parts.

This handsome Duck was not observed in winter, but was very common near Yarkand during the summer. It is a fine diver and has a peculiar manner of emerging from the water with a sharp spring; it carries its head well bent back over its shoulders and is not easily approached. The bird is only a seasonal visitant to Kashgharia, where it breeds; the nest is said to be placed among rushes growing in marshes, and the eggs are reported to be of a green color.

Its Turki name is *Kizil bash aurdak*—the Red-headed Duck.

## 969.—Aythya nyroca, *Guld.*

♂. *Yarkand, 25th April.*—Length, 16·8; expanse, 26·8; wing, 7·3; tail, 2·6; tarsus, 1·15; bill, from gape, 2·0; closed wings fall short of tail, 1·4; weight, 1lb. 3·75oz. Bill, webs, and claws, black; legs, dark greenish; toes, slate colored.

♂. *Juv. Sughuchak, 36th July.*—Length, 16·1; expanse 21; wing, 5·1; tail, 2·4; tarsus, 1·1; bill, from gape, 1·75; wings fall short of tail, 3·4; weight, 15·5oz. Bill, dusky, livid below; irides dark brown*; legs and feet, mottled dusky; claws, black.

♀. *Yarkand, 27th April.*—Length, 16·5; expanse, 26; wing, 7·3; tail, 2·6; tarsus, 1; bill, from gape, 2; closed wings fall short of tail, 1·6; weight, 1lb. 5oz. Bill, black, brownish below; legs and toes, grey slate color; webs, dusky; claws, black.

♀. *Juv. Yarkand, 18th July.*—Length, 15·7; expanse, 26·2; wing, 7·05; tail, 2·1; tarsus, 1·2; bill, from gape, 1·9; closed wings fall short of tail, 1·4; weight, 15·4oz. Bill, black above, grey slaty below; irides, brownish grey*; legs and toes, dusky plumbeous; webs, greyish black; claws, black.

This species is very common during the summer, near Yarkand, where it arrives about March, migrating again southwards at the beginning of winter. It breeds in Eastern Turkestan, laying in May or June, and is often seen flying about in pairs. The Turki name for this Duck is *Chiki* (or *Chikit*) *kanat aurdàk*, the word *chikit* having some reference to the white speculum edged with black.

## 972.—Mergus castor, *Linn.*

A specimen of the Merganser was preserved at Kashghar on the 30th October, and it was tolerably common on the rivers near Kashghar during the months of November and December. The natives said it fed entirely on fish and water insects, and that it migrated eastward to the lake region of Lob.

Its Turki name is *Ala ghaz urdak, i. e.*, the Variegated Goose-duck.

♂. *Kashghar, 30th October.*—Length, 25·3; wing, 11·5; tail, 5·8; tarsus, 1·8; bill, from gape, 2·85. Bill, dark blood red—greyish dusky at tip; legs and feet, orange red; claws, brown horny.

## 973.—Mergellus albellus, *Linn.*

The Smew was occasionally seen near Yarkand in the winter, but only one specimen, a female, was obtained in February near the Yarkand river, which was then completely frozen over.

* Observed in the fresh bird and noted at the time.

The Yarkandi name for the species is *Boz aurdak*, Grey Duck.

♀. *Beshkant, 5th February.*—Length, 15; wing, 7·3; tail, 3·3; tarsus, 1·2; bill, from gape, 1·5. Bill, dusky grey; tips of both mandibles, whitish; legs and feet, plumbeous.

## 974.—Podiceps cristatus, *Linn.*

♂. *Sughuchak, 10th June.*—Length, 23·5; expanse, 34·8; wing, 7·7; tail, 2·2; tarsus, 2·8; bill, from gape, 2·5; closed wings fall short of tail, 3·0; weight, 2lbs. 6·5oz.

Bill, dusky purplish; irides, blood red; tarsi, dusky externally, pale green on inner side; feet, greenish above, dusky below.

The Crested Grebe was numerous in the lakes of Sughuchak, about twelve miles west of Yarkand, in summer, where it was breeding. The birds were so difficult to approach, however, that I only managed to shoot two; and one of those I lost in the thick reeds and rushes into which it fell. The bird was never seen in winter.

## 975.—Podiceps minor, *Linn.*

The Little Grebe was observed at Kashghar in November and December, and a specimen was preserved in the former month; it was not numerous and frequented small unfrozen springs called *Karasu*. The bird was again noticed in a lake at Sughuchak in June. The natives assert that the bird breeds near Yarkand, and call it *Chumighak*, "the diver."

♂. *Kashghar, 28th November.*—Length, 8·5; wing, 3·9; tarsus, 1·2; bill, from gape, 0·96. Bill, brownish dusky above, brown horny below; irides, reddish brown; legs and feet, greenish black.

## 980.—Xema brunneicephala, *Jerdon.*

♂. *Juv. Kashghar, 6th December* 1874.—Length, 15·8; wing, 11·5; tail, 4·45; tarsus, 1·7; bill, from gape, 1·9.

Bill, black at tip, brownish dusky above, yellowish brown below; irides, yellowish brown; legs and feet, orange; claws, black.

A few birds of this species were observed at Kashghar in winter (November and December) fishing over the streams and ponds; and again in January near Sughlak. The Turki name of this Gull is *Ghorki*.

## 986.—Sterna fluviatilis, *Naum.*

♂. *Sughuchak, 15th July.*—Length, 14; expanse, 30; wing, 10; tail, 5·55; tarsus, 0·75; bill, from gape, 2·0; closed wings exceed tip of tail, 0·45; weight, 3·7 oz.

Bill, black at tip, orange red at base below ; legs and feet, orange red ; claws, black.

*Four females, shot at Yarkand or Sughuchak in April and June*—Length, 13·5 to 14·1 ; expanse, 30·5 to 32 ; wing, 10·5 to 10·6 ; tail, 5·4 to 5·9 ; tarsus, 0·75 to 0·85 ; bill, from gape, 1·85 to 2·0 ; closed wings exceed tail, 0·4 to 1·0 ; weight, 3·6 oz. to 4·4 oz.

Bill, black at tip, brownish red at base ; irides, dark brown ; legs and feet, brick red, orange red and dark red ; claws, black.

This Tern arrives in the plains of Eastern Turkestan in April and migrates about September; it breeds in June. This species was exceedingly numerous about Yarkand, fishing over pools, marshes, rice fields, and inundated fields ; its principal food seems to consist of a small fish which occurs very plentifully in Kashgharia, called *Tini balik*.

This bird has a harsh shrill cry and is called in Turki *Balakchi*—'The Fisher.'

## 988.—Sternula minuta, *Linn.*

♂. *Yarkand, 20th June.*—Length, 9·4 ; expanse, 20·7 ; wing, 7·0 ; tail, 3·2 ; tarsus, 0·7 ; bill, from gape, 1·6 ; closed wings exceed tail, 0·7 ; weight, 2 oz. Bill, greenish yellow, *black at tip ;* irides, dark brown ; legs and feet, orange yellow ; claws, black.

♂. *Yarkand, 25th July.*—Length, 9·9 ; expanse, 21 ; wing, 7·4 ; tail, 3·4 ; tarsus, 0·7 ; bill, from gape, 1·55 ; closed wings exceed tail, 0·9 ; weight, 2 oz. Bill, greenish yellow *throughout ;* legs and feet orange ; claws, black.

This Tern was frequently observed throughout the months of June and July, in the neighbourhood of Yarkand. It associated with *Sterna fluviatilis,* but was very much less numerous than that species. It is a seasonal visitant only to Eastern Turkestan, arriving about May and leaving certainly before the beginning of October. It breeds in Kashgharia, where it is known by the name of *Balakchi*—" The Fisher. "

## 1005.—Graculus carbo, *Linn.*

♂. *Tarim Langar, 23rd July.* 1875.—Length, 32·8; expanse, 55·5 ; wing, 14 ; tail, 8·3 ; tarsus, 2·1 ; bill, from gape, 3·9 ; closed wings fall short of tail, 5·8 ; weight, 4 lbs 2·25 oz. Bill —upper mandible dusky above, grey horny at sides and tip—lower mandible, purplish horny ; gular pouch, orange yellow ; legs and feet, black ; claws, brownish dusky.

♂. *Tungtash, 3rd August.*—Length, 33; expanse, 57·3 ; wing, 13·7 ; tail, 7·8 ; tarsus, 2·2 ; bill, from gape, 3·8 ; closed wings fall short of tail, 6·5 ; weight, 4lbs 10 oz. Bill—grey horny,

blackish above; gular pouch, orange yellow; irides, brownish grey; legs, feet, and claws, black.

*Juv. Tungtash, 4th August.*—Length, 32·75; expanse, 55·8; tail, 7·7; tarsus, 2·1; bill, from gape, 3·8; closed wings fall short of tail, 6·6; weight, 4lbs 5 oz. Bill grey horny, top of upper mandible black; irides, grey; gular pouch, orange yellow; legs and feet, black; claws, greyish black.

This Cormorant is, I believe, a permanent resident in Kashgharia—in the plains. The first specimen was obtained on the banks of the Yarkand river, near Tarim Langar. In the beginning of August I found these birds quite common at Tungtash, near Karghalik. They were then nearly always seen in parties of five, sitting on the top of a mud cliff—often thirty feet high—immediately overlooking the water below; one of the party acting as sentinel. The favourite posts of the Cormorants could be easily recognised about the place: spots worn into a sort of dome shape by their tails, and always near the edge of the cliff. In sitting these birds rest on their feet and the stiff feathers of their tails; the tail being spread out to form a sort of hollow half cone. When they fly the neck is stretched forward, like a goose. On one occasion I saw a Cormorant sitting near the water's edge apparently watching intently for a fish; I shot the bird just as it rose, and it immediately dived into the water, reappearing again however in a few seconds as it was mortally wounded.

The Turki name for this Cormorant is *Kara Ghaz*, "the Black Goose."

## On the Geographical distribution of the genus Pericrocotus.

By R. Bowdler Sharpe, F.L.S., F.E.S., &c.

I believe that a few papers on the geographical distribution of Indian birds will be useful to the numerous field ornithologists who are now working so vigorously in the cause of science in India and the adjacent countries, inasmuch as it will enable them to see what has been written (as far as I shall be able to collect the facts), and published on the subject. Here is, as it seems to me, a ground on which the field, and cabinet naturalist, can work hand in hand, to their mutual benefit; and I shall be particularly obliged to any one who will endeavour to supplement the information here compiled respecting the range of the species of *Pericrocotus;* and I may add that a few specimens would be very gratefully received by me for the British Museum, where the Indian skins are not in very good condition!

The Minivets seem to me to be divisible into two groups, *viz.*, (a), species with a red or yellow tip to the tail, and (b), species with white-tipped tails: by far the greater number belong to the first division in which I recognise 11 different species, as follows:—

1.—P. speciosus.
   *α. P. speciosus.*
   *β. P. elegans.*
2.—P. xanthogaster.
3.—P. flammeus.
4.—P. exul.
5.—P. peregrinus.
6.—P. igneus.
7.—P. brevirostris.
8.—P. miniatus.
9.—P. roseus.
10.—P. solaris.
11.—P. griseigularis.

I shall now proceed to record what I believe to be the habitats of these species as briefly as possible, although in the case of a few some critical remarks are necessary.

## 1.—Pericrocotus speciosus.

*Hab.* Himalayah Mountains. Not uncommon near Darjeeling, generally at about 3,000 to 4,000 feet of elevation (*Jerdon*): Darjeeling (*Beavan*): Sikhim (*Hume*): Nepal (*Hodgson*)): Kumaon (*Hume*): Mussoorie (*Hume*): below Mussoorie half way from Rajpur (*Brooks*): Khasia Hills (*Godwin-Austen*): Ponsee Kakhyen Hills (*Anderson*): Bhamo, Upper Burmah (*Anderson*): Fokien Province, South China (*Swinhoe*).

We see from the above records, all of which I consider to be perfectly authentic, that *P. speciosus* is a bird of the hills, found in the Himalayas, Upper Burmah, and extending even to Southern China; but how far this large form may be said to be constant, or in what respect it is approached by examples from other localities, is a question for future observers to decide. Dr. Jerdon says that *P. speciosus* is found about Calcutta and extends to Assam, Burmah, and Malayana, and it has been received from the Andaman islands." The bird from the latter locality, Mr. Hume considers to be a distinct species; but as far as I can understand, there is nothing but a difference in size, to separate the Assam bird (*P. elegans*), the Hainan (*P. fraterculus*), which Mr. Swinhoe in his original description admits to have seen from Siam, and *P. andamenensis* from *P. speciosus*; *P. ardens*, or, as I believe, we shall have to call it *P. xanthogaster* (Raffles): is also nothing, but a small form of

the true *P. speciosus* type. I think, however, that we can separate it from the latter as worthy of distinction on account of its minute size, as, according to my experience, its wing never exceeds 3·25 inches in length. Mr. Ball has made some excellent observations on the *Pericrocoti* of Central India, and according to the measurements given by him of a series of examples from the Chota Nagpur district, there can be little difference in size between these and Himalayan birds. His largest specimen, a male from Sirguja, has the wing 4·15 inches in length.

Mr. Hume (St. F., 1875, p. 95) separates *P. elegans* from *P. speciosus*, and *P. flammeus*, and writes concerning their specific distinctions as follows:—"First as to *P. flammeus*, no doubt it is of much the same size, and also that the colour of *P. elegans* is, to a certain extent, intermediate between that of *P. flammeus*, and *P. speciosus*; but then the red extends in *P. elegans* as in *P. speciosus* on to the third, whilst in *P. flammeus* it only extends on the fifth primary. As regards *P. speciosus*, *P. 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 *P. elegans*; because I have specimens, both from the Central Provinces and Sikhim, of the true *P. speciosus* in which the outer webs of these central feathers are partly or wholly red. The points I would insist on, as regards *P. flammeus*, the difference in the amount of red on the wing, and as regards *P. speciosus*, the great difference in size: as regards the females, the same kind of differences exist, and moreover the female of *P. elegans* has, like that *P. speciosus*, a great deal more yellow on the front of the head than that of *P. flammeus*."

Lord Walden has also noticed certain differences, for he remarks (*Ibis*, 1871, p. 174):—

"In all Burmese male individuals of *P. speciosus* (Lath.), which have come under my notice, the middle pair of rectrices have the outer webs wholly red, the inner webs only being black. I have never observed this peculiarity in either Himalayan or Central-Indian examples. The Burmese form is also smaller. An Assam example in Major Godwin-Austen's collection also exhibits this peculiarity."

In order to test these observations I have re-examined our series, not a very rich one, in the British Museum. I find in one specimen of *P. flammeus*, that the red colour extends on to the *fifth* primary, as noted by Mr. Hume, but in another it only goes on to the *fourth*, so that character is not constant.*

* I believe that there must be some mistake here. Our museum *is* very rich in *Pericrocoti*, and I wrote after a careful examination of *very* large series. There are many points in this paper in which I do not concur and when I have again access to our collections I shall furnish a separate paper on the Indian members of this genus.—Ed., S. F.

*P. elegans* seems to be decidedly of smaller bulk than *P. speciosus*, but this is the only characteristic for the amount of black on the centre tail-feathers varies so much, and is so irregular, as to render it a character of no importance.

Taking Himalayan birds, therefore, as the typical form of *P. speciosus*, I would give its range the Himalayas, Central-India and Upper Burmah, across to Southern China, and I would consider it as replaced by a smaller race in the following countries :—

Hainan (*Swinhoe*) : Siam (*Schomburgk*) : Assam (*McClelland, Godwin-Austen*) : Khasia Hills (*Godwin-Austen*) : Lower Burmah (*Walden*) : Pegu (*Blanford, Oates*) : Andaman Islands (*Hume, Ramsay*).

The following are the measurements of a series of male specimens in the British Museum :—

| | | Wing. | Tail. | Tarsus. |
|---|---|---|---|---|
| *a. b. P. speciosus*, | Nepal | 3·95-4·0 | 4·0-4·3 | 0·7 |
| *c. d.* ,, | Ponsee | 3·85-3·9 | 3·95-4·2 | 0·7 |
| *e.* ,, | Bhamo | 3·95 | 4·1 | 0·7 |
| *f. P. elegans*, | Bassein | 3·75 | 3·8 | 0·65 |
| *g. P. andamanensis*, | S. Andaman | 3·55 | 3·6 | 0·65 |
| *h. P. fraterculus*, | Hainan | 3·65 | 3·6 | 0·7 |

It will be seen that there is a gradation between the last three which can scarcely separate them, the one from the other, and I shall look anxiously for further notes and specimens to confirm or destroy the correctness of my conclusions.

## 2.—Pericrocotus xanthogaster (*P. ardens*, Boie).

*Hab.* Singapore (*Wallace*) : Sumatra (*Wallace, Raffles*) : Borneo (*Mus. Brit.*) : Sarawak (*Doria, Beccari*) : Marup (*Everett*) : Bangermassing (*Schierbrand*).

## 3.—Pericrocotus flammeus.

*Hab.* Confined to the jungles of South-west India and Ceylon ; extends from Travancore to the latitude of Bombay, from near the level of the sea to 5,000 feet on the Neilgherry slopes ; tolerably common through all the forests of Malabar (*Jerdon*) : Travancore (*Biddulph*) : Cardamum hills, Travancore (*Elwes*) : Madras (*Mus. Brit.*)

Birds of this species have been recorded from the north-west Himalayas by D. Adams, (P. Z. S., 1858, p. 494) and from the Khasias by Major Godwin-Austen, but both identifications are probably wrong, although Blyth stated that he had seen true examples undistinguishable from others from Assam. (*Ibis*, 1866, p. 369).

## 4.—Pericrocotus exul.

*Hab.* Lombock (*Wallace*): East Java (*Wallace*): Banda (*Wallace*).

The Javan specimen is rather more richly coloured than the typical Lombock birds. This is doubtless.

## 5.—Pericrocotus peregrinus.

*Hab.* Spread throughout the whole of India, extending to the Andaman Islands, and Burmah (*Jerdon*): Nepal, Behar, (*Hodgson*): Sindh (*Hume*): (said to have been procured by Griffith in Afghanistan (*Horsf.* and *Moore*, Cat. I., p. 140), but Blyth (*Ibis*, 1872, p. 89) thinks that an error in the locality has probably arisen, and that Griffith really obtained it in the Khasia Hills; at the same time it is allowed that he collected in Sindh, and the specimen may just as well have come from the latter locality: very common during the whole year at the Sambhur Lake (*Adam*): Kachh (*Stoliczka*): Barrackpore, common at Umballah, Maunbhoom (*Beavan*): tolerably common throughout Chota Nagpur; in Sirguja and Lohardugga (*Ball*): Kamptee (*Hinde*): Wardha Valley (*Blanford*): Madras (*Mus. Brit*): Ceylon (*Holdsworth*): South Andaman (*Ramsay*): not uncommon near Port Blair (*Davison*): Pegu, Thayet-Myo (*Blanford, Oates, Feilden*): Ye-boo, Pabyouk, Amherst in Tenasserim (*Hume*): West Java (*Wallace*). On the variation in colour in specimens of *P. peregrinus* from different localities, Mr. Hume's remarks (St. F., I., p. 178) should be carefully studied.

## 6.—Pericrocotus igneus.

*Hab.* Borneo; Sarawak, (*Beccari*): Marup (*Everest*): Sumatra (*Mus. Lugd.*): Singapore (*Wallace*): Mallacca (*Mus. Brit*): Western China (*Penny, Mus Paris*).

*P. flagrans*, Bp., is undoubtedly the female of this species.

## 7.—Pericrocotus brevirostris.

*Hab.* "The Short-billed Minivet is found throughout the Himalayas up to 8,000 feet of elevation during the summer, migrating in the cold weather to the plains of India, and visiting Lower Bengal* and Central India, not however extending its migrations far south. I have killed it in Goomsoor, N. Lat. 20, and also near Saugor. It extends into Assam and Arakan. It is very common at Darjeeling from April to October" (Jerdon): small parties of this Minivet visit Sambhur during the cold weather (*Adam*): Cashmere (*Biddulph*): Sind

* Mr. Blyth (*Ibis*, 1866, p. 369) writes: "I doubt if this bird ever visits Lower Bengal, as Dr. Jerdon, probably by a slip of the pen, asserts."

Valley (*Biddulph*): Kotegurgh in winter, Gaora, particularly abundant in the hot weather of 1866 at Simla (*Beavan*): common at all heights between Simla and Mussoorie (*Tytler*): met with as high up as Derali, and even in the pine woods close to the snows (*Brooks*): several times seen in the well-wooded districts near Nynee Tal and Almora, where it was evidently breeding (*Brooks*): large flocks seen in the early part of winter in Kumaon (*Jerdon*): Nepal (*Hodgson*): Behar (*Hodgson*): in Mahnbhoom along with *P. speciosus* (*Beavan*): abundant in the Tista Valley, at elevations below about 6,000 feet (*Brooks*): abundant in the forests which still partially cover the beautiful spurs running down from the Jella Pahar Mountains to the little Runjeet River (*Bulger*): Khasia hills (*Godwin-Austen*): Sawaddy, Upper Burmah (*Anderson*): Ponsee, Kakhyen hills, (*Anderson*): right bank of Tapeng river (*Anderson*): Nampung river (*Anderson*): Hotha (*Anderson*): pine woods north of Pahpoon, Tenasserim (*Hume*): passes Peking in migration, but does not breed in the Cheelee province (*David*).

## 8.—Pericrocotus miniatus.

*Hab.* Western Java (*Wallace*): Java (*Temminck*). Lord Walden (*Ibis*, 1872, p. 372) thinks that the bird figured by Temminck as the female, must be another species. Mr. Wallace, however, collected a pair in Western Java, which agree with the figures in Temminck's plate; these birds were determined by Mr. Wallace to be male and female of the same species.

## 9.—Pericrocotus roseus.

*Hab.* "Spread through the wooded parts of India; not uncommon in Lower Bengal, as about Calcutta, extending into Arrakan. I procured it in Goomsoor, and I obtained it from various parts of Malabar. Lord Hay informed me that he had seen it most abundant on the hills dividing Tinivelly from Travancore; still it cannot be called common in the south of India" (*Jerdon*): extends to the Lower Himalayas as far west as Mussoorie, and is not rare in some parts of the Dehra Doon (*Jerdon*): breeds near Murree (*Cock* and *Marshall*): Nepal (*Hodgson*): Behar (*Hodgson*): Assam (*Jerdon*): Khasia Hills (*Godwin-Austen*): Mungla, Sanda valley (*Anderson*): Bassein, Pegu (*Blanford*): Pahpoon, Tenasserim (*Hume*).

## 10.—Pericrocotus solaris.

*Hab.* Found on the South-East Himalayas, as in Sikhim. I procured it at Darjeeling, and found it at heights varying from 2,000 to 5,000 feet" (*Jerdon*): Nepal (*Hodgson*): Assam (*Jerdon*): Khasia Hills (*Godwin-Austen*); it also occurs as far west as Cashmere, where a specimen was procured by Captain

Biddulph during the late Yarkand mission, and it is by no means certain whether the bird recorded by Dr. Adams (P. Z. S., 1859, p. 182), under the name of *P. flammeus*, was this species or *P. brevirostris*.

## 11.—Pericrocotus griseigularis.

*Hab.* Formosa; abundant in the hilly parts of the north-west of the island (*Swinhoe*): Fokien province, South China (*Swinhoe*).

In the group (*b*), species with white-tipped tails, I recognize four, *viz*:—

12. P. cinereus.
13. P. cantonensis.
14. P. erythropygius.
15. P. albifrons.

## 12.—Pericrocotus cinereus.

*Hab.* South Amoorland; upper half of the mouths of Ussuri River (*Schrenk*); common in September between Takoo and Peking; in South China only seen and heard in seasons of migration: it passes its summer in North of China, occurring even in Amoorland, and in early autumn turns down the Coast to Amoy and Canton, whence it wings its ways across the sea touching the south of Formosa, to the Phillippines for its winter quarters" (*Swinhoe*): Formosa (*Swinhoe*): Saigon, Cochin China, (*Mus. Brit.*): Malacca (*Strickland*): Tenasserim, (*Hume*) Penang (*Blyth*): Sumatra (*Boie*): Luzon, probably only a winter visitant in the Phillippines (*Walden*).

## 13.—Pericrocotus cantonensis.

*Hab.* Pretty common near Canton (*Swinhoe*); northwards to Foochow, and westwards to Szechuen (*Swinhoe*.)

## 14.—Pericrocotus erythropygius.

"I have found this Minivet extensively spread throughout India, but everywhere rare. I first procured it at Ajuntch, near Jalna; I afterwards saw it near Hyderabad; again near Segoor at the foot of the Neilgherries, and since in Bundelkund. Latham, too, describes it as the 'Cawnpore Flycatcher, so that it probably extends into the North-Western Provinces through the jungles of Gwalior; and since the above was written, Colonel Tytler informs me that it is common about Delhi (*Jerdon*): not very rare in the open country about Nagpur. (*Blanford*): only seen west of the Wardha in South-East Berar, and there not often (*Blanford*): tree jungles near to Marot and Koochamun, but never obtained at Sambhur (*Adam*): Catch,

not common (*Stoliczka*): Kattiawar, and Northern Guzerat, (*Butler and Hume.*)

## 15.—Pericrocotus albifrons.

*Hab.* Upper Burmah (*Jerdon*): Thayet-Myo, and in Upper Burmah, at least as far as Pajun; confined to the dry region of Burmah (*Blanford*); extremely local in Upper Pegu, and not common even in places which seem suitable to it; apart from the immediate neighbourhood of Thayet-Myo, it occurs only at Palow fifteen miles north (*Oates*).

---

## Anastomus oscitans.

By C. T. Bingham, Lieut., 33rd N. I.

Very little has been written about the breeding, changes of plumage, and habits of this curious bird.

I have seen several breeding places, and watched the birds in their wild state closely for the last two years, besides having kept several, old, and young at different times in confinement.

First as to its breeding. It nests in the Doab,* (where only I have seen and shot it) in July and August, generally in the neighbourhood of villages, frequenting the same trees, and repairing the old nests, if still extant, year after year. These latter are mere platforms of sticks some 4 inches thick, and 20 inches in diameter, with very shallow depressions in the centre, which I have observed to be in a few instances lined with tufts of grass, or a leaf or two; the majority of nests however have no lining. The trees chosen for nesting in, are generally lofty Peepul or Neem trees, in many cases growing in the very centre of villages. The number of eggs varies from 2 to 5, and their normal color is pure white; but as incubation proceeds, they get stained, so that hard set eggs are often of a deep yellowish brown color: they are oval in shape, and the texture is fine; the average measurements of 40 eggs are—length 2·20 inches, breadth 1·49 inches. As far as I know, the birds breed but once a year and always gregariously; at Umraha near Jusra, the second station, on the G. I. P. Railway, from Allahabad, I counted on one tree upwards of sixty nests.

My experience has led me to believe the Shell-eater to be anything but a "fierce bird," as Layard calls it. I never but once saw it defend its nest, and in that one instance it was only a feint after all, for the birds, male and female, flew off, when the man whom I had sent up to get the eggs closely approached

* In one instance only (across the Jumna, some 15 miles) have I found a breeding place out of the Doab.

them, notwithstanding that they had been opening their bills threateningly and making a clattering noise whilst he was still some yards below them.

Nor do they, as their brethren of Ceylon seem to do, keep a tree to themselves, at least not invariably. At Mohar, about 30 miles from Cawnpore, on an immense tamarind tree, Shell-eaters, and the White Ibis (*Threskiornis melanocephalus*) breed sociably together; the nests of the latter can however at once be distinguished by their smaller size.

The changes of plumage, and the change in the bill of the Shell Ibis, have misled both Colonel Sykes and Dr. Jerdon, *vide* "Birds of India," Vol. III.

To take the plumage first—that of the nestling is a light grey, a little darker on the head and neck, where the feathers are short and the webs hair-like: the upper back, winglet, primaries, secondaries, tertials, scapulars, and tail are black; shot with green and purple reflections; the naked skin about the chin, and base of the beak and the orbits, is greenish black; the bill, dark green; the legs, brown, tinged with pinky red (but generally covered by a whitish scurf of dirt and droppings) and the irides, brown. As the bird grows older, the grey assumes a lighter color, the black of the back disappears, and the irides get a darker brown. In May, through an actual change of color in the feathers themselves, the grey becomes pure white, and this is the breeding plumage, which lasts till the beginning of September, when the bird moults, and again assumes the grey phase of plumage.

*Secondly* as to the beak—in the nestling this measurs 3·20 inches to 3·40 inches taken from the gape, but increases rapidly, as in one shot in October it measured 4·10 inches; and in the adult measures sometimes as much as 7 inches. As is well-known the bills of old birds are characterized by a gape in the centre of the commissure, which, however, does *not* exist in the young, notwithstanding Colonel Sykes', and Dr. Jerdon's statements to the contrary. My belief is they were misled by seeing the old birds in grey plumage and taking them for young. It is not till the bird is four or five months old that this gape begins to show itself.

I give outline sketches* of the beaks of birds of different ages in my collection, which show the gradual development of the gape.

That this is caused by attrition from the shell-fish they chiefly feed on, I have not in my own mind the slightest doubt, but then Dr. Jerdon gives his opinion to the contrary founded chiefly on the mistaken idea of the gape existing in the young,

* Not received.—Ed., S. F.

and on his experience of seeing some blinded Shell-eaters feeding, *vide* "Birds of India," Vol. III.

All I can say is that I have watched the birds, frequently and carefully, feeding both in the fields, and in confinement, and invariably seen them proceed thus: on finding a large shell—some species of *Ampularia*, on which they chiefly feed—they take it to some dry spot, and there holding it firmly under one foot, break a hole by repeated blows from the point of the bill, into one of the upper convolutions of the shell, dragging out the fish piece-meal. The smaller shells, *and this is what I believe causes the attrition*, are crushed between the powerful mandibles and swallowed by repeated jerks of the head.

I may add that the young are fed with shell-fish after extraction from the shell,—this I had ample means of proving by watching the old birds.

In their wild state the birds haunt edges of jheels, but by preference rice fields, and rarely banks of rivers, feeding as above stated almost exclusively on shell-fish, with occasionally a frog or a fish, for I have found the remains of these in the stomachs of some I have shot. In confinement I have found that both old and young die, if kept long on an exclusively fish diet.

They are silent birds generally, but sometimes at night utter a curious laughing chattering noise with frequent clatterings of the bill.

In the breeding season they are more gregarious than at other times, but even in the cold season they are seldom seen singly.

C. T. B.

## Novelties?

### Criniger theiodes, *Sp. Nov.*

*Above hair brown, every feather broadly margined with dark olive green; lower surface sulphur yellow, brightest on the middle of abdomen, vent, and lower tail-coverts, and strongly suffused with olive on the breast, sides, and flanks; wing,* 3·25 *to* 3·45.

This species, which was met with by Mr. Davison only in the forests of Johore, about 30 miles north of Singapore, belongs possibly to the same minimum sub-division as *plumosus*, Blyth, *brunneus*, Blyth, and *pusillus*, Salvadori; but is more brightly colored than any of these. It is excessively difficult, I find, to make certain what species are indicated by the names given by some of the earlier writers; but after consulting such

works of reference, as I have available, I believe this species to be undescribed.

I am uncertain whether it ought properly to be classed as a *Criniger* or *Ixos*, but though it approximates closely to *C. ictericus*, and its affines, it seems to me to correspond most closely with *plumosus*, which I have hitherto followed Blyth in separating as an *Ixos*, though Salvadori, I see, and I am inclined to think with good reason, includes it as a *Criniger*.

I may premise that this supposed new species is at any rate not any one of those included by Dr. Finsch in his monograph (J. für O., 1867, *p.* 1), or in Count Salvadori's recent works (Uccelli di Borneo) in which I have found so many of our Malayan and Tenasserim birds, nor is it amongst the species enumerated in Blyth's or in Horsfield's catalogue, nor is it, to the best of my belief, included in Mr. Gray's Hand-list. That the bird should be still undescribed would not be surprising; for it belongs to a little sub-group of bulbuls, all the species of which are very confusingly similar, and the special locality where alone this bird was met with has not previously been much explored.

In color the upper surface differs scarcely perceptibly from what I take to be *Criniger Finschii* of Salvadori, but it differs in its stronger and more truly *Criniger*-like bill, and in the sharp-pointed sub-elongated coronal feathers. In this latter respect it resembles *Iole*, but differs from this in its less straight and somewhat deeper bill with slightly more arched culmen. To *plumosus* again it bears a strong general resemblance, and the bills are barely separable except that that of the present species is slightly broader at the base and perhaps slightly more compressed as a whole.

Three males were obtained. The dimensions recorded in the flesh were as follows:—Length, 7·0 to 7·5; expanse, 10·0 to 10·62; tail from vent, 2·82 to 3·25; wing, 3·25 to 3·37; tarsus, 0·55 to 0·65; bill, from gape, 0·8 to 0·9; weight, from a little over 0·75 oz. to a little over one oz.; upper mandible, black or very dark horny brown; lower mandible, pale plumbeous or pale brown tinged with plumbeous; irides, in two specimens sienna brown, in one litharge red legs and feet, pinkish brown or dark salmon fleshy.

The ground color of the entire upper surface is a hair brown, but except on the wings and tail, the feathers are so broadly margined with dark olive green, that this latter color altogether predominates.

On the crown and occiput the brown centres of the feathers are faintly noticeable, giving a slightly squammated appearance to these parts, and here and there on the back, also, the browner

centres of the feathers are faintly perceptible; on the rump the olive green is slightly yellower. The tail feathers have, I think, the faintest possible rufous tinge; but it is so faint that even in a good light one cannot be quite certain of it. The quills and tail feathers are margined with dull olive. The greater wing coverts are similar to the quills. The lesser and median similar to the back and scapulars. There are no pale tippings to any of the tail feathers. The chin and throat are pure, pale, sulphur yellow; the middle of the abdomen is a brighter sulphur yellow, in some specimens very bright. The vent and lower tail-coverts are similar, but not quite so bright, and the latter of a somewhat different shade verging perhaps towards primrose yellow. The sides of the neck, the entire breast and the whole of the sides and flanks seem to have a ground of pale dull sulphur yellow densely overlaid with dull olive green, with, in some, a greyish or brownish tinge. The edge of the wing at the carpal joint and the wing lining primrose yellow, brighter in some specimens; the inner margins of the quills, on the lower surface, a yellowish buffy white. The lores, orbital region, cheeks, and ear-coverts, olive green with more or less of a faintly dotted appearance, owing apparently to the brown bases of the feathers shewing through.

This species is essentially a forest bird, and even where it was obtained, it was apparently rare. Like the rest of its congeners at the time it was found to be feeding greedily on a small berry in company with *Ixidia cyaniventris*, *Ixus plumosus*, *brunneus*, *pusillus*, *C. Finschii*, *&c.* All of which, it has to be noted, except the first, exhibit a sort of general resemblance in tint and seem to have been specially designed to avoid notice in the leafy shades which they frequent. The note is that of the *Crinigers*, and it has the same habit of puffing out the feathers of the throat, that is so conspicuous in these.—A. O. H.

## Recently described Species.

### Republications.

### Suthora munipurensis, *G.-Aust.* and *Wald.*

*Description.*—Crown of head cinnamon brown, becoming more olivaceous or fulvous green on back; shoulder of wing, greenish umber; primaries black, the first four edged white, the rest crossed with a bright fulvous bar on the outer webs; the secondaries edged broadly with fulvous, and a few of the last tipped white on inner web; tail ruddy fulvous at base, paling towards the end, which is dusky and indistinctly barred, a

broad supercilium black, lores and narrow circle round the eye, pure white; ear-coverts and side of neck grey; chin and throat black, merging into pearly grey and white on the breast; under tail-coverts, pure white.

Length, 4·5; wing 1·8; tail, 2·4; tarsus, ·77; bill, at front, ·28.

Obtained by Mr. William Robert, near Karakhul, Munipur hills.—*Ibis*, 1875, p. 250.

---

## Sphenocichla,* *Wald.*

Bill longer than the head, conical, straight, and acute. Culmen, from region of the nostrils to the forehead, much compressed; from nostril to apex swollen and flattened; nostrils protected by a scale-like cover and shaded by dense nareal tufts; commissure almost straight; lower mandible flatsided; gonys broad, more flat than rounded, but slightly curved; tarsus strong, moderately long; hallux and claw well developed; outer toes equal and but slightly shorter than the middle; wing short, rounded; first primary half as long as second; second, third, and fourth about equal; fifth longest. Outer pair of rectrices short, next pair shorter than remainder.

## Sphenocichla Roberti, *G.-Aust.* and *Wald.*

General coloration throughout dark umber brown, richer on the wings and tail, which are closely barred with black; feathers of the nape and back edged with darker brown, and with an inconspicuous pale spot near tip; these spots are more defined on the side of the neck. The feathers of the throat, neck, and breast are lanceolate, with a white edging showing as V-shaped markings; towards the abdomen these become less conspicuous, and only a few white spots dot the flanks; bill grey, pale beneath and at tip.

Length, about 6·5; wing, 2·8; tail, 3·0; tarsus, ·93; bill at front, ·87; depth at base, ·4.

Shot on Hemes Peak, North Cachar hills, and also in the Munipur hills.

This anomalous form has the structure of a *Turdinus* and the bill of a *Stachyris*.†—*Ibis*, 1875, p. 250.

## Acridotheres albocinctus, *G.-Aust.* and *Wald.*

Top of head glossy black; feathers rather elongated, and a white collar on back of neck; back dull grey-black, with a

---

* This may be the same genus as that named *Heterorhynchus* by Mandelli,; but if so, that title cannot stand, having been previously employed by Lafresnaye, *Wald.*

† This I take to be the most characteristic feature; I had named the genus "*Stachyrirhynchus*," but Mr. Brooks persuaded Mr. Mandelli to change it to *Heterorhynchus*.—Ed., S. F.

slight green tinge, and with a tendency to purple on the shoulders and wing-coverts; tail black with green reflections; primaries black, white at base, forming a wing-band; secondaries warm sepia-brown. Beneath dull, but dark greenish grey; upper tail-coverts black, tipped white, and arranged in bars. All the tail feathers tipped with white, except the two centre ones; bill and legs, yellow.

Length, about 9; wing, 5; tail, 3·5; tarsus, 1·4; bill at front, ·91.

Appears numerous in Munipur Valley, where the type was obtained.—*Ibis*, 1875, p. 251.

## Pnœpyga Roberti, *G.-Aust.* and *Wald.*

Above olive brown, each feather pale-centred and fringed, or tipped with dark brown; lores albescent. Between the eyes and the rictus black. A well-defined streak extending from above the eye down each side of the head, fulvous; ear-coverts cinereous at base, brown towards the tips; chin and throat pure white, each throat feather being terminated by a small black triangular drop; as the tips of the feathers overlap, these drops form continuous black lines, the two principal ones descending from the angles of the under mandible; cheeks ferruginous; each feather with a black terminal drop; pectoral and abdominal feathers pale brown, with broad pure white or fulvous-white centres; under tail-coverts bright ferruginous yellow; plumage on the rump loose, soft, and dense, completely concealing the short tail, and being of an almost uniform ferruginous brown colour; wings, when closed, dark chocolate-brown, most intense on the secondaries. Most of the wing-coverts distinctly tipped with almost pure white, so also the inner tertiary quills; rectrices, chocolate-brown; mandibles, dark brown; legs, pale horn-brown.

Bill, from nostril, ·37; wing, 2·15; tarsus, ·75; tail, 1·15. Described from specimens obtained at Chakha, in the Munipur hills, and also at Asalu.

In general appearance this bird closely resembles *Turdinus brevicaudatus*. The upper plumage of the two is almost identical. By its much smaller dimensions and diminutive tail, however, it can be readily distinguished. It is the *Pnoepyga caudata*, Blyth, apud Godwin-Austen, (J. A. S. B., 1870, p. 101. No. 331).—*Ibis* 1875, *p.* 252.

## Pnœpyga chocolatina, *G.-Aust.* and *Wald.*

Above olive-brown, each feather fringed with a somewhat fainter tint, thus imparting a subdued scaly aspect to the back; wings and tail, chocolate brown; upper and under tail-coverts, ferruginous brown, brightest on the under coverts; lower

surface generally ferruginous brown, many of the abdominal feathers being largely centred with white or fulvous white; pectoral feathers with minute terminal white drops, or some with narrow white or fulvous white centres. A few almost pure white feathers on the middle of the breast; chin, white; gular feathers, white, with pale fulvous or ferruginous edges; bill, dark brown; legs, pale flesh-colour.

Bill, from nostrils, ·25; wing, 1·87; tarsus, ·75; tail, 1·75.

Described from a specimen obtained at Kedimai, in the Munipur hills.

This species and *P. longicaudatus* constitute a section of the genus *Pnoepyga*, in which the tail is fully developed.—*Ibis*, 1875, *p.* 252.

---

## Actinura daflaensis, *Godwin-Austen.*

Among the birds collected by me on the Expedition into the Dafla hills, Assam, last winter, one of the most interesting forms is the *Actinura* I now describe. As might be expected, its nearest ally is *A. nipalensis*, Hodgs., the coloration above being very similar on the back and tail, but with less rufous barring. The crest, however, is quite different; and in this respect the species approaches *A. Waldeni* from the Naga hills, on the south of the Brahmaputra valley, only that the crest is far fuller. The general blotchy streakiness of the throat and breast is also a mark of connexion with *A. Waldeni*. On comparison, it is seen that *Actinura daflaensis* bears the same relation to *nipalensis* that *Waldeni* does to *Egertoni*.

The genus is a very well-marked one; and we can now record from the Indian region five species (including *A. Ramsayi* from Tonghoo, in Burmah, described by Viscount Walden in 'Ann. & Mag. Nat. Hist.' for June 1875), viz.:—1. *A. Egertoni*, Gould; 2. *A. nipalensis*, Hodgson; 3. *A. Waldeni*,* Godwin-Austen; 4. *A. daflaensis*, Godwin-Austen; 5. *A. Ramsayi*,† Walden. The last is a very distinct and interesting bird, a departure from the East-Himalayan type, but yet in every point a true *Actinura*.

*Male.* Above—head, ash-brown; feathers in front spatulate, behind elongated into a full crest, narrowly pale-edged; the ash tint pales on back of neck, and merges into the strong rusty brown of the back and upper tail-coverts; base of tail-feathers of same colour, followed by four or five black bars, and the terminal half all black, the three outer tipped white, with a slight tendency to barring on the extreme outer web;

* S. F., III., 396.
† S. F., III., 404.

side of head ash-grey, the ear-coverts with light silky reflections; shoulder of wing rusty brown; first primary coverts tipped with grey, forming a distinct narrow band, the last (covering the first* seven primaries) black, forming a patch; the primaries are sienna-brown, outermost edged with hoary grey, black on inner webs and extremities, and narrowly barred with black on the terminal outer web; secondaries evenly and narrowly barred black and pale olivaceous umber. Beneath—the chin and throat pale dingy white, becoming a dirty ochry ash on the breast, with a blurry striation particularly on the throat; flanks and under tail-coverts rusty brown; tail beneath ashy black, the outermost feathers distinctly barred. Bill dark horny, legs the same; irides——?

Length 7·5 inches; wing, 3·5; tail, 3·2; tarsus, 1·3; bill at front, 0·68.

*Hab.* In high forest at 7,000 feet, Dafla hills, and first shot on Shengorh Peak in February.—Godwin-Austen, A. & M. N. H., November 1875.

---

## †Catalogue of the Striges, or Nocturnal Birds of Prey, By R. Bowdler Sharpe &c. &c.

We have now to acknowledge, with many thanks, this, the second instalment of Mr. Sharpe's great contemplated work, which is nothing less than an elaborate, systematic, and descriptive catalogue of all known birds.

The present volume comprises the whole of the *Nocturnal*, just as the former one, (see S. F., Vol. II., p. 501) included all the *Diurnal*, birds of prey, and has been worked out with the same ability and conscientious industry that characterized its predecessor.

Nearly 200 species are fully, in most cases it might be said, exhaustively described, and the identification of species is greatly facilitated by carefully designed diagnostical keys to genera and species. The labour involved in the production of this volume, must have been enormous, and though there are many minor points in which we are unable to concur with Mr. Sharpe, no impartial critic can deny that the result is fully commensurate with the pains bestowed upon it. Last, but hardly least, 21

* ? "last"—Ed., S. F.

† Printed by order of the Trustees of the British Museum. *Sold* by B. Quaritch, 15, Piccadilly, W., London.

species are figured, and produced as these figures have been under Mr. Sharpe's own skilled supervision, they are probably amongst the most satisfactory yet given to the world; certainly we have never seen any plates that pleased us *more* than those of *Scops magicus* and *guatemalæ*.

To the majority of our Indian readers, who have to work far away from museums or libraries, this work of Mr. Sharpe's will be simply invaluable. Doubtless even these volumes are still far from complete, and despite all conceivable care still probably embody many errors, but this in the present state of the science of ornithology was unavoidable, and we have no doubt, that they are, on the whole, as perfect as they could possibly have been made *without* inordinately delaying their publication.

I would lay particular stress upon this latter point, because some ornithologists writing to us from Europe have expressed a regret that Mr. Sharpe is "in such a hurry to issue his catalogue." To those ornithologists, comparatively few in number, who already possess for the elucidation of their difficulties, all those facilities which the world's capitals afford, this may be a natural view, but by the great majority—the workers by flood and fell, the men who are gathering bricks for the temple of science far a field—Mr. Sharpe's courageous resolve to get out his work with the least possible delay even at the risk of leaving some few blemishes in it, will be accounted one of his most especial merits.

Thirsty workers in a desert, they want water, and water at once. It is all very well for those who "live at home at ease" to spy out a speck or two here and there, and blame the water carrier for not having delayed to filter it again and again, but those who really lack the draught, care little for this, and too thankful for the boon conferred to carp at petty defects, feel unalloyed gratitude to him who has succoured their need, and succoured it so promptly.

An eminent ornithologist writes to us that in his "opinion Mr. Sharpe would have better consulted his own reputation had he kept back these catalogues some few years," and perhaps in a certain very limited sense of "reputation," this may, as regards the immediate present, be to a certain extent true. No one however is better aware of this fact than our author himself, but he deliberately prefers the interests of his favourite science to any temporary reputation of his own. Let who will find fault, he is quite content so long as he satisfies, as quickly and as thoroughly as possible, the urgent want for information (of the very nature supplied by these volumes) which is harassing every working ornithologist, out of Europe and the United States.

How urgent this want was and *is*, as regards the *great* majority of families and genera, can scarcely be appreciated by those at home, but we have only to compare this new catalogue with Bonaparte's Conspectus, or Schlegel's *Musèum* (useful and admirable as both were in their way and time) to see how great an advance has been effected.

Ornithology had just reached a stage when some such comprehensive catalogue was a necessity. When some gathering up and arrangement of the vast confused mass of materials collected by hundreds of workers was indispensable as a standpoint for further progress, and at the right time, and as we think in the right manner, Mr. Sharpe has come forward to supply that need.

Already the publication of the "*Accipitres*" has borne fruit in a series of valuable articles by Mr. Gurney, embracing information which, but for Mr. Sharpe's labours, he might never have put on record, and this is probably one only of innumerable similar increments to our knowledge that will be heaped upon the platform that our author has so boldly and quickly raised.

We have secured now a definite nucleus, around which facts will crystalize rapidly, and when some years hence Mr. Sharpe republishes in a more complete form his present work, it will, we believe, be found that a most material proportion of the progress effected in the interim has been rendered possible mainly by the present issue of this first edition.

To us there seems to be no doubt, that this is eminently a case of *bis dat qui cito dat*, and so far from urging our author to delay for purposes of greater elaboration the issue of future volumes, we would, on the contrary, exhort him to push on the work with the utmost possible rapidity, so that he may secure at the earliest moment, for the further revision, of each family, the co-operation of the great body of working ornithologists,—a co-operation which these volumes renders possible and probable, but which without them, could only in rare cases have been obtained.

By all means let us have criticism; the keener and closer the better, and for this, we are quite sure, Mr. Sharpe himself will be the warmest advocate, for, though the ornithological public do not yet perhaps quite realize it, he is very quietly and cleverly killing two birds with one stone, and while ministering to the immediate wants of multitudes, especially of those who labour in little trodden fields, and thus rendering rapid progress possible, he is also securing the unpaid co-operation of "all the talents" for many years in the correction of these first proofs (for that is what they really are) of one important section of the future work on which his real reputation with posterity will rest.

If only Fate spares him for another 30 years, and he is so young that this may reasonably be hoped for, we entertain no fears that Mr. Sharpe will ever see cause for regretting the generous enthusiasm, with which, regardless of possible adverse criticism, he has unselfishly plunged into the gigantic preliminary toil of supplying to those whose opportunities are greatest for contributing to the progress of ornithology, just what they most stand in need of, and just what is most likely to direct their labours into reproductive channels.

But even should he never live to accomplish *all* that he manifestly aims at, to *do* good work, is the noblest object any man can set before him. Whether the world at the time, or indeed ever, rightly recognizes the worker, is a minor consideration, so long as the work, which must bear due fruit in its appointed season, is really done;

"Worth is the ocean,
Fame is but the bruit that roars along the shallows."

and for the matter of worth, of honest work, Mr. Sharpe's career, brief though it has as yet been, furnishes, in our opinion, a noteworthy example of what one man *can* deserve and do;

....."A soul of fire,
No critics fright him and no labours tire."

and still in the early morning of his manhood he can fairly claim to have already left

"Footprints in the sands of time"

destined to brave for many a long year yet, the abrading influences of Time and Progress.

A. O. H.

---

## A third* list of the Birds of the Tenasserim Provinces.

A vast amount of hard work has added but very few species to our list; altogether we have only secured 21 species, not entered in either of our former lists. These 21 are as follow:—

71*bis*.—Bubo orientalis, *Horsf.* Rare. *Hankachin*, Tenasserim River.

87.—Cotyle riparia, *Lin. Theinzeik*, *Thatone*, *Kyketo*. Not rare here.

86.—Chætura indica, *Hume*. *Bankasoon*. Not uncommon; identical with those from Southern India and the Andamans.

96*bis*.—Chætura gigantea, *V. Hass. Malewoon*. Single specimen identical with those from Java and the Straits.

103*quint*.—Collocalia maxima, *Hume*. *Mergui*, *Bankasoon*.

268*ter*.—Volvocivora fimbriata, *Tem. Malewoon*. Rare.

308.—Cyornis magnirostris, *Blyth*. *Bankasoon*, &c.

514.—Cyanecula suecica, *Lin. Kyketo*. Not common.

* See Vol. II., p. 467, and III., p. 317.

695.—Ploceus manyar, *Horsf. Kyketo, Beeling.*
719.—Emberiza fucata, *Pallas. Beeling.* Only one specimen seen.
724.—Melophus melanicterus, *Gmel., Beeling.* Rare.
767.—Alauda gulgula, *Frankl. Thatone, Kyketo,* &c. Very common.
776 *bis.*—Osmotreron fulvicollis, *Wagler. Bankasoon, Malewoon.* Very common in December.
880.—Philomachus pugnax, *Lin. Mouth of Sitang.* Rare.
896.—Totanus fuscus, *Lin. Banks of Sitang.*
984.—Hydrochelidon indica, *Steph. Thatone, Wan chaun, mouths of Sitang and Salween.* Common.
985*bis.*—Sterna paradisea, *Brün. Off mouth of Lynah creek.*
987.—Sterna melanogaster, *Tem. Thatone, Sitang and Salween Rivers* Common.
995.—Rhynchops albicollis, *Swains. Lower portions of Sitang and Salween River.*
1004.—Pelecanus philippensis, *Gmel. Kyketo.*
1006.—Graculus fuscicollis, *Steph. Kyketo.*

These would make the total number of species from Tenasserim 531, but we must reduce this number by one; because since I last drew attention to the subject, (III., p. 348*n.*) I have succeeded in identifying one of Beavan's supposed new species, *viz.*, *Gelochelidon innotata.*

Mr. Davison had been collecting Gulls and Terns for me very largely in the very same locality in which Captain Beavan's bird was obtained, and at the same season. Amongst the birds sent by Mr. Davison, were about a dozen that he had at once identified from the original description as *innotata.* Some of them corresponded *exactly* both as to measurements, plumage and color of the soft parts. Unquestionably the identification was correct, *but* the instant I saw them I saw that they were only the young of *Hydrochelidon indica.*

Besides the above novelties, we have succeeded in securing, for the first time, specimens of the following eight species, which were entered (but printed in italics) in our first list (II. 467.)—

34*ter.*—Spizaetus alboniger, *Blyth.*
65*bis.*—Syrnium seloputo, *Horsf.*
100*bis.*—Cypselus subfurcatus, *Blyth.*
153*ter.*—Psittinus incertus, *Shaw.*
468*ter.*—Ægithina scapularis, *Horsf.*
941.—Thresciornis melanocephalus, *Lin.*
991.—Onychoprion melanauchen, *Tem.*
1005.—Graculus carbo, *Lin.*

Out of the 530 species that I now include, there remain still no less than 70 of which we have not as yet preserved

specimens. Of these, nearly half have been seen, a considerable number pertain to the high hills about Mooleyit, which we have not yet worked, and the occurrence of the remainder, a very few, is more or less doubtful.

It is hoped that by the close of this new year we may be in a position to furnish a fair account of the Ornis of the Tenasserim Provinces.

A. O. H.

## Notes.

I HAVE to add—

**299*bis*.—Butalis grisola,** *Lin.*, to the Avifauna of Sindh, having recently received a specimen, obtained near Kotree, at the end of August.—(cf. III., p. 467) Also

**834.—Turnix joudera,** *Hodgs.*, obtained near Kurrachee, by Major A. Le Messurier, in August. This raises the Sindh list (see I., 148, 419, III. 378-382,417) to 295 species.

---

TO CAPTAIN C. H. T. Marshall is due the credit of being the first to notice the occurrence of *Querquedula falcata*, Gorgi., in India. He has recently sent us a young male, obtained at the Bazida jheel in the Kurnal district. He at once recognized the species and notified its occurrence to us, and to him belongs the credit of causing its appearance in India to be recorded.

At the same time it is due to Dr. Bonavia to state that years ago, before STRAY FEATHERS came into existence, he very kindly presented us with specimens of this Duck and of *Clangula glaucion*, which he had procured in Oudh, as examples of species not included in Dr. Jerdon's work, and with which he was unacquainted. It was owing partly to pressure of other work and partly to the absence of any vehicle, such as STRAY FEATHERS for giving publicity to such isolated scraps of news, that the birds after being catalogued were put away in the Museum, and the fact that the occurrence of this species in Upper India had never been published, overlooked.

## Letters to the Editor.

SIR,

PERMIT me to make a few remarks on a paper by Mr. Edwin Brooks, C.E., "Notes upon a collection of Birds made between Mussoorie and Gangaotrie in May 1874," which appeared in "STRAY FEATHERS" for 1875. Mr. Brooks may be a close observer, but his paper only seems to shew how even a close

observer may be deceived and led astray when only a casual visitor to a place. It makes one inclined to log it down as an axiom that no one ought to write about a place till he has been in it years, or months at least.

As a beginning, Mr. Brooks laments the destruction of the forests, and attributes to it his ill-success in getting birds. Then he calls the destruction, wanton and wholesale. But I will transcribe a few paragraphs. "Many of these latter (short logs which stud the river bed from end to end) appear to be stranded beyond the reach of ordinary floods, and there they remain rotting away until an extraordinary flood comes which will remove them. Such wanton and wholesale destruction of the timber of a fine valley is not to be met with anywhere else upon the face of the earth I believe. As a natural result birds have become scarce * * * * * * 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 firewood." * * * *

First about the logs. If Mr. Brooks had met with an Ostrich, or even a Moa, on the sands, it would not have been a more remarkable thing than the fact that it did not strike him, an Engineer, that these logs would *not* remain "rotting away till an extraordinary flood came," but would be removed by human agency. Had he been a month or two later, he would have seen the sands swarming with men rolling the logs into the water and floating them off. Unfortunately for my purse, most of the logs put into the river, strand and have to be rolled in again several times, on this long stretch of sand, ere they get fairly off on their journey. What Mr. Brooks saw was a mere nothing. In May 1874 there were about 3,000 logs on the sands, I have seen nearly 20,000. It will be a satisfaction to Mr. Brooks to know that all the logs he saw have long ago been made into railway sleepers, and should he travel on the Rajpootana or Hattrass State Railway, he may have them under his feet.

Next for the "huge pines high up on the hill side cut down and rotting away for which there are no existing means whatsoever of transport to the river." Mr. Brooks is a *Civil* (?) Engineer, and it is, I believe, a portion of his work to contrive means of transport in such cases. Here is another remarkable thing; a whale, or the great sea-serpent, in the river, or a mammoth or mastodon, in the forest, would hardly have been more remarkable; for though Mr. Brooks, a Civil Engineer, could not see it, there were means of transport in every case, and without the aid of genii or fairies these huge pines have long ago been

transported to the river and floated off, and with the logs are now on the abovenamed railways as sleepers, or in their stores.

I regret, as much as Mr. Brooks, the sad necessity of destroying these grand old forests. So do I regret the sad fact that we "can't keep our cake and eat it;" and it seems we can't have railways and leave the forests undisturbed. There is satisfaction no doubt in gazing on, or wandering through, a primeval forest. So also there is satisfaction in starting from Calcutta with the knowledge that next day you will be in the North-West, instead of the weeks or months of travelling which the journey would have taken not so very many years ago. Let us hope this will be some consolation to Mr. Brooks also.

The truth of the matter about the logs and trees and forest, or rather the explanation of it, is, that Mr. Brooks got to the place just before work recommenced for the season; and he seems to have come to the strange conclusion that everything was to be left for ever just as he saw it. I got to Hursil, which is three miles below Derallee, the very day he passed it on his return, and a week later he would probably have concluded the shouting of the men, and other noises connected with the work, had frightened all the birds away. He certainly would never have entertained the idea that any of the felled timber would be left to rot.

His thinking the destruction of the forest has caused a diminution in the number of birds, is quite as great a mistake, for the proportion of felled forest is very small, indeed compared to the whole. Birds never were very numerous, and if Mr. Brooks saw the place in midwinter he would not wonder at it. The Derallee side of the valley is quite buried in snow for two or three months, and most of the birds are only summer visitors. The only ones which have really decreased in numbers are *Ibidorhynchus Struthersii*, and a few others which breed on the sands. The lee of a stranded log is a convenient place for a nest, and when the logs are rolled away in the breeding season, which in most years they are, most of the nests are doubtless destroyed.

As to *Lophophorus Impeyanus*, which, Mr. Brooks says, will soon be extinct in this part of the world, I have very little doubt that in May 1874, they were just as numerous at, and above, Derallee as they were before either he or I was born. The truth is, they never were, and never will be, numerous here, the winter being too severe for them. In the 40 years I have been in this part of the country, I do not think that as many Moonalls have been shot above Derallee, by myself, my men, the villagers, and visitors, altogether. Moonalls are numerous only *south* of the snowy ranges, and Derallee is due *north* of the first one. Not a dozen have in all these years been brought for sale "to the godown below Derallee, where the price is Rs. 2-8."

The nearest one to which they are brought in any number being at Betwaree, *twenty* miles lower down the valley.

Mr. Brooks complains also that large game shooting up the Bhageruttee is a profound mistake, and that no European sportsman going up the valley should dream of even a chance shot. So no doubt it is for those who won't take the trouble to hunt after it, and believe all that an interested villager may tell them. I should have been glad to prove to Mr. Brooks that his thinking so was a far greater mistake. That large game is now much scarcer than it was, is certainly true, but that it is not a "thing of the past," is shewn by the fact that, a very few days after Mr. Brooks passed Hursil, my son went out up the Nela valley, and within ten or twelve miles of our house, shot in three days, eleven male Ovis Burhel and a Snow Bear. The skull of one of these Burhel was sent to you, Mr. Editor, in 1875, and was said by you to be one of the finest you had ever seen.* Mr. Brooks says, nothing will tempt him to come again, but if you, Mr. Editor, ever favour our out-of-the-way place with a visit, I certainly would not recommend you to leave your rifle behind you as "an useless encumbrance."

Another complaint is about the price of grain. This is regulated by what it costs to collect it in, (for the locality,) large quantities from the surrounding districts, and this is found to be about a rupee for eight seers. Mr. Brooks must have been imposed upon if he got four or five only. It is supplied to travellers by the villagers, and they are generally loth to part with any even at that rate. Where Mr. Brooks' *bunniahs* come from I cannot imagine. There is not one within forty miles of the place.

I can sympathize with Mr. Brooks on being deprived of milk for his tea or coffee for the week he was above Derallee. But surely he did not expect to find the valley flowing, not metaphorically, but *actually*, with milk and honey? Yet how else could he expect to get milk in a totally uninhabited place unless he took some milch animal with him?

There, I also have said quite enough about our charming valley and its so-called "misfortunes." Enough at least I hope to set Mr. Brooks' mind at rest about them, and shew him how advisable it is, when in a strange place, to enquire a little about things before jumping to conclusions.

MOUNTAINEER.

HURDWAR, *February* 10*th*, 1876.

---

* I think it is the finest on record, each horn measures 31 inches in length, and over 13 inches in girth at the base.—ED., S. F.

DRYMOIPUS TERRICOLOR and DRYMOIPUS LONGICAUDATUS.

SIR,

In reference to Messrs. Butler's and Hume's remarks, STRAY FEATHERS, 1875, p. 483, I wish to make one or two further observations.

1. The bill, as in *Drymoipus rufescens*, is very variable as regards size, and I certainly do not find in my series that one has a larger bill than the other. In the cold weather the bulk of the examples procured will be young birds of the year, and short bills will predominate. They are then all in the rufous *longicaudatus* plumage.

2. The procuring of a July example in *longicaudatus* plumage is not conclusive. The bird may have missed the usual spring change, or perhaps the autumnal young birds don't put on the summer *terricolor* plumage the first spring. We know that *Ianthia rufilata* and *Siphia leucomelanura*, also *Erythrosterna parva* do not put on full male plumage during their first spring. I have shot males of the two former breeding in the female plumage. Perhaps then the young birds of *Drymoipus terricolor, which must moult later than the parent birds,* do not moult again in the spring; and thus in a northern part of the country, where plumage fades less than in the damp hot southern portions, we might have a fairly preserved specimen in typical *longicaudatus* plumage. This question can be worked out by some one who has the time and the opportunity.

3. The two forms have very different tails. This is a strong point, but is in favour of identity. I have seen many changing birds, and have seen the feathers of the new *terricolor* tail growing alongside of the rufous, and very much longer *longicaudatus* tail. The new secondaries and tertials, when either change is taking place, contract strongly with the old plumage of the other form. This is best observed at the autumn change, when the new feathers are edged with deep rufous.

As far as my observation goes, the question of identity is established, and we have facts to deal with which cannot be disposed of.

I do not know whether it has been observed that *Prinia Stewarti* undergoes a similar change; acquiring a shorter spring tail, and a darker grey head, losing also the faint supercilium observable in some autumnal birds; which supercilium, I believe, is always present in the young bird.

CURRUCA AFFINIS AND CURRUCA GARRULA.

I have examined a great number of the former since I last wrote on the subject. The strong point of difference is the different form of the two wings: the 2nd quill being proportionally longer in the European bird. Its plumage is softer

and the dark cheek does not contrast so strongly as in the Indian species.—W. E. Brooks.

Cawnpore.

---

Sir,

I have been the usual round of the Kurrachee Districts this year and I have got some more of the Crowned Sandgrouse (*P. coronatus*), but I spoilt the skins very much I am sorry to say; however I am sending you one male and one female which I hope may be of some use. The latter is a very dark plumaged bird. I also send one male and two females of what I take to be *Pterocles Lichtensteini*, which you mention in Stray Feathers as having shot in Sind near Mehur. I see Jerdon mentions that "*Lichtensteini*" is not unlike *fasciatus*, but differs in being *larger*." Now I have shot great numbers of "*fasciatus*" in Khandesh and am certain it is a larger* and heavier bird than the ones I send you for "*Lichtensteini*."

These birds I killed under the bare sandy Ibex hills and got them at the water *after* dusk. I have watched for them three or four times and they never come until it is just dark and are therefore difficult to get. They come in flocks of five or six, but I only succeeded in shooting the three I now send you, and they are the *smallest* kind of Sandgrouse I have killed, and I have shot the following:—*arenarius*, *fasciatus*, *exustus*, *coronatus*, and *senegallus*. Last cold weather not a single one of *arenarius* was to be found in the Kurrachee District. I made every inquiry for them as I had never seen one, but without success. This year they were in large numbers to the north of the Munchur, and I killed one bird out of five I saw as far south as Kotree and I cannot hear of their ever having been seen so low down before.—Frank Wise.

Kurrachee District.

---

Sir,

During a recent visit to Egypt, I shot several Stilts (*Himantopus candidus*, Bonn.) the plumage of whose heads is to me a mystery, but perhaps you who live in India may be able to explain whether the white head is the distinguishing mark of the summer plumage. Two adults, apparently shot in the spring, have the one a dark brown head and neck, the other those parts white.—J. H. Gurney, Junior.

Northrepps Hall, Norwich.

---

* For exact dimensions see. Vol. I., p. 219.

# STRAY FEATHERS.

**Vol. IV.]** **DECEMBER 1876.** **[Nos. 4, 5, & 6.**


## Notes on some Birds collected in Sambalpur and Orissa.


By V. Ball, M.A., F.G.S.

*Geological Survey of India.*


In the present paper I only purpose to enumerate species which are either not included in my account of the avi-fauna of Chota Nagpur,* or which, if included, are noted as being rare in that part of the country.

Already in my paper of *Addenda*† I have mentioned the occurrence of a few birds in Sambalpur which come under one or other of these heads. The species so indicated were respectively—

1. *Otus brachyotus*, Gmel.; *Bulacca ocellata*, Less.; and *Chætornis striatus*, Jerd. 2 *Acanthylis sylvatica*, Tick.; *Pericrocotus erythropygius*, Jerd.; *Chibia hottentota*, Linn.; *Muscicapula superciliaris*, Jerd.; and *Esacus recurvirostris*, Cuv.

To avoid confusion the birds from Sambalpur are kept distinct from those of Orissa; for, while the two faunas have much in common, there are also many important differences. In Orissa, at least in those parts influenced by the sea-air, the vegetation is wholly different from that of the jungles of Sambalpur; and with the change in vegetation appear certain species of birds which do not occur in the more inland district; moreover the long coast face of Orissa yields many marine species which never leave the immediate vicinity of the sea.

### Sambalpur.

### 115.—Harpactes fasciatus, *Gmel.*

For several years I have kept steadily in view the desirability of obtaining some confirmatory evidence of the occurrence of the Malabar Trogon in the jungles of the south-west frontier of Bengal and adjoining portions of the Central Provinces. Tickell's single specimen (a female) from Dampura in

* S. F., Vol. II., pp. 355—440.
† S. F., Vol. III., pp. 288—294.

Dholbhum having been the only recorded example from these jungles.

In January of the present year, when encamped at the village of Nakrideol in Rehrakole (a native state belonging to Sambalpur) I saw and shot my first specimen. The locality was an ancient mango-grove, with a copious undergrowth in which I also obtained several other interesting and rare birds.

The bird in question suddenly rose *from the ground* in front of me and perched on a low branch. Seeing it was not a *Taccocua*, as I at the first glance supposed it to be, I was fairly puzzled as to its identity until I shot it, when I was rejoiced to find that it was a female Trogon. Nearly three months later, when returning through the same part of the country, I saw another female in the fine forest jungle to the west of Rampur (the chief town of Rehrakole). This I did not shoot, as it kept flitting from tree to tree in front of me, out of range, finally disappearing.

My specimen contained a caterpillar, besides insects in its stomach, so that the species probably does not exclusively feed on the wing as is generally stated to be the case.

The measurements taken in the flesh are:—

Length, 11″·5; expanse, 13″·25; wing, 5″·; tail, 7″·; tarsus, 0″·6; bill from gape, 1″·.

## 246.—Salpornis spilonota, *Frankl.*

I saw and shot only two specimens of the Spotted Grey Creeper in Sambalpur. It is probably quite as rare there as it is in Chota Nagpur.

I shot them early in March on the south bank of the Mahanadi, close to the village of Kurumkel, 22 miles north-west of Sambalpur town.

## 273.—Pericrocotus brevirostris, *Vigors.*

Together with a good series of *P. speciosus* which I recently collected in Sambalpur and the Tributary States of Orissa, I have three males of *P. brevirostris* from the former locality. They were all shot in February within six days of one another, and therefore in the same tract of country—the valley of the Ebe, about twenty miles north of the station of Sambalpur. Though I continued to meet with *P. speciosus* up till May, I did not see *P. brevirostris* again after the above given date. It is therefore most probable that it is only a cold-weather visitant to Sambalpur. In going to and fro it may very possibly pass through Lower Bengal, and the statement by Dr. Jerdon that it is a visitor there, though attributed by Mr. Blyth to a slip of the pen, is not improbably correct.

Although stated by Captain Beavan to occur in Manbhum, I did not insert it in my list of Chota Nagpur birds, as I might doubtless have done with perfect safety.

## 284.—Dissemurus malabaroides, *Hodgs.*

The large Racket-tailed Drongo or Bhimraj occurs very abundantly in Sambalpur and Western Orissa, though it is so rare further north in Chota Nagpur.

As much interest attaches to the subject of the distribution of the different races of this bird, I give a series of measurements from some of my specimens:—

| | | Length. | Wing. | Tail. | | Bill from gape. | Tarse. | Frontal crest. |
|---|---|---|---|---|---|---|---|---|
| Rehrakole | ♂ ... | 22″·0 | 7″·0 | 7″·0 | +9″·0 | 1″·5 | 1″·2 | 2″·1 |
| Sambalpur | ♂ ... | 19″·5 | 6″·25 | 6″·0 | +6″·5 | 1″·75 | 1″·1 | 2″·1 |
| Ungul | ♂ ... | 18″·4 | 6″·25 | 6″·0 | +6″·4 | 1″·5 | 1″·1 | 1″·5 |
| Talchir | ♂ ... | 18″·2 | 6″·5 | 6″·8 | +6″·0 | 1″·7 | 1″·1 | 1″·7 |
| Ungul | ♀ ... | 20″·2 | 6″·25 | 6″·1 | +7″·9 | 1″·6 | 1″·1 | 2″·0 |
| Rehrakole | ♀ ... | 20″·15 | 6″·5 | 6″·6 | +7″·55 | 1″·5 | 1″·1 | 1″·5 |
| „ | ♀ ... | 16″·3 | 6″·0 | 6″·0 | +4″·6 | 1″·5 | 1″·0 | 1″·3 |
| „ | ♀ ... | 16″·8 | 6″·0 | 6″·25 | +4″·8 | 1″·5 | 1″·0 | 1″·6 |

In the two last, the shaft of the outer tail feathers is narrowly barbed throughout the portion which is usually bare. They were shot in January, and are probably birds of the previous season.

It will be observed that the dimensions, though variable between individuals, do not appear to be influenced in any marked degree by sex.

## 440.—Megalurus palustris, *Horsf.*

Within the limits of the Sambalpur district, the Striated Marsh-bubbler is by no means uncommon; but it is, so far as my observation has gone, exclusively confined to the Tamarix-clad islets in the bed of the Mahanadi river. Towards evening numbers may, in some places, be seen hovering over the bushes, or seated on the exposed sprays and twigs. The vigorous chattering note of this bird can scarcely fail to attract notice.

The feet and claws are, for the size of the bird, singularly powerful and raptorial-like. A wounded bird used his sharp claws with considerable effect and much in the same way that a Kestrel would have done under the same circumstances.

## 512.—Calliope kamtschatkensis, *Gmel.*

I shot one specimen, a female, of the common ruby throat, in the Ebe river in Sambalpur. *Cyanecula suecica*, though rare in Chota Nagpur, is common in Sambalpur. I obtained it both in the beds of the rivers and in paddy-fields.

## 538.—Prinia Hodgsoni, *Blyth.*

A specimen of *Prinia* agrees perfectly with examples from Darjiling, these latter are I believe admitted to be identical with *Hodgsoni*, Blyth. In order to make sure, however, I have examined Blyth's type. This, like so many other specimens of the old A. S. collection, has plumage of the regular museum hue, and the specimen being otherwise damaged (bill broken), is of but little use for purposes of comparison. However I believe that the above identification is correct.

## 539.—Cisticola schænicola, *Bonap.*

The Rufous Grass Warbler occurs occasionally in suitable localities in Sambalpur. I never shot it in, nor is it recorded from, Chota Nagpur.* One measured in the flesh :—

♂ length, 4″·6 ; extent, 5″·5 ; wing, 1″·8 ; tail, 1″·4 ; tarse, 7″·5.

## 836 —Eupodotis Edwardsii, *Gray.*

To Captain Bowie, Deputy Commissioner of Sambalpur, I am indebted for a specimen of the Indian Bustard. It was one of a pair which he came across near Burga in the Sambalpur district. So far as I could ascertain, this is the only instance of the bird being seen in Sambalpur, but in the adjoining district of Raipur, it is said to be occasionally met with.

On the authority of Captain Bowie I add that the Florican, which was only once met with by me in Chota Nagpur, occasionally occurs in Sambalpur where several have been shot.

Two birds—which are included in my *Addenda*, but which are decidedly rare in Chota Nagpur, I have since frequently met with in Sambalpur and the western parts of Orissa. They are *Hoplopterus ventralis* and *Esacus recurvirostris*. The latter is particularly abundant in the Brahmini river in Orissa.

## 910.—Porzana pygmæa, *Naum.*

I shot one specimen of the pigmy Rail in Sambalpur. So far as I can remember, I have never seen the bird but once before, that being in a jheel at the north-east corner of the Rajmehal hills.

## 988.—Sternula minuta, *Linn.*

The little Tern occurs in the Mahanadi river, not only in the vicinity of Cuttack, but also some distance up beyond Sambalpur. The furthest point at which I shot it was near Padampur—about 200 miles, in a direct line from the sea.

* Since the above was written, I have received a specimen from Chota Nagpur.

The following birds were met with only in Orissa, and so far as my observation has gone, do not extend *into Sambalpur* :—

ORISSA.

## 208.—Ololygon passerinus, *Vahl.*

The Indian Plaintive Cuckoo not improbably extends into Sambalpur,* as I have found it in Chota Nagpur, where, however, it is excessively rare.

I got one specimen not far from Cuttack. The bird was in full adult plumage, and I was struck with the general resemblance it presents to *Volvocivora melaschistos*—just as *Surniculus dicruroides* resembles, so far as plumage goes, *Buchanga albirictus*. From Mr. Hume's Nests and Eggs it would appear that there are no recorded cases of the eggs of either species being found in the nests of the species they respectively resemble; but what can be more likely, than that this imitation subserves the purpose of fascilitating the birds in their endeavours to lay their eggs in the nests of the species they so resemble.

## 452.—Ixos luteolus, *Less.*

The White-browed Bulbul is very abundant in Orissa throughout a broad zone in which the vegetation is characterized by certain species of plants which are not met with further west. These are for the most part thorny shrubs, which often form an absolutely impenetrable thicket. These thickets abound in the above species, together with *Otocompsa emeria*. *Zanclostomus sp.* (?) is occasionally seen, and of course many other birds. Jungle, Pea, and Spurfowl are common in this cover, where it is extremely difficult to shoot them.

The zone extends westwards as far as Ungul and so far is the White-browed Bulbul to be found, but not beyond. So defined is its limit here that I think it probable that I was in error in inserting it in the Chota Nagpur list, since Colonel Tickell's specimen was obtained in Midnapur, and it is possible that the species does not extend so far west as Manbhum.

## 695.—Ploceus manyar, *Horsf.*

The Striated Weaver bird was very common in the vicinity of the Mahanadi above Cuttack during last April. Whether it is a permanent resident or not I cannot say. Flocks numbering several thousands were several times seen.

## Carpophaga ænea, *Linn.*

The Imperial Pigeon is excessively common throughout the hilly jungles of the western states of Orissa. I shot it in

* It is very common in the adjoining district of Raipur, but I do not seem to have received it as yet from Sambalpur.—ED., S. F.

Ungul, Atmalik, Atgurh, Talchir, and Denkenal; but I have never seen it in Sambalpur. This year, when marching from Sambalpur to Cuttack, I met it first in Atmalik in precisely the same spot where I had seen it last year.

I have already mentioned its occurrence in Manbhum and the Rajmehal hills.* It would appear that in so far as Bengal is concerned, the limits of extension of the species towards the west are very clearly defined. The boundary runs west of the Rajmehal hills through Manbhum, and then along the Orissa—Sambalpur frontier. It must I think be south of this line that it penetrates into the southern central jungles of the peninsula. Mr. Blanford does not agree† with Dr. Jerdon's account of the distribution of this bird, and expresses a disbelief in its occurrence in Central or Western India. He thinks it probable that it ranges with *Gallus ferrugineus* and *Rucervus duvaucelii*. He did not obtain it either in the Nerbudda or Taptee valleys, nor did he observe it near Chanda. The most northern point at which he did meet with it was Sironcha, and thence it occurred down the Godavery. It has, however, since Mr. Blanford wrote, been obtained in the Chanda district by Mr. Hughes of the Geological Survey to whom I am indebted for a specimen.

### 834.—Turnix joudera, *Hodgs.*

I obtained one specimen of this Button Quail in the jungle near the coast at the mouth of the Chandballi river. It was not uncommon there, but nobler game being in the neighbourhood, the Quails were not interfered with. In this specimen the wing measures 3″·4. The coloration is as given in the figure in Gray's Genera.

### 846.—Cirrepidesmus Geoffroyi, *Wag.*, & 847.—C. mongolicus, *Pall.*

I shot both these species of Sand Plover on the sea-coast at the mouth of the Chandballi river.

### 848.—Ægialophilus cantianus, *Lath.*

This species occurred in the same locality as the last. *Æ. fluviatilis* was common inland, both in Sambalpur and Orissa.

### 876.—Terekia cinerea, *Gmel.*

I shot one specimen of the Avoset Sandpiper also on the sea-coast at the same place. It occurred in small flocks. Unfortunately I did not examine the specimen closely at the time and omitted to obtain other examples.

Measurements of skin :—

♂ wing, 4″·9; tail, 2″·2; tarse, 1″·1; bill at front, 2″.

---

* S. F., Vol II., p. 424.

† J. A. S. B., 1869, Pt. II., p. 188.

Though shot in May, the plumage of this specimen shews no approach to the described summer plumage.

### 939.—Platalea leucorodia, *Linn.*

I saw a small party of Spoonbills in the Mahanadi close to Cuttack. One of these which I shot has the outer webs of the first two primaries mottled with greyish-black, and all the primaries tipped with the same color.

### 983.—Gelochelidon anglicus, *Mont.*

At Chandballi I shot a specimen of the Gull-billed Tern in May. It has a peculiarly lazy flight. Dr. Jerdon speaks of the species as being exceedingly abundant over all India. Such is not my experience, as I have never met it in any of the inland districts with which I am familiar.*

### 995.—Rhyncops albicollis, *Swains.*

I came across a large flock consisting of Skimmers and Terns (*Seena aurantia*) in the Mahanadi near Cuttack. I managed to obtain half a dozen specimens of the former, but was struck with the difference in the actions of the two species. While the Terns attracted rather than frightened by my shots, flew in swarms over and close to my head, the Skimmers, for the most part, kept out of range. However, by waiting patiently for chances, and leaving the Terns to their diversions, I got the number I wanted. I previously met this species in the Ganges near Rajmehal.

---

## Note on the Synonymy of Spizalauda.

By W. T. Blanford.

Owing to the length of time during which the types of the species of birds described in 1832 by Colonel Sykes have remained inaccessible, doubts have arisen as to which of the two kinds of Lark referred by different naturalists to *Alauda deva* was correctly identified. As was indicated by Dr. Jerdon, but first, so far as I know, clearly pointed out by Mr. Hume, these two forms, which have long been referred to different genera, are in reality closely allied: they resemble each other in plumage, in the form of the wing and of the crest, and in having the hind claw only moderately lengthened, whilst they are distinguished by difference in size, and slightly in coloration. The larger of these is the bird ultimately identified by Jerdon and Blyth with *Alauda malabarica* of

* It is certainly common about all large jheels wherever I have been in the plains country. It is of course rare in dry upland hilly tracts.—Ed., S. F.

Scopoli, the smaller is the *Spizalauda deva* of Jerdon's Birds of India, previously described by him as *Mirafra Hayi*.

The name *Alauda malabarica* of Scopoli was given to the Crested Lark of the Malabar Coast (alouette huppée de la côte de Malabar), figured and described by Sonnerat in his "Voyage aux Indes Orientales et à la Chine." The same figure and description were the origin of Latham's Malabar Lark and Gmelin's *Alauda malabarica*. Sonnerat describes his bird as five inches nine lines (French) long, and with a wing measuring three inches and four lines (the corresponding English measures being 6 and 3·55 inches), and gives the following account of the plumage:—"The feathers on the top of the head are long and form a crest which the bird can raise at will; they are brown, terminated by a white band; the feathers of the neck light rufous, marked with a longitudinal black band which is broader below; the throat and abdomen are of a rufous white; the feathers of the back and the small wing feathers (*i.e.* the coverts) brown, terminated by a very light rufous border; at the extremity of each feather is a white spot; the large wing feathers (quills) and those of the tail earthy brown, terminated by a rufous edge; beak black; feet reddish."

The white edges to the crest feathers, and the white spots on the mantle, are probably signs of immaturity, and the figure represents, I think, a young bird. With these exceptions it agrees in every respect with *Spizalauda:* it has the characteristic pointed crest, and a short hind claw. The dimensions would correspond with either form; for, as will be seen, the male of the smaller kind is sometimes as large as the female of the larger. I believe, however, that the larger form is that found on the Malabar Coast, and consequently that Sonnerat's figure and description must have been taken from it.

Mr. Blyth appears originally* to have identified with Sonnerat's Lark the rufous variety of the Indian Sky Lark, which is so common on the Nilgiri hills, and which, after passing through the hands of half the ornithologists who have lived in India, has at last found one in the person of Mr. Brooks sufficiently bold to name it, although it is much to be regretted that the appellation selected is not very appropriate. This form also appears, to judge by the synonymy in Jerdon's Birds of India, to be the *A. malabarica* of Blyth's catalogue, with which *A. deva*, Sykes, is identified. Subsequently in 1860, J. A. S. B., XXIX., p. 96, Mr Blyth mentions having recently seen the true *A. malabarica*, and it is to be presumed that the specimens to which he refers are those now preserved under that name

* In his Synopsis of Indian *Fringillidæ*, J. A. S. B., XIII., p. 962.

in the Asiatic Society's collection. The identification agrees with that finally adopted by Jerdon, who, in his first catalogue of the Birds of Southern India, omitted *Alauda malabarica* altogether, though in his second supplement to the same catalogue (Madras Journal, 1844, XIII., p. 136), he identified with it his *Mirafra affinis*, a very different species. In his Birds of India, he gives a rather imperfect account of the Malabar Lark, without measurements, but states that it is closely allied to *Spizalauda deva*.

In 1867 I procured at Khandalla, the spot where the railway from Bombay to Poona reaches the top of the Western Ghâts, several specimens of a Lark which I failed in identifying satisfactorily until I shewed it to Dr. Jerdon, who immediately recognised it as his *Alauda malabarica*, and I gave a full description of it under that name in the Journal of the Asiatic Society for 1869. At the same time I doubted its being the same as Sonnerat's species. Further consideration and comparison has induced me to coincide in Dr. Jerdon's opinion, which has been generally accepted.

The history of the smaller form of *Spizalauda*, described by Sykes as *Alauda deva*, is equally confusing. Jerdon in his catalogue identified with it a form of *Galerita cristata*, and Blyth, as we have seen, considered Sykes' bird the same as his (wrongly identified) *Alauda malabarica*. But subsequently Jerdon obtained a small Lark which he named *Mirafra Hayi*, and which was described by Blyth in his Synopsis of Indian *Fringillidæ* (J. A. S. B., XIII., p. 959), and included in the second supplement to Jerdon's catalogue. The types originally described by Blyth are in the Asiatic Society's collection, now made over to the Indian Museum, and I have compared them with the smaller *Spizalauda*. Jerdon, in his Birds of India, correctly identified his *Mirafra Hayi* with Sykes' species. Blyth in 1855 (J. A. S. B., XXIV., p. 258, note) founded the genus *Spizalauda* on *Mirafra Hayi*.

In 1870 Mr. Hume, in his notes upon my paper in the Journal of the Asiatic Society, expressed his opinion that the bird identified by Jerdon, and described by myself as *Alauda malabarica*, was the true *Alauda deva* of Sykes, although he acknowledged that the measurements given by Jerdon were too small. He referred (as Blyth once did) the Nilgiri form of *A. gulgula* to *A. malabarica*,* and proposed the new name of *Spizalauda simillima* for the smaller form of *Spizalauda*. This name could not stand in any case even if the true *Alauda deva* had proved to be the larger species, because the types of *Mirafra Hayi*, preserved in Calcutta, shew that Jerdon had previously named the same form.

* *Apud* Jerdon.

I adopted Mr. Hume's view of the identity of *A. deva* with the larger *Spizalauda* in some notes published in the *Ibis* for 1873. I was in England at the time, but owing to the extreme care which was then taken of the natural history collections belonging to the old East India Company by the India Office officials, all the types of Sykes were packed away in a warehouse and preserved from the outer world. However, I looked forward to an opportunity for a direct comparison. Last year, as all the world knows, the big bazar at South Kensington having come to the end of its resources, and being very hard up for specimens of some kind to fill its empty galleries, took compassion on the imprisoned Indian Museum collections. At the same time I received from Mr. Fairbank specimens of both forms of *Spizalauda*, the larger from Mahableshwar, the smaller from near Ahmednagar. I sent skins of both to Mr. Dresser, and Indian ornithologists are indebted to this gentleman for settling this vexed question by comparing the birds with Sykes' types. Mr. Dresser writes to me that the smaller form is unmistakably Sykes' species, thus confirming Jerdon's nomenclature.

I give the corrected synonymy of the two birds below. I must say that I much doubt whether the section to which they belong really deserves generic separation from *Alauda*. Its seems to me that these birds scarcely differ sufficiently from the Skylarks either in structure or habits to justify more than sub-generic distinction. I have never had an opportunity of observing either species in the breeding season, but Mr. Fairbank writes to me that the smaller form, the true *Alauda deva*, rises into the air singing precisely like a Skylark, and although we are assured on equally good authority (Nests and Eggs, p. 483) that *A. malabarica* does not sing when flying, it is impossible to place two birds so closely allied in different genera, and it is the smaller form, *A. deva*, which is the type of *Spizalauda*.

1. ALAUDA (*Spizalauda*) DEVA.

*Alauda deva*, Sykes, P. Z. S., 1832, p. 92.

*Mirafra Hayi*, Jerdon, Blyth, J. A. S. B., XIII, 1844, p. 959; Jerdon, 2nd Supp. Cat. No. 188 *bis*, Mad. Jour., XIII, p. 136.

*Spizalauda Hayi*, Blyth, J. A. S. B., XXIV,* 1855, p. 258, note.

*Spizalauda deva*, Jerdon, Birds of India, II, p. 432.

*Alauda* (*Spizalauda*) *deva*, Gray, Hand List, II, p. 118, No. 7761.

---

* Misquoted XIV in Jerdon's birds, a misquotation which cost me more than an hour's work to rectify.

*Spizalauda simillima*, Hume, J. A. S. B., 1870, XXXIX, pt. 2, p. 120; Stray Feathers, I, p. 389; Nests and Eggs, p. 484.

This species appears to have a wide range in India, being found according to Hume, Jerdon, and other observers, in the Punjab, N. W. Provinces, Oudh, Behar, parts of the Central Provinces, and throughout the greater portion of the peninsula, keeping mainly to the drier parts, and being more common on the plateau than near the coast. It is not known to occur in Lower Bengal, or in the dry desert parts of Western India. It ranges, however, to the extreme south of India, and should not therefore I think be called the "*northern* crown-crest." The term "crown-crest" is a very good one.

As compared with the next species this bird is smaller, rather paler and greyer in colour above, and in general, I think, much less spotted on the breast, whilst the crest is longer. A male measures:—Wing, 3″·52; tail, 2″·1; tarsus, 0″·8; hind toe and claw, 0″·67; culmen, 0″·67; bill at front, 0″·48, and the length is recorded by Mr. Fairbank as 6 inches.* A female has:—Wing, 3″·2; tail, 1″·9; tarsus, 0″·8; hind toe and claw, 0″·7; culmen, 0″·65; bill at front, 0″·48; length (recorded) 5″·6. The measurement of the female agrees well with the dimensions (all of females) given by Mr. Hume for *S. simillima*.

2. A. (*Spizalauda*) MALABARICA.

*L'Alouette huppée de la côte de Malabar*, Sonnerat, Voyage aux Indes Orientales, IV, p. 266, pl. 111, fig. 1 (edition of 1806.)†

*Alauda malabarica*, Scopoli, Deliciæ faunæ et floræ insubricæ.‡

*Malabar lark*, Latham, Gen Syn. II, pt. 2, p. 379.

*Alauda malabarica*, Gmel. Syst. Nat. I, pt. 2, p. 795; Blyth, J. A. S. B., XXIX, 1860, p. 96; Jerdon, Birds of India, No. 768, II, p. 436; W. Blanf., J. A. S. B., 1869, XXXVIII, pt. 2, p. 183; Gray, Hand List, II, p. 117, No. 7748; Brooks, Stray Feathers, I, p. 486.

*Spizalauda deva*, Hume, J. A. S. B., 1870, XXXIX, pt. 2, p. 119.

*Spizalauda malabarica*, Hume, S. F., I., p. 389 note, and 486 note; W. Blanf., Ibis, 1873, p. 222;? Hayes Lloyd, *ib.*, p. 414; Hume, Nests and Eggs, p. 483.

Found in many parts of Southern India, especially near the western coast, on the range of the Western Ghâts, keeping

* This appears to be a rather large specimen. In another male in the Indian Museum the wing is 3″·45.

† There was an earlier edition of this book, which was that quoted by Latham and Gmelin. Possibly in that edition the plate is 113, as quoted by most authors. The later edition is alone available in Calcutta.

‡ I have not access to this work at present. To the best of my recollection *Alauda malabarica* is stated in it to have been brought from China!

chiefly to the damper parts of the country. If the species recorded, by Hayes Lloyd is the same and not *S. deva*, this bird is also found in Kathiawar.

It is darker in plumage, more rufous above, and whiter beneath, and has larger and more numerous breast spots than *A. deva*. The crest is rather shorter, whilst all the dimensions are larger. A male measures :—Wing, 3″·8; tail, 2″·15; tarsus, 0″·95; hind toe and claw, 0″·8; culmen, 0″·72; bill at front, 0″·6. Wing in a female, according to Mr. Hume, measures 3″·6.

---

## Notes on and Additions to Ceylonese Avi-fauna, with a Notice of some apparently new Species.

By Captain W. V. Legge.

### 78.—Glaucidium malabaricum, *Blyth.*

An Owl, which I conclude is this species, has for many years baffled my pursuit, although he constantly put me on his track by his extraordinary shouts uttered always in broad day light and at all times of the day. I contrived, however, to secure him some months ago in the Eastern Province. This makes an interesting addition to our list of Raptors. It inhabits the hill forests of all the south-west, the jungles of the south-east, and eastern districts and those of the Uva and Central Ranges.

### 181.—Brachypternus intermedius, *N. Sp.**

*Dimensions, male and female*:—Length, 10″·5 to 10″·[illegible]; wing, 5″·2 to 5″·4; tail, 3″·5; outer anterior toe, 0″·75; its claw straight, 0″·45; versatile toe, 0″·65; its claw straight, 0″·34; bill to gape, 1″·5 to 1″·6.

*Soft parts, male.*—Iris crimson; bill blackish slaty, pale at the base; legs and feet dusky greenish or pale olivaceous.

The head and the white facial-and-neck-stripes as in *puncticollis*, with the ear coverts blacker or less marked with white than in that species; the hind neck, rump, tail, anterior part of wing, and the same part of the scapulars, similarly colored black; back and scapulars orange, overlaid or washed with crimson; the basal and central parts of the feathers being brownish orange, changing into crimson at the tips; wing coverts and outer webs of secondaries and tertials reddish orange, the edges being brightest; the margins of

* I cannot see how this supposed new species differs from many specimens of *puncticollis* (*chrysonotus* apud *Jerd.*), which is very variable in the points on which Captain Legge dwells.—Ed., S. F.

the greater wing coverts are crimson like the scapulars, and the outer secondary wing coverts are spotted with reddish white and whitish as in *puncticollis;* primaries as in that species; throat spotted or barred with white, the black portions of the feathers limited, in old specimens, to marginal spots; chest and lower part of throat black, striated with white, very boldly on the chest, the whole of the centres being white with parallel black margins to the feathers; these diminish on the breast, leaving the lower parts merely dark-edged, and as white in appearance as *aurantius.* Under-tail coverts barred or centred and edged with black.

*Female.*—Iris red or duller than that of the male. The crimson of the occipital crest is not so brilliant, and the back and scapulars are orange, slightly washed with crimson; the outer webs of secondaries and tertials and the wing coverts brownish orange. Some specimens (and I think this is the normal phase of the female plumage) have no crimson whatever, on the back, this and the wings being pure orange. An immature example (having, as is the case with nonage in all *Brachypterni*, the markings of the chest *oval)* corresponds in this respect exactly with an old or striated-chested female.

*Habitat.*—Inhabits the forests of the whole northern part of the island, commencing in the region north of Kurnegalla, and found throughout the great jungle tract as far as Trincomalie and the Ibanni.

In *Coll.* National Museum, Ceylon, and *coll.* W. V. Legge.

## 257.—Lanius erythronotus, *Vigors.*

Differs from its Indian relative, in its smaller size and almost complete absence of rufous on the scapulars, only the terminal portions of the longer, underlying, feathers being thus colored. The rufous of the rump is almost confined to that region, and does not extend up to the centre of the back as in Indian examples. Should this diagnosis be correct, I would propose the name of *L. affinis* for our bird as a sub-species.* The matter of diminutive size, however, is not of any value whatever according to my view, as this feature holds good of almost all Indian forms in Ceylon, and is the result of the warm climate only.

## 265.—Tephrodornis ponticeriana, *Gmelin.*

Some Ceylon specimens have very large supercillia. This bird was at one time thought to migrate from the Western Province during the S. W. monsoon. This is erroneous; it merely retires from the unsheltered coast region to the interior.

* This is apparently nothing but *L. caniceps*, Blyth.—Ed., S. F.

## Oreocincla pectoralis, *N. Sp.**

*Dimensions.*—Length, 8″·35; wing, 4″·7; tail, 3″·0; tarsus, 1″·1; mid toe and claw, 11″·5; hind toe, 0″·5; claw straight, 0″·35; bill to gape, 1″·15. The bill is long and *turdulus*-like, but not so massive in its conformation as that of *O. nilgherriensis*.

*Soft parts.*—Iris brown (?); bill dusky; gape and base of lower mandible yellowish; legs and feet dusky yellowish; claws yellowish, with dusky tips. These are the *soft parts* as taken from the dry skin.

*Description.*—Above deep olivaceous brown, slightly greenish on the rump and upper tail coverts, the lower feathers of which latter are tipped white; on the head and hind neck the feathers are dark shafted, and the brownish olivaceous of the sides of the neck spreads over the chest and lower throat; wings dark brown, the greater coverts and secondaries with their outer webs olivaceous brown, and the coverts with an angular terminal

---

* I cannot at all make out this species; it might possibly I thought be *O. Gregoriana*, Nevil, but the bill in that is decidedly more massive, though shorter than in that of *O. nilgherriensis*, which latter in its bill at any rate shows a strong affinity to *Zoothera*. I have referred to *O. Gregoriana* before Vol. I, p. 437, but I do not know that any full description of it has yet been published, and I therefore subjoin one:—Length, 9″; wing, 5″; tail, 2·″3; tarsus, 1·″1; bill from forehead to point, 0·″95; from gape, 1·″35.

The whole top and back of the head, back of the neck, back rump, and upper tail coverts a very rich olive brown, with a distinct rufescent tinge, feeblest on the rump and upper tail coverts, all the feathers pale shafted, and each of them with a conspicuous black tipping or terminal bar, the bars being so close together on the head that the black there predominates.

The lores, cheeks, ear coverts, chin, throat, sides of the neck fulvous, the feathers of the cheeks, ear coverts, and side of the neck with black terminal spots, and a few faint traces of similar spots on the throat; a narrow conspicuous black collar divides off the chin and throat from the breast; breast and entire lower parts a very rich warm buff, all the feathers except those of the lower tail coverts, with a conspicuous black margin; those of the sides of the breast somewhat shaded with olive.

The wings a very deep brown; the quills tinged with rusty olive on their outer webs, the primary greater coverts tipped with blackish brown and with a broad sub-terminal rufous buff band; the rest of the greater and the median coverts tipped with this very same rufous buff, which in the case of the median coverts run somewhat up the shafts. The lesser coverts suffused at the tips with reddish olivaceous and with rufous buff shafts.

The four central tail feathers, and the exterior pair on either side plain olive brown; the rest of the feathers blackish brown, more or less tipped paler.

All over the back the bases of the feathers, where they show through, are less rufescent than the tips immediately preceding the black tipping, so as to produce the effect of a second rufescent band inside the black tipping.

This is a very distinct species sent to me by Mr. Nevil as *O. Gregoriana*, Nevil, of Ceylon, but I see from the ticket that it was obtained from Messrs. White & Co., of Kandy, and there is therefore I fear no guarantee any more than in the case of *Batrachostomus punctatus* that the specimen ever really was procured in Ceylon. To me the bird seems like a small very rufescent edition of *Oreocincla malayanus*, Sund. (*varius apud* Horsf). I note especially in the axilla the brush of silky white feathers, broadly tipped with black, which is noticed by Horsfield as a characteristic of the Javan bird.

I have to add that I have now strong doubts whether the *Phodilus badius*, also sent me by Mr. Nevil as killed in Ceylon, but which likewise was procured from Messrs. White & Co., was ever killed there at all. I must leave it to Captain Legge to try and get the truth about these skins out of Messrs. White & Co.—Ed., S. F.

whitish spot, above which the inner webs are blackish; first 3 primaries with a pale fulvous edge, the remainder with rusty brown margins; uropygials rusty brown, the remaining rectrices dark brown, with white tips to the three outer pairs running up the inner webs considerably; lores blackish, surmounted by a conspicuous fulvescent supercillium; chin and throat fulvescent white, with two mandibular stripes joining the dark line of the chest; feathers of the chest and lower part of fore-neck, with broad white centres, surrounded by blackish margins; breast, belly, and lower tail coverts crossed, except down the centre, with blackish terminal bars; upper flanks banded with the same on a duskier ground; lower flanks washed with olivaceous and barred with paler marks than the upper; lower tail coverts margined with brownish.

Described from a single specimen shot by Mr. Thwaites, the cufator of the cinchona gardens at Hakgalla. This is at an elevation of 6,000 feet, and forms part of the great central forest-clad mountain range of the hill zone. The specimen is carbolised, and the sex, therefore, undetermined. In *Col.* W. W. Legge.

## 404 *bis*.—Pomatorhinus melanurus, *Blyth*.

The rufous hue of the back of low country specimens contrasted with the olivaceous tint of hill birds is I think due to the operation of climate. It is common to Western Province, Southern District, and Northern birds. Examples from the neighbourhood of Trincomalie are counterparts of Galle specimens. Mr. Holdsworth was of opinion that the difference was marked enough to warrant specific separation of the hill and low country birds. I hope to get a series of intermediate altitude specimens, and then the question may perhaps be decided.

## 454.—Kelaartia pencillata, *Blyth*.

Have any more examples of this species come to hand in South India?* It is unsatisfactory to assign it a place in the continental list merely on the *supposition* of its occurrence in Mysore by the late Dr. Jerdon.

## 844.—Squatarola helvetica, *Gmelin*.

This Plover must now be added to the Ceylon lists, a specimen having been procured by me in March near Manaar. I saw them on two occasions, and am informed by a gentleman who has

* I have as yet no record of its occurrence there.—Ed., S. F.

collected in the Jaffna district that they are not uncommon there.

## 861.—Dromas ardeola, *Payk.*

Literally hundreds of these usually rare species crowded the great tidal flats to the north of Manaar, but, having to hurry my canoe on to save the tide, I could do no more than have a passing stalk, at some little groups, which of course failed.

## 862.—Hæmatopus ostrealegus, *Linn.*

I met with this rare and wary bird on several occasions during my late trip to Jaffna, and succeeded in knocking over a fine immature bird, with white throat at the small span of 90 yards! I know of no other example actually procured in the island.

## 985 *bis.*—Sterna Dougalli, *Montague.*

The Terns noticed in "STRAY FEATHERS," Vol. III., p. 376, were correctly identified as belonging to the above, and not to *Sterna paradisea*, Bonn,* which is the Arctic Tern. Mr. Saunders has since determined that the birds procured at the Andamans belonged to the latter species. It is a mystery where all the flocks, I saw, departed to, they began to pair rapidly at the beginning of June, and disappeared altogether in about a fortnight after that.

## 988 *ter.*—Sternula sinensis, *Gmelin.* (*S. placens*, Gould)

This is the common little Tern of Ceylon and ranges I believe by Java and Sumatra to the seas of the north coast of Australia.

* Some confusion exists here. In the first place *S. paradisea*, Brün. not Bonn is probably intended. In the second place our Andaman Terns are by no means the Arctic Tern.

I think the explanation is this; *Sterna paradisea*, Brünn, Orn. Bor. 42 (1746,) is by some ornithologists still considered to refer to the same species as Montague's *S. Dougalli*. Orn. Dict. suppl. (1813). Others and probably the majority of modern ornithologists hold that Brünnich's name is applicable to the Arctic Tern, now usually accepted as *S. hirundo*, Lin, with *macrura*, Naum, and *arctica*, Tem, as Synonymes. When Lord Walden reported, *Ibis*, 1874, p. 149, that Mr. Howard Saunders had identified the Andaman Terns with *S. paradisea*, Brünn, he unquestionably used the name as I did (S. F., II. p. 501) as equivalent to *S. Dougalli*, and not in its more modern acceptation of the Arctic Tern. Lord Walden's remarks "lower surface deeply suffused with a rosy salmon tint" sufficiently dispose of this question. Perhaps Lord Walden does not concur in the more modern acceptation: very likely at the the time he wrote, Mr. Saunders had not yet made up his mind on the subject; but be this as it may, the fact remains that the Andaman specimens referred to by both Lord Walden and myself (*loc. cit*) were (if not *gracilis* Gould, and for this Mr. Saunders is responsible) the Roseate and *not* the Arctic Tern, *i.e.* the same species as occurs in Ceylon.—ED., S. F.

It is a larger* bird than *minuta*, has the bill bright yellow, and generally with a sharply defined black tip, at the breeding season. It breeds at Hambantotta (P. L. Z., 1875, p. 377) and at Kandelay and Minery Tanks in the northern half of the island.

## 993.—Anous stolidus, *Linn.*

An example, apparently, of this noddy was procured out of three at the Galle face beach in June. Wing, 10″·9 ; bill at front, 2″·1.† The forehead and front of vertex were white passing into greyish on the crown, throat slightly pervaded with grey. The above measurements correspond with those of Pacific birds, although they do not equal those given by Jerdon.

A most interesting addition to the avi-fauna of Ceylon—a fine number of the genus *Baza* has of late been procured in the island. As it has been passed over all these years, it is doubtless a rare species, and its capture now is probably owing to the increased interest taken in bird collecting by the planters in Central Province. To this cause is also due the shooting during the last two years, of a number of examples of the magnificent *Spizaetus nipalensis*, as also the capture of a fine specimen of *Nisaetus pennatus*. Our new *Baza* of which I have two specimens, as far as I can judge from the material at hand, comes between *B. magnirostris* from the Phillipines and *B. sumatrensis* from Sumatra, approaching the former in size, but differing in the crest and closely resembling (in what is stated to be the young plumage) the latter species, from which, however, it differs in its smaller dimensions. The following are measurements and description of my bird :—

## Baza ceylonensis, *N. Sp.*‡

*Dimensions.*—Length to front of cere (from skin) 16″·5 ; culmen 10″=total length, 17″·5 ; wing, 11″·7 ; tail, 7″·5 ; tarsus, 1″·5 ; mid toe, 1″·35 ; its claw straight, 0″·65 ; inner toe, 1″·0 ; claws straight, 1″·6 ; bill to gape 1″·2.

---

* Captain Legge has kindly sent me a specimen. I cannot separate it from European specimens. See further my remarks on this species in my Laccadive paper.—Ed., S. F.

† This must I think certainly be *Anous leucocapillus*, Gould. The bill in no specimen of *stolidus* that I have examined exceeds 1″·8 at front. In Indian specimens of *leucocapillus* it is 2″ to 2″·2. But the wing, 10″·9 seems large for this latter species of which, however, unlike *stolidus*, I have examined but few specimens. See further my note on this species in my Laccadive paper.—Ed., S. F.

‡ If this species is really new, it is one of the most remarkable discoveries of recent times here. A *Baza*, rather a wandering genus, restricted to a small island like Ceylon, and even there of excessive rarity. In very many respects it seems to agree with the *Baza* from Sikhim and Tenasserim, that I was inclined to identify with *sumatrensis*, and that I provisionally distinguished (III, p. 314) as *B incognita*, but it *seems* too small for this, if the primaries are fully developed in the specimen measured by Captain Legge.—Ed., S. F.

Iris, yellow; bill, blackish leaden; lower mandible, palish at base; cere, dusky plumbeous (?); tarsi and feet, yellow; claws, plumbeous.

Lores, blackish; head, brownish tawny; over the centre of the forehead and crown the feathers are black, the rufous colour being confined to the edges; occipital crest (1¾ inches in length) black, conspicuously tipped with white; the feathers of the hind neck deeply edged with rufous tawny, the centre parts being black, which overcomes the pale edges on the lower portion; back, scapulars, rump, upper tail coverts, primary and lesser wing coverts, blackish brown; the latter the deepest and with a cinerious tinge; upper tail coverts, paler than the back; median and greater wing coverts, pale or fulvous brown; quills, black; the outer webs curved by smoking grey bars; the corresponding band on the inner web being brown; tertials and secondaries, tipped with white; tail, dark smoky grey, with greyish white tip, and four blackish bars, the terminal one about 1½ inches in depth; cheeks and ear coverts, slaty grey with dark shafts, the dark feathers of the occiput passing round to meet the latter region; chin and throat buff, with a broad mesial black streak; sides and lower part of fore-neck with the upper edge of pectoral region tawny cinerious, the feathers with brownish shafts; below this the under-surface, under-tail, and under-wing coverts, are white with broad rufescent brown, dark margined brown the chest, flanks, and outer surface of thighs; the under-tail coverts and under-wing, are spotted with pale rufescent; the light portions of quills and tail are white beneath.

A second specimen, probably a female, has the wing 12″. It is not fully mature having some of the scapulars edged white, while the tertials are more deeply tipped than the above.

Some months ago an immature example of a Falcon, which had all the characteristics of this genus came under my notice; the second or anterior tooth was wanting, but notwithstanding it was evidently a *Baza* and I suggested *in epist.* to Mr. Sharpe, that it might be *Baza sumatrensis*. I now am of opinion that it was nothing more than the young of the present species, and probably a female, judging from its length of wing. Its length from the skin was about 17 inches; wing, 12″·25; tail, 8″; tarsus, 1″·15; mid toe and claw, 1″·15; longest-crest feathers, 1″·8.

The crest was very deeply tipped with white and the entire upper surface dark brown, the feathers edged with whitish throughout the tertials and greater wing coverts most conspicuously so; quills, blackish brown, with smoke brown bars, paling

towards the bases of the feathers and whitish at the inner edge; tail, smoke brown, tipped white and with fine blackish bars as in the adult; under-surface, white, the chest with broad mesial stripes, and the breast and flanks widely barred with sienna brown; under-wing coverts with bar-shaped spots of the same.

This specimen has been sent to England by the gentleman with whom I examined it, and will doubtless prove on comparison with my specimens, to belong to the same species. It was shot near Nilambe in the Kandy district last year, and my specimens were both procured at the same time near Matab last month.

## 31.—Nisætus pennatus, *Gmelin.*

Two examples of this, hitherto, in Ceylon, almost unknown Eagle have been procured this year. The first specimen noticed in the island was shot by Edgar Layard many years ago near St. Pedro and is recorded in his notes, *Am. Nat. His,* 1855, p. 98; our birds have now turned up in widely different localities. The first was shot near Colombo in January last; a fine female in immature plumage and was the first bird, mounted in the new museum. My specimen is an adult male and was killed in the upland of Doombara near Kandy. It has a wing of 15″; the under-surface is almost pure white, the striae are confined to the chest and sides of the breast and the lower flank feathers are slightly barred with sienna brown.

## 351.—Petrocossyphus cyaneus, *Lin.*

I omitted above to record the occurrence of two examples of this interesting Thrush in the island. They were shot by the same gentleman, Mr. Thos. Fan, in the Central Province; the first in November 1872, the latter in March 1875, both frequenting boulders and rocks beneath precipices.

The second example is now in my collection, and is in the plumage of a young male or in transition from the dress of the female to that of the other sex. The chest is overcast with brownish, and the feathers there tipped with rufous grey, the primary wing coverts and tertials are pale tipped; the breast and under-tail coverts are edged with whitish; becoming somewhat rufescent on the planks; the head and hind neck are brown with bluish bases to the feathers.

This Rock Thrush is most probably an annual visitant to Ceylon but has, in common with other migrants, been passed over until lately.

# List of Birds collected in the vicinity of Khandala, Mahabaleshwar, and Belgaw, along the Sahyadri Mountains; and near Ahmednagar in the Dakhan.

By Rev. S. B. Fairbank, M.A.,
*Missionary of the A.B.C.F.M.*

Reference has often been made in "Stray Feathers" to Khandala and Mahabaleshwar, but no general account has appeared of the birds found at these places or at any other place in the same region. The list now given is necessarily incomplete, because I have not had the opportunity of collecting at any place on the hills, throughout the year. With the exception of a visit to Mahabaleshwar in the cold season, my opportunities have been confined to the hot months of March, April, and May. The avi-fauna varies greatly, from the coming and going of birds, during these three months, and doubtless the same process goes on in other parts of the year. At least, many species of birds may be found in the autumn and winter that have disappeared before the beginning of March. However, an authentic list, though incomplete, is better than none.

My collections have been made principally at Mahabaleshwar; but this year some birds were collected at Khandala, and last year for a few weeks in the Eastern frontier of the Goa and Sawant Wade Territories. These localities are similar to each other, in that they are all on the crest of the Sahyadri mountains, and some forty or fifty miles east from the sea-coast. Khandala is in about 18° 40′ North Latitude. It is somewhat south of east from Bombay, and about forty miles distant, as the crow flies. The village and railway station are 1,970 feet above sea-level.

The adjacent hills are several hundred feet higher. On the Goa frontier there are fewer hills rising above the level of the Dakhan than at Khandala. There the Dakhan plains seem suddenly broken off, and there is a precipitous descent into the Konkan. The hills rise to 4,700 feet at Mahabaleshwar, higher than at any other habitable place north or south of it for two or three hundred miles. The trees are preserved for ten miles around the sanitarium. So the plateau, which may contain ten square miles, is thickly wooded, as are also parts of the adjacent hills and valleys. Other parts are kept mostly bare of trees by the fires that are sure to overrun them every year when the grass is dry. The villagers are full of complaints because the trees are preserved. They would like to pollard the trees yearly and burn the leafy branches on their

fields for rice and *náchní* (*Eleusine coracana*). The ground in most places is rocky, and the soil thin. So that the trees are mostly small and dwarfed. But as a large space is wooded, the fruits, seeds, insects, &c., on which certain kinds of birds feed, are produced abundantly. Of these birds we may mention the Spurfowl (*Galloperdix spadiceus*), the Bulbul (*Otocompsa fuscicaudata*), the Black Bird (*Merula nigropileus*), the Ground Thrush (*Geocichla cyanotus*), the Whistler (*Myiophonus Horsfieldii*), and the Merry Wrenbabblers (*Alcippe poiocephala* and *Pellorneum ruficeps*). These birds have greatly increased in numbers within a few years. The preservation of the trees on this tract has not however increased the number of kinds of birds on the Mahabaleshwar plateau so much as might have been expected. The birds that affect the groves and wooded ravines of the western declivities, and the western base of the hills, are mostly, if not all, found also in similar situations near Khándala, although Khandala is a degree farther north, and seems to have been regarded by Dr. Jerdon as fairly outside of the Malabar region.

The western face of the Sahyadris is very precipitous, and there are belts of bare rock running along almost continuously for hundreds of miles. In some places these are crossed by ravines that are wooded fairly up to the crest of the hills. Other strata of the trap rock, of which these hills are composed, are friable, and in them some trees find congenial soil. So belts of small trees run along the hill sides horizontally at different heights, and both beautify and utilize them. Barbets, Orioles, Woodpeckers, Babblers, Thrushes, Bush-quails, Spurfowls, Green-pigeons, Shrikes, Honeysuckers, Bulbuls, Cuckoos, &c., frequent these belts of trees. Some of them come down from the higher woods, and some come up from the valleys. The birds that belong distinctively to the Malabar region, seem more at home in the wooded valleys which are but little higher than the rest of the Konkan. They sometimes ascend the hill sides for food, but the crest of the hills is a boundary they seldom pass. Some of the Babblers as (*Alcippe poiocephala*, *Pyctorhis sinensis*, and *Dumetia albogularis*,) one of the Barbets, (*Megalaema viridis*,) our Hill Lark (*Alauda malabarica*), and the Ghat Black Bulbul (*Hypsipetes ganeesa*) live mostly on or near the top of the hills. They are seldom found far down the western slopes and do not often wander into the dry open plains of the Dakhan. There are limited localities however on and among the spurs which extend from the Sahyadri mountains far into the Dakhan, that are congenial to the birds which frequent the slopes of the Sahyadris, and I have found Magpies (*Dendrocitta rufa*), Sirkeers (*Taccocua affinis*), and Thrushes

(*Orocætes cinclorhynchus*, *Geocichla cyanotus*, and *Pitta coronata*) more than a hundred miles east of their usual haunts.

The list of Konkan birds would doubtless be increased by collecting at Bombay and along the coast. Even in the vicinity of Ahmednagar where I have collected for many years, a bird turns up now and then that had not been obtained before.

It seems best to still adhere to Jerdon's classification and numbers also when the bird is described in his Birds of India, although the time has doubtless come for adopting a more natural classification. It is to be hoped that the next complete work on Indian Ornithology, will give us a classification improved up to the present state of the science.

2.—*Otogyps calvus.*—Throughout the region.

4.—*Gyps indicus.*—Throughout.

5.—*Gyps bengalensis*—Throughout.

6.—*Neophron gingianus.*—Everywhere.

11.—*Falco jugger.*—Common in the Dakhan. Not one seen at Khandala. Obtained one at Parr, six miles west of Mahabaleshwar.

16.—*Chicquera typus.*—More common in the Dakhan, but obtained also at both Khandala and Mahabaleshwar.

17.—*Tinnunculus alaudarius.*—Everywhere in the cold season.

18.—*Erythropus cenchris.*—I obtained a pair in January 1861, near Ahmednagar, out of a flock of perhaps two dozen. They were resting on a small babhul (*Acacia arabica*) tree. The skins were sent to America, and I know not where they may be at present. I have been unable to find them since, and so cannot tell whether the birds were true *E. cenchris*, but they answered well to Jerdon's description.

23.—*Micronisus badius.*—Common. The iris of the adult male is brilliant vermillion red; but that of the female is yellow.

24.—*Accipiter nisus.*—Two specimens that I referred to this species, were obtained on the road between Poona and Mahabaleshwar, but were sent away, and for two years I have not found an individual for more careful examination.

25.—*Accipiter virgatus.*—I obtained by Parr, near Mah'r, birds that I unhesitatingly called *besra*, and distributed to correspondents as such. Afterwards I sent a bird shot in the same locality, but put up, without special examination, to Mr. Hume. He wrote me that it was doubtless a *shikra*. I did not find the *besra* at Khandala, the season for them having past, so I am not able to prove that the birds I obtained at Parr were of this species, or rather that the *besra* inhabits the Bombay region; it is, however, known to inhabit Canara.

29.—*Aquila vindhiana.*—Common throughout our region.

31.—*Hieratus pennatus.*—Not uncommon in the Dakhan. It consorts with *Milvus govinda.*

32.—*Neopus malayensis.*—One shot at Mahabaleshwar. They are rare there.

33.—*Nisætus fasciatus (Bonellii).*—Mahabaleshwar, rare.

34.—*Spizætus limnætus.*—One obtained near Ahmednagar.

35.—*Spizætus cirrhatus.*—Obtained one and observed others on the western slope from Mahabaleshwar.

38.—*Circætus gallicus.*—Often seen on the plains of the Dakhan.

39.—*Spilornis cheela.**—At Khandala, Mahabaleshwar, &c. It attracts attention by its "plaintive wild cry that is heard for two miles and more." It is the most common Eagle along the Sahyadris.

45.—*Buteo ferox.*—Not uncommon in the Dakhan.

48.—*Poliornis teesa* may be found any day in the Dakhan, sitting on the earth heaps that mark boundaries, or skimming along just above the ground from one heap to another.

51.—*Circus Swainsoni.*—Found along the hills, and common in the Dakhan.

52.—*Circus cineraceus.*—Found along the hills, and common in the Dakhan.

54.—*Circus æruginosus.*—Mahabaleshwar and along the hills. Rare in the Dakhan.

55.—*Haliastur indus.*—Found everywhere, but not so plentiful in the Dakhan, as in other parts of India.

56.—*Milvus govinda.*—Very common everywhere.

56 *bis.*—*Milvus major.*—Khandala. Mr. Blanford informed me that he had been assured one of Colonel Sykes' types of *Milvus govinda* is a *M. major.*

57.—*Pernis ptilorhynchus.*—Everywhere. Common in the Dakhan. The coloring of the head and body seems very variable, but when flying all are easily recognized by the two black bands across the tail.

59.—*Elanus melanopterus.*—Rare in the vicinity of Ahmednagar, and not observed on the hills.

60.—*Strix javanica.*—Common in the Dakhan. It nests frequently in holes in the mud walls of the Dakhan villages.

61.—*Strix candida.*—As I have not *collected,* this Owl perhaps it has no business in this list. But I have more than once flushed a Grass Owl that I believe to be this.

63.—*Syrnium indrani.*—Mahabaleshwar.

65.—*Bulaca ocellata.*—Found on its nest in the fork of a mango tree a few miles from Poona.

* ? The smaller Southern race *melanotis,* Jerd., *S. minor,* nobis; ? *albidus,* Cuv.—Ed., S. F.

68.—*Brachyotus accipitrinus.*—Ahmednagar.

69.—*Ascalaphia bengalensis.*—Common in the Dakhan.

72.—*Ketupa ceylonensis.*—Khandala.

74.—*Ephialtes pennatus*, or a nearly allied species, once obtained at Mahabaleshwar.

74 *bis.*—*Ephialtes brucei.*—Rahuri, in the vicinity of Ahmednagar. Only three specimens are known.* A fourth Scops Owl in the rufous stage of plumage, that probably belonged to this species, was obtained in a neighbouring village, but it is not known where the specimen is now.

76.—*Athene brama.*—Common everywhere.

81.—*Ninox hirsutus.*—Several have been obtained in the district of Ahmednagar.

82—*Hirundo rustica.*—Common.

84.—*Hirundo filifera.*—Common in the Dakhan.

85.—*Cecropis erythropygia.*—Common.

86.—*Lagenoplastes fluvicola.*—Near Satara.

89.—*Cotyle sinensis.*—Near Satara.

90.—*Ptyonoprogne concolor.*—Common.

91.—*Ptyonoprogne rupestris.*—Khandala, Mahabaleshwar, &c.

100.—*Cypselus affinis.*—Abundant in and about Ahmednagar. Found at Khandala, &c.

102.—*Cypselus palmarum.*— Vicinity of Ahmednagar.

104.—*Macropteryx coronatus.*—Khandala and along the hills.

107.—*Caprimulgus indicus.*—Ahmednagar, Khandala, &c.

112.—*Caprimulgus asiaticus.*—Common in the Dakhan.

113.—*Caprimulgus mahrattensis.*—Rahuri. It is rare.

114.—*Caprimulgus monticolus.*—Goa frontier.

115.—*Harpactes fasciatus.*—Woods of Sawant Wade, in the Konkan.

117.—*Merops viridis.*—Common.

118.—*Merops philippinus.*—Found once at Ahmednagar, and once at Khandala.

119.—*Merops Swinhoei.*—Sides and base of Goa and Sawant Wade hills.

123.—*Coracias indica.*—Everywhere in the cold season.

127.—*Palargopsis gurial.*—Once found near Mahabaleshwar.

129.—*Halcyon smyrnensis.*—Everywhere.

134.—*Alcedo bengalensis.*—Still more common.

136.—*Ceryle rudis.*—Common.

140.—*Dichoceros cavatus, Shaw.*—Konkan and western slopes near Mahabaleshwar. Goa frontier.

141.—*Hydrocissa coronata.*—Ratnagiri, on the coast south of Bombay.

* Other specimens have been procured elsewhere. Mr. Blanford recently obtained it in Sindh. I should say it never became rufous.—Ed., S. F.

145.—*Tockus griseus.*—Khandala by the reversing station.

148.—*Palæornis torquatus.*—Common.

149.—*Palæornis purpureus.*—Common along the hills. Visits the Dakhan at some seasons in flocks.

151.—*Palæornis columboides.*—Western slopes of the Sahyadris, at least as far north as Khandala.

153.—*Loriculus vernalis.*—Western slopes of the Sahyadris, at least as far north as Khandala.

160.—*Picus mahrattensis.*—Everywhere, but not abundant.

164.—*Yungpicus Hardwickii.*—Goa forests. Mr. Bruce obtained one at Mahabaleshwar.

166.—*Chrysocolaptes gutticristatus.*—All along the Sahyadris.

179.—*Micropternus gularis.*—Khandala and Mahabaleshwar on western declivities.

181.—*Brachypternus chrysonotus.*—Western slopes from Khandala to Goa frontier.

188.—*Yunx torquilla.*—Sparingly about Ahmednagar.

193 *bis.*—*Megalæma inornata.*—Western base of the Sahyadris. Not usually found far up the hill sides.

194.—*Megalæma viridis.*—Khandala, &c. on the top and along the sides of the hills.

197.—*Megalæma hæmacephala.*—Common.

198.—*Megalæma malabarica.*—Sawant Wade forests.

201.—*Cuculus poliocephalus.*—Ahmednagar.

202.—*Cuculus sonneratii.*—Khandala.

203.—*Cuculus micropterus.*—Ahmednagar.

205.—*Hierococcyx varius.*—Common.

208.—*Ololygon passerinus.*—Ahmednagar and Goa frontier, but seldom obtained.

212.—*Coccystes Jacobinus.*—Ahmednagar, Mahabaleshwar.

214.—*Endynamys honorata.*—Everywhere. Abundant at Belgaum.

217.—*Centropus rufipennis.*—Common.

222.—*Taccocua affinis.*—Throughout this region, but rare.

226.—*Æthopyga Vigorsi.*—Mahabaleshwar and Khandala. They began to appear in the valleys and on the western slopes of the hills in April. At that time none had finished moulting. By the middle of May they were abundant in certain localities where *Loranthus obtusatus* is (common). It is at that time in full flower. The fine dress of these birds is then in perfection. Jerdon describes them as having "a stripe, from the chin to the breast, shining violet." He should have said, a stripe *on each side.* The scarlet of the breast of the mature male is always mingled with yellow striæ, caused by some of the tips of the scarlet feathers being yellow. In some birds the yellow rump patch is washed with vermillion. The iris is red brown. I

have searched carefully for young males that had not donned the adult plumage, and succeeded in obtaining two or three indifferent specimens. The colors were similar to those of the adult female, except that the cap was brown with a rufescent tinge, like that of the wings and tail, and there were some dull brick red feathers on the throat and breast. There were no violet ear coverts or moustachial stripes, and no yellow striæ on the breast. I obtained a full plumaged male once at Khandala in August, but have not traced this bird through the fall and winter.

232.—*Leptocoma zeylonica.*—Bombay, Poona, and other places a few miles east of the Sahyadri range. Not found at Khandala or Mahabaleshwar. The iris is bright ruby red.

233.—*Leptocoma minima.*—On the western slopes at Khandala, Mahabaleshwar, and Goa frontier. It moults earlier than either 226 or 232, and is in perfection in March. Hardly one in bright plumage is to be found after the middle of May. Iris, light hazel.

234.—*Arachnechthra asiatica.*—Common.

238.—*Dicæum minimum.*—Common on the western slopes of the Sahyadris.

239.—*Dicæum concolor.*—In the same localities, but rare.

240.—*Piprisoma agile.*—In the same localities, but rare.

253.—*Dendrophila frontalis.*—Goa frontier.

254.—*Upupa epops.*—Common.

255.—*Upupa nigripennis.*—Common.

256.—*Lanius lahtora.*—Common in the Dakhan throughout the year. They live as far from human habitations as they can.

257.—*Lanius erythronotus.*—This is the common shrike along the hills, and is also found more sparingly on the Dakhan plains till April or even May.

260.—*Lanius Hardwickii.*—Common in the Dakhan till March, common at Khandala till the middle of May.

261.—*Lanius cristatus.*—Rare in the district of Ahmednagar.

265.—*Tephrodornis pondiceriana.*—Ahmednagar, but more common along the Sahyadris.

267.—*Hemipus picatus.*—Ahmednagar, but more common along the Sahyadris.

268.—*Volvocivora Sykesii.*—Khandala. Rare about Ahmednagar. Common in the woods by the Gatprabha river, in the Belgaum district.

270.—*Graucalus Macei.*—Everywhere, but not abundant.

272.—*Pericrocotus flammeus.*—Khandala and all along the western slopes of the hills, but most abundant on the Goa frontier.

276.—*Pericrocotus peregrinus.*—Common.

277.—*Pericrocotus erythopygius.*—Ahmednagar, rare.

278.—*Buchanga albirictus.*—Common.

280.—*Buchanga longicaudata.*—Khandala and all along the hills. Rarely found in the Ahmednagar district.

281.—*Dicrurus cœrulescens.*—Everywhere, but not abundant.

282.—*Chaptia ænea.*—Khandala low valleys.

285.—*Dissemurus malabaricus.*—Khandala, Goa frontier, and rarely all along the base of the hills.

288.—*Tchitrea paradisi.*—Everywhere at some season, but most common along the hills.

290.—*Myiagra azurea.*—Mahabaleshwar, and more rarely in the Ahmednagar districts.

292.—*Leucocerca albofrontata.*—Common in the Dakhan.

293.—*Leucocerca leucogaster.*—Rare at Mahabaleshwar, common at Satara, Poona, &c., but do not seem to come as far from the hills as to Ahmednagar.

295.—*Culicicapa cinereocapilla.*—Ahmednagar districts.

297.—*Alseonax latirostris.*—Everywhere, but not abundant.

301.—*Eumyias melanops.*—Mahabaleshwar, &c., and sometimes found in the Ahmednagar district.

305.—*Cyornis Tickellii.*—Everywhere in suitable localities, but sparse.

307.—*Cyornis ruficauda.*—Ahmednagar, rare.

309.—*Cyornis pallipes.*—Two specimens procured in deep dark ravines near Parwar on the Goa frontier.

310.—*Muscicapula supercillaris.*—Ahmednagar. One specimen.

323.—*Erythrosterna parva.*—Found both at Ahmednagar and Mahabaleshwar in the cold season.

342.—*Myiophonus Horsfieldii.*—Along the Sahyadris on both sides. It has become more abundant at Mahabaleshwar within a few years.

345.—*Pitta coronata.*—I have seen three in the city of Ahmednagar. There were none at Khandala in April, but before the end of May they were in plenty in the valley west of the "Duke's Nose."

351.—*Petrocossyphus cyaneus.*—In the Dakhan till March. At Khandala till the end of April.

353.—*Orocetes cinclorhynchus.*—At Mahabaleshwar till into April. A pair was shot near Ahmednagar in October.

354.—*Geocichla cyanotus.*—Common along the hills on both sides.

356.—*Geocichla unicolor.*—Shot by Mr. Blanford at Khandala in November.

359.—*Merula nigropileus.*—Along the top of the Sahyadris. They have become abundant at Mahabaleshwar.

385.—*Pyctorhis sinensis.*—Eastern slopes at Mahabaleshwar, Khandala, &c.

389.—*Alcippe poiocephala.*—Abundant at Khandala, Mahabaleshwar, &c., but not found at Ahmednagar.

398.—*Dumetia albogularis.*—In same localities, but rarer than *Alcippe.*

399.—*Pellorneum ruficeps.*—Shy, but abundant along the hills. Its laughing notes and the babbling of *Alcippe*, are to be heard every morning and evening in Mahabaleshwar.

404.—*Pomatorhinus Horsfieldii.*—Makes all the ravines of the Sahyadris ring with its bell-like notes.

433.—*Malacocircus griseus* met me when on the way to Belgaw on the south bank of the Gatprabha river, and seemed to make that river the boundary between its territory and that of *M. Malcolmi.* I did not see the latter again till after we had passed the Gatprabha on our return to Satara.

435.—*Malacocircus Sommervillei* is the Babbler found on the Goa frontier as well as at Mahabaleshwar and Khandala.

436.—*Malacocircus Malcolmi* is one of the commonest birds around Ahmednagar, Poona, and Satara. It is not, however, found at either Khandala or Mahabaleshwar.

437.—*Layardia subrufa.*—I obtained a single specimen at Talmet, near Mahabaleshwar.

438.—*Crateropus caudatus.*—Common around Ahmednagar.

446.—*Hypsiptes ganeesa.*—Rarely found on the Mahabaleshwar plateau. Abundant on the Goa frontier.

450.—*Criniger ictericus.*—Rarely found on the Mahabaleshwar plateau. Abundant on the Goa frontier.

452.—*Ixos luteolus.*—In thickets by the Gatprabha river in the Belgaw district, but not found on the Goa frontier.

460 *bis.*—*Otocompsa fuscicaudata.*—Abundant along the hills from Khandala to Goa. Does not stray far into the Dakhan.

462.—*Pycnonotus pusillus.*—Eastern slopes of the hills and the Dakhan.

463.—*Phyllornis Jerdoni.*—Along the hills from Khandala to Goa, usually found near the western base.

464.—*Phyllornis malabaricus.*—Along the hills from Khandala to Goa, usually found near the western base.

468.—*Ægithina typhia.*—Throughout our province. The mature birds in the *zeylonica* plumage are respectively more common at Khandala than at Ahmednagar.

469.—*Irena puella.*—Found in the Sawant Wade woods.

470.—*Oriolus kundoo.*—All over our region.

471.—*Oriolus indicus.*—Obtained one in the Sawant Wade woods.

473.—*Oriolus ceylonensis.*—Konkan and on western declivities of the Sahyadris, from Khandala to Goa.

475.—*Copsychus saularis.*—Rare in the Dakhan. Common along the hills.

476.—*Kittocincla macroura.*—In thick woods along the hills. More plentifully in the wooded valley between the reversing station and the "Duke's Nose," at Khandala than in any other locality I have visited.

479.—*Thamnobia fulicata.*—In villages in the Dakhan, as well as on the sides of all hills.

481.—*Pratincola caprata.*—Throughout.

483.—*Pratincola indica.*—Throughout the Dakhan.

488.—*Saxicola opistholeuca* is probably the name of a black and white Stonechat I have twice observed, but failed to secure. At Ahmednagar.

491.—*Saxicola isabellina.*—Rare among bushes in the Ahmednagar district.

492.—*Saxicola deserti.*—Rare among bushes in the Ahmednagar district.

497.—*Ruticilla rufiventris.*—Dakhan in the cold season.

507.—*Larvivora superciliaris.**—Mahabaleshwar and Goa frontier. In damp deep shade.

514.—*Cyanecula suecica.*—Ahmednagar district. By hedges and in bushes and rushes on the banks of streams.

515.—*Acrocephalus stentorius* (=*A. brunnescens*).—Ahmednagar. Among rushes.

516.—*Acrocephalus dumetorum.*—In every tree in the cold season.

530.—*Orthotomus sutorius*(=*O. longicauda.*)—Throughout our province.

534.—*Prinia socialis.*—Nearly as common.

538.—*Prinia Hodgsoni.*—At western base of the hills by Khandala and Mahabaleshwar.

543.—*Drymoipus inornata*, and 544 *D. longicaudatus*, which is the same in winter plumage, are common in the Dakhan.

551.—*Franklinia Buchanani.*—Ahmednagar district. Has the habits of *Chatarrhœa.*

553.—*Hypolais rama.*—Khandala.

554.—*Phyllopneuste tristis.*—Ahmednagar.

558.—*Phyllopneuste lugubris.*—Ahmednagar.

559.—*Phyllopneuste nitidus.*—Ahmednagar.

560.—*Phyllopneuste viridanus.*—Khandala.

561.—*Phyllopneuste affinis.*—Karti, near Khandala.

---

* Equals *cyana* et *cyanea*, Hodgs., *nec cyane*, Pall.—Ed., S. F.

562.—*Phyllopneuste indicus.*—Ahmednagar, Khandala.
563.—*Reguloides occipitalis.*—Ahmednagar.
565.—*Reguloides superciliosus.*—Common.
581.—*Sylvia orphea.*—Common in Dakhan.
582.—*Sylvia affinis.*—Common in Dakhan.
583.—*Sylvia curruca.*—Common in Dakhan.
589.—*Motacilla maderaspatana.*—Along all our rivers.
591 *bis.*—*Motacilla dakhanensis.*—Common in the cold season in the Dakhan.
592.—*Calobates melanope.*—Associates with 591, and is common by mountain streams where 591 is rare.
593.—*Budytes viridis.**—Ahmednagar district, following cattle and sheep.
594.—*Budytes calcaratus.*—Ahmednagar and Khandala. In beds of streams and other damp places. Rather rare.
595.—*Nemoricola indica.*—Mahabaleshwar and Goa frontier, in woods. Rare.
596.—*Pipastes agilis.*—Common.
600.—*Corydalla rufula.*—Common in the Dakhan, and found on the hills.
601.—*Corydalla striolata.*—Dakhan. Less common than 600 and 602.
602.—*Agrodroma campestris.*—Dakhan. Common.
603.—*Agrodroma similis.*—One obtained on the Mainpur ghat, near Ahmednagar.
631.—*Zosterops palpebrosus.*—Common everywhere.
645.—*Parus cinereus.*—Common in Dakhan.
648.—*Machlolophus Jerdoni.*—Along the hills.
660.—*Corvus Levaillantii.*—Everywhere.
663.—*Corvus splendens.*—Everywhere, except on the higher mountains. Not often found on the Mahabaleshwar plateau.
674.—*Dendrocitta rufa.*—All along the Sahyadris and in some restricted places in the Ahmednagar district.
684.—*Acridotheres tristis.*—Dakhan and on the eastern slopes of the Sahyadris.
686.—*Acridotheres fuscus.*—Top and western slopes of the Sahyadris.
687.—*Temenuchus pagodarum.*—Everywhere, though numerically less abundant than *Acridotheres.*
690.—*Pastor roseus.*—Comes into the Dakhan in vast flocks in November and stays till April.
694.—*Ploceus baya.* Everywhere.
699.—*Munia punctulata.*—Rare in the Ahmednagar district.
701.—*Munia striata.*—Khandala to Goa along the Ghat hills.

---

* Probably *cinereocapilla* is meant.—Ed., S. F.

703.—*Munia malabarica.*—Common. Especially abundant in the Ahmednagar district.

704.—*Estrilda amandava.*—Near Mahabaleshwar, rare.

705.—*Estrilda formosa.*—Near Mahabaleshwar, rare.

706.—*Passer indicus.*—Everywhere.

711.—*Passer flavicollis.*—Found everywhere, but in small numbers.

716.—*Emberiza Huttoni.*—Everywhere and abundant on some Ghats.

721.—*Euspiza melanocephala.*—Ahmednagar district. Comes in flocks and is very destructive to the grain crops.

722.—*Euspiza luteola.*—An individual is now and then found in the Ahmednagar district, particularly in the eastern part of it.

724.—*Melophus melanicterus.*—Sparsely scattered on the sides of the Sahyadris, and also of the spurs that extend into the Dakhan.

738.—*Carpodacus erythrinus.*—On both our hills and plains in the cold season, but it leaves us just as the plumage acquires its roseate flush, in the end of March.

756.—*Mirafra erythroptera.*—Ahmednagar district. Among bushes and particularly on hill sides.

758.—*Ammomanes phœnicura.*—In every field in the Dakhan.

760.—*Pyrrhulauda grisea.*—In every field in the Dakhan.

761.—*Calandrella brachydactyla.*—Abundant in the Ahmednagar district in the cold season. It lives in large flocks.

765.—*Spizalauda deva.*—The doubts about this species have been removed by a comparison of specimens with Colonel Sykes' types. Everywhere in the Dakhan.

768.—*Spizalauda malabarica.*—Khandala to Goa, along the hills. It is similar to 765 in appearance and habits, but is larger, darker in plumage, and has a much longer bill.

773.—*Crocopus chlorigaster.*—Everywhere, but not very abundant.

775.—*Osmotreron malabarica.*—Khandala, in the valley west of the "Duke's Nose." Jerdon's description needs to be corrected. The wing feathers are edged with white. The tail appears all green above when closed, but shows the ashy tips of the side feathers when opened. The six middle under-tail coverts of the male are cinnamon colored. The rest of them are of the same green, ashy, and white mixture as in the female. The soft basal part of the bill is glaucous green, but the tips of both mandibles are ashy. The iris is blue with an outer ring of pink or lake-red. Jerdon has made the same mistake, doubtless clerical, in describing the irides of *Crocopus phœnicopterus.* The irides of *Crocopus chlorigaster* at least are smalt blue, with an outer circle of carmine.

786.—*Palumbus Elphinstonei.*—Mahabaleshwar and along the hills, but rare.

788.—*Columba intermedia.*—Everywhere.

792.—*Turtur rupicola.*—All along the Sahyadris, especially on the western slopes, rarely found in the Ahmednagar district.

793.—*Turtur meena.*—At Mahabaleshwar in the cold season.

794.—*Turtur cambayensis.*—Everywhere.

795.—*Turtur suratensis.*—Abundant along the hills, especially on the western slopes. Rare in the Ahmednagar district.

796.—*Turtur risoria.*—Everywhere. Very abundant in the Dakhan.

797.—*Turtur humilis.*—Ahmednagar district, in small flocks in the cold season.

800.—*Pterocles fasciatus.*—Ahmednagar district. In pairs among bushes at the base of hills.

802.—*Pterocles exustus.*—Frequents the open fields around Ahmednagar, often collecting into large flocks.

803.—*Pavo cristatus.*—In wooded hills and ravines, but not abundant in our region.

813.—*Gallus Sonneratii.*—Khandala to Goa along the hills, but nowhere allowed to become abundant.

814.—*Galloperdix spadiceus.*—Abundant at Khandala, Mahabaleshwar, and all along the Ghat range.

819.—*Francolinus pictus.*—Dakhan in bushy places.

822.—*Ortygornis ponticeriana.*—Throughout the Dakhan.

826.—*Perdicula cambayensis.*—Khandala, Mahabaleshwar, &c.

827.—*Perdicula asiatica.*—Ahmednagar and the Dakhan generally.

828.—*Microperdix erythrorhyncha.*—Khandala, Mahabaleshwar, &c.

829.—*Coturnix communis.*—Dakhan, in the cold season.

830.—*Coturnix coromandelica*—Dakhan, at all seasons.

832.—*Turnix taigoor.*—Common.

835.—*Turnix Dussumieri.*—Dakhan. Not abundant.

836.—*Eupodotis Edwardsii.*—Ahmednagar district. It is becoming scarce.

839.—*Sypheotides aurita.*—Dakhan.

840.—*Cursorius coromandelicus.*—Dakhan. Common in the cold season, and I have seen them in July.

844.—*Squatarola helvetica.*—Dakhan, in flocks in the cold season.

845.—*Charadrius fulvus.*—I have not seen it, but Mr. Blanford told me he had received specimens from Bombay.

849.—*Ægialitis philippensis.*—Dakhan, Khandala.

855.—*Lobivanellus indicus.*—By every stream in our region.

856.—*Sarciophorus malabaricus.*—Dakhan fields.

859.—*Œdicnemus indicus.*—Dakhan fields.

865.—*Grus cinerea.*—Rarely visits the Ahmednagar district in the cold season.

866.—*Anthropoides virgo.*—Dakhan, in large flocks.

871.—*Gallinago scolopacina.*—In all marshy places, though in small numbers in the cold season.

872.—*Gallinago gallinula.*—In all marshy places, though in small numbers in the cold season.

873.—*Rhynchæa bengalensis.*—Permanent resident in the Dakhan.

885.—*Tringa Temminckii.*—Ahmednagar, &c.

891.—*Actitis glareola.*—Ahmednagar, &c.

892.—*Actitis ochropus.*—Ahmednagar, &c.

893.—*Actitis hypoleucos.*—Ahmednagar, &c.

894.—*Totanus canescens.*—Ahmednagar, &c.

895.—*Totanus stagnatilis.*—Ahmednagar, &c.

898.—*Himantopus candidus.*—Ahmednagar, &c.

900.—*Metopodius indicus.*—Dakhan, but rare.

901.—*Hydrophasianus chirurgus.*—Dakhan, but rare.

902.—*Porphyrio poliocephalus.*—Mr. Blanford tells me he once saw a specimen of this species freshly killed at Poona.

903.—*Fulica atra.*—Not rare in the Ahmednagar district.

907.—*Gallinula phœnicura.*—By the Koina river, near Mahabaleshwar.

909.—*Porzana maruetta.*—Ahmednagar.

910.—*Porzana pygmæa.*—Ahmednagar.

915.—*Leptoptilus argala.*—Dakhan, but is rare.

918.—*Ciconia nigra.*—Dakhan, but is rare.

919.—*Ciconia alba.*—Dakhan, more plentiful.

920.—*Ciconia episcopus.*—Dakhan, more plentiful.

923.—*Ardea cinerea.*—Dakhan, more plentiful.

924.—*Ardea purpurea.*—Dakhan, more plentiful.

925.—*Herodias alba.*—Dakhan, more plentiful.

926.—*Herodias egrettoides.*—Dakhan, more plentiful.

927.—*Herodias garzetta.*—Dakhan, more plentiful.

928.—*Demiegretta gularis.*—Dakhan, more plentiful.

929.—*Buphus coromandus.*—Dakhan, &c., abundant.

930.—*Ardeola Grayii.*—Dakhan, &c., abundant.

931.—*Butorides javanicus.*—By streams along the hills, and sometimes in the Dakhan.

933.—*Ardetta cinnamomea.*—Mahabaleshwar, rare.

937.—*Nycticorax griseus.*—Not uncommon in the Ahmednagar districts.

938.—*Tantalus leucocephalus.*—They breed in the Ahmednagar district, gathering in large numbers in certain villages, and nesting on banyan trees, of which they use every available branch.

939.—*Platalea leucorodia.*—Dakhan.
940.—*Anastomus oscitans.*—Dakhan.
941.—*Threskiornis melanocephalus.*—Dakhan.
942.—*Geronticus papillosus.*—Dakhan.
944.—*Phœnicopterus roseus.*—Sometimes visits the larger collections of water in the Dakhan and the salt pans in Bombay.
952.—*Dendrocygua arcuata.*—Observed at Mahabaleshwar.
953.—*Dendrocygua major.*—Obtained a pair once near Ahmednagar, but I have seen them on no other occasion.
954.—*Casarca rutila.*—Dakhan through the cold season, in pairs along on larger rivers.
957.—*Spatula clypeata.*—Dakhan.
959.—*Anas pœcilorhyncha.*—Dakhan.
960.—*Anas caryophyllacea.*—One rose from a tank close by me, so that I am sure of its identity, though I did not bag it.
961.—*Anas streperus.*—Dakhan.
964.—*Anas crecca.*—Dakhan.
965.—*Anas circia.*—Dakhan.
967.—*Branta rufina.*—Dakhan.
975.—*Podiceps philippensis.*—In all lakes and large tanks.
985.—*Sterna seena.*—Along Dakhan rivers.
1007.—*Graculus pygmæus.*—Along Dakhan rivers.
1008.—*Plotus melanogaster.*—Along Dakhan rivers.

I have omitted some names of birds that I think I have obtained, because they were not carefully examined at the time, and their not having been found for several years, casts some doubt on the old identification.

There are 313 species in this list. Of these some reside in all parts of the district under examination. Some reside in restricted localities, and so deserve particular enumeration.

The following 28 species belong to the Malabar region. The title is used in a wide sense, to include the whole strip of land between the Sahyadri mountains and the Arabian sea. Really the Malabar Coast does not extend half way from Cape Comorin to Bombay. But the conditions of climate and food are so similar from Cape Comorin to Surat, that the region had better be regarded as one and in fact many of the following birds are likely to be found throughout the strip, and to some extent up the similar Coromandel Coast, and are not found elsewhere in the Peninsula :—

32.—*Neopus malayensis.*
115.—*Harpactes fasciatus.*
119.—*Merops Swinhoei.*
140.—*Dichoceros cavatus.*
141.—*Hydrocissa coronata.*
145.—*Tockus griseus.*

151.—*Palæornis columboides.*
153.—*Loriculus vernalis.*
179.—*Micropternus gularis.*
181.—*Brachypternus chrysonotus.*
194.—*Megalæma viridis.*
198.—*Megalæma malabarica.*
202.—*Cuculus Sonneratii.*
226.—*Æthopyga Vigorsii.*
233.—*Leptocoma minima.*
272.—*Pericrocotus flammeus.*
285.—*Dissemurus malabaricus.*
309.—*Cyornis pallipes.*
389.—*Alcippe poiocephala.*
435 —*Malacocircus Sommervillei?*
437.—*Layardia subrufa.*
446.—*Hypsipetes ganeesa.*
450.—*Criniger ictericus.*
464.—*Phyllornis malabaricus.*
469.—*Irena puella.*
775.—*Osmotreron malabarica.*
786.—*Palumbus Elphinstonei.*
828.—*Perdicula erythrorhyncha.*

In addition to the above, the following 32 species belong to the Sahyadri mountains, as distinguished from the Dakhan, so that 60 species found along the hills, have not been seen by me in the plains of the Dakhan :—

72.—*Ketupa ceylonensis.*
91.—*Ptyonoprogne rupestris.*
164.—*Yungpicus Hardwickii.*
166.—*Chrysocolaptes gutticristatus* (*C. Delesserti.*)
193.—*Megalæma inornata.*
238.—*Dicaeum minimum.*
239.—*Dicæum concolor.*
240.—*Piprisoma agile.*
253.—*Dendrophila frontalis.*
282.—*Chaptia ænea.*
359.—*Merula nigropileus.*
385.—*Pyctorhis sinensis.*
398.—*Dumetia albogularis.*
399.—*Pellorneum ruficeps.*
404.—*Pomatorhinus Horsfieldii.*
460.—*Otocompsa fuscicaudata.*
463.—*Phyllornis Jerdoni.*
476.—*Cittocincla macroura.*
507.—*Larvivora superciliaris.*
538.—*Prinia Hodgsoni.*

939.—*Platalea leucorodia.*—Dakhan.
940.—*Anastomus oscitans.*—Dakhan.
941.—*Threskiornis melanocephalus.*—Dakhan.
942.—*Geronticus papillosus.*—Dakhan.
944.—*Phœnicopterus roseus.*—Sometimes visits the larger collections of water in the Dakhan and the salt pans in Bombay.
952.—*Dendrocygua arcuata.*—Observed at Mahabaleshwar.
953.—*Dendrocygua major.*—Obtained a pair once near Ahmednagar, but I have seen them on no other occasion.
954.—*Casarca rutila.*—Dakhan through the cold season, in pairs along on larger rivers.
957.—*Spatula clypeata.*—Dakhan.
959.—*Anas pœcilorhyncha.*—Dakhan.
960.—*Anas caryophyllacea.*—One rose from a tank close by me, so that I am sure of its identity, though I did not bag it.
961.—*Anas streperus.*—Dakhan.
964.—*Anas crecca.*—Dakhan.
965.—*Anas circia.*—Dakhan.
967.—*Branta rufina.*—Dakhan.
975.—*Podiceps philippensis.*—In all lakes and large tanks.
985.—*Sterna seena.*—Along Dakhan rivers.
1007.—*Graculus pygmæus.*—Along Dakhan rivers.
1008.—*Plotus melanogaster.*—Along Dakhan rivers.

I have omitted some names of birds that I think I have obtained, because they were not carefully examined at the time, and their not having been found for several years, casts some doubt on the old identification.

There are 313 species in this list. Of these some reside in all parts of the district under examination. Some reside in restricted localities, and so deserve particular enumeration.

The following 28 species belong to the Malabar region. The title is used in a wide sense, to include the whole strip of land between the Sahyadri mountains and the Arabian sea. Really the Malabar Coast does not extend half way from Cape Comorin to Bombay. But the conditions of climate and food are so similar from Cape Comorin to Surat, that the region had better be regarded as one and in fact many of the following birds are likely to be found throughout the strip, and to some extent up the similar Coromandel Coast, and are not found elsewhere in the Peninsula :—

32.—*Neopus malayensis.*
115.—*Harpactes fasciatus.*
119.—*Merops Swinhoei.*
140.—*Dichoceros cavatus.*
141.—*Hydrocissa coronata.*
145.—*Tockus griseus.*

151.—*Palæornis columboides.*
153.—*Loriculus vernalis.*
179.—*Micropternus gularis.*
181.—*Brachypternus chrysonotus.*
194.—*Megalæma viridis.*
198.—*Megalæma malabarica.*
202.—*Cuculus Sonneratii.*
226.—*Æthopyga Vigorsii.*
233.—*Leptocoma minima.*
272.—*Pericrocotus flammeus.*
285.—*Dissemurus malabaricus.*
309.—*Cyornis pallipes.*
389.—*Alcippe poiocephala.*
435 —*Malacocircus Sommervillei ?*
437.—*Layardia subrufa.*
446.—*Hypsipetes ganeesa.*
450.—*Criniger ictericus.*
464.—*Phyllornis malabaricus.*
469.—*Irena puella.*
775.—*Osmotreron malabarica.*
786.—*Palumbus Elphinstonei.*
828.—*Perdicula erythrorhyncha.*

In addition to the above, the following 32 species belong to the Sahyadri mountains, as distinguished from the Dakhan, so that 60 species found along the hills, have not been seen by me in the plains of the Dakhan :—

72.—*Ketupa ceylonensis.*
91.—*Ptyonoprogne rupestris.*
164.—*Yungpicus Hardwickii.*
166.—*Chrysocolaptes gutticristatus* (*C. Delesserti.*)
193.—*Megalæma inornata.*
238.—*Dicaeum minimum.*
239.—*Dicæum concolor.*
240.—*Piprisoma agile.*
253.—*Dendrophila frontalis.*
282.—*Chaptia ænea.*
359.—*Merula nigropileus.*
385.—*Pyctorhis sinensis.*
398.—*Dumetia albogularis.*
399.—*Pellorneum ruficeps.*
404.—*Pomatorhinus Horsfieldii.*
460.—*Otocompsa fuscicaudata.*
463.—*Phyllornis Jerdoni.*
476.—*Cittocincla macroura.*
507.—*Larvivora superciliaris.*
538.—*Prinia Hodgsoni.*

595.—*Nemoricola indica.*
648.—*Machlolophus Jerdoni.*
686.—*Acridotheres fuscus.*
701.—*Munia striata.*
704.—*Estrilda amandava.*
705.—*Estrilda formosa.*
768.—*Alauda malabarica.*
793.—*Turtur meena.*
813.—*Gallus Sonneratii.*
814.—*Galloperdix spadiceus.*
826.—*Perdicula cambayensis.*
933.—*Ardetta cinnamomea.*

The following 30 species, as well as several of the *Grallatores* and *Natatores* which would probably be found along the hills at the proper season, have not been observed out of the Dakhan :—

68.—*Brachyotus accipitrinus.*
69.—*Ascalapia bengalensis.*
74 *bis.*—*Ephialtes Brucei.*
81.—*Ninox hirsutus.*
232.—*Leptocoma zeylonica.*
256.—*Lanius lahtora.*
261.—*Lanius cristatus.*
277.—*Pericrocotus erythropygius.*
436.—*Malacocircus Malcolmi.*
438.—*Crateropus caudatus.*
488.—*Saxicola opistholeuca.*
491.—*Saxicola isabellina.*
492.—*Saxicola deserti.*
514.—*Cyanecula suecica.*
515.—*Acrocephalus stentorius.*
543.—*Drymoipus inornatus.*
551.—*Franklinia Buchanani.*
601.—*Corydalla striolata.*
603.—*Agrodroma similis.*
645.—*Parus cinereus.*
699.—*Munia punctulata.*
722.—*Euspiza luteola.*
758.—*Ammomanes phœnicura.*
761.—*Calandrella brachydactyla.*
800.—*Pterocles fasciatus.*
802.—*Pterocles exustus.*
827.—*Perdicula asiatica.*
835.—*Turnix Dussumieri.*
836.—*Eupodotis Edwardsii.*
839.—*Sypheotides aurita.*

840.—*Cursorius coromandelicus.*
856.—*Sarciophorus malabaricus.*

I have been interested in comparing this list with Captain Butler's list of the avi-fauna of Mount Aboo and Northern Guzerat. ("STRAY FEATHERS," Volume III, pp. 437—50, and Volume IV, pp. 1—41.) In the notes appended by the Editor of "STRAY FEATHERS," we find on page 36 of Volume IV, a list of 31 species that belong "exclusively, so far as the region with which we are dealing is concerned, to Mount Aboo." By examining this list of the birds we have found at Khandala, &c., it will be seen that we have no less than 23 (or perhaps 25) of these specialties of Mount Aboo within our borders.* Those we have not found are the following :—

9.—*Falco peregrinator.*
13.—*Hypotriorchis subbuteo.*
75 *ter.*—*Ephialtes bakhamuna.*
77.—*Athene radiata.*
147.—*Palæornis eupatria.*
171.—*Gecinus striolatus.*
219.—*Taccocua Leschenaulti.*
404 *ter.*—*Pomatorhinus obscurus.*

But 219 may be the same bird that we have identified as 222 *Taccocua affinis*, and 404 *ter* may be the same bird as the one we call 404 *Pomatorhinus Horsfieldii.*

As to Captain Butler's entire list, it contains 102 species that we have not found in the region we have under review. They are numbers

| | | | | | |
|---|---|---|---|---|---|
| 1 | 180 | 539 | 767 | 876 | 958 |
| 3 | 199 | 544 *bis* | 769 | 877 | 962 |
| 3 *bis* | 219 | 545 *bis* | 772 | 878 | 963 |
| 4 *bis* | 246 | 550 | 799 | 880 | 966 *bis* |
| 8 | 260 *ter* | 582 *bis* | 801 *bis* | 884 | 968 |
| 9 | 262 | 592 *bis* | 818 | 896 | 969 |
| 13 | 273 | 597 | 834 | 897 | 971 |
| 28 | 404 *ter* | 605 | 837 | 899 | 973 |
| 42 | 432 | 645 *ter* | 840 *bis* | 905 | 974 |
| 70 | 459 | 646 | 846 | 908 | 980 |
| 75 *ter* | 480 | 681 | 847 | 917 | 983 |
| 77 | 489 | 685 | 848 | 936 | 984 |
| 98 | 491 *bis* | 688 | 852 | 943 | 965 |
| 120 | 492 *ter* | 695 | 853 | 944 *bis* | 1001 |
| 147 | 494 | 716 *bis* | 858 | 945 | 1004 |
| 167 | 520 | 757 | 863 | 950 | 1005 |
| 171 | 536 | 765 *bis* | 875 | 951 | 1006 |

* This is what might have been expected, one great characteristic of the avi-fauna of Aboo being, as I pointed out, *Loc cit*, the strong admixture of Southern forms, which here find their northernmost limit, and are nowhere found in the plains country round about.—ED., S. F.

On the other hand our list contains 84 species that are not recorded as found in Guzerat by Captain Butler. Their numbers are as follows :—

| | | | | |
|---|---|---|---|---|
| 31 | 145 | 253 | 437 | 601 |
| 32 | 151 | 267 | 446 | 603 |
| 34 | 153 | 272 | 450 | 686 |
| 39 | 166 | 280 | 452 | 701 |
| 52 | 181 | 282 | 463 | 765 |
| 61 | 194 | 285 | 464 | 768 |
| 63 | 198 | 290 | 471 | 775 |
| 65 | 201 | 295 | 476 | 786 |
| 72 | 202 | 297 | 479 | 793 |
| 74 | 203 | 309 | 507 | 828 |
| 74 *bis* | 222 | 310 | 558 | 909 |
| 104 | 226 | 354 | 559 | 910 |
| 115 | 232 | 389 | 560 | 933 |
| 119 | 233 | 399 | 561 | 952 |
| 127 | 238 | 404 | 563 | 953 |
| 140 | 239 | 433 | 565 | 960 |
| 141 | 240 | 435 | 595 | |

The excess in favor of the Guzerat avi-fauna is due principally to the large number of water birds found there that do not visit us. We doubt not that a collection made in the vicinity of Bombay in the cold season would so largely increase our list that the excess would be in our favor.

## Ornithological Notes and Corrections.

By W. Edwin Brooks.

### 28.—Aquila maculata, *Gmelin (Aquila clanga*, Pallas), the Spotted Eagle.

There appears to be so much uncertainty as to what species *Aquila nævia* of Gmelin, Brisson, and the old authors really is, that it appears to me desirable to use instead Gmelin's term *maculata*, which is founded upon Latham's description of the "Spotted Eagle."

This latter description is very clearly defined, and together with his observations upon the names and geographical distribution of the species, fixes the bird beyond all doubt as the greater Spotted Eagle.

*Aquila nævia* of Schwenckfeld (the original describer of *nævia*) is, Mr. Dresser informs me, the common Buzzard, this being the case, it is not desirable to continue the use of the term for the Spotted Eagle.

It should be remembered that both Brisson's and Gmelin's descriptions are not original, but taken from older authors.

## Aquila rufonuchalis, n. s., the Lesser Spotted Eagle of Europe.

As far as I can see, there is not any existing term which is clearly applicable to this Eagle, and I therefore give it a name for convenience sake, and having reference to its first plumage.

Continental as well as English naturalists have been in the habit of applying to it the term of *Aquila nævia*, but this term is, as Mr. Dresser has shewn (Annals and Magazine of Nat. Hist., May 1874) wholly inapplicable; and with him I protest against its use for the species in question.

A new name for so well known a bird will surprise many; but who can prove to a demonstration that any previously existing term clearly belongs to it? Neither of Brehm's terms "*pomarina*" and "*subnævia*" relate to this Eagle, although they are given as synonyms by Mr. Sharpe.

I shall describe this Eagle as follows.—Of nearly the same size as *Aquila hastata*, but slightly more robust; general tone of body plumage very similar, but more inclined to rufous, especially about the head; the eye of the adult is said to be yellow, and I have seen a note to this effect upon the labels of skins collected by Mr. Robson at Belgrade; in the *first plumage it has a large fulvous or buff triangular nuchal patch*, the point of the triangle being downwards; the size of this patch is about two inches wide by one and a half inches in depth; the spots on the wings are similar to those of *Aquila hastata*, but the markings on the head and neck differ, being more like very narrow short stripes, instead of simple light tips; there are spots on the lower back, sometimes triangular, and sometimes plain roundish spots at the end of the feather; the lower tail coverts are, as a rule, of a darker tone than in *Aquila hastata*, and are striped or spotted as the case may be, with dull whitish; in adult plumage it is of course entirely spotless, being then a plain hair brown bird like *Aquila hastata*? in this stage the head and carpal region of the wing are generally lighter in tone than the rest of the upper surface. The tone of the bird in this stage, especially about the head, is more rufous than that of *Aquila hastata*.

I have examined three examples in first plumage, and they all correspond as regards the remarkable nuchal patch. There is a fourth in the Norwich museum with, I am told, a similar patch, but this one I have not seen; anyhow, a concord between three examples, and the first three young birds I have seen,

is conclusive as to specific distinctness. I have seen several in other stages of plumage, up to the entirely spotless one, but it would take up too much time now to copy the detailed descriptions out of my note-book.

It will be well to note here the points of difference between this Eagle and *Aquila hastata*, with which it may be very easily confounded:—

1. The nuchal patch in first plumage; and it is strange that this Eagle has a nuchal patch in *first* plumage, while the much larger *Aquila nipalensis* gets the nuchal patch in the *final* stage.
2. More rufous in general tone of plumage.
3. Inclined to have a paler and more sandy-colored head.
4. Frequently the upper part of the wing or carpal region, and immediately below the scapulars when the wing is closed, is of a very light brown, contrasting strongly with the darker brown of the back. I have seen many examples of *Aquila hastata*, but in only one in the museum of Mr Hume, is this peculiarity marked. It is conspicuous in most examples of the common Indian Kite, *Milvus affinis*.
5. The nostril as a rule is larger, but of the same shape
6. The outline of the top of skull, seen in elevation, has the occipital portion raised higher above the line of top of bill than in *hastata*. This is generally the case, but a few have the skull-shaped as in *hastata*.
7. The darker lower tail coverts of the immature bird and which are sometimes tipped, and sometimes striped with dull yellowish white.
8. The spots in the lower back, and which I have only seen in one example of *hastata* from Darjeeling collected by Major Sharp, and now in the collection of skins in the British museum.
9. The fine narrow stripes of fulvous on the feathers of the back of head, which feathers in *hastata* are merely tipped with this color.
10. The yellow eye. This I only have evidence for, and cannot confirm from my own observation.

Of the above points the nuchal patch, the spots in lower back, and the more rufous tone of the bird, especially about the head, are the most important.

I once united this Eagle with *Aquila hastata* from a comparison of mature birds only; but I was mistaken, for in immature plumage, there is considerable difference.

Mr. Dresser (in Annals and Magazine of Nat. Hist., May 1874) has applied Gmelin's term of *Aquila maculata* to

this species, which in my opinion is wrong for the following reasons :—

1. Latham's description (on which Gmelin's is founded) is very accurate, noting even the small spots on the tibia; it is clear from the amount of spots to which he refers, and from the striated lower parts, that the bird was in first plumage; and taking the minuteness of the description into account, it is not likely that he would omit all notice of the *one* large spot the bird possesses, *viz.* that on the nape of the neck.

2. He speaks of the wing spots as "giving the wing a most beautiful appearance." The wing spots of the lesser bird are not very conspicuous, and at the distance of a few yards it would hardly shew its spots at all; but take a young example of the larger bird, and its big shower of large oval white spots at once command attention, for they really present "a most beautiful appearance."

3. Latham says, the inner secondaries are white at their ends "for more than an inch, which is decidedly not the case with *Aquila rufonuchalis*, which has these white tips considerably shorter," most examples of the larger bird, however, fully come up to the requirement.

4. The back is said to be spotted with buff, and speaking of the large oval white wing spots, he says :—"The feathers on the middle of the back are likewise spotted, but of a pale buff color." The larger bird is noted for large oval buff spots on the back, which are often so numerous and large, that they coalesce. Let me here remark that I cannot say at what stage these large oval spots are exchanged for smaller triangular ones; perhaps after the first moult.

5. In his later description of the bird (1821), in which he adopts Gmelin's Latin term, Latham gives further particulars and says, the bird "is found everywhere in Russia and Siberia, and even in Kamtschatcka," that "it has a plaintive cry, hence called Planga and Clanga." Latham's synonomy also connects his bird with the larger and well-known Spotted Eagle.

In the face of the above evidence it is impossible to correctly apply Latham's term to the small German Eagle, which neither answers to the description, nor to the geographical distribution indicated. *Falco maculatus*, Gmelin, is therefore a term clearly applicable only to the larger and well-known bird.

## Aquila nævioides, *Cuv.*

I have seen a third South African example in the collection of Canon Tristram, and it corresponds very closely with the first one that I described (Pros. A. S. B. 1873, pp. 173, 174).

I have seen two or three of the dark Abyssinian species usually referred to *A. nævioides*, but I consider them quite

distinct, and probably referable to *Aquila albicans*, Rüppell. There is no disposition to rufous in the Abyssinian bird, while *nævioides* is pre-eminently rufous, the most rufous of Eagles. I have seen an old very pale-faded example of the South African bird which was in the moult, and the new feathers, which were just coming, were of a full rich red. The dark Abyssinian species is in every way as distinct as possible, and is closely affined to the Indian *A. vindhiana;* but it is larger, more robust, and possessed of more uniform coloration.

## 41 *bis*.—Poliætus plumbeus, *Hodgs.*

I examined specimens of *P. humilis*, Schl. and Müll, which are distinct from the Indian bird, and very much smaller.

## 49.—Archebutio strophiatus, *Hodgs.*

I saw one of Hodgson's examples in the British museum. It agrees very closely with his drawing, and this leads me to adhere to my conclusion that *A. cryptogenys*, Hodgs, is a good and entirely distinct species. Hodgson's minute details of the latter shew a much feebler bird of distinct coloration. The type is not to be found now, so we have a rarer bird than what the great Auk was to search after. *Aquila hastata* that myth of an Eagle has been brought thoroughly to light, so let us hope that some determined ornithologist will succeed in making *A. cryptogenys* well known.*

## 56.—Milvus govinda, *Sykes.*

I examined the type in the Kensington museum. There are two examples there labelled "*Milvus govinda*," but one, which is a small example of *Milvus affinis*, Gould, does not in any way agree with Sykes' original description, and it must therefore be discarded.

† The type bird is in almost juvenile plumage, having the lower parts striated. The wing is 19·5 inch, and the tail 11·5

* Personally I have little doubts that *cryptogenys, hemiptilopus, and strophiatus* are all one and the same. Coloration goes absolutely for nothing in these birds, and the males are markedly feebler than the females. See my remarks on Buzzards in the Travancore paper.—Ed., S. F.

† Is not this rather begging the question? In the first place there is nothing to show that *either* of these was the type. Colonel Sykes by no means gave all his collections to the Indian Museum. I remember that as late as 1862, the last time I was in his house, he had a number of mounted birds there—as far as I remember all moderate-sized ones; but he may have had larger ones elsewhere.

In the next place Mr. Brooks ignores what I conceive to be a fundamental fact, *viz.*, that we have 3 distinct Kites in India the small *affinis* identical, as I years ago showed, with Australian specimens. A larger Kite with mottled bases to the primaries which I hold to be *govinda*, and a much larger Kite, with pure white bases to the primaries, which is my *major*. Either of these latter may be *melanotis*, T and S, but both cannot be, and from what Mr. Gurney writes to me of the basal portions of the primaries in *melanotis*, I believe that this belongs to *govinda* if it belongs *to either* of our Indian species.—Ed., S. F.

inches long. As mounted, the bird with its head bent, measures 24 inches; and in the flesh, measured with head and body in one line, would have fully reached the dimension of the original description or 26 inches. There is no original label on either bird. The primaries of the type are largely mottled with white on the basal portion when the wing is opened and looked at from below. There are a few very rufous new feathers appearing in the upper plumage.

It is a decided example of *Milvus melanotis*, T. and S., which term, together with *Milvus major*, Hume, become synonyms of *Milvus govinda*, Sykes.

*Milvus affinis*, Gould; I examined some Australian examples and found them identical with our common Indian Kite.

## 243 *bis*.—Certhia Hodgsoni, *Brooks*.

My distinction of four plain outer primaries holds good. In all the European ones I have examined, there are three plain primaries. Supposing one or two of the English species were found with four plain outer primaries, this would not invalidate a general rule, and a prevailing difference, even with an occasional exception, must not be set aside. *Sitta cashmirensis*, Brooks, is considered by Mr. Dresser and others who have seen it to be a good species. I mention this as it was doubtfully referred to in birds of Europe.

## 297.—Alseonax latirostris, *Raffles*.

*A. cinereoalba* (T. and S.); I have seen two more examples from Japan,* and they do not agree with the Indian *A. terricolor*, Hodgs. The bill is somewhat differently shaped, and has much more black on the lower mandible; also the general tone of the plumage is much more ashy or greyer than that of *terricolor*. Mr. Swinhoe was wrong in uniting the two species.

## 323 *bis*.—Erythrosterna parva, *Meyer and Wolf*.

Indian examples are not to be separated from European ones. It appears that I was wrong in considering Indian examples of *parva* to be *E. hyperythra*, Cabanis, figured by Holdsworth, in winter dress. *E. hyperythra* must therefore be a hill species, which does not migrate to the plains of India in the cold weather.

---

* *A. latirostris* was described from Sumatra—all we in India contend for is that *latirostris* is probably identical with *terricolor*, Hodgs. inasmuch as we get this *terricolor* not only all over India, but in the Andamans and throughout the Malay Peninsular to within a few miles of Sumatra. Whether the Japanese bird is distinct or not, does not alter the fact that *latirostris* of Sumatra is infinitely more likely to be identical with birds on the other side of the Straits of Malacca than with Japanese birds, and that therefore our Indian bird which is identical with specimens from the latter locality ought in all human probability to stand as *latirostris*.—Ed., S. F.

We have then in India three closely affined species, *E. parva*, *E. albicilla*, *Pallas* (erroneously termed *leucura*, Gmelin), and *E. hyperythra*.

**393 *bis*.—Stachyris rufifrons, *Hume*.**

*Stachyris præcognitus*, Swinhoe, has a very red head and no striæ like *S. rufifrons*, Hume. The latter is smaller and somewhat paler on the head.

**483.—Pratincola indica, *Blyth*.**

Is quite* distinct from *rubicola*, and as observed by Mr. Swinhoe, has always the upper tail coverts plain, which in *rubicola* are always marked longitudinally with dark brown. This is an unfailing distinction; so let the confounding of these two distinct Stonechats be abandoned for the future.

**Pratincola robusta, *Tristram*.**

I examined the two types, and consider this remarkably fine large Stonechat to be a good species. It is rarer than *P. insignis*, Hodgson.

**548.—Drymoipus inornatus, *Sykes*.**

I examined the type, and it is in the *longicaudatus* plumage, or the winter plumage of *D. terricolor*, Hume.

The synonyms of this bird are therefore—

D. inornatus, *Sykes*.
D. longicaudatus, *Tickell*.
D. terricolor, *Hume*.

The difference between winter and summer plumage is fairly shewn in the plate in Lahore to Yarkand, except that the tip of the tail of the winter bird (*D. longicaudatus*) is too white.

I took a number of Indian examples with me to compare with Sykes' type, in order that no mistake might be made.

**550.—Drymoipus lepidus** (*Burnesia lepida*, Blyth.)

This is quite distinct from *Drymaeca gracilis*, Rüpp, and lays a blue egg streaked with black,† while the eggs of *D.*

* Some time ago I examined my large series of Indian and European birds and this distinction appeared to me infallible. Did not Cabanis first point it out? c. f. III, p. 429, and note, p. 239.—Ed., S. F.

† There is some mistake here. Our Indian bird, *gracilis* or *lepidus*, whichever it may be, lays a small glossy egg, with a dull white, greenish white, or pale green ground, profusely freckled and streaked, and, at times, even blotched with a bright, only slightly brownish, red; the markings are densest around the large end where they form a broad nearly confluent well-marked but imperfect and irregular zone. See also Nests and Eggs, Rough Draft, page 357. Since this was written Captain. Bingham has taken a very large number of these eggs, and they correspond perfectly with the specimens received from Mr. A. Anderson. I do not know what Mr. Brooks means by saying this bird lays a blue egg streaked with black.—Ed., S. F.

*gracilis*, which I have from Palestine taken by Canon Tristram, are as red as those of a *Prinia*. *D. lepidus* is a true *Drymoipus*, and should not be generically separated because it is streaked. The note is exceedingly like that of *D. inornatus*, but weaker, and its habits are very similar.

## 553.—Hippolais rama, *Sykes*.

I examined the type which Mr. Dresser correctly determined as the larger and greyer in species. I had specimens of both species with me for comparison.

## Phyllopneuste coronata, *T. & S.*

Is very like *Reguloides occipitalis*, but with darker and rather stronger bill. It is a rather brighter colored bird, and the lower tail coverts are pale yellow. The latter point is the characteristic distinction. It is quite distinct from *R. occipitalis*, with which it has been erroneously united.

## Phylloscopus Brehmii, *Homeyer*.

I have seen the type, which is *P. rufa*. The small Chiffchaffs are only the females, and not distinct species.

## Phylloscopus brevirostris, *Strickland*.

I have examined the type, and it is beyond all doubt only *P. rufa*. The wing formula of this species is subject to slight variation, which includes the proportions of the primaries of *P. brevirostris*.

## Phylloscopus abyssinicus, *Blanford*.

Is also *P. rufa* in fine pure spring plumage.

It was very satisfactory to find that the types of the three new Chiff-chaffs—*Brehmii*, *brevirostris*, and *abyssinicus*, were founded upon some of the phases of *P. rufa*. I myself had described very small female examples of *rufa* as *P. Tristrami*; but the Editor of the *Ibis* did not insert my paper as soon as I could have wished and I recalled it. I am glad now that the delay took place, or there would have been one more useless synonym of the Chiff-chaff.

Some years since I came to the conclusion that *Phylloscopus tristis*, Blyth, was identical with *P. rufa*. I had found that an example of *P. brevirostris*, sent me by Canon Tristram, was apparently identical with *P. rufa*. Blyth, in *Ibis* for 1867, page 25, suggests the identity of *tristis* and *brevirostris*; Jerdon also (Birds of India, page 873) refers to the identification on Blyth's authority; and as *brevirostris* was clearly *rufa*, I erroneously jumped to the conclusion that *tristis* = *rufa*. Close

comparison of a good series which I afterwards got of *rufa*, with our Indian bird, soon convinced me that I was wrong.

The European and Asiatic Chiff-chaffs much resemble each other, so a word or two upon their differences will not be out of place.

*Tristis* is not nearly so greenish above, nor so yellowish below as *rufa*. It is pale greyish, brown above, and dull fulvous white below, like *rufa*, it is rufous about the head, or strongly tinged with reddish white, the cheeks and supercilium especially shew this tint. *Rufa* is olive above, and much more tinged with yellow on the lower parts. Both birds have the bright yellow axillaries and edge of wing. While *rufa* is a rather richly toned *Phylloscopus*, *tristis* is, with the exception of *neglectus*, the most sober-toned of the group.

With regard to the eggs said to be those of *tristis* taken by Messrs. Seebohm and Harvie Brown, I am not quite satisfied with them. They are exactly like those of *trochilus*, but rather smaller than the average. They rest entirely upon native evidence, and were taken where *trochilus* is common. They therefore require confirmation. I should expect the eggs of *tristis* to be more like those of *rufa*, *viz.* spotted with dark purple brown, instead of light red. Still the eggs may be those of *tristis* which time will shew. *Vide Ibis* for April 1876.

## Phylloscopus xanthodryas, *Swinhoe.*

Is a very distinct species, similar in coloration of upper surface to *P. magnirostris*, but rather greener; and its lower surface is different, being a rather clear greenish yellow, more inclined to green than yellow. It is less infuscated on the sides of the breast and flanks than *magnirostris*. The second primary equals the 6th. It is about the same size as *magnirostris*.

## Phylloscopus plumbeitarsus, *Swinhoe.*

Is also a good species. It is about the size of *P. viridanus*, and has two wing bars. It is somewhat greener than that bird, and its supercilium is broad and long. The bill is stouter than in *viridanus*, being more of the *magnirostris* shape. Dried skins do not shew the colour of the legs and feet as different from those of *viridanus*, but no doubt the lead color is apparent in fresh examples. The second primary is equal to the seventh.

## Phylloscopus tenellipes, *Swinhoe.*

Another good bird; is a small *Phylloscopus* of entirely different coloration, brownish olive, above and passing to very rufous olive on lower back and tail. The head is inclined to greyish

brown. There is a buff-colored wing bar and indications of a second one. Supercilicum reddish white inclined to yellow anteriorly. A very dark band through the eye: cheeks mottled with brown; lower parts white, washed with brownish on sides of breast and flanks. Bill rather short and stout, legs and feet very pale, as in *Horornis*. The second primary is equal to seventh, or between sixth and seventh.

## Phylloscopus umbrovirens, *Rüpp.*

Is a remarkable species. Head ruddy brown, wings very green; tail greenish; no wing bars; bill rather stout; a warm brownish supercilium; from chin to breast light rufous brown or brownish buff, becoming paler lower down towards tail coverts.

## Phylloscopus Schwarzii, *Radde.*

I am afraid that my namesake, P. Brooksi, Hume, belongs to this species.* Comparing my colored sketch of the type, the only difference I can perceive is the slightly longer bill. Dimensions of two examples were: —

| | Wing. | Tail. | Bill at front. | Bill from nostril. | Bill from gape. |
|---|---|---|---|---|---|
| ♂ | 2″·5 | 2″·26 | ·29 | ·29 | ·47 |
| ♀ | 2″·5 | 2″·15 | ·29 | ·27 | ·5 |

The total lengths given on the labels are ♂ 143 Mill. ♀ Mill. 131. I have given a few particulars of *Phylloscopi* that are not Indian to facilitate identification; if any of them happen to turn up in India, which is not at all unlikely as regards the three Chinese species.

## 582.—Curruca affinis, *Blyth.*

The distinctions I have pointed out ("Stray Feathers," 1875, p. 272) hold good, and the Indian bird is quite distinct from its European congener.

## 582 *bis.*—Curruca cinerea, *Latham.*

Mr. Hume shewed me examples killed in the west of India.

* I am inclined to doubt this identification; *Schwarzii* is very carefully figured by Radde "Reisen im sudën von ost Sibirien." Table 9.

Neither of the two figures shew any supercilium, whereas this is very large and conspicuous in *Brooksi* extending to the nape. The shape of the first quill is different, and the bill of *Brooksi* appears to be not only shorter, but not nearly so broad; however, Mr. Brooks may be correct, but I had fully considered *Schwarzii* when I described *Brooksi*.—Ed., S. F.

## Anthus Seebohmi, *Dresser*.

I examined this bird. It has a longer and stronger bill than *pratensis*, and more resembles *Corydulla* than *Anthus*. The coloration is rather different from that of *pratensis*, and there are a few whitish feathers, mingled with the dark brown of the shoulders. The third primary is shorter than in *pratensis*, being one-sixth of an inch short of tip of wing. The outer tail feathers are not white, but pale brownish white, or a rather soiled cream color. The wing is the same length as in *pratensis*. But for the long strong bill, it might, at first sight, be mistaken for *pratensis*. It is a good species.

## 597.—Anthus agilis, *Sykes*.

I examined the type which I found to be undoubted *arboreus* or *trivialis*, as suggested by Mr. Blyth. I had a number of Pipits of various sorts with me in order to make sure work, but it was apparent at a glance, that Sykes' bird was the common Tree Pipit of Europe. To some the identification would not have been easy work; for the type, like an old soldier, has a false leg belonging to some other species. It has a white leg, and a stronger black one. The white leg is an original one, but the toes are all decayed, and from the foot the species could not be determined. The character of the plumage as regards striation of back, the bill, size of wing, &c., are what we have to go by, but they are sufficient for any one who knows the species. I trust the term *agilis* will not in future be the favourite one for the very distinct green Chinese Pipit, *Anthus maculatus*, Hodgs.

## Accentor multistriatus, *David*.

From North China, is excessively like *A. strophiatus*, Hodgs.; but is paler, and somewhat larger. It is quite distinct from both *A. strophiatus* and *A. Jerdoni*, Brooks.

## 679.—Fregilus graculus.

This is Indian, and is the species found in Persia and Cashmere.

*Fregilus himalayanus*, Gould, is a larger bird, with considerably longer wing and bill; and the color of the bill and legs is retained much better in skins than in the other species. I think the large species should be kept distinct.

## 765.—Spizalauda deva, *Sykes*.

This type I carefully examined, and it is the small bird that Mr. Hume named S. *simillima*.

# Additional Notes on the Avi-fauna of the Andaman Islands.

SINCE the publication of my paper on the avi-fauna of the Islands of the Bay of Bengal,* a very large number of specimens, chiefly from the Andamans, have, owing to the kindness of General D. Stewart, Captain Wimberley, and Mr. A. F. de Roepstorff, passed through my hands.

Several good species, *Ephialtes modestus*, *Emberiza pusilla*, *Tringa crassirostris*, and *Strix de Roepstorffi*, have been added to the list, as also one doubtful one *Hypotænidia abnormis*. I have now to add three others—*Accipiter nisus*, *Cuculus canorus*, and *Gelochelidon anglica*. Some species that were doubtful have proved to be invalid like *Janthenas nicobarica*, *Geocichla andamanensis*, and *Megapodius trinkutensis*; others again, such as *Alcedo Beavani* (entered by me as *A. asiatica*), *Halcyon saturatior*, *Pelargopsis intermedia*, *Hypotænidia obscuriora*, *Turnix albiventris*, have proved in my opinion valid species.

As to several species, *e.g.* *Milvus govinda*, *Pastor roseus*, and *Pelecanus philippensis*, the further experience of several years confirms the view that I originally took that these cannot be considered as pertaining to the *ornis* of these islands, though a straggler of one or other of them may possibly have occurred there.

Of some species again the continued failure to procure any further information, *e.g.*, *Hirundo andamanensis* and *Oreocincla inframarginata*, strengthens the conviction that there has possibly been some mistake in regard to them.

It is quite certain now that *Acridotheres fuscus* and every other species introduced by Colonel Tytler, with the exception of *Acridotheres tristis* and *Pavo cristatus*, have entirely died out.

I have jotted down from time to time a few further notes in regard to the avi-fauna of these islands which have occurred to me in examining the numerous collections which have been kindly submitted to me, and I take this opportunity of now putting these on record.

I have entered the names of all species not included in my first list (II, p. 139,) in antique type.

8.—*Falco peregrinus*, Gmel.

To General Stewart I am indebted for a specimen of this species procured at Port Blair. We saw the species at Preparis, and Dr. Armstrong lately obtained a specimen at Diamond Island, not far from Cape Negrais, so that the route by which this species (and probably the several *Accipiters*) arrive at the Andamans is pretty clear.

* See Vol. II. p. 139, *et seq.*; see also Vol. II., p. 489, p. 490, *et seq.* p. 531; Vol. III, p. 264, p. 280, p. 327, and pp. 389, 390.

## 24.—Accipiter nisus, *Lin.*

The occurrence of the European Sparrow Hawk at the Andamans, where a fine female, which he has just sent me, was killed in October, by Captain Wimberley, is worthy of note. This species has not as yet been recorded from Tenasserim, and its occurrence in Burmah *at all* rests solely on Captain Fielden's belief that a bird he shot some years ago at Thayetmyo was *Accipiter nisus*. It occurs eastward as far as China, southwards to Ceylon, but does not extend its wanderings, as far as is yet known, to Malayana or the Archipelago—and the South Andaman is the most south-easterly point from which it has been as yet recorded.

25.—*Accipiter virgatus*, Temm.

Three more specimens of this species, all young birds of the year, and killed in the South Andaman in August and September, were sent me by Captain Wimberley. In all (see Vol. II, p. 141) the fourth quill is decidedly longer than the fifth.

The birds, two females and one male, are small and more brightly tinged with rufous than is usual in the case of continental exemples.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ♂ | Length, | 10″·75 | Wing, | 5″·8; | Tarsus, | 1″·8 | Tail, | 4″·5. |
| ♀ | „ | 13″·5 | „ | 7″·3; | „ | 2″·1 | „ | 6″·0. |
| ♀ | „ | 12″·9 | „ | 7″·1; | „ | 2″·0 | „ | 5″·5. |

34 *bis.*—*Spizaetus andamanensis*, Tytler.

This species is not so rare as I fancied; I have now received other specimens in young and intermediate stages of plumage.

Two males measured:—Length, 22″·5—22″·75; wing, 14″—14″·2; tail from vent, 9″·75—9″·5; tarsus, 3″·5—3″·6; bill from gape 1″·8.

One of these, which from analogy I take to be a young bird, has the entire head and neck all round and entire lower surface white with a faint creamy tinge on the head and neck; the ear coverts unstreaked white; no mandibular stripe; the faintest possible trace of a throat stripe; the breast feathers with a very few linear lanceolate dark brown shaft stripes.

Feathers of the centre of the crown and of the broad nuchal sub-crest, as also the feathers of the nape below this crest and the sides of the basal portion of the neck, with dark brown oval sub-terminal shaft spots. Forehead and sides of the crown and the feathers immediately beyond the ear coverts, with dark shaft stripes; mantle deep wood brown, the feathers margined paler; the tail has a broad sub-terminal dark brown band, with a narrow white tipping, and there are *six* well-marked, nearly equidistant, half inch broad, dark brown bands, on a somewhat olive brown ground, above this.

In the next stage the dark shaft spots on the head and nape are more numerous and more developed: the ear coverts and cheeks and sides of the throat are striped with dark brown;

a narrow central throat stripe appears; most of the feathers of the breast and abdomen exhibit large (though not so large as in the fully adult), somewhat wedge-shaped, terminal brown shaft spots, and the tibiæ and vent feathers acquire a fulvous brown tint. In this stage the whole lower surface is sometimes tinged with a dirty pale fulvous brown. The third stage, that of the fully adult, has been already described in detail, Vol. II, page 142.

I do not exactly understand the changes that take place in the barrings of the tail. In the quite young bird, above described, there are six bars besides the sub-terminal one; in the two in Colonel Tytler's collection which I examined, and which were also, as I now know, young and not adult birds, there were four bars only, besides the sub-terminal one. In the old adult described, Vol. II, page 142, there are five. In the specimen described by Captain Beavan there were apparently six, besides the terminal one. As a rule in the *Spizaeti*, the bars in the young are more numerous and more or less equidistant; as the bird grows older, some of the bars get absorbed, the terminal bar becomes much broader than the rest, the succeeding interspace becomes broader than any of the other interspaces, and the remaining bars often reduced to half the number that exist in the young bird, also grow broader and more pronounced. But then, as in many other of the Raptores, the changes of plumage of the lower surface and of the tail are not always synchronous, and specimens will be found with a perfectly adult tail which have not yet assumed the perfect adult plumage below, and again others in which the chin, throat, and whole lower parts, are those of the perfect adult, while the tail has not yet completed its changes.

39 *quat.*—*Spilornis Davisoni*, Hume.

This species appears to be quite as common at the Andamans as *Elgini*. I have examined now fully fifty specimens, and all I previously said of this species (Vol. II, pp. 147-8) is correct. Call it a local race or sub-species, or species, its coarse stout tarsi, with their coarse conspicuous scutation, and wings only varying from about 14 to 15½ inches, separate it at once from the other races of *cheela*, *melanotis*, Jerd., and *Rutherfordi*, Swinh., of both of which as of *Davisoni*, I have now *very* large series.

As I said long ago, this race seems to me to come nearest *pallidus*, Wald., but it differs (at rate if Mr. Sharpe's figure and description, Cat. I, p. 290, pl. IX, are correct) from this latter in two important particulars at least. In the first place instead of having a comparatively short though full crest, it has a *very* long one, completely covering when not raised the whole back of the nape; in a fine male, measured from the forehead where it may be said to commence, it extends 5·2 inches backwards. In the second place the tail is differently marked. In *pallidus* the tail is all dark brown, tipped of course paler and with one broad

median ashy white band. Of the central tail feathers of the above specimen of *Davisoni* the basal 3·5 inches (of which all but 1″·2 is hidden by the upper tail coverts) are a rather warm hair brown. Then comes a broad very dark brown bar of 1″·9, margined above on the inner web with an 0″·1 broad wavy pure white line. Then after the dark brown bar comes a broad (1″·3) pale bar, white at its upper and lower margins, elsewhere clouded with pale brown. Then follows a sub-terminal 2-inch blackish brown bar, tipped for 0″·2 with pale brown, and then beyond that with pure white for 0″·1. Add to this that *Davisioni* has apparently a larger bare lore space than *pallidus*. In this latter the frontal feathers descend on either side as low as a line joining the nostrils and the anterior angle of the eye. In *Davisoni*, they nowhere cross a line drawn from the culmen of the cere, to a point about 0″·15 above the upper margin of the eye. This holds good in every one of sixteen specimens now before me, one of which has apparently only just left the nest, while three are clearly *old* adults. I feel sure myself that the species (or sub-species) is a good one.

39 *sextus.*—*Spilornis minimus*, Hume.

Mr. De. Roepstorff has procured three other specimens of this species, two in the very same locality where our former specimens were obtained, and one at Katchall. The first he has sexed as a female. It measured:—Length, 18″·5; wing, 11″·5; tail from vent, 7″·5; tarsus, 2″·75; bill from gape, straight to point, 1″·7; the bird appears to be adult and is a perfect miniature of adult *cheela*, but entirely wants any barring on the throat and entire breast.

The second is a nearly adult male, it is in the adult plumage, but is paler than the preceding, and has the scapulars and all the coverts tipped with white. It has no trace of barring on the throat or breast. It measures:—Length, 18″·7; wing, 11″·1; tail from vent, 7″·6; tarsus, 2″·75; bill from gape, 1″·6.

The third of these is sexed a female, it is in the first plumage very similar to that of *cheela*. It measures:—Length, 19″·25; wing, 11″·3; tail, 8″·3; tarsus, 2″·7; bill from gape, 1″·67.

We have now five specimens, males and females of this interesting species in different stages of plumage, and these fully confirm my original brief, but I believe sufficient diagnosis (I, p. 464.)

"*Resembles cheela, but is much paler; has the throat and breast entirely unbarred. Is the smallest of its genus. Wings varying from* 11″·0 *to* 11″·75."

56.—*Milvus govinda*, Sykes.

Notwithstanding the close look-out that has now been kept since our visit to the Andamans nearly three years ago, by three different collectors, no specimen of the common Kite appears yet to have been met with.

## 60 *bis*.—Strix De Roepstorffi, *Hume (III, p. 390)*.

There seems no doubt now that this must have been the Owl which Colonel Tytler saw, and which Captain Beavan supposed might be *Syrnium seloputo*, Horsf. There is no reason whatsoever to believe that this latter does occur at the Andamans, or indeed the Nicobars, but the latter have been as yet so perfunctorily worked, that the negative evidence goes, where these are concerned, for much less.

## 74 *bis A*.—Ephialtes nicobaricus, *Sp. Nov.*

At p. 151, Vol. II, I entered doubtfully a small Scopsowl from the Nicobars as pertaining to the rufous form, as it is generally considered (though I believe it to be distinct) of *Ephialtes pennatus, viz. Scops sunia* of Hodgson.

Having now re-examined the bird, and compared it with specimens of *pennatus*, *sunia*, *malayanus*, *menadensis*, and other similar species, and having carefully studied Mr. Sharpe's catalogue, it appears to me clear that the Nicobar bird is distinct from any species as yet admitted by Mr. Sharpe.

It can be easily described as closely resembling *sunia*, with the whole forehead, crown, occiput, and upper parts generally, together with the sides of the head, throat, and breast, ferruginous chestnut (much more ferruginous than *Sunia* ever is,) with the same white scapular spots, the same white notches on primaries and greater coverts, but with the crown and entire upper surface, more or less freckled and vermiculated with blackish brown, and with the feathers of the ruff on the sides of the neck and across the throat strongly marked with black. The frecklings and vermiculations of the upper surface (which are wanting in *sunia*) are not so dense, and are much coarser than in *malayanus*, and the sides of the head and cheeks are rufous, and not greyish or greyish brown as in this latter.

No specimen of *sunia*, and I have a large series, makes any sort of approach to the markings of the upper surface, which characterise the Nicobar bird. Some very rufous examples of *pennatus* on the other hand do make some approach in the character of their markings on the upper surface to those of the Nicobar birds, but then the very brightest rufous examples of *pennatus* always have more or less of a greyish tinge on the scapulars and tertiaries, and never have the throat and breast and sides of the neck bright rufous. Moreover, the vermiculations and markings on the upper surface in the Nicobar bird are coarser and more sparse than in rufous *pennatus*.

The lower breast, abdomen, and the rest of the lower parts including the *tarsi*, are precisely as in many specimens of *sunia*, and again as in a very rufous *pennatus*.

The dimensions are those of the two last named species.

## 74 *quint.*—Ephialtus modestus, *Wald.*

Mr. Sharpe who has carefully examined the types of both this species and *E. Balli*, Hume, is of opinion that *modestus* is distinct. He remarks :—" It has been suggested by Mr. Hume that the bird from the Andamans, named *Scops modestus* by Lord Walden, must be the young bird of *S. Balli;* and I confess that, until I examined and compared the types, I entertained a similar impression. Lord Walden, however, having kindly lent me the original specimen of *S. modestus* for examination, I have come to the conclusion that the two species are quite distinct. Lord Walden has two specimens precisely similar; and they seem to me to represent the young of some species of the *S. malayanus* type. Immature they certainly are; but they present too many differences for me to refer them to *S. Balli*. The type of the latter has been lent to me by Mr. Hume; and as the wings and tail in *S. modestus* are doubtless those of the adult bird, I draw attention to the following characacters, which, as its seems to me, must separate the two; for in no other species of *Scops* is such a difference known between the young and the adult stages:—

*Scops Balli*, ad. *greater wing coverts* and *secondary quills* dull brown, externally rufous chocolate, with minute vermiculations of black, and a few small notches of fulvous.

*Primary coverts* nearly blackish brown, vermiculated with rufous chocolate at the tips. Primaries dull brown, rufescent at tips, notched with white on outer web, the interspaces inclining to rufous chocolate.

*Tail* for the most part rufous, chocolate-like back, with indications of lighter bands, the outer feather externally notched with whitish.

*Scops modestus*, juv. *greater wing covert* and *secondary quills* alternately barred with sandy rufous and dark brown, the latter bars rather broken up into vermiculations, especially on outer margin; the greater coverts with white spots near the tip of the outer web, not present in the secondaries.

*Primary coverts* and *primaries* dull brown on inner web, but regularly banded with sandy rufous and dark brown on outer web; some of the primaries with whitish notches.

*Tail* regularly banded with dark brown and sandy rufous, the dark bars somewhat broken up into vermiculations on the centre feather.

Again, the feathering of the *tarsus* is very different, not extending nearly so far down the leg in *S. Balli* as it does in *S. modestus*."

**81 A.—Ninox scutulata,** *Raff.*? N. burmanica. *Sp. Nov.*

It is under Raffles' name that Mr. Sharpe considers that the Nicobar birds should stand. He appears to have seen only one specimen, a female collected at Trinkut with a wing 7″·4. I cannot doubt that this specimen was *affinis*. The larger race that occurs on the Nicobars has the wing about 8″·1 and 8″·4 in males and females, and they should perhaps be placed with the Burmese race; they are much larger, and not at all of the same type as the extreme south of India, Ceylonese, and Straits race. In dealing with these Ninoxes, Mr. Sharpe defines the species as follows:—

Head, grey; much lighter than the back, which is browner; tail, clear grey, tipped with white, the black bands in strong contrast.

*a.* Axillaries barred with brown and white; breast spots, brown; size, large. Wing 8 to 8·75 inches ... ... ... ... *lugubris*, Tick.

*b.* Axillaries uniform orange chestnut; breast spots, chestnut. Size, small. Wing, 6·65 inches *affinis*, Tytler.

Head, dark brown, generally uniform with the back, seldom greyer; tail, dark brown, with blackish brown bars ... *scutulata*, Raffl.: *hirsutus*, Tem.

*Lugubris* he assigns to the Indian peninsula and the Himalayas. *Affinis*, which is clearly distinct and of which further hereafter, belongs, though Mr. Sharpe does not specifically mention this, equally to the Andamans and Nicobars.

Lastly his *scutulata*, he assigns to the whole of India, Ceylon, Malaiasia, through China to Japan and southwards into the islands of the Malayan sub-region. Thus uniting under this head, the little *malaccensis*, Eyton from the Straits, *japonicus*, and *borneensis*, Bonp., and *florensis*, Wallace.

I myself am very doubtful whether the Indian *lugubris* and *scutulata*, *apud* Sharpe, can be definitely separated. No doubt typical specimens corresponding with Mr. Sharpe's diagnosis may be selected, but many specimens will be found which it is not possible thus to classify.

The points Mr. Sharpe insists on are:—(1) the greyness of the head, much lighter than the back in *lugubris*, and the dark brown head, generally uniform with the back in what he calls *scutulata;* and (2) the pale grey tail, tipped with white in *lugubris*, and the dark brown tail in *scutulata*.

I do not think however, that these distinctions hold good. I have some birds with very dark tails and conspicuously greyer heads; others with very light tails and yet of a generally dark brown upper plumage, and the head darkest of all and not in the least grey.

My impression is that either we must unite Mr. Sharpe's two species *lugubris* and *scutulata*, or that we shall have to divide them into several more species. (1) one for the plains of Central and Northern India, the true *lugubris*, (2) one for Ceylon, Travancore, and the Straits, *hirsutus*, Tem, *which*, if Sumatran specimens prove identical, must stand as *scutulata*, (3) one for Nipal and the Eastern *Himalayas*, *nipalensis*, (4) one for Tipperah, Cachar, and other neighbouring localities eastward, a very large dark form only provisionally designated by me as *innominata*, and (5) one for Pegu and Tenasserim intermediate between this last and *nipalensis* with which the Nicobar birds closely correspond. I shall deal, however, with this question more fully hereafter, at present I merely wish it to be understood that the Cachar birds (*? innominata*, sp. nov.) belong to a very large dark race, the upper surface a nearly uniform deep chocolate brown with the head if anything darker than the rest of the body—while those from the Nicobars like those from Pegu and Tenasserim, are intermediate in size and color between the Cachar form and *nipalensis*, Hodgs.

I am quite ready to make only one species of the lot, but if *lugubris* is to be separated, so also must be, I think, the other races above indicated.

81 *bis.*—*Ninox affinis*, Tytler.

I am afraid Mr. Sharpe's diagnosis of this species, "axillaries uniform orange chestnut, breast spots chestnut, wing 6"·65," will scarcely hold good.

The axillaries are not always uniform, they are sometimes banded with brown, and are pale buff instead of being orange chestnut; the breast spots are not always chestnut, in one specimen they are ferruginous buff, precisely the same color as in specimens of other Indian and Malayan *Ninox*. Lastly, the wing in the male is certainly sometimes as large 6"·9, for I have one specimen of this size, and the wings of the females run to 7"·4 and 7"·6, and I entertain no doubt that Mr. Sharpe's *N. scutulata* from the Nicobars (Cat. Vol. II, p. 159,) a female with the wing 7"·4 belonged really to the present species.

82 *ter.*—*Hirundo andamanensis*, Tytler.

Nothing has yet been seen of this supposed species, which I suspect will prove to be nothing but the immature male of the common Eastern Chimney Swallow.

## 82 *quat.*—Hirundo gutturalis, *Scop.*

Under which name, and not *H. rustica*, as given in my first paper, the Chimney Swallow so common at the Andamans should probably stand.

96.—*Chætura indica*, Hume.

Notwithstanding what has recently been advanced, I must re-express my opinion that this is a good species, differing from *gigantea* (Hasselt) as pointed out, S. F., I, p. 471.

I have now specimens of the true *gigantea*, one killed by Mr. Hough at the extreme south of the Tenasserim Provinces, and two others from near Singapore. They all want the white or whitey brown patch in front, and the whitey brown throat, and have a distinct green and not bluish gloss. Again, they are not nearly so pale on the back as *indica*. I have now compared 4 Javan, 2 Singapore, 1 Malewoon specimen, all of one type, representing as I believe the true *gigantea* with between 30 or 40 specimens of *indica* from Southern India and the Andamans, and I cannot myself see how the adults of the two species can be confounded. The young of *indica* doubtless have the white patch, more or less tinged with brown, but even so, they appear to me distinguishable at a glance.

These birds possess such extraordinary powers of locomotion, that I should not be surprised to hear of specimens of *indica* turning up in Sumatra or the Malay Peninsular as stragglers from the Andaman's, but if the races were not distinct, it is most extraordinary that, out of 37 specimens from India and the Andamans, not one should belong to the *gigantea* type, and that out of 7 from Java and the Malay Peninsular, not one should be of the *indica* type.

118.—*Merops philippinus*, Lin.

I mentioned (S. F., II, p. 162,) that, though seen at the Cocos, and obtained at the Nicobars, we had no record of the occurrence of this species at the Andamans. I have recently obtained specimens killed at Aberdeen (S. Andaman) in November by Mr. De Roepstorff.

130.—*Halcyon atricapillus*, Gm.

This also is a species, which is not quite so rare as I fancied, as I have received altogether some 8 or 10 specimens since my paper was published.

133.—*Ceyx tridactyla*, Lin.

No second specimen appears to have been since obtained from the Andamans, but Mr. De Roepstorff has sent me two specimens which he procured on Kondul, a tiny island immediately adjoining the Great Nicobar.

## 134 *quat.*— Alcedo Beavani, *Walden*.

Referring to what I said (II, p. 174), I may mention that I have now examined about 26 specimens from the Andamans, and that the only difference that I can discover to be constant between the two sexes is that in the female, the lower mandible is red, a peculiarity shared, however, apparently by the young

but two specimens have just as much white on the throat as the Nicobar birds, and one has the head and other parts just as brightly colored.

The Nicobar female again has more white on the throat than three out of the five Andaman birds, but two of the Andaman birds have just as much white. The Nicobar bird again has the head and lower parts considerably more deeply colored than four out of the five Andaman birds, but the fifth Andaman bird only differs by a shade.

On the whole it seems to me that all that can be said is that the Nicobar birds, as a body, are more deeply colored and have more white on the throat than the Andaman birds; but looking to the fact that this distinction is by no means absolutely constant, and that it is not accompanied by any perceptible difference in size, I do not think that this is sufficient to warrant specific separation, and I cannot therefore now concur in the propriety of separating the Andamanese bird under Lord Walden's title of *G. andamanensis*.

### 520 *bis*.—Locustella lanceolata, *Tem.*

I am now disposed to think that my *L. subsignata*, really may be, as stated by Lord Walden, identical with Temminck's bird.

The entire tone of coloration is quite different from that of a specimen obtained on the Attaran river in Tenasserim, and which was pronounced by Messrs. Sharpe and Dresser to be probably the true *lanceolatus*, but I have since obtained numerous specimens further south in the Tenasserim provinces, corresponding well with the Andaman species, and I am disposed to think that either the Attaran specimen is not the true *lanceolatus*, or that it is in very different stage of plumage. It is well known how these *Locustellas* vary in plumage according to season; this is most conspicuous in the case of *L. Hendersoni*. Cassin. The only difficulty here is that the Attaran specimen and others killed in the Andamans and in the extreme south of Tenasserim, were killed in the same month, and yet differ as widely in plumage as does *Hendersoni* immediately after the autumn moult and during the breeding season.

On the whole, I think, the Andaman bird must stand as *lanceolata*, and the question of the identity or otherwise of the Attaran bird must be left to future investigation.

### 556 *bis*.—Phyllopneuste borealis, *Blas.*

Lord Walden, *Ibis*, 1874, p. 140, records a specimen of this species from the South Andamans. I myself have only seen the nearly allied *P. magnirostris* from these islands. *Borealis* is very like *magnirostris*, but greyer about the neck and breast, with more pointed wings and a small first primary as in *sibilatrix*.

590.—*Motacilla luzoniensis*, Scop

I admitted this species into my list with some doubt, no specimens having been procured of late years. Now at last however Captain Wimberley has procured a single specimen near Port Blair in February. It is a female, with the very dark grey of the back patched, or beginning to be mottled with black. Captain Wimberley informs me that this is the only specimen he has ever seen.

631 *ter.*—*Zosterops nicobariensis*, Blyth.

I have carefully re-examined two large series of this supposed species, one from the Andamans, and the other from the Nicobars. In the great majority of specimens the bills of these insular birds are longer and conspicuously broader at the base than in the continental *palpebrosus*. In some specimens the difference in size is so marked and conspicuous that no one would hesitate to separate *nicobariensis* as distinct, but out of the large series two are, as far as I can see, absolutely inseparable from *palpebrosa*, and in at least one-fourth of the specimens, the difference of size is inconsiderable.

As regards color I do not think that they can be safely separated; no doubt, a good many of the insular birds do have the upper surface somewhat greener, but others correspond in this respect with continental specimens. Whether under these circumstances the species should be maintained as distinct, is entirely a matter of opinion; personally I am not disposed to think that it should be separated. This is just one of those cases in which the trinomial nomenclature (which I am confident our successors will adopt) would be so convenient.

The name *Zosterops palpebrosa nicobariensis* would exactly fit the case.

701 *ter.*—**Munia fumigata**, *Walden*.

The Andaman race of *M. striata*, which I described, II, p. 257, under the name of "*non-striata*," must stand as above. The Nicobar race, which is quite as distinct from the Andaman one as is this latter from *striata* must, if separated at all, stand under my name "*semistriata*," under which I characterized it, *loc. cit.*

720.—**Emberiza pusilla**, *Pall.*

As already noticed (II, p. 497), this species has to be included in the list. It was obtained near Port Blair by Lieutenant Wardlaw Ramsay.

730 *ter.*—*Carpophaga insularis*, Blyth.

This species must begin to lay at the end of December. On the 12th February Mr. De Roepstorff shot a young bird

**881 *bis.*—Tringa crassirostris,** *Tem and Schl.*

Is another species obtained near Port Blair by Lieutenant Wardlaw Ramsay.

**913 *bis.*—Hypotænidia obscuriora,** *Hume* (S. F., January 1874, p. 302, *H. ferrea*, Walden, *Ibis*, April 1874, p. 147.)

Having now had the opportunity of comparing over twenty specimens of the Andamanese Rail with fully double that number of specimens of *striata* from very numerous localities in India, Burmah, and the Malay Penisular, I believe that no doubt can exist as to the specific distinctness of the insular form.

At p. 389, Vol. III, I described a supposed new Rail under the name of *Hypotænidia abnormis*. No further specimens of this have come to hand, and I have a conviction that it will turn out to be an abnormal variety of *obscuriora*, probably a nearly adult bird, that, as an accident, has not put on the normal white banding of the upper surface.

951.—*Nettapus coromandelicus*, Lin.

This species turns out to be not very uncommon in the Andamans, and a good many specimens have been sent to us.

**983.—Gelochelidon anglica,** *Mont.*

This is another species new to these islands. It was killed by Captain Wimberley, in the S. Andamans, in November, and is, he says, the only one he has seen. The specimen is a rather small young female, the primaries very dark, the wing only 11″·5; tarsus, 1″·1; bill at front, 1″·5.

**986 *ter.*—Sterna Dougalli,** *Mont.*

Though not apparently a constant resident, or even a regular visitant to the Andamans, this species occurs there from time to time in large flocks, so much so that during the last 18 months I have seen fully 50 specimens.

The bills vary in color according to season. In birds killed in April they are blackish, in May they begin to change to orange red at the bases. In June only the terminal portions are blackish dusky, and in July the whole of the bill has become red or orange red. (*vide ante* note, p. 246.)

A. O. H.




Reduced from the survey by Lieut. F.W. Stirnard, R.N. 1876.

Photozincographed at the Surveyor General's Office Calcutta.

# Notes on some Birds collected in the Eastern or Rangoon District of the Irrawaddy Delta.

By James Armstrong, B.A., M.B., &c.

From the latter end of November until the beginning of March, my duties, as officer in medical charge of the Marine Survey of India, enabled me to devote a portion of my time to the study of the avi-fauna belonging to the Rangoon district of the Irrawaddy delta. During this period, so far as I was able, I have made short notes upon the habits of the birds collected, and have carefully recorded in the flesh the different dimensions of each species met with, in the hope of being able to add something to the general store of ornithological facts.

Before giving a detailed account of the different species found to frequent this district, I shall first endeavour to convey a rough idea of the region in which they were collected.

By reference to the map it will be seen that the Rangoon river, after its junction with the Pegu, forms the eastern boundary of the Irrawaddy delta, and that at some distance to the westward a second large stream pours out its waters into the Gulf of Martaban. This stream is called the China-Ba-keer river, and has for a considerable portion of its terminal length a direction more or less parallel with the Rangoon river, with which it is connected at irregular intervals by several large channels or creeks, extremely tortuous in their course, and all mainly depending for their depth of water upon the condition of the tides.

Between the mouths of the Rangoon and China-Ba-keer rivers, is enclosed a district of about five and twenty miles in extent, of which the main feature is its perfect flatness, without the slightest hill or smallest elevation to be seen on any side. Yet, notwithstanding its uniformity in this respect, it possesses a great diversity in the character and amount of its vegetation. Swamps and jheels, open waste ground and ploughed lands, forest country and thin tree jungle, are all to be met with.

Throughout this region the great majority of the collection, which forms the subject of the following notes, was made. Some few specimens were also collected from the immediate vicinity of Rangoon, and others from the region about Eastern Grove, which forms the eastern boundary of the Rangoon river near its mouth. Several birds were also obtained from the neighbourhood of Syriam, a small town and district situated near the eastern bank of the Rangoon river, close to its junction with the Pegu.

In the Syriam district alone there are a few slight hills and rising grounds, the highest attaining an elevation above the surrounding level of perhaps 150 or 180 feet. These hills are, for the most part, clothed with forest trees, consisting chiefly of various species of figs and acacias, which furnish an abundant supply of food to the numerous birds which frequent them. Several species of Squirrels, too, are to be met with: *Sciurus Phayrei*, Blyth, *Sciurus ferrugineus*, Cuv., and *Sciurus chrysonotus*, Blyth, all occur here in tolerable abundance.

It only remains now to say a few words upon the zoology and physical features of the country which intervenes between Elephant Point at the mouth of the Rangoon river, and the village of China-Ba-keer, similarly situated with regard to the river of the same name.

The marine zoology of this district is extremely small and scanty. The great rapidity of the tides, the brackishness of the water, and the immense amount of mud and fine sand, which is held in suspension by the water, and is constantly being deposited by subsidence on the bottom, are the factors which most powerfully co-operate to prevent the development and retard the growth of the marine fauna in this locality.

The littoral fauna, on the contrary, is abundant. Along the entire length of the coast line, between Elephant Point and China-Ba-keer, there are immense mud flats, varying from half to three or four miles in width, which at low tides are left uncovered, and swarm with different kinds of crabs and small mud-fishes. These banks afford rare feeding-grounds to multitudes of Stints, Plovers, Herons, and other shore birds, which congregate upon them.

Fringing this long stretch of mud (which, by the way, is very soft, and without some special contrivance impossible to traverse) is a very gently sloping beach, varying in width from fifty to several hundred yards, and entirely composed of fine white sand. This zone of sand swarms with a crimson stalk-eyed crab, *Ocypode platytarsis*, which exists in such numbers at certain points, as to give the beach the appearance of an extended surface of crimson. As one approaches this crimson expanse, a very curious effect is produced by the sudden disappearance of the color along the margin, caused by the instantaneous withdrawal of the crabs into the holes, which they burrow for themselves in the sand, and from which they never appear to wander for more than a few feet.

At intervals along the shore the continuity of this sandy beach is interrupted by mangrove swamps, which sometimes extend out to a considerable distance into the mud, and are always completely covered at high water. A few miles distant from

Elephant Point, the jungle in these swamps consists almost exclusively of a tall willow-like tree, *Sonneratia apetala*, which appeared to be a favorite resort for several species of King-fishers and Wood peckers. With the exception, however, of this solitary patch of *Sonneratia*, the tidal jungles were mainly composed of such plants as *Ceriops Roxburghiana*, *Acanthus ilicifolius*, and various species of mangroves.

Beyond the sandy beach in the neighbourhood of Elephant Point, the country is under cultivation, and, with the exception of a few isolated clumps of trees, hedges, and small patches of thin tree jungle and scrub, it is quite open. At a little distance to the westward, however, cultivation ceases, and for several miles along the shore, a dense low jungle comes down quite close to the beach. Sometimes at very high spring tides this jungle is completely flooded for several miles inland. It is composed mainly of low-growing trees and shrubs, such as *Hibiscus tiliaceus*, *Clerodendron inerme*, *Derris scandens*, *Grewia microcos*, *Glycosmis pentaphylla*, *Jasminum scandens*, *Flagellaria indica*, and others, amongst which very few birds indeed are to be found.

About midway between Elephant Point and China-Ba-keer, this low jungle is found to pass abruptly into an open grass covered country, which continues almost up to China-Ba-keer, and is in a few places irregularly dotted with hedges and scrub. Inside this open grass land, there are broad belts of evergreen forest, running more or less parallel to the shore, and in many places rendered quite impenetrable by the Liana-like creepers and thick thorny underwood beneath.

In addition to all these varieties of country, numerous swamps and jheels of varying extent are to be met with at intervals. Some of these are quite open and clear, or at the most only fringed with weeds, but the greater number are completely covered with aquatic plants, and are the favored haunts of numberless Herons and other water birds.

In conclusion I have to convey my warmest thanks to the editor* of "STRAY FEATHERS," to whom I am indebted for the identification of all the specimens collected, and without whose kind assistance the present paper could not have been written.

---

## 34.—Spizaetus caligatus, *Raffles.*

This appears to be a rare species. I only saw a single specimen which I shot near China-Ba-keer in December. It was

* I have added a few notes at Dr. Armstrong's request, as also references to previous passages in S. F., in which birds mentioned and not included in Dr. Jerdon's work, will be found described.—A. O. H., Ed.

perching upon one of the lower branches of a large tree overhanging a jheel, from whence it appeared to be watching for frogs or fish. It was a male, and gave the following measurments in the flesh :—

Length, 26·2 ; expanse, 51·5 ; tail from vent, 12·1 ; wing, 16·8 ; tarsus, 4·25 ; bill from gape, 1·85.

The irides were light yellowish brown ; cere and bill, dusky black ; feet, light yellow ; toes, with three or four very large scutella at base of claws ; claws, black.

## 41.—Polioætus ichthyætus, *Horsf.*

This species appeared to be scarce. I have not been able to identify it along the coast line, although it is not improbable that it occurs there along with *Cuncuma leucogaster*. I have only shot a single specimen at a considerable distance up the Rangoon river, where the white-bellied Sea Eagle does not appear to extend to. It was an immature female, killed on the 23rd of January, and gave the following measurements recorded in the flesh :—

Length, 28 ; expanse, 61 ; tail from vent, 12·2 ; wing, 18·2 ; tarsus, 3·55 ; bill from gape, 2·2.

The irides were light yellowish brown ; cere, slaty grey ; bill, dark dusky slate color, lighter towards base ; legs and feet, thick, coarse, and strong, and of a dirty light yellow color ; claws, black.

[This specimen is in the lineated stage.—A. O. H.]

## 43.—Cuncuma leucogaster, *Gmel.*

The white-bellied Sea Eagle was to be met with, though sparingly, all along the coast from Elephant Point up to China-Ba-keer. It was not unusual to see a pair or more of these birds high up in the air, and far out of the reach of shot, wheeling and circling round and round, with a peculiarly easy and graceful flight. It was very seldom indeed that one would come within shooting distance, so that it was a matter of considerable difficulty to obtain specimens. I killed one male bird at China-Ba-keer, of which the following are the dimensions in the flesh :—

Length, 27·75 ; expanse, 71 ; tail from vent, 10·5 ; wing, 22 ; tarsus, 3·7 ; bill from gape, 2·25.

The irides were light brown ; cere and gape, leaden grey ; upper mandible, dusky brown, shading into a greyish blue towards its junction with the cere ; lower mandible, bluish grey, tipped with dusky brown ; legs and feet, dirty yellowish white ; claws, black.

**48 *ter*.—Poliornis liventer, *Tem.* (*vide S. F., III, p.* 31.)**

This species is by no means very uncommon in the immediate vicinity of Elephant Point, where it frequents the extensive paddy-fields in that locality. These birds may be often seen in the early morning coursing along with a graceful swooping flight from one field to another, never rising to any height, but generally flying quite close to the ground, and when tired, settling down to rest on the slightly elevated boundaries between the fields. They are particularly wary and difficult to approach. The following are the dimensions recorded in the flesh of a fine male bird killed at Elephant Point:—

Length, 15·8; expanse, 37·75; tail from vent, 6·5; wing, 11·5; tarsus, 2·6; bill from gape, 1·4; mid toe and claw, 2·05.

The irides were of a beautiful lemon yellow color; cere, orange; both mandibles, orange yellow, tipped with dusky brown; legs and feet, bright yellow; claws, dusky black.

**53.—Circus melanoleucus, *Gmel.***

This bird was abundant in the neighbourhood of Rangoon, and was likewise numerous in suitable localities between Elephant Point and China-Ba-keer. Like *Poliornis liventer* it seemed to prefer hunting for its prey over the rice-fields and open waste ground. I shot three birds which, although differing very much *inter se* in coloration, are all referred by Mr. Hume to this species. The following are their dimensions recorded in the flesh:—

*Adult male.*—Length, 18·5; expanse, 41·75; tail from vent, 8·5; wing, 14; tarsus, 3·05; bill from gape, 1·2; mid toe and claw, 1·75. Irides, bright yellow; cere, dark slaty grey; bill, dusky black; legs and feet, chrome yellow; claws, black.

*Male, juv.*—Length, 18; expanse, 40; tail from vent, 8·5; wing, 13·5; tarsus, 3·1; bill from gape, 1·25; mid toe and claw, 1·75. Irides, yellow; cere, slaty greenish grey; bill, dusky black; lower mandible, lighter colored near base; legs and feet, orange yellow; claws, dusky black.

*Female, juv.*—Length, 18·75; expanse, 43·25; tail from vent, 8·6; wing, 14·4; tarsus, 3·25; bill from gape, 1·25; mid toe and claw, 1·85. Irides, light brownish yellow; cere, slaty greenish grey; bill, dusky black; legs and feet, orange yellow; claws, black.

**56 *ter*.—Milvus affinis, *Gould.***

This species was met with everywhere, but was abundant only in the vicinity of villages. I observed a single pair breeding in the middle of January. They had their nest in

the fork of a large acacia tree, growing close to the shore at Eastern Grove, several miles distant from the nearest village. The female was sitting on her nest, but I shot the male as he was flying around. The following measurements were recorded in the flesh :—

Length, 25·2 ; expanse, 52·5 ; tail from vent, 12·5 ; wing, 17·5 ; tarsus, 2·5 ; bill from gape, 1·8.

[The only specimen preserved by Dr. Armstrong should, in my opinion, rather be classed as *M. govinda*, Sykes. It is a male, with a wing, 17·5.—A. O. H.]

## 60.—Strix indica, *Blyth.*

I have only met with the Indian Screech Owl at Elephant Point, where it was by no means abundant. I killed two specimens there amongst some tall densely foliaged trees whither for several evenings I had observed them to resort. The male bird was somewhat larger than the female, and measured in the flesh :—

Length, 14·8 ; expanse, 39·75 ; tail from vent, 5·2 ; wing, 11·5 ; tarsus, 2·75 ; bill from gape, 1·7.

*Female.*—Length, 14·5 ; expanse, 38·25 ; tail from vent, 4·7 ; tarsus, 2·75 ; bill from gape, 1·75 ; wing, 11.

In both sexes the irides were deep brown ; bill, yellowish white ; cere, pinkish white ; legs and feet, dusky yellowish brown ; claws, horny brown.

## 72.—Ketupa ceylonenis, *Gmel.*

This handsome Owl was tolerably abundant in the thin forest jungle surrounding the different jheels lying between Elephant Point and China-Ba-keer. The following are the dimensions recorded in the flesh of female birds shot at Elephant Point:—

Length. 21·5 to 22·15 ; expanse, 46·75 to 49·5 ; tail from vent, 7·5 to 7·75 ; wing, 14·9 to 15·7 ; tarsus, 3·15 to 3·2 ; bill from gape, 2·25 to 2·3.

The irides were bright golden yellow ; the bills horny or slaty grey ; the legs and feet were dirty yellow ; and the claws dusky brown.

## 72 *bis.*—Ketupa javanensis, *Less.*

The Malay Fish Owl was abundant in the jungle bordering the numerous creeks which flow into the Rangoon river near its mouth. Just after sun-set these birds begin to issue from the surrounding jungle, and with a powerful, though somewhat heavy flight, hunt for their prey up and down along the course of the creek, resting now and then in some adjacent

mangrove. The following are the dimensions recorded in the flesh of a male bird shot in Deserter's Creek :—

Length, 19 ; expanse, 46·5 ; tail from vent, 6·8 ; wing, 13·9 ; tarsus, 2·95 ; bill from gape, 1·95.

The irides were light yellow, cere, dark slate color; bill, dusky ; legs and feet, dusky yellowish brown.

[This species is not included by Dr. Jerdon, and has not yet been described in "STRAY FEATHERS."

The dimensions are very variable, but I cannot yet satisfy myself that there is any constant difference in the dimensions of the sexes, though I have twelve specimens before me from Johore, Malacca, Pak-Chan, Tenasserim, Amherst, and Rangoon.

Taking the two sexes together, the dimensions recorded in the flesh vary as follows :—

Length, 17·75 to 19·25 ; expanse, 46 to 48 ; tail from vent, 6·25 to 7 ; wing, 13·25 to 14 (a very young bird has the wing 12·75) ; tarsus, 2·6 to 2·95 ; bill from gape, 1·65 to 2 ; weight, 1·75 to 2·25 lbs.

In the adult the colors appear to be as given above by Dr. Armstrong. In the young birds the legs and feet appear to be a pale dirty green, or dirty greenish white. The bill and cere, dark plumbeous horny ; the gape and the tip of the lower mandible, whitish ; in one young bird, however, the bill was plumbeous blue, yellowish horny at tip, and the cere, greenish blue. At all ages the irides appear to be yellow.

The feathering of the tarsi varies a great deal in different individuals. This may possibly be partly due to age, but I have not been able to satisfy myself of this fact. In one specimen the whole tarsus and tibio-tarsal articulation, except just in front, are quite bare ; in another a very narrow tongue of feathers runs down the front of the tarsus for about three quarters of an inch ; in another again, no portion of the tibia even at the back is bare, the whole of the front and sides of the tarsus is feathered at the joint, and from this a broad triangular patch of feathering runs downward for fully an inch from the joint, terminating, of course, in a point on the front of the tarsus.

The whole lower surface in the adult is a uniform clear buff, the chin only and a large patch at the base of the throat, white ; all the feathers with narrow linear blackish brown shaft-stripes, always broadest on the breast, and the thigh coverts unstreaked. The breadth of the streaking on the lower surface varies very greatly in different specimens. In the very young birds the broadest streak barely exceeds 0·15 ; in some birds, apparently of intermediate age, some of the stripes

on the breast are fully 0·3; while again, in what I take to be the oldest adults, the broadest breast stripes do not exceed 0·15. These differences, however, may perhaps be individual. Anyhow where the breast stripes are broadest, there the stripes of the rest of the lower parts are most strongly marked; and where the breast stripes are very narrow, there the stripes are almost obsolete on the lower abdomen, flanks, and lower tail coverts.

The ear-tufts are very long. In some specimens nearly three inches in length. These, with the whole of the feathers of the head, upper back, and interscapulary region, are dark, almost blackish brown, margined with buff. The width of these margins varies greatly in different specimens, as does also the tint; in some they are a clear pale buff, and in others redder and more ferruginous; and, I should perhaps here note, that in some specimens the under-surface also has a decided rusty tinge, especially on the breast.

The scapulars and lesser wing coverts are somewhat similar to the feathers of the nape and upper back, but they mostly want the buff edgings, though paling in patches towards the margins, and they are more or less distinctly characterized by imperfect, transverse yellowish-white bars, which in many specimens are reduced to moderate-sized spots, one on either web.

The rump and upper tail coverts vary extraordinarily in different specimens, but typically they are buffy, or buffy-brown, or fawn brown, with a dark brown patch at the tips, fringed marginally with buff, and with a few paler spots here and there, representing more or less imperfect transverse bars. The tail feathers are deep brown, more or less broadly tipped with yellowish or buffy white, and with, in the adult, three transverse bars of the same color, the third of which is partially hidden by the upper tail coverts; but some specimens, apparently adult, also have four such transverse bars, in which case it is the fourth which is partially hidden by the tail coverts; and one quite young bird, clearly the youngest specimen I have, has five such bars, besides the pale tippings.

The quills and their greater coverts are dark brown, broadly banded and tipped, paler on both webs, the banding on the outer webs and tippings being yellowish white, pale buff, or bright buff, and on the inner webs being a pale greyish or yellowish brown. The size and color of all these markings varies in every individual, but the banding is always, I think, broadest on the primaries, and narrowest on the tertiaries.

The lores are densely clad with large bristle-like feathers, paler, indeed sometimes whitish, at their bases, blackish for

more or less of their terminal portions. The cheeks and ear coverts are a dull rusty buff, sometimes very ferruginous, and generally darker shafted, at any rate towards the tips.

One very young bird has the whole of the upper parts very similar to the lower parts, each feather with a narrow blackish brown shaft stripe; only two or three feathers of the head, and a few of the scapulars with broad dark brown centres as in the adult.

As pointed out by Mr. Sharpe (Cat. II, 4). both *flavipes* and *javanensis* are distinguished at once from *ceylonensis* by the absence of the hair-line transverse bars on the lower surface, which give these parts in *ceylonensis* a vermiculated appearance, while from *flavipes*, the present species is at once distinguished by its smaller size, the wing probably never exceeding 14·5, while in *flavipes* it probably never falls short of 18 inches.—A. O. H.]

## 81.—Ninox scutellatus, *Raffles, apud Sharpe.*

I found this species abundantly amongst the clumps of trees and thin jungle near the shore at Elephant Point, where they appear to feed principally upon a species of crab, *Ocypode platytarsis*, which occurs in immense profusion upon the lands in that locality. I found the debris of these crabs in the stomachs of nearly all those which I examined. There does not appear to be any important difference in size between the two sexes. The following are the dimensions of six specimens recorded in the flesh:—

Length, 11·5 to 13·5; expanse, 24·75 to 28; wing, 8·2 to 8·7; tail from vent, 5 to 5·5; tarsus, 1 to 1·25; bill from gape, ·9 to 1·1.

The irides were bright yellow; cere, dark slaty green; bill, dusky black, margined with greyish; legs and feet, dusky yellow; claws, horny brown.

[I have adopted Mr. Sharpe's nomenclature for these specimens, but as fully explained in my Travancore paper, I do not consider these Burmese birds to be the true *scutellatus*. Rafl.—A. O. H.]

## 82.—Hirundo rustica, *Lin.*

This was the only Swallow I met with, and it occurred in the greatest abundance everywhere. At Elephant Point along the shore vast swarms were always present, roosting at night on the sands a little above high water mark. Male birds measure somewhat more than females. The following is a *resumé* of the dimensions of both sexes recorded in the flesh:—

*Males.*—Length, 5·75 to 6·3; wing, 4·45 to 4·75; tail from vent to end of outer feathers, 2·75 to 3·5; to end of mid feathers,

1·8 to 2·1 ; tarsus, ·42 to ·46 ; bill from gape, ·55 to ·6 ; at front ·3 ; width at gape, ·52 to ·6.

*Females.*—Length, 5·25 to 5·6 ; wing, 4·3 to 4·5 ; tail from vent to end of outer feathers, 2·5 to 2·6 ; to end of mid feathers, 1·8 to 2·1 ; tarsus ·43 to ·44 ; bill from gape, ·55 to ·57 ; at front, ·3 ; width at gape, ·45 to ·47.

In both sexes the irides are deep brown ; bill, legs, feet, and claws, dusky black.

[This is the smaller race generally now separated as *gutturalis*.—A. O. H.]

## 117.—Merops viridis, *Lin.*

The common Indian Bee-eater was very generally distributed ovre every portion of Southern Pegu which I visited. It was especially abundant at the mouth of the Rangoon river, and from there all alcng the coast up to China-Ba-keer, where hundreds might be seen perched upon the dead bushes and drift wood washed up along the margin of the shore just above highwater mark. They were here wonderfully tame, allowing me to get within two or three yards of them before they would attempt to fly away. The following is a *resume* of the dimensions of several specimens recorded in the flesh :—

Length, 9 to 9·5 ; expanse, 11·5 to 12·1 ; tail from vent, 3·7 to 3·8 ; wing, 4·6 to 5·2 ; tarsus, ·35 to ·4 ; bill from gape, 1·3 to 1·45.

Irides, deep red ; bill, dusky black ; legs and feet, greyish black ; claws, horny brown.

[The whole of the specimens belong to the rufous crowned and naped race separated as *ferrugineiceps*.—A. O. H.]

## 118.—Merops Daudini, *Cuv.*

This species, though tolerably abundant in certain localities was by no means general in its distribution. I have only met with it in a tidal swamp a few miles from Elephant Point, and also along the course of Deserter's Creek. In this latter locality it was met with in tolerable abundance, more especially where the margins were bordered with tall *Sonneratia* trees. Here numbers of this species might be seen making wide circles, with a strong rapid flight at a great height up in the air, and again returning to perch on the summits of these trees, where they would remain for a moment or two before starting on a fresh expedition. They kept, as a rule, to the highest trees, and were very wary and difficult to approach. A male bird shot near Elephant Point measured in the flesh :—

Length, 12·1 ; expanse, 15·6 ; tail from vent, 5·5 ; wing, 5·45 ; tarsus, ·5 ; bill from gape, 1·95.

The irides were deep crimson; bill, black; legs and feet, dusky greyish black; claws, horny brown.

## 119.—Merops Swinhoei, *Hume.*

The Chesnut-headed Bee-eater occurred very sparingly in Southern Pegu. During the months of November, December, and January, I did not meet with any specimen of this species, but during the latter end of February I saw several pairs near Elephant Point. They were all remarkably shy, and when disturbed flew away quite out of sight. A male bird shot in the vicinity of Elephant Point measured in the flesh :—

Length, 8·75; expanse, 12·5; tail from vent, 3·5; wing, 4·2; tarsus, ·4; bill from gape, 1·65.

Irides, crimson; bill, black; legs and feet, dusky pink; claws, brownish.

## 124.—Coracias affinis, *McClell.*

This bird, without being numerous anywhere, was universal in its distribution over the entire district. Wherever there were clumps of trees, bushes or hedges in open cultivated or waste ground, this species might be seen perching usually upon some dry leafless branch or twig. It was, however, excessively wary, so that it was not always easy to procure specimens. The following is a *resumé* of the dimensions of several specimens recorded in the flesh :—

Length, 12·5 to 13·75; expanse, 22·5 to 13·7; tail from vent, 5 to 5·3; wing, 7·2 to 7·5; tarsus, 1·0 to 1·15; bill from gape, 1·6 to 1·8.

Irides, light red; bill, black; legs and feet, ashy grey; claws, black.

## 128.—Pelargopsis amauroptera, *Pearson.*

This handsome King-fisher was by no means abundant anywhere. I have only met with it amongst the mangrove jungle which borders the margin of the larger creeks, flowing into the Rangoon river near its mouth. It is very shy and difficult to approach, and when disturbed, flies away with a harsh cry into the thickest jungle it can find. Male birds appear to be somewhat larger than the females. The following are the dimensions of three specimens shot on the banks of Deserter's Creek :—

Length, 14·5 to 5; expanse, 20·3 to 20·7; wing, 5·7 to 6; tail from vent, 4·1 to 4·4; tarsus, 0·6 to 0·7; bill from gape, 3·3 to 3.7.

The irides vary from light to deep brown; the eyelids are margined with orange beading; gape, deep salmon or orange

red; bill, bright vermilion, tipped with dusky; legs and feet, orange red; claws, dusky black.

## 129.—Halcyon smyrnensis, *Lin.*

This species was universally distributed over the entire district, and tolerably abundant everywhere. It was found in low jungle, and thin forest in open ground as well as along the margins of all the nullahs and streams in the vicinity. The following are the dimensions recorded in the flesh of ten specimens from Elephant Point, China-Ba-keer, Deserter's Creek, Rangoon, Syriam, and Eastern Grove:—

*Nine Males.*—Length, 10·7 to 11·5; expanse, 14·25 to 15·5; wing 4·5 to 4·95; tail from vent, 3·2 to 3·7; tarsus, ·6 to ·65; bill from gape, 2·7 to 2·9.

A female measured.—Length, 10·7; expanse, 14·75; wing, 4·55; tail from vent, 3; tarsus, ·62; bill from gape, 2·7.

The irides are dark brown; bill, dusky red, tipped with blackish brown; legs and feet, brownish red; claws, dark brown.

## 130—Halcyon pileata, *Bodd.*

This beautiful King-fisher formed a marked characteristic of the avi-fauna belonging to the Rangoon district of the Irrawaddy delta. It was to be seen everywhere. It was abundant amongst the mangroves on each side of every creek and nullah. The shore jungle along the coast, from Elephant Point up as far as China-Ba-keer, resounded with its discordant cry. Under every little dry projecting twig along the sea shore, a quantity of white excreta, and the remains of the legs and bodies of small crabs showed where one of these birds had been making its dinner and indulging in its siesta. Each bird appears to have its own favorite watch tower, and when disturbed, flies away with a shrill cry, taking a semicircular sweep to some dry twig ahead, and as soon as it thinks that the danger is passed by, returns again to the post from which it had been dislodged. The following is a *resumé* of the dimensions recorded in the flesh of numerous examples of this species:—

Length, 11·7 to 12·5; expanse 18 to 18·75; tail from vent, 3·3 to 3·75; wing, 4·9 to 5·3; tarsus, ·6 to ·7; bill from gape, 2·9 to 3·15.

Irides, reddish brown or dark brown; bill, deep coral red; legs and feet, dusky brownish red; claws, horny brown.

## 132.—Halcyon chloris, *Bodd.*

The White-collared King-fisher occurs, though very sparingly throughout the tidal swamps intervening between Elephant

Point and China-Ba-keer. It was perhaps more frequently met with amongst the mangroves bordering the larger nullahs and creeks near the mouth of the Rangoon river, feeding upon the small crabs and fish, which at ebb-tide swarm upon the mud in those localities. I obtained four specimens, of which the following are the dimensions recorded in the flesh :—

Length, 10 to 10·25 ; expanse, 14 to 15 ; wing, 4-43 ; tail from vent, 2·8 to 3 ; tarsus, ·6 to ·63 ; bill from gape, 2·1 to 2·3. Irides, dark reddish brown ; upper mandible, dusky greenish black ; lower mandible, pinkish or yellowish white, tipped and margined with greenish black ; legs and feet, slaty grey.

## 134.—Alcedo bengalensis, *Gm.*

The common Indian King-fisher was tolerably abundant along all the nullahs and creeks in the vicinity of Elephant Point and Eastern Grove. It does not, however, appear to frequent the more extensive mangrove swamps along the coast between the Rangoon and China-Ba-keer rivers. The dimensions of four specimens recorded in the flesh are as follows :—

Length, 6·3 to 6·6 ; expanse, 9·4 to 9·75 ; tail from vent, 1·3 to 1·5 ; wing, 2·75 to 2 8 ; tarsus, ·35 ; bill from gape, 1·8 to 2 ; bill at front, 1·35 to 1·45.

Irides, dark brown ; uppermandible, black ; lower mandible, either black or brownish white, tipped and margined with dusky black ; legs and feet, dull red ; claws, brown.

## 147 *bis.*—Palæornis magnirostris, *Ball,* (*Vide* S. F., II, 9,176.)

Birds of this species were very abundant in the district about Elephant Point. They used to select the adjacent paddy-fields for their feeding grounds, remaining there throughout the day-time. Towards evening, however, they would return in large parties to roost amongst some isolated clumps of tall trees which were scattered here and there over the neighbourhood. I observed them breeding in the trunks of trees towards the end of January and throughout February. The following is a *resumé* of the dimensions of six specimens recorded in the flesh :—

*Three Males*—Length, 20 to 21 ; expanse, 22·5 to 23 ; tail from vent, 13 to 13·6 ; wing, 7·6 to 8 ; tarsus, ·73 to ·75 ; bill from gape, 1·2 to 1·3 ; from base of culmen to tip, 1·4 to 1· 5 ; height of bill at base, 1·35 to 1·47.

*Three Females.*—Length, 17 to 20 ; expanse, 21·5 to 22·75 ; tail from vent, 10·2 to 12·6 ; wing, 7·3 to 7·7 ; tarsus, ·72 to

·75 ; bill from gape, 1·05 to 1·25 ; from base of culmen to tip, 1·35 to 1·4; height of bill at base, 1·4 to 1·45.

In both sexes the irides were of a pale yellowish white ; bill, crimson, tipped with dirty yellow, apparently the result of attrition; legs and feet, bright yellow.

[The numerous specimens collected by Dr. Armstrong, though very much resembling *magnirostris* of the Andamans, has not, taking a series, so large a bill as that species. It is a very much larger bird, however, than the Ceylon *eupatria*, and it altogether wants the glaucous blue tinge on the head of the Northern and North-Western *sivalensis*, Hutton. It approaches nearest to *nipalensis*, Hodgson, but seems to me on the whole to average larger, and to have the yellow throat patch more conspicuously marked.—A. O. H.]

## 149 *bis*.—Palæornis bengalensis, *Gm.*, (*Vide* S. F., II, 16.)

This species was tolerably abundant in the forest districts lying between Elephant Point and China-Ba-keer. I have always found them consorting in parties of from seven or ten to twenty or thirty. They are very noisy birds, giving utterance to a harsh screaming cry during their flight, which is extremely rapid and powerful. The following is a *resumé* of the dimensions of eight specimens recorded in the flesh :—

*Four males.*—Length, 11·5 to 13 ; expanse, 15·7 to 16·5 ; tail from vent, 6·7 to 7·5 ; wing, 5·2 to 5·7 ; tarsus, ·5 to ·6 ; bill from gape, ·65 to ·75.

*Four females.*—Length, 10·5 to 11 ; expanse, 15·2 to 15·7 ; tail from vent, 5·7 to 6·3 ; tarsus, ·5 to ·6 ; wing, 5 to 5·25 ; bill from gape, ·65 to ·7.

In both sexes the irides were light pinkish or yellowish white ; upper mandible, orange or dark yellow, becoming lighter towards the point which is tipped with greyish white ; lower mandible, black ; legs and feet, dirty black.

## 152.—Palæornis melanorhynchus, *Wagler*.

This species was more numerous and more generally distributed than either *magnirostris* or *bengalensis*. It is usually gregarious in its habits, but I have not infrequently found it solitary. It occurs most abundantly in the vicinity of flowering trees, upon the flower and leaf buds of which it feeds. It is much more familiar than any other species of Parrot which I met with, and if one of a flock should happen to be wounded, its calling will bring the whole party flying round almost within arm's length, the entire number keeping up all the time an

unceasing din of not unpleasing chatter. Male birds measure in the flesh:—

Length, 13·75 to 14·5; expanse, 19·25 to 20·5; tail from vent, 6·7 to 7·5; wing, 6·6 to 6·8; tarsus, ·65 to ·7; bill from gape, ·9 to 1.

*Females.*—Length, 13·5 to 14·2; expanse, 19 to 20; wing, 6·5 to 6·7; tail from vent, 7 to 7·3; tarsus, ·6 to ·7; bill from gape, ·85 to 1.

In both sexes the irides are pearly white; the legs and feet, greenish grey. In the adult male the upper mandible is bright vermilion red, tipped more or less with yellowish white, while in the adult females and young males it is dusky black, in both sexes the lower mandible is black.

## 153.—Loriculus vernalis, *Sparrm.*

The Indian Lorikeet was by no means abundant. I have only met with it in the thin forest jungle at Elephant Point and near China-Ba-keer. The birds are very active little creatures, and have a curious habit of ascending the branch of a tree in a spiral path, making numerous circuits of the stem before reaching the extremity. Their cry is harsh and discordant. The following are the measurements of three specimens recorded in the flesh:—

Length, 5·55 to 5·75; expanse, 8·75 to 9·6; wing, 3·4 to 3·6; tail from vent, 1·55 to 1·7; tarsus, 0·45 to 0·5; bill from gape, 0·45 to 0·5.

The irides are white; bill, orange yellow; legs and feet, yellow; claws, dusky brown.

## 157 *ter.*—Picus analis, *Horsf.*—(*Vide* S. F. III, 57.)

This species was only met with in the thin tree jungle close to Elephant Point, where it was decidedly rare. Two females measured in the flesh:—

Length, 7 to 7·3; expanse, 11·5 to 11·6; tail from vent 2·5; wing, 3·9 to 3·8; tarsus, ·65 to ·7; bill from gape, 1 to ·95.

Irides, dark brown; bill, dull greenish black; legs and feet, dusky greyish black; claws, black.

## 163 *bis.*—Yungipicus canicapillus, *Blyth.*—(*Vide* S. F., III, 59.)

This species appears to be extremely local in its distribution. I have only met with it in a patch of tall willow-like trees ("*Sonneratia apetala*"), growing in a tidal jungle a few miles from Elephant Point. During the mornings and evenings they occurred in great abundance amongst the branches of these trees, but during the heat of the day they always retired for

shelter to the thick underwood adjoining. The following are the dimensions of six specimens recorded in the flesh :—

*Three males.*—Length, 5·5 to 5·8 ; expanse, 10·3 to 10·6 ; tail from vent, 1·7 to 1·9 ; wing, 3·15 to 3·2 ; tarsus, ·55 to ·6 ; bill from gape, ·72 to ·8·

*Three females.*—Length, 5·3 to 5·6 ; expanse, 10·2 to 10·5 ; tail from vent, 1·7 to 1·9 ; wing, 3·05 to 3·15 ; tarsus, ·5 to ·6 ; bill from gape, ·7 to ·75.

In both sexes the irides vary from light to dark brown ; bill, dark greenish black ; legs and feet, dull greenish slate color ; claws, horny brown.

## 166.—Chrysocolaptes sultaneus, *Hodgs.*

In the belts of forest trees between Elephant Point and China-Ba-keer, this species was met with in abundance. It flies with considerable rapidity from tree to tree the branches of which it ascends by a series of jerks. During its flight it utters a harsh scream, which it discontinues as soon as it alights. The following are the dimensions of several specimens recorded in the flesh :—

*Males.*—Length, 12·5 to 12·75 ; expanse, 20·25 to 21·5 ; tail from vent, 4·1 to 4·7 ; wing, 6·15 to 6·65 ; tarsus, 1·15 to 1·2 ; bill from gape, 2·1 to 2·2.

*Females.*—Length, 11·5 to 12·2 ; expanse, 20·1 to 20·75 ; tail from vent, 4 to 4·8 ; wing, 6·2 to 6·5 ; tarsus, 1·15 to 1·2 ; bill from gape, 1·85 to 2.

In both sexes the irides were white, with a tinge of pink shading into brownish at the sclerotic margin ; bill, legs, and feet of a dark slate color ; claws, dusky black.

[The numerous specimens collected by Dr. Armstrong agree well with specimens from Thayetmyso—like these, they are larger than *C. Delesserti*, and conspicuously smaller as a body than the true Himalayan *sultaneus*.—A. O. H.]

## 171 *bis.*—Gecinus vittatus, *Vieillot.*—(*Vide* S. F., III, 68.)

This species of Woodpecker appears to be rare in Southern Pegu.* I have only met with three or four specimens in the forest jungle near China-Ba-keer. Two males measured in the flesh :—

Length, 12·2 to 12·8 ; expanse, 16·2 to 17·75 ; tail from vent, 4·8 to 4·9 ; wing, 5·45 to 5·5 ; tarsus, 1·1 ; bill from gape, 1·6 to 1·7.

* Say rather, close to the coast.—Ed, S. F.

The irides were dull red; upper mandible, dusky black; lower mandible, brownish yellow, tipped with dusky; legs, feet, and claws, dull greenish black.

## 184.—Tiga intermedia, *Blyth.*

I found this species to be more common and more generally distributed than any other Woodpecker. It was especially numerous in the vicinity of China-Ba-keer, where there are belts of tall forest trees running parallel to the shore. From sun-rise until nearly noon, this region resounds with the harsh cry, which, like *Chrysocolaptes sultaneus*, they only utter when on the wing flying from tree to tree. Like that species too they always alight on the lower part of the trunk or branch, ascending by a series of jerks, and stopping frequently to gather insects from the bark, or to have a look around them. During their flight they make with their wings a peculiar whirring noise, which I have not remarked during the flight of *Chrysocolaptes sultaneus*. The following are the dimensions of six specimens recorded in the flesh :—

*Three males.*—Length, 10·5 to 11·6; expanse, 16·8 to 17·7; tail from vent, 4 to 4·3; wing, 5·45 to 5·75; tarsus, 1 to 1·1; bill from gape, 1·3 to 1·4.

*Three females.*—Length, 10·75 to 11·25; expanse, 16·5 to 17·75; tail from vent, 4·1 to 4·4; wing, 5·5 to 5·8; tarsus, ·95 to 1·05; bill from gape, 1·25 to 1·3.

Irides, bright red; bill, dull bluish black; legs and feet, slate color.

## 197.—Xantholæma hæmacephala, *Müll.*

Wherever there was thin forest jungle or clumps of trees, this species was to be met with in abundance. They frequented, as a rule, the outskirts of the forest, perching on the tops of the trees, and giving utterance to their peculiar monotonous call, which may be distinctly heard at a distance of more than a quarter of a mile. The following is a *resumé* of the dimensions of four male birds recorded in the flesh :—

Length, 5·5 to 6·7; expanse, 10·2 to 10·65; tail from vent, 1·5 to 1·7; wing, 3·2 to 3·4; tarsus, ·75 to ·85; bill from gape, ·9 to 1·05.

Irides, dark reddish brown; bill, dusky black; legs and feet, red; claws, black.

## 207.—Hierococcyx sparveroides, *Vigors.*

This species is undoubtedly rare. I have only met with it on two or three occasions, and always in the thickest part of

the forest jungle near China-Ba-keer. A male specimen shot on the 19th December measured in the flesh :—

Length, 15·7 ; expanse, 25·3 ; tail from vent, 8·75 ; wing, 9·25 ; tarsus, 1 ; bill from gape, 1·4.

Irides, rich yellow ; eyelids, margined with orange yellow ; upper mandible, dull greenish black ; lower mandible, dusky horny green, shading into dirty yellow towards the point, which is tipped with dusky black ; legs, feet, soles, and claws, bright yellow. The contents of the stomach consisted almost entirely of portions of grasshoppers and beetles.

### 209.—Cacomantis rufiventra, *Jerd.*

This species was universally distributed over the entire region lying between Rangoon and China-Ba-keer, but did not appear to be abundant anywhere. They were generally met with in pairs, frequenting the open ground at the outskirts of forest jungle, keeping almost exclusively to low bushes or hedges. There does not seem to be any appreciable difference of size between the two sexes. The following is a *resumé* of the dimensions of five specimens recorded in the flesh :—

Length, 8·75 to 9·5 ; expanse, 15·1 to 15·6 ; tail from vent, 4·5 to 5·1 ; wing, 4·45 to 4·6 ; tarsus, ·6 to ·65 ; bill from gape, ·9 to 1.

Irides, brown ; upper mandible, reddish black ; lower mandible, yellowish brown, tipped with dusky ; gape, deep salmon red ; legs and feet, yellowish brown ; claws, black.

### 215.—Rhodophytes tristis, *Less.*

This species was not uncommon amongst the copses and thickets in the forests jungle between Elephant Point and China-Ba-keer. Several specimens measured in the flesh show the following result :—

Length, 20·5 to 22·5 ; expanse, 16·2 to 18·2 ; tail from vent, 13·2 to 16·5 ; tarsus, 1·55 to 1·65 ; bill from gape, 1·5 to 1·65. Irides, brownish red ; lores, crimson ; bill, bright horny green, darker towards the base ; legs and feet, greenish black ; claws, dark brown.

### 217 *quat.*—Centrococcyx eurycercus, *Hay.*—(*Vide* S. F., I, 453 ; III, 83.)

This species was generally distributed, though far from abundant anywhere. I only obtained a single specimen which I shot near Elephant Point ; it was a female and measured in the flesh :—

Length, 20·5 ; expanse, 24 ; tail from vent, 10·75 ; wing, 7·9 ; tarsus, 2·4 ; bill from gape, 1·9.

Irides, crimson; bill, dusky black, whitish at extreme point; legs and feet, dark slaty black; claws, black.

[The only specimen obtained by Dr. Armstrong resembles in every respect specimens from Thayetmyo; and if the races, which I have indicated, as differing materially from the true *eurycercus*, be considered deserving of specific separation, this present specimen should stand as *C. intermedius*. (See S. F., I, 453; and III, 83).—A. O. H.]

## 233 *bis*.—Chalcoparia cingalensis, *Gmel*, (*Vide* S. F., III, 86.)

I have only met with this species at Syriam and the vicinity of Elephant Point, where, however, they appear to be scarce. They frequent the thin shrubby jungle in those localities. The following are the dimensions of three specimens recorded in the flesh:—

*A male measured.*—Length, 4·3; expanse, 6·2; wing, 2·2; tail from vent, 1·75; tarsus, 0·6; bill from gape, ·06.

*Two females.*—Length, 4 to 4·1; expanse, 5·8 to 5·9; wing, 2·05 to 2·15; tail from vent, 1·55 to 1·6; tarsus, 0·58 to 0·6; bill from gape, 0·55 to 0·58.

In both sexes the irides are bright red; bill, dusky black; legs and feet, dull greenish black.

## 234.—Arachnechthra asiatica, *Lin.*

In the neighbourhoods of Rangoon and Syriam this species was extremely abundant, but I have only met with it two or three times between Elephant Point and China-Ba-keer. Male birds measure in the flesh:—

Length, 4·4 to 4·7; expanse, 6·7 to 6·8; wing, 2·15 to 2·2; tail, 1·4 to 1·55; tarsus, ·52 to ·6; bill from gape, ·8 to ·85.

A female measured in the flesh:—

Length, 4·4; expanse, 6·75; wing, 2·15; tail from vent, 1·35; tarsus, ·55; bill from gape, ·8.

Irides, brown; bill, legs, feet, and claws, black.

## 234 *ter*.—Arachnechthra flammaxillaris, *Blyth*.

This species, though not abundant anywhere, was met with generally throughout the district. Five males measured in the flesh:—

Length, 4·3 to 4·6; expanse, 6 to 6·25; wing, 1·97 to 2·1; tail from vent, 1·35 to 1·5; tarsus, ·5 to ·55; bill from gape, ·75 to 8.

A female measured in the flesh:—

Length, 4·25; expanse, 6; wing, 2; tail from vent, 1·5; tarsus, ·53; bill from gape, ·8.

In all the irides were red; bill, legs, feet, and claws, black.

[When describing *Arachnechthra andamanica* (S. F., I, 404), I also pointed out some of the characteristic differences of the present species, *A flammaxillaris*, Blyth; but the species is not included in Dr. Jerdon's work, and has not yet been described in "STRAY FEATHERS."

The following are the dimensions, and a description founded on a large series obtained in various parts of the Tenasserim provinces and lower Pegu, Diamond Island, and Akyab:—

*Males.*—Length, 4·3 to 4·6; expanse, 6 to 6·8; wing, 1·95 to 2·12; tail from vent, 1·35 to 1·55; tarsus, 0·5 to 0·55; bill from gape, 0·7 to 0·8; bill at front, 0·59 to 0·7.

*Female.*—Length, 4·25 to 4·37; expanse, 6 to 6·5; wing, 2 to 2·05; tail from vent, 1·3 to 1·5; tarsus, 0·45 to 0·53; bill from gape, 0·7 to 0·8; bill at front, 0·63 to 0·67.

The bill, legs, feet, and claws, black. As to the irides there is some doubt; they have been recorded as red in some specimens, and dark brown in others.

The adult male has the entire top and back of the head, sides and back of the neck, the entire back, scapulars, and lesser coverts, rump and upper tail coverts, a dull olive green, or brown, washed with this color. Some specimens are much browner, some greener, but in most examples, there is a slightly brighter tinge on the rump.

The quills, and their greater coverts, are rather pale hair brown, as a rule all more or less fringed on their outer margins, with the color of the back, but this is sometimes almost entirely wanting, only the margins of the quills being slightly paler.

The tail is black; the exterior tail feather broadly, and the next two, more and more narrowly tipped with white.

The chin, throat, and breast, deep metallic purple, bordered along the sides of the neck, and, indeed, from the gape downwards, by a more or less well-defined band of deep steel blue. Below, the deep metallic purple of the upper breast is bordered by a more or less conspicuous band of red, which varies from a brownish orange red in some specimens, to almost maroon in others.

This band is very imperfectly marked in some good specimens even, and it is succeeded by a dusky or blackish patch, in some specimens confined to the centre of the breast, in some extending on either side into a band.

The abdomen, vent, and lower tail coverts, typically are clear pale primrose yellow, paling somewhat on the lower tail coverts, but in some specimens with a gamboge tint on the abdomen, and in others very pale, the flanks always more or less shaded with grey or dusky, which, in some very brightly-colored

specimens, becomes a greenish olive. Axillary tufts typically a flame orange, but in some specimens only an intense gamboge yellow, tinged with orange towards the tips.

I am not clear as to the meaning of these variations in color, as they occur in specimens all apparently adult, and killed at the same time and place.

The female is similar to the male, but appears never to have the same amount of green edgings to the quills and their coverts, and has the entire lower surface a bright clear primrose yellow, only down the centre of the chin and throat, the color is slightly paler and less pure.—A. O. H.]

## 236.—Dicæum cruentatum, *Lin.*

I have met with this species only in the immediate vicinity of Rangoon, where it was extremely abundant. They are met with most abundantly during the hottest part of the day, frequenting thin tree or open forest jungle. They flit about with great activity from tree to tree, usually in small parties of four or five, giving utterance all the time to small chirruping notes. The following is a *resumé* of the dimensions of six males recorded in the flesh :—

Length, 3·25 to 3 5 ; expanse, 5·8 to 6·1 ; wing, 1·85 to 1·95 ; tail from vent, 1·1 to 1·15 ; tarsus, ·45 to ·5 ; bill from gape, ·5 to ·55.

A female measured in the flesh :—

Length, 3·3 ; expanse, 5·65 ; wing, 1·75 ; tail from vent, 1·1 ; tarsus, ·46 ; bill from gape, ·5.

In both sexes the irides were reddish brown ; bill, legs and feet, black.

## 254 *bis.*—Upupa longirostris, *Jerd.*—(*Vide* S. F., III, 89.)

This species appeared to avoid forest jungle, but was very abundant in the open cultivated or waste ground, frequenting the shrubs and hedges in those localities. I have usually found it consorting in pairs. The following is a *resumé* of six specimens, the dimensions of which have been recorded in the flesh :—

*Two males.*—Length, 11·7 to 12·2 ; expanse, 17 to 17·4 ; wing, 5·45 to 5·5 ; tail from vent, 4·1 to 4·4 ; tarsus, ·95 ; bill from gape, 2·55 to 2·75 ; from forehead to tip, 2·42 to 2·6 ; from anterior margin of nares to tip, 2 to 2·2.

*Four females.*—Length, 11·2 to 11·75 ; expanse, 16·5 to 17 ; wing, 5·1 to 5·3 ; tail from vent, 3·9 to 4 ; tarsus, ·93 to ·95 ; bill from gape, 2·37 to 2·52 ; from forehead to tip, 2·25 to 2·37 ; from anterior margin of nares to tip, 1·85 to 2.

In both sexes the irides were light brown; bill, dusky black, paler towards base; feet, legs, and claws, dark slate color.

[Dr. Armstrong preserved eight specimens. All of these agree in the characteristic point of the black tippings of the crest feathers joining on to the chestut of the crest, without any intermediate white bar as in *epops*, or paler band as in *nigripennis*. The bills too, as will be seen from Dr. Armstrong's measurements, run considerably longer than those of either of the two above referred to species. A. O. H.]

## 260 *bis*.—Lanius collurioides, *Less.* (*L. hypoleucos*, Blyth.—*Vide* S. F., III, 90.)

I have only seen this species at Rangoon where it was decidedly scarce. They frequent the thick bushes and hedges in the neighbourhood. The following are the measurements of two male birds recorded in the flesh :—

Length, 7·6 to 7·8; expanse, 10·7 to 10·5; wing, 3·4 to 3·35; tail from vent, 3·55 to 3·75; tarsus, 1; bill from gape, ·9 to ·85.

Irides, reddish brown; upper mandible, dusky black, margined near gape with yellowish white; lower mandible, yellowish white, tipped with dusky black; feet and legs, dusky.

## 261.—Lanius cristatus, *Lin.*

This Shrike, although far from being abundant, appears to be more generally distributed than *collurioides*. It seems to prefer the vicinity of towns or villages, frequenting the thick low jungle in their vicinities. The following are the measurements recorded in the flesh of two specimens, a female and a male killed near Rangoon and Elephant Point respectively :—

Length, 7·4 to 7·6; expanse, 10·4 to 10·5; wing, 3·35; tail from vent, 3·2 to 3·3; tarsus, 1; bill from gape, ·85 to ·87.

Irides, dark brown; upper mandible, dusky black, margined with yellowish white near gape; lower mandible, dirty white, tipped with dusky black; legs and feet, dusky brown.

## 270.—Graucalus Macei, *Less.*

This species occurs in tolerable abundance amongst the thin tree jungle at Syriam and Eastern Grove, as well as in similar localities between Elephant Point and China-Ba-keer. It frequents the tops of the taller trees, flying from one to another, and seldom so far as I have observed, settling amongst any of the lower branches. There seems to be no appreciable difference of size between the two sexes. The measurements

of two males and two females recorded in the flesh are as follows :—

Length, 12 to 12·35 ; expanse 19·3 to 19·75 ; wing, 6·6 to 6·75 ; tail from vent, 5·2 to 5·5 ; tarsus, 1·05 to 1·1 ; bill from gape, 1·5 to 1·55.

The irides vary from brilliant light hazel to reddish or dark brown ; bill, legs, and feet, black.

[The Rangoon specimens agree perfectly with Calcutta specimens, and are intermediate in size, between the larger Northern race usually identified as the true *Macei*, and the smaller Southern *G. Layardi*, of Blyth. I do not myself believe in the distinctness of these two supposed species. (See also S. F. II, 204.—(A. O. H.]

## 275.—Pericrocotus roseus, *Vieillot.*

This species occurs sparingly in the vicinities of Rangoon and Syriam, and I have also found it in the neighbourhood of China Ba-keer. As a rule, it is solitary in its habits, and I have never met with more than a pair of these birds together. They seem to prefer high trees with loose foliage, such as *Casuarinas* and *Sonneratias*, amongst the branches of which they hop about with great rapidity. The following result is obtained from the measurments of three males recorded in the flesh :—

Length, 7·2 to 7·3 ; expanse, 9·8 to 10·3 ; wing, 3·3 to 3·45 ; tail from vent, 3·3 to 3·7 ; tarsus, ·6 to ·65 ; bill from gape, ·75 to ·8.

Irides, dark brown ; bill, legs, and feet, black.

[Lord Walden, in his interesting article on the late Colonel Tickell's "Illustrations of Indian Ornithology," remarks :—"P. *roseus*, ♂, is figured and described by Colonel Tickell from a Tenasserim example. The uropygium and upper tail coverts are described as being 'pure brilliant scarlet,'—This is certainly the case with all Burman and Assam birds I have seen. But is it so in typical Bengal and other Indian individuals? These last I have never met with varying from the description given by Jerdon (B. Ind. I, p. 422.)—'rump tinged with rosy"

Typical specimens from Mergui are widely different from others, say from the Agrore valley at the extreme north-west frontier of India. In the Tenasserim specimens the head and back, the former especially, are a much darker, almost leaden grey, in the Agrore bird much paler and browner. In the Agrore bird, the rump and upper tail coverts are merely tinged with rosy, in the Tenasserim bird the upper tail coverts are brilliant crimson scarlet, and the rump is strongly tinged and patched with the same color. The red on the wings, tail and wing lining of the Tenasserim bird is altogether brighter

than in the Agrore bird. Birds from Rangoon appear to be similar. Adult females of the Tenasserim birds also differ from the female from Agrore, in the first place in being somewhat darker, and in the second place in having the rump and upper tail coverts not merely slightly yellowish, but also in having each feather of these parts narrowly fringed with bright gamboge yellow. Birds from the neighbourhood of Mussoorie and the Doon are very similar to those from Agrore, but are somewhat darker in color, and so the Darjeeling birds also appear to be. But specimens from Comillah, Tipperah, appear to be intermediate between the two forms, but most nearly allied to the Tenasserim form, having a very strong scarlet tinge on the rump, and having the upper surface notably darker than in the Agrore specimens. I think that the two forms grade perfectly into one another, and I am not myself inclined to separate them specifically. If the Tenasserim form should be deemed worthy of separation, it would probably stand as *affinis*, MacClelland. P. Z. S. 1839, p. 157, which is stated to pertain to the Assamese form of *P. roseus*, which corresponds with the Tipperah birds.—A. O. H.]

## 276—Pericrocotus peregrinus, *Lin.*

This species was abundant at Rangoon and Syriam as well as throughout the entire district intervening between Elephant Point and China-Ba-keer. It occurred in greatest numbers along the borders of the forest jungle, and I have always met with it consorting with several others of the same species. They measure in the flesh.

Length, 5·7 to 6; expanse, 8·4 to 8·8; wing 2·65 to 27; tail from vent, 2·7 to 2·8; tarsus, ·6 to ·62; bill from gape ·62 to ·65.

Irides, dark brown; bill, legs, and feet, dusky black.

## 278.—Buchanga albiricta, *Hodgs.*

The common Drongo Shrike occurred in abundance everywhere. It was to be found alike on the outskirts of forests, in the vicinity of villages and along the sea-shore. The following is a *résume* of the dimensions of six specimens recorded in the flesh:—

*Three males*—Length, 10·55 to 11; expanse, 16·6 to 17·25; wing, 5·7 to 5·9; tail from vent, 5·6 to 5·9; tarsus, ·7 to ·72; bill from gape, 1·05 to 1·1.

*Three females.*—Length, 10·35 to 11; expanse, 15·5 to 16·7; wing, 5·2 to 5·55; tail from vent, 5 to 5·8; tarsus, ·67 to ·7; bill from gape, 1·05 to 1·1.

In both sexes the irides vary from brown or reddish brown, to bright red; the bill, legs, and feet, are black.

[A large number of specimens, procured by Dr. Armstrong, are what I consider to be true *albiricta*. In a very fine specimen of this species from Ajmere, (I choose a central locality), in which the white rictal spot is very nearly the tenth of an inch in diameter, a male, the wing measures 5·92, and the tail from vent, it being a particularly fine specimen, 6·25. These Rangoon specimens agree precisely with this Ajmere specimen in size and shape of bill, in color, and I may also say in size, as in some males the wings range up to 5·9, and the tails also up to 5·9. As regards the rictal spot, none have this so strongly marked as in the Ajmere example, but some have it clearly marked, while in others it is barely discernible. Doctor Jerdon (*Ibis*, 1872, p. 119) separates the Indian King-crow without a rictal spot under Swinhoe's name of *cathœcus*, but I must absolutely dispute the value of the rictal spot as a specific characteristic of Indian birds as all over the country, at least, wherever, I have been, birds with and without the rictal spot equally occur. As to the smaller Southern race *D. minor*, Blyth, from Ceylon, and and *B. atra*, Hermann, from Tranquebar, the difference of size may be considered to warrant specific separation, but certainly *D. longus* and *D. cathœcus* of India, *apud* Jerdon, are not in my opinion separable from *D. albirictus*.—A. O. H.]

## 280 A.—Buchanga intermedia, *Blyth*.—(*Vide* S. F., III, 97.)

The ashy Drongos collected from the neighbourhoods of Rangoon and Syriam, as well as those from the district intervening between Elephant Point and China-Ba-keer, may, from their relative dimensions, be arbitrarily divided into two *quasi* species. The larger birds are, probably, referable to the *B. pyrrhops* of Hodgson, although their dimensions are somewhat less those given by Mr. Grote for that species; while the smaller variety may, I think, with equal probability be referred to the *B. intermedia* of Blyth. The following are the dimensions recorded in the flesh of four specimens of *intermedia* :—

| | Sex. | Length. | Expanse | Wing. | Outer tail feathers. | Middle tail feathers. | Tarsus. | Bill from gape. |
|---|---|---|---|---|---|---|---|---|
| 1 | ♂ | 10 | 15·5 | 4·9 | 4·8 | 3·8 | ·76 | 1·05 |
| 2 | ,, | 10·3 | 16 | 5·1 | 5·2 | 3·9 | ·75 | 1·12 |
| 3 | ,, | 10·5 | 16·3 | 5·3 | 5·5 | 3·9 | ·72 | 1·07 |
| 4 | ,, | 10·4 | 16 | 5·2 | 5·6 | 4 | ·75 | 1·1 |

In all four specimens the irides were lake red; the bill, legs, feet, and claws, jetty black.

## 280 B.—Buchanga pyrrhops, *Hodgs.*—(*Vide* S. F., III, 98.)

The birds which have been referred to this species were as generally distributed and occurred in apparently as great abundance as the preceeding The following are the dimensions of four specimens recorded in the flesh :—

| | Sex. | Length. | Expanse. | Wing. | Outer tail feathers. | Middle tail feathers. | Tarsus. | Bill from gape. |
|---|---|---|---|---|---|---|---|---|
| 1 | ♂ | 11·2 | 17·25 | 5·65 | 6·3 | 4·5 | ·75 | 1·12 |
| 2 | ,, | 11 | 17·25 | 5·5 | 5·9 | 4·3 | ·75 | 1·15 |
| 3 | ,, | 11·5 | 17 | 5·6 | 6·4 | 4·5 | ·8 | 1·2 |
| 4 | ♀ | 10·75 | 17 | 5·4 | 5·5 | 4·3 | ·75 | 1·15 |

In all four specimens the irides were lake red, and the bill, legs, and feet, jetty black.

[I should unhesitatingly refer all these eight birds, all precisely similar, and in which a regular gradation of size can be traced, to one species. They are all, with one exception, very typical, being light iron grey beneath, pale above, and very ashy on the tail. One specimen, however, is much closer to *longicaudatus*, the bill and the entire upper surface, including the tail, is absolutely inseparable from true *longicaudatus*. The breast and abdomen alone have the purer lighter grey tint of *pyrrhops*. In these respects this bird resembles several from Dacca, where the typical *pyrrhops* also is common. Most certainly typical *longicaudatus* and typical *pyrrhops* or *intermedius* appear to be very different, but no observer, however superficial, with an adequate series before him, can truthfully deny that numbers of intermediate forms occur, which might be indifferently united with either, and under these circumstances I must reiterate the remark I long ago made, namely, that it is very doubtful whether it is expedient to separate specifically all these interblending races.—A. O. H.]

## 282.—Chaptia ænea, *Vieillot.*

This species occurs very sparingly in the forest jungle near China-Ba-keer, but I have not met with it elsewhere. A male specimen measured in the flesh :—

Length, 8·7 ; expanse, 13·8 ; tail from vent, 4·6 ; wing, 4·75 ; tarsus, ·7; bill from gape, 1.

Irides, dark reddish brown ; bill, legs, and feet, deep black.

## 283.—Bringa tectirostris, *Hodgs.*

This species was met with occasionally in the thick underwood of the tall forest jungle adjacent to China-Ba-keer, where, however, it was scarce. The following are the dimensions recorded

in the flesh of two male birds, shot at China-Ba-keer in December, neither of which had by that time developed its long tail feathers :—

Length, 10·5 to 10·75; expanse, 15·9 to 16·25; wing, 5·15 to 5·2; tail from vent, 5·4 to 5·35; tarsus, ·85; bill from gape, 1·1 to 1·15.

Irides, reddish brown; bill, legs, feet, and claws, black.

### 285 *bis*.—Dissemurus paradiseus, *Lin.* (*Vide* S. F., II, 212; III, 101.)

This species was met with in great abundance in the forest belts intervening between the Rangoon and China-Ba-keer rivers. It frequents the lower branches of the trees and the dense thorny underwood in those localities. The following are the measurements of six specimens recorded in the flesh :—

*Three Males.*—Length, 20·5 to 22; expanse, 19·5 to 20; wing, 6·35 to 6·6; outer tail feathers, 14·5 to 16·2; middle tail feathers, 5·8 to 6; tarsus, 1·2 to 1·25; bill from gape, 1·5 to 1·55.

*Three Females.*—Length, 17·5 to 19·5; expanse, 18·5 to 19·25; wing, 6 to 6·2; outer tail feathers, 11·2 to 14; middle tail feathers, 5·5 to 6; tarsus, 1·15 to 2; bill from gape, 1·45 to 1·52.

Irides, dark brown or reddish brown; bill, legs, feet, and claws, black.

### 286.—Chibia hottentota, *Lin.*

Although this species was, as a rule, abundant in those localities where it occurred, yet it appeared to be very local in its distribution. I have met with it most abundantly near Syriam, where I shot some nine or ten specimens in a small clump of *Acacias*, the flowers of which they were minutely examining apparently in search of insects. These trees appeared to afford them such an abundant harvest of food, that, although they would all fly off at the report of the gun, yet after flying away to a short distance, they would almost immediately return to the same trees. I do not think that there could have been less than seventy or eighty of these birds feeding in this small clump of nine or ten *acacias*. There is no appreciable difference in the dimensions of the two sexes. The following is a *resumé* of the dimensions of eight males and four females recorded in the flesh :—

Length, 11·5 to 12·5; expanse, 18·75 to 20; wing, 5·9 to 6·55; tail from vent, 5·3 to 5·5; tarsus, 1 to 1·1; bill from gape, 1·45 to 1·7.

Irides, dark brown; bill, legs, feet, and claws, black.

### 287.—Artamus fuscus, *Vieillot.*

This bird was very abundant throughout the entire district. I have met with at Rangoon, Syriam, Elephant Point, and

China-Ba-keer. It was especially numerous in the vicinities of villages, where parties of from ten to twenty or more would perch in the upper branches of some tall tree, whence they would sally forth at intervals in quest of insects. Male birds measure in the flesh :—

Length, 7 to 7·5 ; expanse, 14·5 to 15 ; wing, 5 to 5·15 ; tail from vent, 2·3 to 2·5 ; tarsus, ·6 to ·7 ; bill from gape, ·85 to ·95.

A female measured in the flesh :—

Length, 7·3 ; expanse, 14·75 ; wing, 5·05 ; tail from vent, 2·3 ; tarsus, ·6 ; bill from gape, ·9.

In both sexes the irides are dark brown ; bill, greenish blue, tipped with dusky ; legs and feet dark, dark slate color.

## 290.—Myiagra azurea, *Bodd.*

This species was abundant throughout the entire district, frequenting for the most part the underwood in forest jungle. I have generally met with it in small parties of four or five, all of which were usually females. The male bird when met with was generally solitary, but now and then I observed one amongst a party of females. The females are somewhat smaller than the males.

Four females measured in the flesh :—

Length, 5·8 to 6·2 ; expanse, 5·75 to 6·5 ; wing, 2·6 to 2·85 ; tail from vent, 2·6 to 2·9 ; tarsus, ·65 to ·67 ; bill from gape, ·7 to ·72.

A male specimen measured in the flesh :—

Length, 6·5 ; expanse, 6·75 ; wing, 2·95 ; tail from vent, 2·9 ; tarsus, ·75 ; bill from gape, ·75.

Irides, dark brown ; bill, indigo blue ; legs and feet, slaty color.

## 295.—Culicicapa cinereocapilla, *Vieillot.*

I have only met with this bird in the neighbourhood of Rangoon, where it appears to be very rare. A male specimen shot in February measured in the flesh :—

Length, 4·6 ; expanse, 6·75 ; tail from vent, 1·95 ; wing, 2·4 ; tarsus, ·55 ; bill from gape, ·5.

Irides nearly black ; bill, dusky above, dirty white underneath ; legs and feet, brownish yellow.

## 296.—Hemichelidon sibiricus, *Gmel.*

This species appears to be rare. I only obtained a single specimen which I shot amongst the loose thickets near Elephant Point. It was a female, and measured in the flesh :—

Length, 4·7 ; expanse, 9·75 ; tail from vent, 2 ; wing, 2·9 ; tarsus, ·55 ; bill from gape, ·58 : width at rictus, ·37.

Irides, dark brown; upper mandible, dusky black; lower mandible, yellowish brown, tipped with dusky; legs and feet, brownish black.

### 301.—Eumyias melanops, *Vigors.*

This species occurred in tolerable abundance both at Syriam and Elephant Point. It appears to frequent alike the hedges and thickets in the sides of hills and in open waste ground as well as the low thin jungle in mangrove swamps. The following are the dimensions of five specimens recorded in the flesh :—

*Two Males.*—Length, 6·5 to 6·7; expanse, 10·75 to 11; wing, 3·45 to 3·5; tail from vent, 2·95 to 3·1; tarsus, ·62 to ·63; bill from gape, ·66 to ·68.

*Three Females.*—Length, 6·2 to 6·4: expanse, 10·4 to 10·6; wing, 3·15 to 3·2; tail from vent, 2·6 to 2·9; tarsus, ·62 to ·63; bill from gape, ·6 to ·65.

Irides, dark brown; bill, legs, and feet, black.

### 323.—Erythrosterna leucura, *Gmel.*

This is evidently a rare species throughout the district. I have only seen a single specimen which I shot in December at Elephant Point. It was a female, and measured in the flesh.:—

Length, 5·3; expanse, 8·25; tail from vent, 2; wing, 2 65; tarsus, ·72; bill from gape, ·63.

Irides, very dark brown; bill, dusky brown, lighter underneath, legs and feet, dusky black.

### 371.—Oreocincla dauma, *Lath.*

I have only seen a single specimen of this bird, which I shot on the 18th December, in the forest jungle near China-Ba-keer. It was busily occupied picking up insects on the ground, and on being disturbed, flew away into a tree, where it was shot. It was a fine male bird, and measured in the flesh :—

Length, 11·3; expanse, 17·25; tail from vent, 4·35; wing, 5·6; tarsus, 1·35; bill from gape, 1·25.

Irides, dark brown; upper mandible, dusky black; basal half of lower mandible, yellowish brown; terminal, half dusky; legs and feet, yellowish brown; claws, horny brown.

### 396.—Timalia pileata, *Horsf.*

I shot a single specimen of this bird at Elephant Point in the beginning of January, but did not meet with any more. Its sex is doubtful, the generative organs not being sufficiently developed for determination. It measured in the flesh :—

Length, 5·6; expanse, 7·8; tail from vent, 2; wing, 2·55; tarsus ·98; bill from gape, ·78; from nares, ·52.

Irides, reddish brown; bill, black; legs and feet, dusky black.

**452** *ter A.*—**Ixus Davisoni,** *Hume.* (*Vide S. F., III,* 301.)

I have seen several birds which I believe belong to this species amongst the open tree jungle near Elephant Point. I only obtained a single specimen which was a female, and measured in the flesh :—

Length, 7·75; expanse, 11·25; tail from vent, 3·35 ; wing, 3·55 ; tarsus, ·9 ; bill from gape, ·9.

Irides, brownish white ; bill, legs, and feet, dusky black.

**456.—Rubigula flaviventris,** *Tickell.*

This little bird was extremely abundant in the neighbourhood of Rangoon. It occurs also, though sparingly, at Syriam, but I have not met with it in any portion of the country which lies between Elephant Point and China-Ba-keer. It is very familiar in its habits, and seems to prefer the vicinity of houses or villages. It frequently flies off shore, and perches on the rigging of the ships in harbour, where it will remain for hours, warbling songs with peculiarly sweet twittering notes. From its familiar habits it becomes an easy prey to the native boys of the town, who wantonly kill numbers of them with mud bullets discharged from a bamboo bow. The following is a *résume* dimensions of six specimens recorded in the flesh :—

Length, 7·25 to 7·6; expanse, 10 to 10·5 ; wing, 3·15 to 3·45 ; tail from vent, 3·2 to 3·5 ; tarsus, ·59 to ·65 ; bill from gape, ·72 to 75.

Irides, white, with a greenish yellow tinge ; bill, legs, and feet, dusky brownish black.

**457** *bis.*—**Brachypodius melanocephalus,** *Gmel.*

This species was tolerably abundant at Syriam, frequenting the taller trees in thin forest jungle. I have also met with it in similar localities at Rangoon. I only obtained two specimens, a male and female, of which the following are the dimensions recorded in the flesh :—

*Male.*—Length, 7·2 ; expanse 10·2 ; tail from vent, 3·1 ; wing, 3·35 ; tarsus, ·55 ; bill from gape, ·75.

*Female.*—Length, 6·8; expanse, 9·75 ; tail from vent, 2·9 ; wing, 3·15 ; tarsus ·55 ; bill from gape, ·75. Bill, deep black ; legs and feet, plumbeous.

[This species is not included in Dr. Jerdon's work, and has not yet been described in "STRAY FEATHERS."

*Male.*—Length, 7·12 to 7·3 ; expanse, 10·12 to 10·3 ; wing, 3·2 to 3·35 ; tail from vent, 2·9 to 3·3 ; tarsus, 0·5 to 0·55 ; bill from gape, 0·75 to 0·85.

*Female.*—Length, 6·5 to 6·9; expanse 9·75 to 10; wing, 3·1 to 3·15; tail from vent, 2·8 to 3; tarsus, 0·5 to 0·55; bill from gape, 0·75 to 0·8.

In both sexes the legs are plumbeous or dark plumbeous, the bill is black, the inside of the mouth, pale plumbeous blue, the irides, clear pale blue.

The entire head, including cheeks, chin, and throat, black, with a metallic lustre, decidedly green on the throat and ear coverts, but purplish in most lights elsewhere. The whole body above and below, including upper and lower tail coverts, the wing coverts, except the greater primary coverts, yellow, strongly tinged with greenish olive on the breast and back, and faintly washed with this tint elsewhere, except on the lower abdomen, vent, and lower tail coverts. The feathers of the lower back are only broadly tipped with yellow, and where the feathers are in the least disarranged, the deep brown basal portions show through as conspicuous more on less lunate patches. The quills and the primary greater coverts, deep hair brown; the secondaries, margined on their outer webs with, and the greater portion of the outer webs of the tertiaries, yellow. The tail, which is very much rounded, black, broadly tipped with bright yellow. Both upper and lower tail coverts are very long, the former reach within about 0·7, and the latter within 0·8, of the end of the tail, which brings them just level to the end of the exterior tail feather. The wing lining, white, tinged with yellow.

The female is, as a rule, precisely similar to the male, but in some cases is, perhaps, greener and more infuscated than in any male.

The quite young birds appear to have the metallic black of the head entirely replaced by a dull olive green, and the whole plumage is duller and greener than in the adult.—A. O. H.]

## 460.—Otocompsa emeria, *Shaw.*

This species was met with, though very sparingly throughout the district which lies between Elephant Point and China-Ba-keer. It occurs, however, in abundance at Syriam, where, as a rule, it keeps to the sides of the hills and lower elevations. The following is a *résume* of the dimensions of six specimens recorded in the flesh:—

Length, 7·5 to 8·25; expanse, 9·4 to 10; tail from vent, 3·2 to 3·6; wing, 3·05 to 3·3; tarsus, ·82 to ·85; bill from gape, ·82 to ·87.

Irides, brown; bill, legs, and feet, black.

### 461 *bis.*—Molpastes intermedius, *Hay.* (*Vide S. F., III*, 127.)

I have met with this species only in the thin tree jungle near Elephant Point, where, however, it appears to be rare. A male bird shot at the end of February measured in the flesh:—

Length, 8·5; expanse, 11·5; tail from vent, 3·7; wing, 3·8; tarsus, ·9; bill from gape, ·95.

Irides, dark brown; bill, legs, feet, and claws, black.

### 467.—Iora typhia, *Lin.*

This little bird was met with in tolerable abundance, about Rangoon and Syriam, and less frequently at Elephant Point and China-Ba-keer. It appears to frequent loose shrubby jungle and gardens, as well as the outskirts of forest land. The following are the dimensions of four specimens recorded in the flesh:—

Length, 5·2 to 5·6; expanse 7·6 to 8·2; tail from vent, 1·8 to 2·; wing, 2·4 to 2·6; tarsus, ·73 to ·75; bill from gape, ·68 to ·78.

Irides, light greyish white; bill, slaty blue, lighter at tip; legs and feet, bluish grey.

### 469.—Irene puella, *Lath.*

This species occurs sparingly at China-Ba-keer, but is extremely common at Syriam, where, in the early mornings, large flocks of these birds may be found feeding amongst the different fig-trees in the neighbourhood. There is no constant difference in size between the two sexes. Three males and three females measured in the flesh show the following result:—

Length, 9·75 to 10·3; expanse, 14·5 to 15·5; tail from vent, 3·75 to 4·25; wing, 4·8 to 5·2; tarsus, ·75 to ·85; bill from gape, 1·1 to 1·2.

In one female the irides were deep red, in all the remaining specimens of either sex they were light reddish brown; the bill, legs, feet, and claws, were black.

Of nine specimens that I obtained, none exhibited the brilliant smalt blue plumage of the adult male. None of these specimens however were obtained later than the end of February.

[This brilliant plumage is however by no means seasonal, as we have killed males in the perfect plumage in every month in the year.—A. O. H.]

### 471.—Oriolus chinensis, *Lin.*

This species was generally distributed, but by no means abundant anywhere. It frequents thinly wooded forest jungle,

keeping, as a rule, to the tops of the tallest trees. A fine male shot near Elephant Point measured in the flesh :—

Length, 10·5; expanse, 18·75; tail from vent, 3·8; wing, 6·2; tarsus, 1 ; bill from gape, 1·45.

Irides, red; bill, fleshy pink; legs, and feet, dusky slate color; claws, horny brown.

## 472.—Oriolus melanocephalus, *Lin.*

The black-headed Oriole occurs in abundance throughout the entire district. It frequents alike low tree jungle as well as forest land. A male specimen from Syriam measured in the flesh :—

Length, 9·5; expanse 15·8; wing, 5·1; tail from vent, 3·4; tarsus, ·98; bill from gape, 1·3. Irides, bright red ; bill, brownish white, tipped with pinkish; legs and feet, dark slate color; claws, black.

## 475.—Copsychus saularis, *Lin.*

The Magpie Robin was met with everywhere in tolerable abundance. I have usually seen it in couples frequenting thickets and hedges. The following are the dimensions of four specimens recorded in the flesh:—

*Three males.*—Length, 8 to 8·7; expanse, 11·25 to 11·7; wing, 3·8 to 3·85; tail from vent, 3·5 to 3·9; tarsus, 1·15 to 1·2; bill from gape, 1 to 1·2.

*One female,*—Length, 8 ; expanse, 11; wing 3·55; tail from vent, 3·3 ; tarsus, 1·05; bill from gape, 1·05.

Irides, dark brown; bill, legs, and feet, black.

[Three specimens, male, of this species shot at Elephant point and China Ba-keer, places both on the western side of the Rangoon river, and about twenty miles apart, are remarkable for having, one the tail of typical *saularis*, with the fourth tail feather, counting from the exterior, pure white, with only a narrow dusky fringe on the basal portion of the inner web, while a second has an almost typical *musicus* tail, with the fourth feather black, with only a white wedge projecting downwards from the tip along the shaft for about an inch ; the third is intermediate, the fourth feather is white, with a narrow black band on the exterior of the outer web, and a broad black band along the interior of the inner web. A single female only was procured at Elephant Point, she is much darker than females of the Indian *saularis*, but not so dark as *musicus* from the Straits.—A. O. H.]

## 483.—Pratincola indica, *Blyth.*

I have only met with this little bird in the neighbourhood of Elephant Point, where it was very abundant. It was always

## 555.—Phylloscopus fuscatus, *Blyth.*

This species did not appear to be very uncommon amongst the copses and thickets in the vicinity of Elephant Point. A male bird shot in that locality measured in the flesh :—

Length, 5·5; expanse, 7·2; tail from vent, 2·4; wing, 2·5; tarsus, ·95; bill from gape, ·52. Irides, brown; upper mandible, dusky brown; basal half of lower mandible, yellowish white; terminal half, light brown; legs, feet, and claws, yellowish brown.

## 558.—Phylloscopus lugubris, *Blyth.*

I only saw a single specimen of this species, which I shot in December near Elephant Point. It was a male, and measured in the flesh :—

Length, 4·9; expanse, 6·0; tail from vent 2; wing 2·5; tarsus, ·78; bill from gape, ·6.

Irides, brown; upper mandible, dark brown, tipped with light yellowish; middle part of lower mandible, light brown, whitish at base and tip; legs and feet, greenish brown.

## 565.—Reguloides superciliosus, *Gmel.*

I have only met with this species at Syriam and in the vicinity of Elephant Point, at both of which localities it appears to be very rare. Two male specimens measured in the flesh :—

Length, 4 to 4·2; expanse, 6·25 to 6·3; tail from vent, 1·5 to 1·65; wing, 1·12 to 1·12; tarsus, ·7 to ·7; bill from gape, 5 to ·49.

Irides, dark brown; upper mandible, dusky brown; lower mandible, yellowish white, tipped with brown; legs and feet, yellowish brown; claws, brown.

## 593 *quat.*—Budytes flava, *Lin.*—(*Vide* S.F. II, 238.)

This bird appeared to be numerous about Rangoon and in the neighbourhood of Elephant Point, frequenting the open waste ground and dried-up paddy-fields in those localities. A female shot at Rangoon measured in the flesh :—

Length, 6·9; expanse, 9·75; tail from vent, 3·2; wing, 3·35; tarsus, 1; bill from gape, ·7.

Irides, dark brown; upper mandible, dusky black; lower mandible, yellowish white, edged and tipped withhorny brown; legs, feet, and claws,black.

## 595.—Nemoricola indica, *Gmel.*

I have seen only a single specimen of this species, which I shot in the thickest part of the dense forest jungle a few miles

to be found in the open waste ground, and amongst the paddy-fields, flying from one ear of rice to another, and generally selecting those which were taller than the surrounding ones. It is a very wary little bird, just allowing one to get within range of it, when it would at once fly off, and perch again at a little distance off, upon the dried stalk of some withered herb or tall rice-stem.

The following are the dimensions of four specimens recorded in the flesh :—

*Two Males.*—Length, 5·2 to 5·3; expanse, 7·5 to 7·25; wing, 2·7 to 2·55; tail from vent, 2·05 to 2; tarsus ·8 to ·78; bill from gape, ·62 to ·66.

*Two Females.*—Length, 5·2 to 4·8; expanse, ·7 to 7·2; wing, 2·5 to 2·55; tail from vent, 1·85 to 1·8; tarsus, ·78 to 8; bill from gape, ·7 to ·6.

Irides, darkbrown; bill, legs, and feet, black.

## 518.—Arundinax ædon, *Pallas.*

This species appears to be very uncommon. I have only met with it once in the low scrubby jungle near Elephant Point. The specimen then obtained was a female, and measured in the flesh :—

Length, 7·5; expanse, 9·5; wing, 3·2; tail from vent, 3·45; tarsus, ·8; bill from gape, 1·1.

Irides, dark brown; upper mandible, dusky brown; lower mandible, whitish yellow; legs and feet, slate color.

## 544 *quat.*—Drymoipus extensicaudata, *Swinhoe.*—(*Vide S. F.* III, 310.)

This little bird is rare. I have only seen a single specimen which I shot on the 1st of January a few miles from Elephant Point. It was running and hopping about amongst some acanthus bushes in a dried-up swamp, holding its tail erect, and giving utterance to a continuous succession of monotonous notes, probably to attract the attention of its partner. It was a male, and measured in the flesh :—

Length, 5·8; expanse, ·6; tail from vent, 2·85; wing, 1·95; tarsus, ·8; bill from gape, ·65.

Irides, light brown; upper mandible, dusky brown; lower mandible, pinkish white, tipped with horny, legs and feet, flesh color; claws, horny brown.

[I have already previously thus identified similar specimens forwarded by Mr. Oates. This present specimen has been compared with Chinese examples received from Mr. Swinhoe.—A. O. H.]

## 555.—Phylloscopus fuscatus, *Blyth.*

This species did not appear to be very uncommon amongst the copses and thickets in the vicinity of Elephant Point. A male bird shot in that locality measured in the flesh :—

Length, 5·5; expanse, 7·2; tail from vent, 2·4; wing, 2·5; tarsus, ·95; bill from gape, ·52. Irides, brown; upper mandible, dusky brown; basal half of lower mandible, yellowish white; terminal half, light brown; legs, feet, and claws, yellowish brown.

## 558.—Phylloscopus lugubris, *Blyth.*

I only saw a single specimen of this species, which I shot in December near Elephant Point. It was a male, and measured in the flesh :—

Length, 4·9; expanse, 6·0; tail from vent 2; wing 2·5; tarsus, ·78; bill from gape, ·6.

Irides, brown; upper mandible, dark brown, tipped with light yellowish; middle part of lower mandible, light brown, whitish at base and tip; legs and feet, greenish brown.

## 565.—Reguloides superciliosus, *Gmel.*

I have only met with this species at Syriam and in the vicinity of Elephant Point, at both of which localities it appears to be very rare. Two male specimens measured in the flesh :—

Length, 4 to 4·2; expanse, 6·25 to 6·3; tail from vent, 1·5 to 1·65; wing, 1·12 to 1·12; tarsus, ·7 to ·7; bill from gape, 5 to ·49.

Irides, dark brown; upper mandible, dusky brown; lower mandible, yellowish white, tipped with brown; legs and feet, yellowish brown; claws, brown.

## 593 *quat.*—Budytes flava, *Lin.*—(*Vide* S.F. II, 238.)

This bird appeared to be numerous about Rangoon and in the neighbourhood of Elephant Point, frequenting the open waste ground and dried-up paddy-fields in those localities. A female shot at Rangoon measured in the flesh :—

Length, 6·9; expanse, 9·75; tail from vent, 3·2; wing, 3·35; tarsus, 1; bill from gape, ·7.

Irides, dark brown; upper mandible, dusky black; lower mandible, yellowish white, edged and tipped withhorny brown; legs, feet, and claws,black.

## 595.—Nemoricola indica, *Gmel.*

I have seen only a single specimen of this species, which I shot in the thickest part of the dense forest jungle a few miles

from China-Ba-keer. It was a male and gave the following measurements in the flesh :—

Length, 6·75; expanse, 9·5; tail from vent, 2·8; wing, 3; tarsus, ·8; bill from gape, ·9.

Irides, nearly black; upper mandible, dusky brown; lower mandible, fleshy white; legs and feet, purplish white; claws, horny white.

## 596.—Pipastes maculatus, *Hodgs.*

This species was met with sparingly in the thin tree jungle and amongst the isolated clumps of trees in the vicinities of Rangoon and Syriam. A female specimen killed at Rangoon measured in the flesh :—

Length, 6·5; expanse, 10·25; tail from vent, 2·5; wing, 3·3; tarsus, ·87; bill from gape, ·68.

Irides, dark brown; upper mandible, dusky brown, paler at margin; lower mandible, light yellowish brown; legs and feet, pale brown; claws, horny brown.

## 599.—Corydalla Richardi, *Vieillot.*

This species was extremely abundant in the paddy-fields and amongst the marshes and open swamps near Elephant Point and China-Ba-keer. The following are the dimensions of four males recorded in the flesh:—

Length, 7·6 to 7·8; expanse, 11·5 to 12·2; tail from vent, 3 to 3·2; wing, 3·45 to 3·7; tarsus, 1·2 to 1·22; bill from gape, ·8 to ·85.

Irides, dark brown; upper mandible, dusky brown; lower mandible, pale browish white, tipped with dusky brown; legs and feet very pale brown; claws, horny brown.

## 600.—Corydalla rufula, *Vieillot.*

This species was abundant in the cultivated and open waste ground around Rangoon and in the neighbourhood and Elephant Point. A female measured in the flesh :—

Length, 6·2; expanse, 10·25; wing, 3·27; tail from vent, 2·45; tarsus, ·98; bill from gape, ·75.

Irides, dark brown; upper mandible, dull brown; lower mandible, dirty whitishtipped with brown; legs and feet, pale brown; claws, horny brown.

## 645.—Parus cæsius, *Tickell.*

This species was met with abundantly in the open tidal jungle, bordering portions of the coast between Elephant Point and China-Ba-keer, and also in similar localities along the margin of the Rangoon river at Eastern Grove. It is a very active little

bird perpetually moving from one bush or tree to another, and frequenting alike the highest *Sonneratia* trees and the lowest mangroves. I have never observed it at any distance from tidal jungle. The following is a *resumé* of the dimensions of five males recorded in the flesh :—

Length, 5·5 to 5·75 ; expanse, 8·25 to 8·75 ; tail from vent, 2·2 to 2·4 ; wing, 2·42 to 2·55 ; tarsus, ·68 to 7 ; bill from gape, ·5 to ·53. Irides, brown ; bill, black ; legs and feet, slaty blue ; claws, black.

## 674.—Dendrocitta rufa, *Scop.*

I only saw a single specimen of this species, which I shot in the forest jungle near Syriam in the beginning of January. It was a male, and measured in the flesh :—

Length, 16·5 ; expanse, 18·5 ; wing, 5·85 ; tail from vent, 9·75 ; tarsus, 1·35 ; bill from gape, 1·42.

Irides, brownish red ; bill, dusky black ; legs and feet, slaty black ; claws, black.

## 678 *bis.*—Crypsirina varians, *Lath*—(*Vide S. F. III.* 146.)

This bird occurred in great abundance in the Evergreen forests lying between Elephant Point and China-Ba-keer, as well as in the thin tree jungle near the mouth of the Rangoon river. The following is a *resumé* of the dimensions recorded in the flesh of six male and two female specimens :—

Length, 12 to 13 ; expanse, 12·75 to 13·5 ; tail from vent, 7·5 to 8 ; wing, 4·45 to 4· 6 ; tarsus, 1 to 1·1 ; bill from gape, 1 to 1·07.

In most specimens the irides were of a fine pale or greyish blue, but in two males they were dark brown ; the eyelids of all were margined with reddish or light brown, and the bill, legs, feet, and claws, were deep coal black.

## 683 *bis.*—Sturnopastor superciliaris, *Blyth*,—(*Vide S. F. III*, 149.)

This species was very common in all open cultivated and waste ground, more especially in the vicinity of villages. It was usually met with in parties of from ten to thirty. There is no appreciable difference in size between the two sexes. The following are the dimensions of six specimens recorded in the flesh :—

Length, 9·2 to 9·5 ; expanse, 13·5 to 14·5 ; tail from vent, 2·75 to 3 ; wing, 4·4 to 4·55 ; tarsus, 1·15 to 1·25 ; bill from gape, 1·38 to 1·45.

Irides, yellow; bill, orange red at base, shading into dirty white towards tip ; legs and feet, pale yellowish brown ; claws, light brown.

[ The specimens vary a good deal, and that too apparently in the case of perfect adults. In some specimens the forehead and the entire crown are so thickly streaked with white, that little else is to be seen but this color ; in others the forehead only is very sparingly streaked with white, so that the bird scarcely appreciably differs from *contra*.—A. O. H. ]

## 686.—Acridotheres fuscus, *Wagler.*

This species was even more abundant than the preceding. The birds congregated in crowds round every village, and flocks of thirty or fifty might be seen feeding in almost every dried-up paddy field. The following are the dimensions of six specimens recorded in the flesh:—

Length, 9 to 10 ; expanse, 14·25 to 15·2; wing, 4·5 to 4·9 ; tail from vent, 2·9 to 3·2 ; tarsus, 1·25 to 1·35 ; bill from gape, 1·05 to 1·22.

Irides, whitish, yellowish white, or pale dull yellow ; upper mandible, orange, tipped and margined with horny yellow and black at gape ; lower mandible, orange, black at base, and tipped with horny yellow, legs and feet, dull brownish yellow.

## 688.—Temenuchus malabaricus, *Gmel.*

This species was very abundant, frequenting alike forest jungle, open country, hedges, and thickets. I have frequently seen these birds in the forests clinging like tit-mice to the trunks and branches of trees, and apparently searching for insects. They are usually gregarious, consorting in parties of five to fifteen.

The following are the dimensions of four males and two females recorded in the flesh :—

Length, 7·2 to 7·8 ; expanse, 12 to 12·75 ; wing, 3·75 to 4·05 ; tail from vent, 2·5 to 2·8 ; tarsus, 85 to 95 ; bill from gape, ·9 to 1·05.

Irides, dull white, greyish or pale yellowish white ; bill bright apple green, dusky green at base, bright yellow towards, point, tipped and margined with pale yellow ; legs and feet pale brown or yellowish brown.

## 688 *bis.*—Temenuchus burmanicus, *Jerd,*—(*Vide S. F. III,* 149.)

This appears to be a rare species. I have only seen a single specimen which I shot in November in the open forest

jungle near Rangoon. It was a male, and measured in the flesh.—

Length, 9·4; expanse, 14·5; tail from vent 3·2; wing, 4·52; tarsus, 1·3; bill from gape, 1·22.

Irides, light yellow; bill, bright orange red, tipped with horny yellow, and dusky black at base, naked lores, dull brown; legs and feet, yellowish brown.

## 688 *Quat.*—Temenuchus nemoricolus, *Jerd.*—

This species appears to be just as common as *malabaricus* from which it does not appear to differ in habits. I have generally killed both species together in the same flock. The following is a *resumé* of the dimensions of six specimens recorded in the flesh:—

Length, 7·2 to 7·7; expanse, 11·7 to 12·5; tail from vent, 2·4 to 2·9; wing, 3·7 to 3·95; tarsus, ·8 to ·9; bill, from gape, ·9 to 1·05.

Irides, pale yellowish white; bill, apple green, duller at base, and terminal portion bright yellow, tipped and margined with lighter yellow; legs and feet, pale brown or yellowish brown.

[I have already (S. F., III., 151), reproduced Doctor Jerdon's original description of this species, and I mentioned at the same time that this description did not correspond over well with the type specimen given me by Dr. Jerdon, and I also gave a full description of the type specimen. I have now ascertained that the bird given me by Dr. Jerdon was a young bird, which can scarcely have served him as a type, and which differs from his type in a most important particular. He says; "Winglet and a spot on the greater coverts pure white," and several of Dr. Armstrong's specimens agree perfectly with this description, namely, they have the entire winglet and the whole of the primary greater coverts white. On the other hand the specimen given me by Dr. Jerdon has the winglet and primary greater coverts dark brown, but has the median coverts and the secondary greater coverts, fulvous white.

I do not now doubt that these all belong to the same species or race. I find the amount of white in the wings of these birds most variable. In some specimens the winglet and only three or four of the primary greater coverts are white; in others only some of the winglet feathers and some of the primary coverts are white. Again, sometimes it is the anterior ones and sometimes it is the posterior ones that are white, sometimes white and brown feathers pretty well alternate; lastly, one specimen of Dr. Armstrong's has, besides the entire winglet and primary greater converts, one secondary and the entire *tail* white!

In my first list of the birds of Tenasserim, (S. F., II, 480 note) I pointed out that the race of *malabaricus*, at that time obtained by us in the northern half of Tenasserim, differed materially from the continental form, and I proposed for this form, in case it should be considered deserving of specific separation, the name of *leucopterus*.

I am now convinced that this form is not deserving of specific separation; it is not typical *malabaricus*, neither is it typical *nemoricola*, but a race intermediate between the two.

But, taking now a large series of specimens, it seems to me somewhat doubtful whether *nemoricola* even can be maintained; because after all, it only differs from *malabaricus* in the much paler hue of the lower surface and in the white of wing. The latter is a most unstable character, varying in extent and situation in every possible way; while as to the color of the lower parts, every intermediate shade between the darkest *malabaricus* and palest *leucopterus* is represented amongst my specimens.

There are specimens with only one single winglet or primary greater covert feather on one wing, white; all the rest, as as in *malabaricus;* and the lower surface scarcely perceptibly paler than in the fullest colored examples of this latter species. And at the other end of the series you have a bird, with the whole of the primary greater coverts and winglet, one secondary in each wing, and the whole of the tail white, and the lower surface also almost white. And between these extremes you have every intermediate form; the rule appearing to be that the more white there is on the wing, the paler is the lower surface and *vice versâ*.

Taking this in connection with the fact that the birds associate in the same flock, and are precisely identical in all other particulars, it seems to me possible that *nemoricolus* is nothing more than a more or less albinoid variety of *malabaricus*. This view of the question at any rate deserves fuller investigation, and Dr. Armstrong has promised to procure this next season a very full series of these birds.—A. O. H.]

## 691.—Saraglossa spiloptera, *Vigors.*

I shot a pair of these birds on the 1st January in the low scrubby jungle near Elephant Point. They are the only specimens which I have seen, and appear to be very rare throughout the district. The male measured in the flesh :—

Length, 7·85; expanse, 13·5; tail from vent, 2·55; wing, 4·25; tarsus, ·88; bill from gape, ·98.

Irides, dull white; bill, dusky black, reddish black at base of

lower mandible; upper and lower mandibles, margined with pale yellow; legs, feet, and claws, black.

The female measured in the flesh :—

Length, 7·75; expanse, 13; tail from vent, 2·5; wing, 4·15; tarsus, ·9; bill from gape, 1.

Irides, white; bill, black, dusky yellow at gape; legs, feet, and claws, black.

## 693.—Eulabes javanensis, *Osbeck.*

This species occurs sparingly in the evergreen forests about Syriam and China-Ba-keer. Two males measured in the flesh :—

Length to, 10·5 to 11; expanse, 20 to 19·25; wing, 6·5 to 6·15; tail from vent, 3·1 to 3·4; tarsus, 1·35 to 1·32, bill from gape, 1·5 to 1·42.

Irides, dark brown; nude lores, orbital skin, and lappets, yellow; bill, deep orange red, bright shading into bright yellow towards tip; legs, feet, and claws, dirty yellow.

## 693 *Sex.*—Ampeliceps coronatus, *Blyth.*

This species appears to be very uncommon throughout the entire district. I have only met with it once in the thick and almost impenetrable underwood of the forest jungle near China-Ba-keer. It then formed one of a party of eight or ten of the same species, who were chirping and chattering and chasing each other amongst the dense thickets in that locality. The following are the dimensions of a male specimen recorded in the flesh :—

Length, 8·7; expanse, 16·2; tail from vent, 2·5; wing, 5·05; tarsus, 1; bill from gape, 1·05.

Irides, dark brown; bill, dull greenish, tipped and margined with yellow; legs and feet, bright ochrish yellow; claws, dark brown.

[We had never previously obtained this beautiful species, the Gold-crested Grackle, further north than a place about twenty miles south of Moulmein. Dr. Armstrong's specimen is from near China-Ba-keer, in about the same latitude as our most northerly specimen, but fully a hundred miles further to the west.

I have seen no other specimens from anywhere else outside the Province of Tenasserim, and in that I only as yet know it to occur between Moulmein and some locality intermediate between Tavoy and Mergui: to the latter locality it does not extend.

This species has not yet been described in "STRAY FEATHERS," and is of course not included by Dr. Jerdon.

The following dimensions and description are taken from a large series obtained within the limits above referred to :—

*Males.*—Length, 8 to 9·2; expanse, 15·25 to 16·75; wing, 4·82 to 5·3; tail from vent, 2·2 to 2·5; tarsus, 0·95 to 1; bill from gape, 1 to 1·15; weight 2·75 to 3·5 ounces.

*Females.*—Length, 8·5 to 8·82; expanse, 15·12 to 16·82; wing, 4·82 to 5; tail from vent, 2·5; tarsus, 0·9 to 1; bill from gape, 1 to 1·12.

The legs and feet are in some a pinkish chrome yellow, in others a dingy fleshy orange, or a dull orange yellow; the claws, black, or dingy greenish blue. The bill is yellow, in some slightly brownish, in some greenish, more or less greenish at the gape, and bluish at the base of the lower mandible. The irides are very dark brown; the eyelids, black; the orbital skin in some a pale dingy orange, with fleshy tint, in some gamboge yellow, in some clear bright pale orange.

The adults of both sexes appear to be quite similar, and have the lores, forehead, crown, occiput, and a full short occipital crest, the chin, the upper throat, as far back as the centre of the eyes, and a triangular point projecting downwards in the centre of the lower portion of the throat, golden yellow.

The first six primaries have a broad white patch on the inner webs near the bases, the seventh has a small white patch also on the inner web, and the second to the seventh have a corresponding patch on the outer webs strongly tinged with golden yellow.

The whole of the rest of the plumage of the bird, except the inner webs of the quills, which are deep hair brown, is black, glossed with a dull green metallic reflection.

The young birds probably want the golden yellow on the throat and head. The youngest bird that I possess, has the lores and the whole front and top of the head black, but with a few golden feathers intermingled on the forehead and anterior half of the crown. There is also much less of the golden yellow on the chin and throat.—A. O. H.]

## 704 *bis*.—Estrelda burmanica, *Hume*. (*Vide, infra* p.)

This little bird appears to be very rare throughout the entire district. I have only once met with a single pair, a few miles from Elephant Point, amongst the tall grass ridges, which form the boundaries between the paddy-fields. It always rested upon some tall grass panicle, feeding apparently upon the seed, and when disturbed, would fly across the paddy-field to some neighbouring ridge of grass, where it would again settle. The following are the dimensions of a male recorded in the flesh:—

Length, 4·2; expanse, 5·35; tail from vent, 1·5; wing, 1·75; tarsus, ·51; bill from gape, ·33.

Irides, crimson; upper surface of upper mandible, black at its base, remainder of bill bright red; legs and feet, flesh, color.

**767.—Alauda gulgula,** *Franklin.*

This species was evenly distributed, and tolerably abundant over the entire district, frequenting open cultivated and waste ground.

A male specimen measured in the flesh :—

Length, 6·5 ; tail from vent, 2·4 ; expanse, 11·8 ; wing, 3·65 ; tarsus, ·98 ; hind toe and claw, 1·1 ; bill from gape, ·82.

Irides, dark brown; bill, light brown ; legs and feet, chocolate brown.

**774.—Osmotreron bicincta,** *Jerdon.*

This Pigeon was very abundant in the evergreen forests lying between Elephant Point and China-Ba-keer. It also occurs in tolerable abundance in the thin tree jungle and hedges on the borders of forest land. The following are the dimensions of four specimens recorded in the flesh :—

Length, 11·5 to 12 ; expanse, 19 to 20·5 ; tail from vent, 4 to 4·4 ; wing, 6·1 to 6·65 ; tarsus, ·88 to 9 ; bill from gape, ·85 to 9.

Irides with an inner ring of pale blue and an outer zone of salmon red ; bill, dull green to nares ; remainder, light horny green ; legs and feet, lake red.

**780.—Carpophaga ænea,** *Lin.*

This species occurred sparingly in the forest jungle near China-Ba-keer. A male bird shot in December measured in the flesh :—

Length, 17 ; expanse, 29 ; tail from vent, 5·9 ; wing, 9·35 ; tarsus, 1·1 ; bill from gape, 1·5.

Irides, deep red ; bill, dusky purple, darker at base ; legs and feet, lake red.

**782.—Alsocomus puniceus,** *Tickell.*

This Pigeon was very rare. I have only met with a single specimen, which I shot in the dense Evergreen Forest in the vicinity of China-Ba-keer. Its stomach contained a quantity of large plum-colored drupes. It was a female, and measured in the flesh :—

Length, 15·75 ; expanse, 26 ; tail from vent, 6·1 ; wing, 8·65 ; tarsus, 1 ; bill from gape, 1·05.

Irides, orange ; bill, purplish, tipped with horny ; legs and feet, purplish red.

**795** *bis.***—Turtur tigrina,** *Tem.*—(*Vide S. F., I.*, 461).

This Dove was one of the commonest birds I met with. Wherever the country is suitable for them, they occur in the greatest profusion. They frequent open thickets, and loose underwood and hedges, seeking their food on the ground, and roosting during the heat of the day in the thickets. The following is a

*resumé* of the dimensions of six specimens recorded in the flesh.

Length, 11·25 to 12·8; expanse, 16·5 to 17·75; tail from vent, 5 to 5·8; wing, 5·6 to 5·75; tarsus, ·95 to 1; bill from gape, ·95 to 1·05.

Irides, light or reddish brown, or salmon red; bill, dusky black; legs and feet, red.

## 797.—Turtur humilis, *Tem.*

This species was not abundant anywhere. It was generally met with in well-wooded districts; but occasionally in open ground in parties of four or five. A male and female measured respectively in the flesh:—

Length, 9·5 to 9·2; expanse, 17·5 to 16·2; tail from vent, 3·5 to 3·6; wing, 5·6 to 5; tarsus, ·85 to ·8; bill from gape, ·85 to ·8.

Irides, brown; bill, black; legs and feet, dusky purplish red.

[These specimens belong to the Malayan, and not the Indian form. They are, what I described under the name of *T. humilior* from the Andamans, but as I have already remarked in a recent paper on the birds of the Andamans, I think that Temminck's name "*humilis*" applies to this the Malayan, and not to the Indian form.—A. O. H.]

## 812.—Gallus ferrugineus, *Gmel.*

The Red Jungle-fowl was not uncommon in the wooded districts and evergreen forests in the vicinity of China-Ba-keer. I have frequently dislodged a family of them from some densely foliaged shrub, to which they had resorted for shelter from the midday sun. A male shot at China-Ba-keer in December measured in the flesh:—

Length, 26; expanse, 26·5; tail from vent, 13; wing, 9; tarsus, 3; spur, 1·25; bill from gape, 1·2.

Irides, light red; comb wattles and lores, crimson; upper mandible, dusky black; lower mandible, dusky blacked, tipped paler; legs and feet, slaty grey.

## 843.—Glareola lactea, *Tem.*

This bird was rare. I have not seen more than three or four on the sands near Elephant Point. A male specimen measured in the flesh:—

Length, 6·5; expanse, 16·2; tail from vent, 2·15; wing, 5·5; tarsus, ·9; bill, ·75.

Irides, dark brown; bill, legs, and feet, black.

## 844.—Squatarola helvetica, *Gmel.*

I have only met with this species along the sandy portions, of the beach, between Elephant Point and China-Ba-keer where

it was not uncommon. The birds are often seen in parties of from five to ten, but are generally associated with flocks of smaller birds, amongst which they may be readily distinguished by their much greater size. They are very wary and shy, and are always the first to set the example of flight to their smaller companions. The following are the dimensions of four males recorded in the flesh :—

Length, 11·8 to 12·75; expanse, 24 to 25; tail from vent, 3·3 to 3·5; wing, 7·6 to 7·7; tarsus, 1·8 to 1·9; bill from gape, 1·45 to 1·52.

Irides, dark brown; bill, legs, and feet, black.

## 845.—Charadrius fulvus, *Gmel.*

The Eastern Golden Plover was common enough all along the sea shore, but was found much more abundantly in the adjacent ploughed lands and cut paddy-fields, where they usually occurred in parties of variable numbers. Two males and two females measured in the flesh :—

Length, 9 to 9·75; expanse 18·7 to 20; wing, 5·9 to 6·5; tail from vent, 2·4 to 2·65; tarsus, 1·55 to 1·7; bill from gape, 1·05 to 1·2.

Irides, dark brown; bill, black; legs and feet, dark slate color.

## 846.—Œgialitis Geoffroyi, *Wagler.*

This species occurred in abundance along the sands and on the mud banks near Elephant Point. They were generally met with in small parties consorting with immense flocks of smaller Sand-plovers. Five specimens measured in the flesh :—

Length, 8·1 to 8·85; expanse, 17·75 to 19·25; tail from vent, 2·1 to 2·7; wing, 5·4 to 5·75; tarsus, 1·4 to 1·5; bill from gape, 1·05 to 1·15.

Irides, dark brown; bill, dusky black; legs and feet, greyish plumbeous.

## 847—Œgialitis mongolicus, *Pall.*

This species is extremely abundant. It occurs in immense numbers upon the sand and mud flats lying between Elephant Point and China-Ba-keer, as well as all along the eastern boundary of the mouth of the Rangoon river. The following is a *resumé* of the dimensions of five male and five female specimens :—

Length, 7 to 8·2; expanse, 15·5 to 17; tail from vent, 2 to 2·4; wing, 4·8 to 5·15; tarsus, 1·3 to 1·4; bill from gape, ·85 to 1.

Irides, dark brown; bill, black; legs and feet, dark slaty grey.

In one bird out of thirteen the wing measures 5·25: nevertheless it appears to belong to this species.

## 848.—Œgialitis Cantianus, *Lath.*

This Sand-plover is quite as abundant as *mongolicus*. The flocks of the two species usually intermingle and feed together in company. The dimensions of numerous specimens recorded in the flesh show the following result :—

Length, 6·5 to 7 ; expanse 13 to 14·2 ; tail from vent, 1·8 to 2·2 ; wing, 4·2 to 4·5 ; tarsus, 1·1 to 1·25 ; bill from gape, ·75 to ·95.

Irides, dark brown ; bill, black ; legs and feet plumbeous grey.

## 849.—Œgialitis curonicus, *Besck.*

Although only a single specimen of this bird was obtained, yet it is probable that it is not so uncommon as might be thence inferred. The specimen shot was one out of ten or twelve other birds belonging to the two allied species *mongolicus* and *cantianus*, from which, at a distance, it is impossible to distinguish it. The specimen was a female, and measured in the flesh :—

Length, 6·8 ; expanse, 13·2 ; tail from vent, 2·6 ; wing, 4·5 ; tarsus, ·92 ; bill from gape, ·7.

Irides, dark brown ; bill, black ; legs and feet, yellowish brown.

## 809.—Œdicnemus indicus, *Salvad.*

This bird appears to be rare. I have only seen a single specimen, which I shot in December at China-Ba-keer. It was lying in cover under some low scrub at the margin of the beach, and did not attempt to rise until I had almost placed my foot upon it. It then flew some twenty yards off, and squatted down on the sand. Thinking that it was a nestling, and that I might capture it alive, I was proceeding towards it when it again rose and settled down some little distance off, where it was shot. It was a male, and measured in the flesh :—

Length, 15 ; expanse, 29 ; tail from vent, 4·7 ; wing, 7·9 ; tarsus, 3 ; bill from gape, 2.

Irides, light lemon yellow ; basal portion of bill, glaucous yellow, tipped and margined with dusky black ; legs and feet, horny yellow.

## 870.—Gallinago stenura, *Tem.*

The Pintail Snipe was met with in great abundance at Rangoon Syriam, Eastern Grove, Elephant Point, China-Ba-keer, and the intervening district. It frequented alike paddy-fields, jheels, swamps, and grassy plains. Male specimens measured :—

Length, 10·2 to 10·5 ; expanse, 17·75 to 18·25 ; tail from vent, 2·3 to 2·6 ; wing, 5·2 to 5·3 ; tarsus, 1·35 to 1·4 ; bill from gape, 2·45 to 2·5.

## 876.—Terekia cinerea, *Gmel.*

The Avoset Sand-piper was by no means abundant. I only saw two or three specimens feeding along with Stints and Sand-plovers on the mud flats near Elephant Point. A male bird shot in January measured in the flesh:—

Length, 9·2; expanse, 16·75; tail from vent, 2·2; wing, 5·25; tarsus, 1·15; bill from gape, 2·25.

Irides, dark brown; basal third of bill orange dusky, thence shading into dusky black for the remainder of its length; legs and feet, bright yellow; claws, black.

## 877.—Numenius lineatus, *Cuv.*

This species was extremely abundant all along the coast from Elephant Point to China-Ba-keer, as well as along the eastern shore of the mouth of the Rangoon river. They were nearly always met with in parties varying from four or five to forty or fifty. They were always excessively wary and difficult to approach. The male bird is smaller than the female, more particularly in the length of bill. A male bird, shot near the Eastern Grove light house in February, measured in the flesh:—

Length, 21·5; expanse, ·38; tail from vent, 4·5; wing 11·1; tarsus, 3·1; bill from gape, 5·2.

A female shot in January at Deserter's Creek measured in the flesh:—

Length, 24·3; expanse, 40·75; tail from vent, 4·5; wing, 11·2; tarsus, 3·6; bill from gape, 7·2.

Irides, dark brown; upper mandible, dusky black; lower mandible, dirty pinky; white at base; remainder, dusky black; legs and feet, livid slaty grey.

## 878.—Numenius phœopus, *Lin.*

The Whimbrel, although abundant, did not occur in such large numbers as *lineatus*. It was for the most part solitary, but I have also met with in small parties of five or six. A male bird shot, on the banks near the mouth of the Rangoon river, measured in the flesh:—

Length, 17·5; expanse, 28; tail from vent, 3·8; wing, 9·2; tarsus, 2·4; bill from gape, 3·8.

Irides, dark brown; upper mandible, dusky black; basal two-thirds of lower mandible, fleshy white, terminal third dusky black; legs and feet, ashy grey.

## 881 *bis.*—Tringa crassirostris, *Tem. et Schleg.*—(*Vide* S. F., I, 240.)

This species was apparently rare. I only obtained a single specimen which I shot on the sands near China-Ba-keer.

They feed in company with other Stints of smaller species amongst which they are conspicuous by their size. The specimen shot was a male, and measured in the flesh :—

Length, 11·15 ; expanse, 23 ; tail from vent, 2·6 ; wing, 6·9 ; tarsus, 1·38 ; bill from gape, 1·9.

Irides, dark brown; bill, dusky black, paler at base of lower mandible ; legs and feet, greenish dusky.

## 882.—Tringa subarquata, *Gmel.*

This was by no means a common species about the mouth of the Rangoon river, where alone I met with it. It was most abundant at low water, where it might be seen hunting for food in the soft mud close to the water's edge. At high water it was found amongst the fresh water jheels in the neighbourhood of Elephant Point. The following is a *resumé* of the dimensions of several species recorded in the flesh :—

Length, 8 to 9·2 ; expanse, 14·2 to 16·25 ; tail from vent, 1·8 to 2·2 ; wing, 4·9 to 5·25 ; tarsus, 1·18 to 1·25 ; bill from gape, 1·45 to 1·6.

Irides, dark brown ; bill, legs, and feet, dusky black.

## 884.—Tringa minuta, *Leisler.*

This little Stint was extremely abundant all along the sea coast lying between Elephant Point and China-Ba-keer. It seemed, as a rule, to prefer the more sandy part of the shore, and did not appear to frequent the mud-banks, for even at low water it was always to be found feeding on the sand which was bordering the margin of the mud. The following is the result of the measurements of numerous specimens recorded in the flesh :—

Length, 5·75 to 6·5 ; expanse, 11·75 to 12·5 ; tail from vent, 1·8 to 2·1 ; wing, 3·75 to 4 ; tarsus, ·75 to ·8 ; bill from gape, ·75 to ·85.

Irides, dark brown ; bill, legs, and feet, black.

With regard to the variations in the size of the wing in birds of this species from different localities, Mr. Hume says in "Stray Feathers," Vol., I., p. 243 :—"Amongst all my Indian killed specimens, male and female, in winter and in summer plumage, only one has a wing above 3·9 ; in the vast majority the wings are between 3·7 and 3·8 ; and in a few specimens the wings range between 3·6 and 3·7, and again in a very few between 3·8 and 3·9." Now out of ten specimens shot by me in Burmah, one only is as small as 3·75 ; two measure 3·8 ; two, 3·9 ; two, 3·92 ; and the remaining three reach a length of 4. Thus it would appear that the Burmese specimens attain a considerably larger average length of wing than those killed in India.

[Some of the larger specimens, at any rate, probably belong to the nearly allied *T. albescens*, Temminck, but I must confess myself unable to separate this species from *minuta*, in winter plumage, with any certainty.—A. O. H.]

## 886.—Tringa platyrhyncha, *Temm.*

This species was excessively common throughout the entire district lying between the mouth of the Rangoon river and China-Ba-keer. It was also common along the margins of all the creeks and nullahs in the vicinity, extending up the Rangoon river as far as the junction of the latter with its Pegu tributary. Four males measured in the flesh show the following result:—

Length, 6·5 to 7; expanse, 12·3 to 13·4; tail from vent, 1·5 to 1·9; wing, 4 to 4·25; tarsus, ·85 to ·95; bill from gape, 1·25 to 1·4.

Irides, dark brown; bill, legs, and feet, dusky black.

## 887.—Eurynorhynchus pygmœus, *Lin.*

The neighbourhood of Elephant Point at the mouth of the Rangoon river has not as yet been recorded as a locality from whence this remarkable species has been obtained. It seems to be of rare occurrence in that district, for although several days were spent by me in careful and systematic search for it, yet I was never able to see or to obtain more than a single specimen. The specimen referred to, was one of a score or more of other birds, belonging to the smaller species of *Œgialitis* and *Tringa*, which were all killed at one shot as they were feeding together in a common flock of many hundreds on the sand-banks fringing high water mark. It is a female in winter plumage, and was shot on the 1st of December. The following dimensions were recorded by me in the flesh:—

Length, 6·2; expanse, 12·15; tail from vent, 1·7; wing, 3·92; tarsus, 8·3; bill from gape, ·98; from forehead to tip, 1·05; from behind nares to tip, ·83; greatest width of upper mandible, ·41; ditto of lower mandible, ·38.

The irides are of a deep dark brown; bill, legs, feet and claws, black; mid toes, ·76 inches in length.

## 888.—Calidris arenaria, *Temm.*

This bird was somewhat rare. I have only met with it at Elephant Point where it feeds on the sands along with Sand-plovers and Stints. The following are the dimensions of a male bird recorded in the flesh:—

Length, 7·75; expanse, 15; tail from vent, 2·2; wing, 4·9; tarsus, 1; bill from gape, 1·15.

Irides, dark brown; bill, legs, feet, and claws, black.

## 891.—Actitis glareola, *Gmel.*

The spotted Sandpiper was tolerably abundant on the Sand-banks between Elephant Point and China-Ba-keer. A male specimen recorded in the flesh measured :—

Length, 9·15 ; expanse, 14·75 ; tail from vent, 2·1 ; wing, 4·8 ; tarsus, 1·5 ; bill from gape, 1·45.

A female measured in the flesh :—

Length, 8·3 ; expanse, 14·5 ; tail from vent, 2 ; wing, 4·85 ; tarsus, 1·55 ; bill from gape, 1·3.

In both the irides were dark brown ; bill, dusky black, except near base where it was greenish ; legs and feet, slaty green.

## 893.—Tringoides hypoleucos, *Lin.*

The common Sandpiper was not very abundant anywhere. It was usually met with in small parties in cultivated land and ploughed fields and on the margins of tanks and jheels. The following is a *resumé* of the dimensions of several specimens recorded in the flesh :—

Length, 7·6 to 8 ; expanse, 13 to 13·8 ; tail from vent, 2·2 to 2·45 ; wing, 4·2 to 4·3 ; tarsus, ·92 to 1 ; bill from gape, 1·05 to 1·2.

Irides, brown ; legs and feet, greenish brown.

## 894.—Totanus canescens, *Gmel.*

This species was very abundant in all the jheels and along the margins of the mud flats in the vicinity of Elephant Point. They were usually solitary, but were frequently met with in parties of three or four. The measurements of several male specimens recorded in the flesh show the following result :—

Length, 13·2 to 14·25 ; expanse, 22 to 23·5 ; tail from vent, 3·2 to 3·5 ; wing, 7·4 to 7·8 ; tarsus, 2·5 to 2·62 ; bill from gape, 2·3 to 2·4.

The females are somewhat smaller. A specimen of this sex measured in the flesh :—

Length, 13·25 ; expanse, 21·6 ; tail from vent, 3·1 ; wing, 7·15 ; tarsus, 2·25 ; bill from gape, 2·32.

In all the irides were dark brown ; bill, dusky black ; legs and feet, slate green ; claws, black ; length of mid-toe and claw, 1·5.

## 894 *bis.*—Totanus Haughtoni, *Nobis, Sp. Nov.*

Amongst the numerous varieties of shore birds, killed on the sand and mud flats, between Elephant Point and China-Ba-keer, is one, of which I have secured two specimens, which appear to be new to ornithology.

I propose to describe this presumably new species under the above name, dedicating it to my valued friend, the Rev. Professor Haughton, of Trinity College, Dublin, whose labors have done so much to enlarge the field of Natural History research.

The species appears to be decidedly rare throughout the entire district. I have never seen more than the two specimens obtained, both of which were shot in December at China-Ba-keer, as they were feeding on the extensive sand banks in that locality, in company with a large flock of Sand Plovers. It bears a striking general resemblance to specimens of *Totanus canescens*, Gmelin, from which, however, as well as from all other Indian species belonging to the same sub-family, it differs conspicuously, in the comparatively much longer, broader, and more massive bill, in the much shorter length of tarsus, as well as in the unusual fact of the three anterior toes being united to each other by a membrane.

The following are the dimensions and a description of the bird founded upon the measurements recorded in the flesh of the two specimens obtained at China-Ba-keer :—

| | Length. | Expanse. | Wing. | Tail from Vent. | Tarsus. | Bill from Gape. | Bill at Front. | Bare Portion of Tibia. | Mid-toe And Claw. | Hind-toe and Claw. |
|---|---|---|---|---|---|---|---|---|---|---|
| ♂ | 13·2 | 23·25 | 7·3 | 3·0 | 1·85 | 2·5 | 2·1 | 0·95 | 1·5 | 0·52 |
| ♀ | 12·9 | 22·3 | 7·0 | 3·0 | 1·65 | 2·2 | 1·93 | 0·86 | 1·4 | 0·5 |

In both specimens the irides are dark brown; bill, horny yellow near the base, fading into dusky for the terminal half, which is tipped with black; legs and feet, dull ochreous yellow; claws, black.

Feathers of crown, occiput, back of head, scapulars, and upper back, of a uniform cinereous grey, each with a dark central longitudinal stripe, which is darker and more pronounced in the interscapular region. Lower back, rump, and upper tail coverts, white, the feathers of these parts having near their extremities one or two ill-defined, dusky blotches, which on the upper tail coverts become developed into a pair of more or less clearly defined, V-shaped, transverse bars. Forehead and præ-orbital region of a much lighter grey, and more mixed with white than the other portions of the head. The throat and front of the neck, the entire breast and abdomen, the under-tail coverts, as well as the axillary plumes and under-wing coverts are pure white. On the sides of the neck the feathers are also white, but each has here a dark narrow shaft stripe, thus giving a lineo-punctate appear-

ance to that portion of the bird. The tail, which is short and nearly even, is greyish white, margined and tipped with pure white, the two central feathers alone are brownish, and more narrowly margined with white than the others. The wings are long and pointed ; the primary quills and their coverts are of a rich hair brown, faintly margined with lighter brown on their outer webs. Secondary quills with their coverts, dusky brown, each with a well-defined white margin and tip, which, however, is much narrower on the quills, but is broader and clearer on the coverts. The tertiaries are long and plume-like, of an ashy brown color, the shafts being of a much darker color than the webs. Along the entire length of the radius and angle of the shoulder, there is a well-defined line of demarcation between the dark hair brown of the upper, and the pure white of the under surface. The shaft of the first quill feather is pure white, all the others being of a more or less pronounced brown. First quill longest, second about a quarter of an inch shorter. The bill is long, broad, and massive, slightly recurved for its terminal third, and with both mandibles grooved one for a little more than half their length. The end of the upper mandible is slightly expanded, and has its point bent down over the lower. The nostrils are linear and sub-basal, a little over quarter of an inch in length, and nearly that distance from the most anterior feathered portion.

The tarsi are short and somewhat slender. The toes also are slender, the three anterior being united to each other by a membrane, which extending on either side of the middle toe from the distal extremity of its proximal phalanx, reaches well down to a similar point in the inner, and nearly to the distal extremity of the second proximal phalanx in the outer.

[The present species which I believe to be new* is a very puzzling one. The following is a brief diagnosis :—

*In winter plumage resembles generally* Totanus canescens, *but has a much broader and more massive bill, a much shorter tarsus* (*male* 1·85 ; *female*, 1·65), *and the webs between the anterior toes very much more developed. Wings*, ♂, 7·3 ; ♀, 7·0; *bill at front*, ♂, 2·1 ; ♀, 1·93.

It is by no means a typical *Totanus*, and in its short tarsi and much webbed feet recalls *Pseudoscolopax semipalmatus*, but then the bill is much shorter (in a specimen of this latter now before me the bill is 2·9 at front) and of a different character, wholly wanting the tumid multi-pitted ends of that species,

* If *not* new, I am responsible for the creation of an useless synonyme and not Dr. Armstrong. *Prima facie* it is difficult to believe that it can be new but I have diligently worked up the whole group and can find nothing that agrees well with our specimens.—Ed.

and the membrane between the outer and middle toes, is also proportionately larger.

The bill is something like that of *Tringa crassirostris*, but stouter, broader, and longer, and with the lateral grooves extending only for 11-20ths of the length of the bill, and this peculiarity, of course, equally with the comparative shortness of the bill separates it from the God-wits in which the lateral grooves run quite or very nearly to the point.

Again the webbing of the feet reminds one of *T. semipalmatus*, Gmel. but that is altogether a larger bird, (wing 8·25,) with a longer and much slenderer bill (at front, 2·42) with very much longer tarsi (2·58), and a huge, unmistakable, white patch on the wing.

In the short tarsus and stout bill, this species is allied to *T. incanus*, Gmelin, but that is a decidedly a smaller bird, with as extreme dimensions, wing, 6·95; tarsus, 1·27; and bill at front, 1·55; with a proportionally longer and more rounded tail, and shorter mid toe, with a less stout bill, and scarcely any webbing to the feet. The plumage further of our birds (at any rate in winter, for we know as yet nothing of the summer garb) differs entirely from that of the Ashcolored, Yellow-shanks, indeed to a casual observer is precisely that of the Green-shanks.

On the other hand the bill is not a bit that of a typical *Totanus* compressed throughout, and tapering from the base, and I see that Dr. Finsch places the species (*incanus*), the bill of which most resembles that of our bird, under *Actitis*.

Possibly, these birds should form the type of a distinct genus, which might be thus defined:—Bill considerably longer than the head, stout, nearly straight, but the culmen perceptibly recurved, tapering quite at the base, after that of nearly uniform width throughout, rather obtusely pointed just at the tip, which is bent down over the lower mandible. Culmen broad, slightly flattened towards the tip. Nostrils, lateral, sub-basal (commencing nearly a quarter of an inch from the base) placed in a membranous groove which extends rather beyond half the length of the bill (say 11-20ths.) The wings reaching considerably beyond the end of the tail and pointed. The first quill longest; tail, moderate and nearly even. Tarsi, slender, one-fifth longer than mid toe and claw, covered in front by numerous narrow faintly marked scales. Toes, slender, moderately long, anterior toes united by a membrane. The outer and middle toes quite to the first joint of the middle, nearly, if not quite, to the second joint of the outer. The inner and middle to the first joint of both, but the membrane rather deeply scalloped. Hind toe, long, slender somewhat elevated.

I do not, however, think generic separation necessary and prefer to consider this an aberrant species of *Totanus*.—A. O. H.]

## 895.—Totanus stagnatilis, *Bechst.*

This species, though not scarce, was by no means abundant. It was more frequently met with on the margins of the tidal nullahs and creeks, than on the extensive mud flats at the mouth of the river. Specimens measure in the flesh:—

Length, 10·2 to 10·7; expanse, 15·5 to 16·2; tail from vent, 2·6 to 2·85; wing, 5·2 to 5·3; tarsus, 2 to 2·03; bill from gape, 1·7 to 1·75.

Irides, dark brown; bill, dusky greenish black; legs and feet, greenish plumbeous.

[Of two specimens killed on the 28th February, one was in winter plumage, and the other in almost perfect summer plumage.—A. O. H.]

## 897.—Totanus calidris, *Lin.*

This species was extremely abundant, occurring in large quantities both on the shore between Elephant Point and China-Ba-keer, and along the margins of the numerous nullahs and creeks in the vicinity. They generally associate in large flocks, which do not appear to hunt for food in company with other birds of different species. The combined effect produced by the red legs of a large flock of these birds is very striking, having the appearance of a large red patch moving about on the sands. In this way they may be recognized with facility from a considerable distance. Male birds measure in the flesh:—

Length, 10·35 to 11·29; expanse, 19·4 to 19·8; tail from vent, 2·5 to 2·8; wing, 6·8 to 6·3; tarsus, 2 to 2·1; bill from gape, 2·05 to 2·15. The females are somewhat smaller, and give the following measurements in the flesh:—

Length, 10·75 to 11·25; expanse, 18·75 to 19·5; tail from vent, 2·5 to 2·7; wing, 5·8 to 6·1; tarsus, 2 to 2·1; bill from gape, 1·9 to 2.

In both male and female the irides are dark brown; the bill, dusky red for basal third, from thence to tip dusky black; legs and feet, orange red.

## 900.—Metopodius indicus, *Lath.*

I only met with this bird in the jheels and tanks which were overgrown with aquatic plants and grasses. In these localities it was extremely abundant, lying so close amongst the vegetation, that frequently it would not rise until I had got so near as almost to be able to touch it. A fine male bird in the full black plumage of the adult was shot by me

in one of these jheels near Elephant Point on the 31st December. It measured in the flesh :—

Length, 11·5 ; expanse, 20·5 ; tail from vent, 1·75 ; wing, 6·35 ; tarsus, 2·5 ; bill from gape, 1·4 ; hind toe and claw, 3·4.

Irides, dark brown ; the shield and cere extending down as far as the nares, greenish olive ; bill, greenish, shading into reddish white at base and gape ; legs and feet, dull dusky green.

Another male bird in what Mr. Oates considers to be the plumage of the young bird in its second spring was shot near the same locality on the 20th February, and the following particulars were recorded in the flesh :—

Length, 11·45 ; extent, 2·22 ; tail from vent, 1·8 ; wing, 6·7 ; tarsus, 2·45 ; bill from gape, 1·4 ; hind toe and claw, 3·1.

This specimen is well advanced in the transition stage from the light to the dark plumage. The rufous of the head has been almost entirely replaced by deep metallic green concolorous with the back of the neck, and amongst the buff feathers on the side of the neck numerous dark green feathers have begun to make their appearance, but no change whatever has as yet taken place in the under parts.

It may be worth while remarking that the dimensions recorded of this specimen very considerably exceed those given by Mr. Oates for young males measured by him, and in some particulars are greater even than the dimensions of the adult male in black plumage, as recorded by that gentleman. (See "STRAY FEATHERS," Vol. III, p. 184.)

## 913.—Hypotænidia striata, *Lin.*

I only saw this species in marshy ground in the vicinity of Syriam, where it was decidedly scarce. A male specimen shot on the 16th February measured in the flesh :—

Length, 10·3 ; expanse, 16·2 ; tail from vent, 1·8 ; wing, 4·75 ; tarsus, 1·47 ; bill from gape, 1·7.

The irides were of a light yellowish brown ; upper mandible, dusky brown, except at the gape where it was orange ; lower mandible, orange, shading into dusky brown for its terminal third ; legs and feet, plumbeous green.

## 929.—Bubulcus coromandus, *Bodd.*

The Cattle Egret was met with in great abundance throughout the entire district. It frequented the mangrove swamps and tidal jungle lying between Elephant Point and China-Ba-keer, perching, as a rule, upon the low mangroves and other bushes in those localities. It was also very abundant at a considerable distance from the shore, probably attracted by the herds of buffaloes, a large number of which are kept for agricultural purposes by almost every Burman in that region, and which,

when let out to graze, were almost invariably accompanied by a considerable party of these birds. The following is a *resumé* of the dimensions of numerous specimens recorded in the flesh :—

Length, 19·2 to 20·2 ; expanse, 32 to 34·5 ; tail from vent, 3·2 to 3·6 ; wing, 9·3 to 9·9 ; tarsus, 3·3 to 3·7 ; bill from gape, 3·4 to 3·45 ; mid-toe and claw, 3·1 to 3·15.

Irides, yellowish white ; orbital skin, pale yellowish green ; bill, yellow with a greenish tinge at the base ; legs and feet, black ; mid-toe claw, pectinated on inner margin.

## 930.—Ardeola Grayii, *Sykes.*

This species was extremely common and abundant in every nullah and creek near the mouth of the Rangoon river as well as all along the shore intervening between Elephant Point and China-Ba-keer. They frequented the mud flats when the tide was low, and generally at high water resorted to the mangroves bordering the shore or neighbouring nullahs. Male birds appear to be somewhat larger than the females. A fine specimen measured in the flesh :—

Length, 15·2 ; expanse, 25·75 ; tail from vent, 2·9 ; wing, 8·65 ; tarsus, 2·3 ; bill from gape, 3·2.

*Females.*—Length, 14·25 to 14·6 ; expanse, 23·2 to 23·8 ; tail from vent, 2·55 to 2·65 ; wing, 7·55 to 7·6 ; tarsus, 1·9 to 2·2 ; bill from gape, 3·1 to 3·15.

## 937.—Nyctiardea nycticorax, *Lin.*

The night Heron is undoubtedly rare.

I only met with a single specimen which I shot in the upper branches of a large tree over-hanging a nullah near Elephant Point. It was a male, and measured in the flesh :—

Length, 23 ; expanse, 40·6 ; tail from vent, 4 ; wing, 11·5 ; tarsus, ·3 ; bill from gape, 4·1.

The irides were rich crimson ; upper mandible, dusky black, irregularly blotched near the base with greenish ; basal half of lower mandible, greenish horny, terminal half dusky black ; legs and feet, light ochrish yellow ; claws, horny black.

## 980.—Larus brunneicephalus, *Jerd.*

This Gull, which was the only species met with, swarmed at the mouth of the Rangoon river, and about China-Ba-keer, and was also present in abundance throughout the intervening district. Specimens measure in the flesh :—

Length, 17 to 18·2 ; expanse, 38·75 to 44·25 ; tail from vent, 4·8 to 5·2 ; wing, 12·4 to 13 ; tarsus, 1·75 to 2 ; bill from gape, 2·15 to 2·25.

Irides, white ; bill, orange red, tipped and margined with dusky ; legs and feet, red.

**983.—Sterna nilotica,** *V. Hasselq.*

This species was met with in abundance along the shore lying between China-Ba-keer and Elephant Point. It always preferred hunting for its prey at the water's edge, so that it was only possible to secure specimens at high water, in consequence of the impossibility of crossing the broad mud flats, which at low water intervene between the beach and the margin of the water. Specimens shot measure in the flesh :—

Length, 12·5, 14·25 ; expanse, 34·25, 39·75 ; tail from vent, 4·, 5·5 ; wing, 11·25, 12·2 ; tarsus, 1·2, 1·4 ; bill from gape, 1·9, 2·4.

## A First List of the Birds of the Travancore Hills.

For the last two or three years Mr. Frank Bourdillon has been very kindly sending me, from time to time, small despatches of birds from Southern Travancore, chiefly collected in and at the base of the range of mountains locally known as the Assamboo Hills, which commencing near Cape Comorin, run up thence nearly due northwards. Ninety species having thus accumulated, many of them of great interest, Mr. Bourdillon has kindly favoured me with a brief description of the physical characteristics of the locality in which these specimens were collected, together with notes in regard to most of the species, which will be found reproduced under his initials, in the subjoined list. A great number of the specimens had been carefully measured in the flesh. In all such cases I have copied the dimensions from the tickets. A few species have been inserted in the list by Mr. Bourdillon on his own authority, as he felt certain of their identity.

Mr. Bourdillon says :—

"It is with considerable diffidence that I accede to Mr. Hume's request for a short introductory note to his list of birds collected by me in South Travancore, feeling confident that, through defective information, I shall have to omit many points of interest which might be advantageously introduced in a paper of this kind. However, in the hope that a preliminary notice in "Stray Feathers," may induce other and abler ornithologists with equally favourable opportunities to co-operate in working out and recording the avi-fauna Travancore, I venture to offer a few remarks on the locality in which my specimens were collected.

"This is a portion of that range of hills, which, commencing within a few miles of Cape Comorin, stretches northwards, with slight interruptions, along the western coast, and forms the chief

geographical feature of the southern extremity of the Peninsula.

"The greater number of the specimens, however, were collected within a few miles of the Ponmudi (Golden crown) Peak, a hill of merely local importance and no great height, some twenty miles due east of Trevandrum, the capital of Travancore.

"Of these hills, which rise rather abruptly from the level of the plains or coast line, the average altitude is 4,000 feet, a few peaks reaching 5,000 feet, and only one being credited with an elevation of 6,000 feet above sea level.

"Their chief physical feature is a dense growth of evergreen forest, containing much valuable timber, the greater part of which, owing to the want of proper communication with the coast, remains any thing but a source of revenue to the Government. The dull monotony of this expanse of forest is broken occasionally by bold and precipitous cliffs, while the more exposed ridges and outlying spurs are clothed with a short rank grass. This grass, in a more forcing climate at the foot of the hills, attains great luxuriance, and with a sparse sprinkling of trees, covers almost the whole of the country from the base of the hills to the limit of cultivation along the coast line.

"The annual rainfall is abundant averaging in different parts from 150 to 180 inches, but, owing to the steep slope of the hills, there are no large natural reservoirs, and as a natural consequence, the representatives of the wading and swimming birds are few and scarce. The climate of the hills much resembles that of the central province of Ceylon, with this difference that in Travancore there is nowhere the same variation as may be observed between the climates of the highest and of the lowest parts of the Ceylon mountain range.

"On the Travancore hills at an elevation of 2,500 feet the average temperature may be stated at 75° F.

"The seasons may roughly be divided into two monsoons, *viz.* that in which the prevalent winds are from the S. and S. W., extending from April to September, and that lasting over the other six months of the year, when winds from the E. and N. E. more generally obtain. Of these two seasons, on the *western* slope of the hills the south-west monsoon is characterised by a more copious rainfall (in June and July often as much as 40 and 25 inches), and by a more equable temperature, with occasional severe gusts of wind. The north-east monsoon is usually ushered in by short but violent down-pours of rain, accompanied by storms of thunder and lightning in October. The amount of rain decreases each month

and is replaced during the last two months of the year, by an almost incessant hurricane of wind, which comes sweeping over the hills and temporarily almost denudes of their leaves the coffee plantations of the Europeans who have settled on the hills.

"The average temperature is at its lowest in December and January, rising again during February and March, till the heat towards the end of the latter month becomes trying to European and native alike, and causes a considerable amount of sickness and fever until the rains carry off to the sea the large amount of decaying vegetable matter, which collects in the forest during the windy and dry months.

"Amongst birds, the winter visitors, as far as I have yet been able to observe, begin to arrive in September and stay till the end of April, the earliest to come and the latest to depart being the little Grey and Yellow Wagtail (*Calobates melanope*). In addition to the winter visitors there are other birds permanent residents of the plains—which only ascend the slopes of the hills during the two or three hot months (February to April). Of these, perhaps the common Coucal (*C. rufipennis*) and the Cotton-thief (*T. paradisi*) are the most obvious examples.

"During the S. W. monsoon one hears nothing but the occasional croak of a Fruit Pigeon, and during the rare gleams of sunshine Mynahs and Racket Tails make an effort to appear lively. The only living thing, setting aside slugs and leeches, that seems to enjoy the persistent rain, is the Whistling Thrush (*M. Horsfieldi*), who has a high old time of it, picking up snails and such like petits morçeaux, from dreary morn to dismal eve.

"Of the larger animals indigenous to the hills, we have amongst quadrumana two species of black monkey (*Presybtis* *?) and at least one of grey (*Macacus*?), the latter being held in some sort of superstitious veneration by the natives, while both of the former are eagerly sought for as a variation of the usual curry and rice diet. Of the carnivora, tigers are not uncommon, occasionally doing much damage when herds of cattle are kept, but rarely causing loss of human life. Leopards also are not rare, though seldom met with, an entirely black and rather smaller variety being somewhat more scarce. Wild dogs (*Cuon rutilans*), are numerous and are said to destroy large numbers of deer and pigs. The jackal (*Canis aureus*) on the other hand, rarely, if ever, ascend the hills, though common along the coast line.

* ? *P. jubatus*, Wagner, and *P. johnii*, Fisher, and *M. radiatus*, Kuhl.—Ed., S. F

"Of Rodentia the only remarkable examples are the large black and red squirrel (*Sciurus malabaricus*); and the brown flying squirrel (*Pteromys petaurista*), both of which animals exist in great numbers in the heavy forest; we have also, though in less numbers, the common porcupine (*Hystrix leucura*). Among the carnivora, I should not have omitted the S. Indian bear (*Ursus labiatus*), which may be found in suitable localities, and labours under the same evil character amongst the natives, as that attributed to the Ceylon animal by the Cingalese.

"Among the deer tribe, the Sambhar (*Rusa Aristotelis*) and the little mouse-deer (*Moschus memimna;* are the most common on the hills proper, while in the jungles at the foot of the range, the spotted deer (*Axis maculatus*) is more abundant. On the higher grass ridges may sometimes be observed large herds of the Neilgherri ibex (*Hemitragus hylocrius,*) and I myself on one occasion during the breeding season counted over forty of these animals together. I believe neither the neilghai, nor black buck is found in any part of Travancore, though the latter occurs in great force on the plains along the Eastern coast. Great numbers of bison, as they are misnamed (*Gavaeus gaurus*), roam about the hills at all seasons, descending to the lower jungles when the April rains help the young grass to spring up amongst the ashes caused by the annual forest fires.

"Elephants also, though nowhere in the south collecting into large herds, may generally be found with the assistance of the hillmen as trackers, to whom they are a source of great terror, and who readily assist in their destruction.

"Owing to the inroads of the elephants on their patches of cultivation, the hill men in the wilder jungles live almost entirely in little huts built among the boughs of some large tree, which they ascend by means of a bamboo tied round the stem and forming a sort of ladder.

"The wild boar (*Sus indicus*) occurs in great numbers, but owing to the nature of the ground and the density of the jungle he is no where hunted on horseback.

"I must not conclude without recording my obligations for assistance in the collection of my specimens to Messrs. T. Fulton Bourdillon and H. S. Ferguson, who have both sent me several species which I have not myself obtained."

LIST OF SPECIES.

*(The numbers are those of Dr. Jerdon's Birds of India, and of my catalogue)*

**14.—Hypotriorchis severus,** *Horsf.*

"Is I believe only a winter visitor, though (without having taken a nest) I have reason to think that it breeds here. The

cry of this bird is rather shriller and weaker than that of the Kestril.—F. W. B."

A male adult shot at Kowdiar, April 27th, measured in the flesh :—

Length, 10·75 ; expanse, 26 ; wing, 9·25 ; tail, 4·5 ; tarsus, 1·36 ; bill from gape, 0·9.

## 17.—Tinnunculus alaudarius, *Lin.*

"The Kestrel is also a winter visitor, and breeds on the hills. On one occasion I noticed a pair of old birds feeding their young in a nest perched on the ledge of an inaccessible rock, at an elevation of about 2,800 feet, during the month of April.—F. W. B."

Two males killed, Mynall in December and Erridge in March, both belong to the slightly smaller and markedly deeper-coloured race, resident in the southern portion of the Peninsula of India, where they breed in the Neilgherries and Pulneys, and probably the other hilly ranges, such as the Anna muleys and the Assamboo Hills.

A male measured :—Length, 13·12 ; expanse, 25·5 ; wing, 9·37 ; tail, 7 ; tarsus, 1·37 ; bill from gape, 0·7.

## 22.—Lophospiza trivirgatus, *Tem.*

"A resident appearing to prefer heavy jungle. I know nothing of its breeding habits.—F. W. B."

A young male killed at Mynall on the 6th August at an elevation of about 2,000 feet, clearly, as might be expected, belongs to the true *trivirgatus* race, which is markedly smaller than the race (*L. indicus*, Hodgs.) which occurs in Sikhim, Cachar, and Burmah. It measured in the flesh :—Length, 15 ; expanse, 27·5 ; wing, 8 ; tail, 7·25 ; tarsus, 2·36 ; bill from gape, 1·06.

The bill was black ; the gape, tarsi, and feet, greenish yellow ; claws black ; irides, sulphur yellow.

## 32.—Neopus malaiensis, *Reinw.*

"A resident on the hills, not uncommon from 500 feet elevation and upward. I have never seen any make an attempt to seize a full-grown bird, but have once or twice seen one carry off a nest in its claws and examine the contents as it sailed lazily along. It is a very silent bird and may be seen steadily quartering backwards and forwards along the side of a hill, and in and out amongst the tree tops.—F. W. B."

A male of the Black Kite Eagle, still showing traces of the young plumage, killed at Mynall measured :—

Length, 27 ; expanse, 64 ; wing, 20·62 ; tail, 13·5 ; tarsus, 3·25 ; bill from gape, 2 ; inner toe, 1·45 ; its claw straight

from root to point, 1·45; mid toe, 1·72; its claw straight from root to point, 1·08; outer toe, 1·1; its claw straight, 0·63; hind toe, 1·1; its claw straight, 1·4.

## 35.—Spizaetus cirrhatus, *Gmel.*

"Perhaps the handsomest eagle of the hills, not so common as either the Black Kite Eagle, or Harrier Eagle. It is very daring, frequently making a dash amongst the chickens, when, if it misses its stroke, it retires to some neighbouring tree to concert a fresh plan of attack, if not shot or driven off. When approached in this position, it raises its crest very conspicuously. Though not yet fortunate enough to take a nest, I think this species must breed on the hills, for I once saw a young bird barely able to fly.—F. W. B."

I do not think that the gradual changes of plumage of this species from youth to maturity have been anywhere very clearly noticed. Without entering into an elaborate description, I think I can with the series before me, obtained in Travancore, the Neilgherries, Seone, Raepoor, Mundla, and other localities in the Central Provinces, Mount Aboo and Etawah, give some idea of the normal changes of plumage.

I may mention here that Mr. Sharpe, in his Catologue I. p. 270, records a specimen of this species from Nipal. I have seen an enormous number of *Spizaeti* from Sikhim and Kumaon as well as other parts of the Himalayas, but never one referable to this species, only *nipalensis* from the higher hilly region, and *caligatus*, as well as *nipalensis* from the lower hills, and either there is some mistake as to the species, or the locality, whence the specimen was obtained has been wrongly recorded.

The youngest birds of *cirrhatus*, when they first issue from the nest, have the entire head, neck all round, chin, throat, and entire under-parts, white; only on the crown and sides of the neck is there a slight fulvous tinge, and a few of these feathers have linear, brown, shaft stripes, and the flanks and the upper portion of the tibia have a pinkish fawn-coloured tinge. The entire chin, throat, breast, abdomen, absolutely pure spotless white. The crest black, with usually very little white tipping. The tertiaries and secondary greater coverts, conspicuously margined with white, the tail with 6 or 7 transverse darker brown bars, besides the sub-terminal one, which is not wider than the others.

A little later a buffy fawn-coloured tinge spreads over the whole head and sides of the neck, a few of the feathers of the breast get a faint tinge of the same colour and these exhibit a linear shaft stripe. On the abdomen many of the feathers get a fawn-coloured spot towards their tips, and a tint of the same

colour pervades portions of the vent feathers and lower tail coverts.

Later again the whole head, nape, and sides of neck, become a warm fawn brown, all the feathers now shewing narrow, blackish, shaft stripes. The lower parts are still chiefly white, but almost all the feathers of the breast and abdomen have a more or less triangular, brownish, fawn-coloured spot at the tip, and shew a tendency to a dark shaft stripe; and in some birds, at this time several of the feathers of the lower throat have conspicuous narrow black shaft stripes. The sides become fawn brown, though the feathers still are mottled white at the bases and the shafts are darker; the thighs, vent feathers, and lower tail coverts are now a warm, but brownish fawn colour, somewhat irregularly barred with white; the tail has now only four bands besides the sub-terminal one, which has become conspicuously broader. [Sometimes the young bird, before exhibiting any black streaks on the side of the neck or on the throat, becomes a nearly uniform warm fawn colour on the entire lower surface, and even retains this plumage until it has acquired the adult tail. I do not understand this, it is certainly none of the normal stages from the nestling to maturity, but as it occurs it is necessary to record it.]

Then (to return to the normal stage of progression), the black striping of the head, back, and sides of the neck, becomes more conspicuous; a black central throat stripe begins to be indicated, the warm fawny tint of thighs and vent becomes replaced by a wood brown, the black shaft stripes of the breast become more oval, and the tail begins to approach the normal type with only three transverse bars besides the sub-terminal one.

Gradually the brown of the vent and flanks creeps up to the lower breast; the breast spots grow larger and larger, and ultimately the white margins of the feathers almost wholly assume the brown tint of the abdomen. The entire white chin and throat have the feathers so broadly striped, centrally, with black, that only just enough white peeps through to give indications of a separation between a black throat stripe, and two broad black moustachal stripes.

The brown of the head and sides of the neck, though still warm, has lost the fawny tinge of the younger stages, and the black centres of the feathers have greatly increased in size.

The tail has a very broad terminal band, of say 1·8 and interspace of 2, and three other bands each about an inch broad. The crest quite black and untipped, grows to a great length; in one specimen before me it is over 4·75 inches long.

While these changes have been going on, the whole upper plumage has been growing darker.

As to the white tipping to the crest, this is very irregular, the youngest birds and the oldest most generally want it; birds of intermediate ages generally have it; but in several cases I notice of two birds, in precisely the same stage, that one wants, and the other exhibits it.

**39 *bis*.—Spilornis melanotis,** *Jerd.* *S. minor,* Hume. ? *S. albidus,* Cuv.

"The Harrier Eagle is commoner than the Black Kite Eagle, but though sometimes making an attempt on the fowl-yard, it is generally rather shy. It has a loud clanging scream, which the bird utters while soaring high in the air.—F. W. B."

Two males of this species are typical examples of the smaller southern race which I designated *minor*, and which it is said should, if distinct, stand as *albidus*, Cuvier.

The birds are not only smaller, *very much smaller* than *S. cheela* of the Himalayas, but they look very different, and the conspicuous absence of all striation on the breast catches the eye at once.

The following are the measurements in the flesh of two males, one an old adult, the other a young bird just beginning to pass into the adult plumage:—

*Adult*—Length, 25; expanse, 48; wing, 17; tail, 12·25; bill from gape, 1·8; tarsus, 3·75.

*Young*—Length, 24; expanse, 50; wing, 15·75; tail, 10·75; tarsus, 3·87; bill at gape, 1·8. In this latter, killed in March, the cere and bare space round the eye were yellow; the legs and feet were dirty yellow; claws, black; the irides, pale, clear yellow; the base of bill and gonys, plumbeous; the tip, black.

**47.—Buteo plumipes.** *Hodgs.* Beng. Sp. Mag. p. 182, 1836.—P. Z. S. 1845, p. 37.— B. *rufiventer,* Jerd. 1847.—*Falco buteo japonicus,* Tem and Schl. 1850.

"This bird, a winter visitor, seems to be not uncommon during December, January, and February, preferring high open country, where two or three may be seen steadily quartering the ground and occasionally pouncing on some mouse or lizard. I have seen them perch both on trees and on stones, and once saw one as low as 2,000 feet elevation, where it was beating backwards and forwards over a field of young coffee.—F. W. B."

The single specimen sent from Travancore by Mr. Bourdillon belongs, I believe, unquestionably to Hodgson's species, *plumipes*.

I have long since come to the conclusion that the Himalayan and northern Pegu Buzzards which I identified with *japonicus*,

(Schlegel) were identical with *plumipes*, and I see that Mr. Sharpe having Japanese and Chinese specimens to compare, has united the two.

Having now obtained a specimen of this species from the hills of Southern India and having specimens from the Himalayas agreeing precisely with his plate, I cannot doubt that Dr. Jerdon's *B. rufiventer* from the Neilgherries, *a male* with a wing of 15, belonged to this species, and not to *B. desertorum*, of which Mr. Sharpe says, that the wing never exceeds 15, and of which Schlegel gives 15·3 as the extreme limit; clearly if the wing never exceeds 15·3 in females, no male could in this division of the Buzzards have the wing 15.

I have recently had to review my whole series of Indian Buzzards, nearly 200 specimens in all; and I take this opportunity of stating the conclusions at which I have arrived after some days' careful study. I am the more anxious to do this, because my present views differ in some respects from those that I have previously recorded. The species of Buzzards that I would now admit into our Indian avi-fauna, are:—

1. Buteo ferox, *S. G. Gmelin*, (1769.)
2. „ aquilinus, *Hodgs.* (Blyth J. A. S. B. 1845*)
3. „ plumipes, *Hodgson* (as above).
4. Archibuteo hemiptilopus, *Blyth* (1846)—strophiatus, *Hodgs.* (1844)—*sine discr.*—leucoptera, *Hume* (S. F. I. 318).

It will be observed that I no longer admit *desertorum* to our list; for a long time past I have only retained this species on the strength of Dr. Jerdon's *rufiventer*, and now, that I have obtained a specimen from Southern India and have convinced myself that it is inseparable from *plumipes*, I feel compelled to exclude the African species from our avi-fauna.

At one time I separated the slightly smaller and more rufous specimens of *ferox*, so common in the Himalayas and considered these to represent *desertorum*; but even at the time ("Rough Notes," pp. 268 to 269, and *note*), I remarked that our birds seemed to be too large with reference to the dimensions given by European authors, as also with reference to those of a fine male from South Africa in Colonel Tytler's collection, and I added of this latter.—"In plumage it greatly resembles some of our Himalayan birds, but is *much* smaller than any of these. Personally, I feel by no means satisfied that our Indian bird is *desertorum*."

Mr. Dresser, in his recent article on this species, quotes my remark that *desertorum* "is confined to the Neilgherries and

* It is impossible to say whether this name or Hodgson's other name, *leucocephalus*, should stand. This latter was read at the Zoo, on the 8th April 1845, but when the record of this reading was *published*, I cannot ascertain. *Aquilinus* appeared in the J. A. S. B. for 1st April 1845, but when this actually appeared is doubtful. The numbers were often months in arrears.—Ed., S. F.

Himalayas, and appears not to be uncommon anywhere in these latter hills, from Murree to Darjeeling."

This remark, however, must now be considered to be cancelled; the birds that I assigned to *desertorum* from numerous parts of the Himalayas were only, I am now convinced, small specimens of *ferox* (many, if not all, of the stages of plumage, of which are precisely similar to stages of the South African Buzzard), while the Southern Indian supposed *desertorum*, must, I believe, be assigned to *plumipes*.

It may be noticed that *primâ facie* this is what might have been expected. The Malabar Coast and the hills of Southern India, in consequence, as I am inclined to believe, of their heavy rainfall, comprise a fauna closely allied to that of the Terai, Sikhim, and what we may call the Indo-Burmese Province. If an African species were to be looked for, it would rather be in the open Deccan, Sindh, or Rajpootana, or the dry plains of Upper India or of Upper Pegu. The last place it would be likely to occur in, would be the Neilgherries and the Assamboo Hills, and that the Buzzard under consideration is *not uncommon*, in these latter is a strong *à priori* argument *against* its being *desertorum* and *in favor* of its being *plumipes*.

The importance of this consideration is enhanced by the fact, that while characteristic and accurately sexed specimens of *plumipes* and *desertorum* can doubtless be separated, at a glance, it becomes I believe, almost impossible to discriminate some unsexed and non-characteristic specimens. They may be either female *desertorum*, with rather abnormally fully-plumed tarsi, or male *plumipes*, with little-plumed tarsi.

And here it is to be noticed that the pluming of the tarsus is a very unstable character; in each species the extent of the bare portion of the tarsus varies very materially, and this not only if the apparent bare portion of the tarsus be considered (in consequence of the feathers being longer or shorter according to season and perhaps climate), but also in the actual distance to which the tarsus is feathered, counting this only to the root (and not the tip) of the lowest feather. Measured in this latter way, which is perhaps the safest, I find that in a series of 120 *ferox*, with wings varying from 16·25 in the smallest male to 19·25, in the largest female, the unfeathered portion of the front of the tarsus, varied from 2·4 to 1·5; and that not by any means according to size of bird, one male for instance, with a 16·8 wing, having 2·1 unfeathered, while a female, with a wing 19 has only 2·0 unfeathered. Nay, more than this, one typical *ferox*, a female, wing, 18·5; with the *front* of the tarsus unfeathered for 2·1; has a stripe of feathers running down the inside of each tarsus, to within 0·5 of its base.

Now this variation in the extent to which the tarsus is feathered is equally observable in *plumipes (=japonicus)*, as will be seen from the following details of the specimens in my museum. I note that in this list I have measured the bare portion of the tarsus, counting from near the tips of the tarsal plumes :—

| | | | Length of wing. | Bare portion of tarsus. | Locality. |
|---|---|---|---|---|---|
| Variable plumage (*B. japonicus.*) | 1 | | 14·3 | 1·7 | Travancore. |
| | 2 | | 14·4 | 1·5 | Sikhim. |
| | 3 | ♂ | 14·5 | 1·6 | Thyet Myo. |
| | 4 | ♂ | 14·6 | 1·1 | Kotgurh. |
| | 5 | | 14·6 | 1·2 | Darjeeling. |
| | 6 | | 14·8 | 1·4 | Ditto. |
| | 7 | | 15 | 1·4 | Native Sikhim. |
| | 8 | ♀ | 15·3 | 1·3 | Gulmerg, Cashmir. |
| | 9 | | 15·3 | 1·5 | Native Sikhim. |
| | 10 | | 15·5 | 1·5 | N. of Masuri. |
| | 11 | | 15·9 | 1·35 | Darjeeling. |
| | 12 | | 15·9 | 1·1 | Native Sikhim. |
| | 13 | | 15·9 | 1·21 | N. of Masuri. |
| | 14 | | 15·9 | 1·2 | Kotgurh. |
| | 15 | ♀ | 15·9 | 1· | Kote Khaie. |
| Uniform blackish plumage (*B. Plumipes.*) | 16 | | 14·7 | 1·3 | Native Sikhim. |
| | 17 | | 14·8 | 1·2 | Ditto. |
| | 18 | | 15·1 | 1·3 | Ditto. |
| | 19 | | 15·5 | 1·5 | Ditto. |
| | 20 | | 15·5 | 1·1 | Ditto. |
| | 21 | | 15·6 | 1·6 | Darjeeling. |

Now it will be observed that the wings vary from 14·3 to 15·9; and the bare portion of the tarsus from 1 to 1·7; but it has to be noted, that the only two birds in which it exceeds 1·5, are from Travancore and Thyet Myo, and in these the real difference mainly consists in the feathers *being* shorter and more worn, possibly to a certain extent the result of the warmer climate in which they were residing when killed.

All these 21 birds are absolutely inseparable. Bill, legs, feet, plumage, dimensions have all been most carefully scrutinized. I have spent a whole day over them, and have not the slightest hesitation in asserting *my* conviction, that they all belong to one* species.

In refusing to admit *B. desertorum* to a place in our avi fauna, I have not overlooked, that Mr. Sharpe in his catalogue (I,

* Since this was written, Mr. W. F. Blanford has been staying with me, and I submitted to him the whole of my Buzzards. He examined these 21 birds most carefully and laboriously, and he says that, like myself, he is unable to discover any single point by which they can be divided, or by which any one can be separated specifically from the rest.

p. 180), records three Indian examples of this species, from Nipal, Etawah, and Madras.

Possibly Mr. Sharpe not having a sufficient series before him, may have relied too implicitly on the extent of the feathering of the tarsus, which, as I have shown, is a worthless character, as regards individual specimens, although it may be good specifically. It may be quite true that *desertorum*, as a species, has the tarsus less feathered than *plumipes*, but it is impossible to take a particular specimen, and because it has 1·5, 1·6, or 1·7 of its tarsus bare, thereupon to pronounce that it is necessarily not *plumipes*, because we have essentially typical *plumipes*, with 1·5 and 1·6 of the tarsus bare.

Or again he may have relied, similarly in the absence of a good series, on the more rufous character of the plumage and specially of the thighs, which is said to be a diagnosis of *desertorum*. But plumage in the case of these Buzzards is, I am convinced, a delusion and a snare; not only *ferox* (*and ? desertorum*), but equally *plumipes* and *Archibuteo strophiatus* exhibit similar variations of plumage from the pale, through the rufous and brown to the blackish brown, and though one type of plumage is more common in one species and another in another, specimens of each *may*, I believe, be met with in each. So in *plumipes* we have a specimen from Native Sikhim, a typical specimen wing, 15·9, and barely 1·1 of the front of the tarsus bare (the feathers running a good deal further down on the interior of the tarsus), which is as red as any Buzzard can be.

It is, however, possible that while the South African *desertorum* with a wing never, as far as I can make out, exceeding 15·3 inches, may, the sexes being known, be clearly separable at all times from even rufous and slightly tarsi-plumed *plumipes*; gradations between the two may occur in intermediate countries, a consideration of which would as completely justify Mr. Sharpe in uniting his Indian specimens with *desertorum*, as a careful examination of my series (unfortunately but few of them reliably sexed) justifies me in assigning all mine to *plumipes*.

Turning now to *ferox* and being desirous of contributing my quota to the discussion which has been going on as to the changes of plumage of *ferox*, I propose to give a list of 94 specimens in my museum which I have recently examined, and arranged according to types of plumage in the order in which, from a consideration of my large series, these appear, if sequent and not alternative, to follow each other, together with the dimensions of the wing in each specimen.

There appear to me to be five fairly well-marked types, with of course numbers of intermediate forms, showing how

the different types, in some cases at any rate, grade into each other and thus enabling me, according to my idea, to make pretty certain as to the order in which these types occur.

I do not pretend to assert that *every* bird passes through *all* these stages, some of them may be alternative, some birds may never attain the final stages, possibly the females never pass into the black stage; but what I do contend is, that where these stages are attained they are attained somewhat in the order indicated below. That the white and rufous stage is the younger (though some birds breed in this,) and the darker stages older, and that the so-called melanism, or 5th stage, is not an indication of youth, but a final result into which birds pass *after* going through, and not *before*, any of the other stages.

To those who contend that the white and brown or rufous stage is the adult and the darker stages the young, I would draw attention to the fact that out of 94 specimens, no less than 44 belong to their supposed adult, and as a matter of fact, it is, taking the country as a whole, twice as numerous as all the other forms put together, though owing to the fact that the less common varieties attract the collector's eye, the number in this series is only as 44 to 50. Now every collector knows that in these Raptors one always sees many more immature than perfect adults, and it is therefore contrary to all experience to believe that the most common form is that of the adult, and the rarer ones those of the young. The following is the list: —

1st Stage, Lower plumage white, dirty white or buff more or less marked with brown or rufous.

*Males* (1) Raipoor 16·5. (2) Rohtuk 16·25. (3) Sambhur 16·75. (4 Sambhur 16·4.
(5) Sirsa 16·5. (6) Kotghur 17. (7) Mukrana, Jodhpoor 17. (8) Etawah 17.
(9) Sambhur 17. (10) Kot Khaie 17. (11) Sambhur 17·25. (12) Sirsa 17·4.
(13) Kot Khaie, Simla Hills 17·5. (14) Bhim Tal 17·5. (15) Sirsa 17·5. (16) Sambhur 17·6.
(18) Etawah 17·6. (19) Kotghur 17·75.
(21) Bussahir 16·5. (22) Kotghur 17·5. (23) Sassapur-Khunaitie 16·75.

*Females* (55) Delhi 18. (56) Sirsa 18·5. (57) Cashmere 18·5. (58) Delhi 18·2.
(59) Lahore 18·2. (60) Etawah 18·75. (61) Sambhur 18·5. (62) Sirsa 18·25. (63) Abbotabad 18·75. (64) Sumbulpoor 18·4. (65) Abbotabad 18·75.

(66) Sirsa 18·2. (67) Sirsa 18·75. (68) Kot Khaie 18. (69) Sambhur 19·1.

(70) Sirsa 18·2. (71) Hissar 18·25. (72) Delhi 18. (73) Goorgaon 18·6. (74) Rahun 18.

(75) Delhi 18·6. (76) Kotghur 18·25.

2nd Stage, General plumage brown, but with a good deal of white and rufous, on the breast and abdomen.

*Males* (24) Kot Khaie 16·25. (25) Kotghur 16·5. (27) Khunaihi, Bussahir.

(28) Kotghur 17·2. (19) Sukkur 16·75.

*Females* (77) Kotghur 18. (78) Delhi 18·5. (94) near Larkhana, Sindh, 18·25.

3rd Stage, General plumage brown with breast, and more or less of nape rufous.

*Males* (28) Bussahir 17. (29) Kotghur 16·5. (30) Kotghur 16. (31) Simla 16·5.

(32) Bussahir 17·25. (33) Kotghur 16·25. (34) Bussahir 16·75.

(35) Cashmere 16·8. (45) Dhurmsala 17·8?

*Females* (79) Goorgaon 19·25. (80) Etawah 18·25. (81) Sirsa 18. (91) Nurie Nai, Sehwan 18·25. (93) Sukkur 18·4.

4th Stage, Uniform Brown.

*Males* (36) Kot Khaie 17·75. (37) Kotghur 17. (38) Mussoorie 17·5. (39) Kotghur 16·5.

(40) Kot Khaie 17. (41) Kotghur 17·9. (42) Kotghur 17. (43) Kotghur 17·25.

(44) Sambhur 17·75. (46) Mussoorie 17·5. (47) Delhi 17·5. (48) Rohtuk 17·5.

*Females* (82) Simla 19. (83) Kotghur 18. (84) Murdan 18. (85) Goorgaon 18.

(86) Gawlior 19·2. (87) Delhi 18·2. (88) Rohtuk 18. (89) Kotghur 19. (90) Kotghur 18.

5th Stage, Uniform very dark brown, tail more or less conspicuously barred with white.

*Males* (49) Murdan 17·5. (50) Kotghur 17·5. (51) Hissar 17. (52) Kot Khaie 17·5.

(53) Kot Khaie 16·75. (54) Kotghur 16·5. (92) Cumba, N. Sindh 17·1.

It will be seen that the wing varies in the male from 16·25 to 17·75; and in the females from 18·0 to 19·25; long and short wings are to be met with in pretty well every stage of plumage. I have examined these birds not only with reference to the length of wing, but also with reference to the shape, and relative proportions of the primaries, the size and shape of bills and nostrils, the size of feet and claws, and lastly the length, extent

of feathering, and scutelation of the tarsi, and though individual specimens will be found to differ greatly in all these particulars, such differences exist equally in examples in all stages of plumage, and I really think that I may safely assert that all belong to one and the same species.

The variations of plumage are doubtless extraordinary, but between specimens which above are a dull grey brown, the feathers slightly margined with rufous, and below almost unspotted white, tinged only on the sides and flanks with rufous, and with an unbarred pale, salmon-coloured tail, to the deep chocolate almost blackish-brown bird, with a tail conspicuously barred with white, every intermediate shade of plumage exists, and with the whole series laid out before one it is absolutely impossible to draw a line any where.

I have a good many (26) more specimens, besides those above enumerated, which not being sexed, I have not thought it necessary to record, but not one (belonging to this type, and of course excluding *plumipes*) from the Himalayas or any part of India in which the wing is less than 16·25.

It has in the first place to be noticed that the above classification has no pretensions to mathematical accuracy. Nature draws no hard and fast line, and, except the last sub-division, each of the classes includes several specimens which might with almost equal reason be included, either in the preceding or in the subsequent class, as the case may be.

I have done my best to place each specimen in the sub-division to which, on the whole, it seems most properly to belong; but there are still a few birds so thoroughly intermediate that any one else might arrange them differently.

As regards the fifth sub-division all seven specimens are typical, and, as will be observed, are without exception males. It is just possible that the females never assume this dark plumage, but this seems unlikely, seeing that fully half of my specimens of *plumipes* in the corresponding stage of plumage are presumably females, and Mr. Blanford records having shot, and himself sexed, a female in this stage of plumage with the wing, 15·9.—(J. A. S. B. 1872, p. 41).

As regards the remaining stages of plumage, it is curious that out of 44 in the 1st stage 22 are females, out of 8 in the 2nd stage, only 3 are females, of 14 in the 3rd stage, 5 are females, and of 21 in the 4th stage only 9 are females, while as already noticed in the last stage, none are females.

I cannot at all explain what this indicates, the more so that where 2 or more birds are together, collectors naturally shoot the biggest and finest specimens.

Before taking leave of *ferox*, I may note that although it is quite impossible to separate them specifically, birds from the Himalayas do seem to average somewhat smaller, to be more constantly rufous, and to have the tarsi feathered further down, than birds killed in the plains. There are no doubt several exceptions to this rule, but it is nevertheless a fact that the great bulk of the birds in which the tarsi were feathered for less than 1·9 inches (measuring to the roots and not the tips of the lowest tarsal plumes) were obtained in the Central Himalayas, while in the great majority of specimens killed in the plains of India the bare portion of the tarsus, measured as above, did not fall short of 2 inches. This difference, however, is neither absolutely constant, nor is it accompanied by any such constant difference of plumage, or in dimensions as could justify the separation of these hill birds.

I am inclined to believe that these more fully tarsi-feathered Buzzards which were mostly procured in the hills, north of Simla, in Kooloo and Bussahir (and a great many of them during the winter) represent a permanent resident race belonging to these hills, in which they breed, and from which they do not, as a rule, migrate during the cold season to the plains.

On the other hand, I believe that the mass of the birds which throng the desert plains of Northern and North-western India breed in the Suliman range in Cabul and Beloochistan whence they migrate to India during the winter, and this difference of habitat and of conditions of life is the only rational explanation I can offer of the general, though not absolutely constant, difference between the birds killed in the Central Himalayas and the plains of India.

In my notes on the ornithology of the first Yarkand expedition, I expressed an opinion adverse to the validity of Hodgson's species, *Buteo aquilinus*. I had then a single specimen of the species which was compared for me with the type by Mr. Gurney and Mr. G R Gray, and pronounced by them to be identical with it. I have still only this one specimen, but yet after a very careful examination of it and a comparison with 120 specimens of *ferox*, I am inclined to retract my former opinion and admit *aquilinus* as a good species.

The points of distinction on which Mr. Blyth chiefly insisted were the extent to which the tarsus was feathered, and the reticulate character of the scutation of the foot and front and sides of the tarsus.

As regards the former, I have already shown that this is not a character by which the bird can be separated from many specimens of *ferox*; but as regards the latter I am bound to say that I think I was too hasty in my former conclusion, and

although in several specimens of *ferox* the scutation makes a decided approach to that of my specimen of *aquilinus*, in no single specimen out of 120 does it appear to be so thoroughly and entirely reticulate as in the present species.

But besides this difference, there is a marked structural difference. The wing in this specimen, a female, is only 18·6, and we have several females of *ferox* in which the wing exceeds 19, yet in none of these are the feet anything like so powerful, or the claws as large as in my specimen of *aquilinus*.

In a fine female *ferox* with the wing the same size (18·6) the inner toe-claw measures, from root to point along the curve, exactly one inch, the same claw in *aquilinus* similarly measured is over 1·85. The other claws are also, but not quite proportionally, larger, in fact, the extra size of the inner toe-claw appears to be one characteristic of *aquilinus*.

Besides this I do think that the bill is somewhat more powerful than in *any* specimen I have of *ferox*; and it also seems to me, though I admit that this is not a good character, that the second quill is longer than it is in *ferox*, being not quite an inch shorter than the 3rd.

On the whole, comparing this with perhaps the largest series of *ferox* ever collected together in one place, I cannot avoid the conviction that it is distinct. I have only to add that as regards my specimen, the plumage is similar to that of many specimens of *ferox* in what I call the first stage, and that I have little doubt that rufous, brown, and dark specimens of it occur.

When we turn from *ferox* to *plumipes*, we find in this latter a precisely parallel series of types plumage, although the *upper* surface is apparently never so rufous as it is in some specimens in the first stage of the former.

With the other stages I need not now concern myself but in regard to the dark, and as I conceive latest stage, I wish to make a few suggestions.

Mr. Gurney, *Ibis*, 1876, p. 369, remarks, *à propos* of the black stage:—"To me it seems much more likely to be an accidental melanism, both from its great rarity and from the fact of its never having been observed either in China or Japan, but only in countries adjacent to the Himalayas—a circumstance which possibly may afford a parallel to the occurrence in a similarly restricted, but more westerly, district of the melanistic phase of *B. ferox*."

Now as regards its rarity, it will have been seen that out of my 21 specimens, 6 are in the typical *plumipes* plumage, and 2 of the others, I may add, approach it very closely.

It appears to me that this is the largest proportion of old adults that one could possibly expect to meet with, even in the

very home and stronghold of the species. A melanism that affects 33 per cent. of the community, surely deserves the appellation of a stage of plumage.

That this dark form has not yet been observed in China and Japan, and on the other hand is common in the Himalayas is entirely in favour of its being the plumage of age and not a mere melanism. Habitually the younger birds extend their migrations further than the older ones; if the black birds are old adults, they would, of course, be *very* rare in China and Japan, where the species is only, I believe, a winter migrant, from a distant locality, while (as is a fact) they might be expected to be common in the Eastern Himalayas which are a portion at any rate of the head-quarters of the species. But if the dark stage is a mere accidental melanism, independant of age, then the observed facts are much less easily explicable, indeed become inexplicable. If my contention that the dark stage is dependant on age be rejected, then it seems to me that the only tenable alternative hypothesis is that the dark stage represents a local species or sub-species, bearing the same relation to *japonicus* that *Cyanocincla solitarius* does to *C. cyana*. Under no circumstances does it seem to me that the accidental melanism theory sufficiently accounts for the known facts.

As Mr. Gurney truly observes, the precisely parallel case of *B. ferox* ought to throw some light on the suject. Throughout the plains of the North-Western Provinces the dark birds are almost, if not wholly, unknown. Further west and north in the Punjaub and Rajpootana, these begin to appear, but still throughout the greater portion of these tracts they are rare, and the great bulk of the specimens are still, as they almost universally are, in the North-Western Provinces in what I call the first stage of plumage. It is only in the extreme north and west, in the Punjab, about Peshawur and Murdan, and trans-Indus and again in Sindh trans-Indus that the dark form is at all common; and in some few places in the latter locality they seem to be more numerous than the white and rufous birds. This is in the immediate neighbourhood of the breeding places of, as I believe, the majority of the birds that visit the plains of India.

But it will doubtless be said that the birds breed also about Sarepta in Palestine and elsewhere, and that no considerable number of black birds are ever there obtained. If this is correct, then all that can be said is that the Eastern race that breeds in Afghanistan and Beloochistan (and possibly Persia also) differs in assuming, when old or quite adult, a stage of plumage only accidental in the western race; and such difference is quite in harmony with what I have already noticed in regard

to the Central Himalayan race (and I suspect Mongolian birds from what Radde says are akin) with a greater tendency to deep rufous colouration and a more fully-feathered tarsus.

From all I have seen of this sub-group of Buzzards, I am inclined to suspect that they are specifically of recent origin, and that the several species have not yet become fully differentiated.

As a rule, it seems to me that when dealing with continental species (the conditions of insular life are different), it is only those that *are* past their prime, which we may expect to find clearly and sharply defined from their congeners, and without intermediate connecting links. While the group of species is young and still developing, the boundaries are still hazy and intermingled; it is only when decadence has commenced, and the interconnecting links have dropped out, that the several surviving species are found to be distinctly isolated. It seems to me probable that all those groups, in which the species are found, to grade imperceptibly into each other (a gradation, often, and, as I think, unphilosophically explained as cases of hybridism), are of comparatively recent origin, and that the more throughly isolated a set of species are the older they may *primâ facie* be assumed to be. Of course, there are external circumstances which will modify this general law as to the normal progress of species of life, but the law itself appears to me to be one of primary importance that has scarcely as yet attracted attention.

To return to our Buzzards, and their supposed accidental melanoid varieties; there is yet a fourth species to be noticed, and that is *Archibuteo hemiptilopus*, Blyth.

Now it is very remarkable that this also has a black form, as dark as the darkest *plumipes*, or 5th stage *ferox*.

I have very fully described one specimen of this species (a presumed female) (S. F. Vol. I, p. 315) which is in the stage corresponding to my first stage of *ferox*. I also described *(loc. cit)* from Mr. Hodgson's drawing another specimen, a male, almost precisely in what I have called the 3rd stage of *ferox*.

Mr. Sharpe has figured and described (Cat. I. p. 199, Pl. VII. 2) a specimen, supposed to be Hodgson's type almost exactly in what I call the 4th or uniform brown stage, and I have now before me two others, one a female (presumably) in plumage intermediate between the 2nd and 3rd stages, and one a male (presumably) in the 5th or *melanoid* stage. Both these are from Thibet.

*The first measures:*—Length, about 27; wing, 20; tail, 12; tarsus, 3·4; bill from gape, 2·0; mid toe and claw, 2·25; hind toe and claw, 1·9; bill, along culmen, from edge of cere to point, 1·3; hind toe claw along curve, 1·2; mid do. do. 0·75; inner do. do. 1·1.

Structurally and in dimensions this specimen agrees precisely with the specimen I formerly described, only (as might be expected in an older bird) the feet and claws are a trifle more massive and powerful.

The general plumage is a very uniform, moderately pale, hair brown, verging somewhat to umber, but the breast and middle of the abdomen are much variegated with ferruginous brown feathers broadly tipped and, in some cases, margined, with rufescent buff.

The lower tail coverts are fulvous white, broadly margined with rufous and rufous buff, and with traces of imperfect brown bars on these margins. On the nape and interscapulary region is an immense patch of feathers, white on their basal halves, and buff in some, deep ferruginous in others, on their terminal halves, all brown shafted, and some with narrow brown shaft stripes. The wing lining is mingled deep ferruginous and brown. Large portions of the huge white wing patch described in the former specimen are in this present bird mottled over with a brownish grey, and this is the colour of those portions of the outer webs of the earlier primaries which were white in the former specimen. The tail is like that of many *ferox*, a grey brown, tinged with rufous towards the tips, everywhere browner towards the margins, with 3 or 4 transverse irregular bars towards the tips, and zig-zaggy traces of 4 or 5 others higher up.

The presumed male is a somewhat smaller bird.

Length, about 24; wing, 19; tail, 11·0; tarsus, 3·4; bill from gape, 2·0; mid-toe and claw, 2·0; hind toe and claw, 1·62; bill along culmen from edge of cere to point, 1·C3; hind-toe claw along curve, 1·2; inner do. do. 1·13; mid do. do. 0·7.

Although the bill measured from the *gape* in this skin is as long as in the former specimen, it is really considerably smaller and feebler, and though the claws are nearly as long, they as well as the toes are feebler and slenderer.

The large size of the inner toe claw far exceeding that of the mid, and all but equalling that of the hind toe is a marked peculiarity of this species, shared though in a minor degree by *aquilinus*. Another noteworthy point is the very considerable dilation of the inner edge of the mid toe claw.

The whole bird is a very *deep* umber brown, almost blackish, deepest on quills, tail, abdomen, lower-tail coverts, and tibial and tarsal plumes. The latter quite conceal the foot in this specimen, are somewhat shorter in the female above described, and shorter still in that first described (S. F. p. 1, *loc cit*).

Some of the longer upper tail coverts exhibit a few oval white spots. The basal halves of the central tail feathers exhibit

four irregular clouded transverse grey bars; in the lateral feathers, these are more numerous, extend nearer and nearer to the tips, and are whiter and larger (almost confluent in some places) on the inner webs. The white wing patch is entirely replaced by a pale somewhat brownish grey, except in a small patch along the shaft quite at the base of the primaries. Except that the claws are much more curved, and the inner toe much shorter and feebler and the tail shorter, this specimen might well pass for a rather brown, diminutive *Neopus*, and indeed it was as a probably new species of this genus that Mr. Mandelli sent me this specimen.

Looking to the systematic manner in which this black stage is reproduced in each of these three species, I think that the idea of accidental *melanism* may be set aside, and this form accepted as a normal state of plumage, at any rate in *hemiptilopus* and *(Indian) ferox*, and *plumipes*.

All my three specimens of *hemiptilopus* exhibit that peculiar plumose character of the base of the bill almost concealing the nares, on which Hodgson's name *cryptogenys* was founded. I have no doubt whatsoever myself that this latter, as well as *strophiatus*, Hodgson, must be considered as synonyms of Blyth's name.

Of course, the whitish breast band on which Hodgson's second name was founded is merely one stage of plumage, which may occasionally be observed in *ferox* just as it is passing into the uniform brown stage.

Before quitting the Buzzards, I must notice Mr. Gurney's view (*Ibis*, 1876, p. 367) that in *ferox* "transverse bars upon the tail are ordinarily and normally indications of immaturity." I may be wrong, I naturally traverse in this and other cases, the opinions of so eminent an authority with the greatest diffidence, but still I think, I ought to record distinctly that my large series of this species does not permit of my concurring in this opinion. Strongly barred, feebly barred, partially barred, tails, as well as unbarred ones, and others with only traces of a bar or two seem to be met with in the most various stages of plumage. If you arrange the birds by the degree to which their tails are barred, you get specimens of the most discordant types of plumage side by side. Nothing can be more irregular than the changes of plumage; they are never synchronous on the upper and lower surfaces. Arrange by the former, and you have all types of the lower grouped together and *vice versâ*.

What Mr. Gurney says may possibly be true of the Palestine and Sarepta breeding birds, but I hardly think it can be accepted as equally applicable to the Indian race.

Structurally and in dimensions this specimen agrees precisely with the specimen I formerly described, only (as might be expected in an older bird) the feet and claws are a trifle more massive and powerful.

The general plumage is a very uniform, moderately pale, hair brown, verging somewhat to umber, but the breast and middle of the abdomen are much variegated with ferruginous brown feathers broadly tipped and, in some cases, margined, with rufescent buff.

The lower tail coverts are fulvous white, broadly margined with rufous and rufous buff, and with traces of imperfect brown bars on these margins. On the nape and interscapulary region is an immense patch of feathers, white on their basal halves, and buff in some, deep ferruginous in others, on their terminal halves, all brown shafted, and some with narrow brown shaft stripes. The wing lining is mingled deep ferruginous and brown. Large portions of the huge white wing patch described in the former specimen are in this present bird mottled over with a brownish grey, and this is the colour of those portions of the outer webs of the earlier primaries which were white in the former specimen. The tail is like that of many *ferox*, a grey brown, tinged with rufous towards the tips, everywhere browner towards the margins, with 3 or 4 transverse irregular bars towards the tips, and zig-zaggy traces of 4 or 5 others higher up.

The presumed male is a somewhat smaller bird.

Length, about 24; wing, 19; tail, 11·0; tarsus, 3·4; bill from gape, 2·0; mid-toe and claw, 2·0; hind toe and claw, 1·62; bill along culmen from edge of cere to point, 1·C3; hind-toe claw along curve, 1·2; inner do. do. 1·13; mid do. do. 0·7.

Although the bill measured from the *gape* in this skin is as long as in the former specimen, it is really considerably smaller and feebler, and though the claws are nearly as long, they as well as the toes are feebler and slenderer.

The large size of the inner toe claw far exceeding that of the mid, and all but equalling that of the hind toe is a marked peculiarity of this species, shared though in a minor degree by *aquilinus*. Another noteworthy point is the very considerable dilation of the inner edge of the mid toe claw.

The whole bird is a very *deep* umber brown, almost blackish, deepest on quills, tail, abdomen, lower-tail coverts, and tibial and tarsal plumes. The latter quite conceal the foot in this specimen, are somewhat shorter in the female above described, and shorter still in that first described (S. F. p. 1, *loc cit*).

Some of the longer upper tail coverts exhibit a few oval white spots. The basal halves of the central tail feathers exhibit

four irregular clouded transverse grey bars; in the lateral feathers, these are more numerous, extend nearer and nearer to the tips, and are whiter and larger (almost confluent in some places) on the inner webs. The white wing patch is entirely replaced by a pale somewhat brownish grey, except in a small patch along the shaft quite at the base of the primaries. Except that the claws are much more curved, and the inner toe much shorter and feebler and the tail shorter, this specimen might well pass for a rather brown, diminutive *Neopus*, and indeed it was as a probably new species of this genus that Mr. Mandelli sent me this specimen.

Looking to the systematic manner in which this black stage is reproduced in each of these three species, I think that the idea of accidental *melanism* may be set aside, and this form accepted as a normal state of plumage, at any rate in *hemiptilopus* and *(Indian) ferox*, and *plumipes*.

All my three specimens of *hemiptilopus* exhibit that peculiar plumose character of the base of the bill almost concealing the nares, on which Hodgson's name *cryptogenys* was founded. I have no doubt whatsoever myself that this latter, as well as *strophiatus*, Hodgson, must be considered as synonyms of Blyth's name.

Of course, the whitish breast band on which Hodgson's second name was founded is merely one stage of plumage, which may occasionally be observed in *ferox* just as it is passing into the uniform brown stage.

Before quitting the Buzzards, I must notice Mr. Gurney's view (*Ibis*, 1876, p. 367) that in *ferox* "transverse bars upon the tail are ordinarily and normally indications of immaturity." I may be wrong, I naturally traverse in this and other cases, the opinions of so eminent an authority with the greatest diffidence, but still I think, I ought to record distinctly that my large series of this species does not permit of my concurring in this opinion. Strongly barred, feebly barred, partially barred, tails, as well as unbarred ones, and others with only traces of a bar or two seem to be met with in the most various stages of plumage. If you arrange the birds by the degree to which their tails are barred, you get specimens of the most discordant types of plumage side by side. Nothing can be more irregular than the changes of plumage; they are never synchronous on the upper and lower surfaces. Arrange by the former, and you have all types of the lower grouped together and *vice versâ*.

What Mr. Gurney says may possibly be true of the Palestine and Sarepta breeding birds, but I hardly think it can be accepted as equally applicable to the Indian race.

## 51.—Circus Swainsoni, *Smith.*

"Not uncommon from November to January inclusive, on high and exposed bare grass land.—F. W. B."

A fine young female of this species killed Colathoorpolay Valley, Travancore, at an elevation of about 3,000 feet; on the 28th December measured in the flesh:—

Wing, 14·62; tail, 9·26; tarsus, 2·9; bill from gape, 1·18. The cere was greenish yellow; bill and claws, black; tarsi and feet, orange yellow; irides, bright yellow.

## 55.—Haliastur indus, *Bodd.*

No specimen received.

"The Brahmany Kite is an occasional visitor to the hills during the hot weather. Its usual habitat is the sea coast and the palmyra plantations; a few miles inland.—F. W. B."

## 56.—Milvus govinda, *Sykes.*

No specimen sent. I cannot therefore tell whether the specific name has been correctly assigned.

"The Pariah Kite is a hot weather visitor on the hills; numbers may be seen hovering over the smoke of the grass fires at the foot of the hills, and wherever a piece of felled jungle is fired, the blaze and smoke is sure to attract these birds, who immediately collect and dive repeatedly into the thickest of the smoke, to supper on the remains of some scorched snake or lizard. I do not think that they pass the nights up the hills, for they are not usually visible before eight o'clock in the morning, or after four in the afternoon.—F. W. B."

## 68.—Otus brachyotus, *Gm.*

"A single specimen seen and shot while hawking at midday in bright sunshine, at 4,000 feet elevation, in the end of December.—F. W. B."

This specimen, a female killed at the same time and place as the pale-chested Harrier last mentioned, measured in the flesh:—Length, 15; expanse, 38; wing, 12·37; tail, 6·5; tarsus, 1·87; bill from gape, 1·05.

The bill and claws, black; the irides, yellow.

## 78.—Glaucidium malabaricum, *Blyth.*

"A resident, preferring the lower jungles, though I have occasionally heard one as high as 2,500 feet in heavy jungle. The cry is not to be mistaken, it is extraordinarily loud for the size of the bird. It has a great variety of notes, which

it utters both by night and by day. It appears to feed principally during the hour after sunrise and before sunset.—F. W. B."

I follow Mr. Sharpe's catalogue in classing this bird as a *Glaucidium*, but I am not prepared to say that in all cases the particular small structural differences on which he founds his divisions of genera amongst the owls are those which lead to grouping the various species in the most natural manner. Like Linnœus' botanical classification, it immensely facilitates the identification of any particular specimen, but it seems to me to be in some respects artificial, and I doubt not that he will hereafter modify it considerably. Of its extreme convenience to working field naturalists there can be no two opinions.

The specimens sent, all belong to the typical *malabaricum* type, with the whole head, neck, upper back, and lesser wing coverts, strongly ferruginous. As to the conspicuous difference in appearance between typical *radiatum* and typical *malabaricum* no one can doubt, but it is rather puzzling to find typical *radiatum* in the very same locality as typical *malabaricum*, and to meet with, both in Southern and Northern India, specimens that might be assigned to either species. I have never yet seen a thoroughly typical *malabaricum* from Northern India, but at Anjango on the Travancore coast between Quilon and Trevandrum where considerable collections were made for me, I obtained a typical *radiatum*, several typical *malabaricum*, and a good many more or less intermediate forms. I consider *malabaricum* quite as good a species as a vast number that are now-a-days admitted, but my own fixed impression is that when ornithology is further advanced, a vast number of what are now admitted as species will be degraded to sub-species and indicated by trinomial appellations. I believe that it would be much better to call these present birds *Glaucidium radiatum, malabaricum*, than to designate them as is at present the custom.

Some of the specimens sent measured in the flesh:—Length, 8; expanse, 17·5 to 18; wing, 5; tail, 2·58, 2·62; tarsus, 0·9; bill from gape, 0·7. The irides were light yellow.

## 81.—Ninox scutellata, *Raff.*

"Replaces the preceding species above 2,000 feet elevation, and frequenting heavy jungle and the borders of clearings, where, on bright moonlight nights during the winter months, numbers may be heard calling to one another. The call is a monotonous double hoot (the first syllable prolonged, the second cut short), uttered when the bird is perched on the bough of some bare tree; and I have never heard it cry as described

by Jerdon. The bird is shy, making a sudden dive into the jungle when approached.—F. W. B."

The specimen sent is one of the small dark race which appears to be common to the extreme south of India, Ceylon, and the Straits, and it may be (though I have no specimens to compare) to Sumatra also. This race at any rate answers fairly to Raffles' description, length about 10 inches, and at present I see no objection to retaining it under Raffles' name; but if the Indian *Ninox* are to be divided at all, as Mr. Sharpe divides them into *lugubris and scutellata*, then I altogether demur to retaining under the name of *scutellata* the large dark races of (i) Pegu and Tenasserim, (ii) Cachar, Tipperah, Sylhet, &c., (iii) Nipal and the Eastern Himalayas.

The present specimen is absolutely identical with one of our specimens shot at Pulo Seban, 22 miles E. by N. of Malacca. It is extremely dark, the head darker than the body, but not at all grey, and it has the interspaces of the tail extremely light-coloured, and the tail conspicuously tipped with white. Another specimen shot in the native state of Tampin near Malacca is very similar, only the head a shade less dark. A third specimen shot at Ruroo (near Tampin) is very similar, but has the interspaces of the tail very dark and scarcely any white tipping to it. These are all males, our present being a male also.

*It measured in the flesh* :—Length, 10·6; expanse, 23·75; wing, 7·87; tail, 4·62; tarsus, 0·87.

The corresponding Malaccan specimen measured in the flesh :—Length, 10·1; expanse, 25; wing, 7·6; tail, 4·75; tarsus, 0·9; so that it is really impossible to separate the two.

I have elsewhere descussed our Indian species of *Ninox* and need, therefore, say no more about them at present.

## 83.—Hirundo javanica, *Sparrm.*

"A resident travelling but little, two or three persistently frequenting each sheltered ravine in an open clearing. They seem to spend more of their time on a perch than most Swallows.—F. W. B."

A specimen, a male shot at Mynall, in January, measured :—Length, 4·8; expanse, 10·5; wing, 4·1; tail, 1·94; tarsus, 0·35; bill from gape, 0·5.

## 103.—Collocaliaunicolor, *Jerd.*

"Residents on the hills and very abundant. I only know of one breeding cave, which was discovered by a gentleman when following up the track of a bear. This cave is situated at the base of a grass ridge at an elevation of about 2,300 feet

It is formed by a large mass of rock having slipped and left a crevice between it and the main body, some 80 or 90 feet long, 20 feet high, and an average breadth of 3 feet, being no where more than 6 feet wide. The floor of the cave was thickly strewed with the guano deposited by the birds; this guano consisted for the most part of the undigested and hard portions of beetles, and presented little of the pungent odour which characterises the guano of commerce. On visiting this cave in March, with the gentlemen mentioned in the preface, we found the birds had begun breeding. On the overhanging sides of the cave, at heights varying from 6 to 16 feet from the ground, were some two or three hundred nests. Of these perhaps one-third were empty being either unfinished or abandoned, while the greater number of the nests contained two pointed-oval white eggs: some of the nests contained a single egg, and some a newly hatched nestling.

"The nests themselves, though fastened and lined with a good deal of gelatine, contained a larger proportion of moss and feathers and did not look at all tempting as an article of diet. They varied considerably in shape, the more perfect being a fairly correct circular shallow cup, with one side flattened for adhesion to the wall of rock. Others which held eggs were mere brackets, slightly indented to retain the contents. The egg, judging from 14 specimens collected on this occasion, varies from ·81 to ·91 of an inch in length, and from ·52 to ·58 in breadth: the average being ·85 long and ·55 broad.—F. W. B."

The specimens sent belong to the same species as occurs in the Neilgherries, and after comparing a large series from the Neilgherries with an equally large series from numerous localities in the Himalayas, I have no hesitation in uniting the two, although unquestionably Himalayan birds average lighter coloured.

On the other hand, I must distinctly protest against uniting with this continental Indian species the white, or in less mature examples, whitey brown rumped species of which we procured numerous specimens at the Andamans, and which is exceedingly common on the Tenasserim Coast, and which I have hitherto designated as *spodiopygia*, Peale. I have nearly a hundred of the two species put together before me, and with all deference to eminent ornithologists at home, I must maintain that the two species are as distinct as *Oriolus kundoo*, and *Oriolus chinensis*. It is noteworthy that *unicolor* never makes an edible nest any more than *linchi*, whereas *spodiopyga* always does.

Of two Travancore males measured in the flesh, the following are the dimensions:—

Length, 4·75, 4·9; expanse, 10·3, 10·4; wing, 4·8, 4·75; tail, 2·22, 2·25; tarsus, 0·35; bill from gape, 0·45; breadth at gape, 0·5. Irides, dark brown.

## 105.—Batrachostomus moniliger, *Layard.*

"Of this very peculiar bird, which I believe is not rare, I have at present been able to secure but three specimens, *viz.*, a male and female, and a nearly-fledged nestling. The adult birds were killed in thick brushwood under a dense growth of heavy timber, while the young bird was brought to me with the nest taken in rather open jungle at an elevation of about 2,100 feet.

I believe the bird to be not uncommon, because I attribute to it a loud chuckling cry, with somewhat the tone of a Goat-sucker and not unlike the laugh of some King-fishers, a difficult call to describe, which may generally be heard in heavy jungle at 2,000 feet elevation, any night during the last and first two months of the year. If I am not mistaken, the habits of this bird are very shy and retiring, for it never appears to venture into the open, and only commences calling in the breeding season some considerable time after dark, and living entirely in dense jungle, it is a very difficult bird to secure. Of the nest and nestling, a short account will be found in Mr. Hume's "Nests and Eggs" of Indian Birds.—F. W. B."

Before alluding to the particular specimens sent, I wish at once to point out an error into which the editor of the ornithological part of Blyth's birds of Burma has fallen.

He asserts as a matter of fact that *Batrachostomus castaneus*, Hume, from Darjeeling, *vide* Vol. II. p. 349, is identical with *B. affinis*, Blyth; this however it certainly is not.

This is not a moot point in regard to which opinions might differ, but a simple matter of fact, in regard to which I am sure that the learned editor will agree with me, if he will only take the trouble actually to compare Malaccan and Sikhim specimens. The plumage is no doubt very similar, though the breast in the Sikhim birds is always much brighter than in examples from the Straits, but the great characteristic difference that exists is in the size of the bill. The bill in the Malaccan species is enormously larger than in the Sikhim one. Figured dimensions do not always convey an adequate idea in such matters, but in this case the difference is very considerable.

Thus the width of the gape in the Malaccan species varies from 1·4 to 1·5, in the Sikhim species from 1·05 to 1·1. Again

the length of the bill in *affinis*, measured from gape to point, varies from 1·3 to 1·4; in *B. castaneus*, from 1·06 to 1·12.

Any one who will compare the bills of several specimens from each locality, will, I am certain, admit the distinctness of the two. There are also conspicuous differences in plumage. The whole under-surface in *castaneus* being a much richer and deeper color than in *affinis*, and the white spots of the gorget being in *castaneus* much larger, much purer white, and much more conspicuously bounded below by black; moreover, there are similar white spots on the throat of *castaneus* which are not apparently represented in *affinis*.

In the second place the same editor, above referred to, also asserts that *B. punctatus*, Hume = *B. moniliger* of Layard. This again I must beg to contradict.

Mr. Bourdillon has sent me a very fine pair, the female of which corresponds closely with Mr Blyth's description (J.A. S. B. XVIII., p. 806, and "Stray Feathers," Vol. II., p. 350). And I find that both ♂ and ♀ (the male, however differing greatly in plumage from the female) are clearly distinct from and *very much* larger birds than my *punctatus*.

I pointed out at the time that *punctatus* was much smaller than *moniliger* as described by Blyth, and now I find that Blyth's dimensions agree exactly, except in the matter of the length of the bird (and he took this from the dry skin) with Mr. Bourdillon's measurements recorded in the flesh. I suppose that *punctatus*, though clearly an adult, can scarcely have weighed half as much as *moniliger*. Like *castaneus*, *punctatus* therefore is unmistakably distinct* from the species with which it was so unhesitatingly pronounced to be identical. I do not think that the learned editor in question should have so positively asserted what he had no means of verifying.

These are not the only two errors of this kind into which this same learned editor has fallen in this one catalogue. Mr. Oates has pointed out another of precisely the same character, and I have more yet to notice elsewhere. It does seem a pity that such very erroneous assertions should be put forward so authoritatively without the remotest apparent grounds.

It does not, however, at all necessarily follow that because *castaneus* is distinct from *affinis* that it is therefore a good species. As I said in an article on certain species of this genus, Vol. II., p. 353, I am by no means convinced that *castaneus* is not one sex, and *Otothrix Hodgsoni* the other sex of the same species in which case the bird would stand as *Hodgsoni*.

* Since this was written, Mr. W. F. Blanford has been staying with me. I have submitted to him my whole (very limited) series of Batrachostomi, and he agrees generally with me in all my conclusions. He has promised me to write separately on the subject to the *Ibis*.—Ed., S. F.

It is true, that when I formerly wrote, I thought it (relying upon what Hodgson recorded) probable that *Hodgsoni* was the female and *castaneus* the male, but now the remarkable fact appears that while the female *moniliger* as sexed by Mr. Bourdillon closely agrees with Mr. Blyth's description of that species, the male as also sexed by Mr. Bourdillon approximates in plumage to *Otothrix Hodgsoni*, and bears it appears to me precisely the same relation in point of plumage to *its* female that *Otothrix Hodgsoni* does to *B. castaneus*.

As regards the identity of *Otothrix Hodgsoni* and *Batrachostomus castaneus*, it has further to be remarked that despite what has been said to the contrary (unless I wrongly identify the former), the upper mandible in both closes completely over the lower mandible; moreover the bills of both are precisely similar, and in both very much smaller than either those of *affinis* or *moniliger*, and lastly in both there is, in good specimens, a peculiar development *over* the eye of long bristle-like feathers which I do not find in either of the other species.

Of course, we must defer any positive conclusion until some one will shoot and carefully dissect a few of the Sikhim birds, but at present it appears to me that the balance of evidence is entirely in favor of *B. castaneus* and *O. Hodgsoni*, representing different sexes of the same species. Further it would not surprise me to find that the red and grey birds of the other species of this genus represent the two sexes, instead of being mere stages of plumage common to both sexes.

To return now to *Batrachostomus moniliger* of the female, the following are the dimensions recorded in the flesh:—

Length, 9; expanse, 16; wing, 4·75; tail, 4; tarsus, 0·6; bill from gape to tip, 1·35; width at gape, 1·37.

The original description given by Mr. Blyth, already quoted in this Journal (Vol. II. p. 350), corresponds on the whole so accurately with this bird (the ♀ of the pair according to Mr. Bourdillon,) that I shall not attempt any fresh description, but I would remark that in my specimen it appears to be the nuchal and not the occipital feathers that are tipped white, that the inner webs of the primaries are hair brown, and that every one of the feathers of the interscapulary region has a minute, but bright, black spot at the tip.

The male, however, is a very different looking bird, altogether greyer and less rufous, with the abdomen and the outer webs of most of the scapulars pure white and only pencilled with blackish brown, with an excessively conspicuous and broad white nuchal half collar, and a white band across the base of the throat.

This specimen, like the female, was shot at Mynall in South Travancore at an elevation of about 2,000 feet above the sea level. It measured in the flesh :—

Length, 9; expanse, 15·5; wing, 4·75; tail, 4·5; tarsus, 0·59; bill, width at gape, 1·4; from gape to tip, 1·4.

The bill was pale brownish; feet, ditto; claws, plumbeous; irides, bright yellow.

It is a remarkable fact that while the female has only two-thirds of the tarsus feathered, the male has the entire tarsus feathered.

The entire chin, throat, breast, a pale very slightly rufescent fawn brown, darker towards the sides, most of the feathers, especially along the side and towards the lower part of the breast, excessively finely almost obsoletely vermicilated towards their tips with blackish brown, and a few of those on the lower part of the breast with distinct though minute black spots at the tips; a row of feathers across the base of the throat broadly tipped with white, the white preceded by a faint narrow blackish brown line. Abdomen and sides are excessively pale fawn colour, but the feathers all broadly tipped with white, so that on the upper abdomen and sides, the fawn colour is completely hidden, the white more or less freckled, but very finely, with blackish brown, and in some of the feathers immediately adjoining the breast bounded, by an irregular black line above. A conspicuous fulvous supercilium, all the feathers on the upper edge of which are tipped black; lores, a duller and slightly more rufous tint as are the bases of the strong loreal bristles, the terminal two-thirds of which are blackish.

The whole of the forehead, crown, and occiput, and sides of the head behind the eye, pale buff, much the same color as the supercilium, but so densely freckled over with black or blackish brown as to leave but little of the ground colour visible; besides this all the feathers of the head have minute terminal buff spots preceded and almost surrounded on the upper side by tiny black specks; there is a distinct rufous tinge at the base of the occiput.

The feathers of the nape are broadly banded at the tip with white, preceded and followed by narrow black lines; the interscapulary region is precisely similar to the head, but has the rufous tinge of the base of the occiput, and the black spots want the terminal buff speck; the rump again is similar, but entirely wants both buff and black spots, but a few of the former appear again on the upper tail coverts; the inner webs of the scapulars, and the inner scapulars generally, are similar to the interscapulary region, but the outer webs and a

considerable portion of the outer scapulars are white, finely and sparsely vermicilated with brown; all the scapulars have conspicuous velvet black spots at the tips, and some of the outer ones have a white speck again beyond this.

The primaries are deep hair brown on the inner webs, dull rather pale rufous on the outer webs, with narrow, regular, widely separated, sloping bars of the same colour as the inner web, and with here and there a pale patch on the interspaces.

The secondaries are similar, but have the bars less defined, and the interspaces more freckled.

The extreme tips of both primaries and secondaries are minutely specked with dull pale rufous.

The tertiaries are very similar to the scapulars, but are suffused with a silvery grey tint.

The coverts are rufescent brown, narrowly and irregularly barred with black; many of the secondary and tertiary greater coverts are tipped with white, in some cases preceded, in some almost entirely encircled by a black line. Two or three white spots half encircled by a black line occur on the lesser coverts.

The tail is grey, tinged with slightly rufescent brown on the basal half, every where pencilled finely with blackish brown, but much more densely so in zones, so as to produce the effect of numerous transverse darker bars. The last three of these bars distinctly defined by an irregular wavy velvet black line.

This specimen, I may add, is in the most perfect state of preservation possible.

The nestling, but not of this pair, was obtained with the nest near Mynall on the 24th February. Mr. Bourdillon says :—

"The nest was composed of vegetable down neatly and compactly, interwoven with pieces of dead leaves, fragments of bark, dry wood, and one or two pieces of lichen. In shape it was a circular pad or disc about 2·5 inches broad, and 1·25 in depth, the upper surface being slightly hollowed out. The nest was placed about 16 feet from the ground in the fork of a sapling apparently without any attempt at concealment. At the foot of the tree I found the remains of an egg, these I send with the nest as I at least have no doubt that they originally enclosed the young frog mouth. You will see from these fragments that the egg was pure white, rather round, of thin texture, and with a smooth glossless surface."

Further particulars about the nidification of this species and *Otothrix Hodgsoni*, will be found in the outcoming revised edition of "Nests and Eggs."

The nestling barely fledged is a curious little rufous brown ball, with the characteristic bill of the species and with distinct

traces of black terminal bars to the feathers of the upper back and scapular region. It was so young that its sex was not ascertained by dissection. It is not four inches in length, and probably was not above eight days old.

One word more about my *B. punctatus*. Mr. Vincent Legge suggests that it was probably not shot by Mr. Nevil himself, but procured from a dealer in Kandy along with other specimens which he purchased for me, and that it is therefore possible that after all its parentage may not be Cingalese. So that though certainly not identical with *moniliger*, it may be identical with some other known species. But it is considerably smaller than any other of which I can find a description.

## 108.—Caprimulgus Kelaarti, *Blyth.*

"A winter visitor, occurring rather abundantly from November to March, and preferring open grass land at the edge of forest.—F. W. B."

Six specimens sent, all nearer to the *Kelaarti* than the *indica* type. No doubt, typical examples of these two supposed species appear to be very distinct, but as far as I have been able to investigate the question, every intermediate link between the two typical forms occur, and occur, moreover, almost all over the country; I am quite unable myself to detect any constant difference by which the two species may be separated.

If we accept size as the criterion, then we shall find some of the very smallest birds, not only from Mahabaleshwar and Ahmednuggur, but also from Raipoor, Sankhra, and Etawah. If on the other hand we take the silver grey, and much black-mottled plumage, and the entire absence of rufous as the criterion, we shall find *Kelaarti* not only equal in size to *indicus*, but occurring in Hazara, near Simla, and in the Doab.

In both species the male has a large, almost terminal, white spot on the four exterior laterals on either side, in fact (as there are only ten tail feathers altogether), on all but the two centre ones. A narrow irregular terminal dark band succeeds to the white spot, and Mr. Blyth at one time pointed out as a distinction between *indicus* and *Kelaarti*, that this band was much broader in the latter than in the former; but this distinction again will not hold good, as some of the largest, and some of the most rufous birds will be found, with the terminal bands as broad as any of the smallest, and darkest non-rufous specimens. Besides the white spot on the tail, the male has a white spot on the outer webs of the first three primaries, and on the inner webs of the second to the fourth; the female entirely wants the white tail spots, which are not even represented as in the *albonotatus*

group, by buffy patches, while the white wing spots are represented by imperfect rufous bars, scarcely larger than the rest of the similar bars which mark the primaries.

Of the six birds sent only two are at all typical *Kelaarti*, and even these have more rufous about them than typical *Kelaarti* should have. These measure :—

*Male*—Length, 9·75 ; expanse, 19 ; wing, 6·75 ; tail, 4·5.

*Female*—Length, 10·25 ; expanse, 21 ; wing, 7.25 ; tail, 4·75.

Two are very rufous, quite as much so as the majority of Northern Indian specimens. They measured :—

Length, 10·5, 10·25 ; expanse, 21, 20·75 ; wing, 7·37, 7·62 ; tail, 5·5, 5. The remaining two are intermediate.

I believe myself that *Kelaarti* will have to be suppressed, the most typical specimens are not more distinct than are some of the different Indian races of *Pericrocotus perigrinus*, and these latter races are at any rate confined to particular portions of the country, whereas *Kelaarti* and *indicus* occur everywhere.

## 114 *ter.*—Lyncornis Bourdilloni, *Hume.*

"This species, which Mr. Hume has done me the honour to name after myself, I have only once observed as described in Vol III. p. 302, and I know nothing further of its habits.—F. W. B."

This species was fully described, Vol. III, p. 302, no second specimen has as yet been secured.

## 115.—Haspactes fasciatus. *Gmel.*

"A common bird in heavy jungle above 1,000 feet elevation ; as described by Jerdon, it is of solitary habit, wandering about a good deal ; but it utters its call (something like the mewing of a cat) continuously, though not loud enough to attract much attention.—F. W. B."

## 123.—Coracias indica, *Lin.*

No specimens received.

"The Indian Roller is rather scarce even in the low country. I have seen one or two pairs in the neighbourhood of cultivation at the foot of the hills, where I have also known them to breed. They do not appear to enter the forests or the hills themselves.—F. W. B."

## 126.—Eurystomus orientalis, *Lin.*

"This bird, no where abundant, is, I think, only a visitor, although I have observed it in August, during the winter months, in April and as late as May. During the breeding season they are very noisy and jealous of the approach of even small birds

to the proximity of their nest; and I was once much amused in watching a pair turn out a couple of hill mynahs from a hole in a rotten stump, when the latter had commenced to lay materials for a nest. I secured three hard-set eggs of this species in March at about 1,700 feet elevation, of which a note will be found in Mr. Hume's 'Nests and Eggs.'—F. W. B."

*Eurystomi* from all parts of India, and Burma appears to be undistinguishable.

## 129.—Halcyon smyrnensis, *Lin.*

"Common among the small patches of paddy cultivation and on the banks of the larger streams at the foot of the hills, but never ascending to any height. The female lays from four to six round white eggs, about the beginning of April in a hole in a bank.—F. W. B."

## 135 *bis*.—Alcedo ? asiatica, *Swains.*

"Occurs, though less abundantly, in the same situations as the last species.—F. W. B."

A most lovely little King-fisher sent me by Mr. Bourdillon may for the present bear this title; but if other specimens are procured, exhibiting the same characteristic differences as the example before me, the Southern Indian birds will have to be separated as a distinct species.

The bird before me is larger than any specimen of *asiatica* or *Beavani* that I have seen, and with a considerably longer bill than any specimen recorded by Mr. Sharpe in his splendid monograph. The bill measures 2·05 at front, and the wing is just 2·8.

The colour of the upper surface is as bright as the brightest Malayan specimen. The lower surface is more intensely coloured than any specimen of *asiatica* or *Beavani* that I have seen. The whole sides of the breast are a deep violet-blue, and several rows of the feathers of the breast are narrowly tipped with the same colour.

It must be understood clearly that this is not *Beavani*, but a form lying on the other side of *asiatica*.

As to *Beavani*, a few remarks may be useful. I have now before me eleven males and five females of this species from the Andamans, and I find that the females only differ constantly from the males in having the whole lower mandible, and sometimes the whole of both mandibles, deep dull red. None of the females have the characteristic red ear coverts and cheeks of female *asiatica*. They mostly have the ear coverts almost uniform with the cheeks, but with fewer bright blue spots, but one specimen has on one side of the head a slight rufous

tinge at the base of the ear coverts. These specimens vary a great deal in the colour of the upper parts, but as Lord Walden correctly remarked, not one of these approaches the intensely deep blue of the *finer* Malayan specimens of *asiatica*.

When we take Tenasserim specimens from Amherst, we find that some of these are identical in colour with the deepest coloured Andaman birds, but one of them is nearly as deeply coloured as Malaccan specimens; here the strange thing is that the female has the cheeks and ear coverts red, but divided by a conspicuous blue band. This too is the case with a female from the Rajmahal hills, and this too was probably the case with Captain Beavan's specimen from Maunbhoom, at any rate it had red upon the cheeks. It would thus seem that while the typical *Beavani* of the Andamans is characterized by the absence of rufous on the cheeks and ear coverts in the female, and a somewhat paler and greener tint on the upper surface, the birds of continental India and Northern Tenasserim so far as I yet know them (unfortunately I have no *females* from Sikhim and other localities) are characterized by more or less rufous cheeks and ear coverts divided by a blue band, and some of those from Northern Tenasserim and Sikhim by a tint on the upper surface more approaching that of typical *asiatica*.

On the other hand, this Southern Indian bird (unfortunately I have only a male) is characterized by intense brilliancy of plumage, by its large size and by a bill conspicuously exceeding in length, every specimen I possess of *Beavani*, *asiatica* and the intermediate continental race.

## 140.—Dichoceros cavatus, *Shaw*.

"No where numerous, except perhaps in some of the wilder jungles on the lower slopes of the hills, though one pair might be found in each valley or glen of any size throughout the whole range. I have never seen more than three together. The hideous and harsh cry of this bird first of all perhaps attracts the attention of a new arrival on the hills, while its larger size, conspicuous colouring and extraordinary bill render it no less remarkable to the eye. I believe that the same pair of birds, if unmolested, will continue to build year after year in the same tree, but I am inclined to place little credit in the story of the male plastering up the female during the period of incubation, although it is quite likely he may feed her during the whole of that time. A note of a nest and egg secured in February will appear in Mr. Hume's 'Nests and Eggs,' &c.—F. W. B."

A splendid pair of this species carefully measured in the flesh and sexed have been received. The male differs as is

well known by its slightly larger size, decidedly larger bill and casque, and by having the posterior end of the casque black and the triangular patch on either side of the anterior portion of the casque, and the truncated groove and flat portion of the culmen in front of the casque also black. The irides, as in Burmese specimens, of the males were red, of the females pearly white. The dimensions of these two birds were as follows:—

*Male*—Length, 49·62; expanse, 67·5; wing, 20·5; tail, 18; tarsi, 2·4; bill over all from posterior margin of casque along culmen to point, 16; casque only, 6·5; greatest width of casque, 2·5; height of casque, 1·7.

*Female*—Length, 48; expanse, 62; wing, 20; tail, 17·25, tarsus, 2·37; bill over all from posterior margin of casque along culmen to point, 14·75; casque only, 6; greatest width of casque, 2·7; height of casque, 1·4.

It is not clear how the application of the Linnæan name *bicornis* to this species can be justified. I cannot verify all Linnæus' references, but his description, which ought I conceive to fix his name, accurately applies to *convexus* of Temminck, *Pl. Col.* 530, and can by no possibility apply to the present species.

Linnæus refers to Edwards' birds, pl. 281, fig. D. That again is a coarse but correct representation of the head of *convexus*, Tem. He also refers to Brisson's *Hydrocorax philippensis*; that is a compound description. The entire description of the plumage, with the exception of the tail (where Brisson has got into an inextricable muddle giving the bird 12 tail feathers, ten black and two white which no horn bill in the world has,) also refers *convexus*. As regards the beak and casque it is probable that he did describe this present species. Some others of Linnæus' references may refer to this species also; I am unable to refer to Amœn. Acad. Pet. Gaz.; Will. Orn., so cannot pronounce positively on this point, but Linnæus' own description which must, it seems to me, constitute the criterion of the species he intended to refer to, clearly and unmistakably refers to *convexus*, although in the diagnosis he talks of the casque, as *antrosum bicorni*; and it appears to me that the name of *bicornis* must henceforth be applied to *convexus* of Temminck and Shaw's name, which dates from 1811, be applied to the present species.

Mr. Gray makes two species out of these birds, the one to which he assigns the Linnæan name *bicornis*, he gives from Malacca, Sumatra, and Tenasserim. The other *homrai* of Hodgson, he gives from Nipal and Assam.

I have seen no specimens from Malacca or Sumatra, but after a careful comparison of 12 specimens from various parts of

Tenasserim with 22 others from the Assamboo Hills in the extreme south of India, the Dhoon, Sikhim, and Cachar, I cannot see my way to making more than one species out of the birds that occur within the limits of our Indian Empire.

There is no doubt that the Sikhim birds are, some of them at any rate, larger than those from Tenasserim and even Southern India, but in a large series, such as I have now before me, every gradation of size is to be met with; and so far as plumage and colouration of bill and casque are concerned, there is absolutely not the smallest constant difference between specimens obtained in different parts of the country.

As regards the shape of the casque there is undoubtedly the most conspicuous difference between different specimens. Holding the point of the bill towards one, and looking at the anterior margin of the casque, this margin in some specimens assumes the shape of a semi-circular curve, at times of a curve even deeper than a semi-circle, while again in other specimens it is a curve so flat as scarcely to deserve the name of a curve. In one specimen, for instance, from Darjeeling, the two anterior points of the casque are 3·5 inches apart; but the lowest point of the casque between these two points is only 0·35 below them. In another specimen, and this is from Kollidoo, the points of the casque are only 2·1 apart, and the lowest point of the casque between these points is 1·25 below them.

I believe that the former represents what Mr. Gray considered to be *homrai* of Hodgson, the latter what he considered to be *bicornis*. It was looking to these differences at a time when I had no opportunity of comparing a large series that I, in the first list of the birds of the Tenasserim Provinces (*ante* Vol. II, p. 470), separated the specimens obtained by us in Tenasserim into these two species; but I am convinced, now, that this distinction will not hold, as specimens from all localities equally present these differences, and this in what are obviously old adults.

Even from the same localities the size of the bill and casque varies greatly amongst apparently perfect adults; but unquestionably, as a whole, the Sikhim birds have them larger than any obtained elsewhere.

In one Sikhim bird, the bill and casque together measured from the posterior margin of the casque along the middle of the casque and culmen to point, measures 17·5 inches, and the greatest height of bill taking the two mandibles and the casque together is 5 inches; another Sikhim bird is 17·75 and 5 inches, and there are several Sikhim specimens over 17 and 4·75 inches. On the other hand, the largest South Tenasserim specimen measured in this same way is only 16 and 4·5. The rest average

smaller, and one very beautiful and apparently old adult is only 14 and 3·8. Specimens from Northern Tenasserim and Southern Travancore and the Dhoon seem intermediate in size. Under no circumstances, however, can a small difference like this by itself justify a specific separation and there are a good many Sikhim birds which are not larger than the largest of the South Tenasserim birds.

### 145.—Toccus griseus, *Latham.*

"Common in heavy jungle from 1,000 to 3,000 feet elevation. It has a very ludicrous call reminding one of a Punch and Judy show. It is shy and, unlike that of the last species, its flight is rapid and easy. The specimen sent had bright red irides and was a male. A full grown specimen in the Trevandrum gardens, and perhaps a female, has dirty white or pale grey irides.—F. W. B."

A male of this species, procured at an elevation of about 1,600 feet, measured:—

Length, 22; expanse, 26·5; wing, 8·25; tail, 9·5; tarsus, 1·6; bill at front along curve of culmen, 4·1.

The bill was horny yellow, overspread with a brownish red tinge, except towards the tips; the margin along the commissure, black; the tips, paler; the orbital skin, black; irides, red; tarsi and feet, greenish.

Dr. Jerdon's description does not correspond over well with this specimen.

The forehead is greyish white; a broad superciliary stripe from the nostrils over the eyes extending some distance back, a slightly brownish white; the feathers of the crown and occiput slaty grey; the latter conspicuously elongated and with greyish white shaft stripes; faint greyish white tippings to most of the feathers of the crown; the ear coverts dark brown paler shafted; feathers of the chin, whitish; entire throat and sides of the neck, grey; the feathers pale, almost white shafted. The whole of the plumage of these parts is dull, as is also that of the lower parts, but all the rest of the upper parts is well glossed. The entire back, rump, upper tail coverts, scapulars, and wing coverts, dark greyish dusky, with a faint greenish reflection on it, the coverts have mostly the faintest possible pale edges, and the shafts of many of the feathers have in certain lights a scarcely perceptible line on either side of them. The quills and tail feathers are black, with a greenish lustre on them, very conspicuous on the secondaries and tail feathers, except the central pair. The third to the eighth primary inclusive broadly tipped with pure white on both webs, the ninth similarly tipped but on the inner web only.

All the tail feathers but the central pair broadly tipped with white; breast, flanks, sides, and upper abdomen, dull blue grey; lower abdomen, greyish white to white; vent and lower tail coverts white, tinged with fulvous or dingy pale rufescent.

I may add that females procured in the Wynaad and on the Cardamon Hills only differ in being rather paler and duller above and below, in exhibiting less of the green gloss, and in having only three pairs of the tail feathers tipped with white. I have not specimens enough to enable me to determine whether this difference (three pairs white tipped in the one case, four pairs in the other) is individual or depends, as from my few specimens it would seem to do, upon sex.

I may notice that the young bird has the irides dirty yellow, that the bill is smaller, is entirely pale yellow, and not overspread with the reddish brown tint of the adult, has a black patch at the base of the lower mandible, and another on the basal portion of the culmen.

## 151.—Palæornis columboides, *Jerd.*

"Very common; not ascending to the tops of the hills, and being replaced at their base by the red-headed Parroquet. It occurs on the margin of heavy jungle, but is found most abundantly in the secondary growth on land which has once been occupied by the hill men. This species commences laying in the first week of January, and fresh eggs may be obtained early in February. The eggs are generally deposited without any attempt at a nest, beyond, perhaps, a few dried leaves in a natural cavity of a tree. The eggs, which are smooth, white, glossy, and of delicate texture, are from two to four in number.—F. W. B."

Two males and two females, one of the latter a young bird, all sexed by Mr. Bourdillon himself, fully bear out my remarks in regard to this species, Vol. II, p. 226.

A male measured in the flesh:—Length, 14; expanse, 14·5; wing, 5·5; tail, 8·75; tarsus, 0·5; bill from gape to point, 0·8; a finer male was nearly 15 inches in length and had a tail, 9·5 long.

A female measured:—Length, 12·25; expanse, 16·25; wing, 5·37; tail, 6·75. The bill was black; irides, yellow; and feet, grey.

## 153.—Loriculus vernalis, *Sparrm.*

"Fully as common as the last, at the same elevations, but less conspicuous on account of its smaller size. I took three very hard set eggs of this species from a hollow stump,

in the middle of March; the eggs were smooth, white, and glossy, averaging ·43 × ·33 inches.—F. W. B."

A lovely adult male, the crown, the most brilliant green, without a trace of the blue on the crown which, according to Dr. Finsch, characterizes the adult.

This specimen measured in the flesh:—Length, 5·62; expanse, 10·25; wing, 3·75; tail, 1·87.

## 164 *bis.*—Yungipicus gymnopthalmos, *Blyth.*

"Lives in the tops of high trees, and is as difficult to observe as to shoot.—F. W. B."

A female measured:—Length, 4·87; expanse, 9; wing, 2·87; tail, 1·25;

The bill and legs, plumbeous; the irides, yellow ochre; the bare orbital skin (and I do not remember to have seen this previously noticed), dull lake red.

## 165.—Hemicercus cordatus, *Jerd.*

"Like the last, frequents the tops of tall trees, singly or in pairs, but it has a peculiar loud call which attracts attention. Early in February, I observed a pair of these birds, working at a nest, but unfortunately they were frightened and left before laying any eggs.—F. W. B."

A pair of this species procured at Mynall have been sent by Mr. Bourdillon, unfortunately he did not himself sex them, but put them down as male and female according to what he found in Jerdon, so that these birds afford no additional evidence as to whether in opposition to what Jerdon says, and in accordance with what is the case with *canente*, it is the male that has the white-speckled head. I myself have now no doubt upon this point, the bird with a speckled-head is considerably the larger of the two, and has a markedly larger bill. The following are the dimensions of the two birds:—

1*st.*—Black forehead, speckled with white. Male (*as I believe*):—Length, 6; expanse, 12; wing, 3·72; tail, 1·25; bill at front, 0·88.

2*nd.*—Forehead and crown, fulvous. Female (*as I believe*):—Length, 5·75; expanse, 10·75; wing, 3·6; tail, 1·36; bill at front, 6·70.

## 166 *bis.*—Chrysocolaptes Delesserti, *Malh.*

"Inhabits the lower ranges of forest.—F. W. B."

A single female, clearly belonging to this species or subspecies. It measured in the flesh:—Length, 11·5; expanse, 18·75; wing, 5·75; tail, 4; bill at front, 1·7. The irides were yellow.

## 169.—Thriponax Hodgsoni, *Jerdon.*

"In the neighbourhood of large undisturbed tracts of forest, this bird is fairly common and not very shy, but it soon leaves districts, when the forest is being cleared to any extent.

"I have seen this bird from 600 to 3,000 feet elevation. It has a loud and rather pleasant cry, which it utters at intervals when climbing up the stem of some large tree, and when passing from one tree to another it emits a loud chuckle. It rarely takes a long flight, and a pair may be heard a great distance off calling to each other, as they pass from tree to tree.—F. W. B."

A male measured:—Length, 18; expanse, 24·5; wing, 8·6; tail, 7·5; tarsus, 1·35; bill at front, 2·55.

A female measured:—Length, 17·12; expanse, 24; wing, 8·1; tail, 7·25; tarsus, 1·29; bill at front, 2·5.

## 75.—Chrysophlegma chlorophanes, *Vieill.*

"Almost as abundant as the next species, but less noisy, except during the breeding season. In February and March, the plaintive monotonous call of these birds (which somewhat resembles the breeding call of the common Pariah Kite), may be heard at all hours of the day, as they cling motionless to the topmost bough of some tall forest tree. I have rarely heard them utter any sound during flight.—F. W. B."

## 185.—Chrysonotus rubropygialis, *Malh.*

"One of the commonest birds among the hill forests, not occurring in the low country. I obtained two eggs of this species taken in March.—F. W. B."

I have already remarked, Vol. III, p. 328, that in my opinion this species could not be separated from *C. intermedius*, Blyth. I have now compared six Travancore specimens of the present species, with a large series of *intermedius* from various parts of the Tenasserim Provinces; in my opinion, there is absolutely no constant difference in the plumage of the two, although possibly the heads of the males in the Southern birds are of a slightly deeper and duller red. As regards the size again, some birds of both races are precisely identical in dimensions, alike of bills and wings, but this much may be conceded, that taking a series of both, the Southern birds would average somewhat smaller. This at any rate is true in my series, but it is not at all improbable that if I had as large a series of the Travancore birds, as of the others, I might meet with equally large specimens of the former.

In the three Travancore males, the wings are, 5·3, 5·4, 5·55; amongst the Burman birds, though there are many wings as

small as these, the majority certainly exceed 5·6; and in one or two cases extend to 5·8 and 5·9.

The three females from Travancore have the wings, 5·2, 5·35, 5·45. Amongst the Burman females there are plenty of wings from 5·18 to 5·45; but more than half the birds have the wings, 5·5 and upwards.

I cannot think that a difference of this nature is sufficient to justify the retention of both species.

## 194.—Megalaima viridis, *Gmel.*

"Another very common bird—its loud and rather peculiar call may be heard at all hours of the day, and sometimes at night during fine weather. They build in very rotten old tree stumps, cutting a hole for the purpose and leaving a number of chips of the rotten wood to serve as a nest, laying in March. I have never seen the eggs, but obtained two unfledged young early in April.—F. W. B."

Some years ago, Captain Hayes Lloyd described a Green Barbet of Western India, as distinct from *M. viridis* under the name of *M. Sykesi (vide ante*, Vol. I, p. 419.)

The points upon which he appears to have relied were that it was larger, and that the brown of the head and nape was paler and with a coppery gloss. He obtained the species, he said, on the summit of Matheran and other detached hills in the Concan.

Now I have before me a series from Matheran, three specimens from Mahabaleshwar a huge series from various parts of the Neilgherries, from the base to the summit, a specimen from the Cardamon Hills, another from Mangalore, a series from Aujango, and a couple of specimens from the Assamboo Hills in South Travancore.

I am bound to affirm that so far as plumage goes, every Matheran bird can be matched exactly in the other series; from all localities some have their heads paler, some darker, and the paler ones often have what may be called, by courtesy, a sort of coppery gloss.

I think the Matheran birds do *average* slightly larger than the rest, but there is certainly not enough difference in size to justify specific separation, and the largest bird of all that I have is one from Ooty. I have very carefully measured the wings of a number of birds with the following results:—

Matheran, 4·18, 4·2, 4·2, 4·21.

Mahabaleshwar, 3·75, 3·75, 4·2.

Neilgherries, 4·1, 4·05 4·4, 4·07, 3·9, 3·95, 3·92, 4·17, 4, 4·1, 4·05, 4·05.

Cardamon Hills, 3·8.
Mangalore, 3·85.
Anjango, 3·75, 3·7, 3·7, 4, 3·8.
Assamboo Hills, 3·8, 3·9.

Captain Lloyd gives the wing of his type specimen as 4·3. I have no Matheran bird in which the wing exceeds 4·2; but I have an Ooty bird with a wing 4·4.

I think *Megalaima Sykesi* may be suppressed.

## 198.—Xantholaima malabarica, *Blyth.*

"This species is very common throughout the low country, and during the hot weather ascends the lower slopes of the hills. Its call, as Jerdon mentions, is similar to that of the crimson-breasted Barbet (*X. hæmacephala*), but the two are easy to be distinguished from each other. My brother obtained two fresh eggs of this species early in March at an elevation of about 500 feet above sea level. The eggs were white, smooth, and glossless, measuring 0·64 by 0·62; and 1 by 0·66. They were placed without any attempt at a nest in a hole cut by the birds in a dead branch about 20 feet from the ground.—F. W. B."

## 205.—Heirococcyx varius, *Vahl.*

"Abundant in the semi-cultivated land of the plains and occasionally penetrating the jungles at the foot of the hills to 1,000 feet elevation. Never ascends the hill slopes to any height, though common in the low country.—F. W. B."

*A female measured:*—Length, 13·25; expanse, 22·25; wing, 7·6; tail, 6·75; tarsus, 1·0; bill from gape, straight to point, 1·25.

## 233.—Leptocoma minima, *Sykes.*

"This beautiful little bird is common on the edges of forest and is slightly gregarious in habit, three or four hunting about together amongst the boughs of some Gamboge tree, which is a tree they seem particularly to like. They are not at all shy, and when sitting quiet in thick brushwood, I have seen them perch inquisitively within a few feet of my face. I have not obtained the eggs of this species, but Mr. Ferguson observed a pair commence a hanging nest at the extreme end of a Gamboge bough at some height from the ground. Unfortunately the birds left the nest unfinished.—F. W. B."

*Two males measured in the flesh:*—Length, 3·5, 3·7; expanse, 5·37, 5·62; wing, 1·81, 1·8; tail, 1·0, 1·1; tarsus, 0·48, 0·5.

## 234.—Arachnechthra asiatica, *Lath.*

"This species occurs abundantly in the open jungle near the foot of the hills, it is very active and keeps up an incessant chirping throughout the hottest part of the day, when nearly all other birds, except the crimson-throated barbet, are silent.—F. W. B."

## 235.—Dendrophila frontalis, *Horsf.*

No specimen received.

"This beautiful little Nuthatch is another common species on the hills, principally frequenting the margins of clearings in the forest, when small parties of five or six individuals may be observed creeping about the stems and boughs of dead trees in search of their insect food.—F. W. B."

## 261 *bis.*—Lanius lucionensis? *Lin.* (S. F. Vol. II. p. 199.)

"A single specimen obtained in a felled, but unburnt, clearing of forest early in February at an elevation of about 2,000 feet. —F. W. B."

A specimen of a Shrike nearly adult, belongs either to this species, or, as I suggested, in the case of a very similar specimen from Ceylon (Vol. I., p. 434), to some not yet discriminated species. I have a very large series of *lucioniensis*, from the Andamans, and also specimens from China, but this bird does not *altogether* agree with any. The wing, tail, bill, all are those of *lucionensis*, but the forehead, crown, and occiput are the same pale grey, brown as the back. There is a broad white or whitish supercilium running from the lores, over the black ear coverts, but there is no paling towards the front over the head which seems to be present more or less in all specimens of *lucionensis*. I need scarcely add that it is certainly not *cristatus*, as the whole head, nape, back, and scapulars, are a perfectly uniform dull pale earth brown, without the faintest tinge of rufous and paler a good deal than in any of the young *lucionensis* I have.

## 264.—Tephrodornis sylvicola, *Jerd.*

"Not uncommon in the margins and glades of forest, appearing to prefer the neighbourhood of cultivation, and gregarious in parties of five or six individuals; wandering about a good deal from tree to tree.—F. W. B."

## 267.—Hemipus picatus, *Sykes.*

"Not very abundant; frequents the tops of trees at the higher elevations.—F. W. B."

*A male with the black back measured:*—Length, 5·12; expanse, 7; wing, 2·3; tail, 2·12; tarsus, 0·56; bill from gape, 0·65.

## 272.—Pericrocotus flammeus, *Forst.*

"A common species of gregarious habits, generally (as Jerdon says) frequenting the tops of tall trees. The males have a rather pleasing, but feeble warbling song, which they utter on the wing, while taking a short flight from the top of a tree, and usually returning to the same perch.—F. W. B."

In a recent article on the *Pericrocoti* by Mr. Sharpe (Vol. III., p. 207), he takes exception to my statement that in *flammeus* the red of the wing patch only extends on to the 5th primary, and he remarks:—"I find in one specimen that the red colour extends on to the 5th primary as noted by Mr. Hume, but in another it only goes to the 4th, so that character is not constant."

In the first place I do not understand here what is meant by the expression "*only* to the 4th," because this would look as if Mr. Sharpe was counting from the front of the wing, and that by the red extending to the 4th there was less red on the wing than when it extended to the 5th; I can only suppose that "only" here is a slip of the pen for "also."

Accepting this view, I must submit to Mr. Sharpe that in my opinion either the bird he examined was not *flammeus*, or that the wing examined was imperfect. In a very large series I cannot find a single male in which any appreciable amount of red occurs on the outer webs of any of the first four primaries, and this, I must consider, to be a constant character. In about one specimen in ten, a hair line of red occurs on the exterior margin of the fourth; but I am unable to find a single specimen in which the wing is perfect, exhibiting any appreciable amount of this colour on the outer web of the fourth primary.

These Travancore specimens all agree precisely with the Neilgherry birds in this particular.

*A male measured:*—Length, 7·5; expanse, 10·25; wing, 3·68; tail, 3·75; tarsus, 0·68; bill from gape, 0·72.

*Female:*—Length, 7·37; expanse, 9·5; wing, 3·6; tail, 3·5; tarsus, 0·65; bill from gape, 0·75.

## 280.—Dicrurus longicaudatus, *Hay.*

"Common, especially near cultivation; less abundant in deep forest and at the summit of the hills.—F. W. B."

These specimens are typical *longicaudatus.*

*A female measured:*—Length, 11; expanse, 15·87; wing, 5·4; tail, 6. Another female was only 10 inches long, and had the wing only 5. A third was 11·25 long, and had the wing 5·55.

## 282.—Chaptia ænea, *Vieill.*

"Common like the last.—F. W. B."

Wing, 4·7.

## 285.—Dissemurus malabaricus, *Scop.*

"One of the commonest birds, both in the jungles at the foot of the hills and up to 3,000 feet elevation. It has a great variety of notes, some of them being beautifully clear and melodious, and much imitative power. I have often been amused to hear it imitate the cry of the Harrier Eagle, and see it make a sudden charge down on some smaller bird, either in sheer mischief, or to secure some insect which the latter has captured. I have also heard one imitate exactly the evening note of the Ground Thrush (*Brachyurus coronata*). During the breeding season they are very bold, and a pair think nothing of attacking and driving off from the neighbourhood of their nest either the Harrier or Black Kite Eagle. I once had an adult bird brought to me, which had been caught with limed twigs. Within a few hours of capture it would take cockroaches and other insect food from the hand, and soon got very tame; but, unfortunately during an absence from home, my servant determined that it *ought* to eat rice and gave it nothing else, so the poor bird died of sheer starvation.—F. W. B."

I have already referred to this genus, Vol. II., p. 212, and I can only add that I have hitherto failed to discover any constant difference whether in size, size of crest, size or shape of bill, general tone of colour, or any other point between Southern Indian specimens and those from Rangoon and its neighbourhood, which I understand to be the true *paradiseus*, and I think that *malabaricus* will have to be merged as a synonym of *paradiseus*. The following are the dimensions of a male from Travancore :—

Length, 24·5; expanse, 18·5; wing, 6·38; tail to end of long tail feathers, 18·37; bill from gape, 1·3; tarsus, 1·1;

## 288.—Tchitrea paradisi, *Lin.*

"Very common in the low country jungles, only ascending the hills during the hot weather of February and March.—F. W. B."

## 290.—Myiagra azurea, *Bodd.*

"Not uncommon; frequenting the tops of trees in small parties, often in company with the "Pied Shrike" (*Hemipus picatus*).—F. W. B."

*Two males measured in the flesh:*—Length, 5·5, 6·5; expanse, 7·24, 8·12; wing, 2·6, 2·87; tail, 2·62, 3.

### 297.—Alseonax latirostris, *Raffl.*

"Common during the winter months; of rather solitary habit.—F. W. B."

*A male measured in the flesh:*—Length, 5; expanse, 8; wing, 2·7; tail, 1·87.

*A female measured:*—Length, 4·75; expanse, 8·12; wing, 2·8; tail, 1·91.

### 300.—Ochromela nigrorufa, *Jerd.*

No specimen received.

"Rather scarce, of solitary and silent habits, and frequents dense irul and other thickets from 2,500 feet elevation upwards.—F. W. B."

### 301.—Eumyias melanops, *Vigors.*

"Common though not abundant up to 2,000 feet elevation, and prefers clearings in the forest wherever there are heaps of unburnt brushwood lying about. Is a winter visitor from December to March.—F. W. B."

### 302.—Eumyias albicaudata, *Jerd.*

No specimen received.

"Is more frequently observed in forest with thick underwood, and prefers a rather higher elevation, than the last species (*E. melanops*).—F. W. B."

### 307.—Cyornis ruficauda, *Swains.*

This species has a very wide distribution, we have it from Murree, Cashmere, Simla, Mussouri, and near Gangaotree, Raipoor, Ahmednuggur, Ootakamund, and Southern Travancore, but it does not occur in Sikhim or eastwards, I believe.

### 307 *bis.*—Cyornis Mandelli, *Hume* (*S. F. Vol. II. p. 510.*)

I described this species fully from a Sikhim specimen, Vol. II, p. 510; since I described it, Mr. Mandelli has obtained three more specimens, and now we have two more from Mr. Bourdillon from Travancore obtained at an elevation of about 2,000 feet, one of which is by dissection a male, and, except that the bill is slightly larger, corresponds exactly with the bird described by me. In that description one misprint occurred, the tarsus is given as 0·6 instead of 0·5. 0·51 would be most correct.

It is possible that this male may be a young one, and that the adult male may also be blue, but it seems more likely that it belongs to the *ruficauda* group, which equally occurs in the Himalayas and Travancore, besides other suitable intervening localities. I originally doubted whether these birds might not be females of *C. pallipes*, Jerdon, but dismissed that idea as the present species had then only occurred in Sikhim, while *pallipes* was entirely a southern bird. When now more specimens occurred from Southern India, I again reverted to this idea. I find, however, after careful comparison that this idea is quite untenable; the birds are absolutely distinct; the shape of the bills are different, being longer and narrower in *pallipes*; the shape of the wings also is different; in *pallipes*, the 4th and 5th quills are equal and longest, the 6th sub-equal. In the present species the 3rd and 4th are sub-equal and longest, the 5th slightly shorter. The tarsi again are scarcely over 0·5 in the present species, while they are slightly over 0·7 in *pallipes*, and the feet of the one are nearly double the size of the other.

And here I ought to notice that Dr. Jerdon's description of *pallipes* is very brief and not altogether satisfactory. I have three specimens obtained at the very same locality where Jerdon obtained his type, and therefore though in slight particulars my description and dimensions may not accord with his, mine may, I believe, be relied on as correct.

## Cyornis pallipes, *Male.*

Length, 6·37, 6·5; expanse, 9·8, 10; wing, 2·95, 3; tail, 2, 2·5 nearly; bill at front measured from the edge of the feathers, 0·48, 0·53; but measured from the junction of bill to the skull, 0·68, 0·7; tarsus, 0·71, 0·73; wing when closed falls 1·25 short of end of tail; the fourth and 5th quills are equal and longest; 6th slightly shorter; 3rd 0·1 shorter than 4th; 2nd 0·47 shorter than 4th; 1st 1·35 shorter than 4th.

The bill is black; the irides, brown; the feet seem to vary in colour, not one was pale whitish flesh colour as described by Jerdon. In one the feet were pale whity brown, in another they were bluish white, in a third very pale leaden grey.

The lores and an excessively narrow line across the forehead at the base of the bill, black; above this the forehead and two long superciliary stripes, are of a perceptibly paler and brighter blue than the rest of the plumage. The belly, abdomen, vent, and lower tail coverts, and greater portion of wing lining, pure white; sides and flanks, greyish; chin, blackish; inner webs of the quills, greater coverts, and tail feathers, hair brown; the rest of the plumage dull blue, indigo in some

specimens, somewhat lighter in other specimens, but in all specimens darker than in *unicolour*.

To return to *Cyornis Mandelli*, Mr. Bourdillon records the following dimensions in the flesh:—

Length, 5·25; expanse, 7·5, 8; wing, 2·87, 2·75; tail, ♀ 2; ♂ 2·37; bill at front, from feathers, male 0·5; female, 0·43; from junction with skull, ♂ 0·65; ♀ 0·6 barely; tarsus, 0·51.

The bill above, blackish; tip and beneath, yellowish horny; legs, feet, and claws, white; irides, dark brown.

## 342.—Myiophoneus Horsfieldi, *Vigors.*

"Very common from the base to near the summit of the hills, frequenting alike jungle and open clearings, though generally found in the neighbourhood of some running stream; I have known this species to build on ledges of rock and in a hollow tree overhanging a stream, in either case constructing a rather loosely put-together nest of roots and coarse fibre, with a little green moss intermixed. The female lays two to four eggs in April, and both birds assist in the incubation.—F. W. B."

*A female measured:*—Length, 10·62; expanse, 16·5; wing, 5·6; tail, 3·75; tarsus, 1·65; bill from gape, 1·5.

## 345.—Brachyurus coronatus, *Müll.*

"A migratory species, arriving in considerable numbers about the beginning of October and remaining till late in May. In the early morning and after sunset they are rather noisy birds, whistling in answer to each other among the brushwood.—F. W. B."

## 355.—Cyanocincla cyana, *Lin.*

"Another migratory species, visiting the hills during the same period as the last, but in smaller numbers. It is of solitary habits, living entirely in open country, never in the forest.—F. W. B."

## 353.—Orocætes cinclorhynchus, *Vig.*

"A winter visitor from October to April, preferring the neighbourhood of cultivation from 500 to 2,500 feet elevation.—F. W. B."

## 354.—Geocichla cyanotis, *Jerd. & Selb.*

"Like the foregoing, a winter visitor, but of rather more crepuscular habit than the last, spending the day in shady thickets.—F. W. B."

*A female measured:*—Length, 7·5; expanse, 12·25; wing, 4·2; tail, 2·75; tarsus, 1·25; bill from gape, 1·0.

## 372.—Oreocincla neilgheriensis, *Blyth.*

"Rather scarce and solitary, found in thick jungle from the summit of the hills down to 2,000 feet elevation.—F. W. B."

Of two males, the following dimensions are given:—

Length, 9·75, 9·25; expanse, 15, 13·25; wing, 5; tail, 3, 3·25; bill from gape, 1·4, 1·3; tarsus, 1·12, 1·0.

## 389.—Alcippe poiocephala, *Jerd.*

Identical with specimens from the Neilgherries and Pulneys.

## 390 *bis A.*—Alcippe Bourdilloni, *Hume.*

This bird will be found fully described further on in this number, and I have nothing to add to what I have there said.

## 398.—Dumetia albogularis, *Blyth.*

"Common from 1,000 to 3,000 feet elevation. Its habits are very well described by Jerdon.—F. W. B."

*A specimen measured in the flesh*:—Length, 5·62; expanse, 6·25; wing, 2·125; tail, 2·25; tarsus, 0·73; bill from gape, 0·57.

## 399.—Pellorneum ruficeps, *Swains.*

No specimen received.

"This bird appears to be scarce. I have only obtained a single specimen in thick underwood at an elevation of 2,500 feet.—F. W. B."

## 404.—Pomatorhinus Horsfieldi, *Sykes.*

"A common bird in thick underwood at all elevations, but it especially frequents the reed like *irul* jungle. It builds a large wove nest of grass and ratan leaves (*Calamus rotang?*), placed beneath some overhanging bank or tuft of grass, or occasionally in some thick bush.—F. W. B."

## 409.—Garrulax Delesserti, *Jerd.*

"Has the same distribution throughout the hills as the last, but its habits are much more gregarious; a flock sometimes numbering as many as twenty individuals, which feed a good deal on the ground, and when disturbed utter loud shrill chattering notes of alarm.—F. W. B."

*A specimen measured in the flesh*:—Length, 9; expanse, 12·5; wing, 4·3; tail, 4; tarsus, 1·45; bill at front from margin of feathers, 1·0.

A nestling, a few days old, is brown above, slightly olivaceous on the wing, white below, and brownish white on the sides of the neck.

## 445.—Hypsipetes ganeesa, *Sykes.*

"Very abundant at the higher elevations, and found also, though in small numbers at the foot of the hills. They are gregarious and very noisy birds, apparently preferring the tops of high trees, though they feed also on berries, &c., found in the secondary jungle.—F. W. B."

Doubts having been again raised of late years as to the specific identity of *Hypsipetes neilgheriensis* of Jerdon, and *H. ganeesa*, Sykes. I have carefully compared seven specimens from Mahabaleshwar, with nine from the Neilgherries, three from the Assamboo Hills, and four from Ceylon. I find that adults and young birds from the three former localities are precisely similar; in the younger birds, the wings are browner, and the bills smaller, but there is no difficulty in matching every Mahabaleshwar bird with some Neilgherry one. Birds from Ceylon are in all respects, but one, identical with those from the other localities, but they certainly do appear to have *somewhat* larger bills.

I entertain no doubt that the birds from all these localities should henceforth stand under Sykes' name of *H. ganeesa.*

## 450.—Criniger ictericus, *Strickl.*

"A very common bird chiefly frequenting secondary jungle, wandering about in small flocks and feeding almost entirely on seeds and fruits.—F. W. B."

## 464.—Phyllornis malabarica, *Lath.*

"A common bird in open jungle with large trees. The male makes an attempt to sing, uttering a few notes, something like those of the Bronzed Drongo (*Chaptia ænea*).—F. W. B."

## 469.—Irena puella, *Lath.*

"One of our commonest birds, occurring in the jungles at the foot of the hills and up to 3,000 feet. Both sexes have a clear twittering note which they utter from the top of some tree shortly before sunset, and during the breeding season throughout the greater part of the day. Their food consists partly of insects and partly of berries. Their breeding season is February and March, and I have obtained fresh eggs as late as April. A note of a nest taken appears in the rough draft of Mr. Hume's "Nests and Eggs" of Indian birds, p. 298.—F. W. B."

*A male measured*:—Length, 9·5; expanse, 15·5; wing, 4·95; tail, 4·12; tarsus, 0·67; bill from feathers, 0·87; from base of skull, 1·07; lower tail coverts fall 1·17 short of end of tail; upper tail coverts 1·8 short of end of tail.

**507.—Larvivora cyanea,** *Hodgs.*

"This species is, I believe, only a visitor. During the winter months it is common and numbers may be seen hopping about the fresh earth, wherever a new bridle-path has been cut through the forest. It is a very silent bird, and I do not know its note.—F. W. B."

**538.—Prinia Hodgsoni,** *Blyth.*

"Not uncommon in open tree jungle, or the lower slopes of the hills. It has a feeble little twittering song.—F. W. B."

**556.—Phylloscopus magnirostris,** *Blyth.*

"Less abundant than the following species.—F. W. B."

**556.—Phylloscopus nitidus,** *Lath.*

"Common in heavy jungle, for the most part frequenting high trees, but sometimes descending to the underwood.—F. W. B."

**592.—Calobates melanope,** *Pallas.*

No specimen received.

"One of our most abundant winter visitors, arriving early in September and not leaving till May. Great numbers may be seen in almost every piece of cleared land where there is running water.—F. W. B."

**595.—Limonidromas indicus,** *Gmel.*

"Another winter visitor, which arrives soon after and stays nearly as long as the preceding species. It is of solitary habit and frequents open jungle in the neighbourhood of cultivation. Its note bears a considerable resemblance to that of the English Chaffinch.—F. W. B."

I have hitherto always believed that this was a permanent resident in Southern India.

**600.—Corydala rufula,** *Vieill.*

"Found on all the bare grass ridges, except perhaps on the extreme summits of the hills.—F. W. B."

I dare say that hereafter more species than one will be made out of this *Corydalla*. The local races differ quite as much as do those of *Alauda gulgula*. I notice that in the Southern examples of the present species, the bills are somewhat longer and slenderer, the hind claw is shorter, the markings on the upper surface, I mean of the head and upper back, are better defined and more pronounced. I do not, however, consider that these and other similar small differences, observable in series from other distant localities, are of specific value.

## 645.—Parus cæsius, *Tick.*

"Not uncommon at the higher elevations, wandering about in small parties of four or five individuals.—F. W. B."

## 648.—Machlolophus Jerdoni, *Blyth.*

"Is often seen in company with the foregoing.—F. W. B."

## 678.—Dendrocitta leucogaster, *Gould.*

"One of our commonest birds from the foot of the hills up to 3,000 feet. Of rather gregarious habit, three or four wandering about with as many Racket-tailed Drongos (*D. malabaricus*) which together form a very noisy party.

"A note on the nidification of this species will be found in Mr. Hume's "Nests and Eggs," p. 424.—F. W. B."

Some misprint, I think, has occurred in Dr. Jerdon's description of this bird, or possibly he may have copied somebody else's description without verifying it.

In the first place. The scapulars, back, and rump are *not* bright chestnut bay, the two former are dull, somewhat ferruginous ochre, and the rump is white. The upper tail coverts are not whitish but pure white. Then of the tail it is said :—"Tail black, with the two outer feathers ashy grey, broadly tipped black, as is the half of the 5th pair and the base of the 4th."

This should stand :—"Tail black, with the basal two-thirds of the central pair, the basal two-fifths of the second, and the extreme bases of the third pair grey or greyish white."

The following are the dimensions of two fine males recorded in the flesh :—

Length, 19·25, 17·75 ; expanse, 16·05, 16·25 ; wing, 5·85, 5·5 ; tail, 12·25, 11·25 ; tarsus, 1·15, 1·12 ; bill from gape, 1·25, 1·22.

## 688.—Temenuchus malabaricus, *Gmel.*

"Common in the jungle at the foot of the hills, when they may be observed in considerable flocks, but rarely ascending to 2,000 feet elevation.—F. W. B."

*Is T. Blythi*, Jerdon, really a good species? I have never yet succeeded in obtaining or getting sight of a specimen, that with a large series of *malabaricus* it was possible to separate. The colour in the head of this latter species varies from grey almost to white.

## 692.—Eulabes religiosa, *Lin.*

"Perhaps the most abundant and widely distributed species of the hill birds, being found in equal numbers at all elevations. The Hill Mynah is a very lively and noisy bird, towards

sunset especially. A note on the nidification will be found in Mr. Hume's "Nests and Eggs," p. 435.—F. W. B."

*A male measured*:—Length, 8·75; expanse, 17·5; wing, 5·56; tail, 3; tarsus, 1·25; bill from gape, 1·25.

## 700.—Munia pectoralis, *Jerd.*

"Another common species residing on the hills all the year round. It is gregarious in habit, and feeds on grass and other small seeds. The nest is a large loose construction of fine creeping-grass, with perhaps a few feathers interwoven, deposited in a hollow stump, and contains six to eight white eggs laid about June or July.—F. W. B."

I have in Vol. III. p. 263, described the young of this species, Mr. Bourdillon has sent others precisely similar to what I there described, and one somewhat older in which the shafts on the back and rump are beginning to shew out somewhat paler, and the breast is becoming a warmer brown.

## 775.—Osmotreron malabarica, *Jerd.*

No specimen received.

"These birds principally frequent the lower jungles, where they may be found in great numbers in the neighbourhood of the hill men's clearings. But in February and March they ascend the hills to over 2,000 feet elevation. Their note is a low chuckling whistle.—F. W. B."

## 781 *bis*.—Carpophaga cuprea, *Jerd.*

"An abundant species occurring at all elevations from the base to the very summit of the hills, whenever there is heavy forest. As the generic name implies, their food consists entirely of the larger jungle fruits, and they appear to be very greedy feeders, stuffing themselves to repletion with any favourite fruit. Their note is a peculiar deep booming coo, but in addition to this they utter a low guttural croak of suspicion while seated motionless on some bough, should anything unusual attract their attention. They take some time getting under weigh, but once well started their flight is rapid, and they can carry off a large quantity of shot. I have not taken a nest, but believe they build in lofty trees, laying during March and April.—F. W. B."

I pointed out, Vol. III. p. 328, that the Southern Indian Carpophaga was different from the Himalayan ones. I have now compared five of the former with a large number of the latter. I find that most of the differences I pointed out hold thoroughly good.

In the first place the Southern bird averages decidedly smaller; of five specimens of *cuprea* all fine adults, the wings measure, 8·87, 8·85, 8·95, 9·1, 8·9. A number of *insignis* measure, 9·6, 9, 9·3, 10, 9·93, 10, 9·5, 9·5.

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 colour; in *cuprea*, except the throat, the lower surface is a warm vinous grey and the wing lining is a very much darker slaty grey.

In the third place the upper back, interscapulary region, and lesser scapulars in *insignis* exhibit a strong vinaceous purple tinge, this is entirely wanting in *cuprea*.

## 786.—Palumbus Elphinstonii, *Sykes*.

"Is I believe a resident, preferring dense jungle at the higher elevations.—F. W. B."

## 879.—Chalcophaps indica, *Lin*.

"During February and March these birds abound at all elevations, but the greater number descend to the lower jungles during the rainy and winter months, when their favourite place of resort is the *irul* and bamboo thickets, which skirt the margin of the hill forests.—F. W. B."

*An adult male measured*:—Length, 10·25; expanse, 18·5; wing, 6·1; tail, 3·75; tarsus, 1·06; bill from forehead, 0·95.

The bill was bright red; legs and feet, dull purple; irides, dark brown.

*The female measured*:—Length, 10; expanse 16; wing, 5·75; tail, 3·75; tarsus, 1·0; bill from front, 0·9.

Bill, bright red; orbital skin and legs, flesh colour; claws, slaty; irides, brown.

A nestling bird is not, as Dr. Jerdon says, "dusky above, with a little green and barred below," but it is a warm brown above with all the feathers, except those of the head and quills, broadly tipped with chestnut and with a coppery green lustre on the scapulars and the outer webs of the tertiaries and later secondaries and with all the primaries margined with chestnut; below it is dusky barred with chestnut.

## 813.—Gallus Sonnerati, *Tem*.

"The grey Jungle Fowl is to be found at all elevations from the extreme summit of the hills, where it is perhaps more abundant, down to the lower slopes. About the commencement of the cold weather the males are very noisy and may be heard crowing defiance to each other from all parts of the jungle. They seem to prefer the *irul** and bamboo thickets,

* I do not know what tree is meant. The tree known all over S. India as irul-maram, or irul tree is the *Memna ferrea*, but this is a huge tree, and Mr. Bourdillon above speaks of his *irul* as "reed-like."—A. O. H.

and are not easily shot, for unless put up by a well-trained dog they run right away when approached. I have several times had eggs brought to me by the hillmen, which they declared were the eggs of Jungle Fowl, and I once saw a nest containing three slightly set eggs in the middle of March. The nest was a mere depression in the ground under a tuft of grass at the edge of an *irul* thicket. The eggs which were very similar to those of an ordinary hen measured $1\frac{3}{8} \times 1\frac{7}{10}$ of an inch.—F. W. B."

## 912.—Porzana ceylonica, *Gmel.*

"I know nothing of the habits of this bird: a single specimen having been procured by Mr. Ferguson in some paddy-fields near the foot of the hills at about 400 feet elevation. —F. W. B."

I long ago pointed out, Vol. I. p. 440, that Mr. Blyth's *P. amauroptera* was merely the female of this species; Dr. Jerdon had described the male, but not the female. It may be as well to mention that the female differs in being smaller than the male, in having the breast a duller and browner ferruginous chestnut, and by having this colour replaced on the whole of the top of the head, occiput and nape, by a brown, uniform with the back, and on the cheeks, ear coverts, and sides of the neck by a much paler and more earthy brown.

The only chestnut on the head of the female is a band running from the top of the eye over the lores to the forehead. The feathers bounding the white throat are generally somewhat rufescent, and the earthy brown on the sides of the neck has also at times a faint rusty tinge. I have not as yet secured sufficient specimens to make certain that old females do not assume the plumage or nearly the plumage of the adult males. I do not think that this is the case, but it may be so. Again, I am not certain that the young male is not at one stage similar to the female above described, but I think it likely. I have only two, now at hand, adult males and an apparently adult female, sexed by dissection; the female which I have above described was probably adult, having been shot in company with one of the males.

## 931.—Butorides javanica, *Horsf.*

No specimen received,—

"This bird is a winter visitor. It is very silent and solitary. During the months of November to March it is to be found among the rocks of the larger streams up to about 2,000 feet elevation, and always in dense jungle.—F. W. B."

A. O. H.

# A Note on Pellorneum minor, Hume and P. Tickelli, Blyth.

By Eugene W. Oates, C.E.

The Editor of Mr. Blyth's catalogue of the Birds of Burmah (J. A. S. B., part II., 1875, extra number) tells us that *P. minor*, Hume, is a synonym of *P. Tickelli*, Blyth. I think that Lord Walden could never have seen a specimen of the latter, nor even have read Mr. Blyth's original description of the bird; otherwise he would not have made such a strange mistake.

*Tickelli* was described almost simultaneously by two naturalists, and their descriptions, though brief, agree well together and give us all the really essential particulars of the plumage.

In *minor*, the top of the head is bright chestnut, and the remainder of the upper surface, olive brown. In *Tickelli*, the *whole* upper surface, including the head, is uniform olive brown, *slightly* rufous only.

In *minor* again the breast and flanks are *boldly* streaked with dark brown, while in *Tickelli* there are a few very faint marks on the breast only, so faint as to be barely noticeable. These points alone will enable any one in future to discriminate the two species at a glance.

The dimensions of both species are given at pages 120 and 121 of "Stray Feathers" for 1875. The difference in length is half an inch or more, and *minor* must, I think, weigh fully one-third more than *Tickelli*.

Mr. Swinhoe's *sub-ochraceum*, from the description, may well be, as Mr. Hume has already suggested, the same as *minor*; it cannot possibly be a synonym of *Tickelli*, for it is distinctly said "crown, richer rufous" (than in *ruficeps*), and I have shewn above that *Tickelli* has no rufous crown.

*P. minor* is widely distributed. It occurs throughout Pegu and Tenasserim, except, as far as I know, in the evergreen forests of the Pegu hills where *Tickelli* replaces it. I shot about a dozen of the latter, but on looking over my collection after returning from my hill trip, I found that only two specimens had been preserved. All the birds I shot and saw, however, were similar in all respects.

It is a pity that Lord Walden in his capacity of Editor should have arrived at hasty, and, as I think, in many cases, erroneous conclusions. In dealing with many of Mr. Hume's new species, he might surely have vouchsafed a few words of explanation as to the reasons which have led him to consider them invalid. In the case of the above two birds his conclusions are palpably wrong, and I fear that his *dicta* will not be readily accepted by those who are conversant with local Indian ornithology.

## On the Identity of Drymoipus terricolor, and Drymoipus longicaudatus.

After re-examining my whole series of these little Wren Warblers I feel much inclined to concur with Mr. Brooks in uniting them. I still consider the bird of the hills of Southern India to be distinct, and should have retained for it Sykes' name *inornatus*, but for Mr. Brooks' assurance, *ante* p. 274, that Sykes' type belongs to the northern form. The southern form must probably stand as *D. fuscus*, Hodgson.

The main fact on which I should rely for the identity of the two supposed species is that, broadly speaking, all the specimens obtained from March to September belong to the *terricolor* type, all those obtained from October to January belong to the *longicaudatus* type, while the February birds are somewhat intermediate. There are a very few exceptions to this generalization which I shall notice further on, but the mass of the evidence leads to the conclusion that the birds are identical, and that the two names merely indicate the summer and winter plumage and must both now merge in Sykes' *inornatus*. The only other alternative, open to us, is to suppose that both are migrants, the one replacing the other in the winter; but this, looking to all the circumstances of the case, appears scarcely possible.

On the other hand, if we admit the identity of the two birds one great difficulty remains unexplained. Changes of color, in plumage and in bill, present no difficulties, but the tail in *longicaudatus* is markedly longer than in *terricolor*. Our very large series exhibits no indications of there being any general spring moult, on the contrary, the bright rufous tint of the December *longicaudatus* appears to fade during February into the earthy brown of the summer *terricolor*. How then does it happen that the tail of the latter is so much shorter? It appears to me that in April and May the tail alone is moulted. In February and March the tails are mostly abraded so as to have lost all dark or light tippings, though a few specimens retain the rufous *longicaudatus* tail with the dark penultimate bands and pale rufescent tip, the tail contrasting strongly with the earthy brown of the upper surface. This is the case with a female killed on the 12th March at Mogul Serai. In April all the tails are much abraded and have faded almost to the same color as the back, and though in one specimen the tail is still slightly rufescent, not one exhibits either dark spots or pale tippings. In May several specimens have perfectly new unabraded tails, shorter than those of the winter plumage, of a pure pale earthy brown;

all the lateral feathers, with greyish white tips and a penultimate dark bar. In June all the birds appear to have got new tails, but in a good many of these the dark spots on the tail feathers have disappeared, and the lateral ones have become mostly white. No *longicaudatus* tail is then seen until October. In November almost every bird has a new typical *longicaudatus* tail.

It is not, however, all plain sailing as I shall show a little further on, abnormal birds occur which do not conform to these views.

To take my series; there are seven birds killed in May, from Sambhur, Cawnpore, and Dehra Ghazi Khan; these are all pale earthy grey above, below whitish with the faintest yellow tinge, and most of them have, or are getting, new tails of the pale earthy grey type.

In June there are seven birds, from Sambhur and Saugor. Six of these are typical *terricolor* with new tails of the short type, but the seventh is a young bird, very rufescent, of the *longicaudatus* type, and it occurred to me that the young of this species might be rufescent; I have often seen them in the nest, but I cannot myself remember. But Captain Bingham assures me that he has recently continually handled the young of this species, and that they are grey like the old birds, I cannot therefore account for this very rufescent June bird which is clearly a bird of the year.

July, two specimens, one from Jhansie, one the Central Provinces; the Jhansie bird is typical *terricolor*, but the Raipoor bird is a typical adult *longicaudatus*, in what looking to the rest of the specimens I should call the December plumage. I owe this specimen to Mr. F. R. Blewitt, it is dated Doondagurh, Raipooor Dist., 12th July 1874; if no mistake has occurred it certainly presents a considerable difficulty. It is the only clear exception to the view I now adopt, of *longicaudatus* being the winter and *terricolor* the summer plumage, out of one hundred and twenty specimens.

Eight specimens killed in August from Hansi, Agra, Saugor, Jhansi, and Etawah are all in typical *terricolor* plumage.

So also are two specimens killed in September from Dinapore and Mogul Serai.

Of four specimens killed in October, one has nearly moulted into the *longicaudatus* plumage, but is not very rufous, though it has a typical *longicaudatus* tail, another has a new *longicaudatus* tail and is a faded rufous above, in fact it looks to me like a faded edition of the young June bird already mentioned but with a new rufous tail; two specimens are in *terricolor* plumage, but with a slight rusty tinge not observable in any of the specimens of the previous month.

Eighteen specimens killed in November at Deesa, near Shahpoor, Ferozepore, Etawah, Dinapore, Mogul Serai, Chunar, Ghumer, are almost without exception in the typical *longicaudatus* plumage, some of them especially being excessively rufous; with one exception, all have the *longicaudatus* tail either complete or coming. One specimen alone is in the *terricolor* stage, and what is remarkable about this is that it is moulting, and that the new tail that is coming is not a *longicaudatus* tail, but a typical *terricolor* tail. This anomalous bird was shot by Mr. Brooks at Ghumer on the 7th November.

Of twenty-five specimens killed in December at Etawah, Mogul Serai, Dumraon, Kurrachee, Kugilmeanee, Jacobabad, Dhama, Sumbulpore, Boad, all are of the *longicaudatus* type; many are perfectly typical; in a good many the lower surface has begun to pale; in two or three the upper surface has lost much of its rufescent tinge and is scarcely more rufescent though darker than in *terricolor;* in many the tails have become much abraded, and both the rufescent tipping and the black bar or spot of the typical *longicaudatus* tail has more or less disappeared.

Seven specimens killed in January in the Etawah district and the neighbourhood of the Sambhur lake are all clearly referable to *longicaudatus*, but they are decidedly faded, and in several the tails are very much, and in all a good deal, abraded; only one specimen retains traces of the dark penultimate bar and the pale tippings to the tail feathers.

Twenty-one specimens killed in February at Sambhur, Kalpee, Chunar, the Etawah district are with one or two exceptions in an intermediate stage between *longicaudatus* and *terricolor;* the tails are still in every case more rufescent than in the latter stage and no single specimen exhibits the bar or tip, but the under-surfaces of the bodies have in most cases become almost as pale in *terricolor*, and the rufous tinge has in most cases almost disappeared from the upper surface which, though somewhat darker, approximates closely to that of *terricolor*.

Eighteen specimens killed in March and April differ little from the February birds except in that they are, with one exception, still nearer to typical *terriclor*, the tails being still less rufescent than the majority of birds killed in February. The single exception is a nestling obtained by Mr. Brooks, on 27th March 1869, which is certainly somewhat rufescent and which closely resembles the June nestling already referred to.

This review of the series of dated specimens before me seems to me to confirm Mr. Brooks' view, and though I will not pretend to say that all the difficulties of the case have been thoroughly solved, I think we may conclude, that the typical

*longicaudatus* is the newly moulted November plumage, that from January this begins to fade into the *terricolor* plumage, the tail alone being moulted in May, giving us in June the typical *terricolor* plumage. Before concluding it may be as well to contrast briefly the typical winter and summer plumage.

DRYMOIPUS INORNATUS, *Sykes*.

| Winter *(longicaudatus)*. | Summer (*terricolor*). |
|---|---|
| Bill, brown, greater part of lower mandible, yellowish horny. | Bill, black, yellowish at extreme base of lower mandible. |
| Lower surface, warm buff. | Lower surface, white with a faint yellowish tinge. |
| Upper surface, strongly rufescent. | Upper surface, dull earthy grey brown. |
| Wings, hair brown, strongly margined with dull ferruginous. | Wings, earthy brown, margined albescent. |
| Tail, 3·2; rufescent brown, obsoletely barred with darker brown; the lateral feathers paler; all lateral feathers tipped with rufescent white preceded by an imperfect dark bar; central tail feathers, with traces of the same. | Tail, 2·5; central tail feathers pale earthy brown obsoletely barred with a darker shade; lateral tail feathers paling towards the exterior ones which are almost white; all the lateral ones tipped with white preceded by a dark imperfect bar or spot. |

A. O. H.

## A New Indian Iora.

BY CAPT. G. F. L. MARSHALL, R. E.

### Iora nigrolutea *Sp Nov.*

*Characters.*—♀ and ♂ juv—Tail with the central feathers grey, the outer feathers black, all broadly edged with white. The edgings of the wing feathers purer white, less strongly tinged with greenish yellow than in *I. typhia;* otherwise in coloring and dimensions similar to *I. typhia.*

In advancing to full plumage the grey of the central tail feathers changes to black in strong contrast with the broad white tips.

♂ adult—Head and nape, jet black, divided from the yellow of the back by a sharp line; upper back, lemon yellow with black tips to the feathers (it is possible that the upper back *may* in fully adult males become entirely black, but no such specimen has been found as yet); lower back, greenish; wings with the primaries, dusky, edged with yellowish white; the rest of

the wing black with white tips to the feathers ; tail, black with a broad white tip which latter may possibly disappear with advancing age, but no proof of this has been discovered ; under parts brilliant yellow lighter and purer than in *I. typhia*.

The main distinguishing feature in this species is the tail, which under no circumstances has any green on it in male or female, young or old.

*Habitat.*—The dry parts of Western Continental India. The specimens in my own collection were all obtained in the Meerut and Saharunpoor districts, N. W. P., Mr. Hume's collection contains one ♂ from Mount Aboo, five specimens from Sambhur, one from Kutch, one from Agra, one from Jhansi, and six from Etawah.

Before describing this species as new, I had the advantage of going carefully through the large series of *Ioras* in Mr. Hume's museum; and examined them carefully with a view to discover whether any distinctive points could be adduced between *I. zeylonica* and *I. typhia*. The distinctions as given by Jerdon are briefly "*I. typhia* wants the black on the head and back, the bill is slightly longer, and it is altogether a larger bird."

The two latter distinctions will not hold good ; with regard to the first characteristic, the assumption of black on the head and back, it will hold good, *as a rule*, but to it even, there are exceptions. It may be broadly stated that in the South, where the type of *I. zeylonica* prevails, the males almost without exception assume the black plumage on head and back, while in the North the black plumage is assumed very rarely indeed.

It may be convenient under these circumstances to keep the two races specifically distinct ; on this point no doubt opinions will vary.

But whether the two forms *I. typhia* and *I. zeylonica* be united or kept separate, they both equally differ from the new species now described as *I. nigrolutea*, in that in both, the tail of the female and young male is green with or without paler edging ; in both this green changes directly to jet black, and in neither of them does any trace of either white or grey occur on the tail in any stage.

The variation in plumage of the Indian *Ioras* is a matter of so much doubt and interest that I take this opportunity of noting the facts as exhibited in the specimens in this museum* (Mr. Hume's).

Ceylon, a pair ♂ and ♀. In the male the tail is entirely jet black, the green of the upper plumage being largely mixed

* I shall be glad to receive good specimens of *Ioras*, carefully sexed and dated, from all parts of the country.—Ed., S. F.

with black on back and head, but showing no traces of yellow. In the female the tail is green.

Paunben. Two ♂ one ♀. Both males have the head and upper back, jet black with a few traces of yellow on the latter; tail, entirely jet black; wings, entirely jet black, excepting a white spot on the coverts, in the female the tail is green.

Nilgherris. Three ♂ two ♀. In the males the head and back is black, largely mixed with green; the tail is entirely black. In the young males and females the tail is green.

Travancore. Three ♂ one ♀ precisely similar to the Nilgherri specimens.

Wynaad. One ♂ shot from nest entirely green. Two ♂ one ♀ as in Nilgherri birds.

Mysore. Two ♂, one similar to the Nilgherri specimens, the other exhibits traces of yellow on the back.

Madras. One ♂ two ♀, precisely similar to the Nilgherri specimens.

Kandeish. Two ♂ do. do., but with the black more completely developed.

Matteran. One ♂ one ♀ precisely similar to the Nilgherri specimens.

Mahableshwar. One ♂ two ♀. The male exhibits a slight trace of yellow on the back, otherwise both agree with Nilgherri specimens.

Ahmednuggur. One ♂ exhibits decided traces of yellow on the back, otherwise as in Nilgherri specimens.

Central Provinces. Nine ♂ four ♀. The males as in the Ahmednuggur specimen with decided traces of yellow in the black on the back, showing an approximation to the North-West form *I. nigrolutea*, but the young males and females have all the green tail.

Mount Aboo. Two ♂ one ♀ do. do.

Jhansi. Two ♂ three ♀. The only adult male shows strong yellow markings on the back, but the young male and females have green tails. In this district the true *I. nigrolutea* begins to occur.

So far the type of *I. zeylonica* extends, north of this the *I. typhia* type is the prevailing form; out of 3 ♂ from the Kumaon; Bhabar, one ♂ from Dehra Doon, four males from Etawah, one ♂ from Oude, eight ♂ from Meerut, one ♂ from Etawah, three ♂ from Tirhoot, seven ♂ from Calcutta, one ♂ from Dacca, one ♂ from Tipperah, one ♂ from Akyab, in all thirty-one males from Northern and Eastern India, not one has any decided black mixed with the green on the head and upper back.

In the specimens from Burmah, of which there is a large series, an admixture of black with the green is not uncommon,

and in some the black is highly developed, thus the Northern Indian type appears to be distinct, while the Southern Indian type re-appears in the Malayan peninsular.

The most remarkable variation of all is the prevalence of yellow on the back in all the specimens from Central India.

## The Laccadives and the West Coast.

It had for years been the cherished dream of my existence (to quote the words of an illustrious visitor to India), to visit and explore those little known reefs and Islands, the Laccadives.

Perhaps I hoped to find there a fauna and flora exhibiting affinities with those of Madagascar and the Seychelles, Mauritius, and Reunion, and to unearth some evidence confirmatory of the hypothesis that the Atolls of the Laccadives, the Maldives, and the Chagos mark the mountain crests of a long submerged land, of which Madagascar and the neighbouring Islands once formed parts.

Certainly (I fear me on the barbarian's principle of holding *omne ignoto pro magnifico*) I expected important results from a trip to the Laccadives, and great was my delight at finding myself during the last days of January 1875 in Bombay, with a cruise along the west coast and a trip to these islands arranged for me.

The "Clyde," an old gun-boat, had been fitted out, after a fashion, for use by the new Indian Marine Survey, and as she had to come round to Calcutta, and as several of the Laccadives were supposed to be anything but accurately placed in the charts, it was determined that on her way to Cape Comorin she should run through the Laccadives and fix accurately the positions of as many as possible of the reefs.

The "Clyde" had been declared ready for sea a week previously by the dockyard authorities. I had been telegraphed for from Calcutta to come at once if I meant to go at all, yet more than a week elapsed after my arrival before it was possible to make a start.

During the interim I knocked about the harbour and islands a good deal.

In the most crowded portions of the harbour and about the rocks immediately below the old fort's low battlements, *Larus brunneicephalus* (associated with a much smaller number of *L. ridibundus*) abounds. They sit about on the water during the greater part of the day, not condescending to move for

passing boats, until almost run over. Hundreds may be seen crowded at midday on the fort rocks as tame and fearless, amidst the surrounding bustle, as the crows in the Bombay highways.

Further out into the harbour, where vessels are scarce and the traffic insignificant, few of these are to be seen, but here during the day, *Larus occidentalis** is comparatively abundant. It is only in the early mornings and towards sunset that this latter species gathers in, in any great numbers, where the shipping is massed. Curiously enough I did not notice one *L. leucophæus*, though it is possible that some of the immature birds belonged to this species.

As one gets out towards the Prongs lighthouse and Colaba Point, terns begin to appear; *Gelochelidon anglicus* is by far the most common of these, but *Sterna bengalensis*, and *Bergii*, also occur, and we saw one *Sylochelidon caspius* conspicuous by its large size and red bill; a species rarely seen so far away from fresh or brackish water. On the rocks we saw a solitary specimen of *Larus Hemprichii*, which I first added to the Indian Avifauna from Kurrachee, and of which Bombay must now be taken as the most easterly point to which it is known to extend.

About the seaward face of Bombay Island, I noticed a few Oyster Catchers, and there were several in Back Bay; all round the Island, and other Islands in the harbour, the Turnstone was pretty abundant.

Every here and there, on rocky points, grey and white reef herons (*D. gularis*) are seen, the white as usual much less numerous.

About the shipping, kites were as numerous, as in the streets of Bombay. In the town I saw nothing but what I call *govinda*, a bird intermediate in size betwen *affinis* and *major*, but in the harbour I saw, and, after some trouble succeeded in shooting, a magnificent specimen† of the latter, and I think I saw one or two more at a distance.

---

* A nearly adult male *Larus occidentalis*, but still shewing many traces of the immature plumage, measured:—Length, 24; expanse, 57·5; tail from vent. 7; wing, 17; tarsus, 2·9; midtoe and claw, 2·7; bill from gape, 3·1; weight, 2·5 lbs.; irides, pale yellowish brown; bill, pale livid purplish grey, with a broad blackish brown bar towards the tip, and a yellow tinge at gonys; legs and feet, pale livid pinky white; claws, dark brown.

† This bird is not a bit like the "*melanotis*" from China that I have seen. It was a female, length, 26·6; expanse, 65·0; tail from vent, 14·5; wing, 21·0; tarsus, 2·5; bill from gape, 2·0; weight, 2·4 lbs.

The irides were pale brown; the legs and feet, white, with a pale brown tinge: claws, black; cere on culmen, pale yellow, rest of cere, gape, and base of lower mandible, pale blue; rest of bill black.

There is an enormous pure white patch on the under surface of the wing, much as in a Buzzard.

At Elephanta, Trombay, Oorun, and other islands in the harbour, the commonest species appeared to be the Crow-pheasant (*Centrococcyx rufipennis*), the Grey Drongo (*B. longicaudatus**), the White-browed Bush Bulbul (*Ixos luteolus*), the Dial bird or Magpie Robin (*Copsychus saularis*), the Southern Red-whiskered Bulbul (*O. fuscicaudata*), the Amethyst-rumped and Common Purple Honey Suckers (*L. zeylonica* and *A. asiatica*), the common Indian Bee-Eater (*M. viridis*†), the Rosy Pastor (*P. roseus*), the Black-headed Oriole (*O. melanocephalus*), and the White-spotted Fan-tail (*L. pectoralis*‡).

On the island of Elephanta itself we disturbed a large colony of the Night Heron (*N. griseus*§) and shot a few specimens.

*February 2nd.*—This, the day of our start, was a grand gala day for Bombay. The annual regatta was being held and it would have been impossible to see the harbour to greater advantage.

Close abreast of where we were moored was the old stone battlemented castle, occupying with Bombay itself (which stretches away far north and south of it), the western shore of the harbour. Salsette hill, some 1,000 feet in height, bounds it to the North. The hills of Elephanta (glorious in its stupendous cave temple) and of Carija, wall it in eastwards, while to the S. E. and S., the Quoin and other hills completely close in the view. Embosomed in blue and purple hills fringed everywhere about their bases with bright green lines of man-

---

* Two females that I shot of this species, both exceedingly fine and typical specimens of the race that occurs in this neighbourhood, measured :—

Length, 11·8, 11·5; expanse, 16; tail from vent, 6·35, 6·2; wing, 5·35, 5·4; tarsus, 0·7, 0·65; bill from gape, 1·1, 1·05; weight, 1·33 oz., 1·5oz.

The bill, legs, and feet, were black; the irides, crimson.

† These are of the western type with comparatively little red or golden about the head and neck. A pair measured :—

*Male.*—Length, 9·8; to end of ordinary tail feathers only, 7·7; expanse, 12; tail from vent, 5·1; to end of ordinary tail feathers only, 3; wing, 3·7; tarsus, 0·33; bill from gape, 1·55. Bill, black; irides, crimson; legs and feet, deep brown; edges of scutæ and soles, hoary.

*Female.*—Length, 9·25; to end of ordinary tail feathers only, 7·5; expanse, 11·5; tail from vent, 4·75; to end of ordinary tail feathers only, 2·9, wing, 3·6; tarsus, 0·4; bill from gape, 1·45.

‡ A pair of this species measured :—

*Male.*—Length, 7·5; expanse, 9·0; tail from vent, 3·9; wing, 3; tarsus, 0·8; bill from gape, 0·6.

*Female.*—Length, 7; expanse, 8·4; tail from vent, 3·3; wing, 2·8; tarsus, 0·75; bill from gape, 0·53.

The bill, legs and feet were black; the inside of mouth fleshy white.

§ *A fine male of this species measured.*—Length, 24·5; expanse, 39·5; tail from vent, 4·3; wing, 10·9; tarsus, 3; bill from gape, 4·25; weight, 1·5lbs. It was killed on the 29th of January. The colors of the soft parts were then as follows:—Toes, pale yellow; legs and feet, pale greenish yellow; orbital space, lores, gape and base of lower mandible, pale hoary yellowish green; upper mandible (except a stripe parallel to commissure which is greenish horny) deep brown; medial portion of lower mandible, except the commissure, pale greenish horny; terminal portion and commissure, dark brown; extreme tip, whitish; irides, crimson.

groves or palms, the harbour with its wide expanse of blue green, sand-laden water, glittering in the tropical noontide's glare, looks like some vast inland lake.

The ships are all dressed with multitudinous rainbow-hued lines of flags. The water is everywhere alive with a heterogenous mass of boats and vessels; group after group of these suddenly spread their wings, and dash off before the free breeze, in quick succession as the starting guns are fired at short intervals. Every boat seems to have its own special and peculiar rig and to have its own private view of how the course may best be run. The numbers of gulls dotted about the water, floating quietly in little parties, their wings well peaked astern, or flapping lazily about, seem scarcely less animated by any common purpose than do the several competitors for the various races that are now being sailed.

Some distance east of us lie the clumsy monitors, the Magdala and Abyssinia in their dirty buff livery, veritable leviathans of the wave, while between them a troop of the tiniest and most fairy-like skiffs scud away on white latteen sails, for all the world like a flock of terns about a couple of dead whales.

The rowing matches have commenced, and party after party of four and six oars, spurt away across our bows, propelled by stalwart European, French, English, and nondescript, arms.

The Daphne gun boat there, has contributed some crews, and so has the grey blue French frigate yonder, but the mass of the row boats are furnished by the merchant shipping of every nationality which literally throngs the harbour.

All the while steam launches flaunting the red English flag, or the blue naval reserve are dashing hither and thither, whistling and screaming and then puffing and blowing as if quite exhausted by their exertions.

A man-of-war's boat passes under our stern with the rapid clock work navy stroke. Just ahead a huge lumbering Pattimar, with enormous latteen sails, sweeps by us with the steady rush of a Griffon.

A band strikes up on board the starters' vessel, and, mellowed by the distance, an old sweet refrain, comes floating across the water to us.

Blue cloudless skies; a glorious cincture of many-hued hills; the green glittering water, crowded with boats and ships of every conceivable shape and size and colour; alive with rapid motion, and bustling craft; fluttering flags and swooping sea-birds; lines of white foam along the rocks, and long rows of sparkling crests, where the fresh breeze begins every where to furrow the expanse, while it softens and adds a charm and

freshness to everything from the golden sunlight to the silver song of home it wafts to us.

Healthful enjoyment seems to irradiate the whole scene, but we cannot quite forget that within gun shot of all this foaming life, in a darkened chamber hanging between life and death lies the master spirit, who for the past quarter of a century, has well and wisely ruled and curbed the turbulent and warlike Nepalese. He was to have sailed for Europe yesterday; the previous evening mounting a borrowed Arab, he was thrown, and he still remains insensible. What his fate* may be it will be long before we learn, our anchor is up, and we can only leave behind us our heartiest and most cordial wiskes for his recovery.

Our anchor is up—but somehow we are not moving—the screw declines it would appear to revolve. At last, however, we begin to creep ahead very slowly and hesitatingly—after nearly an hour's hard work with crow bars, the engines have consented to move very slowly. Now they stop, now they are encouraged with a few vigorous pokes with a crow bar and go off 100 revolutions of the screw to the minute, for two minutes, and then gradually slacken and slacken, coming to a dead stop in the midst of the most crowded part of the harbour and exactly to windward of the Regatta grand stand boat. In vain now are the crow bars plied, the screw is jambed hard and fast—the brilliant beings who carry on the Dockyard operations have, it would seem, let an *unseasoned* block of lignum-vitæ, into the stern post for the screw shaft to revolve through, and this block has swelled so that it is doubtful whether we shall ever get the shaft to move again.

Now the "Clyde" is one of the old gun boats, specially intended for river work, no keel, very shallow draught, very heavily built, a poor sailor off a wind and quite helpless on a wind, going to leeward quite as fast as she forges ahead, so that being admittedly a sailing vessel that won't sail, it will, to say the least, be rather awkward if she also turns out a steamer, that won't steam.

Meanwhile we are drifting, threatening to drift on to a mass of boats crowded with sightseers, nay on to the grand stand itself, and are hopelessly perplexing the numerous racing boats, now just coming in to the winning post. We become aware of remonstrances and reproaches, addressed to us from various quarters in naval phraseology—our intellectual capacity is rudely questioned, our optics become the subject of uncharitable denunciations. Our sails are being set, but chains are rusty,

* Jung Bahadur, as we long subsequently learned, soon recovered sufficiently to leave Bombay, but he abandoned his proposed trip to Europe.

blocks stiff, our topsails refuse to be hoisted and hang in bags; the wind too, is too far ahead to suit this slow lubberly old "Crawlin Camel" and as the uproar around us, indicative of the strong feeling of dissatisfaction which we are unhappily exciting increases momentarily, I feel as if all the light had faded out of the charming vision, on which I had so long feasted my hopes.

At last, when all hope seemed over, and a trial for manslaughter on a large scale seemed to close the entire vista of our future, when an indignant public was compelled to silence by the necessity of providing for their immediate safety and a general *sauve qui peut* seemed imminent, off go the engines again suddenly, 16 to the dozen, and off we go at least 4 knots an hour, and though we don't keep *that* up, we do actually, between sails and screw steadily forge ahead at the rate of about 3 knots, to the intense mutual relief of ourselves and a much exercised public.

Throughout this trying scene, our captain, (Staff Commander——R. N.) preserved the most imperturbable serenity, neither depressed when we threatened destruction to aquatic Bombay, nor unduly exalted when the engines incontinently resumed work—but when we were once fairly out of the crowd, a grim smile flickered over his honest features—he seemed to take in the whole of the old Clyde, stock and block, with one comprehensive glance, and then as if this was too much for him, he gave vent to his feelings in the one touching remark, "nice old girl, ain't she?"

Thank heaven! we are at last out opposite the inner light and steering straight for Khundari. Three fine adult *Larus occidentalis* in our wake "und weiter nichts."

*February 3rd.*—About 9 A.M. we were opposite Severndroog, having, by help of sails and steaming full power, made actually nearly 4½ knots per hour throughout the night. No doubt the water had been perfectly smooth and the wind fair, but for this precious tub this was no little achievement and so my spirits began to revive.

Throughout the day we have run down the coast under canvas only, at a distance of from 3 to 4 miles off shore, but we have seen no birds except a solitary *L. ridibundus* that looked us up about 11·30 A. M. and then passed on, and a single *L. occidentalis*, that joined us for about an hour during the afternoon. By 8 P.M. we were off Rutnagheri.

*February 4th.*—Early in the morning we sighted the Vingorla Rocks, some miles ahead, and ran down towards them past Sindeedroog. When nearing the rocks it was thought that a little steam would be useful, and as fires were banked, the order was

passed; steam was soon up, but it was nearly 2 hours more before our chief engineer aided by nine strong men and 3 enormous crowbars, succeeded in persuading the screw to revolve. At last, just when we were close on the rocks, off went the engines with a rush, we ran through the channel and were just coming round to our proposed anchorage when crack went something, and the engines came to dead stop. It appeared that the condensers air pump shaft had snapped in two, that there was no duplicate on board, and that the broken shaft could not be mended except in a dockyard. Further that as *with* the condenser and a pressure of 42 lbs. the engines could hardly be moved, and as *without* the condenser, the boilers will only work up to 30 lbs., we may henceforth give up all idea of further utilizing our engines during the present trip. A cheerful prospect truly, considering the remarkable sailing capacities of the "Clyde."

There was a slight sea on, but we soon had out a good cutter and started for the rocks. These consist of three outer and comparatively large ones, on the outermost of which is placed a light house (distant about 4 miles from the nearest point of the mainland,) and a vast number of minor rocks running in a more or less broken line towards the coast. This line lies nearly north and south, and extends, northwards from the lighthouse, some nine miles to Sindeedroog or thereabouts. Through this line there is in one place a broad channel, about $2\frac{3}{4}$ miles from the shore, through which we came, and on a rock on the edge of which the "Chaldea" was wrecked last year.

The three large rocks, or rocky islands, are entirely metamorphic, and are composed of numerous varieties of quartzo-micaceous rock, mostly more or less ferruginous, and in many places a good deal decomposed and broken up.

The rocks are quite bare, but the crevices everywhere, and some few smooth places near their summits, (the highest is fully 140 feet high), were filled and covered with quantities of a coarse tangled jointed grass, a species of *Cymbopogon*, which, with the exception of a few tufts of the Silver-scaled Amaranth (*Celosia argentea, L.*) and a trailing Clove-wort (*Mollugo spergula, L.*), constitutes their sole vegetation.

The largest of the three is pierced from side to side by a huge tunnel-like cave, and about the middle of the island a shaft has broken down into this owing to the falling in of the roof. This cave is tenanted by numbers of Blue-rock Pigeons (*C. intermedia*), which gave us rather pretty shooting, the birds flashing out from the ends of the cave in rapid succession, when Rocks were thrown in through the shaft. Unfortunately the birds were easier to shoot than to retrieve, and whilst one that dropped a little distance

out to sea, was struggling and flapping on the water, down came a magnificent White-bellied Sea Eagle (*C. leucogaster*) from somewhere over our heads, hurtling like a thunderbolt straight on to the quarry, and a minute later was sailing leisurely away shorewards with the Pigeon in his claws, doubtless to feed its young.

Besides the Pigeons we found two or three Blue Rock Thrushes (*Cyanocincla cyana*) and a pair of common Kestrels, but though we remained several hours on the rocks and explored them thoroughly, we saw nothing else either on land or at sea.

Dr. Jerdon tells us (I. p. 183) that the Indian Edible-nest Swiftlet (*Collocalia unicolor*, Jerd.) breeds upon these rocks. Not one bird of this species was, however, visible, nor were there any traces of nests in the great cave, the only one we could find, and either the birds have deserted the locality or they only visit it during the breeding season, later in the year.

Deserted, however, as these rocks now are, there must be a time when the largest of them, surnamed Burnt Island (and on which curiously enough we found much of the grass burnt), teems with bird life. Everywhere in the crevices and amidst the tangled grass, we found innumerable addled, broken and more or less decayed Terns' eggs, while all about in similar situations, Mummies, dessicated corpses, of young birds of all ages and of a few old *Sterna anosthætus* lay scattered, leaving no possibility of doubt as to the species which chiefly breeds there.

But besides the *anosthætus* eggs, we also found in one place a few very much larger eggs, too decayed for preservation, but still showing sufficient of the characteristic markings to leave no doubt as to their pertaining to some one of the larger Laridæ.

The rocks were everywhere thickly crusted for about 3 feet downwards from high water mark, with small *Ostrea's* apparently all dead, and on these were everywhere scampering multitudes of two species of variegated reef crabs (*Grapsus strigosus* and *pictus*), that innumerable and fearless as they seemed, proved by no means so easy to capture as might have been expected.

Outside, and around the main rocks, on which, by the way the landing is somewhat difficult, stand many bold stacks of rock, round, and high over, which the surf was boiling and spouting. Even for a well-manned cutter the navigation is not easy if only a little sea is on, and it must be very rarely that during the monsoon, when, as I believe, *anosthætus* breeds, a landing can be effected on Burnt Island.

No coral is any where observable about these rocks, though they are situated in only 16° N. latitude.

*February 5th.*—During the night we ran down past Goa, and about 6 A.M. were off St. George's Island, but the wind failed

us entirely when we were still some 6 or 7 miles distant, and we had a long hot row to land in the cutter.

The Island consists of a conical hill to the west, about a quarter of a mile in diameter, and a long narrow rocky island running east and west connected with the hill by lines of rocks, mostly submerged at high water. The hill is about 250 feet in height, and this also is about the height of the highest portions of the long island. At the extreme, or eastern end of the latter, the seaward slope is clad with dense tropical jungle, in which canes and screw palms are conspicuous, but the major portion of the island or islands is too much exposed to the violence of the monsoons, and is mainly covered by dense tangled trailing grass, dotted about with stunted *Ixora* bushes (*I. coccinea*, L.) radiant with their large red corymbs, or the shining oval-leaved, white-flowered Caper (*C. Roxburghii* D. C.) so common in Southern India and Ceylon.

On the long island we found a couple of fishing huts and a small colony of fishermen, the neighbourhood of whose premises was sadly redolent with a complication of bad smells resulting partly from a multitude of strips and steaks of Dog-fish, Shark, and Skate, which were drying in the sun, and partly from a flagrant disregard of sanitation generally. We could not learn from these people that there were ever many birds about the place either on land or sea. Certainly, we saw neither Gull nor Tern, and on land all we noticed after several hours laborious exploration were a flock of blue Rock Pigeons, a fine pair of White-bellied Sea Eagles, a colony of Night Herons, a few Southern Red Whiskered Bulbuls (*O. fuscicaudata*), White-spotted Fantails (*L. pectoralis*, Jerd.), some blue Rock Thrushes (*C. cyana*), and several Blue Reef Herons (*D. gularis*.)

The day was superb. The rock and sea scenery fine, but ornithologically, St. Georges, like Vingorla, was a failure. Here too there was a fine cave, but no sign of any *Collocalia*.

My impression is that the rock was everywhere igneous, with here and there conspicuous quartz dykes, but I forgot to note it at the time. I searched the shores for coral, but found none, and saw nothing there but the usual troops of variegated crabs, of the same species as we obtained on the Vingorla rocks.

*February 7th.*—We got to Pigeon Island about 10 A.M., having drifted slowly down the coast, the engines doing about one knot, and the light breeze, about another, per hour. The island, small and high, say not less than 350 feet at its highest point, is composed of laterite; it rises more or less precipitously on all sides out of rapidly deepening water; the cliffs are succeeded by steep slopes densely clad with tangled and now withered grass, and the highest portions are thickly set with low tree

jungle here and there interspersed with a few large Cotton and Terminalia trees.

On the rocks at the base of the cliffs were huge water-worn fragments of *Porites*, *Madrepora* and other reef corals, but I could discover none *in situ*, though some there must be some where near, as masses, such as we saw, could not have been moved across deep water.

Climbing up the steep sides, the moment we reached the trees, the Asokh (*Saraca indica*, L.; *Jonesia asoka*, Roxb.) with its innumerable bunches of fiery orange coloured flowers, attracted the eye. I have often seen this tree in flower elsewhere, but never bearing anything like the same mass of blossom; the whole copse seemed in some places ablaze with it. Beneath the trees a green and many fingered fern (*Acrostichum virens, var terminans*, Wall.) crept and trailed, while high up the bright baybrown fronds of the Oak-leaf fern (*Polypodium quercifolium*, L.) rigid and glistening, formed coronet-like tufts.

A huge cotton tree, bearing a huge stick nest, drew me to its buttressed base. The nest was tenantless, but on one great bare arm composedly gazing far over the blue waves beneath, sat a grand old Sea Eagle. In the full glare of the noontide sun, his snowy breast shone out with dazzling brightness. The delicate pearly grey of back and wings glistened with an almost silvery sheen. There was an indescribable something in his firm, erect, attitude conveying a sense of majesty and power; he seemed so strong and bold and beautiful, that I had not the heart to shoot him, and then, presto, whether he caught sight of me or whether it was something below that attracted him, I cannot say, but he leant forward, half opened his wings and shot downwards like an arrow, and in a second, was hidden from me by the tops of trees that grew below.

However, I had come to Pigeon Island, specially to secure a really good series of this Eagle, which though, everywhere seen, is ever hard to procure, and during the two days I remained here, I procured some fifteen splendid specimens.

Each of the very large trees on the island, (perhaps 35 in number,) bore one great stick nest; on two trees only I observed a couple of nests. The majority of the nests were empty—the birds probably laying towards the close of December—but in three nests, I found young ones, a pair in each, just ready, but not quite able to fly—of these I preserved one.* Two others, I shot, very similar in plumage, but flying strong and well. Others, again, just a year older, and numerous perfect adults.

---

* See for description, *infra* p. 461.

The White-bellied Sea Eagle is very voracious, and during the morning I watched them incessantly returning to one or other of the big trees, bearing sea snakes, 5 to 6 feet in length, in their claws, which they there devoured at their ease. Once or twice I saw them eating something on the rocks, but, as a rule, they always returned with their prey to some great bare sea o'ergazing limb of one of the giant trees.

One that I shot as he swept over head high above the stunted trees that concealed me (for after a few shots they became wary enough) had in his claws the entire liver and stomach of a goat. Had he found it floating at sea? Had he brought it as an especial delicacy all the long miles from the coast? Certainly nothing of the kind was to be obtained on the island, which is entirely uninhabited, and where not the smallest Mammal was observed by any one.

It is a fine sight to see these eagles striking one after the other in rapid succession. Soaring far far above the highest tree in the island, often I should judge from a height of at least 1,000 feet, they come down with nearly closed wings, and with a rushing roar, like that of a cannon ball, in a perfectly direct line, making an angle of about 60° with the water, which they scarcely seem to reach before they are again mounting with heavy flaps and with a yard or two of snake hanging *dead* in their talons.

One snake I recovered, shooting its captor, less than a minute after it had been seized. It was stone dead (though we all know how tenaceous of life, these reptiles are) and had its head and neck pierced through in several places by the eagle's cruel claws, its whole skull being completely crushed up.

It is easy to see what these birds chiefly prey on, and where they mostly take their meals, for the ground below the nest trees is often thickly strewed with the vertebræ of snakes of which we found innumerable pieces from 6 inches to even 2 feet in length.

There were a few fish bones, a sheep's head, or at least part of it, and one upper carpace of a tiny turtle, but it was the remains of sea snakes that chiefly composed *their* kitchen-middens.

As to other birds there were scarcely any to record; about the base of the cliffs nestling in caves, one of which at any rate is of considerable size, were numerous Blue Rock Pigeons, —but these never appeared to visit the upper portions of the island, and seemed, from what I observed, to proceed daily to the Mainland, to feed, returning about 4 P.M. I may notice that all the many Pigeons which I shot here, on the Vingorla Rocks,

and at St. George's Island, are typical* *intermedia*, very dark in general colour, and with conspicuous slatey rumps.

Nowhere was a single *Collocalia* to be seen. In the Upper Wooded portions of the island the Black-naped Azure Fly-catcher (*M. azurea*), the Indian White-Eyed Tit (*T. palpebrosa*), the Indian Oriole (*O. kundoo*), and the Indian Koil (*E. honorata*), were tolerably common, and we also shot a single Malabar Green Pigeon (*O. malabaricus*), but beyond these, the eagles and the Blue Rocks, not a single bird was seen. There were no Crows, no Kites, no Mainahs, probably because the 90 or 100 odd Eagles that inhabit the island, make it too hot for these smaller robbers.

I believe that no other similar breeding place of this Sea Eagle is known to exist, at any rate, within the limits of the *British* Empire in Asia—I know now of a great many localities where one or even two pairs have for years nested, but this is the only large Colony of which I have ever heard.

It is not difficult to understand why this island should have attracted these birds. It is in the midst of deep sea, literally swarming with sea snakes; it is miles away from land, and there being nothing there to attract visitors, neither cocoanuts, nor birds' nests, nor turtles, nor sea birds' eggs, and it being, even in fine weather, rather difficult to land on, no one I believe *ever* visits it. It is high and perpendicular sided, and bears on its summit huge trees suitable alike for nesting purposes, and as watch-towers, from which prey can be watched for and pounced down upon. If only a single pair settled there, at first, advantages like these, perfect safety and an abundant supply of food would necessarily lead to the establishment of a growing Colony, the growth of which might only be limited by the supply of food. I procured some 15 specimens, and I killed 6 or 7 more which fell down into inaccessible portions of the cliffs, and I left, as far as I could judge, from 70 to 80 birds, old and young, on the island. If some one re-visits the island a few years hence, it will be interesting to ascertain whether the colony, which when we

* Lord Walden recently remarked: "Mr. Hume speaks of typical *Turtur tigrina* from Sumatra. As the species was not described from a Sumatran individual, it is difficult to gather what is meant by the expression typical." By typical I desire to signify an example exhibiting in their highest development, the peculiar characteristics of the species. *Columba intermedia* was certainly not described from a West Coast Island individual, yet amongst a very large series obtained in all parts of the Empire, the Pigeons of these islands are amongst the most typical, *i. e.*, have the characters by which *intermedia* differs from *livia* most pronounced. So too of all the specimens of *tigrina* that I have seen from Burmah and Malayana, those from Sumatra, are amongst those that exhibit in the most marked degree those peculiarities which constitute the specific difference between *suratensis* and *tigrina*, and therefore I call them typical. But *chacun selon son goût*.

landed must have comprised nearly 100 birds of all ages, has increased or diminished.

On the day of our arrival as we were rowing round the island, an enormous whale, a fin-back (probably *Balænoptera indica*, Blyth) joined us and seemed very anxious to cultivate our acquaintance.

I observed it very carefully as it persisted in keeping abreast of us at a distance of from 50 to 70 yards, and am confident that it exceeded 100 feet in length. I never saw such a gigantic creature. It swam sometimes very high, with half its head, nearly half its body and part of its tail above water, and then again it would swim for a time with only the back fin showing.

Suddenly it disappeared, and two minutes afterwards came up on the other side of us. We were in very deep water, scarcely 200 yards from the shore no doubt, but this was densely fringed with jagged rocks on which, comparatively calm as the sea was, a furious surf was boiling, and besides, there were plenty of sharks knocking about, and we had several guns, a chronometer and other valuables with us which it would be impossible to save even if we, ourselves, could all effect a safe landing. It was, therefore, with no responsive feelings, that we marked our Bemoth's persistent advances; peaceful he doubtless was, and friendly his intentions, but we well knew the innocent fancy that at times seizes even well conducted whales, for scratching their remora and barnacle studded backs against the bottoms of ships and boats, and should our amiable monster thus allow his feelings to get the better of his natural timidity, where should we be? Any reader who has never been similarly situated may laugh, but I can assure him that for the ten minutes or so that our uninvited companion stuck to us, we all felt the reverse of comfortable. At last to our inexpressible relief when we had completely rounded the western end of the island, Bemoth dived and finally quitted *us*. Later in the afternoon, however, he paid the "Clyde" a visit swimming round and round her several times, ("very like a whale" perhaps he thought her) and next morning looking down from the cliffs I watched him for nearly an hour, lazily gambolling in the deep water, where he had joined us on the previous day.

I have forgotten to note that although the whole of the island itself seemed to be composed of laterite, some of the exterior outlying rocks appeared to consist of some kind of granite, but they were so enveloped in surf that it was impossible to get at them to procure specimens.

*February 9th.*—Last evening we left Pigeon Island and set sail for Cherbaniani reef, the most northerly of the Laccadive group. There are large banks, the Cora-divh, Sesostris and

Bassas de Pedro (and probably others yet undiscovered,) extending far to the northward of Cherbaniani, but as none of these carry any where less than 10 fathoms over them, their inspection did not fall within our instructions.

One object that I had in view in making this trip was to ascertain whether or no the Laccadives were separated by a deep trough from India—a matter which up to this time had remained uncertain.

I had, therefore, indented on the Bombay dockyard for deep sea line, and they supplied some five or six thousand fathoms of splendid looking line. Our Captain, an old Porcupine man, entered most cordially unto my views, and soon after we left Bombay, took the line in hand and began testing and marking it. To our dismay it soon appeared that the line was in many places rotten. Whilst we lay at Pigeon Island, the Captain had a lot of it carefully picked over, all bad pieces picked out and the good carefully spliced together. By noon we had run down to Lat. 13·20 N. and Long. 73·17 E. en-route to Cherbaniani, which then remained about 100 miles distant. We hove to, to get a sounding; the Captain got 520 fathoms of the picked line, wound on a large hand-winch which he fixed in the stern of our large cutter, at the bows of which he rigged up a rough derrick and let out the line with a 30lb lead. No bottom was found; more line was picked over and spliced and at 4 P.M., when in N. Lat. 13·70 and E. Long. 73·10·30, we again tried, but our whole line 920 fathoms was run out without finding bottom, the line being well up and down, and the armature of the lead coming up as clean as it went down.

The accompanying sketch map shows the position in which these soundings were taken, as also that of the various islands of the group, and our track amongst them.

Whilst we were hove to the first time, a Bo'sun' came, in the usual inquisitive fashion of these birds, to see what we were up to, and poor fellow, as is not uncommon, paid a heavy penalty for not minding his own business. About 4 P. M. another came up and poked about above the mast heads for a few minutes, but somehow I missed him, though I had several (no doubt long) shots, and he sailed away and began fishing very composedly about 300 yards off, dropping into the water like a King-fisher, and hovering for a time before making a plunge much as this latter bird does.

*February 10th.*—We hove to for the night to try and get another cast of the lead, and all hands were hard at work under the Captain's personal supervision, in stretching, testing and cutting out all bad and doubtful portions of the line, so that by noon we had altogether nearly 3,000 fathoms on our winch.

By this time, however, unfortunately we had drifted to N. Lat. 12°47″20′ and E. Long. 72°47′30″, not more than 6 or 7 miles from the edge of the Padria Bank (Bassas de Pedro, or Mungul Par, as it is sometimes called). We had no steam, the wind was N. by E. and the old "Clyde" would not work any thing above due east and we were afraid of getting too far south to strike Cherbaniani so we were fain take a sounding where we were, and, as might have been expected so close to the bank, found bottom at only 546 fathoms.

During the day three more Bo'sun's visited us. All these birds, were *Phæton ætherius*, or at any rate the species that we thus identify, and which is certainly not either *flavirostris* or *rubricauda*. All of the same type, glossy, white, black-spotted birds, with short tails, the central tail feathers in no case projecting more than 6 to 8 inches beyond the laterals. It will be said that these are young birds. But I have myself now shot and preserved more than a dozen specimens in the Gulf of Oman and the Indian Ocean, and I have seen at least 50 others hovering about vessels in which I have been, yet never have I chanced to see a single really long-tailed bird, such as Schlegel and Brandt describe. My impression is that the Phæton of the Red Sea, Indian Ocean, the Gulf of Oman and Persian Gulf, will prove to be distinct from *ætherius* of the Atlantic. It is certainly smaller in all its dimensions, as I shall show when dealing separately with the several species of birds met with at the Laccadives.

*February 11th.*—During the night we had run down to Cherbaniani reef and in the early morning another Phæton called on us, and received a hint to bide with us a wee.

The next event was the discovery that, as if to make the cruise in this miserable old tub more pleasant, small-pox has broken out amongst the crew. In one case it is unmistakeable, in another it is probable.

We have no other means of segregating the sick, and so have had hammocks slung for them on our small quarter deck.

Cherbaniani is a long oval atoll, about 6 miles by 2¼ in its extreme dimensions. It is perfectly typical. There is the reef itself an almost perfectly unbroken line some 200 yards in width, just submerged at high, and more or less dry, at low water. In two places on the eastern, and one on the western side, narrow shallow natural channels exist through the reef, which admit the entrance of boats not drawing more than 3 feet. In three places, one at the extreme northern extremity, one towards the southern, and one about the middle of the eastern side, the winds and waves have piled up masses of coral

debris on the reef so as to form small islands always above high water mark. Inside the reef is a shallow lake-like basin, 2 or 3 feet in depth towards the sides, deepening in one place about the centre of the broadest portion to over 20 feet, but averaging about 6 feet down the centre. Outside the reef there is a somewhat sloping bank extending in some places less than 100 yards, in others a quarter and half a mile and at the extreme south-west corner for three-fourths of a mile to seaward. On this bank the water gradually deepens, there is everywhere from 1 to 2 fathoms close to the reef; where the bank is narrow, there may be 5 or 6 fathoms just at its margin, whereas in its broadest places, there are nearly 20 fathoms at its edge. Everywhere immediately you pass the edge of the bank, there is a tremendous perpendicular fall, and, as we found, no bottom at 200 to 250 fathoms close outside the bank.

The accompanying plan will give a correct idea of the reef. The soundings recorded are in fathoms and fractions of fathoms, and the three black spots on the reef indicate the little islets.

The shelving bank, above referred to, consists everywhere, so far as I could test it, of dead reef coral, bearing on its upper surface branched corals, also dead, and much choked up with coral sand. We dragged up with a grapnel, in about 12 fathoms water, a large piece of a solid Astrea; this was broken away from the solid reef, the flukes having lodged in a crevice, and had clearly been *in situ*, but it was quite dead, as was also every piece of coral of every description that we obtained anywhere from, or on, the outside bank. At the edge of the reef, not far from where we were anchored, we brought up a large piece of slender branching coral from about 18 fathoms. This also was quite dead, but it had clearly been growing where we found it.

The conclusion I came to was that, subsequent to the growth of this reef, there must have been a considerable depression of the foundation sufficient to kill all the coral. This is what has happened in the case of the great Bassas de Pedro—which is a great dead coral reef from 20 to 40 fathoms below the surface. But then in the case of Cherbaniani, there has been a re-elevation sufficient to bring the reef up to something near its former elevation.

Inside, the lagoon is floored with snowy white coral sand, the shallower portions of the basin towards the sides being thickly studded with masses of branching corals, one and all, as far as I could see, dead and greatly choked up with coral sand.

The appearance of an atoll like this is very striking; in its more or less concentric rings of different colours, it reminds one something of the eyes of a peacock's tail. Nothing else




# CHERBANIANI REEF

Cables 10 5 0 1 Sea mile

can adequately convey an idea of the brightness of the tints that are blended to form one of these real ocean gems.

First, there is the central portion of the lagoon, an exquisite chrysophrase green, then a broad zone of this color, dotted and freckled with olive green, then the reef itself, a deep olive brown, interspersed with little patches of dark green, and everywhere frosted with the snowy curls of the breakers, then a narrower or wider belt of bright apple green, and beyond, the deep purple of the open sea.

We remained three days at this reef, as its position had to be accurately observed, and during this time I circumnavigated it and went all about it.

There is not the smallest trace of vegetation on any one of the tiny islets, the largest of which, that on the northern extremity of the reef, is only about 200 yards long, by perhaps 50 yards in breadth. Its highest point may be about 7 feet above high water level.

About the reef we saw a solitary Booby (*S. fiber*), numerous Turnstones (*S. interpres*), and great numbers of Noddys and Terns, *Sternula minuta*, *Sterna Bergii*, *S. bengalensis*; *S. albigena*, *S. fuliginosa*, *S. anosthætus*, and *Anous stolidus*, and secured many specimens, but what interested me most was to find, on the northern islet, both the Noddy and *S. fuliginosa* breeding.

The moment we set foot on the island we were positively mobbed by tens of thousands of these birds; crowds of other Terns, especially of *anosthætus*, were sitting about the place when we arrived, but these all took themselves off to one of the other islets and left us to settle matters with the Noddies and Sooty Terns.

We found that the latter had nearly finished breeding; with all our care we could only find some 30 of their eggs, and all so hard set, that I only succeeded in preserving 23 of them after a hard day's work. On the other hand, the reef swarmed with the young ones, that ran about chirping between one's legs in such wise that it was difficult to avoid treading on them. They were very tame and fearless, most comical and yet sensible looking little fellows. We put about a dozen in a carpet bag, and took them on board, meaning to rear them, but, though quite reconciled to their new position, only now and then uttering a little chirping cry, doubtless of astonishment, at their parent's neglect, they would neither eat nor drink anything we could give them, so, after keeping them 36 hours, and selecting three which we killed for specimens, we took the rest back, and let them loose again on their minute spot of native soil. In less than three minutes, amidst the pattering uproar of thousands of pairs of wings and through the haze of the dense flock of birds

with which we were encompassed, the parents of every one of the "lost children" had found them out, and were busy feeding and caressing them.

I have no doubt these parents gave them the true prodigals welcome home, and will rejoice more over these lost chicks, than over all former offspring, but if those young Sootys are ever rash enough to recount their very strange experiences on board-ship, what they saw, and what they underwent, I fear the rest of the community will set them down as hardened deviators from the paths of veracity and cheerfully predicate for them an unpleasant fate.

As for the Noddies, these unfortunately were only beginning to lay; we found eight of their eggs, all quite fresh and never more than one in the same place, whereas of the Sooty Tern we found 2 and 3 together.

There was no nest or attempt at a nest in any case. The eggs were just laid about promiscuously in any slight depression, either on the bare coral blocks or on the coarse coral sand between them. There was no separation between the two species, and each egg or pair of eggs had to be watched until the parent settled down to it in order to make sure to which they pertained, for the eggs laid by both are too similar to permit of their being otherwise certainly separated.

Both *fuliginosa* and *stolidus* were in full breeding plumage. *Anosthætus* and *Bergii*, on the other hand, were still in winter plumage, and on dissection showed no signs of breeding. The former, as I have already noticed, breeds probably during the monsoon on the Vingorla Rocks amongst other places, and Bergii, as we found later, breeds probably on Pere Mullpar and certainly on Astolah, an Island off the Mekran Coast, at the end of May and early in June.

I ought to note, that on our last visit to north island, we discovered why the young "sweeps," (as the juvenile Sooty Terns were disrespectfully designated on board) would have none of the fish, flesh or fowl, which we tendered for their consideration; the parents we found were feeding them exclusively on small Cephalapods (*Sepiolas.*)

*February 14th.*—Last night we left Cherbaniani, for Bitra-par, which we sighted about 11 A. M. We did not take Chereapani en-route as according to the charts, and it has been regularly surveyed there is no spot on the reef not submerged at high water. But information subsequently received from some of the islanders at Amini leads me to believe that this is a mistake, and that this reef is even more frequented by sea birds than either Cherbaniani, or Pere Mullpar.

We anchored just off Betrapar about, 2 P.M. Betrapar is a small uninhabited island, nowhere more than 9 or 10 feet above high water level, about half-a-mile long, and perhaps a quarter of a mile in width at the broadest point, occupying the north-east corner of a large very regular oval atoll, some 7 to 8 miles in length, and 4 to 5 broad in its broadest part. The island is the only part of the atoll above water at high tide, but the edge of the reef is well marked by high breakers all round, and the reef itself is more or less bare at low water, almost throughout its entire length, except for about three-fourths of a mile on its eastern side, immediately south of the island where we found from 1 to 2 fathoms over the edge when the rest of the reef was uncovered.

The Lagoon is very shallow at the northern end, and all along its western side, but throughout the middle and eastern half, carries from 3 to 6 fathoms, so dotted about, however, with coral reefs and shoals (here also mostly, but not by any means universally dead) rising to within from 3 to 6 feet of high water level, that I found it no easy task to steer the steam launch amongst them at half tide. Of course, except where these reefs and shoals occur, the bottom is all fine white coral sand, and the water exhibits that peculiar and lovely aqua-marine tint already alluded to, a colour that "never was on sea or land" save only in gems and in these coral atolls.

The island itself is not composed of mere blocks of water-worn coral piled up by wind and waves, but of a compact indurated lime-stone, undoubtedly the finely triturated debris of the reef cemented together by continual wetting, partial dissolution and re-deposit. It contains a larger proportion of organic matter,* however, I think, than is usual in the case of such air formations.

When it was formed the reef can hardly have been in its present condition. I could nowhere detect the usual beach slope—on the contrary there was in some places a distinct dip towards the interior of the island.

---

* The following is the report of the Geological Survey Department, to which I submitted specimens:—

"*Betra-Par, Laccadives.*

This peculiar rock is almost entirely a pure carbonate of lime, with only a trace of carbonate of magnesia, but it contains 2·33 of organic matter.

The composition of the mass is, Carbonate of Lime, and a trace of Carbonate of

| | |
|---|---|
| Magnesia ... ... ... ... ... | 96.80 |
| Oxides of iron and alumina ... ... ... ... | 0·70 |
| Insoluble ... ... ... ... ... | 0·17 |
| Organic matter ... ... ... ... ... | 2·33 |
| | 100·00." |

A considerable portion of the island is now covered by soil and vegetation, and it is only along part of the inner face that the rock is clearly exposed, exteriorly it is buried out of sight by loose coral debris and above humus conceals it. I much desired to work out its extent, but had no digging tools, but I found it peeping out near both ends of the island, and in *one* place, and one place only, on the seaward face, and my impression was that the entire island was composed of this rock. If this be so, it can scarcely have been formed when the local conditions were as they now are, as in that case necessarily the rock on the seaward face would have been a coarse conglomerate, whereas, the only piece I could detect on the seaward face, was as fine grained and compact as elsewhere. Probably, this patch is all that remains of a far more extensive formation, that has been submerged since its concretion, and subsequently re-elevated. I searched in vain, however, for any conformation of this view, as I did also for any untriturated organic remains in the many pieces I succeeded (though not without much difficulty) in breaking off. If it had been a sub-aqueous deposit, it must, I should think, have contained these. However, my examination was at best most cursory and insufficient, I can only indicate Betra-par as well worthy of study by any one with time and appliances at his command, and more practical knowledge of such questions than I possess.

The only trees on the island are cocoanuts, and for this clearly it is visited by the Islanders, as we found out a sort of shed that visitors appear to be in the habit of using, and near it a great heap of huge Tiger-claw Shells (*Pteroceras lambis*), the fish of which had doubtless served them for many a meal.

Two large shrubs are very abundant and are common to the Shores of India, Ceylon, the Archipelago, Australia and South Sea Islands. The one a *Scaevola* (*S. Konigii, Vahl.*) with masses of large glossy apple green somewhat fleshy leaves surrounding irregular panicles of white flowers, the other a great coarse wild Heliotrope (*Tournefortia argentea*, L.) with an infinite number of close set whorls of oval leaves, with an universal glaucous blue tint. Of course the sandy shores, as elsewhere in all tropical countries, were covered by the bright-green leaved, purplish-lilac flowered, trailing sand convolvulus, (*L pes-capræ*) and inside this were everywhere huge patches of that remarkable rigid-leaved grass (*Spinifex squarrosus*) peculiar to the shores of India, which is often called the Sea-pink. Not that it is anything of the kind, but only that its densely crowded masses of stiff glaucous blue leaves, remind one irresistibly at a short distance of a bed of pink

plants, after they have done flowering. A large Sedge (*Cyperus* sp.*) grew here and there in profusion, and masses of a beautiful white moon creeper (*Calonyction comospermum* Bojer) were in places densely draped over clumps of the large bushes already mentioned, converting them into an impenetrable thicket. Everywhere the shore Quassia (*Suriana maritima*, L.) common on all tropical coasts, a stunted woody shrub, with multitudes of tiny leaves, occupied the external and most exposed positions.

The only other plants on the island were a sort of Dandelion (*Microrhynchus sarmentosus*, D. C.) a miserable Everlasting (*Achyranthes bidentata*, Blume) infamous for the reckless prodigality with which it expends its seeds on all passing legs, another covered with a little white woolly caterpillar-like infloresence (*Aerva lanata*, Juss,) and a tropically universally diffused Nyctago (*Boerhavia diffusa*, L.).

This completes the scanty flora of the island, all plants of the commonest description and the widest distribution.

But if the plants were few and uninteresting, birds were even scarcer. We remained two days at the place, circumnavigated the lagoon inside and outside without seeing anything on or near the reef, except a few Turnstones, a blue Reef Heron (*D. gularis*), one common sandpiper (*Tringoides hypoleucos*). On the island we shot a pair of common Kestrels, four Turnstones, two Sanderlings (*Calidris arenaria*), an Asiatic Golden Plover (*C. fulvus*,) and a Whimbrel. I also saw a pair of thick billed Sandpipers (*T. crassirostris*), but missed them as they rose. Lastly, I saw and carefully spared a pair of Southern Wood owls, (*Bulaca indranee*) (though one of them sat blinking and winking at me in an exasperating fashion for several minutes); but thereby hangs a tale.

I must explain that in some of the inhabited islands the people are much troubled with rats (*Mus rufescens*, as I found on securing specimens), which live up in the crowns of the cocoanut palms, and incontinently drop the nuts on the heads of passers by, and otherwise seriously diminish the outturn of the trees and make themselves generally disagreeable. Our beneficent Government, anxious to succour its suffering people, first suggested cats, but the people already had cats, which, however, getting plenty of fish below, felt no call for running up 90 feet of bare cocoanut trunk in quest of rats, which they never saw or even smelt. Then Government sent down a lot of snakes and mongooses; the former, the people exterminated

* Dr. Hooker writes that this is not new, but only a robust state of *Cyperus arenarius*, Retz.

as undesirable colonists, the latter, they put up with, but derived no great benefit from them, seeing that mongooses are not tree climbers, and the rats stick to the crowns of the trees. I am aware that the official record claims that the mongooses drove the rats up the trees; were this a fact, they could hardly have been more unprofitably employed, it being just *out* of the trees that it is essential to drive the rats, but as a matter of fact the poor *Herpestes* (the only specimen we got was *vitticollis)* had nothing to do with the matter. If they did no good, at least they did no harm in this direction—since at no time did the rat ever reside anywhere than in the tree tops, and seeing that they have plenty to eat there, and nothing to eat below, it could hardly be expected that they should.

Well, having "driven all the rats up the trees," and I perceive from the reports that this imaginary feat was deemed a decided step in the right direction, it occurred to some one to send down a lot of Owls to drive them down again. The conception was really a grand one—between two fires, what should the wretched rats do, but curse the collector and die?

Unfortunately, as is too commonly the case in India, popular prejudice interfered to mar the success of a paternal Government's beneficent schemes.

When the Owls arrived, (magnificent Eagle Owls, says the report, but practically they were Wood Owls), the people were greatly exercised. "What ails the Sirkar" said the elders "Is it not enough that they deluge us with snakes, that they flood us with long-tailed ground rats (mongooses) that kill our chickens? and now they want to afflict us with these devil birds, whose cries keep us all awake at night, and make the children scream, and the old women foretell death and ruin! Certainly we are the Sirkars slaves—what ever they order we obey, but—we won't have the devil birds." The upshot was, that four pairs of the Owls were taken to Betra-Par, where they might, without offence, make night hideous, and the remaining two, were let loose somewhere on the sly. It is true there are no rats on Betra-Par, and that if there were, it would not signify, but *que voulez vous?* the designs of a great and benevolent Government are not to be allowed to come to naught; the Owls had to be disposed of somehow; in political crisises, compromises have to be accepted, and if the unfortunate and guiltless Owls transported for life to meet an untimely grave on the desolate shores of Betra-Par, do seem to have had hard measure meted to them, we must remember that everything was done with the best possible intentions, and that even in the highest states of civilization blameless individuals have at time to suffer *pro bono publico.*

It is worthy of record that up to about 1830, enormous flocks of sea birds used to breed and lay their eggs amongst the brush wood of Betra-Par. When Mr. Robinson (now Sir W. Robinson) visited this island in 1844, the people told him that barely 10 years before they had gathered from 30 to 50 thousand eggs there in a day, and that for a long past period these eggs had always contributed largely to the support of the Islanders. Suddenly, from some unknown cause, the birds entirely deserted the islands, but whither they had gone was not then known. We now know that some at least have gone to Cherbaniani, and other reefs, and that enormous numbers now breed at the Piti sand bank, to which I shall hereafter have to recur.

But if Betra-Par can now-a-days make little show of birds, beasts, or plants, it is a perfect paradise for crabs, and, finding little employment in other directions, we captured crabs most energetically. We got nothing new here, but the variety was astounding. There were massive built, sturdy, purple, chocolate rascals (*Eriplia scrabicula* and *levimana*) that ensconsed themselves in holes of rocks in which they fitted to such a nicety that it was most difficult to dislodge them. Small long-legged silvery fellows (*Ocypode cordimana*) that scampered along the sand at the rate of ten miles an hour, and just when you thought you had them, vanished into a hole. Then there were some strange, enormous-clawed, cream-colored, and grey-mottled, knobby fellows, grubbing about in shallow water (*Calappa tuberculata*), which, when they opened out their huge arms, seemed to be dividing their bodies into three parts. Then, under every stone we turned, were dumpy brownish red individuals, with black tips to very stout claws, (*Leptodius sanguineus*), the hardest biters of the lot. Hundreds of orange red or hermit crabs (*Cenobita Olivieri*) lurked under the branches of all the low growing littoral shrubs.

Of course, the variegated *Grapsi* swarmed in myriads on every part of the reef, and on the coral blocks at the outermost face of the island. In one of the small pools, left on the face of the reef was a nasty snake like pseudo-lamprey (*Muræna tigrina*). It had, as is their wont, the greater part of the body hidden in a hole, only the head and neck was extended, and kept moving in the water with a perpetual wavy sinnous motion. Suddenly an ill-stared Grapsus passed within about a yard, there was a dart through the water, a splashing and lashing for a few seconds, and then the snaky fish was devouring the crab. Both Dr. Armstrong and myself witnessed this same performance on several occasions from distances of 3 to 10 yards, and there is no doubt that these crabs (we never saw

them catch any others) are a common prey of this Pseudo Lamprey.

But enough of crabs, there were plenty of them, and species Galore, goodness knows, but not one solitary individual big enough to be worth eating!

The sea beach was strewed with large bunches of a delicate snow-white jointed coraline (*Isis hippuris*) that looked as if it would have formed an appropriate moss for the arctic regions. The shallows were full of shells, huge massive Cones, enormous Tiger-claw shells (*Pteroceras lambis*), with their beautiful wide spreading glossy pink lips. Cowries of many species, amongst them some very large tiger shells (*Cyprea tigris*), deep red King Conks (*Cassis rufa*), Olives Cerithium, Murex, Mitra, Nassa, Natica, Nerita, Trochus, Volvorina. I know but little of shells, and shall now only add once for all that from our cruise, we brought back over 100 species of univalves of which at least 12 were new, and a still larger number, I think, of bivalves, all of which will be duly dealt with by Mr. Nevill of the Indian Museum.

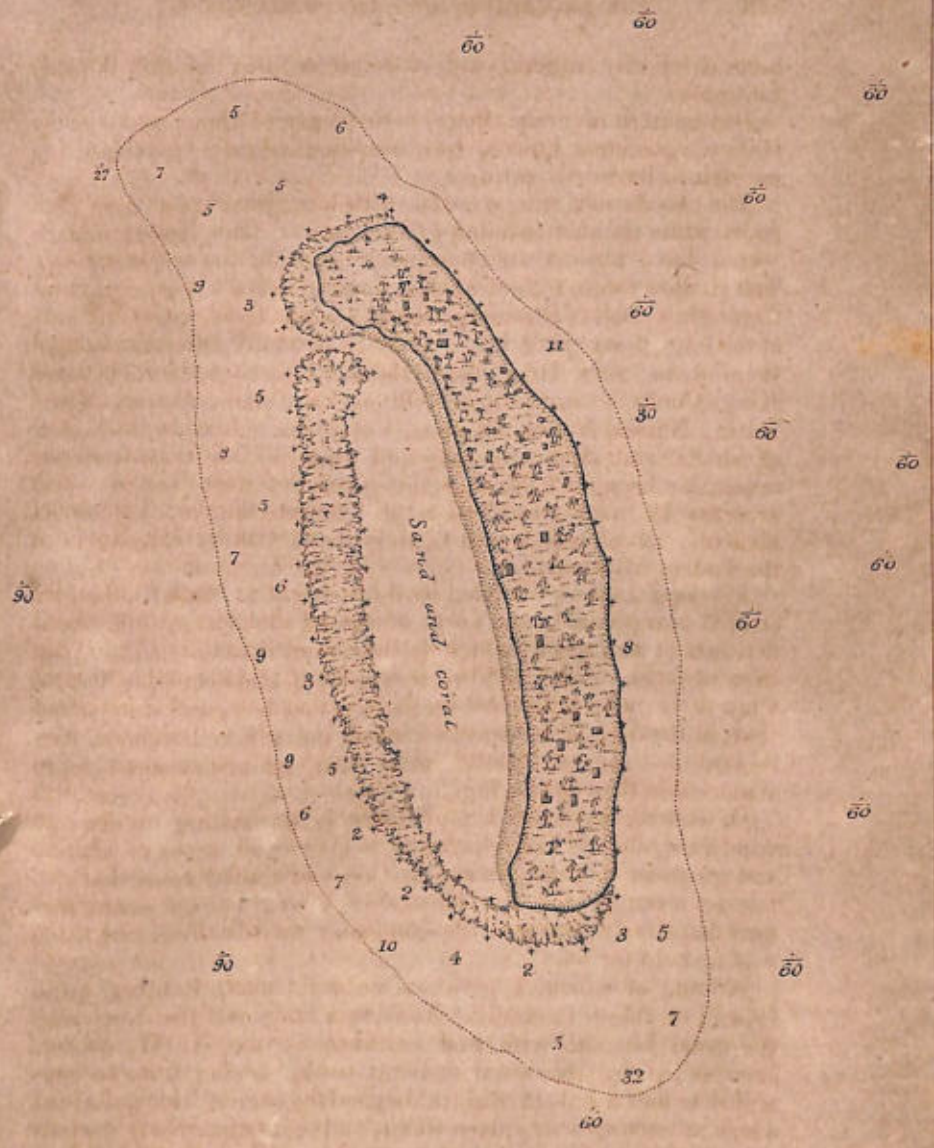
*February 16th.*—We tried hard last night to reach Chitlac, we steered two points to the north of it, and that was within about 6 points of the wind, which is the closest that the "Clyde" can ever manage. Well, the breeze was fresh, and about 11-30 P.M., Chitlac turned up 2 points on the weather bow, and it appeared that, in making 32 miles, this blessed old saucer-bottomed useless tub had sagged 12 miles to leeward, an achievement more remarkable than gratifying.

Of course, in such a craft there is no beating up dead to windward, and we had reluctantly to give up all hopes of Chitlac and go on to Kiltan. It was in this and similar cases that we felt so strongly the loss of steam power; but our screw was now hopelessly jambed, the condenser was disabled, and there was no help for us.

Kiltan, of which I give an accurate plan, it being quite typical of these Laccadive Atols, is a long oval reef, enclosing the usual Lagoon, with one entrance at the N. W. corner, surrounded by the usual shelving bank, varying from an one-eighth to half a mile in breadth, beyond the edge of which, the lead drops at once into very deep water, and with the whole eastern side of the reef converted into an island, which is nearly two miles in length, and may average nearly a quarter of a mile in width.

The Lagoon is very shallow, nearly dry at low water, and the island is one dense cocoanut grove almost from end to end.

The indigenous vegetation is precisely the same as at Betra-Par. I saw no species which does not occur there, except a




# KILTAN ISLAND

Cables ½ 0 1 Sea mile

few screw pines, the only noticeable point was that almost along the entire lagoon face of the island, a dense hedge of the glossy-leaved white-flowered Scævola is allowed to grow just above spring-tide high water mark.

A few useful plants and trees have been introduced, such as the Bread fruit, the Papaia, the Horse Radish tree (*Moringa pterygosperma*) Plantains, Lime trees, and Castor oil plants, but there are very few of these, and the Islanders, a very happy-go-lucky race it must be admitted, seem to set but small store by them.

The way they spoke of the Bread fruit was amusing; their main conception of what was useful in the vegetable world, having been based on the cocoanut palm, which, in these islands and other suitable localities, yields its ripe fruit, week after week throughout the whole year, they regard trees that fruit once in the year and have done with it, as feeble and unsatisfactory freaks of nature. The Bread fruit was all very well they said, but what was the use of their multiplying them? They all bore fruit at the same time, the fruiting season lasted at most two months, and then for the rest of the year there was no yield. A poor sort of tree truly! However, it must be admitted that these islands are rather out of the Bread fruit's natural habitat, and that the tree probably hardly does itself justice here.

As to birds, I worked the island thoroughly, and the only really indigenous bird appeared to be the White-eyed Tit (*Zosterops palpebrosa*) which was common. There were a few Koils (*Eudynanys honorata*), but these the people said were only seasonal visitors, and as the Tit is the only bird that makes a nest in the island, and as the Koils could hardly lay in such a nest, I can quite believe that this is the case. There were several pairs of Kestrels, which the people also said only visited them during the autumn and cooler season. No Crows, no other land birds, except a pair of Owls which we were informed had made their way to the islands from Betra-par, and which being Government protegés, we of course respected, although the people wanted them shot, as they made they said horrible noises at night. There were several Mongooses about, and we shot one which proved to be a Stripe-neck. A Falcon, apparently a Peregrine at times visits the island, but none had been seen there for a month or so previous to our arrival.

On the shore we saw and shot a single Whimbrel, also one out of a tiny flock of large Shore Plovers (*Æ. Geoffroyi*), and a couple of common Sand Pipers (*T. hypoleucos*). There were positively no other birds on or about the islands. No Gulls, Terns or other sea birds of any kind.

I had better now, perhaps, in order to avoid repetition, give once for all a brief account of the islands as a whole, and of their population.

The Laccadives, excluding the mere reefs, Cherbaniani, Cheriapani or Begrangur or Byrankoor, Pere-Mull-Par and Suheli-Par, the Pitti Sand Bank, and the uninhabited islands of Betra-Par, and of Bingaroo and Tingaroo, attached to Aucuttee, are 9 in number, *viz* :—

(1) Chitlac or Chetlat, (2) Kiltan, (3) Cardamum or Kadamut, (4) Amini,—all under the direct management of the British Government,—and (5) Aucuttee or Agalti, (6) Cowrattee or Cabruttee, (7) Androt or Underoo, (8) Kalpini, (9) Minecoy or Munkat—all under the suzeranity of the British Government, but immediately subordinate at present to the Bibi of Cannanore.

Minecoy is often, but erroneously, included amongst the Maldives, but alike in structure, population, and the authority to which it is subordinate, it pertains to the Laccadives. The Maldives are all under a resident Sultan of their own, and, except for the payment of a small tribute to the Ceylon administration, are independant.

I was not able to visit Minecoy on the present occasion, but very early in 1863, coming out in the steamer, immediately after the wreck of the Columbia, we anchored to take up some of the engineers and crew, and I then had an opportunity of examining it.

The inhabitants of the entire group are now Mahomedans, but are of Hindoo origin, and were only converted, according to their own account, some 300 years ago. According to the local tradition, the ancestors, the original colonists, formed part of an expedition, which set out from Malayala on the west coast for Mecca in search of their apostate King Bharmul Pere-Mull, and was wrecked on these islands. They still speak a dialect of Mallayalum, which they write in Arabic, and preserve traces of Malabar castes and of Malabar customs, *e.g.*, of inheritance by the sister's son. As this custom involves the admission of its being impossible for any man to be at all sure as to who may be the father of his wife's sons, and therefore adopting his sister's sons as his heirs, as at least having half of his own family blood in their veins—it recals to us a strange state of society in which public opinion was rather hard on the ladies.

The general structure of many of the islands is well exemplified by the plan of Kiltan, an oval reef, enclosing a lagoon, and the eastern side of the reef constituting the island, which has everywhere a tendency to increase in breadth by gaining

ground westward into the lagoon, which latter seems to be simultaneously shallowing. This is conspicuously the case at Kiltan, where the island is said to gain about a yard in breadth yearly, and where the lagoon is now too shallow to admit the larger boats except at high water.

At Amini, and Underoo it is said, (*non-vidi*) the process has progressed a stage further: there are no lagoons so to speak, only a barrier reef nearly all round the islands, and so close to them that it seems likely soon to become a fringing reef. Aucuttee, however, presents a different structure as both it, and its two little satellite islands, Bingaroo and Tingaroo, are inside a huge lagoon formed by a separate barrier reef.

In most of the islands the substructure appears to be as follows:—A thicker or thinner film of humus; then dry sand varying from two to six feet in thickness; then coarse coral rock from one to two or three feet in thickness; and then below this, several feet of damp sand into which the people have only to pierce in order to procure fairly good, but somewhat brackish, water. Wells and small tanks thus constructed abound everywhere, the water in them, however, rising and falling a little with the tide, showing that the salt and fresh water are somewhere in contact in the more or less porous body of the reef, and that the increased pressure of the high tide raises somewhat the superficial fresh water supply.

The main staple of produce of all the islands is the Cocoanut. The nut itself is one of their principal articles of food, and they export largely the coir or fibre derived from the husk of the nut, the nuts themselves, and to a smaller extent, the *Khopri* or dried kernels, to the mainland. The produce of the British islands is taken to Mangalore, while that of the other islands, chiefly goes to Cannanore.

The Cocoanut trees grow easily and require little care even at the first. There are said to be about 50,000 trees in full bearing in Amini, some 6,000 in Cardamum, 20,000 in Kiltan, and 15,000 in Chitlac. These four islands supply to Mangalore about 170 tons of coir and six or seven hundred thousand Cocoanuts annually, besides a quantity of limes; a number of small cowries which, as is well known, pass as a circulating medium amongst the poorer classes throughout India; a few tortoise-shells and vinegar and jaggery pots.

No exact information is available as to the outturn of the islands now managed by the Rajah of Cannanore (which aggregate an area of about eight square miles, with a population of some 5,500 to 6,000 inhabitants), but it is similar in almost every respect to that from the British Islands, and probably about equal in quantity. In one point only

there is a difference; besides the coir and nuts, the cocoanut tree yields, when the crown is tapped, a sweet and nutritious beverage, which is much in favor with the people, and as they are strict Mahometans is always drunk unfermented. In other parts of India it is fermented and converted into a powerful arrak, here what is not drank when fresh, is boiled down and forms a richly saccharine mollasses.

In the British Islands, but little of this mollasses or jaggery is made; in the other islands, a very considerable quantity is made sufficient, in fact, to supply the British Islands also, which together, boast a population of only about 3,800 souls, of whom more than 2,000 belong to Amini.

I may perhaps say a few words about the coir manufacture, as that produced at all our islands, except Amini, is some of the very best in the world.

Cocoanut trees in these islands get into full bearing according to situation and soil in from 8 to 20 years, and continue in full bearing, it is said, from 60 to even 100 years.

A first-class cocoanut tree ought to throw out a fresh branch bearing nuts each month, and each branch ought to yield from 15 to 20 nuts, but from one accident or another, scarcely any tree really throws out more than 10 bunches in the year, and trees, that have actually produced as many as 200 perfect and mature nuts in one year, are extremely rare.

Practically, taking the trees all round in the four islands, they do not average more than 80 nuts a piece per annum.

The nut is perfectly ripe, and the kernel in the best condition for yielding oil at twelve or thirteen months, but for coir, it does not do to let them remain so long on the tree, and they are cut at about the end of the tenth month. The husks are then split off from the nuts, and are allowed to soak in the sea-water of the lagoons for about a year; they are then taken up, the fibre is easily separated from the woody portion of the husk by beating, and is twisted into a yarn by hand by the women.

If the nuts are allowed to ripen fully, the coir is coarse and extremely difficult to separate from the woody tissue. Again, if the soaking process is not continued long enough, the coir fibres cannot be thoroughly separated, while, if it is too long continued, the fibre is weakened and discolored.

In Amini they have no lagoon suitable for soaking the husks, and this process has, therefore, to be carried on inland in fresh-water pits, the result being that the Amini fibre is neither so strong nor nearly as well colored as that from the other islands. It takes about 30,000 nuts to make one ton of coir.

Besides cocoanuts and fish, salt and fresh, for local consumption, the islands produce very little in way of food stuffs; a very few vegetables, and a small number of Bread-fruits, Papaias, Plantains, Yams, and Areca-nuts are grown in the islands, chiefly at Amini Divi,* and there are a good number of Limes grown in most of the islands, but what the islanders have mainly to depend on, in the way of farinaceous food, is imported rice, which they bring back from the main-land in exchange for their exports.

If, as has happened on several occasions, many of the vessels returning with the rice are lost in any unseasonable storm (for they only communicate with the main-land during the fair season), the mass of the inhabitants are soon on the verge of semi-starvation, and Government aid becomes indispensable.

In former days, a certain amount of millets used to be grown in all the islands, now, even in Amini, little or none appears to be cultivated, and the people are wholly dependant for their supplies on the main-land, whence they bring not only rice but tobacco and salt, which curiously enough never seems to have been manufactured on the islands, the people being allowed to get duty-free salt from Goa.

The people, as far as we could judge of them, seemed a peaceful order-respecting population. They have been accused of plundering wrecks, but, I believe, the worst that can be said of them is that, when they have found abandoned wrecks on the reefs and useful articles lying about handy, they have very sensibly helped themselves. Considering that no salvage had ever been offered to them or any inducement held out to them to act otherwise, I think, that no great blame attaches to them. They have never been inhospitable or unfriendly to ship-wrecked mariners, and now that salvage has been duly offered to them, and the law on this subject explained to them, I do not believe that anything more than petty pilfering, such as goes on to this day on our own English coasts, will be heard of.

One point in the islanders favour deserves prominent record. All who have ever visited eastern climes, have had painful experience of the unpleasant sights and smells that greet one in the neighbourhood of every inhabited site. Now even in the densely populated island of Amini the visitor has nothing of the kind to encounter. The most perfect sanitation exists; the whole place is kept as clean as a private garden. There is no filth, no pigs, and except a little fishy odour here and there on the shore where fish is being salted and dried (and the people do little of this) the whole place is sweet and wholesome.

* *Divi*, which the natives commonly add to all the names of the islands, seems only to mean islands, while "*par*" signifies a reef or bank.

The islands are under the jurisdiction of the Collector of South Canara. Mr. Robinson* visited and reported on them in 1844 and 1845. No European officer again visited them, I think till 1863, since when Assistant-Collectors from South Canara have made visits of inspection three or four times. The real Government of the place consists of a Monégar or Native Magistrate, who resided at Amini, and till recently, I believe, drew the liberal salary of £25 a year; he is now, however, "passing rich on £40 a year," and is assisted by an executive of eight or ten peons scattered about the islands, who enjoy salaries of £7 or £8 per annum.

Feeble as this administration may appear, it is found, supplemented as it is by a sort of local municipal organization, to answer all the requirements of the place.

There are, in all the islands, a certain number of Mukhtessars, more or less strictly hereditary, headmen, who each exercise a certain rather undefined paternal jurisdiction over a certain number of households, and who form juries assisting the Native Magistrate and his peons in the discharge of their public duties, one of the *most* important of which consists in assembling the whole male population for a "Koot."

What is a Koot? Well *Anglice*, it is a Rat Hunt. We all in this life have our trials and crosses, and our peculiar bugbears, and to the Islanders here the special *bête noir* of existence is the cocoanut palm rat. So, once a fortnight in one island, once a week in another, and once in every two, three, or four days in others according to the intensity of the pest, the people assemble and mob the rats, the younger and more active men scale all the palms and drive the vermin out of the crowns. The rats scurry from tree to tree along the interlacing fronds, but, except at the margin of the clump which is being worked, they find a fresh foe in every tree; some are killed above, some fall and are killed by the people below, and though many escape the numbers are kept down successfully by these periodic assaults *en masse*.

The people do not pay any land-revenue to Government for the land on which their cocoanut trees, &c., grow, as they do in most other parts of India. A primitive mode of taxation, which, on the whole, appears to suit the people for the present better than any other, here survives. The Government retains the coir monopoly, that is to say, the Islanders are obliged to

* Many of the facts herein stated in regard to the islands will be found in the excellent report then submitted by Mr. Robinson, but they had all been independently ascertained by myself by local enquiries, as I did not get his report till long after my return, and my figures, which represent the existing state of affairs, will be found to differ materially in some cases from his.—A. O. H.

bring all the coir they desire to part with to Mangalore and there sell it at a certain price to Government, such price being considerably below its market value. The Government then sell the coir by auction, and under recent orders, a certain percentage on the difference between the prices paid and realised by Government is, I believe, to be given to the producers.

The bargain is not nearly so disadvantageous to the islanders as might at first sight appear. In the first place, they pay no other tax. In the second place, they are paid three-fourths in rice and one-fourth only in money, and the rice is given at a fixed rate, much less than the market value, in some years less than half that value, a rate fixed long ago when rice was far cheaper than it now is. In the third place they have no bother of hunting about for purchasers—no delay in completing bargains, and while the former is important to strangers who are invariably cheated by the mainland sharpers, the latter is a *sine qua non* as the frail 6 to 15 tons vessels in which the trade is chiefly, I may say entirely, carried on, cannot conveniently come up to Mangalore before a certain time and cannot safely return after a certain date, and on their return it must be remembered the grain supply to the whole population for a year depends.

There are other minor advantages enjoyed with regard to salt, &c., by the Islanders, so that the arrangement is not really inequitable to them, and, as a matter of fact, when administrative expenses have been defrayed, the native medical officer that Government keeps there, and the vaccinators that are sent there periodically (for the people, unlike most Indian populations, highly appreciate vaccination), are paid for, a very small surplus remains, and this is not more than sufficient to meet the extraordinary expense, which has every now and then to be incurred (as in 1863 and 1871) of suddenly chartering a steamer with rice to send down to the islands to avert general semi-starvation.

To return now to Kiltan in particular; in the central portion of the leeward half of the great cocoanut grove, which covers nearly the whole island, about 180 odd houses containing a population of some 750 souls are scattered about. Many of these houses seem comfortable enough, the walls being solidly built of blocks of coral rock, and the roofs constructed of cocoanut leaves, laid on rafters of wreck wood or split palm trunks. Many houses, however, are wholly composed of these latter materials.

*February 17th.*—During the night we ran down to Cardamum and anchored at the S. W. corner. This is a long oval reef, like that of Kiltan, with the island similarly situated, but much larger, the reef being probably 4½ miles and the island

3½ miles long, the latter being, moreover, fully three-fourths of a mile broad at its central and widest place.

The lagoon too is large, and in places, deep, but the sole entrance to it, that we could hear of, was only practicable for our steam cutter at or near high water, and as we did not anchor till past 10 A.M., and as the tide had been high about 7 A.M., we failed during the entire day to get through the reef or land anywhere. We circumnavigated the atoll, but failed to see even one single Gull, Tern, or Sea Bird. About 5 P. M., we got water enough to cross the reef close to the southern extremity of the island, and ran a mile or so up the lagoon, and landed some of our people. But we saw very little as it was getting dusk, and only made out, that the central portion of the island alone was planted, and that the rest was thickly covered with low scrub jungle. We arranged for some of our men, who could shoot, to sleep on the island, so that they might commence the search for birds at daylight.

*February 18th.*—Landed by 7·30, and worked the whole island hard till dusk. I do not believe that there could have been a single bird on the island not seen or shot by somebody. Yet large as the island is, and extensive as is the scrub jungle, the only species at all abundant were the White-eyed Tit and the common Koil. There were several pairs of Kestrels, and one *Elanus melanopterus* was seen and shot. No Crows, no other land birds, but of shore birds a very few of each of the following were seen, and one or two of each obtained :—

The Eastern Golden Plover (*C. fulvus*), the Kentish, Mongol and Large Shore Plovers (*Æ. cantianus*, *mongolicus*, and *Geoffroyi*), the Turnstone, the Indian Curlew (*N. lineatus*), the Common Sandpiper, (*T. hypoleucos*), the Greenshank (*T. canescens*), the Indian Pond Heron (*Ardeola Grayii*), and the Green Bittern (*Butorides javanicus*).

Certes, it was worth while coming so far and working so hard (and the heat was great, and the glare from the white sand, and the glitter from the water, most trying) to get a trumpery lot like this!

Of course, with so much jungle, we got a good many species of plants which we had not previously met with, but one and all common tropical plants, many of them of the widest distribution. Screw Pines were more abundant than we had hitherto seen them, but the people make no use of the fruit. I tried to teach and explain to them the Nicobarese method of cooking the fruit, whereby excellent bread is obtained. The fruit, split up in its natural divisions is boiled for 12 hours, then the doughy portions of the interior are scraped out with a shell, and patted together into a ball; a fine string is then drawn through and

through this lump of dough thus extracting the whole of the woody fibres, that permeate it; when the string drawn through, every portion of the mass fails to bring out a single fibre, the dough is rolled and patted into small cakes, which are baked on hot ashes, and are both palatable and nutritious. It is only in the Nicobars, that this process, simple as it is, seems to be understood. They have lots of Pandanus in the straits, but it is never utilized there any more than at the Laccadives. At the latter, I fully explained it, both here and at Amini, but not having time to give a practical illustration of my instructions, I fear that nothing will come of them.

The Common Southern Milk Plant (*Calotropis gigantea*) was noticed here for the first time. There were also Mallow-Worts, the small trailing *Sida humilis*, Müll, and the *Abutilon indicum*, G. Don. Quantities of wild indigo, whole fields of it, if I may use the expression, only broken by patches of a scarlet flowered Ixora (not the one, we got on St. George's Island, but *I. bandhuca*, Roxb). Large clumps of a broad-leaved shrub, not unlike the common Dāk (*Butea frondosa*), for which I think previous visitors have mistaken it, but which is really *Guettarda speciosa*, L.

A great part of the jungle is composed of a dwarf tree a Verbene (*Premna integrifolia*, L.) closely allied, though very different in appearance to the gigantic Teak. A tall fine loose flowering grass (*Apluda aristata*, L.) fills all the outskirts of the jungle. A few other insignificant herbs, *Wedelia biflora*, D. C., and *Euphorbia pilulifera*, L., complete the list of wild plants which we first met with here, and to which have to be added almost all those found on Betra-Par and Kiltan.

The population of the island, large as is this latter, does not exceed 200. They do not seem nearly so well off in any respect as the people of Kiltan. And though the soil is better perhaps than that of any of the other of the islands scarcely one-third of it is yet planted. Thay have only four mosques against 14 in Kiltan and 34 in Amini. They have no Schools, Blacksmiths, Barbers or Gold and Silversmiths, which all the other islands have. In fact the island is very backward in every way, and this partly seems to arise from the fact that all the inhabitants are of the lowest caste (for despite their conversion to Mahomedanism they keep up certain caste distinctions, specially on Amini, where alone any of the highest caste reside) and are in a variety of ways kept under and domineered over by the higher caste people of Amini, who exercise an undefined but still obviously real and depressing feudal influence over them. Government have, I believe, been taking measures to remedy this evil. Hitherto the people of Cardamum have been

compelled to send all their coir to the mainland in boats belonging to the people of Amini, which involved a freight charge of 20 per cent. of the coir sent. Now, I understand, they are to be allowed to send their own produce in their own boats.

*February 19th.*—We landed early on Amini, the best and most populous of the British Islands. It is here that the Monégar and the Native Doctor reside, and here they have no less then six schools containing over 100 pupils of both sexes. This island has grown from east to west so as to have all but completely obliterated the original lagoon.

It has a comparatively large population, 16 or 17 families of (for the islands) considerable wealth, and a good many people of better caste than any who inhabit the three islands previously mentioned. Of course they have many more cocoanuts, many more large boats than any of these, but they have besides a large plot of land near the centre of the island far better suited for cultivation than any other spot in the group. Here in some long-forgotten past time the whole superficial stratum of dry sand, and the whole coral crust (to which I have already alluded in treating of the general structure of the islands), has been apparently removed. It must have been a work of enormous labour, and it occurs to me that it may possibly be a natural and not artificial depression. Anyhow throughout this *Kot*, as it is locally called, the cultivation is down on the moist sand stratum, and everything, including Cocoanut and Arecanut Palms, grows superbly on it.

Here there are some 700 Bread-fruit trees, numbers of Lime bushes, a good number of Betel-nut Palms, Plantains and Pomegranates. Castor oil plants, Papaya and Horse-radish trees are common. I saw also several Banyan; some Tamarind, some Aonla (*Embica officinalis*), and a number of Poon trees (*Callophyllum indophyllum*, L.,) so valuable for masts and cross pieces of small vessels like those in use in these islands. A good many vegetables are also grown here, Yams, Sweet-potatoes, Arooee's (*Collocasia antiquorum*) and others.

With the comparatively large trade of this island it is not surprising that many more wild plants are found here than in the other islands. We procured every species here, that I have already enumerated, except the Sedge found on Betra-Par and besides, saw many plants of the Datura or Stramonium, of the Winter Cherry (*Physalis peruviana*, L.) of a large Cowitch with bunches of deep blackish purple flowers (*Mucuna capitata*, W. and A.) looking like Hamburgh grapes, of the lovely blue flowered creeper so common in Indian gardens (*Clitorea ternatea*) of two yellow blossomed Acanthads (*Barleria prionitis*,

L. and *ciliata*, Roxb.) and many* other inconspicuous herbs, including the broad-leaved jointed (*Panicum compositum*, L.) and common three-toed Grass (*Dactyloclenium ægyptiacum*, Weld.)

As regards birds this island is as barren as the rest, the only new feature in the case was the presence of a good number of the common Indian Crow. The White Eyed Tit was here, as elsewhere in this group, very common, and on a comparatively open plot of ground towards the south-west of the island a considerable number of Asiatic Golden Plovers were scattered about in twos and threes, and afforded rather pretty shooting, as they flew backwards and forwards just within shot, when flushed for us by the juvenile portion of the population. I say juvenile, for they were made to do the running about, but the whole population evinced the liveliest interest and sympathy in my proceedings. In the first place, they had never seen a breech loader before, and the way in which I deliberately, according to their idea, broke the gun at the breech and popped it together again, excited a perfectly irrepressible astonishment. All the head men insisted upon my repeating the performance of loading the gun at least 50 times before they would consent to order the great crowd that surrounded us to give way, and let me commence shooting. When at last I drew near to where the Plovers were, and indicated that I was about to shoot, it became very apparent that they had no confidence in the safety of a gun that could open and shut in that way, and as I raised the gun to fire, the whole multitude fell back helter-skelter higgledy-piggledy, tumbling one over the other and creating such a terrible stampede that I was obliged to pause awhile to allow them to recover themselves.

But in the second place they had never seen a bird shot flying, and when a few minutes later, a pair of Golden Plover flew over at a height of about 40 yards, and I knocked them down right and left stone dead, the crowd raised a roar of applause, that for a moment made me fancy myself a successful candidate on the hustings on the declaration day. After this there was no shooting for another quarter of an hour, every

* These are as follows:—In giving this list I desire to record my obligations to Dr. King who verified for me all the plants I collected. Though I formerly made Indian Botany a special study, my knowledge of specific names has grown rusty and having now no botanical library, I could not without Dr. King's kind aid have made certain as I now can of the correct names of many of the species, common, though most of them are—

*Cleome viscosa*, L.; *Cardiospermum Halicacabum*, L.; *Crotolaria verucosa*, L.; *Vernonia cinerea*, Less; *Ageratum conyzoides*, L.; *Plumbago zeylonica*, L.; *Tylophora asthmatica*, W. and A.; *Peristrophe bicalyculata*, Nees; *Rungia pectinata*, Nees; *Leucas aspera*, Spreng; *Euphorbia atoto*, Forst; *Phyllanthus madraspatensis*, Müll.

body insisted upon a close inspection of the wonderful gun that could do this sort of thing. I did not observe that I got any credit for my good shooting, it was all the wonderful gun, such a gun! and at least a dozen gentlemen at once signified their willingness to accept it, if I would only kindly supply them with plenty of ammunition.

At last every one was persuaded to allow us to continue shooting. We got a good number of Plovers, and then a lot of the boys and men took us to all the places about the island where birds were ever seen, and before we had finished, assured us that they never saw any other birds besides those they had shewn us. This of course must be accepted *cum grano*, but I think I may safely assert that there were no other species at that time on or about the island. All the species we saw were a single White-Bellied Eagle soaring above the island, a chance visitor, as the people said they had never seen one like it before, a female Peregrine, a Black-winged Kite (*Elanus melanopterus*), several Whimbrel, several Koil, a few Turnstones, and common Sandpipers and a couple of Pond Herons (*A. Grayi*). These with the Crows, Plovers, and White Eyed Tits constituted the entire *avi fauna* of the island, save only of course the pair of Government Owls whose sanctity we religiously respected.

The people of this island appeared to me an extremely sociable, good tempered, intelligent lot, and as the Native Doctor of the place (who talked English and Malayalum fluently, had resided sometime in the island and enjoyed the confidence of the inhabitants,) accompanied us from sunrise to sunset interpreting whenever we were at fault, we got on famously with them, and collected without the least difficulty every possible kind of information.

Early in the morning I expressed a wish for some Turtle and any good shells that they could find, and by the afternoon about a dozen edible Turtles weighing from 30 to 50 or 60 lbs each, (*Chelonia virgata*), and a number of fine King Conks (*Cassis rufa*) a couple of very handsome Tritons, and several beautiful red Mitres (*Mitra episcopalis*) were brought, together with vegetables and other things for which the islanders were with great difficulty prevailed on to accept a small payment.

The Turtles had not been speared as they always are at the Andamans, and when I asked how they had been captured, the men said that they jumped into the water where it was not above 6 to 8 feet deep, and seized them with their hands. I confess I hardly credited this, so I had the biggest Turtle, a very lively and energetic party popped into the largest fresh water tank in the place in which the water was quite muddy and fully seven feet deep. The moment the Turtle touched the water he darted

off and disappeared; one of the men then jumped in, dived, but failed to find the Turtle; a second dived, and almost immediately brought the Turtle up, and holding his belly upwards, despite the violent flapping of his limbs, swam safely to the bank with him. After this I did not hesitate to believe that in the clear water of the lagoons, where it was not very deep, Turtle would stand a poor chance with half a dozen of these amphibious Islanders after them.

I have said something of the curious customs of these Islanders in the matter of the succession always going to the sister's son. Scarcely less curious are their marriage arrangements. When a young man marries he cannot remove his wife from her father's house, but he must, at any rate, if on the island, sleep every night at his father-in-law's house; if he misses a single night, a terrible row ensues, and in this matter the ladies so entirely have their own way that absences of this kind are very rare. As a rule, a man takes his meals also at his father-in-law's house. This, however, is optional, but if he does so, he must provide the food for his wife to cook. This state of things continues throughout a man's whole life. Even when his maternal uncle dies, and he becomes himself the master of a house of his own, he can never take his wife there. The woman lives and dies in the house in which she is born, and with her remain her children; both she and they belong to her father's family and not to her husband's. *Primâ facie* this would seem to be an impracticable and unnatural arrangement, but it is astonishing with what facility human nature adopts itself to any custom, and how the unnatural of one people or age constitute the natural of another; and, as far as I could ascertain, the people were just as happy and comfortable under this, to us, abnormal state of affairs as they are elsewhere, where domestic arrangements are more in consonance with our European proclivities.

When towards evening, I walked leisurely about with a group of elders in the central portion of the island, I thought I had rarely seen a prettier sight. Everywhere towering over our heads waved the feather crowns of the finest and tallest cocoanut trees I have ever seen; the declining sun poured in a perfect flood of golden light through the fretted canopy of softly undulating fronds, imparting to them an almost unearthly brightness. Below, hiding half the pillar-like palm stems, which seemed to stretch away endless in all directions, and already shrouded in the gloom of evening, dense masses of bread fruit trees hemmed us round with deep green many-fingered foliage. Lower again infant palms of the most marvellous vigour and symmetry (destined to replace, when the inevitable evil day

arrives, their gigantic progenitors above) dot the smooth green plots and half conceal the snowy paths (clean and trim, as in some ancient virgin's garden), which divide the various tiny properties. In this part of the island, where the trees yield habitually nearly a couple of hundred nuts a year, a single rood is the estate of a millionaire.

A hundred artificial divisions separate inevitably the roots, and round them we wrangle or smile as the spirit moves us, but high over head the up-risen crowns blend in everlasting harmony in the blue heaven, one and undivided.

*February 20th.*—During the night we came on to Pere-Mull-Par, a huge triangular atoll, with only one small bank (say 200 yards in length by 50 in breadth) at the N. E. corner above high water mark, but with the greater portion of the boundary reef more or less visible at low water.

As we neared the reef, we saw a huge flock of large sea birds fishing away out to seaward. They were fully a mile off, and it was impossible to find out what they were. I went after them in the steam cutter, but they moved away nearly as fast as we steamed, and after an hour's chase, and running at least nine miles, they were still three quarter of a mile distant. My impression is, they were so large and white, and fished so like Cormorants, that they were *Sula piscator*, but I have never shot, or even seen, this bird alive, so that I cannot feel certain.

Any how they were white and fished like Cormorants. These latter birds, as a rule, always desire to be *primi inter pares*. The flock swims along very rapidly, probably chasing a shoal of fish. Each Cormorant, the moment he finds that he is last, rises and flies to the front, and so the whole flock is incessantly playing a sort of "pat-a-cake, pat-a-cake baker's man" game—there being an unbroken stream of birds perpetually flying from the rear to the front of the flock. The rapidity with which the flock, two-thirds of it in the water and one-third in the air, manage to move is surprising; in the present case the flocks moving in this manner cannot have progressed at a slower rate than between 8 and 9 miles an hour.

We entered the atoll without difficulty near the southern extremity, at noon. Not a bird was to be seen, except a few Turnstones about the partly bare portions of the reef. The lagoon up which we steamed was mostly very shallow and dotted about with lumps and bosses of dead coral, through which it was difficult to steer, going at the pace our cutter can go. As we ran on towards the bank at the N. E. corner, two or three *S. fuliginosa* passed, and these were all we saw of this species here from first to last. Clearly this is not one of its head-quarters. Nearing the sand bank, we saw an immense

flock of Terns sunning themselves on a tiny out-lying patch in the lagoon some 50 yards inside the main bank, and in their midst one large dark brownish bird towering above them like a giant.

When we were about 200 yards distant we cut off steam and ran on noiselessly with the way we had on, until we were about 80 yards off the flock. I was lying ready in the bows, and as the big bird rose, I fired and had the luck, long shot as it was, to break a wing. It turned out to be a Booby, *Sula fiber*. Strange to say many of these as I have seen, it is the first that I have ever shot.

As I knocked over the Booby all the Terns rose, and we gave them 3 barrels, bringing down 18 *S. bengalensis* and 12 *S. Bergii*. A few moments later, whilst we were busy picking up the dead and wounded, a small flock of *Dromas ardeola*, which must have risen on the seaward face of the bank, passed within ten yards of the boat, but my hands were full of Terns and I could not get at a gun in time, and they swept away towards the other end of the lagoon, where, although we saw them later, we quite failed to obtain a shot. There was not a particle of vegetation on the bank, and, although the people at Amini assured us that large numbers of Terns bred upon this bank (probably the two species above mentioned, of which there must have been some thousands), we could find on it no old or rotten or broken eggs, or other traces of this. Still the sand bank is so absolutely devoid of any vegetation, so entirely bare, smooth, and wind-swept that this is not to be wondered at, and I do not doubt that these birds really breed here—probably towards the latter end of May. Neither *Bergii* nor *bengalensis* showed on dissection any signs of breeding, and all were still in winter dress.

The only other species observed here was that cosmopolitan, the Common Sandpiper.

*February 21st.*—Came on during night and anchored inside the great lagoon of Aucuttee. The barrier reef is somewhat shoulder-of-mutton shaped, the knuckle to the south, with Aucuttee itself in the middle of the knuckle, and two small uninhabited islands, Bingaroo and Tingaroo, towards the edge of the blade at the N. E. corner. The barrier reef is high and strongly marked on the N., N. E., and more than half the eastern side, and here I think some points remain uncovered even at high tide; elsewhere it is much lower—much of it never becoming bare even at low water, and being pierced with broad deep ship channels in several places.

We first went northwards to a small sand-bank half way between our anchorage and Tingaroo, and there saw a few Turnstones and a single *S. Bergii*.

arrives, their gigantic progenitors above) dot the smooth green plots and half conceal the snowy paths (clean and trim, as in some ancient virgin's garden), which divide the various tiny properties. In this part of the island, where the trees yield habitually nearly a couple of hundred nuts a year, a single rood is the estate of a millionaire.

A hundred artificial divisions separate inevitably the roots, and round them we wrangle or smile as the spirit moves us, but high over head the up-risen crowns blend in everlasting harmony in the blue heaven, one and undivided.

*February 20th.*—During the night we came on to Pere-Mull-Par, a huge triangular atoll, with only one small bank (say 200 yards in length by 50 in breadth) at the N. E. corner above high water mark, but with the greater portion of the boundary reef more or less visible at low water.

As we neared the reef, we saw a huge flock of large sea birds fishing away out to seaward. They were fully a mile off, and it was impossible to find out what they were. I went after them in the steam cutter, but they moved away nearly as fast as we steamed, and after an hour's chase, and running at least nine miles, they were still three quarter of a mile distant. My impression is, they were so large and white, and fished so like Cormorants, that they were *Sula piscator*, but I have never shot, or even seen, this bird alive, so that I cannot feel certain.

Any how they were white and fished like Cormorants. These latter birds, as a rule, always desire to be *primi inter pares*. The flock swims along very rapidly, probably chasing a shoal of fish. Each Cormorant, the moment he finds that he is last, rises and flies to the front, and so the whole flock is incessantly playing a sort of "pat-a-cake, pat-a-cake baker's man" game—there being an unbroken stream of birds perpetually flying from the rear to the front of the flock. The rapidity with which the flock, two-thirds of it in the water and one-third in the air, manage to move is surprising; in the present case the flocks moving in this manner cannot have progressed at a slower rate than between 8 and 9 miles an hour.

We entered the atoll without difficulty near the southern extremity, at noon. Not a bird was to be seen, except a few Turnstones about the partly bare portions of the reef. The lagoon up which we steamed was mostly very shallow and dotted about with lumps and bosses of dead coral, through which it was difficult to steer, going at the pace our cutter can go. As we ran on towards the bank at the N. E. corner, two or three *S. fuliginosa* passed, and these were all we saw of this species here from first to last. Clearly this is not one of its head-quarters. Nearing the sand bank, we saw an immense

flock of Terns sunning themselves on a tiny out-lying patch in the lagoon some 50 yards inside the main bank, and in their midst one large dark brownish bird towering above them like a giant.

When we were about 200 yards distant we cut off steam and ran on noiselessly with the way we had on, until we were about 80 yards off the flock. I was lying ready in the bows, and as the big bird rose, I fired and had the luck, long shot as it was, to break a wing. It turned out to be a Booby, *Sula fiber*. Strange to say many of these as I have seen, it is the first that I have ever shot.

As I knocked over the Booby all the Terns rose, and we gave them 3 barrels, bringing down 18 *S. bengalensis* and 12 *S. Bergii*. A few moments later, whilst we were busy picking up the dead and wounded, a small flock of *Dromas ardeola*, which must have risen on the seaward face of the bank, passed within ten yards of the boat, but my hands were full of Terns and I could not get at a gun in time, and they swept away towards the other end of the lagoon, where, although we saw them later, we quite failed to obtain a shot. There was not a particle of vegetation on the bank, and, although the people at Amini assured us that large numbers of Terns bred upon this bank (probably the two species above mentioned, of which there must have been some thousands), we could find on it no old or rotten or broken eggs, or other traces of this. Still the sand bank is so absolutely devoid of any vegetation, so entirely bare, smooth, and wind-swept that this is not to be wondered at, and I do not doubt that these birds really breed here—probably towards the latter end of May. Neither *Bergii* nor *bengalensis* showed on dissection any signs of breeding, and all were still in winter dress.

The only other species observed here was that cosmopolitan, the Common Sandpiper.

*February 21st.*—Came on during night and anchored inside the great lagoon of Aucuttee. The barrier reef is somewhat shoulder-of-mutton shaped, the knuckle to the south, with Aucuttee itself in the middle of the knuckle, and two small uninhabited islands, Bingaroo and Tingaroo, towards the edge of the blade at the N. E. corner. The barrier reef is high and strongly marked on the N., N. E., and more than half the eastern side, and here I think some points remain uncovered even at high tide; elsewhere it is much lower—much of it never becoming bare even at low water, and being pierced with broad deep ship channels in several places.

We first went northwards to a small sand-bank half way between our anchorage and Tingaroo, and there saw a few Turnstones and a single *S. Bergii*.

We caught a lot of crabs here and got numbers of shells, but saw no birds, and ran on to Bingaroo, a mass of vegetation down to the waters' edge, dense with cocoanuts above and screw pines below. The undergrowth was also very dense. Enormous patches of a great sedge (*C. pallidus*, Heyne,) common in Burmah, the Malay Peninsular and Borneo, and now in full flower, were very conspicuous. We observed most of the plants already recorded, but they grow here with a luxuriance which contrasted strongly with the generally-stunted growth of the same species on Betra Par. The rosemary-like shore quassia (*Suriana maritima*, L.) was here in great densely-packed bushes, dotted with small orange yellow flowers. Interiorly the place was an almost impenetrable thicket, full of grass of many* species not obtained elsewhere (*Panicum verticillatum*, L.—*Cynodon dactylon?*—a species of *Hemarthria*, and others not in flower and not identifiable.)

Masses of *Cæsalpinia bonducella*, Flem, with its all pervading, sharp double recurved thorns, recalling the "Bide-a-wee" thickets of the Cape, in many places barred all progress.

Hard work as this was, I worked backwards and forwards for more than two hours, and was rewarded by seeing and shooting a couple of Koils! There were absolutely no other birds, not even White-eyed Tits, on the island.

Tingaroo was less wooded, but here also there were no land birds, but on the shore and on a long sandy reef that runs out from Tingaroo, we shot Turnstones, a Kentish Plover, and a Curlew, and saw for the first time several common Herons (*Ardea cinerea*).

Lastly, on the reef a splended female Peregrine kept for some time unsuccessfully striking at the Turnstones, and at last came right over us.

The whole north-east portion of the lagoon in which these islands and banks are situated is excessively shallow. Paved throughout with snow-white sand the water assumed the loveliest pale chrysophrase tint imaginable, but this failed to console us for the fact that we were perpetually getting aground, sticking first here, then there, having all to evacuate the cutter, and even lift out the coal bags, &c., and so on. It delayed us terribly as did likewise an unsuccessful attempt to capture turtle, of which there were numbers about. It was very simple when the Amini people did it; but none of us, natives or Europeans, could touch a flapper.

It was past 2 before we started southwards along the edge of the reef for Aucuttee—a long run—but not a single bird was

* I also noticed here, for the first time, *Morinda bracteata*, Roxb.

seen, and by the time we reached Aucuttee, there was a tidy sea up, and we got into a terrible race round the north-west corner of the island, and we not only found it impossible to land, but had the greatest difficulty in getting out of the mess. For at least a quarter of an hour it was a very near thing—twice the engines ceased to revolve, when, with every care in steering, we took heavy seas aboard—each time every one held their breath, as, had we lost way, we must have instantly rolled over, and to say nothing of sharks, of whom we had seen several, no one probably could ever have made head against such a seething jumble of waters; but each time the dear little engines were click-clacking again in less than a minute, their mite of a pump rapidly baling out the water, and just after dark we got alongside the old "Clyde" all safe and none the worse for the prolonged shower-bath to which we had been exposed.

*February 22nd.*—During the night we came on to the Pitti or Pootti sand-bank, which is the extreme southernmost point of an enormous sunken bank over 20 miles in length, which stretches up northwards almost to Amini. All the rest of the bank is from 6 to 20 fathoms below low water; this one patch, nearly square, perhaps 200 by 300 yards, of pure sand, rises about 6 or 7 feet above high-water mark. This island stands on the extreme verge of the shoal which is there semicircular, so that, while on the greater part of three sides there is only from 10 to 12 fathoms water round it, on the fourth there is more than 100 fathoms very close to it. It must clearly rest on rock or coral, for while it shelves very steeply, more steeply than I should have thought it possible for sand to stand, for a short distance, it then goes sheer down in the way that only rock or coral can go.

On this sand bank, we learned at Amini, that in April incredible numbers of sea birds now breed—the main portion probably of the vast colony that in years prior to 1830 frequented Betra-Par for this purpose. Towards the end of March they begin, it is said, to congregate there, but at present there is not a sign of one. Yearly the boats of Amini, on their way back from Cowrattee or Cabrutee, touch at this shoal (as far as we could make out in the latter half of April) and bring thence as many eggs as they can stow away. The birds are said to be so close-packed that one has to kick them up to get across the bank, and so tame that they may be taken by the hand. Several species seem to breed here, some white and as large as geese, (? *Sula piscator)* some grey, some dark, some big, and some little, but naturally one could get no satisfactory particulars, such as would enable one to fix the species, out of the islanders.

Remembering the evidences collected at Vingorla, I was anxious to visit this sand bank, hoping to find a clew on the spot to the birds that breed there. But unfortunately nothing was to be seen; the sand swept by the monsoon winds was as smooth and clean as if no "Booby fair" had ever been held there.

Then we came on to Cowratee, a fine island belonging to the Cannanore Rajah. It is of the usual type, with a fair lagoon, which, however, appears to have only one entrance which we did not like to attempt on the strength of our not-very-reliable chart, the more so as the whole reef seemed enveloped in a frightful surf. However, a canoe soon came out, a most loquacious and amusing individual joined us, ascertained our draught, and piloted us in through a perfect snow-storm of surf in perfect safety. The island contains about 1,000 people, who seem to be a good deal better off than the inhabitants of any of our islands. The soil perhaps is better, and then for some years they have, I believe, refused to pay the Rajah anything. He owns a number of trees in the islands, and these he leases at half-produce rents to some of the islanders. Even these, as far as I could understand, never really paid a fair share of the produce, while the rest never now pay him anything. Of course therefore they are better off than in our islands, where there is a coir monopoly, and where the people in this way have to pay the cost of the administration; but, *per contra*, there is no administration at all in the Cannanore Islands, a very anarchical state of affairs prevails, and the people expressed great anxiety to be brought direct under British rule. I believe there is some prospect of this being done, but when the people do get King Stork, I venture to predict that it will not be long before they bitterly regret the good old days of King Log. The fact is, that throughout these islands, what these people want is to pay nothing to nobody, do what they like, and have cargoes of rice sent them gratis and for love when times are hard and their usual supplies fail. Of course British government and native non-government alike fail to fulfil these Utopian visions. It is the same everywhere. Go where you will in native states and the people long for and descant on the blessings of British rule. But I have never yet seen any part of the country which had been 50 years under that rule, where the people did not believe that they would prefer to revert to native rulers. Both systems have their evils and advantages, and so far as the comfort of the masses is concerned, I am unorthodox enough to believe that there is little on the whole to choose between the two. But the people are like children, and always fancy that what they have *not* got is better than what they have.

I saw nothing specially noticeable in this island beyond the general appearance of superior comfort amongst the inhabitants. One shrub, a Daphne (*Hernandia peltata*, Meissner) with broad cordiform leaves, and large glossy whitish drupes, containing a black seed or nut, I saw here for the first time, but the plants generally were those already noticed. As for birds it was the same story; on land nothing but White-eyed Tits, a Kestrel and a pair of Peregrines, and on the shore the ubiquitous Turnstone. Nothing else, though we traversed every part of the island, which we did not leave till dusk, piloted out safely, despite darkness and surf, by our loquacious friend. He insisted, late as it was, on paying the "Clyde" a visit. He had conceived an immense fondness for the steam cutter; our little engines seemed to be a source of intense delight to him. Their rapid click-clack, click-clack seemed to have an inspiriting effect on him, and from the moment we cleared the breakers, until we ran alongside the "Clyde," he sung in the most energetic manner what we understood to be a love song, keeping time scrupulously with the beats of the pistons. When on board he suggested that, as we could easily get another where we were going to, we should leave the steam-cutter with him, but, meeting with no encouragement in this direction from us, he went away ultimately with a few seers of fine rice, quite happy, in a pitch-dark night and a nasty sea, and duly lit, as he promised, a large torch on the point when he landed to show us that he had safely crossed the reef.

*February 23rd.*—When about 18 miles from Kalpeni, in Lat. 10°6′4″; N. and "Long. 73°17′5 E., we took soundings and found bottom at 990 fathoms. This was of course still well within the group, and helped us in no way towards the depth of the trough dividing the group and the mainland.

In the evening we made Kalpeni and got just in the right place to anchor at the S. W. corner. The word was given to let go, the vessel gave a heavy roll, and the anchor caught in the bo'sprit chains. This was the port anchor, the gear of the starboard anchor we had carried away the day before, and we drifted off the scanty bank of soundings before we could get the port anchor disengaged. Then of course, though we had a fresh breeze, no power on earth could make the old "Clyde" work up a yard to windward. We did try it, and made several tacks, but never gained an inch, for, though she might lie up a little higher, she always sagged bodily to leeward, and at last we had to give it up and bid farewell to the Laccadives.

*February 24th.*—We hove to again in N. Lat. 9°46′8,″ and E. Lat. 74°34′8″ to sound. This was as nearly as possible

Remembering the evidences collected at Vingorla, I was anxious to visit this sand bank, hoping to find a clew on the spot to the birds that breed there. But unfortunately nothing was to be seen; the sand swept by the monsoon winds was as smooth and clean as if no "Booby fair" had ever been held there.

Then we came on to Cowratee, a fine island belonging to the Cannanore Rajah. It is of the usual type, with a fair lagoon, which, however, appears to have only one entrance which we did not like to attempt on the strength of our not-very-reliable chart, the more so as the whole reef seemed enveloped in a frightful surf. However, a canoe soon came out, a most loquacious and amusing individual joined us, ascertained our draught, and piloted us in through a perfect snow-storm of surf in perfect safety. The island contains about 1,000 people, who seem to be a good deal better off than the inhabitants of any of our islands. The soil perhaps is better, and then for some years they have, I believe, refused to pay the Rajah anything. He owns a number of trees in the islands, and these he leases at half-produce rents to some of the islanders. Even these, as far as I could understand, never really paid a fair share of the produce, while the rest never now pay him anything. Of course therefore they are better off than in our islands, where there is a coir monopoly, and where the people in this way have to pay the cost of the administration; but, *per contra*, there is no administration at all in the Cannanore Islands, a very anarchical state of affairs prevails, and the people expressed great anxiety to be brought direct under British rule. I believe there is some prospect of this being done, but when the people do get King Stork, I venture to predict that it will not be long before they bitterly regret the good old days of King Log. The fact is, that throughout these islands, what these people want is to pay nothing to nobody, do what they like, and have cargoes of rice sent them gratis and for love when times are hard and their usual supplies fail. Of course British government and native non-government alike fail to fulfil these Utopian visions. It is the same everywhere. Go where you will in native states and the people long for and descant on the blessings of British rule. But I have never yet seen any part of the country which had been 50 years under that rule, where the people did not believe that they would prefer to revert to native rulers. Both systems have their evils and advantages, and so far as the comfort of the masses is concerned, I am unorthodox enough to believe that there is little on the whole to choose between the two. But the people are like children, and always fancy that what they have *not* got is better than what they have.

I saw nothing specially noticeable in this island beyond the general appearance of superior comfort amongst the inhabitants. One shrub, a Daphne (*Hernandia peltata*, Meissner) with broad cordiform leaves, and large glossy whitish drupes, containing a black seed or nut, I saw here for the first time, but the plants generally were those already noticed. As for birds it was the same story; on land nothing but White-eyed Tits, a Kestrel and a pair of Peregrines, and on the shore the ubiquitous Turnstone. Nothing else, though we traversed every part of the island, which we did not leave till dusk, piloted out safely, despite darkness and surf, by our loquacious friend. He insisted, late as it was, on paying the "Clyde" a visit. He had conceived an immense fondness for the steam cutter; our little engines seemed to be a source of intense delight to him. Their rapid click-clack, click-clack seemed to have an inspiriting effect on him, and from the moment we cleared the breakers, until we ran alongside the "Clyde," he sung in the most energetic manner what we understood to be a love song, keeping time scrupulously with the beats of the pistons. When on board he suggested that, as we could easily get another where we were going to, we should leave the steam-cutter with him, but, meeting with no encouragement in this direction from us, he went away ultimately with a few seers of fine rice, quite happy, in a pitch-dark night and a nasty sea, and duly lit, as he promised, a large torch on the point when he landed to show us that he had safely crossed the reef.

*February 23rd.*—When about 18 miles from Kalpeni, in Lat. 10°6′4″; N. and "Long. 73°17′5 E., we took soundings and found bottom at 990 fathoms. This was of course still well within the group, and helped us in no way towards the depth of the trough dividing the group and the mainland.

In the evening we made Kalpeni and got just in the right place to anchor at the S. W. corner. The word was given to let go, the vessel gave a heavy roll, and the anchor caught in the bo'sprit chains. This was the port anchor, the gear of the starboard anchor we had carried away the day before, and we drifted off the scanty bank of soundings before we could get the port anchor disengaged. Then of course, though we had a fresh breeze, no power on earth could make the old "Clyde" work up a yard to windward. We did try it, and made several tacks, but never gained an inch, for, though she might lie up a little higher, she always sagged bodily to leeward, and at last we had to give it up and bid farewell to the Laccadives.

*February 24th.*—We hove to again in N. Lat. 9°46′8,″ and E. Lat. 74°34′8″ to sound. This was as nearly as possible

the centre of the trough. But our usual ill-luck attended us, and when a little over 700 fathoms had run out smoothly, the line taut and well up and down, it parted. At 4 P.M., having remarked the line and gone over it again carefully, being then in about N. Lat. 9°38′40,″ and E. Lat. 74°55′40,″ we again sounded and got bottom at 1,290 fathoms. It was so far a thoroughly satisfactory cast, but we only got in again 400 fathoms, and then the wretched line parted again. Not a single bird was seen either yesterday or to-day.

*February 25th.—En-route to Quillon*—During the day two or three *Phaetons*, all of the *æthereus* type, looked us up, but no other birds were seen.

When evening closed we were about 20 miles distant from Quillon, and then changed our course southwards towards Kolachul.

*February 26th.*—Running down the coast very slowly, two Bo'suns looked us up about 8 A.M.; after this we kept closer in, and these were the last that we saw during the trip.

Of the rest of our cruize little need be said. On the 27th we reached Kolachul. There were no sea birds about, except a very few *Larus brunneicephalus*. We had only a few hours on shore, and saw nothing but the commonest birds. Crows (*C. impudicus*), Kites (*M. affinis* and *H. indus*), Palm Swifts (*C. palmarum*), the Common Coucal, with black interscapulary region (*C. rufipennis*), Wood Shrikes (*T. ponticeriana*), Bulbuls (*P. pusillus*), the Common Mainah (*A. tristis*), and the Pond Heron (*A. Grayii*). One bird only requires notice, the *Malacocircus* though nearest *griseus* is not typical, and I have no doubt would be separated by some as a distinct species. In its more rufous tail it approches *Sommervillei*, but it is not so large as this latter, and has the feebler bill and pale head of *griseus*, from which, however, it differs not only in the deep rufous tail, but also in the constant occurrence of more or less bright ferruginous patches on the nape and back—patches, which not unfrequently form a demi-collar and sometimes cover the whole interscapulary region. The bills also seem to be slightly longer and more slender than in typical *griseus*. However, all the many races of Indian *Malacocirci* so run one into the other that I feel no inclination to propose any separate name for the South Travancore coast race, well marked and constant as its peculiarities seem to be.

On the 28th we sailed for Tuticorin, but here our evil fortune stuck to us; the wind was adverse, and for nine whole days and nights we tried vainly to get round Cape Comorin. Backwards and forwards from the Cape to near the coast of "Ceylon" we tacked and tacked; each day we thought we must have gained

ground, and each day we found ourselves back exactly abreast of the square mark that indicates the extreme southern point of Hindostan. All this while the weather varied, now it rained, now the sun shone, now it was dead smooth, now there was a little sea ; one thing only never varied, and that was the direction of the wind, which much or little was always dead ahead! All this time no single Gull or Tern or Bo'sun ever came within sight, and a drearier time than we had of it (and it was horribly hot withal) could scarcely be imagined.

At last we made Tuticorin, and I had had enough of the old "Clyde," to which I here bade farewell, devoting the rest of my leave to Southern India, the Pulneys, and Neilgherries, of which I need say nothing here.

After I left, Dr. Armstrong went on with the "Clyde" to Paunben and spent some days about Ramesuram Island, which forms the Indian end, as Manaar does the Cingalese end, of Adam's Bridge. Though chiefly occupied with marine zoology, his own especial branch, Dr. Armstrong very kindly collected several birds for me on this island, and, as so far as I am aware, no specimens have hitherto been recorded from this locality, I think it may be useful to give a list of what he procured, imperfectly as this must necessarily represent the local avi-fauna.

The island he tells me is about eight or ten miles long, everywhere very low and sandy, and mostly covered with a low thin tree jungle. We might have expected this to be a paradise of sea birds, and doubtless at one time it may have been so, but it is now the highway along which passes and repasses the mighty stream of emigration that goes on continually between Southern India and "Ceylon," and Dr. Armstrong did not observe a single Gull or Tern about the place when he was there in the middle of March.

*List of specimens procured at Ramesuram Island.*

**17.—Tinnunculus alaudarius,** *Briss.*

**76.—Athene brama,** *Tem.*

The specimens are rather small and dark, and rather finely spotted, recalling, as do likewise some of the Anjango specimens, the *A. pulchra* of Pegu.

**181.—Brachypternus puncticollis,** *Malh.*

A thoroughly typical example ; the throat only marked with small circular spots.

**212.—Coccystes jacobinus,** *Bodd.*

**216.—Zanclostomus viridirostris,** *Jerd.*

This species also occurs in the Northern half, at any rate, of Ceylon.

**234.—Arachnechthra asiatica,** *Lath.*

**255.—Upupa nigripennis,** *Gould.*

The specimen procured approaches closely to *N. longirostris* of Burmah; it is a female with a bill 2·3 at front, and not the faintest trace of any pale colour intervening between the chesnut of the body of the crest feathers and their black tips.

**265.—Tephrodornis ponticeriana,** *Gmel. See* **S. F.,** Vol. I., p. 435.

The Ramesuram specimens at first appear rather to contravert the theory propounded *loc. cit.* The entire upper surface is earth brown without the least tendency to grey; the supercilia are large and well marked; the cheek and earpatch contrast well with the color of the upper surface; but if the map is looked to, it will be seen that Ramesuram belongs geographically to the flat lowland eastern coast district, the fauna of which is much more closely allied to that of Central and Upper India, whereas the birds from Anjango, which so closely resemble the Ceylonese *affinis*, belong to the western mountainous heavy rainfall tract, which assimilates closely in its physical conditions to many parts of "Ceylon."

**278.—Dicrurus albirictus,** *Hodgs.*

**287.—Artamus fuscus,** *Vieill.*

**288.—Tchitrea paradisi,** *Lin.*

**432 *bis*.—Malacocircus striatus,** *Sw.*

Identical with Ceylonese specimens

**438.—Chatarrhæa caudata,** *Dum.*

**460 *bis*.—Otocompsa fuscicaudata,** *Gould.*

**467.—Iora zeylonica,** *Gmel.*

**475.—Copsychus saularis,** *Lin.*

A male has a black margin to both webs of the 4th pair of lateral tail feathers (counting from the exterior) from the base almost to the tips, thus approaching C. *musicus* of the Malayan regions.

**530.—Orthotomus longicaudatus,** *Gmel.*

**600.—Corydalla rufula,** *Vieill.*

**687.—Temenuchus pagodarum,** *Gmel.*
**760.—Pyrrhulauda grisea,** *Scop.*
**822.—Ortygornis ponticeriana,** *Gmel.*
**845.—Charadrius fulvus,** *Gmel.*
**860.—Strepsilas interpres,** *Lin.*
**878.—Numenius pheopus,** *Lin.*

---

I need only here add that in the Madras roads, where Dr. Armstrong also collected, the only sea birds that he met with at the end of March were *Larus leucophæus*, all more or less in immature plumage, and *Xema brunneicephala* mostly getting into and one already in perfect breeding plumage.

---

I will now give a separate list of the species of birds actually observed at the Laccadives, remarking by way of preface that, unsuccessful as on the whole it was, our cruise established.

1*st*—That the Laccadives are divided from the main land of India by a deep trough, not less than 1,300 fathoms in depth, and possibly considerably more.

2*nd*—That they have no distinctive fauna or flora. No Mammals, except the common Indian *Mus rufescens*, that even in the neighbourhood of Calcutta infests cocoanut trees.

No land birds, except a very few of the commonest Indian species.

No non-Indian plants, the flora consisting mostly of species common on the sea-coasts of India, and more or less diffused over China, Java, and the Straits, extending in many cases to the Malayan Archipelago, Australia, and the South-sea Islands and in several to the tropics generally.

I may add that the majority of the species of plants possess, according to native ideas, medicinal properties, and are therefore just those which are most likely to have been introduced by human agencies; and that, as a matter of fact, it is in the largest island, where the population is greatest and the communication with the mainland has been on the largest scale, that the number of species is greatest.

There appear to me reasons for suspecting that the northern members of the group, at any rate, have undergone a period of subsidence since the coral, of which they mainly consist, was formed, the subsequent elevation not having been sufficient

to allow the re-emergence of those now represented by the great banks of Padrio, &c. Probably the subsidence was greatest to the north, and not improbably it was connected with the volcanic agency which we know to have been in operation scarcely more than half a century ago in the Runn of Cutch, *which is due* north of the group.

And now for our scanty list of birds. One feature, in which, *viz.* its non-inclusion of a single Gull, deserves prominent notice.

Never did we even catch sight of one of these birds anywhere in or about the group. Up to this moment, so far as I can learn, no Gull has ever been seen or shot anywhere in or about the Andamans or Nicobars; certainly we never saw one.

*Primâ facie* one might have expected all these oceanic groups to have abounded with Gulls; as a fact, as far as I know, no Gull ever visits them, except perhaps when blown out thither from inhabited coasts in a cyclone.

The explanation seems to be that, while the Terns are the Hawks and Falcons of the ocean, the Gulls play at sea the part of the Kites on land. It is where offal abounds, the dejeta of crowded human life or extensive fisheries, that the Gulls, when not intent on breeding purposes, love to dwell. In the fish market at Kurrachee, at Muscat, Guader, Cochin, the Chilka, the mouths of the Hooghli and the Ganges, they swarm during the non-breeding season, but the pure seas of the thinly-populated groups referred to are as much out of their line as ices and wafers at Gunter's are out of that of the ordinary London Scavenger.

---

*List of species observed at the Laccadives.*

## 8.—Falco peregrinus, *Gmel.*

The Peregrine appears to be a tolerably common visitant to the islands. We saw it at Amini, Bingaroo (of Aucuttee) and Cowrattee, and heard of its occasional appearence at Kiltan. It does not, however, breed in the islands, nor does it seem to visit them at any one particular season. It is seen at all periods of the year, even during the monsoon; sometimes a single bird and sometimes a pair make their appearance, and remain sometimes only a single day, sometimes for months; so at least say the natives who know the bird well.

## 17.—Cerchneis alaudarius, *Briss.*

The Kestrel is the commonest Raptor at the Laccadives during the cold season. We shot it at Betra-Par, Kiltan, Cardamum,

and Cowrattee, and it probably occurs at every single island. It does not, however appear to breed in the islands, or to remain there during the hot season or monsoons.

The specimens obtained were all of the European type and not of the deeper-colored race resident in Southern India.

## 43.—Cuncuma leucogaster, *Gmel.*

We only once met with this species anywhere in the group, and there we saw a single bird of this species soaring for hours high above the island of Amini. The people to whom I pointed it out declared that they had never seen a specimen of it about the islands before, though several of them knew it as common along the coast. We cannot of course quite believe that this was a special manifestation for our benefit, but we may certainly accept the fact, that it is only a very rare straggler to these islands.

I have already (*supra*, p. 423,) made some remarks about the habits of this species, which I had many opportunities of watching closely at Pigeon Island, and I may here record a few particulars in regard to specimens there obtained. Three adults measured in the flesh :—

| | Length; | Expanse; | Tail, from vent; | Wing; | Tarsus; | Bill from gape; | Weight. |
|---|---|---|---|---|---|---|---|
| ♀ | 29″·5 | 82″ | 11″·5 | 23″·0 | 4″·0 | 2″·65 | 6lbs. |
| ♂ | 26″·5 | 72″ | 9″·9 | 20″·6 | 3″·75 | 2″·3 | 5·5lbs. |
| ♂ | 26″·75 | 74″·5 | 9″·8 | 21″·0 | 4″·0 | 2″·4 | 4·8lbs. |

The irides were brown; the legs and feet white, more or less tinged with a greenish brown, sea-weed-like colour on the soles and edges of the scales; the claws black; the cere and gape pale leaden colour; the lower mandible pale blue, brownish at the tip; the upper, pale somewhat leaden brown, bluish at junction with cere.

I noticed that in the very young birds the legs and feet are a beautiful white, with the faintest possible pink or blue tinge, but as they get older these parts, especially on the soles and edges of the scales, acquire a dirty greenish sea-weedy appearance.

The plumage of the adult has been often well described—not so I think that of the nestling. A young female from the nest, fully fledged but not able to fly, the primaries being only half developed, had the whole of the top and the sides of the head a rather pale wood brown, every feather tipped with yellowish white; the back and sides of the neck, interscapulary region and scapulars, rich purplish brown, each feather tipped with buff, or in the larger scapulars, buffy white; the primaries, black; the secondaries and greater coverts, blackish

brown, the former paling somewhat as they approach the tertiaries, which are wood brown and with the later secondaries are tipped paler; the median coverts, dark brown, whity brown towards the tips; the lesser coverts, a rich dark brown with minute buffy or whitish fringes at the tips; the tail is white, freckled and mottled with dark brown towards the tips, and margined at the tips with buffy white; the upper tail coverts are white at their bases, brown at the tips; the chin, throat, and cheeks, and the sides of the abdomen and flanks, are a warm rufous buff; the ear coverts, dark brown; the base of the neck in front and upper breast, a warm brown, the feathers tipped or tinged at the tips with buff color; the centre of the upper abdomen and lower abdomen mingled brown and buffy; the vent and lower tail-coverts white, tinged with buff.

In a female, well able to fly, having perhaps left the nest a month, the rich buff markings of the interscapulary region and scapulars had diminished much in size and paled in colour, and the buffy white tipping of the feathers of the top and side of the head had increased in size, and spread up the margins of the feathers so as to leave but little of the brown visible.

In a young bird, about thirteen months old, the colors had all become much duller, the whole of the top and sides of the head and back of the neck had become sandy or buffy white, the feathers dark shafted, and the brown bases only showing through here and there. The whole of the buff and buffy white tippings to the feathers of the upper back, interscapulary region, scapulars, wings, tail, and breast, had disappeared, and, as already mentioned, the warm rich browns and buffs had faded. The upper tail-coverts retained only a freckling of blackish-brown towards their tips, and the lower back, which in the birds recently out of the nest is dark brown, each feather broadly tipped with white, had become a dull pale brown, with barely a trace of such a tipping.

## 56.—Milvus govinda, *Sykes.*

Although we never met with this species, it is certain that at times individuals of this species or of *affinis* do occur at Amini and some of the other islands. It is, no doubt, only a chance straggler to the group, but it is one that not very uncommonly appears there.

## 59.—Elanus melanopterus, *Daud.*

The Black-winged Kite appears to visit these islands regularly, though in very small numbers. We procured specimens

on both Amini and Cardamum, and, though we met with it nowhere else, it is a bird clearly recognized by the people. There is no reason to believe that it breeds here.

### 214.—Eudynamis honorata, *L.*

We procured this species on every inhabited island that we visited. Unless perhaps at Amini, where there are Crows and one or two of the Cannanore Islands, at which also this latter species occurs, they can only be, as the people affirm, seasonal visitants—there being no bird in whose nests they could lay their eggs.

### 637.—Zosterops palpebrosus, *Tem.*

The White-eyed Tit is the one resident land bird of the group. Crows also are resident in one or two islands, but the Tit occurs in every inhabited island that we touched at.

### 663.—Corvus splendens, *Vieill.*

The Common Crow was pretty abundant in Amini, but we saw it at no other island. We heard, however, that it also occurred at one or two of the Cannanore Islands which we did not visit.

The Crows at Amini are a very dusky race. The pale collar ill marked, and one or two specimens recall *C. insolens* of Burmah.

### 845.—Charadrius fulvus, *Gmel.*

We saw and shot single individuals of the Asiatic Golden Plover at almost every island in the group that we visited, but it was only at Amini that we saw any considerable number of the species. There, there were certainly fifty, not immediately on the shore, but feeding about in twos and threes in a small comparatively bare plot of ground densely studded with clumps and beds of the curious Sea-Pink grass (*Spinifex squarrosus*, L.) already referred to.

### 846.—Ægialitis Geoffroyi, *Wagler.*

Not very uncommon at the islands. We saw, I suppose, a dozen at Cardamum and Kiltan, and I believe saw, but failed to shoot it, at one other island.

### 847.—Ægialitis mongolicus, *Pall.*

We obtained three specimens at Cardamum, and these, I think, were all we saw.

### 848.—Ægialitis cantianus, *Lath.*

We saw, I think, only two of these—one at Cardamum and one at or near Bingaroo in the Aucuttee atoll.

### 860.—Strepsilas interpres, *Lin.*

The Turnstone is the commonest bird in the Laccadives. We found it on every reef and on the shores of every island without exception. They were nowhere in large numbers in any one place, but they were dotted about everywhere in ones and twos, and occasionally we saw small parties.

The Turnstone, I find, swims about a great deal. At Cherbaniani I passed three small birds swimming about merrily just outside the breakers, outside the atoll. I shot two, and after much trouble (as we dared not take the steam launch too close to the breakers, as huge rollers were coming in) succeeded in securing them. I made sure that they must be Phaleropes, and was naturally vastly disgusted at finding they were merely Turnstones. Subsequently we repeatedly saw them swimming about in similar localities—never in the still lagoons. They rose out of the water with the greatest ease, took short flights, and dropped down again into the sea, in which they appeared to be perfectly at home. I have seen many Turnstones before, but never saw them thus affect the water.

### 861.—Dromas ardeola, *Payk.*

We only once met with this species in the group, and that was at Pere-Mull-Par, where we saw a small flock of ten or a dozen individuals.

### 877.—Numenius lineatus, *Cuv.*

A rare bird in the islands. We altogether saw (and shot) two—one at Cardamum, the other at Aucuttee.

### 878.—Numenius pheopus, *Lin.*

This Whimbrel is decidedly less rare than the Curlew, we shot it at Kiltan, Amini, and Betra-Par, and probably saw not less than six or seven from first to last.

### 881 *bis.*—Tringa crassirostris, *Tem. and Schl.*

I only once met with this species in the Laccadives; a single pair at Betra-Par; I did not shoot either, but I am familiar with the species, of which I procured numbers in the Kurrachee harbour. I examined this pair with binoculars from a distance of about 100 yards before trying to get at them.

## 888.—Calidris arenaria, *Lin.*

I saw and shot a pair of Sanderlings at Betra-Par. I never met with the species anywhere else in the group.

*A female measured*:—Length, 8″·0; expanse, 15″·3; tail, from vent, 2″·0; wing, 5″.0; tarsus, 1″·0; bill, from gape, 1″·0. Bill, legs, and feet, black.

## 893.—Tringoides hypoleucos, *Lin.*

This was, next to the Turnstone, the most common shore bird. It was not numerous anywhere, but we saw, one, two or three at Betra-Par, Kiltan, Cardamum, Amini, and Pere-Mull-Par. I do not suppose, however, that there were one-tenth of the number of common Sandpipers that there were of Turnstones. They were not *plentiful* everywhere as they are at the Andamans and Nicobars.

## 894.—Totanus canescens, *Gmel.*

We never but once saw the Greenshank in the Laccadives, and this was at Cardamum, where, after some trouble, for it was very wary, I stalked and shot it.

## 923.—Ardea cinerea, *Lin.*

We saw several specimens of the Common Heron at the little uninhabited islands, Bingaroo and Tingaroo of the Aucuttee atoll (and here I suspect it breeds, as on two or three of the trees were stick nests that belonged obviously to some species of Heron), but we never saw it elsewhere in the group.

## 928.—Demiegretta gularis, *Bosc.*

I saw one single specimen, of this Blue Heron at Betra-Par, but did not meet with it elsewhere in the Laccadives.

I have already (Vol. I. p. 254) given full dimensions of the normal blue-grey or slatey specimens of this species obtained at Kurrachee. A snow-white example, a female, shot in the Bombay harbour, and which is absolutely structurally identical with slatey blue birds of the same sex, measured:—

Length, 24″·1; expanse, 38″·0; tail, 3″·8; wing, 10″·2; tarsus, 3″·8; mid toe and claw, 2″·91; bare portion of tibia, 2″·0; bill from gape, 4″·2. It weighed 1 lb.

The irides were bright yellow; the upper mandible, deep wood brown; the lower mandible, dull yellow; lores, slightly greenish yellow; orbital space, more hoary; feet, yellow; legs, blackish olive; base of tarsi and patches on both tarsi and tibiæ, greenish yellow.

Although killed on the 2nd February, the crest was fully three inches long, the interscapulary plumes, disintegrated and extended to the tip of the tail; and the pectoral plumes elongated and lanceolate.

This species has now been observed by me at Muscat on the Arabian Coast, all along the Mekran Coast from Gwader, at Kurrachee, at the western extremity of Kattiawar, at Teetul, at Bombay, at the Laccadives (where I only saw a single specimen) at various points along the west coast and round Cape Comorin to Tuticorin, and I have received a specimen shot by my former Collector, Mr. Theobald, in the Tinnevelly District. I have not the least doubt that it is this species that occurs in Ceylon. On the other side of Muscat it occurs along the whole Arabian coast, the whole western coast of Africa from Suez to Mozambique, in the Comoros and Madagascar, and reappears on the East in Senegambia and the Gold Coast.

As has often been noticed, the remarkable fact of the adults wearing some of them a dark slatey and some of them a pure white livery, and that too, without any reference to sex or season, is common to other species of *Demi egretta*, e.g., *sacra* of Burmah, the Andamans, and Nicobars, and the entire Archipelago, including Australia and New Zealand, and *rufa* and *cærulea* of America.

I have already discussed this question in its relation to *sacra* (Vol II, p. 304) and have nothing to add of my own experience, but I have found some very interesting facts in regard to this allotropism in the present species in Heuglin's great work on the Ornithology of North-East Africa to which I would draw attention.

Heuglin remarks that specimens occur (1) varying from ash to deep slatey grey; (2) pure white, (3) pied grey and white, the latter, however, being only young birds, and the pure white being less common than the grey. Further that he has examined many nests and has found in the same nest half grown young of both sexes, some a dirty ash grey, and some white, more or less variegated with brownish grey, but that he has never met with nestlings either pure white or deep slatey grey like old birds. The variegated birds change as time passes, some into normally coloured, some into white plumage, but no really old bird ever exhibits the spotted plumage.

This is exactly our experience at the Andamans and Nicobars of *D. sacra*.

It seems to me not impossible that both this species and *D. sacra* were originally white, and were derived from a stock whose natural feeding grounds were more inland and less exposed. It is quite conceivable that when they took to frequenting, *par*

*preference* bare dark rocks and reefs, their extremely conspicuous white plumage may have been in many ways disadvantageous to them. It would not only be that their enemies would more readily discern them, but that their prey also would be less likely to permit their approach. Any variation, therefore, towards a grey or dusky tint, such as a marked change in diet, might well produce, would be a distinct advantage to the individuals thus favored, and the descendants of these, if they retained this peculiarity, would be likely in time to supersede the original race. Dusky varieties would gradually gain ground and become the predominant forms as we now see them.

At the same time the variety does not even yet appear to have become well fixed, young white birds, spotted more or less with dusky, appeared to be common, and a certain portion of these revert later in life to the pure original type.

It is certain not only that the white birds in both species are far less common than the slaty ones, but also that they are far more wary; I have tested this myself dozens of times, so that *they* at least are conscious that there is something about them that makes it more dangerous for them than for the others to allow an enemy to approach. As a matter of fact you invariably notice these at a distance of a quarter of a mile, while you may row within twenty yards of one of the grey birds as he sits motionless amidst the dusky surf-beaten rocks without ever seeing it.

### 930.—Ardeola Grayi, *Sykes*.

We only met with the Indian Pond Heron on Amini and Cardamum, and there we only saw two or three examples.

### 931.—Butorides javanicus, *Horsf.*

We saw and shot a single specimen of the Green Bittern at Cardamum.

### 986 *bis*.—Sterna albigena, *Licht.* (Nomencl. Mus. Berol., p. 98.)

Firing into a crowd of small Terns, Dr. Armstrong killed two birds of this species, together with a number of lesser Terns at Cherbaniani reef, on the 13th February. Neither of the specimens were adult, and the lower surface has only a certain number of the feathers of the breast and abdomen a blue smoky grey; moreover, the forehead and greater part of the crown are greyish white more or less speckled with blackish brown; and owing to the imperfect development of the black of the head, the white cheek stripe is only imperfectly marked.

Independent of the smoky grey under surface this species

is distinguishable from its three nearest allies—*Sterna fluviatilis*, Naum. (*S. hirundo*, Tem nec *L.*) ; *S. hirundo*, *L*, (= *S. macroura* Naum.; *S. arctica* Tem.; *S. paradisea*, Brün) and *S. longipennis* Nordm,—in the much darker grey of the upper surface; in its longer and slenderer bill, in the upper tail coverts almost uniform with the back, and in the almost entirely grey inner webs to the tail feathers.

This species has only hitherto* been obtained on the coasts of the Red Sea, northwards to about the twenty-fourth parallel north Lat. and southwards to the Gulf of Aden, where Heuglin tells us that it is more common on the African than on the Asiatic shore. It constitutes, therefore, an important addition to our Indian avifauna, the only one which our expedition yielded. We never saw this species on any other occasion.

Of two males, the dimensions were as follows, but I may note that of the second male the external tail feathers were undeveloped :—

Length, 14″·5, 12″·5; expanse, 29″·25, 29″·5; tail from vent, 6″·5, 4″·1; wing, 9″·9, 9″·7; tarsus, 0″·77, 0″·75; mid toe and claw, 1″·04, 0″·94; bill from gape, 2″·15; at front, from margin of feathers, 1″·55, 1″·47.

In both specimens the irides were deep brown; the legs and feet, Indian red, tinged in front of tarsi and toes with blackish dusky; the bill was blackish, with the extreme tips, whitish horny, and with more or less of a reddish tinge, as if it would turn red; gape and inside of mouth, deep red.

The lores and point of the forehead, white; the latter with a few black speckles; a patch in front of the eye, black speckled with white; the anterior half of the crown, white tinged earthy or brownish grey, and with spots and blotches of brownish black. Feathers immediately above the eye, all the feathers behind the eye, the sides of the head, occiput and nape, black; the posterior half of the crown blackish brown, a little mingled with greyish white; an imperfect white band from the lores beneath the eyes; and an imperfect black stripe below this.

The back of the neck, whitish; the feathers suffused with grey towards the tips; the whole of the back, scapulars, wings, tail, a moderately dark french grey, darker than in *S. bengalensis*, but not so dark as in some *Bergii*. The upper tail coverts, slightly paler; the wings, more silvery; but the outer web of the first primary and of the exterior elongated tail feather, much

* Long after this was written, Lord Walden announced in the *Ibis*. having procured specimens of this species from Bombay.

darker; the inner webs of the primaries, darker; the first primary with a considerable portion of the inner web, white to the margin; the other primaries also, with white on the inner web, but with a grey band on the margin.

The second and third tail feathers also a rather darker grey on the outer webs towards the points; the rest of the tail feathers, inner and outer webs, pretty well concolorous with the rump and upper tail coverts; the chin, throat, and sides of the neck, almost pure white, only a few faint dusky grey patches; the breast and abdomen, a dusky bluish grey, with many large patches of white; the lower tail coverts, greyish white; the wing lining, white.

In breeding plumage, according to Heuglin, the upper surface is a full bluish grey; the front and sides of the neck, breast, and abdomen, a somewhat paler and more purplish grey; the entire upper surface of head and nape, intensely black; the chin and upper part of the throat, the lores, and an oblique band beneath the eyes, conspicuously snowy white; the beak, coral red, blackish towards the base of the culmen and at the tips; the feet, bright coral red.

## 988.—Sternula minuta, *Lin.*

We shot eight or ten little Terns, on Cherbaniani reef, but observed them in no other part of the group.

I must humbly confess my inability to separate the little Terns into the several species that seem now-a-days accepted by many authors.* For instance, I have a Tern from Ceylon, which, Captain Legge assures me, was named *Sterna sinensis*, Gm. by Mr. Howard Saunders. I am unable to discover any constant points of difference between this specimen and numerous specimens from various parts of India, Burmah, the Laccadives, England and Europe. Of course the bills vary very much in colour, but I take that to be a sign of age or season. In the young birds the bills will be brown, a little later they will be tinged with olive in the central portion, then the central portion will become an olive orange, then, when the bird is adult, the bill is sometimes yellow with a conspicuous deep brown tip 0·3 in length; others have it similarily tipped 0·2 and 0·1 in length, others have a mere brown spot at the extreme tips, others are all yellow.

Then the bills differ very materially in length and shape, some are decidedly more slender, others, both deeper and broader, some have the angle of the gonys pretty well marked, in others, this is not the case.

* I shall feel *greatly* indebted to all correspondents who will send me good skins carefully sexed and dated, of the little Tern from various parts of India, Burmah, and Ceylon.—Ed., S. F.

Then again, some have the entire rump, upper tail coverts and tail, pure white; others have the rump, grey, others the upper tail coverts also grey, while lastly, some have the entire tail, except the outer tail feather, also grey.

But I am quite unable to group these differences together in such wise as to permit of any specific separation, and I must, therefore, leave it to some one wiser than myself to decide whether our specimens obtained at Cherbaniani are veritable *minuta* or not.

I measured five specimens, 3 males and 2 females, very carefully.

*The males varied as follows :*—Length, 9″·5, 9″·2, 8″·6 ; expanse, 20″·5, 20″·5, 19″·6; tail from vent, 2″·7, 3″·1, 2″·35; wing, 7″·0, 6″·9, 6″·6; tarsus, 0″·68, 0″·7, 0″·65 ; bill from gape, 1″·65, 1″·67, 1″·45;

*The females measured :*—Length, 9″·25, 8″·5 ; expanse, 20″·0, 19″·5 ; tail from vent, 2″·75, 2″·4 ; wing, 6″·45, 6″·5 ; tarsus, 0″·67, 0″·7 ; bill from gape, 1″·5, 1″·6.

In all, the legs and feet were a dusky olive yellow, or dusky olivaceous orange ; the irides, deep brown.

The bill varied—in one, dusky olive browner at tips of mandibles and base of culmen ; in another, olive orange tipped and with basal portion of culmen rich brown ; in another, the whole bill was deep brown, slightly tinged with olivaceous about the middle portion of the mandibles.

The only sign of immaturity exhibited by this bird was the dusky slaty colour of the lesser wing coverts along the ulna and carpal joint.

## 989.—Sterna Bergii, *Licht.*

I have taken a good deal of trouble with these large Sea Terns of late years—see also STRAY FEATHERS, Vol. I, p. 283—and I am disposed to believe now that, admitting *Sterna pelecanoides*, King, to be distinct, it does not occur anywhere on our Indian coasts. I have procured numerous specimens from the coasts of the Persian Gulf and Gulf of Oman, Kurrachee, the Laccadives, Madras, the mouths of the Hugli, the Megna and Mergui Harbour, and Bopyin at the south of the Tennasserim Provinces. One and all appear to me to be referable to the same species. The males are generally rather larger birds, and have decidedly stouter and stronger bills than the females, but in the same sex the bills vary *inter se*. In some, the ridge of the culmen is rounder than in others, as a rule it is very round and obtuse, but in one specimen it is distinctly carinated and every intermediate form occurs. Then again, the angle of the gonys is pretty strongly marked in some, while it is almost wanting in others. Again in both sexes, some specimens are slightly

darker, and others lighter in shade, and the wings too vary somewhat in length. I have given on a former occasion, "STRAY FEATHERS" *loc. cit.*, the dimensions of numerous specimens from the Sind coast and the Gulf of Oman. To judge from four specimens, two of each sex which I measured in the flesh at the Laccadives, these latter are somewhat smaller, but the birds are really not separable, and the difference in the size of the wings in these latter is due to the fact, that none of those which I happened to measure had the two longest primaries fully developed. The following are the dimensions :—

| | Length. | Expanse. | Tail. | Wing imperfect. | Tarsus. | B. from gape. | B. from front. | Weight. |
|---|---|---|---|---|---|---|---|---|
| Males | 21″· | 42″·5 | 6″·7 | 12″·7 | 1″·25 | 3″·7 | 2″·8 | 1lb |
| | 19″·5 | 43″·0 | 6″·2 | 12″·3 | 1″·2 | 3″·55 | 2″·65 | 14oz |
| Female | 20″·5 | 42″·0 | 7″·1 | 12″·7 | 1″·3 | 3″·35 | 2″·5 | 14oz |
| | 19″·75 | 42″·8 | 6″·5 | 13″·0 | 1″·35 | 3″·35 | 2″·6 | 1lb |

A female that I did not measure in the flesh but which has the primaries fully developed, has the wing, 13·7; although the bill is only 2·5 at front. In all, the legs, feet, and claws, were black; the irides, brown; and the bill, pale wax yellow with a greenish tinge. In all, the forehead was pure white; and the entire crown white streaked with black; only the occiput and occipital crest being dull black; the feathers, in many specimens, being slightly edged with white.

In the breeding season, the entire crown, occiput, and occipital crest, become jet black, and the bill, a purer and brighter yellow.

I now subjoin a few leading dimensions of the series of specimens from various parts of the coasts of India :—

| S. Bergii, | | Wing. | Bill at F. | Tarsus. | Locality. |
|---|---|---|---|---|---|
| ,, | ♂ | 14″·6 | 2″·62 | 1″·44 | Gwader Mekran Coast. |
| ,, | ♂ | 14″·5 | 2″·72 | 1″·36 | ,, ,, |
| ,, | ♀ | 14″·3 | 2″·53 | 1″·28 | ,, ,, |
| ,, | ♂ | 14″·3 | 2″·6 | 1″·4 | ,, ,, |
| ,, | ♂ | 14″·55 | 2″·73 | 1″·4 | Kurachee. |
| ,, | ♀ | 13″·6 | 2″·5 | 1″·29 | Laccadives. |
| ,, | ♀ | 13″·7 | 2″·5 | 1″·2 | ,, |
| ,, | ♀ | *imperfect* | 2″·45 | 1″·23 | ,, |
| ,, | ♀ | *do.* | 2″·5 | 1″·3 | ,, |
| ,, | ♂ | 13″·5 | 2″·62 | 1″·26 | ,, |
| ,, | ♂ | *imperfect* | 2″·85 | 1″·29 | ,, |
| ,, | ♂ | *do.* | 2″·7 | 1″·29 | ,, |
| ,, | ♀ | 13″·8 | 2″·55 | 1″·27 | ,, |
| ,, | ♀ | *imperfect* | 2″·5 | 1″·3 | ,, |
| ,, | ♀ | 13″·7 | 2″·5 | 1″·22 | ,, |
| ,, | ♂ | *imperfect* | 2″·5 | 1″·37 | ,, |
| ,, | ? | 13″·65 | 2″·65 | 1″·33 | Madras. |
| ,, | ♀ | 13″·6 | 2″·47 | 1″·26 | ,, |
| ,, | ♂ | 15″. | 2″·6 | 1″·25 | Saugor Island. |
| ,, | ? | 14″·2 | 2″·66 | 1″·33 | Megna, Comilla. |

| S. Bergii | | Wing. | Bill at F. | Tarsus. | Locality. |
|---|---|---|---|---|---|
| „ | ♂ | 14″·3 | 2″·55 | 1″·22 | Mergui, Tenasserim. |
| „ | ♀ | 13″·2 | 2″·35 | 1″·24 | „ „ |
| „ | ♂ | 14″·3 | 2″·58 | 1″·25 | Bopyin, souht of Mergui. |

I observe that Messrs. Finsch and Hartlaub (Central Polynesia, p. 216) and Baron Heuglin (Nord. Ost., Africka, p. 1436) unite with the present species, *Sterna pelecanoides*, King, and *poliocercus*, Gould. I am much disposed to believe that in this they are in error, and that Professor Schlegel, who separates these two, is correct.

I have, from the Society Islands, a Tern, which I consider to be *Sterna pelecanoides*. Its dimensions are as follows:—Wing, 12″·7; bill at front, 2″·05; tarsus, 1″·1. It will be seen how these dimensions contrast with those above given of twenty-three specimens of *Bergii*.

Besides this difference in size, the colour of the upper parts is *markedly* paler than in 19 out of 20 *Bergii*, and is *somewhat* paler than even the most exceptionally pale *Bergii*.

As for *poliocercus*, Gould, I cannot see how any doubt as to its distinctness can arise; a peculiarly fine male in full breeding plumage from Port Lincoln, South Australia, measures—wing, 13″·3; bill at front, 2″·27; tarsus, 1″·0.

By the comparatively small tarsus, by the much slenderer and more compressed bill, by the uniformly pale tint of the tail with the whole of the outer tail feather white, except only a little grey powdering on the inner web just at the tip, *poliocercus* appears to me to be clearly distinguished from both *Bergii* and *pelecanoides*.

I take this opportunity of noting my inability to comprehend how Messrs. Finsch and Hartlaub consider it correct to unite *Sterna longipennis* of Nordmann (which I may mention occurs upon our Indian coasts) with *Sterna frontalis*, Gray.

The true *longipennis* as I understand the species is very close to the *Arctic* Tern, *Sterna hirundo*, but has a slightly longer wing, a slightly stronger bill, which is black at all ages, and a tarsus intermediate in length between that of *S. hirundo*, the Arctic Tern, and S. *fluviatilis*, the common Tern.*

* As to the differences between these two species Mr. Dresser remarks:—[Birds of Europe:—

"The adults of these two birds are not difficult to recognize when in full plumage, and the present species (*fluviatilis*) may always be known—(1) by the black marking on the bill near the tip; (2), by the stronger foot and longer tarsus, measuring at least 0·7 inch; and (3), by the wings reaching beyond the tail. In the adult Arctic Tern the bill is entirely coral-red, the tarsus only measures 0·55, *and the tail reaches beyond the wings*; hence the name of *macroura*, which it sometimes goes by. The young birds are rather more difficult to separate, but may be distinguished by the following characters:—*viz.*, by the amount of black on the inner web

*Sterna frontalis*, on the other hand, is an immense Tern with a bill about 1·7 at front, a wing of over 11″·0, and a total length in fine specimens of over 16 inches; the bird must weigh fully half as much again as *longipennis*; the large species, *frontalis*, does not, so far as I am aware, occur within our limits, whereas, *longipennis*, as I have already mentioned, certainly does.

In regard to the present species, *Sterna Bergii*, I note that we saw an enormous flock of it at Pere-Mull-Par, a small flock at Cherbaniani reef, and a single specimen near Bingaroo in the Aucuttee Atoll. At Pere-Mull it very probably breeds, but the only breeding place of this species, within our limits of which I yet know for certain, is the rocky island of Astolah, which lies off the Mekran coast opposite Jask, a short distance beyond the boundary of Sind.

On this island this species breeds in vast numbers in the early part of the monsoons. A boat sent to this island for me by Captain Wise on the 1st June, brought back no less than 3,000 eggs of this species, and the men said that they had not half robbed the rocks. The eggs of this species have been remarkably well figured in a paper by Baron K. Köing Von Wart-hausen, *Ibis* 1860, pl. V., fig. 4 to 8. by Heuglin from eggs taken by himself, and there is also another good figure of the egg in his Ornithologie Nordost. Afrikas, pl. L., but excellent as these figures are, they fail to convey an adequate idea of the extraordinary diversity, in colouration and markings, of the eggs of this species, though Wart-hausen's remark that in some the markings recall those ot the finest eggs, of *Uria troile*, gives a good idea of one type at any rate of these surpassingly handsome eggs.

The eggs are typically broad ovals, strongly pointed towards the small end, but considerably elongated, varieties are not uncommon. The shell is strong and compact, but entirely devoid of gloss. The ground colour varies from white, greenish and pinkish white, to pale buff, pale yellowish, and again pale pinkish stone colour, to the richest and warmest salmon pink. The markings are of two colours,—an intensely deep burnt sienna brown, often quite black in its intensity, and a pale inky purple, which has an appearance of lying beneath the surface of the shell. In some eggs, the inky purple markings are almost entirely wanting; in others, they are almost more numerous and extensive than the dark ones. In some eggs these dark

---

of the first primary (which is both darker and broader in the common Tern), and above all, by the short tarsus of the Arctic Tern (which fully applies to all birds, even the nestlings). Although the common Tern never attains to the entirely crimson bill of the adult Arctic Tern, yet in the young birds the base of the under mandible, shows more of an orange red colour, than the immature birds of the other species, which has the bill more or less black."

markings are comparatively thinly sprinkled; in others, they are very dense. In some eggs, they are huge blotches and spots, and in these eggs the markings always predominate about the large end, where in some eggs there is a broad zone, in others, a huge more or less mottled cap. In other eggs the markings are almost entirely hieroglyphic-like lines, and in these eggs there is rarely any conspicuous cap or zone.

Of 25 eggs which reached me, no two were very closely alike, and for variety and richness of colouring, they surpass as a body, the eggs of any species with which I am acquainted.

In length they vary from 2″·3 to 2″·71; and in breadth, from 1″·63 to 1″·78; but the average of two dozen was 2″·45 by 1″·71.

## 990.—Sterna bengalensis, *Less.* *See also S. F., Vol. I. p.* 284.

Of this species also we saw a large flock at Pere-Mull-Par, and a few individuals at Cherbaniani, but we met with it nowhere else.

All the specimens obtained were in winter plumage, the entire forehead and lores pure white; the crown, white; each of the feathers centered with a larger or smaller dot of blackish dusky; and the occiput blackish dusky; the feathers margined with white only; a spot in front of the eye and a broad black line from behind eye joining into the crest along the base of the occiput, with the whole of this latter, velvet black.

*A female measured*:—Length, 15′·0; expanse, 35″·25; tail from vent, 5″·7; wing, 11″·3; tarsus, 1″·0; mid toe and claw, 1″·05; bill from gape, 2″·6; at front from margin of feathers, 1″·93; weight, 8 ounces. The bill was pale orange, paler towards the tip; legs and feet, black; the soles of feet and lower surface of toes, dull orange.

I have hitherto failed to discover any breeding place of this species (numerous as they must be) within our limits.

## 992.—Sterna anosthætus *Scop.*

We found the Panayan Tern in enormous numbers at Charbaniani Reef, but did not meet with it elsewhere; we shot about 50 specimens, and preserved half this number. There were one or two young birds amongst them, in which a more or less light wood brown takes the place of the grayish smoky or sooty brown of the adult in winter plumage, but all the rest were adults in winter plumage; on dissection they shewed no signs of breeding, and not one single specimen shewed any traces of the breeding plumage. The dessicated examples of adults that we picked up in the Vingorla rocks were, of course, in breeding plumage.

I do not find it anywhere noticed that the winter and summer plumage of this species is very distinct. In fact, as far as I can make out, the winter plumage is generally described as that of the young. Generally also the descriptions that I have seen are not wholly satisfactory. Dr. Jerdon's, I am afraid, I must call eminently unsatisfactory and he is quite wrong as to the colors of the soft parts.

He says:—"Bill, dusky reddish, red towards the base of the lower mandible; legs, coral red." As a matter of fact, alike in summer and winter plumage, the bill, legs, feet, claws, and webs, are all black.

The birds are in full breeding plumage in May. I will describe a specimen caught at Sea, some 60 miles north of Madras, on the 7th May.

♀ Length to end of outer tail feather, 14″·75; expanse, 29″·0; tail from vent, 7″·0; wing, 9″·62; tarsus, 0″·75; bill from gape, 1″·95; at front from margin of feathers, 1″·6; mid toe and claw, 1″·15; bill, legs, and feet, black; irides, deep brown.

A frontal band, about 0·17 broad, extending backwards over the eyes for about 0·15 behind the posterior angle of the eye, pure white. A broad black stripe through the lores to eyes and behind the eyes joining the black of the occiput; the forehead and crown inside the white band, the entire occiput and nape, velvet black, not fuscous black as Finsch and Hautlaub and Heuglin and others give it. The entire chin, throat, cheeks, and sides of the neck, wing-lining, axillaries, lower tail coverts, and edge of the wing along the carpal joint and along the ulna, pure white; breast, abdomen, and flanks, white, delicately shaded with pale French grey; back of the neck, white, shaded delicately with grey; back, wings, tail, a smoky or sooty brown; the upper back, strongly shaded with bluish grey, as are also some of the tail feathers; the lesser coverts along the ulna, just inside the white edge, blackish brown; the primaries, a darker brown; their shafts, brown on the upper surface; the outer web of the first primary, almost black; the primaries greyish white, on their inner webs, towards their bases; the outer and longest tail feather, white for the basal half on both webs, greyish brown on the inner web for the terminal half, and with a corresponding greyish brown streak along the shaft on the outer web.

The other tail feathers greyish white on the inner webs at their bases. There is more or less of a slaty grey shade on the tail feathers and the longer scapulars.

In the winter plumage a number of males varied as follows:—

Length, 13″·4 to 15; expanse, 30″·0 to 30″·5; tail, 5″·0 to 6″·2; wing, 9″·4 to 9″·9; tarsus, 0″·8 to 0″·85; bill from gape,

2″·0 to 2″·1 ; bill at front from margin of feathers, 1″·6 to 1″·75; weight 4 to 5 ounces.

In all, the bill, legs, feet, were black ; the irides, deep brown.

In the winter plumage the entire under surface is pure white, and wants altogether the delicate grey shade on the lower surface. There is a small dark spot in front of the eye, but the eye stripe, through the lores, is either wanting or only faintly indicated by a dusky speckling. The entire forehead is white; the crown is white or faintly greyish white; the feathers with central blackish specks, spots, or stripes. In some specimens, these are excessively small, mere specks ; in others, they form conspicuous centres to the feathers. The feathers of the occiput are somewhat similar, but they may be more properly described as black, more or less broadly bordered with white.

At the base of the occiput is a dull black collar extending on either side round the occiput nearly to the eye ; below this, the back of the neck is mingled white and pale smoky grey ; the feathers being white at their bases and smoky grey towards their tips. The rest of the upper plumage is much as in the summer plumage, but the brown is not so pure a color, there is much less, often, no white, on the outer tail feathers and the scapulars and in the scapulary region, and often the upper tail coverts are broadly or narrowly margined or fringed at the tips with white. The amount of this fringing or tipping varies in every individual.

In the young birds, killed at the same period, the nuchal collar is a sort of wood-brown, and so are the scapulars, greater, and median coverts, tertiaries and secondaries, there is not a trace of white anywhere on the outer web of the exterior tail feather, and both on the rump and upper tail coverts, the brown, is more of a dull earthy brown, and less of a grey smoky brown than in the adult in winter plumage.

When, as already mentioned (*supra*. p. 420,) I visited the Vingorla rocks, on the 4th February 1875, I found all the higher parts more or less thickly clothed with coarse dry shaggy grass, which sprouted out of every nook and cranny, and had, moreover, established itself over every little plateau or tiny table ground where the decay of the rock, and the Guano of the numerous sea birds that frequent these rocks at the breeding season had spread a thin sheet of mould.

Everywhere in amongst this grass, were thousands of addled and rotten eggs, mostly broken and weather beaten, but a very few of the smaller of the two kinds, retaining their original colours tolerably well. What species the large eggs belonged to I cannot guess, there were very few of them, and all were much broken.

They clearly belonged to some Gull, and were, I think, larger than those of *Sterna Bergii* which I have from Astola. In regard to the smaller species, there could be no doubt, scores of dried-up mummies of the young birds and several nearly perfect dried-up skins of old ones of our present species lay about. I dare say, I saw the remains of more than 100 young and old ones; and all belonging to this same species; not a single remain did I find of any other species; I have, therefore, not the smallest doubt that the few eggs which I was able to bring away also belonged to this species. No doubt they are much too small compared with the eggs figured in Finsch and Hartlaub's Ornithology of Central Polynesia, but they agree well enough with Gould's dimensions (Birds of Aus., Vol. II., p. 411,) and those given by Heuglin (O. N-O. Afr., p. 1,456.)

The eggs are of the usual Tern shape, perhaps a trifle more elongated than usual, shewing a considerable tendency to be pointed towards the small end. The ground colour appears to have varied through different shades of buffy greenish and pinkish stone color, and they are rather profusely spotted, blotched, and speckled with darker and lighter shades of purple or greyish lilac. The eggs are not in a really good condition, and have lost all gloss (if they ever had any) so that I cannot be quite sure of the colors.

The eggs, I have preserved, vary from, 1·68 to 1·82 in length, and from 1·2 to 1·22 in breadth.

## 992 *bis.*—Sterna fuliginosa, *Gm.*

I have already described this species, S. F., Vol. I., p. 440. We found it breeding in enormous numbers at the Cherbaniani reef, but when we visited the place, about the middle of February, almost all the eggs were hatched off and the reef was swarming with myriads of young birds *vide supra.* page 429, from one to I suppose twenty days of age.

The following are the dimensions of three fine adults that I measured in the flesh:—

| | Length. | Expanse. | Tail. | Wing. | Tarsus. | Bill from gape. | Bill at front. | Weight. |
|---|---|---|---|---|---|---|---|---|
| ♂ | 17″·75 | 35″·25 | 7″·7 | 11″·8 | 0″·9 | 2″·4 | 1″·7 | 8 oz. |
| ″ | 16″ | 34″·5 | 6″·7 | 11″·5 | 0″·93 | 2″·35 | 1″·65 | 3 oz. |
| ♀ | 16″·1 | 32″·5 | 6″· | 10″·65 | 0″·9 | 2″·3 | 1″·6 | 3 oz. |

Irides, deep brown; bill, legs, and feet, black or blackish with a dull purplish tinge.

A nestling, perhaps two days' old, has the chin, throat, breast, abdomen, greyish white; the whole of the rest of the body and head, white and buffy white, speckled and streaked and spotted with blackish dusky. One a few day's older, and, probably double its weight, is similar, but it has a certain number of feathers dusky with narrow white tips on the upper back, and most of

the lesser scapulars have appeared, blackish brown with broad white tips. A good deal older, almost completely fledged bird, with the primaries about two inches in length, has the entire upper surface, sides of the neck and breast, and upper abdomen, a deep sooty brown, almost black on the head and scapulars; all the scapulars and the longest tertiaries, and the tail feathers, tipped with white, and those of the interscapulary region and all the wing and upper tail coverts, tipped with rufescent buff. The colour of these tippings, however, varies greatly; being in some, all white, in some, all buffy or rufous buffy, but in the majority, as in the specimen described. The feathers, immediately above and behind the eye, are in this specimen still those of the nestling, dusky speckled with buff, or pale buff speckled with dusky; the middle of the throat, greyish white, as are also the centre of the abdomen and vent; flanks and lower tail coverts, ashy, tipped with pale rufous.

The eggs of this species are very variable, both in size, colour and markings. Typically they are moderately elongated, rather regular ovals, somewhat pointed, as a rule, towards the smaller end, but some are of the ordinary hen's egg shape, and a few are markedly elongated.

The shell is very fine and compact, but has no gloss. The ground colour varies from white, to pinky white, and from this latter, to a yellowish pinkish stone colour. The primary markings consist of large blotches, spots, streaks and specks, of a very rich brown, which on the pinkish eggs, is often decidedly red, and on the rest is a sienna brown, (burnt or raw). The secondary markings, which look more or less as if they were beneath the shell, consist of spots and blotches of pale purple, lilac, purplish brown, or grey, the shade varying in different specimens.

The extent and character of the markings vary much. In some eggs, all the markings, are small and spotty, in others, the majority are large and bold; in some, they are scattered evenly over the whole egg, in the majority, they are most numerous about the large end; in some, the markings are pretty densely set, in others, they are very sparse.

In length the 23 eggs, I was able to preserve, varied from 1″·86 to 2″·03, and in breadth, from 1″·26 to 1″·45, but the average of the lot is 1″·96 nearly by 1″·34

## 992.—Anous stolidus, *Lin.*

We found this species breeding in great numbers on the Cherbaniani reef, but saw it nowhere else in the group. When we visited the reef in the second week of February the birds had only just begun to lay and we only procured a few quite

fresh eggs. Of the numbers we procured, only one was a young bird, all the rest were in full breeding plumage. The following are the dimensions of two males and two females measured in the flesh. The dimension of the males being the first two of the four given:—

Length, 16″·5, 15″·75, 15″·9, 15″·62; expanse, 33″·2, 33″·75, 31″·75, 32″·0; tail from vent, 6″·35, 5″·8, 5″·9, 6″·0; wing, 10″·8, 10″·5, 9″·9, 10″·45; tarsus, 1″·05, 1″·0, 0″·99, 0″·95; bill from gape, 2″·3, 2″·4, 2″·3, 2″·25; bill at front from margin of feathers, 1″·7, 1″·76, 1″·68, 1″·65.

The irides were deep brown; bill, black, orange at the angle of the gape; the legs and feet were a dusky vinous purple: the webs, paler and more dove colour; the claws, black.

In the full breeding plumage the general colour is a dull smoky somewhat chocolate brown; the primaries and their greater coverts, being much darker; the former in some specimens almost black. A spot immediately in front of the eye, black, this is prolonged forwards to the bill—sometimes occupying nearly the whole of the lores, sometimes as a narrow line skirting the white of the forehead; backwards it is prolonged along the upper eyelid, but is interrupted a little beyond the middle of the eye by a white spot on the upper eyelid; the lower eyelid is fringed with white; the whole of the forehead and crown is white, delicately shaded with pale french grey, sometimes with brownish grey; the margin of this, from the culmen to above the centre of the eye, is always purer white than the rest of the crown, and is sometimes a conspicuous white line abutting on the black of the upper portion of the lores—sometimes the crown and forehead are unicolorous, sometimes the forehead is conspicuously whiter and less grey.

The whole nape, back, and sides of the neck are more or less shaded with grey. In many specimens, a tinge of this same color pervades the chin and throat, and sometimes many of the feathers of the back and lower parts exhibit a good deal of this ashy shade, so that, even amongst breeding adults, some birds are altogether greyer, and others, altogether browner.

In the one young bird that we obtained, a bird certainly of the previous season, but which for some reason had not moulted into full plumage, the whole of the feathers except the quills and tail feathers were light earthy wood brown; the top and sides of the head are grey mouse brown, with only a very narrow greyish white line from the top of the eye to the bill, defining the black of the upper portion of the lores.

The three species of Noddy which have as yet been found within our limits differ sufficiently to permit of their being readily distinguished. These three as I at present identify them

are—(1) *A. stolidus*, Lin ; (2) *A. senex*, Leach; (?= *A. tenuirostris*, Tem., Pl: Col: 202.); (3) *A leucocapillus*, Gould.

The following particulars will, I think, suffice to enable any one to distinguish the three species to which I refer :—

| | *A. stolidus.* | *A. senex.* | *A. leucocapillus.* |
|---|---|---|---|
| Length ... | 15″ to 16″ | 11″ to 12″·5 | 13″·5 to 14″ |
| Wing ... | 10″ „ 11″ | 8″ „ 9″· | 9″ „ 9·5″ |
| Bill ... | Rather stout 1·6″ to 1″·75 at front. | Much slenderer 1″·6 at front. | Slenderer and straighter 1″·9 2″·2 at front. |
| Lores ... | Blackish. | Grey or mouse brown. | Blackish. |

I may mention here that I have no doubt that the White-headed Noddy, described by Jerdon as *Anous tenuirostris* with the bill 2″·12 at front, was really *leucocapillus*, Gould.

The specimen in the Indian Museum, No. 1,716, entered as *tenuirostris* and from the mouth of the Ganges, is also clearly I think *leucocapillus*. It has a bill nearly 1·9 in length and blackish lores ; the other Madieran specimen is too dilapidated to enable one to offer any opinion.

The true *tenuirostris* as, Teminck's figure shews, has the bill almost exactly as long as the head, measuring from the point of the feathers on the forehead, to the tip of the bill and from the same point to the occiput. Measuring in this way, I find that in the species which I identify as *senex* the bill measures 1·6 and the head 1·5. Measured in the same way *leucocapillus* has the head 1·55, and the bill 2·1 Both these species have comparatively slender bills, but the much greater length of that of *leucocapillus* separates it at once. Again from *stolidus*, *senex* is at once separated by the absence of the black or blackish lores by its much smaller size and slenderer bill.

There is a fourth species that might well occur, but of which I have never yet seen specimens obtained within our limits, *viz* :—

*Anous melanops*, Gould.—This seems to be much of the same size as *tenuirostris*, Tem., which I identify as *senex* of Leach, but differs in the conspicuous black crescent in front of the eye and black patch behind the eye, and in this respect exactly resembles *leucocapillus*.

Note that in *melanops* the bill is about 1·7 in front, and the wing about 7·5.

The few eggs of our present species (*A. stolidus*) that I secured were barely, if at all, separable from those of *S. fuliginosa*, except that they seem to average somewhat larger, (contrary to what Mr. Gould says, Hand. B. of Aus., pp. 410

and 416) and to be somewhat more elongated in shape and more richly colored.

I only secured eight, and these are all more elongated and more decidedly pointed than the great majority of the *fuliginosa* eggs.

The markings, too, in some specimens are perhaps somewhat more brightly coloured than in any of the eggs of this latter species, but with this exception the description already given of the eggs of the one will answer perfectly for those of the other.

My specimens varied in length from 1·9 to 2·25, and in breadth from 1·33 to 1·46, but the average of eight is 2·08 nearly by 1·38.

## 996—Phaeton ætherius, *Lin.*? P. indicus, *Sp. Nov.*

We procured a specimen of this (or possibly a nearly allied) species near enough to Cherbaniani reef to necessitate its inclusion in the avi-fauna of the group.

At the same time we never once met with it amongst the islands.

As far as my experience goes, and I have shot many, these birds are not usually met with either in mid ocean or very near the coast. All down the west coast of India it is only in a zone between about 7 and 30 miles off the shore that they are at all common.

I have already, S. F., Vol I., p. 286, given full dimensions of 5 males and a female shot on the Mekran Coast, with a full description.

The following particulars refer to the specimen shot about 30 miles from Cherbaniani :—

♂. Length to end of ordinary tail feathers, 18·0; central tail feathers, 3 inches more; expanse, 38·5; tail to end of ordinary tail feathers, 4·75; wing, 11·5; tarsus, 1·15; mid toe and claw, 1·8; bill from gape, 3·4; at front, 2·35; weight, 1·5 lbs.

Irides, brown; bill, dull red; edges of both mandibles at commissure from point to gape, blackish brown; upper shelf of nostrils, and a line along junction of feathers and bill, on both mandibles dusky; claws and three longer toes as far as basal joint, and webs between them black; rest of feet and legs, cream color, with bluish tinge on tarsus.

This is the only species of *Phaeton* that I have seen or known to occur in the Indian Ocean anywhere near our Indian coasts or in the Gulf of Oman, or the Persian Gulf. Both *flavirostris* and *rubricauda* have, I know, occurred in the Bay of Bengal and about the Andamans and Nicobars, but I have neither seen nor heard of either of these in the localities above

alluded to. Both these species breed in the neighbourhood of Mauritius.

The present species breeds, I believe, on the Omara Headland of the Mekran coast and on the Island of Astolah; also as Heuglin tells us in the Red Sea in the Dahlak Archipelago and elsewhere.

Now I have shot and measured 14 specimens of this bird; all were of one and the same type; none had very elongated middle tail feathers; all ranged pretty much of a size.

I subjoin for purposes of comparison the dimensions of our Indian Ocean species as recorded by myself and Heuglin, and of the true *ætherius*, according to Brandt, Schlegel, Hartlaub and Finsch.

| | *P. indicus.* | | *P. ætherius.* | | | |
|---|---|---|---|---|---|---|
| | Hume | Heuglin. | Brandt. | Schlegel. | Hart, and Finsch | |
| Total length to end of longest ordinary tail feather. | 16″·83 to 18″·05 | 16″·42 to 17″·52 | 21″·38 | ... | | 20″·35 |
| Longest ordinary tail feather | 4″·0 „ 4″·75 | 3″·8 | 4″·38 | 5″·21 | | 5″·0 |
| Central tail feathers | 7″·5 to 10″·6 | 9″·87 to 12″·61 | 17″·52 | 31″·35 | | 21″·9-30″·0 |
| Wing | 10″·75 „ 11″·8 | 10″·95 „ 11″·23 | 13″·5 | 13″·7 | | 13″·15 |
| Bill at front | 2″·2 „ 2″·45 | 2″·2 „ 2″·5 | 2″·5 | 2″·61 | | 2″·52 |
| Tarsus | 1″·0 „ 1″·15 | 1″·04 „ 1″·17 | 1″·3 | ... | | 1″·3 |

It seems to me very clear, whether we look to total length to end of ordinary tail feathers, to wings or central tail feathers, that ours is a very much smaller bird than the true *ætherius*.

It might have been said that my fourteen specimens were all young birds, but then Heuglin found them breeding repeatedly and some of these must be adults, and yet his dimensions agree perfectly with mine.

Then again Finsch and Hartlaub (Faun., Central Polynesiens, p. 250), state that the old birds of *ætherius* are pure white, only the outer web of the first primaries and of the longest of the latest secondaries, the eye stripe and the basal portion of the shafts of the middle feathers, black. I have certainly seen thirty specimens of our Indian bird besides those that I have shot flying round about vessels in which I was, and passing by me within thirty to fifty yards; all were without exception variegated with black like the specimen I described, Vol I., p. 287. Again, it may be urged that all the specimens I saw may have been young birds, but Heuglin also says, and he has repeatedly found them breeding, and must, to judge from the tenor of his text, have seen hundreds of these birds, referring to F. and H.'s description of the old bird, "In this plumage have I never seen this Phaeton."

Taking all these facts together, it appears to me that I am quite justified in provisionally separating the species which

I have procured in the Indian Ocean and the Gulf of Oman, and which I fully described, *loc. cit.*, as *P. indicus*.

## 998.—Sula fiber, *Lin.*

We met with this species only twice during our trip—once at Cherbaniani, where I failed to obtain a shot, and once at Pere-Mull-Par, where I saw and shot a single specimen, a female.

*This measured:*—Length, 31·7; expanse, 62; tail, 8; wing, 16·1; tarsus, 2; bill from gape, 5·1; bill at front, 4·1; the irides were white; the bill creamy white with a bluish tinge in veins; the pouch, gape, lores, and orbital spaces, pale hoary greenish yellow; the legs and feet pale yellow, with a greenish tinge on tarsi; the claws white with a bluish tinge. The breast, abdomen, vent, and central lower tail coverts, axillaries, sides, flanks, a pure white; the whole of the rest of the bird a nearly uniform umber brown, only the feathers of the crown are just perceptibly, paler margined at the tips, and those at the base of the lower mandible and contiguous to the pouch are faintly speckled whitish; the longer lateral lower tail coverts are paler brown and tipped whitish; the primary, lower wing coverts, and the lesser ones along the edge of the wing are the same brown as the rest of the bird, but the rest of the lower secondary and tertiary coverts are pure white.

## 999.—Sula piscatrix, *Lin.*

As already noticed (*supra*, p. 450,) I saw a large flock of White Boobies which, I believe, belonged to this species near Pere-Mull-Par. I do not think that it could have been *cyanops*, because, as far I could make out, there was no black on the tails; in fact no black about them anywhere except on the ends of the wings. However, they were too far off to acquire any certainty about them; although I watched them with powerful binoculars off and on for fully an hour. Certainly they were Boobies and white; I myself have little doubt that they belonged to this species, but as *cyanops* is the common species in the Red Sea they may have belonged to this latter species.

I may note that both Dr. Jerdon and Mr. Blyth states that this present species is occasionally seen in the Bay of Bengal and the Indian Ocean, but I have failed to find a single record of any specimen of this species having been procured in the Bay of Bengal. *White* Boobies have unquestionably been seen, but no specimen, as far as I can discover, has ever been procured and identified, and there are several species of White Boobies. A young specimen supposed to belong to this species, was sent from the Maldives, and is now in the Asiatic Society's Museum, but I am not prepared to say that even this specimen has been correctly identified.

A. O. H.

## Novelties.

### Estrilda burmanica, *Sp. Nov.*

*Male in breeding plumage, similar to* amandava, *but upper tail coverts and tertiaries unspotted; abdomen pale saffron yellow, tinged with crimson; spottings of breast and wing coverts extremely minute; general coloring paler.*

I FIRST noticed this representative species amongst some birds sent me by Mr. Oates; the specimens were not good, and I had no series of the Indian birds with which to compare them. Dr. Armstrong has now brought a fine specimen, a male, obtained at Elephant Point near Rangoon, exhibiting the same peculiarities as those which I noticed in Mr. Oates' specimens. The following are the dimensions and colors of the soft parts of Dr. Armstrong's specimen as recorded by him in the flesh:—

Length, 4·2; expanse, 5·35; tail, 1·5; wing, ·1·75; tarsus, 0·51; bill from gape, 0·33; irides, crimson; bill, deep red, blackish at base on the culmen of upper mandible; legs and feet, flesh color.

The chin, throat, breast, cheeks, orbital region, lores, and a line over the eye, crimson; the feathers of the breast and sides of the neck with minute subterminal white specks; abdomen, flanks, and vent, a sort of saffron yellow, most of the feathers partially washed with pale crimson; lower tail coverts, black; some of the shorter ones white at their bases and tipped with a pinky yellowish white; upper tail coverts, crimson, unspotted; head, nape, back, wings, a rather light hair brown; the median and lesser coverts with a few minute white spots.

It has to be noticed that the abdomen in the non-breeding plumage of the male *amandava* sometimes closely resembles in color, though it is less bright, the abdomen of the present species in breeding plumage, but when *amandava* has put on the crimson of the upper parts, the abdomen always becomes blackish brown.

Again, specimens in non breeding plumage of female *amandava* sometimes have the upper tail coverts entirely unspotted, but I have seen no instance of the upper tail coverts of the male in breeding plumage being absolutely unspotted. Further it has to be remarked that, judging from a large series, the larger wing coverts in adult *amandava* are never spotless. Lastly, none of my specimens of *amandava*—and

I have twenty-three before me now—at all approach *burmanica* in the minute and speckly character of the spottings.

I am not yet in a position to point out how the present species differs from *amandava* in the non-breeding plumage, or, how the females of the two may be discriminated.

## Alcippe Bourdilloni, *Sp. Nov.*

*Similar to* A atriceps, *Jerdon, but with much stouter bill and tarsi and with the black cap entirely replaced by brown. Similar also to* poiocephala, *but smaller (wing, 2·4 against 2·7 inches, in* poiocephala) *with more robust bill, wanting the grey head, ear coverts deep brown and chin, throat, and breast, white. Similar to* A. nigrifrons, *Blyth but larger (wing, 2·4 against 2·2); bill more compressed at base, upper surface much less rufescent and no black on forehead.*

The above diagnosis will, I think, sufficiently explain the relation of this Travancore Quaker Thrush, first procured by Mr. Frank Bourdillon, after whom I have named it, with the Cingalese and other nearly-allied Southern Indian forms. I shall therefore only add dimensions and a description of a male shot at Mynall on the 9th February :—

Length, 5·6; expanse, 6; wing, 2·4; tail, 2; tarsus, 0·95; bill at front, from base of skull, 0·65; from gape, 0·69.

The upper mandible, deep blackish brown; lower mandible, pale whitish horny; the legs and feet appear to have been brown.

Lores, forehead, cheeks, entire crown, brown, becoming tinged at the base of the neck, with the rufescent olive brown of the back; ear coverts, blackish brown; back, upper tail coverts, and tail, almost precisely as in *poiocephala*, except that the tail is shorter than in this species; wings, a rufescent olive brown, not quite so rufescent as in *poiocephala*, with the inner webs of the quills hair brown; 5th, 6th, 7th quills almost exactly equal; 4th, a shade shorter; 3rd, 0·15; 2nd, 0·3; 1st, 1·0 shorter than the longest.

Tail very much rounded; exterior tail feathers, 0·8; next pair, 0·4; next pair, 0·2 shorter than the central ones; chin, throat, and upper breast, pure white; rest of lower parts, grey, tinged on sides, flanks, vent, and lower tail coverts with pale slightly ferruginous brown, but not nearly so strongly so as in *atriceps*.

The bill is very considerably deeper and more compressed than in *nigrifrons*, and it is altogether a larger bird.

Generally the upper surface more resembles *poiocephala*, the lower surface *nigrifrons*.

The Mountain Finches, *Montifringilla*, Brehm (1828), and *Leucosticte* of Swainson (1831) form a compact and well-marked sub-group amongst the true Finches.

At present, so far as I have been able to ascertain, seven valid species of *Leucosticte*, and five of *Montifringilla*, have been described, and I have now to add two new species to this second sub-group. Both these species were collected by Mr. Mandelli's people in or on the borders of Thibet to the north of Native Sikhim, and, being suspected to be new by that gentleman, were sent to me by him for examination and description.

In examining these birds I have had the advantage of Mr. W. T. Blanford's advice and assistance, who has already added one species to this group and who has paid special attention to it.

The species of these two genera which are known to me are as follows:—

(i)—*Leucosticte tephrocotis*, Swainson, F. B. A., II., 1831, p. 265, pl. 50.

(ii)—*Leucosticte griseinucha*, Brandt., Bull. Imp. Acad., St. Peters, 1844, p. 36.*

(iii)—*Leucosticte brunneinucha*, Brandt., Bull. Imp. Acad., St. Peters, 1841, p. 35.

(iv)—*Leucosticte hæmatopygia*, Gould, P., Z. S., 1851, p. 115.

(v)—*Leucosticte Giglioli*, P. Z. S., 1868, p. 579.

(vi)—*Leucosticte arctoa*, Pallas, Zoogr. Ross. As. II., 1831, p. 21.

(vii)—*Leucosticte Brandti*, Bonaparte. Consp., I., 1850., p. 537.†

(i)—*Montifringilla nivalis*, Lin., I., 1766., p. 321.

(ii)—*Montifringilla Adamsi*, Moore., P. L. S. T. 1858., p. 482.

(iii)—*Montifringilla Gebleri*, Brandt., Bull. Imp., Acad., St. Peters 1843, p. 251.

(iv)—*Montifringilla alpicola*, Pallas., II., 1831., p. 20.

(v)—*Montifringilla ruficollis*, Blanford, J. A. S. B., 1872, p. 66.

(vi)—*Montifringilla Blanfordi*., Sp. Nov.

(vii)—*Montifringilla Mandelli*, Sp. Nov.

---

*Dr. Elliot Coues, in his Birds of the North-West (of America), treats this species as only a variety of *tephrocotis*.

† Besides these Baird has described two species, *L. campestris*, Coopere B. Cal. I, 1870-1863, and *littoralis*, Tr. Chic. Acad. I., 1869, p. 318, the former of which is considered by Coues, B. of N. W., p. 113, as being referable to *tephrocotis* proper, and the latter as agreeing sufficiently with the variety, as he considers it, *griseinucha*.

## Montifringilla Blanfordi.

*Closely resembles* M. ruficollis, *but is slightly larger, has a much more massive bill, has one central and two lateral short black frontal stripes; the entire chin black; the back uniformly colored, devoid of striations; no white on the lesser wing coverts; more white on the later primaries; basal portions of lateral tail feathers blackish, or dusky, not pale grey as in* ruficollis.

*Dimensions, from the skin*:—Length, 5·75; wing, 3·8; tail, 2·3; tarsus, 0·7; hind toe and claw, 0·55; bill at front, 0·47.

The legs and feet are black; the bill in one specimen entirely black, in another with the greater portion of the lower mandible yellow; probably becomes entirely yellow in the winter like other species of this genus.

A broad frontal band, a patch over the eye, cheeks, and basal portion of ear coverts, pure white.

The lores and a narrow band at the base of the mandibles black; from the lores on either side a short black streak runs upwards towards the crown; from the base of the culmen a central black streak runs up across the forehead to the crown; the entire chin is black, and this is continued on either side as two short mandibular streaks; the throat, the middle of the breast, the vent, lower tail coverts, wing lining, and axillaries, white; the crown, fawn brown, becoming a rufous fawn on the occiput and nape; the ends of the ear coverts and the feathers of the sides of the neck and sides of the breast of this same rufous fawn color, forming an ill defined, but very distinct, demi-collar.

Sides and flanks more or less tinged, and intermingled with fulvous fawn; entire back, scapulars, and upper tail coverts a sort of fulvous fawn; the basal portions of the feathers when lifted, brown; the greater primary wing coverts, hair brown; the rest of the coverts, fulvous fawn, somewhat greyer on the lesser coverts and more fulvescent on the outer webs and tips of the secondary greater coverts; tertiaries similar, but centered with hair brown. Primaries and secondaries, hair brown; the outer web of the first primary, pure white; the second primary with a small patch of white on the outer web, just at the emargination and a narrow white margin on the inner web towards the base; the third similar, but with more white on the inner web; the fourth similar, but with the white on the inner web quite to the shaft; the next four with a broad white band across both webs, but the shafts running through this band, blackish. The third

and succeeding quills very dark brown towards the tips and tipped paler, the tippings becoming paler and more conspicuous as the feathers recede from the front of the wing

Central tail feathers, brown, broadly edged and tipped with fulvous fawn; the rest with blackish brown tips, margined with fulvous fawn, then a white band which becomes wider and wider as the feathers recede from the centre, and which runs down the whole of the outer web of the exterior feather on either side; the basal portions where not white, blackish, dusky.

It may give some slight idea of the much greater massiveness of the bill in this species if I note that the height of the bill in this species measured from the culmen to the posterior angle of the lower mandible is 0·47, while measured in the same way in *ruficollis* it is only 0·37; or again measured from the angle of the gonys to the base of the culmen it is 0·38 in this species, and 0·32 in *ruficollis*.

---

The next species is perhaps a rather aberrant *Montifringilla*, and will very probably hereafter be separated as a distinct genus. The wing is not so pointed; the tarsus is excessively massive, and the hind toe and claw also massive—the latter more curved than is usual in this genus.

## Montifringilla Mandelli.

*Orbital region black; lower surface pure white; upper surface grey brown; back streaked whitish and darker brown; rump white; lateral tail feathers, broadly tipped white; external nearly all white; greater portion of secondaries, dark brown; wing, 4·1.*

---

*Dimensions (from the skin)*:—Length, 6·6; wing, 4·1; tail, 2·6; tarsus, 0·9; hind toe and claw, 0·57.

The legs and feet are black; the bill, yellowish horny, blackish dusky at tip (probably varies with season). The lores and the whole of the feathers round the eye, blackish dusky; this color, though somewhat paler, is continued backwards as a streak over the ear coverts. A narrow frontal band, continued backwards over the eye, to the nape, greyish white, purest in its posterior portion; the frontal band is not well defined, but passes gradually into the color of the head. The entire top and back of the head included within these stripes, a dull earthy brown. This is succeeded by a narrow ill-defined greyish-white collar, dividing the brown of the head from the brown of the interscapulary region; scapulars and entire interscapulary region

and lower back, a duller and greyer earthy brown than the nape; many of the feathers margined broadly with dingy white and with darker brown centres, and in some cases inner webs, giving a striated appearance to these parts; rump, white; upper tail coverts extending within one inch of the end of the tail, pale brown, with a fawny tinge obscurely tipped paler; tail rounded—external pair 0·5 shorter than central ones; four central tail feathers, dark brown, margined and tipped with brownish fawn color, and the greater portion of the webs of the central tail feathers overlaid with this same color. The rest of the tail feathers blackish brown at the bases, more and more broadly tipped with white as they recede from the centre, and the external pair entirely white except an oblique black patch quite at the base.

The entire lower surface, including the wing lining, and lower tail coverts, white, but with a faint fulvous grey tinge upon the breast; the ear coverts, grey brown; the winglet and primary greater coverts, dark brown; visible portion of lesser and median coverts, chiefly white, the brown bases of the feathers showing through; secondary greater coverts, hair-brown, tipped white, and broadly margined with yellowish white; tertiaries, hair brown, broadly margined and tinged on their outer webs with pale fawn colour, and with an ill-defined wedge-shaped whitish spot at the tip of each; the quills, hair brown; the first primary white on the outer web, except towards the tip, the next three primaries narrowly margined whitish on their outer webs, and with a good deal of white on the inner webs at their bases; the next four or five with a broad white bar across both webs towards their bases, only interrupted in each by the shafts. The primaries narrowly tipped with pale fawny brown; most of the secondaries white at their bases, then very dark brown, and tipped white.

## Recently Described Species.

### Republications.

### Suthora daflaensis, *God.-Aust.*

I HAVE to publish another interesting bird from the Dafla hills, Assam, of the genus *Suthora*, closely allied to *S. munipurensis*,* Wald. and G.-Aust., described in the *Ibis* for 1875, p. 250. The difference between them is most marked on the

* S. F. IV., p. 216.

underside, the chin being grey in the Dafla bird, paling on the upper breast and belly to dull yellowish white; while in the Munipúr and Nágá species, the chin and throat are deep black, fading to grey on the breast, into the white of the lower tail coverts. There is also a marked difference in size, this new form being the smallest of the genus now known.

Above crown of head chrome-brown; back and rump, rusty olivaceous brown; tail very rich rusty brown, particularly near the base; frontal band, passing over the eye to the nape, black; a white circle round eye, with a moustachial streak passing down the side of the neck of the same colour; ear-coverts, grey, surmounted by a small streak of golden yellow; chin, grey; breast and belly, dull sordid white; under-tail coverts, white; flanks, grey; shoulder of wing, olivaceous; primaries, black, rufous at the base, forming a band, the outermost edged white; their coverts, black; secondaries, grey, edged rich rufous on the outer web, with a narrow white edging to the inner. Irides, dark brown; legs and feet, pale grey; bill, neutral grey.

Length, 3·25 inches; wing, 1·75, tail, 2·10, tarsus, 0·62; bill at front, 0·25.

*Hab.* The bamboo underwood of the forests at 5,000—7,000 feet, Dafla hills, and first obtained on the slopes of Torúpútú Peak in January.

These curious little birds associate together in large flocks, making an incessant sharp twitter. They are most active, flitting rapidly about the foliage of the bamboos, of which the underwood is principally composed. They were the most fearless birds I ever met with, perching on twigs within a couple of yards of one's head, so close that it was some time before I could fire at one without the certainty of blowing it all to pieces, and two specimens obtained I had to throw away. The bright-coloured top of the head, set off with its black coronal edging, is conspicuous as they fly and hop about the branches.—A. and M. N. H., January 1876.

---

## Minla Mandelli, *God.-Aust.*

Above dark olivaceous; tail, brown; forehead, rufous, merging into the olivaceous brown of the top of the head; a white supercilium commences from above the eye, and extends to the neck, merging into some streaky buff and black feathers behind the ear-coverts; a black band surmounts the white one, but does not meet the black lores; ear-coverts, sooty; chin, throat, and upper breast, buffy white; sullied white on abdomen; flanks, olivaceous. Irides, dark red brown; legs

and feet, pale fleshy; bill, grey brown; feathers of the head, scaly.

Length, 5·55 inches; wing, 2·2; tail, 2·5; tarsus, 0·95; bill at front, 0·45 (measured in the flesh).

*Hab.* Nágá hills in forest at about 6,000 feet.

I have named this bird after Mr. L. Mandelli, who has so successfully worked the ornithology of the Sikkim hills, and who described in 'STRAY FEATHERS', July 1873 (p. 416), a very near ally of this species, viz., *Minla rufogularis* (=*collaris*.* Walden), of which I obtained several specimens in the Dafla hills last winter.†

---

## Accentor Jerdoni, *Brooks.*

Bill, shorter, feebler and sharper pointed than in *A. strophiatus*, and not nearly so black. One specimen has the basal portion of the lower mandible, pale brown. Total length, 4·5 inches; wing, 2·54 to 2·62; tail, 2·3 to 2·54; bill at front, 0·35; tarsus 0·75.

This bird in mode of coloration strongly resembles *A. strophiatus*, yet it is very distinct, being altogether a paler, and less boldly marked species. The striation of the back is comparatively cloudy, and resembles that of *Pipastes arboreus*. The upper surface is a mixture of brownish grey and dark brown, and there is none of the warm rufous tint observable on the back of *A. strophiatus*. The rump and upper tail coverts, which are strongly streaked in *strophiatus*, are plain greyish brown, in our bird, with hardly the faintest streak perceptible. The anterior portion of the supercilium is whitish, as in *strophiatus*, but the remainder, instead of being deep rusty red, is merely warm buff or fulvous. Above the supercilium is a dark band on each side of the head, which is continued to the occiput; the crown of the head is brownish grey, mottled indistinctly with pale brown; the back is brownish grey, streaked with dark brown; ear coverts, dark slatey brown, slightly mottled with greyish white; a patch of pure grey, very faintly streaked with brown, between the ear coverts and bend of wing; from chin to upper breast, white, with small neat dark brown spots; below this white, a broad (¾ inch) pectoral band of rufous, not nearly so deep and bright as in *strophiatus*, and devoid of dark streaks; *strophiatus* sometimes has the pectoral rufous strongly streaked; rest of lower surface, dull whitish with the flanks tinged with brown; the latter, having also broad

---

* S. F., Vol. III., p. 281.

† I am very decidedly of opinion that this supposed new species is *Proparus dubius*, Hume, Pro. A. S. B, May 1874, and S. F., II., 447.—ED., S. F.

cloudy brown streaks; lower tail coverts, pale brownish, with broad whitish edges; wings and tail, brown, of a much lighter shade than in *strophiatus*, and having pale brown margins to the feathers, particularly so in the case of the wing-coverts and tertials.

I have thought necessary to refer comparatively to *A. strophiatus* in this description, on account of the similar distribution of colours and size of the two birds. They can only be understood by contrasting them. I have one specimen of the new bird from Dhurmsala, and others from Cashmir. *A. strophiatus* ranges from near Simla to Darjeeling; but at what point west of Simla is its *western* limit, and where the *eastern* one of *A. Jerdoni* begins is not yet known. Captain Cock took some nests of the new bird with eggs (uniform greenish blue) at Sonamurg, up the Sind Valley in Cashmir.—J. A. S. B., 1872, p. 327.

---

## Troglodytes neglectus, *Brooks.*

It is of the same size as *T. nipalensis*, but very much lighter in colour and having a strong resemblance to the English Wren. It is dull reddish brown above, becoming brighter in tone towards and on the tail. The whole of the upper surface is covered with wavey dark brown bars, which are very indistinct on the head, but increase in distinctness as the tail is reached, upon which they are very well marked; below, pale brownish, with the abdomen and belly, nearly white; the whole of the under surface, like the upper, being barred with brown; lower tail coverts, brown, spotted with white. Bill, brown, paler on lower mandible at base; legs and feet, brown. Length, 3·5 inches; wing, 1·8; tail, 1·2; bill at front, 0·42; tarsus 0·63; central toe and claw, 0·57; hind toe and claw 0·53. The sexes are alike in size and plumage.

Apart from its comparatively pale tone of colouration its much smaller and slenderer tarsus and foot easily distinguish it from *T. nipalensis*, which is a very dark brown sooty looking little bird. Of *T. nipalensis*, the central toe and claw, measure 0·7; hind toe and claw, 0 62.

The Cashmir Wren is not uncommon in the pine woods of Cashmir, and in habits and manners it strongly resembles its European congener. Its song is very similar, and quite as pretty. It is a shy active little bird, and very difficult to shoot. I found two nests, one was placed in the roots of a large up-turned pine, and was globular with entrance at the side. It was profusely lined with feathers and composed of moss and fibres. The eggs were white, sparingly and minutely

spotted with red; rather oval in shape; measuring 0·66 by 0·5. A second nest was placed in the thick foliage of a moss grown fir tree, and was about 7 feet above the ground. It was similarly composed to the other nest, but the eggs were rounder and plain white, without any spots.—J. A. S. B., 1872 p. 328.

---

## Anorhinus Austeni, *Jerd.*, *Ibis.*, 1872, *p.* 6.

[I can find no satisfactory description of this species; Dr. Jerdon, says:]—"Its nearest ally is *B. Tickelli* of Tenasserim, but it differs conspicuously from that by its white-tipped tail feathers."

Major Godwin-Austen, who originally seemed to have identified it with *A. galeritus*, Tem. says:—

"The whole of the upper parts of a pale slaty grey, having in certain lights a greenish tinge; throat and sides of neck, white; dull rufous on the breast and belly, thighs and under-tail coverts primaries;" (and ? lateral tail feathers) "greenish black, tipped and barred white; a white spot formed by the tip of the outer wing coverts; the base of the primaries being also of this color; secondaries, edged whitish; tail, tipped white; centre feathers, same color as the back; bill, yellowish white. Length, about 31 inches; wing, 13; tail, 13; bill to gape, 4·5; depth 2."

[The inexplicable part of this business is that Mr. Gray is said to have considered this as perhaps the young of *Rhinoplax scutatus*, while Dr. Jerdon originally identified it with *galeritus*. It is impossible to understand how any horn bill, nearly allied to *Tickelli*, could be considered the young of *scutatus*.]

---

## Prionochilus vincens, *Sclater.*

*Male.*—Length, 4″·15; tail, 1″·2; wing, 2″·3; tarsus, 0″·5; mid toe with claw, 0″·5; hind toe 0″·25; bill to gape, 0″·45, at front, nearly 0″·4. Third primary, longest, only slightly longer than second.

*Description.*—Iris, reddish; bill, upper mandible, black; lower mandible, lightish at the base; legs and feet, blackish brown.

Entire head (except the chin and throat), hind neck, back, rump, and lesser wing coverts, dull steel-blue, palest on the rump, and with the bases of the feathers, dark; quills, blackish brown; the basal portion of inner webs, with the under wing coverts, white; tertiaries, greater wing coverts and tail, black; —the former edged with the hue of the upper surface, the latter

with the three outer feathers, white towards the tip, the colour extending a little up the shaft on inner web,—the next two with a small terminal white spot; chin, throat and chest, white, below which, the under surface is saffron yellow; paling at the vent; under-tail coverts, white, edged pale yellow.

*Female.*—Length, 4″·1; wing, 2″·25; tail, 1″·1. Bill, slightly lighter in hue than ♂; legs, feet and iris, the same as ♂.

Head and hind neck faded bluish ashen; centres of feathers, dark; back, olivaceous brown; secondaries and wing coverts, brown, edged with olivaceous; quills, lighter than in the male; sides of neck and chest, ashy; beneath, paler yellow than the male, mingled with grey on the flanks; tail, brownish black.

*Hab.* Forests of the low hills in the Southern Province (Ceylon), where it affects principally the creepers which entwine the trunks of the trees, resorts also to small branches of low trees.

*Food.*—Seeds and pollen from the flowers of creepers—*Ibis*, 1874, p. 2.

## Reguloides subviridis, *Brooks.*

I have, for the last six years, procured specimens of a *Reguloides*, which is not uncommon in the North-West Provinces during the cold weather. This bird I took to be *Reguloides viridipennis*, Blyth, as far as I could judge by the brief description given in Dr. Jerdon's work. Recently, I have had the pleasure of examining Mr. Blyth's type birds of this species and of reading his original detailed description of it in the Journal of the Asiatic Society, Vol. XXIV, p. 275; and I find it to be a species strongly resembling *Reguloides trochiloides*, Sundevall, but considerably smaller, and rather brighter coloured. I shall, therefore, name my hitherto undescribed bird as above.

*Description.*—Above, dull light olive green, with the rump and upper tail coverts a shade or two lighter, but not yellow white and abruptly defined, as in *Reguloides proregulus*; lower surface, dull albescent, tinged with yellowish; wings and tail brown; the primaries, secondaries, and tail feathers, edged with light olive green; and the tertials with broad whitish margins as in *Reguloides superciliosus*, but to a rather less extent. The greater or secondary wing coverts are brown, broadly tipped with dull yellowish white, which forms the *second* wing bar; the smaller wing coverts are edged with light olive green, but the lower, or last row, are tipped with dull yellowish white, which forms the upper or *first* wing bar. I need hardly observe that in all *Reguloides*, the first wing bar is very narrow, and the second one is very broad; the coverts of the primaries are

brown, of a darker shade than the quill feathers, and form a darkish patch beyond the second wing bar. The wing is thus, in its whole appearance, extremely like that of *Reguloides superciliosus*. On the crown of the head is a very distinct coronal streak, similar to that of *Reguloides proregulus*, and of the same dull yellow colour; the supercilium is yellow and brighter anteriorly; the cheeks are yellowish, faintly mottled with pale brown; a brownish streak passes through the eye; irides, dark brown, bill brown, and light yellow brown on lower mandible, except the tip, which is dark, as in the upper one; legs and feet, brown.

Length, 4 to 4·25 inches, according to sex; wing, 2·2 to 2·3 of the male, and 2·0 to 2·05 of the female; tail, 1·7 to 1·83 of the male, and 1·5 to 1·7 of the female; bill at front, ·3; tarsus, ·65 to ·7.

The 4th quill is generally the longest; 5th a shade shorter; 3rd shorter than 5th, and intermediate between it and the 6th; 2nd equal to 8th; but sometimes intermediate between 8th and 9th; the 4th and 5th are rarely equal; and still more rarely is the 5th the longest in the wing; the 1st quill is from 1·17 to 1·08 short of tip of wing; according to sex.

The general tone of colour is strikingly like that of *Reguloides proregulus*, Pallas, but paler and duller; and it differs from that bird in not having a yellow rump band; also in its more slender and much lighter coloured bill. From *Reguloides superciliosus*, Gmel., it differs in having the supercilium of a decided yellow, while that bird's is ruddy white or pale buff; and its cheeks are of the same colour, but duller, mottled with light brown. Our new bird's cheeks, on the contrary, have generally a strong yellow tinge; its coronal streak too is bright and well defined as in *Reg. proregulus*; while the coronal streak of *R. superciliosus* is seldom visible, and when so, is merely a faint brownish grey line on the dark olive brown head which can only be seen when looked at in certain lights. The indistinctness, or entire absence, of the coronal streak is one of the characteristics of *Reguloides superciliosus*. All the others, except *Reguloides castaneiceps*, have the coronal streak very distinct. In our new species, the plumage is very soft and lax; and, however, carefully the skin may be put up, the coronal streak gets disturbed and out of place.

Unlike the purely hill *Reguloides*, *R. proregulus*, *R. erochroa*, *R. maculipennis*, and *R. castaneiceps*, our bird is migratory, and frequents the plains of the North-Western Provinces during the cold season. The four species which I have just mentioned find the lower Himalayan hills quite warm enough for their winter retreat.

The call note of our species is peculiarly shrill, tinkling; weak, but quite Phylloscopine; a "*tiss-yip,*" as expressed by Mr. Blyth. There is a greater rise between the 1st and 2nd notes of the call (the 2nd being the highest,) than there is in the call note of *Reguloides superciliosus* or of *Phyllopneuste trochilus.*

The song, which I have sometimes heard on their arrival, is a pleasant twittering but feeble one, and very like that of *Regulus cristatus.* I have procured *Reguloides subviridis* in the Etawah and Cawnpore districts, but I have no doubt it is generally spread over the whole North-West. In Kashmir I never met with it, although *R. proregulus* and *R. superciliosus* were abundant there.

It arrives in the plains about a month later than *R. superciliosus,* and while that species loves large and shady trees, our one seems to prefer those of light foliage, especially the Babool. With one or two exceptions, all my specimens were procured in aBbool trees. The banks of the Etawah branch of the Ganges ucnal abound with these trees, and there this little bird is not uncommon. It is not an abundant bird like *Reguloides superciliosus,* but is comparatively scarce; and its peculiar and excescively shrill note enabled me to find the numbers I did. It only calls occasionally, and is as silent a bird as *R. superciliosus* is noisy.—*Pro. A. S. B.,* 1872, p. 148.

## Notes.

In my concluding note to Captain Butler's paper on the Avifauna of Mount Aboo, &c., (see ante, page 40) I omitted to notice, as found along the coasts of Kutch and Kattiawar, No. 862.—*Hæmatopus ostralegus.*

Since this paper appeared I have received three specimens of 888.—*Calidris arenaria* from Mr. James, shot by him at Mandavee in Kutch. I have also received a specimen of 956.—*T. vulpanser* shot by this same gentleman on the last day of 1875, near Nowanuggur, Kattiawar.

Captain E. Bishop of the I. G. S. S. "Amberwitch," who recently sent me skins of *Dromas ardeola* from the Mekran Coast, informs me that in April last he saw flocks of this species as far north and west as Bushire, which is the nearest Persian port to Shiraz, and about 120 miles from the head of the Persian Gulf. He also mentions, a rather curious fact, that he has seen *Mergus castor* for three successive years at Chabour and Jask on the Mekran Coast.

WITH REFERENCE to my remarks at p. 480, Vol. III, as to a specimen of *Prinia Stewarti* sent me by Captain Butler, which exhibits a very conspicuous whitish line above the lores, I may notice that, having referred to my museum, I find that both *P. socialis* and *P. Stewarti* occasionally exhibit this same line more or less conspicuously. I take this line to be an individual peculiarity and not seasonal, as I have specimens killed in March, April, July, October, and November exhibiting it, while numerous other birds killed in the same and intervening months shew no trace of it. Out of forty specimens of these two species, now before me, about one-eighth shew it conspicuously and another eighth shew some traces of it.

---

I THINK it somewhat doubtful whether *Ruticilla nigrogularis*, Moore, P. Z. S., 1854, p. 29, and Jerd., B. I., Vol. II, p. 14, is a good species. The dimensions are admittedly the same as those of *R. schisticeps*, the descriptions also coincide, and Moore says that his species only differs from *schisticeps* in having the throat black instead of white.

Out of eight males now before me, manifestly all of the same species, three have a large white patch on the throat; in two there is only trace of the white; the others are intermediate. Out of five females, one has a large white patch, three have only small white patches, and one has no trace of this. It seems probable that the presence and absence of the white patch, on which Moore based the distinctness of his *nigrogularis* from Hodgsons *schisticeps*, is only a seasonal peculiarity.

---

AFTER EXAMINING numerous specimens of my *Horeites brunnescens* (*Ibis* is 1872, p. 109, "STRAY FEATHERS," Vol. III, p. 410.) I begin to suspect that this species may be identical with Hodgson's *Horornis fulviventris* (P. Z. S., 1845, p. 32, Jerd., B. I. II, 1862). I am aware that Blyth considered this latter identical with *Phylloscopus fuscatus*, Blyth (*Sylvia sibirica*, Middendorff,) but I am not sure that he had any very certain authority for this identification.

The dimensions of wing given by Hodgson, *viz.*, "not 2" are small for *brunnescens*, the wing of which in good specimens is about 2·2, and in his brief description he omits all reference to the very rufescent tinge of the upper parts. At the same time, unless Blyth's identification is correct, no one has yet met with the true *Horornis fulviventris*, and my bird is common in the localities worked by Hodgson (I have sixteen specimens of it), and it does not seem likely that it should have escaped him.

I have for years had specimens which I referred to *fulviventris*, Hodgson, one of them labelled by Jerdon *Horornis flaviventris*. This it certainly was not, and I referred it to *fulviventris*, but now that I have had an opportunity of comparing all my specimens, I see that my supposed *fulviventris* and my *Horeites brunnescens* are identical.

Whether *H. fulviventris*, Hodgson, is a good species, and if so, identical with my *H. brunnescens*, or whether it is, as Blyth considers, identical with his own *Phylloscopus fuscatus*, only an examination of the type specimens in the British Museum (if they still exist there), can finally enable us to determine, but in the meantime it may be useful to call attention to the matter.

---

It is worthy of note that Mr. Mandelli has lately obtained specimens in the Bootan Doars of *Dicæum olivaceum*, Walden, which will be found accurately described, S. F., Vol. III., p. 403. I have only to add that it differs from *D. virescens*, nobis, not only in the particulars noted by Lord Walden, but also in its much shorter bill.

---

At the page above quoted I reproduced Lord Walden's description of a new Ixos, *I. annectans*. Subsequently comparing this description with *Ixos Davisoni*, nobis, I cannot doubt that the two are the same species—the only difference being that I described from a very beautiful specimen, a perfectly adult male, while Lord Walden probably described from a younger bird. He fails to notice the narrow bright orange line over the lores, but this I find, after examining other specimens collected by Dr. Armstrong, is only apparent in really good skins. The bird will stand, I think, as *I. Davisoni*.

---

Mr. R. Thompson, Deputy Conservator of Forests, Chanda, Central Provinces, writes: "On the 27th of March, I shot, and indeed saw, for the first time, a specimen of *Harpactes fasciatus*. I found it in the Ahiri forests whilst going up a nullah fringed with lofty trees. This was after a heavy storm of wind and rain the previous day. I noticed the bird flying across the nullah, the flight so much resembling that of a *Dendrocitta*, that I at first supposed it to belong to that species. Presently the bird sat motionless, and I saw the peculiar position and bill of *Harpactes*, with the Himalayan species of which I am familiar.

I had only an express rifle, and was obliged to shoot it with this, bringing it down with one side blown to atoms, the other

all right; it proved to be a young female, moulting (?) from the nestling plumage."

I do not think that we have as yet any record of this species so far north as Ahiri.

Since this was written Mr. Ball has obtained this species in Radakole, or Rehrakhole, which is a good deal further north and much further east. Ahiri is about 19°30′ N. Lat. and 80° E. Long, while Rehrakhole is about 21°. N. Long. and 84° E. Long.

---

Mr. Mandelli has procured several specimens of *Passer montanus* in that portion of Thibet which is immediately north of Sikhim. They are noteworthy as being throughout of a duller and deeper tint than specimens from England, Japan, Java, Darjeeling, and Burmah. On the whole under surface the white is replaced by pale ashy grey; the head and neck is duller and more of a chocolate tint, and generally the colouring of the upper surface is somewhat deeper colour. It does not, however, appear to me that these differences are sufficient to justify specific separation.

---

Mr. Mandelli sent me for examination a goose that at first puzzled me a good deal. On further examination it turned out to be the young of *Anser indicus*, which has never, I think, as yet been described.

It differs altogether in the head and neck markings. The bill is as in the adult, yellow with deep brown nail; the legs and feet appear to have been a brownish orange; the forehead is brownish white a little tinged with rusty; there is a dusky line through the lores to the eyes; the whole crown, occiput, and nape is a sooty or dusky black; below this the back of the neck is wood brown, and the sides and front of the lower part of the neck, a pale dusky greyish, mottled with whitish, this being the colour of the tips of the feathers; most of the feathers of the breast and abdomen and lower parts generally have a pale rusty or fulvous tinge towards the tips; the conspicuous dark banding of the flanks is almost entirely wanting, only one dark greyish brown feather on each side having as yet made its appearance.

There is no trace of either the two distinct black head bars or of the conspicuous white neck streaks, so that the head and neck look strangely unlike those of the adult.

The tail is rather browner than in the old bird. The rest of the plumage is very similar to that of the adult, but perhaps everywhere less pure in colour.

I, SOME YEARS AGO recorded having obtained a specimen from Oudh, of a bird which Dr. Jerdon identified for me as *Luscinia major*, of Europe. Later obtaining specimens of this bird from Europe, I found that the Indian specimen was quite distinct. I then thought that it might be *Daulias Hafizi* of Severstov, which, *à priori*, was much more likely to occur in India. I submitted the specimen to Mr. W. T. Blanford, who informs me that it is close to *Hafizi*, but should, perhaps, more properly, owing to its larger size, be identified with *L. Golzii*, described from Turkestan by Dr. Cabanis, J. F. Orn, 1873, p. 79. According to Dr. Cabanis this species is structurally characterized by having the first or undeveloped primary a little longer than the primary greater coverts, by having the second primary a trifle shorter than the fifth (in my specimen they are almost equal), and by having the fourth primary decidedly shorter than the third.

The dimensions of my specimen taken from the skin are:—Length, 7″·5; wing, 3″·7; tail, 3″·5; tarsus, 1″·1; bill at front, 0″·65.

The type specimen Mr. Blanford mentions (Zoology of Persia, Aves, p. 171) measured—Wing, 3·8; tail, 3·32; tarsus, 1·15; and bill at front, 0·72.

These measurements agree sufficiently well, and the following is a description of my bird:—

Lores pale fulvous; forehead, crown, and the whole upper parts, except the wings and tail, a dull reddish brown, perhaps slightly redder on the head and paler on the rump; the tail feathers slightly brighter and less brown, more approaching to a dull chestnut or ferruginous.

The upper surface generally is decidedly more rufous than in *Daulias Hafizi*, as figured by Mr. Blanford, but the tail and upper tail coverts agree precisely with his figure. The whole of the lower parts are fulvous white, purest on the abdomen, and much suffused with brown on the breast; the sides and flanks are brown; there is a trace of a pale streak over and behind the eye; the ear coverts are mingled pale fulvous and brown. My specimen is a bad one, and I cannot be quite certain of these parts.

The wings are hair brown; the primaries and secondaries, the winglet and greater primary coverts all narrowly margined with pale somewhat rufescent olivaceous; the secondary greater coverts are more broadly margined and tipped with a paler shade of this same color, forming a noticeable paler patch on the wing; the tertiaries are much suffused with the color of the back; the wing lining and axillaries are white, with a slight fulvous tinge.

This specimen does not quite agree in all particulars with Dr. Cabanis' brief remarks, *loc. cit.*, but I do not think that any

sufficient difference exists to warrant its separation, at any rate until it can be compared with the type.

It was procured in the Oudh Terai in October 1865.

---

Mr. Mandelli has obtained specimens of *Stachyris ruffrons*, nobis, (S. F., Vol I., p. 479) in the Bootan Doars. This was in April last. His specimen agrees precisely with the type.

---

In the *Ibis* for 1871, p. 406, I described a Goat-sucker, new to our Indian avi-fauna, under the name of *Caprimulgus Unwini*. This was reproduced, "Stray Feathers," Vol. III., p. 407.

When I described the species, I had only one specimen of the European Goat-sucker, an English female, a very large and dark bird, as unlike my specimens of *Unwini*, as they could possibly be. Not long since I obtained from the Volga a Goat-sucker, labelled *C. europæus*, which seemed hardly separable from *Unwini*.

Mr. Blanford, in his excellent work on the Zoology of Persia, not having had an opportunity of examining my type, and having only my old meagre description before him, suggested that *Unwini* might be identical with *mahrattensis*. When recently he paid me a visit, I protested that this was out of the question, and gave him all the specimens to examine, telling him at the same time that my only doubt was, whether *Unwini* was distinct from *europæus*.

After examining the specimens, Mr. Blanford informed me that he had no doubt that *Unwini* belonged to the somewhat paler and more silvery race met with in Persia, and he added that, though possibly many of the Western European specimens were much darker and more rufous, he had seen European specimens, perfectly similar he believed to my bird.

The fact is, that *C. Unwini* bears precisely the same relation to *C. europæus* that *C. Kelaarti* does to *C. indicus*. It is a much paler, more silvery, and I should say, typically, or possibly ought to say on the average, slightly smaller race.

Those who mantain *Kelaarti* must also maintain *Unwini*. I myself believe in neither as specifically distinct, and should substitute for *C. Unwini*, *C. europæus* in our Indian lists.

I have only three undoubted specimens, all from Murree and the Agrore Valley, at the extreme north westerly corner of our Indian Empire.

One of these, though sexed a female by Captain Unwin, must, I feel now sure, have been a male, and this sadly misled me.

I have two other specimens, females, one from Sirsa in the Punjab, and one from Etawah, which either belong to the

present or to an undescribed species. Mr. Blanford inclines to this latter view, but until I am able to examine a really good series of European *europæus*, I shall not attempt to deal with these.

---

Major Godwin-Austen says, A. & M. N. H. July 1876 :—"I take the earliest opportunity in this paper to suppress the species (*Garrulax albosuperciliaris*) figured in the 'Journ. Asiat. Soc. Bengal,' 1874, and described by me in the 'Proc. Zool. Soc.' for 1874," "(*vide* S. F., III., p 393.) "It is, I find, the same as *G. sannio*, Swinhoe. The only variation I noticed in the single specimen with which I have compared it, was a slight difference in the shade of coloration of the upper surface; this is one often seen in birds taken on the extreme limits of their range."

---

Dr. Jerdon, it will be remembered, says nothing in his great work, "The Birds of India," of ever procuring an adult *Larus fuscus* in India, but Mr. Blyth remarked (*Ibis*, 1867, p. 176) that Dr. Jerdon must have forgotton the adult specimen sent by him from the Bay of Bengal.

Dr. Jerdon himself later said that he could not remember ever getting any such specimen, but that if Blyth said so, he was doubtless right.

There is in the As. Soc. Museum a specimen of *Larus fuscus* which bears a label in Dr. Anderson's hand-writing, "Bay of Bengal, T. C. Jerdon, 1842." It is to be presumed that Dr. Anderson had good reasons for thus identifying this specimen; but it is notorious that not a few of the tickets had been changed and lost after Mr. Blyth gave up charge of the Museum, and had also got loose from their stands, so that one cannot rely too implicitly on this identification.

This specimen, it should be noted, is a lovely one. No one, I think, who has ever received many skins from Dr. Jerdon, will, for one moment, believe that he collected it himself; for it has all the appearance, even after these many years, of having been originally prepared, as well as subsequently mounted by a professional taxidermist. I have acquired in the course of years a certain technical knowledge of skins, and I believe this one to be European.

Again, if Dr. Jerdon really procured this in the Bay of Bengal, it is curious that he should have remembered nothing about it, because this specimen is in full summer adult plumage, and no one who had ever shot the comparatively light grey Gulls (*ridibundus, brunicephalus, leucophæus, ichthætus*, or even

the darker *occidentalis*), could have failed to be vividly impressed with the extreme darkness, almost slaty blackness, of this very typical specimen.

Few people have oftener traversed the Bay of Bengal intent on ornithology than Davison and myself, but neither of us have ever yet met with a Gull of the *marinus* and *fuscus* types. I have, moreover, very carefully worked the greater part of the coasts from Gwader to Cape Comorin, including the Laccadives. We have both worked the Andamans and Nicobars, he for many months, and again he has searched the coasts very carefully nearly from Rangoon to Singapore, but neither of us have ever seen an adult specimen of *fuscus*. As to the young, of course, we cannot speak positively; these might escape notice on the wing, but the adult certainly could not.

It seems to me not at all impossible that some one gave Dr. Jerdon this English or European skin, and that he sent it unticketed, as was his common practice (more than half the birds he sent to Mr. Blyth and me had no tickets) along with other specimens obtained in the Bay of Bengal, and that a mistake thus occurred.

Most certainly, in my opinion, the occurrence of *L. fuscus* within our limits requires to be further verified. No doubt they are said to be common enough in the Red Sea, but I have never yet seen, or been able to verify, the occurrence of one on this side of Aden, and I hope that all Indian ornithologists, who may have the opportunity, will endeavour to help me in clearing up this matter.

When speaking of *Larus fuscus*, I may note that Mr. Blanford says of four specimens of a Gull which he obtained at Gwader:—"Three are in young plumage, and may be either *fuscus*, or *argentatus*, var *leucophæus*; the fourth is a young female assuming the summer plumage, and both Mr. Howard Saunders and Mr. Dresser who have very carefully and repeatedly examined it, have no doubt of its really belonging to *L. fuscus*. Mr. Hume referred this bird from the same locality to *L. occidentalis*, because the basal portion of the primaries is grey or greyish; but Mr. Howard Saunders informs me that this is not a safe character except—if I understand him rightly—in full summer plumage. It follows that Dr. Jerdon and Mr. Blyth were probably right in including this species in the Indian fauna."

Now I will say nothing about the particular specimen examined by Messrs. Sharpe and Dresser, but it is simply absurd to tell me that the thirty odd specimens that I obtained at Kurrachee and along the Mekran Coast, at the end of February, when all the Gulls were in, or getting into, full summer plumage, were *Larus fuscus*.

I have known *Larus fuscus* since I was a child, and have shot and skinned scores and scores, and I have a series in my museum, and no person with the faintest eye for color could possibly mistake the Mekran Coast birds that I have called *occidentalis* (the proper name may be *cachinans*, Pallas, for all I know) for *fuscus* of Europe.

It must be remembered that I speak not on the strength of one immature bird, but on the basis of over 30 perfect adults.

---

Propasser Murrayi (the unique specimen of which I recently examined), is a very doubtful bird; in shape of bill, and length of tail it seems to me precisely identical with *Fringilauda sordida*, Stol., but the wing is only 2·97. The specimen is very much damaged, but the head has a more lineated appearance; the feathers with dark brown centres and very pale edges; the back and scapulars on the other hand are more uniformly colored. One peculiarity is, that the chin and throat are nearly white, with little brown spots. There are two distinct wing bars.

---

Major Godwin-Austen remarks (A & M. N. H. Jan. 1876):—

"Dr. Jerdon, in a paper on some birds from Upper Burmah in the *Ibis* for 1862, p. 19, describes, under the title *Chrysomma altirostris*, a bird he obtained at Thyetmyo, which I do not think has since been got there. Among the collection from the Dafla hills there are several skins of what can be no other than this species. Dr. Jerdon's description and the size agree very well. To Lord Walden is due the credit of the identification. It is curious to say Dr. Jerdon in the above paper twice (probably writing fast, and using the term "chur") writes "Barrampootra" instead of Irrawaddy, the above word being applied to the sandy islands of the former river; but there is just this possibility that the specimen really came from Assam, where I found it quite common in the grassy country of the Bishnath plain up to the base of the Dafla hills. It is very close to *Pyctorhis sinensis*, Gmel., as mentioned by Dr. Jerdon in the 'Birds of India,' Vol. II., p. 16, and approximates in its higher and shorter bill to the *Paradoxornis* group. It is, however, not so gregarious, being only found two or three together. I found it a very hard bird to shoot, from its rapid dodgy flight in the grass, and the quick way in which it would hide at once; this is probably the cause of its not having been oftener noticed and collected. I have failed to discover where Dr. Jerdon's original type of this interesting bird can now be."

With reference to the above remarks I may note that Mr. Blanford, who was with Dr. Jerdon at the time the type was procured, is quite certain that it was obtained on an island in the Irrawaddy, opposite Thyetmyo.

I have recently received a specimen from Mr. Mandelli, obtained in the Bhootan Doars in January, which is probably Major Godwin-Austen's bird, and possibly Dr. Jerdon's. Dr. Jerdon's original description will be found quoted, S.F. Vol., III., p. 115.

The specimen received from Mr. Mandelli agrees fairly in some respects with Dr. Jerdon's description, but it differs in some important particulars. In the first place it is not pale reddish brown above, but a rather dark ferruginous brown, and the color is not deepest on the wings and tail, but much deepest on the head, and brighter and more ferruginous on the wings and tail. Then I should not call it beneath whitish, tinged on the lower part of the breast, abdomen, and flanks with pale fulvescent, but I should say, chin, throat, and upper breast, pale smoky grey; the rest of the lower parts, brownish buff, deeper colored, and slightly more ferruginous on flanks and lower tail coverts.

Besides this, the bill is scarcely deeper than in *Pyctorhis sinensis*, and could hardly, I should think, have given grounds for Dr. Jerdon's remark that this species was closely allied to the *Paradoxornis* group. Undoubtedly, the dimensions coincide very nearly, and the hoary grey forehead and streak over the eye is a very noteworthy point of resemblance, and on the whole, although, as noticed, the description given by Dr. Jerdon does not absolutely coincide with our specimen, I do not think it would be expedient to describe it as different until the original type can be compared.

---

It will be remembered that, in opposition to the views held by Dr. Jerdon, Mr. Blyth, Mr. Brooks, and others, I have held (*S. F.*, Vol. I., p. 494) that Hodgson's *Abrornis chloronotus* was Blyth's *Reguloides* or *Abrornis maculipennis*, and had therefore precedence of this latter, while, according to the authorities above mentioned, Hodgson's *chloronotus* was only a synonym of *Reguloides proregulus*.

Mr. Brooks now writes :—

"I examined Hodgson's 'type' said to be of *Abrornis chloronotus*. It is *maculipennis;* so were three other old skins of Hodgson's labelled *chloronotus;* one of his labelled *proregulus* was true *proregulus*.

"I examined his two drawings in which *chloronotus* is shown. The nest one shows the left hand side bird with spread tail and white feathers in it. Another drawing shows several *reguloides*, and No. 5 is *Abrornis chloronotus*, the tail is spread, but does not shew any white feathers.

"The drawings of *erochroa* with both spread and closed tail on same sheet shew the white tail feathers most distinctly. I therefore come to the conclusion that Hodgson did not discriminate between *maculipennis* and *proregulus*. Under *chloronotus* he had both."

Accepting Mr. Brooks' facts, I must demur to his conclusion. Four skins labelled by Mr. Hodgson as *chloronotus* all prove to be *maculipennis*. One skin labelled *proregulus* is *proregulus*. My original drawings of *chloronotus* show clearly that the bird is *maculipennis*, so does one of the British Museum drawings. That one of these latter fails to show the white in the tail is surely quite unimportant in the face of the mass of corroborative evidence, which confirms my view that Hodgson's *chloronotus* was the same bird that Blyth later renamed *maculipennis*, which later name must sink into a synonym.

---

Mr. Brooks writes :—

"I examined the type of *Motacilla dukhunensis* and found it was all right and not *personata* as some have supposed. The type is mature with black throat and fore-neck ; back, grey."

---

I have received some very interesting official corespondence, for which I regret that I cannot find space, having reference to the *Bori* bird which commits terrible havoc amongst the ripe crops of the Munchar lake in Sindh, and seems to be considered eminently a *bore* by the inhabitants.

Some time ago, it will be remembered, that Mr. James identified this bird as *Euspiza melanocephala*.

Col. Haig, in his proposals for a revised settlement of the Sehwan Taluk, announces that Mr James is "wrong once more," and that the native name of *Euspiza melanocephala* is "*Wahio*," which is nothing like so destructive as the "*Bori*."

As Col. Haig goes on to say that he has never seen the "*Bori*," he is perhaps a little premature in congratulating himself that Mr James is "wrong once more." He winds up by informing the authorities that "the habitation of the *Bori* is evidently some distant part of Central Asia, and its visits to Sindh are probably occasioned by an unusually rigorous and prolonged winter forcing it to seek warmer latitudes."

Colonel Dunsterville proceeds to take the shine out foo this eloquent passage by remarking that he has known the "*Bir*" in Sindh ever since he has been there; that it is nothing but *Ploceus manyar* (and certainly the specimens he sent to me belonged to that species), and that the "*Wahio*" is not *Euspiza melanocephala* at all, but *Pastor roseus!*

It is much to be regretted that Government does not insist upon all Settlement and Revenue Officers passing in ornithology and subscribing to "STRAY FEATHERS."

## Letters to the Editor.

### "*Glareola pratincola*" and "*Cotyle riparia*" in Sindh.

SIR,

I AM indebted to Mr. F. Fedden of the Geological Survey for two skins of the true, Collared Pratincole, shot by himself in Lower Sindh, south-west of Kotree. Mr. Fedden had already identified these birds with *G. pratincola*, and noticed the distinction between them and *G. orientalis*. Both have the deeply-forked tail of the European species, but it is worthy of notice, with reference to the distinctions between the two forms mentioned by Mr. Hume (STRAY FEATHERS, Vol. II., p. 284), that whereas in one of the skins there is a well-marked white terminal fringe to the secondary quills, this is almost entirely wanting in the other specimens.

The occurrence of *G. pratincola* in India has been announced previously by Mr. Blyth (*Ibis* 1867, p. 163), who stated that this bird had been received by Mr. Gould from both the Bombay and Madras Presidencies. As, however, it was not known by whom the specimens were collected, some doubt necessarily attached to the locality, especially as a closely-allied species, *G. orientalis* is common in many parts of India. Even now the occurrence of *G. pratincola*, in any part of India, east of the desert region, requires confirmation. It should be remembered that another Sindh bird, *Pyrrhulauda melanauchen* (*P. affinis*, Blyth), was received by Mr. Gould labelled as from Madras, though the occurrence of this species in the Indian Peninsula is extremely improbable.

I have obtained three specimens of *Cotyle riparia* in Sindh—two shot by myself on the Manchhar Lake, the third near Rohri. This tends to confirm Captain Butler's opinion (S.F., Vol. III., p. 452) that he found the bird in Deesa. I have compared both the Pratincole and Bank Martin with European specimens, and Mr. Hume, who has examined them also, agrees with the identification.

*C. riparia* has lately been obtained by Mr. Davison in Tenasserim. Dr. Jerdon, who noticed its occurrence in some other parts of India, stated (*Ibis*, 1871, p. 353) that I obtained it in Central India. I may have done so, but I do not recollect the circumstance, and I cannot find that I have ever before mentioned in print the occurrence of this species in India.

W. T. Blanford.

Simla, *October 23rd*, 1876.

---

Sir,

To-day, while out nesting, I came upon a perfect colony of Night Jars, about twenty birds within a cottah of jungle; one rose about five feet from me and settled about ten yards off; the native with me pointed to where she had risen (and for full fifteen seconds I could not make out what he was alluding to), and then I saw two young, covered with down, the wing feathers just sprouting. They were perfectly still, looked like dead, would hardly move even when I touched them; the parent all this while was moving about amongst the dead leaves. What do you think she was doing? Quivering her body and wings just like a bird does who has been shot through the legs while on the ground, and attempts to rise after it. On walking up to her she flew a few yards, and on alighting did the same. I have read of Peewits and some other birds trying to allure a person away from their nests, but never thought a Night Jar capable of the same thing. I returned to the nest and hid myself; the mother came and settled about six feet from the nest (if it can be so named) and gave a few low chuckles, when both young ones ran to her over the dead leaves just like chickens. She flew off immediately having seen me; the young ones eyes were kept closed all the while. Mr. R. Thompson says, "Nests and Eggs, Vol. I., p. 95, the young are quite helpless." The ones he saw were very likely just hatched.

J. R. Cripps.

Bamandanga, 31*st March* 1876.

---

Sir,

I have just received a skin of *Pterocles senegallus* Lin, ♂ and a wing of the ♀ from Dr. Newman. He says he shot them at Tookaram, about 70 miles north-east of Jodhpoor, in the corner between the three states of Bickaneer, Jessulmere, and Marwar. I mention the fact as you say in our paper. "I have never seen or heard of it from Jodhpoor or from any part of Guzerat inland from the Runn."—E. A. Butler.

Deesa, *April 4th*, 1876.

[The Spotted Sand Grouse has now been recorded from numerous localities in Sindh, (Vol. I., p. 221; Vol. II., p. 267), from Kutch, Kattiawar, and Northern Guzerat (Vol. IV., p. 4) along the shores of the Runn (Vol. III., p. 418), and from Shahpoor, on the Jhelum in the Punjaub (Vol. II., p. 331). Shahpoor the most northern, and Patree the most southern locality, where this species has yet been obtained, are about 650 miles apart, nearly due north and south, both being between the 72nd and 73rd parallels of east longitude.

This new locality, Tookaram, is almost exactly half way between these two.—Ed., S. F.]

---

Sir,

By to-day's post I have sent you a Green Magpie which I shot about a month ago about seven miles up above where the Ganges leaves the Himalayas. He was hopping about in low jungle close to the Ganges. I have shown and described the bird to many people—Wilson among the rest—and none of them, either Europeans or natives, have ever seen it before.

The only time I ever saw one was last winter in the Sal hills, in the Garhwal Bhabur; my brother shot at it and winged it, but could not catch it.

It may be a common bird in some parts of India; but, I think, it must be very rare in the N. W. P. and Panjab, or I surely should have seen it oftener.—G. Greig, *Conservator of Forests, N. W. P.*

Camp, 26*th December* 1875.

[The bird sent is *Cissa speciosa*. I cannot remember ever seeing it west of the Ganges, but at Jewlee, immediately below Nynee Tal, and everywhere eastwards in the Sub-Himalayan ranges, it is common enough.—Ed., S. F.]

---

Sir,

I killed a brace of *Totanus fuscus* on the 8th of May in full summer or breeding plumage, out of a large flock I saw in a jhill in the extreme N W of the Allahabad district, where they were associated with numbers of *Himantopus candidus*, *Metapodius indicus*, *Hydrophasianus chirurgus*, *Rhynchæa bengalensis*, and other resident birds. *T. fuscus* has the reputation of breeding at the north pole, or at all events within the arctic circle, and so it may for all I know; but our birds I am convinced breed somewhere within a few hundred miles off where

I got them. And as I cannot find a mention of the bird in the dusky plumage in "STRAY FEATHERS," I send you a succinct description in hopes that the occurrence of the birds in the country so late as May will stimulate further inquiry among ornithologists.

♂. Length, 13″; wing, 6″·25; tarsus, 2″·12; bill, 2″·12; mid toe, 1″·5.

*Plumage.*—The entire head, neck, and lower surface, sooty black, which is also the ground color of the remainder of the body; a few of the shafts of the feathers on the back of the neck with minute white tips, more numerous on the hind neck, and developing into round white dots on the back; a ring of white feathers completely encircles the eye; greater and lesser wing coverts, tertials, and elongated scapulars, with a series of triangular white dots on the margin of each feathers; axillary plumes pure white, as is also the rump; the tail (including the medial pair of feathers), upper and lower coverts, and tibial plumes barred with white.

Legs, dark green; bill which was slightly recurved *in the fresh bird* with the basal half of the lower mandible, and the margins of the corresponding portion of the upper one *dark red.*

♀ Length, 14″; wing, 6″·38; tarsus, 2″·25; bill, 2″·25; mid toe, 1·58. Is a slightly larger bird and differs in having each feather of the breast, flanks, and abdomen narrowly margined with white, and in being a little more white about the wing coverts, and in having the medial pair of tail feathers less strongly *yet distinctly barred.* These differences I am inclined to regard as seasonal rather than sexual. The ♂ bird corresponds exactly with the figure given in the Naturalist's Library, Vol. XIII. pl. 14, fig. 1, of this species in summer plumage. While Yarrell's exquisite woodcut, Vol. II. p. 624, fig. 1, is a perfect counterpart of the stage of plumage exhibited by the ♀. The bird is also figured life-size in Hardwicke and Gray's Ill. of Ind. Zoo., Vol. II., pl. 53, figs. 1 and 2, in both stages of plumage. Figure one (summer plumage) shows the beautiful white ring of feathers round the eye very distinctly. In this figure the bird is represented with legs of a dusky green, with a slight fleshy tinge about the knee and foot. In figure two (winter plumage) the legs are light orange red. All the authorities I can turn up (Yarrell, Jardine, Swainson, and Morris), I find agree in giving the legs as vermillion (light red) in winter, and dark red in summer. My birds when *freshly* shot *had dark green legs,* unrelieved by a single tinge of pink or flesh color.

I got a beautiful pair of *Tringa sub-arquata* here, on May 17th. A ♂ of which is in perfect chestnut summer plumage. You say,

Lahore to Yarkand, I think that you have never heard of this species so far inland.*

I am certain in my identification of these birds, the ♂ has not a particle of black below as in the Dunlin, agrees in all dimensions, and has the peculiar curved bill of *sub-arquata*.

*Charadrius fulvus*, ♂ in full summer plumage, killed 29th May. A ♀ killed close by on the 1st June was in changing plumage, and had eggs the size of B B shot in her.

874.—*Cirrepidesmus mongolicus*, Pal., ♀, killed 1st June.

842.—*Glareola orientalis*, Leach, ♀ with six partially developed eggs, 10th May.

It would be impossible even on the wing to mistake this bird for *lactea*. The axillaries are bright chestnut, while in *G. lactea* they are jet black.

J. Cockburn,
*Curator, Allahabad Museum.*

---

Sir,

I write a line to tell you about the breeding place of *Micropternus phaioceps*, as some of your Kumaon correspondents may be able, when you tell them where to look, to find eggs of it, and clear up what appears to me a most unusual occurrence. When I took my first egg of it, I was so much astonished that I began to think I was dreaming. About a week ago (on the 20th April,) I took a few nests at Sitong, and was starting out of the jungle for home, when I happened to see this Wood-pecker leave an ant's nest. You are aware that a species of small ant makes a nest, suspended from bamboos and branches, not unlike that of one of the home wasps. The nest was on a bamboo about ten feet up, and as I happened to notice a hole in the side of it, I had the bamboo cut. The ants were in thousands, so that this was rather a nasty job. Right in the middle of the nest, close up to the bamboo, which ran up the middle, there was one egg. The Wood-pecker had gone only a little way off, and I shot her. The stomach was crammed full of this same small ant. Two days ago, on the 28th of April, I got another ant's nest, suspended from a branch, with three *M. phaioceps'* eggs in it. The ants had quite forsaken this nest, and I have saved it for you. I am uncertain whether this bird takes possession of deserted ants' nests, or if it causes the ants to leave, but am inclined to think that the latter is the case. I have often remarked the very strange smell that there is about this bird, and

* Except at the times of passage, in April, May, and October, at these seasons every species that goes north to breed (even regular coast birds like *Lobipes hyperboreus*) may be met with inland *en route* to its breeding quarters.—Ed., S. F.

wondered what service such could be to it. May not this bird have the power of secreting some substance so repulsive to the ants as to make them quit its neighbourhood? The first nest was evidently only just taken possession of, and the ants had not had time to vacate. Not so much as a solitary ant was about the second nest. You may be sure that I am keeping my eyes open for more information on the subject. I have not met with a single native who appears to know that any bird lays in ants' nests. The smell about this bird is most persistent, and I think you will find that it still hangs about skins of several years' old. On ruffling the feathers the smell is more strongly emitted.

*Mongphoo.* J. GAMMIE.

*P.S.*—Since this was written, I have, during this past month (May), secured two more similarly situated nests of this Woodpecker.

[It will be remembered that *Halcyon occipitalis* similarly always lays in ants' nests.—ED., S. F.]

---

MR. DRESSER, in the birds of Europe, hazards the opinion that my *Sturnus nitens* (Ibis, 1871, p 410; Lahore to Yarkand, 250, Pl. XXIV) is possibly nothing but an old *S. vulgaris*. As I have seen some thousands of these birds, a hundred or more in the same day, all breeding and without the admixture of a single bird in any degree spotted, this hypothesis is untenable.

It seems, however, that "*nitens*" being a synonym, of Brehms, for *S. vulgaris*, my name cannot, according to some European ornithologists, stand. I, personally, consider a name that is a synonym, extinct as regards the species it was so applied to and available for use in regard to any other species.

To meet, however, the views of those who think differently, I propose the new name of *ambiguus*, for this very distinct, but apparently much disbelieved-in, Starling.

(*See also Blanford, Zool. Persia, p.* 267.)

A. O. H.

---

**End of Vol. IV.**

# INDEX.

## Species described or discriminated.


ÆTHERIUS, *Lin.* Phaeton... 482
affinis, *Blyth.* Batrachostomus ... ... 376
affinis, *Tytler.* Ninox ... 285
agilis, *Sykes.* Anthus ... 278
albigena, *Licht.* Sterna ... 467
albocinctus, *G.-Aust.* Acridotheres ... ... 217
albosupercilíaris, *G.-Aust.* Garrulax ... ... 502
altirostris, *Jerd.* Pycnorhis ... ... 504
andamanensis, *Walden.* Geocichla ... ... 289
andamanensis, *Tytler.* Spizaetus ... ... 280
annectans, *Wald.* Ixos... 498
anosthætus, *Scop.* Sterna ... 474
aquilinus, *Hodgs.* Buteo 366
asiatica, *Swains.* Alcedo 383
Austeni, *Jerd.* Anorhinus 493

BALLI, *Hume.* Ephialtes ... 284
Beavani, *Wald.* Alcedo... 383
Bergii, *Licht.* Sterna ... 470
bicornis, *Lin.* Dichoceros 385
Blanfordi, *Hume.* Montifringilla ... ... 487
borealis, *Blasius.* Phylloneuste ... ... 290
Bourdilloni, *Hume.* Alcippe ... ... 485
burmanica, *Hume.* Estrilda ... ... 484
burmanica, *Hume.* Ninox 285

CASTANEUS, *Hume.* Batrachostomus ... ... 376
cathæcus, *Swinh.* Dicrurus 319
cavatus, *Shaw.* Dichoceros 384
ceylonensis, *Legge.* Baza 247
ceylonica, *Gmel.* Porzana 405
chloronotus, *Hodgs.* Reguloides ... ... 505
chocolatina, *G.-Aust.* Pnœpyga ... ... 218
cirrhatus, *Gmel.* Spizaetus ... ... 356
coronata, *T & S.* Phylloneuste ... ... 275
coronatus, *Blyth.* Ampeliceps ... ... 335
cuprea, *Jerd.* Carpophaga 403

DAFLAENSIS, *G.-Aust.* Actinura ... ... 219
daflaensis, *G.-Aust.* Suthora ... ... 489
deva, *Sykes.* Spizalauda 2

FIBER, *Lin.* Sula ... 483
flammaxillaris, *Blyth.* Arachnechthra ... 314
flammeus, *Forst.* Pericrocotus ... ... 394
fluviatilis, *Naum.* Sterna 472*n*
frontalis, *Gray.* Sterna... 473
fuliginosa, *Gm.* Sterna ... 477
fuscicollis, *Stephens.* Graculus ... ... 34
fuscus *(S. Plu) Lin.* Totanus ... ... 510

GANGESA, *Sykes.* Hypsipetes ... ... 400
gigantea, *Hasselt.* Chætura ... ... 287
Golzii, *Cab.* Daulias ... 500
gregaria, *Pallas.* Chettusia 13
Gregoriana, *Nevil.* Oreocincla ... ... 244*n*
griseus. *Lath.* Toccus ... 387

HAUGHTONI, *Armstrong.* Totanus ... ... 344
hemiptilopus, *Blyth.* Archibuteo ... ... 369
hirsutus, *Tem.* Ninox ... 285
hirundo, *L.* Sterna ... 472*n*
homrai, *Hodgs.* Dichoceros ... ... 385
humilis, *Tem.* Turtur ... 292

INDICA, *Hume.* Chaetura ... 287
indica, *Blyth.* Pratincola 274
indicus (*juv.*) *Gm.* Anser 499
indicus, *Lath.* Caprimulgus ... ... 381
indicus, *Hume.* Phaeton 481
inornatus, *Sykes.* Drymoipus ... ... 410
intermedia, *Blyth.* Dicrurus ... ... 319
intermedius, *Legge.* Brachypternus... ... 242

JAVANENSIS, *Less.* Ketupa 300
Jerdoni, *Brooks.* Accentor 491

KELAARTI, *Blyth.* Caprimulgus ... ... 381

LEUCOCAPILLUS, *Gould.* Anous ... ... 480
leucogaster, *Gm.* Cuncuma 461
leucogaster, *Gould.* Dendrocitta ... ... 402
leucogenys, *Wald.* Dicrurus ... ... 289
leucophæus, *Vieill.* Dicrurus ... ... 289
longicaudatus, *Tickell.* Drymoipus ... 407
longipennis, *Nord.* Sterna 472
lugubris, *Tick.* Ninox ... 285

MACULIPENNIS, *Blyth.* Reguloides ... ... 505
malabarica, *Jerd.* Osmotreron ... ... 261
Mandelli, *G.-Aust.* Minla 490
Mandelli, *Hume.* Montifringilla ... ... 488
Melanocephalus, *Gmel.* Brachypodius ... 324
minor, *Hume.* Pellorneum 406
modestus, *Walden.* Ephialtes ... ... 284
monilige-, *Layard.* Batrachostomus ... 378
munipurensis, *G.-Aust.* Suthora ... ... 216
Murrayi, *Blyth.* Propasser 504

NEGLECTUS. *Brooks.* Troglodytes ... ... 492
neilgheriensis, *Jerd.* Hypsipetes ... ... 400
nemoricolus, *Jerd.* Temenuchus ... ... 333
nicobaricus, *Hume.* Ephialtes ... ... 283
nicobariensis, *Blyth.* Zosterops ... ... 291
nigrogularis, *Hodgs.* Rutticilla ... ... 497
nigrolutea, *Marsh. G.F. L.* Iora ... ... 410

OSCITANS, *Bodd.* Anastomus 213

PALLIPES, *Jerd.* Cyornis 397
pectoralis, *Legge.* Oreocincla ... ... 244
pelecanoides, *King.* Sterna 472
plumbeitarsus, *Swinh.* Phylloscopus ... 276
pyrrhops, *Hodgs.* Dicrurus 320

ROBERTI, *G.-Aust.* Pnœpyga 218
Roberti, *G.-Aust.* Sphenocichla ... ... 217
roseus, *Vieill.* Pericrocotus ... .. 317
rubicola, *Lin.* Pratincola 274
rubropygialis, *Malh.* Chrysonotus ... ... 391
rufiventer, *Jerd.* Buteo 359
rufonuchalis, *Brooks.* Aquila ... ... 269

SCHISTICEPS, *Hodgs.* Ruticilla 497
scutulata, *Raff.* Ninox ... 285
Seebohmi, *Dresser.* Anthus 278
senex, *Leach.* Anous ... 480
simillima, *Hume.* Spizalauda ... ... 1
sinensis, *Shaw.* Graculus 33
stolidus, L. Anous ... 478
subviridis, *Brooks.* Reguloides ... ... 494
superciliaris, *Blyth.* Sturnopastor ... ... 332
Sykesi, *H. Lloyd.* Megalaima ... ... 391

TENELLIPES, *Swinh.* Phylloscopus ... ... 276
tenuirostris, *Tem.* Anous 480
terricolor, *Hume.* Drymoipus ... ... 407
theiodes, *Hume.* Criniger 215
Tickelli, *Blyth.* Pellorneum 406
tranquebarica, *Herm.* Turtur ... ... 292

Umbrovirens, *Rüpp.* Phylloscopus ... ... 277
Unwini, *Hume.* Caprimulgus ... ... 501
Vigorsi, *Sykes.* Æthopyga 255
Vincens, *Selat.* Prionochilus ... ... 493
Xanthodryas, *Swinh.* Phylloscopus ... ... 276


## Species Noticed.


Abnormis, *Hume.* Hypotænidia ... ... 279, 294
abyssinicus, *Blanford.* Phylloscopus ... 275
accipitrinus, *Gmel.* Brachyotus ... ... 254, 266
acuta, *Lin.* Dafila 29, 89, 200
acuticauda, *Blyth.* Cypselus 90 92, 99, 105-107, 132
Adamsi, *Hume.* Alaudula 41
Adamsi, *Gould.* Montifringilla ... 109, 110, 172, 486
ædon, *Pallas.* Arundinax 328
ægocephala, *Lin.* Limosa 16
ægyptius, *Licht,* Caprimulgus ... ... 133
ænea, *Linn.* Carpophaga 235, 337
ænea, *Vieill.* Chaptia 257, 265 320, 395, 400
æruginosus, *Lin.* Circus 34, 92, 99, 101, 103, 104, 126, 253
æsalon, *Lin.* Lithofalco 41, 76, 77, 120
ætherius, *Lin.* Phæton 427, 456 481, 482
affinis, *Blyth.* Batrachostomus ... 376, 377, 378
affinis, *McClell.* Coracias... 305
affinis, *Gray.* Cypselus ... 34, 254
affinis, *Blyth.* Edolius ... 289
affinis, *Legge.* Lanius ... 243
affinis, *Gould.* Milvus 270, 272, 273, 299, 414, 456, 462
affinis, *Jerdon.* Mirafra ... 239
affinis, *Tytler.* Ninox ... 285, 286
affinis, *Tick.* Phylloppeuste ... ... 259
affinis, *McClell.* Pericrocotus ... ... 318
affinis, *Blyth.* Pyrrhulauda ... ... 507
affinis, *Blyth.* Sylvia ... 35, 229, 260, 277
affinis, *Blyth.* Tephrodornis ... ... 458
affinis, *Blyth.* Taccocua 251, 255, 267
agile, *Tick.* Piprisoma ... 256, 265
agilis, *Sykes.* Pipastes ... 260, 278
agricolus, *Jerd.* Acrocephalus ... 41
akool, *Sykes.* Porzana ... 21, 38
alaudarius, *Brisson.* Tinnunculus 34, 59, 62, 69, 71, 75, 79, 82, 88, 96, 99, 105, 108, 113, 120, 252, 255, 457, 460
alba, *Belon.* Ciconia 22, 69, 91, 93, 97, 100, 101, 194, 263
alba, *Linn.* Herodias ... 23, 75, 77, 81, 83, 87, 89, 91, 196, 263
alba, *Lin.* Motacilla ... 59, 151
albellus, *Lin.* Mergellus... 31, 86, 87, 202
albescens, *Tem.* Tringa ... 343
albicans, *Rüpp.* Aquila ... 272
albicaudata, *Jerd.* Eumyias ... ... 396
albicilla, *Pallas.* Erythrosterna ... ... 274
albicilla, *Lin.* Haliætus... 41
albicollis, *Swains.* Rhynchops ... ... 32, 224 237,
albidus, *Cuv.* Spilornis ... 253, 358
albifrons, *Jerd.* Pericrocotus ... ... 211, 212
albigena, *Licht.* Sterna ... 429, 467
albirictus, *Hodgs.* Buchanga 34, 235, 257, 318, 319, 458
albiventris, *Hume.* Turnix 279, 293
albocinctus, *G.-Aust.* and *Wald.* Acridotheres ... 217
albofrontata, *Frankl.* Leucocirca ... ... 34, 257
albogularis, *Blyth.* Dumetia ... 36, 251, 258, 265, 399
albogularis, *Blyth.* Geocichla ... .. 289
alboniger, *Hume.* Saxicola 41
alboniger, *Blyth.* Spizaetus ... ... 224
albonotatus, *Tick.* Caprimulgus ... ... 381
albosuperciliaris, *God.-Aust.* Garrulax ... ... 502
albosuperciliaris, *Hume.* Suya ... 92, 96, 99, 105, 147
alchata, *Lin.* Pterocles ... 41
alpicola, *Pallas.* Montifringilla ... ... 486
alpinus, *Vieill.* Pyrrhocorax ... 44, 108, 109, 162

altirostris, *Jerd.* Chrysomma ... ... 504
amandava, *Lin.* Estrilda ... 26, 39, 266, 484, 485
amauroptera, *Pearson.* Pelargopsis ... 305
amauroptera, *Blyth.* Porzana ... ... 405
ambiguus, *Hume.* Sturnus 512
ampelinus, *Bonap,* Hypocolius ... ... 41
analis, *Horsf.* Picus ... 309
andamanensis, *Wald.* Geocichla ... 279, 289, 290
andamanensis, *Tytler.* Hirundo ... ... 279, 286
andamanensis. *Tytler.* Pericrocotus ... 206, 208
andamanensis, *Tytler.* Spizaetus ... ... 280
andamanica, *Hume.* Arachnechthra ... ... 314
anglicus, *Mont.* Gelochelidon ... 237, 279, 294, 414
angustirostris, *Menetries.* Querquedula ... 30, 39
annectans, *Hodgs.* Dicrurus ... ... 288, 289
annectans, *Walden.* Ixos... 498
anosthætus, *Scop.* Sterna ... 420, 429, 430, 474
antigone, *Lin.* Grus ... 14
apus, *Lin.* Cypselus ... 41
aquaticus, *Bechst.* Anthus ... 81, 84, 86, 89, 90, 152
aquaticus, *Lin.* Rallus ... 96, 100, 193, 194
aquilinus, *Hodgs.* Buteo... 359, 366, 367, 370
arboreus, *Bechst.* Pipastes 35, 278, 491
arctica, *Tem.* Sterna ... 246, 468
arctoa, *Pallas.* Leucosticte ... ... 486
arcuata, *Cuv.* Dendrocygna ... ... 27, 264
ardens, *Boie.* Pericrocotus ... ... 206, 208
ardeola, *Payk.* Dromas ... 41, 246, 451, 464, 496
arenaria, *Temm.* Calidris ... ... 40, 66, 188, 343, 433, 465, 496
arenarius, *Blyth.* Lanius... 39, 90, 92, 96, 99, 105—108, 135, 137—139
arenarius, *Pall.* Pterocles 4, 104, 105, 118, 179, 230
arenicolor, *Severtsov.* Caprimulgus ... 133
argala, *Lin.* Leptoptilos ... 21, 263
argentatus, *Brün.* Larus ... 503
arquata, *Lin.* Numenius... 16
arundinaceus, *Lin.* Acrocephalus... 90, 92, 99, 146
asha, *Sykes.* Ardea ... 23
asiatica, *Swains.* Alcedo ... 279, 288, 383, 384
asiatica, *Lath.* Arachnechthra ... ... 34, 256, 313, 393, 415, 458
asiatica, *Lath.* Mycteria ... 22
asiatica, *Lath.* Perdicula... 6, 7, 262, 266
asiaticus, *Lath.* Caprimulgus ... ... 254
atra, *Hermann.* Buchanga 319
atra, *Lin.* Fulica ... 20, 35, 71, 75, 77, 89, 90, 93, 96, 100, 191, 263
atricapillus, *Gm.* Halcyon 287
atriceps, *Jerd.* Alcippe ... 485
atrogularis, *Temm.* Planesticus 40, 61, 75, 77, 80—82, 86, 140
atrogularis, *Blyth.* Saxicola ... ... 46
aurantia, *Sykes.* Seena ... 237
aurantius, *Lin.* Brachypternus ... ... 34, 243
aurita, *Lath.* Sypheotides ... 10, 262, 266
auritus, *Ray.* Turtur ... 93, 96, 100, 105, 177
Austeni, *Jerd.* Anorhinus 493
avocetta, *Linn.* Recurvirostra ... ... 18
azurea, *Bodd.* Myiagra ...257, 322, 395, 424

BABYLONICUS, *Gurney.* Falco 118
bactriana, *Blyth, ? Hutton.* Athene ...75—77, 81, 82, 86, 88, 90, 92, 99, 107, 108, 130
bactriana, *Bonap.* Pica... 45, 58, 59, 71, 75—77, 83, 108, 158
badius, *Gmel.* Micronisus 34, 252
badius, *Horsf.* Phodilus.. 244
bakhamuna, *Forst.* Ephialtes ... ... 36, 267
balicassius, *Lin.* Dicrurus 288
Balli, *Hume.* Ephialtes ... 284
barbarus, *Lin.* Falco ... 40, 75 76, 77, 118
barbatus. *Lin.* Gypætus 44, 57, 116
baya, *Blyth* Ploceus ... 39, 260
Beavani, *Walden.* Alcedo 279, 287, 383, 384
bengalensis, *Gmel.* Alcedo 34, 254, 307

bengalensis, *Frankl.* Ascalaphia ... ... 254, 266
bengalensis, *Gmel.* Gyps. 35, 252
bengalensis, *Gm.* Palæornis ... ... 308
bengalensis, *Lin.* Ploceus 41
bengalensis, *Lin.* Rhynchæa ... 15, 263, 509
bengalensis, *Less.* Sterna 40, 414, 429, 451, 468, 474.
Bergii, *Licht.* Sterna ... 40, 414, 429, 430, 451, 468, 470—473, 477
biarmicus, *Lin.* Calamophilus ... ... 89, 90, 92, 96, 100, 101, 103, 126, 154
bicincta, *Jerd.* Osmotreron 337
bicornis, *Lin.* Dichoceros 385, 386
bicornis, *Scop.* Meniceros 37, 39
bilobus, *Gmel.* Sarciophorus ... ... 14
Blanfordi, *Hume.* Montifringilla ... ... 486, 487
Blythi, *Jerdon.* Temenuchus ... ... 402
Bonellii, *Tem.* Pseudaëtus 34
Bonhami, *Gray.* Ammoperdix ... ... 41
borealis, *Blas.* Phylloppeusto ... ... 290
borneensis, *Bonp.* Ninox.. 285
boschas, *Lin.* Anas ... 28, 66, 69, 71, 75, 77, 82. 83, 85, 87, 89, 91, 93, 96, 100, 122, 199
Bourdilloni, *Hume.* Alcippe ... ... 399, 485
Bourdilloni, *Hume.* Lyncornis ... ... 382
brachydactyla, *Tem.* Calandrella ... 2, 39, 113, 171, 172, 261, 266
brachyotus, *Lin.* Otus ... 81, 82, 85. 86, 88, 90, 128, 231, 372
brama, *Tem.* Athene 39, 254, 457
Brandti, *Bonap.* Leucosticte ... ... 486
Brehmii, *Homeyer.* Phylloscopus ... ... 275
brevicaudatus, *Blyth.* Turdinus ... ... 218
brevirostris, *Gould.* Linota ... 109, 113, 114, 170
brevirostris, *Vigors.* Pericrocotus ... 38, 39, 209, 211, 232
brevirostris, *Strickl.* Phylloscopus ... 275
Brooksi, *Hume.* Phylloscopus ... ... 277
Brucei. *Hume.* Ephialtes.. 254, 266
brunneicephala, *Jerd.* Xema ... 31, 75, 78, 203, 350, 413, 456, 459
brunneinucha, *Brandt.* Leucosticte ... 486
brunnescens, *Jerd.* Acrocephalus ... ... 592
brunnescens, *Hume.* Horeites ... ... 497, 498
brunneus, *Blyth.* Ixus ... 214, 216
Buchanani, *Blyth.* Franklinia ... 39, 259, 266
burmanica, *Hume.* Estrilda.336, 484, 485
burmanica, *Hume.* Ninox 285
burmanicus, *Jerd.* Temenuchus ... ... 332
Burnesi, *Blyth.* Laticilla... 41

CACHINANS, *Pallas.* Larus 504
cæsius, *Tick.* Parus... 37, 320, 402
calcaratus, *Hodgs.* Budytes 260
calidris, *Lin.* Totanus ...18, 46, 75, 89, 90, 93, 96, 100, 113, 189, 348
caligatus, *Raffl.* Spizaetus 297, 356
calvus, *Scops.* Otogyps 21, 39, 252
cambaiensis, *Lath.* Thamnobia ... ... 35
cambayensis, *Lath.* Perdicula ... 6. 36, 262, 266
cambayensis, *Gmel.* Turtur ... ...3, 35, 262
campestris, *Lin.* Agrodroma ... ... 39, 260
campestris, *Cooper.* Leucosticte ... ... 486
candida, *Tick.* Strix ... 253
candidus, *Bonn.* Himantopus ... 230, 263, 509
canescens, *Gmel.* Totanus 71, 113, 189, 263, 344, 345, 444, 465
canente, *Less.* Hemicercus 389
canicapillus, *Blyth.* Yungipicus ... ... 309
caniceps, *Blyth.* Lanius... 243
canorinus, *Cab. et Hein.* Cuculus ... ... 288
canoroides, *Muller.* Cuculus ... ... 288
canorus, *Lin.* Cuculus ...37, 90, 92, 96, 99, 105, 106, 107, 134, 279, 288
cantiaca, *Gmel.* Sterna... 41
cantianus, *Lath.* Ægialitis 12, 89, 90, 93, 100, 101, 104, 185, 236, 340, 444, 464
cantillans, *Jerd.* Mirafra.. 8
cantonensis, *Swinhoe.* Pericrocotus ... 211
caprata, *Lin.* Fratincola 39, 40, 259
carbo, *Lin.* Graculus ...33, 34, 35, 96, 100, 104, 204, 224
caryophyllacea, *Lath.* Anas ... ... 264

cashmirensis, *Brooks.* Sitta 273
caspius, *Lath.* Sylocheli-
don ... ... 41, 414
castaneiceps, *Hodgs.* Regu-
loides ... ... 495
castaneus, *Hume.* Batra-
chostomus ... 376, 377, 378
castor, *Lin.* Mergus 71, 75, 78, 202,
496
cathœcus, *Swinhoe.* Dicru-
rus ... ... 319
caudata, *Dumeril.* Chatarr-
hœa ... 39, 258, 266, 458
caudata, *Blyth.* Pnœpyga 218
cavatus, *Shaw.* Dichoceros 254, 264,
384
cenchris, *Naum.* Erythro-
pus ... ... 252
cetti, *Marm.* Cettia ... 41
ceylonensis, *Legge.* Baza.. 247
ceylonensis, *Gmel.*
Ketupa ... 254, 265, 300, 303
ceylonensis, *Bonap.* Orio-
lus ... ... 259
ceylonica, *Gmel.* Porzana. 405
cheela, *Daud.* Spilornis...253, 281,
282, 358
chicquera, *Daud.* Hypo-
triorchis ... ... 39
chinensis, *Lin.* Oriolus ... 326, 375
chirurgus, *Scop.* Hydro-
phasianus ... 20, 263, 509
chlorigaster, *Blyth.* Cro-
copus ... ... 2, 261
chloris, *Bodd.* Halcyon ... 306
chloronotus, *Hodgs.* Ab-
rornis ... ... 505, 506
chlorophanes, *Vieill.* Chry-
sophlegma ... ... 390
chloropus, *Lin.* Gallinula 20, 35,
96, 100, 104, 129, 192
chocolatina, *G.-Aust.* and
*Wald.* Pnœpyga ... 218
chrysætus, *Lin.* Aquila 41, 75, 77,
82, 84—86, 123
chrysonotus, *Less.* Bra-
chypternus ... 242, 255, 265
chukor, *Gray.* Caccabis 41
cinclorhynchus, *Vigors.* O-
rocetes ... 37, 252, 257, 398
cinclus, *Lin.* Tringa ... 40, 71,
187
cineraceus, *Mont.* Circus 253
cineraceus, *Horsf.* Dicru-
rus ... ... 289
cinerea, *Lin.* Ardea 23, 75, 77, 81,
83, 84, 87, 89, 90, 103 113, 196,
263, 452, 465
cinerea, *Lath.* Curruca ... 277
cinerea, *Bechst.* Grus ... 15, 263
cinerea, *Bonap.* Sylvia ... 39
cinerea, *Gmel.* Terekia 16, 236, 341
cinereoalba, *T & S.* Alseo-
nax ... ... 273
cinereocapilla, *Savi.* Bu-
dytes ... ... 260
cinereocapilla, *Vieill.* Cu-
licicapa ... ... 257, 322
cinereus, *Meyer.* Anser 26, 87, 89,
96, 197, 198
cinereus, *Vieill.* Parus ... 260, 266
cinereus, *Lafr.* Pericroco-
tus ... ... 211
cingalensis, *Gmel.* Chal-
coparia ... ... 313
cinnamomea, *Gmel.* Ardet-
ta ... ... 263, 266
circia, *Lin.* Querquedula 30, 91,
93, 100, 201, 264
cirrhatus, *Gmel.* Spizaetus 36, 253,
356
citreola, *Pallas.* Budytes 41, 45,
89, 90, 92, 96, 99, 101, 104, 113,
151
citreoloides, *Hodgs.* Bu-
dytes ... ... 39
clanga, *Pallas.* Aquila ... 268
clypeata, *Linn.* Spatula 28, 71, 75,
199, 264
cœrulescens, *Lin.* Dicrurus 37, 257
collaris, *Walden.* Minla ... 491
collurio, *Lin.* Lanius ... 39
collurioides, *Less.* Lanius 316
columboides, *Jerd.* Palæ-
ornis ... ... 255, 265,
388
communis, *Bonaterre.* Co-
turnix 7, 35, 86, 89, 90, 93, 100,
184, 262
concolor, *Sykes.* Cotile ... 35
concolor, *Jerd.* Dicœum... 256, 265
concolor, *Sykes.* Ptyono-
progne ... ... 254
contra, *Lin.* Sturnopastor 331
convexus, *Tem.* Dichoceros 385
cordatus, *Jerd.* Hemicer-
cus ... ... 389
cornix, *Lin.* Corvus, ... 68, 69, 71,
75, 77, 79, 80, 81, 82, 86, 89, 90,
156, 157
coromandelianus, *Gmel.*
Nettapus ... ... 27, 294
coromandelica, *Gmel.* Co-
turnix ... 7, 39, 262
coromandelicus, *Gmel.*
Cursorius ... ... 10, 262, 267
coromandus, *Bodd.* Bub-
ulcus ... ... 349
coromandus, *Bodd.* Bu-
phus ... ... 23, 263
coronata, *Müll.* Brachy-
urus ... ... 395, 398

coronata, *Bodd.* Hydrocissa ... ... 254, 264
coronata, *T. & S.* Phylloppeuste ... ... 275
coronata, *Müll.* Pitta ... 37, 252, 257
coronatus, *Blyth.* Ampeliceps ... ... 335
coronatus, *Tick.* Macropteryx ... ... 254
coronatus, *Lin.* Pterocles 41, 230
corone, *Lin.* Corvus 71, 75, 77, 81, 82, 86, 89, 90, 92, 100, 101, 156
crassirostris, *Tem. & Schl.* Tringa ... 41, 279, 294, 341, 347, 433, 464
crecca, *Lin.* Querquedula 30, 46, 69, 75, 83, 86, 87, 200, 264
crepitans, *Tem.* Œdicnemus ... ... 14
crispus, *Bruch.* Pelicanus 32, 33, 40
cristata, *Lin.* Galerida ... 2, 39, 239
cristata, *Ray.* Fuligula ... 31
cristatus, *Lin.* Lanius 36, 39, 138, 139, 256, 266, 316, 393
cristatus, *Lin.* Pavo ...5, 35, 80, 262, 279
cristatus, *Lin.* Podiceps 31, 96, 100, 203
cristatus, *Koch* Regulus ... 496
cristatus, *Meyer.* Vanellus 41, 64, 66, 71, 75, 77, 89, 90, 93, 96, 100, 101, 186
cruentatum, *Lin.* Dicæum 315
cryptogenys, *Hodgs.* Archibuteo ... ... 272
cryptogenys, *Hodgs.* Buteo 371
culminatus, *Sykes.* Corvus 37, 59, 61, 62, 66, 68, 69, 71, 75, 77, 79, 81, 82, 85, 86, 89, 90, 92, 96, 100-102, 104-109, 156, 157
cuprea, *Jerd.* Carpophaga 403, 404
curonicus, *Gmel.* Ægialitis 12, 35, 340
curruca, *Gmel.* Sylvia ... 35, 46, 63, 90, 92, 96, 99, 101, 104, 105, 106, 150, 260
cyana, *Lin.* Cyanocincla 34, 249, 257, 368, 398, 420
cyane, *Pall.* Larvivora ... 259
cyanea, *Hodgs.* Larvivora 259, 401
cyaneus, *Lin.* Circus 71, 75, 77, 78, 81, 82, 86, 88, 90, 92, 99, 101, 104, 125
cyaniventris, *Blyth.* Ixidia 216
cyanops, *Sundw.* Sula .. 483
cyanotus, *J. & S.* Geocichla 251, 252, 257, 398
cyanus, *Pallas.* Parus 108, 109, 112, 154

Daflaensis, *Godwin-Austen.* Actinura ... ... 219
daflaensis, *God.-Aust.* Suthora ... ... 489
Daudini, *Cuv.* Merops ... 304
dauma, *Lath.* Oreocincla 323
daurica, *Pallas.* Coleus... 158
Davisoni, *Hume.* Ixus ... 324, 498
Davisoni, *Hume.* Spilornis ... ... 281, 282
Delesserti, *Malh.* Chrysocolaptes ... 265, 310, 389
Delesserti, *Jerd.* Garrulax 399
delicatula, *Hartl.* Sylvia 41
De Roepstorffi, *Hume.* Strix ... ... 279, 283
deserti, *Rüpp.* Saxicola ... 39, 49, 56, 104, 105, 106, 107, 108, 112, 113, 143, 259, 266
desertorum, *Daud.* Buteo 359, 360, 361, 262
desertorum, *Stanley.* Certhilauda ... ... 40
deva, *Gray.* Alauda (Spizalauda) ... ... 240
deva, *Sykes.* Alauda ... 237, 238, 239, 240
deva, *Jerd.* Spizalauda ... 238, 239, 240
deva, *Sykes.* Spizalauda 1, 261, 278
dicruroides, *Hodgs.* Surniculus ... ... 235
Dougalli, *Montague.* Sterna ... ... 246, 294
dubius, *Hume.* Proparus... 491
dukhunensis, *Sykes.* Motacilla ... 35, 260, 506
dumetorum, *Blyth.* Acrocephalus. ... ... 38, 259
Dussumierii, *Tem.* Turnix ... 8, 9, 262, 266

Earlii, *Blyth.* Chatarrhæa 41
Edwardsii, *Gray.* Eupodotis ... 9, 234, 262, 266
Egertoni, *Gould.* Actinura ... ... 219
egrettoides, *Tem.* Herodias ... .. 263
elegans, *McClell.* Pericrocotus ... 206, 207, 208
Elphinstonei, *Sykes.* Palumbus ... 262, 265, 404
emeria, *Shaw.* Otocompsa 235, 325
episcopus, *Bodd.* Ciconia... 263
epops, *Lin.* Upupa 34, 39, 43, 51, 53, 59, 66, 71, 75, 80, 82, 86, 89, 90, 96, 99, 101, 105, 106, 107, 108, 109, 113, 136, 256, 316

erochroa, *Hodgs.* Reguloides ... ... 495
erythrinus, *Pall.* Carpodacus ... ... 35, 45, 107, 113, 170, 261
erythrogastra, *Guld.* Rutícilla 44, 58, 110—114, 144
erythronotus, *Vigors.* Lanius 34, 243, 256
erythroptera, *Jerdon.* Mirafra ... ... 39, 261
erythropus, *Lin.* Anser ... 41
erythropygia, *Sykes.* Hirundo ... ... 35, 254
erythropygius, *Jerd.* Pericrocotus 211, 231, 257, 266
erythrorhyncha, *Sykes.* Perdicula, (Microperdix) 262, 265
eupatria, *Lin.* Palæornis 36, 267, 308
europæus, *Lin.* Caprimulgus ... ... 501, 502
eurycercus, *Hay.* Centrococcyx ... ...312, 313
Eversmanni, *Bonap.* Palumbœna ... ... 41, 96, 100, 102, 175, 176
extensicaudata, *Swinhoe.* Drymoipus ... 328
exul, *Wall.* Pericrocotus 206, 209
exustus, *Tem.* Pterocles 4, 11, 230, 262, 266

FALCATA, *Gorgi.* Querquedula ... ... 225
familiaris, *Menet.* Ædon ... 39
fasciatus, *Gmel.* Harpactes 231, 254, 264, 382, 498
fasciatus (Bonellii,) *Vieill.* Nisætus ... ... 253
fasciatus, *Scop.* Pterocles 4, 35, 230, 262, 266
ferina, *Lin.* Aythya ... 30
ferox, *Gmel.* Buteo ... 39, 81, 82, 86, 88, 90, 124, 253, 359, 360, 362, 366-371
ferrea, *Walden.* Hypotœnidia ... ... 294
ferrugineiceps, *Hodgs.* Merops ... ... 304
ferrugineus, *Gmel.* Gallus 236, 338
festivus, *Bodd.* Chrysocolaptes ... ... 37
fiber, *Lin.* Sula ... 429, 451, 483
filifera, *Steph.* Hirundo 39, 254
fimbriata, *Tem.* Volvocivora ... ... 223
Finschii, *Salvadori.* Criniger ... ... 215, 216
flagrans, *Bp.* Pericrocotus 209
flammaxillaris, *Blyth.* Arachnechthra ... 313
flammeus, *Forst.* Pericrocotus ... ... 206, 207, 208, 211, 256, 265, 394
flava, *Lin.* Budytes ... 40, 329
flavicollis, *Frankl.* Passer 35, 261
flavipes, *Savign.* Chettusia ... ... 13
flavipes, *Hodgs.* Ketupa... 303
flavirostris, *Brandt.* Phæton ... ... 427, 481
flaviventris, *Hodgs.* Horornis ... ... 498
flaviventris, *Tick.* Rubigula ... ... 324
florensis, *Wallace.* Ninox 285
fluviatilis, *Bechst.* Ægialites ...77, 89, 90, 93, 100, 101, 104, 113, 185, 236
fluviatilis, *Naum.* Sterna 91, 93, 100, 101, 103, 113, 191, 203, 468, 472
fluvicola, *Jerd.* Laganoplastes ... ... 254
formosa, *Lath.* Estrelda ... 36, 261, 266
fraterculus, *Swinhœ.* Pericrocotus ... ... 206, 208
frontalis, *Horsf.* Dendrophila ... 256, 265, 393
frontalis *Gray.* Sterna ... 472
frugilegus, *Lin.* Corvus ... 69, 71, 75, 77, 80, 81, 82, 86, 89, 90, 156, 157
fucata, *Pallas.* Emberiza 224
fulicarius, *Lin.* Phalaropus 41
fulicata, *Lath,* Thamnobia 259
fuliginosa, *Gm.* Sterna ... 429, 430, 450, 477, 480, 481
fulvescens, *Severtsov.* Accentor ... 112, 113, 155
fulvescens, *Hume.* Gyps... 39
fulvicollis, *Wagler.* Osmotreron ... ... 224
fulviventris, *Hodgs.* Horornis ... ... 497, 498
fulvus, *Gmel.* Charadtrius ... ... 11, 262, 339, 433, 444, 459, 463, 511
fulvus, *Gmel.* Gyps ... 39
fumigata, *Walden.* Munia 291
fuscatus, *Blyth.* Phillosc-opus ... 329, 497, 498,
fuscicaudata, *Gould* Otocompsa 36, 39, 251, 258, 265, 415, 421, 458
fuscus, *Wagler.* Acridotheres. 260, 266, 279, 332
fuscus, *Vieill.* Artamus 321, 458

fuscus, *Hodgson.* Drymoipus ... ... 407
fuscus, *Lin.* Larus 502, ... 503, 504
fuscus, *Lin.* Totanus ... 18, 224, 509
fusicollis, *Steph.* Graculus 34, 224

GALBULA, *Lin.* Oriolus ... 41
galeritus, *Tem.* Anorhinus 493
gallicus, *Gmel.* Circætus 253
gallicus, *Gmel.* Cursorius 11
gallinula, *Lin.* Gallinago 15, 263
gangeesa, *Sykes.* Hypsipetes 251, 258, 265, 400
garrula, *Lin.* Coracias 41, 107, 113, 133
garrula, *Retz.* Curruca 229
garrulus, *Lin.* Ampelis 89, 152
garzetta, *Lin.* Herodias ... 23, 35 263
Gebleri, *Brandt.* Montifringilla ... 486
Geoffroyi, *Wagler.* Ægialitis 339, 437, 444, 463
Geoffroyi, *Wagler.* Cirrepidesmus ... 12, 236
gigantea, *V. Hass.* Chætura ... 223, 287
Giglioli, *Salvad.* Leucosticte ... 486
ginginianus, *Daud.* Neophron ... 34, 252
githagineus, *Licht.* Bucanetes ... 41
glareola, *Gmel.* Actitis ... 17, 35, 263, 344
glaucion, *Lin.* Clangula 225
glottis, *Lin.* Totanus 18, 71, 189
Golzii, *Cab.* Lusciola ... 500
govinda, *Sykes.* Milvus 34, 253, 272, 273, 279, 282, 372, 414, 462
gracilis, *Rüp.* Drymaeca 274, 275
gracilis, *Gould.* Sterna 246
graculus, *Lin.* Fregilus 44, 56, 58, 107, 110, 111, 113, 159, 278
Grayii, *Sykes.* Ardeola 23, 35, 263, 350, 444, 448, 456, 467
gregaria, *Pall.* Chettusia 11, 12
Gregoriana, *Nevil.* Oreocincla ... 244
grisea, *Scop.* Pyrrhulauda 39, 261, 459
griseigularis, *Gould.* Pericrocotus ... 206, 211
griseinucha, *Brandt.* Leucosticte ... 486
griseus, *Lath.* Malacocircus 258, 456
griseus, *Lin.* Nycticorax 24, 35, 263, 415
griseus, *Lath.* Tockus 255, 264, 387
grisola, *Lin.* Butalis ... 39, 225
gularis, *Bosc.* Demiegretta 23, 263, 414, 421, 433, 465
gularis, *Jerd.* Micropternus ... 255, 265
gulgula, *Frankl.* Alauda 2, 39, 224, 239, 337, 401
gurial, *Pears.* Pelargopsis 254
guttacristatus, *Tick.* Chrysocolaptes ... 255, 265
gutturalis, *Scop.* Hirundo 286
gymnopthalmos, *Blyth.* Yungipicus ... 389

HÆMACEPHALA, *Müll.* Xantholæma 35, 255, 311, 392
hæmatopygia, *Gould.* Leucosticte ... 486
hæmatopygia, *Gould.* Montifringilla 43, 44, 45, 47, 49, 51, 52, 53, 56, 58
Hafizi, *Severtsov.* Daulias 500
haliætus, *Lin.* Pandion 41
Hardwickii, *Gray.* Lanius ... 256
Hardwickii, *Jerd.* Yungipicus 36, 255, 265
hastata, *Less.* Aquila ... 269, 270, 272
Haughtoni, *Armstrong.* Totanus ... 344
Hayi, *Jerd.* Mirafra 238, 239, 240
Hayi, *Blyth.* Spizalauda 240
heliaca, *Savig.* Aquila 40
helvetica, *Lin.* Squatarola 11, 12, 75, 184, 245, 262, 338
hemiptilopus, *Blyth.* Archibuteo 272, 359, 369, 371
Hemprichii, *Bonap.* Larus 41, 414
Hendersoni, *Hume.* Falco 76, 77, 96, 117
Hendersoni, *Cassin.* Locustella ... 39, 290
Hendersoni, *Hume.* Podoces 60, 62, 104, 105, 106, 108, 159, 160
Hendersoni, *Hume.* Saxicola ... 61, 144
himalayanus, *Gould.* Fregilus ... 278
himalayensis, *Gray.* Tetraogallus 76, 77, 83, 86, 181
hirsutus, *Tem.* Ninox ... 254, 266, 285, 286
hirundo, *Lin.* Sterna 246, 468, 472
hirundo, *Tem.* Sterna 468

Hodgsoni, *Brooks.* Certhia 273
Hodgsoni, *Gray.* Otothrix 377, 378, 380
Hodgsoni, *Blyth.* Prinia 37, 234, 259, 265, 401
Hodgsoni, *Jerd.* Thripo-nax ... 390
Homeyeri, *Cabanis.* Lanius 76, 77, 78, 79, 83, 86, 136
homrai, *Hodgs.* Dicho-ceros ... 385, 386
honorata, *Lin.* Eudynamys 34, 255, 424, 437, 463
Horsfieldii, *Gray,* Gallinago 41
Horsfieldii, *Vigors.* My-iophoneus 36, 251, 257, 353, 398
Horsfieldii, *Sykes.* Poma-torhinus 258, 265, 267, 399
hottentota, *Linn.* Chibia 231, 321
humilior, *Hume.* Turtur 292, 293, 338
humilis, *Hume.* Podoces 58, 110, 111, 161
humilis, *Schl. & Mull.* Poliœtus ... 272
humilis, *Temm.* Turtur 3, 35, 262, 292, 293, 338
Huttoni, *Moore.* Accentor 75, 155
Huttoni, *Blyth.* Emberiza 35, 261
hyperboreus, *Lin.* Lobipes 41, 511
hyperythra, *Cabanis.* Ery-throsterna ... 273
hypoleucos, *Lin.* Actitis 18, 46, 108, 109, 112, 113, 188, 263, 316
hypoleucos, *Lin.* Tringoi-des 344, 433, 437, 444, 465

Ichthyaetus, *Pall.* Larus ... 41, 502
ichthyaetus, *Horsf.* Poli-oœtus ... ... 298
ictericus, *Strickl.* criniger 215, 258, 265, 400
igneus, *Gmel.* Falcinellus, 25
igneus, *Blyth.* Pericroco-tus ... ... 206, 209
Impeyanus, *Lath.* Lopho-phorus ... ... 227
impudicus, *Hodgs.* Cor-vus ... ... 456
incanus *Gmel.* Tringa ... 347
incarnata, *Severtsov.* Ery-throspiza ... ... 169
incertus, *Shaw.* Psittinus... 224
incognita, *Hume.* Baza ... 247
indica, *Hume.* Chætura ... 223, 286, 287
indica, *Lin.* Chalcophaps 404
indica, *Lin.* Coracias ... 34, 254, 382
indica, *Steph.* Hydrochelidon ... ... 32, 224
indica, *Gmel.* Nemoricola 260, 265, 329
indica, *Blyth.* Pratincola 35, 106, 109, 142, 259, 274, 327
indica, *Blyth.* Strix ... 300
indicus, *Gmel.* Anser 27, 40, 499
indicus, *Lath.* Caprimul-gus ... 36, 254, 381
indicus, *Scop.* Gyps ... 21, 252
indicus, *Gmel.* Limonidro-mus ... ... 401
indicus, *Bodd.* Lobivanel-lus ... 14, 35, 262
indicus, *Hodgs.* Lophos-piza ... ... 355
indicus, *Lath.* Metopodius 19, 39, 263, 348, 509
indicus, *Salvad.* Œdicne-mus ... ... 263, 340
indicus, *Jerd.* Oriolus ... 258
indicus, *J & S.* Passer ... 35, 45, 165, 261
indicus, *Hume.* Phæton ... 481, 482, 483
indicus, *Jerd.* Phylloscо-pus ... ... 37, 260
indrani, *Sykes.* Syrnium 253, 433
indus, *Bodd.* Haliastur ... 35, 253, 372, 456
inframarginata, *Blyth.* Or-eocinla ... ... 279
innominata, *Hume.* Ninox 286
innotata, *Beavan.* Gelo-chelidon ... ... 224
inornata, *Walden.* Mega-laima ... 36, 255, 265
inornatus, *Sykes.* Drymoi-pus 259, 266, 274, 407, 410
inquieta, *Rüpp.* Scotocerca 41
insignis, *Hodgs.* Carpo-phaga ... ... 404
insignis, *Hodgson.* Pra-tincola ... ... 274
insolens, *Hume.* Corvus... 463
insularis, *Blyth.* Carpo-phaga ... ... 291
intercedens, *Brehm.* Tur-tur ... ... 178
intermedia, *Blyth.* Bu-changa ... ... 319
intermedia, *Strick.* Col-umba ... 3, 35, 262, 419, 424
intermedia, *V. Hasselq.* Herodias ... ... 23, 35
intermedia, *Hume.* Pelar-gopsis ... ... 279
intermedia, *Blyth.* Tiga ... 311
intermedius, *Legge.* Bra-chypterrus ... ... 243

intermedius, *Hume.* Centrococcyx ... ... 313
intermedius, *Blyth.* Chrysonotus ... ... 390
intermedius, *Adams.* Corvus ... 122, 129, 156, 157
intermedius, *Blyth.* Dicrurus ... ... 320
intermedius, *Blyth.* Himantopus 18, 35, 93, 100, 101, 190
intermedius, *Hay.* Molpastes ... ... 326
interpres, *Lin.* Strepsilas... 40, 429, 459, 464
isabellina, *Rüpp.* Saxicola 39, 90, 92, 96, 99, 104-107, 142, 259, 266
ispida, *Lin.* Alcedo ... 41

JACOBINUS, *Bodd.* Coccystes ... 34, 255, 457
japonicus, *T & S.* Buteo 71, 81, 82, 86, 88, 90, 124, 125, 358, 361
japonicus, *Schl.* Ninox ... 285
javanensis, *Osbeck.* Eulabes ... ... 335
javanensis, *Less.* Ketupa 300, 303
javanica, *Horsf.* Butorides 24, 35, 263, 405, 441, 467
javanica, *Sparrm.* Hirundo ... ... 374
javanica, *Gmel.* Strix ... 253
javanicus, *Horsf.* Graculus ... ... 34
Jerdoni, *Brooks.* Accentor ... ... 278, 491
Jerdoni, *Blyth.* Machlolophus ... 36, 260, 266, 402
Jerdoni, *Blyth.* Phyllornis ... ... 258, 265
jondera, *Hodgs.* Turnix 8, 225, 236
jugger, *Gray.* Falco ... 39, 252

KAMTSCHATKENSIS, *Gmel.* Calliope ... ... 233
Kellarti, *Blyth.* Caprimulgus ... 381, 382, 501
kundoo, *Sykes.* Oriolus... 90, 92, 96, 99, 101, 105, 107, 140, 258, 375, 424

LACTEA, *Tem.* Glareola ... 338, 511
lahtora, *Sykes.* Lanius 39, 256, 266
Lambruschini, *Bonap.* Larus 41
lanceolata, *Tem.* Locustella 290
latirostris, *Raffl.* Alcedonax 257, 273, 396
lepida, *Blyth.* Burnesia... 274
lepidus, *Blyth.* Drymoipus 274 275
Leschenaultii, *Less.* Taccocua ... ... 36, 267
leucocapillus, *Gould.* Anous ... 247, 480
leucocephala, *Gmel.* Ciconia ... ... 22, 38
leucocephalus, *Hodgs.* Buteo ... ... 359
leucocephalus, *Gmel.* Tantalus ... ... 24, 263
leucogaster, *Gmel.* Cuncuma ... 298, 420, 461
leucogaster, *Gould.* Dendrocitta ... ... 402
leucogaster, *Cuv.* Leucocerca ... ... 257
leucogenys, *Walden.* Dicrurus ... ... 289
leucogeranus, *Pall,* Grus 41
leucomelanura, *Hodg.* Siphia ... ... 229
leucophæus, *Vieill.* Dicrurus ... ... 289
leucophæus, *Licht.* Larus 40, 414, 459, 502, 503
leucopterus, *Salv.* Picus 81, 83, 84, 86, 134
leucopterus. *Hume.* Temenuchus ... ... 334
leucorodia, *Lin.* Platalea 24, 237, 264
leucoryphus, *Pallas.* Haliætus 96, 99 101, 103, 124
leucotis, *Gould.* Otocompsa 39
leucura, *Licht.* Chettusia 13
leucura, *Gmelin.* Erythrosterna ... ... 274, 323
leucura, *Blyth.* Pratincola 41
Levaillantii, *Less.* Corvus 260
Lichtensteinii, *Tem.* Pterocles ... 4, 41, 230
limnætus, *Vig.* Spizætus 253
linchi, *Horsf.* Collocalia 375
lineatus, *Cuv.* Numenius 16, 341, 444, 464
littoralis, *Baird.* Leucosticte ... ... 486
liventer, *Tem.* Poliornis 299
livia, *Briss.* Columba ... 41
longicauda, *Gmel.* Orthotomus ... ... 259
longicaudata, *Hay.* Buchanga ... ... 257, 415
longicaudata, *Moore.* Pnœpyga ... 219
longicaudatus, *Hay.* Dicrurus ... ... 320, 394
longicaudatus, *Tickell.* Drymoipus... ... 39, 229 259, 274, 407—410
longicaudatus, *Gmel.* Orthotomus ... 35, 458

longipennis, *Nordm.* Sterna ... ...468, 472, 473
longirostris, *Jerd.* Upupa 315, 458
longus, *Jerd.* Dicrurus 319
lucionensis, *Lin.* Lanius 393
lugubris, *Tick.* Ninox 285, 286, 374
lugubris, *Blyth.* Phylloneuste ... ... 259
lugubris, *Blyth.* Phylloscopus ... ... 329
lusitania, *Gmel.* Ammomanes ... ... 41
luteola, *Sparr.* Euspiza 90, 92, 96, 100, 103, 107, 108, 135, 167, 261, 266
luteolus, *Less.* Ixos ... 235, 258, 415
luzoniensis, *Scop.* Motacilla 291

Macei, *Less.* Graucalus ... 39, 250, 316
Macqueenii, *Gray.* Honbara ... ... 9
macrorhyncha, *Stol.* Pratincola ... ... 40
macrorpynchus, *Hume.* Acrocephalus ... 108, 146
macroura, *Gmel.* Kittocincla 259, 265
macroura, *Naum.* Sterna 246, 468, 472
maculata, *Gmelin.* Aquila 268, 270
maculatus, *Hodgs.* Anthus 278
maculatus, *Gmelin.* Falco 271
maculatus, *Hodgs.* Pipastes ... ... 38, 330
maculipennis, *Blyth,* Reguloides ... 495, 505, 506
maderaspatana, *Briss.* Motacilla ... 35, 260
magicus, *Müll.* Scops ... 221
magna, *Hume.* Galerita ... 59, 61—63, 65, 68, 69, 71, 75, 77—80, 82, 86, 89, 90, 93, 96, 100, 101, 103—107, 174, 175
magnirostris, *G. R. Gray.* Baza ... ... 247
magnirostris, *Blyth.* Cyornis ... ... 223
magnirostris, *Geoffr.* Esacus ... ... 293
magnirostris, *Ball.* Palæornis ... ... 307, 308
magnirostris, *Blyth.* Phylloscopus ... 276, 290, 401
maharattensis. *Sykes.* Caprimulgus ... ... 254, 501
maharattensis, *Lath.* Picus 35, 255
major, *Jerd.* Dendrocygna ... 28, 41 264
major, *Brehm.* Luscinia... 500
major, *Hume.* Milvus ... 41, 127, 253, 272, 273, 414
malabarica, *Gmelin.* Alauda .. ... 238
malabarica, *Scop.* Alauda 1, 237, 238, 239, 240, 241, 251, 266
malabarica, *Bodd.* Lobipluvia ... ... 14
malabarica, *Blyth.* Megalæma ... ... 255, 265
malabarica, *Lin.* Munia 35, 261
malabarica, *Jerd.* Osmotreron ... 261, 265 403
malabarica, *Scop.* Spizalauda 261
malabarica, *Blyth.* Xanthol.æma ... ... 392
malabaricum, *Blyth.* Glaucidium ... 242, 372, 373
malabaricus, *Scop.* Dissemurus ... 257, 265, 395
malabaricus, Osmotreron 424
malabaricus, *Lath.* Phyllornis ... 258, 265, 400
malabaricus, *Bodd.* Sarciophorus ... ... 262, 267
malabaricus, *Gmel.* Temenuchus 36, 332, 333, 334, 402
malabaroides, *Hodgs.* Dissemurus ... ... 233
malaccensis, *Eyton.* Ninox 285
malayanus, Ephialtes 283, 284
malayanus, *Sund.* Oreocincla ... ... 244
malayensis, *Reinw.* Neopus ... 253, 264, 355
Malcolmi, *Sykes.* Malaocircus ... 35, 258, 266
Mandelli, *Hume.* Cyornis 396, 398
Mandelli, *God.-Aust.* Minla 490
Mandelli, *Hume.* Montifringilla ... ... 486, 488
manyar, *Horsf.* Ploceus .. 39, 224 235, 507
marinus, *Lin.* Larus ... 503
marnetta, *Briss.* Porzana 41, 55, 193, 263
maxima, *Hume.* Collocalia 223
maximus, *Sibbald.* Bubo ... 85, 86, 88, 90, 92, 99, 103, 123, 129, 157
meena, *Sykes.* Turtur 3, 262, 266
melanauchen, *Tem.* Onychoprion ... ... 224
melanauchen, *Cab.* Pyrrhulauda ... ... 41, 507
melanicterus, *Gmel.* Melophus ... 37, 224, 261
melanocepala, *Licht.* Budytes ... ... 35
melanocephala, *Gmel.* Euspiza ... 35, 261, 506, 507

melanocephalus, *Gmel.* Brachypodius ... ... 324
melanocephalus, *Lin.* Oriolus ... 37, 327, 415
melanocephalus, *Lin.* Threskiornis 25, 213, 224, 264
melanogaster, *Gmel.* Plotus ... 34, 35, 264
melanogaster, *Tem.* Sterna ... ... 40, 224
melanognathus, *Brandt.* Graculus ... ... 34, 35
melanoleucus, *Gmel.* Circus ... ... 299
melononotus, *Tem.* Sarkidiornis ... ... 27
melanope, *Pallas.* Calobates .. 260, 353, 401
melanopogon, *Tem.* Calamodita ... ... 41
melanops, *Gould.* Anous 480
melanops, *Vigors.* Eumyias 37, 257, 323, 396
melanopterus, *Daud.* Elanus 39, 253, 444, 448, 462
melanorhynchus, *Wagler.* Palæornis ... ... 308
melanotis *T. & S.* Milvus... 90, 92, 96, 99, 103, 105—108, 112, 126, 141, 157, 272, 273, 414
melanotis, *Jerd.* Spilornis 253, 281, 358
melanurus, *Blyth.* Pomatorhinus ... ... 245
melaschistos, *Hodgs.* Volvocivora ... ... 235
melba, *Lin.* Cypselus ... 37, 39
menadensis, *Wall.* Ephialtes ... ... 283
micropterus, *Gould.* Cuculas ... ... 255, 288
miniatus, *Sw.* Pericrocotus ... ... 206, 210
minima, *Sykes.* Leptocoma 256, 265, 392
minimum, *Tick.* Dicæum... 256, 265
minimus, *Hume.* Spilornis 282
minor, *Blyth.* Dicrurus ... 319
minor, *Hume.* Pelorneum 406
minor, *Geoff.St. Hill.* Phœnicopterus ... ... 25
minor, *Lin.* Podiceps 75, 77, 96, 203
minor, *Hume.* Spilornis ... 253, 358
minuta, *Lin.* Ardetta ... 41
minuta, *Pallas.* Porzana... 41
minuta, *Lin.* Sternula ... 91, 93, 100, 101, 191, 204, 234, 246, 429, 469
minuta, *Leisl.* Tringa ... 17, 342, 343
minutus, *Pall.* Ægialitis 40
modestus, *Wald.* Ephialtes ... 279, 284
monacha, *Rüpp.* Saxicola 41
monachus, *Lin.* Vultur 57, 99, 109, 116
monedula, *Lin.* Colœus ... 69, 71, 75, 77, 81, 82, 86, 89, 90, 158
mongolicus, *Pall.* Ægialitis 293, 339, 340, 444, 463
mongolicus, *Swinhoe.* Carpodacus ... ... 96, 168
mongolicus, *Pall.* Cirrepidesmus 12, 236, 511
moniliger, *Layard.* Batrachostomus ... 376, 377, 378
monotonellus, *Pallas.* Accentor ... ... 155
montanus, *Lin.* Passer 59, 61, 65, 68, 69, 71, 75, 77, 80, 82, 86, 89, 90, 92, 96, 100, 105-109, 119, 165, 168, 499
monticolus, *Frankl.* Caprimulgus ... 37, 254
multistriatus, *David.* Accentor ... 278
munipurensis, *G.-Aust. & Wald.* Sathora ... 216, 489
muraria, *Lin.* Tichodroma 109, 136
Murrayi, *Blyth.* Propasser 504
musicus, *Raffl.* Copsychus 458

NÆVIA, *Gmelin.* Aquila ... 268, 269
nævia, *Schwenckfeld.* Aquila ... 268
nævioides, *Cuv.* Aquila ... 271, 272
neglectus, *Hume.* Phylloscopus ... 41, 276
neglectus, *Brooks.* Troglodytes ... 492
neilgherriensis, *Jerd.* Hypsipetes ... 400
neilgherriensis, *Blyth.* Oreocincla ... 244, 399
nemoricolus, *Jerd.* Temenuchus ... 333, 334
nicobarica, *Walden.* Ianthenas ... 279, 292
nicobaricus, *Hume.* Ephialtes 283
nicobariensis, *Blyth.* Zosterops ... 291
nigra, *Lin.* Ciconia ... 22, 93, 100, 101, 194, 263
nigricollis, *Sund.* Podiceps 41
nigrifrons, *Blyth.* Alcippe 485
nigripennis, *Gould.* Upupa 39, 256, 458
nigrogularis, *Moore.* Ruticilla ... 497

nigrolutea, *Marshall.* Iora 410, 411, 412
nigropileus, *Lafr.* Merula 36, 251, 257, 265
nigrorufa *Jerd.* Ochromela 396
nilotica, *Hasselq* Sterna ... 31, 351
nipalensis, *Hodgs.* Actinura 219
nipalensis, *Hodgs.* Aquila 270
nipalensis, *Hodgs.* Ninox ... 286
nipalensis, *Hodgs.* Spizaetus ... 247, 356
nipalensis, *Hodgs.* Troglodytes 492
nisus, *Lin.* Accipiter ... 34, 75, 77, 92, 122, 252, 279, 280
nitens, *Hume.* Sturnus ... 512
nitida *Lath.* Phyllopneuste 259, 401
nivalis *Lin.* Montifringilla 486
nivea, *Daudin.* Nyctea ... 76, 77, 128
non-striata, *Hume.* Munia 291
nycticorax, *Lin.* Nyctiardea 350
nyroca, *Güld.* Aythya ... 30, 89. 91, 93, 96, 100, 103, 129, 202

OBSCURIORA, *Hume.* Hypotænidia ... ... 279, 294
obscurus, *Hume.* Pomatorhinus ... ... 36, 267
obsoleta, *Cab.* Cotile ... 40
obsoleta, *Licht.* Erythrospiza 70, 71, 75-77, 81, 82, 86, 89, 90, 92, 97, 100, 101, 105, 107, 135, 168, 169
occidentalis, *Audubon.* Larus 41, 414, 418, 503, 504
occipitalis, *Blyth.* Halcyon ... ... 512
occipitalis, *Jerd.* Reguloides ... 41, 260, 275
ocellata, *Less.* Bulaea 40, 231, 253
ochropus, *Lin.* Actitis 18, 35, 69, 71, 75, 77, 89, 90, 93, 100, 101, 103, 105, 113, 188, 263
œnanthe, *Lin.* Saxicola 112
œnas, *Lin.* Columba ... 93, 100, 102, 122, 176
olivaceum, *Walden.* Dicæum ... ... 498
olor, *Gmel.* Cygnus ... 197
onocrotalus, *Lin.* Pelecanus ... ... 32
opistholeuca, *Strickl.* Saxicola ... ...259, 266
orientalis, *Horsf.* Bubo ... 223
orientalis, *Lin.* Eurystomus 382
orientalis, *Leach.* Glareola 507, 511
orphea. *Tem.* Sylvia ... 35, 260
oscitans, *Bodd.* Anastomus ... ... 25, 212, 264
ostrealegus, *Lin.* Hæmatopus ... ... 246, 496

PAGODARUM, *Gmel.* Temenuchus ... 35, 260, 459
pallescens, *Hume.* Caccabis 45, 75, 76, 77, 87, 89, 182
pallescens, *Hume.* Gyps... 35, 39
pallidus, *Hume.* Caccabis 54, 58, 108, 113, 183
pallidus, *Wald.* Spilornis 281, 282
pallidus, Troglodytes 84, 86, 139
pallipes, *Jerd.* Cyornis 257, 265, 397
palmarum, *Gray.* Cypselus 37, 254, 456
palpebrosus, *Tem.* Zosterops 37, 260, 291, 424, 437, 463
palumbarius, *Lin.* Astur 71, 77, 84, 121
palumboides, *Hume.* Carpophaga .. ... 292
palustris, *Horsf.* Megalurus ... ... 233
papillosus, *Tem.* Geronticus ... ... 25, 264
paradisea, *Brün.* Sterna 224, 246, 468
paradiseus, *Lin.* Dissemurus ... ... 321, 395
paradisi, *Lin.* Tchitrea ... 38, 257, 353, 395, 458
paradoxus, *Pall.* Syrrhaptes ... ... 179
parasiticus, *Naum.* Stercorarius ... ... 41
parva. *Bechst.* Erythrosterna 34, 229, 257, 273, 274
passerinus, *Vahl.* Ololygon 36, 235, 255
pectoralis, *Horsf.* Arachnechthra ... ... 288
pectoralis, *Jerd.* Leucocirca ... 36, 415, 421
pectoralis, *Jerd.* Munia 403
pectoralis, *Legge.* Oreocincla ... ... 244
pekinensis, *Swinh.* Cypselus 90, 92, 99, 132, 133
pekinensis, *Swinh.* Rhopophilus ... ... 147
pelecanoides, *King.* Sterna 470, 472
pencillata, *Blyth.* Kelaartia ... ... 245
penelope, *Lin.* Mareca 30
penicillata, *Gould.* Orocoris 53, 66, 75, 77, 79, 82, 86, 106, 115, 174
pennatus, *Hodgs.* Ephialtes ... ... 254, 283

pennatus, *Gmel.* Hieratus 253
pennatus, *Gmelin.* Nisætus ... ... 247, 249
peregrinator, *Sund.* Falco 36, 39, 267
peregrinus, *Lin.* Falco 39, 88, 117, 279, 460
peregrinus, *Lin.* Pericrocotus 34, 206, 209, 256, 318, 382
persicus, *Hume.* Puffinus 41
personata, *Gould.* Motacilla 45, 51, 62, 71, 75, 77, 83, 89, 90, 92, 96, 99, 101, 103—109, 113, 150, 151, 506
phaioceps, *Blyth.* Micropternus ... ... 511
pheopus, *Lin.* Numenius 16, 341, 459, 464
philippensis, *Lath.* Ægialitis ... ... 262
philippensis, *Briss.* Hydrocorax ... ... 385
philippensis, *Gmel.* Pelecanus ... 33, 224, 279
philippensis, *Gmel.* Podiceps ... 31, 35, 264
philippinus, *Lin.* Merops ... 36, 254, 287
phœnicopterus, *Lath.* Cropcopus ... 2, 37, 261
phœnicura, *Frankl.* Ammomanes ... 39, 261, 266
phœnicura, *Penn.* Porzana 21, 35, 263
picata, *Blyth.* Saxicola ... 35
picatus, *Sykes.* Hemipus 256, 393, 395
pictus, *J. & S.* Francolinus 6, 262
pileata, *Bodd.* Halcyon 306
pileata, *Horsf.* Timalia 323
piscator, *Lin.* Sula 450, 453, 483
pispoletta, *Pallas.* Alaudula 71, 75, 77, 82, 86, 89, 90, 92, 100, 102, 104, 173
pœkilorhyncha, *Pen.* Anas 28, 264
poiocephala, *Jerd.* Alcippe 251, 258, 265, 399, 485
placens, *Gould.* Sternula 246
platyrhyncha, *Tem.* Tringa 41, 343
plumbeitarsus, *Swinhoe.* Phylloscopus ... 276
plumbeus, *Hodgs.* Poliætus ... ... 272
plumipes, *Swinh.* Athene 130
plumipes, *Hodgs.* Buteo 358, 359, 360, 361, 362, 365, 367, 369, 371
plumosus, *Blyth.* Ixus 214, 215, 216
poliocephalus, *Lath.* Cuculus ... ... 255
poliocephalus, *Lath.* Porphyrio ... ... 20, 263
poliocercus, *Gould.* Sterna 472
pomarina, *Brehm.* Aquila 269
pondiceriana, *Gmel.* Ortygornis ... 6, 35, 262, 459
pondiceriana, *Gmel.* Tephrodornis 34, 243, 256, 456, 458
præcognitus, *Swinhoe.* Stachyris ... ... 274
pratensis, *Lin.* Anthus ... 278
pratincola, *Lin.* Glareola 507
proregulus, *Pallas.* Reguloides 494, 495, 496, 505, 506
ptilorhynchus, *Tem.* Pernis 36, 253
puella, *Lath.* Irena 258, 265, 326, 400
pugnax, *Lin.* Philomachus 17, 224
pugnax, *Tem.* Turnix ... 7
pulchra, *Hume.* Athene 457
pulchrata, *Hodgs.* Turtur 3, 37
punctatus, *Hume.* Batrachostomus ... 244, 377, 381
puncticollis, *Malh.* Brachypternus ... 242, 243, 457
punctulata, *Lin.* Lonchura 38, 260, 266
puniceus, *Tickell.* Alsocomus ... ... 337
purpurea, *Lin.* Ardea 23, 263
purpurus, *Mull.* Palæornis 35, 255
pusilla, *Pall.* Emberiza 279, 291
pusillus, *Salvadori.* Ixus 214, 216
pusillus, *Blyth.* Pycnonotus 35, 258, 456
pygmæa, *Naum.* Porzana 96, 100, 193, 234, 263
pygmæus, *Lin.* Eurynorhynchus ... ... 343
pygmæus, *Pall.* Graculus 264
pyrrhops, *Hodgs.* Buchanga 319, 320
pyrrhuloides, *Pall.* Emberiza ... 81, 82, 85, 86 89, 90, 92, 100, 101, 166

RADIATA, *Tickell.* Athene... 36, 39, 267, 373
rama, *Sykes.* Phylloneuste 92, 97, 99, 147, 259, 275
Ramsayi, *Wald.* Actinura 219
Rayi, *Bonap.* Budytes ... 36
recurvirostris, *Cuv.* Esacus ... 14, 231, 234
religiosa *Lin.* Eulabes ... 402
Richardi, *Vieill.* Corydalla 96, 100, 101, 152, 320
ridibundus, *Lin.* Larus ... 41, 413, 418, 502
riparia, *Lin.* Cotyle ... 223, 507, 508
risorius, *Lin.* Turtur ... 3, 4, 35, 262

Roberti, *G.-Aust.* and *Wald.* Pucpyga ... 218
Roberti, *G.—Aust* and *Wald.* Sphenocichla ... 217
robusta, *Tristram.* Pratincola ... ... 274
roseus, *Lin.* Pastor ... 35, 61, 164, 260, 279, 415, 507
roseus, *Vieill.* Pericrocotus ... 206, 210, 317, 318
roseus, *Pallas.* Phœnicopterus ... ... 25, 264
rubetra, *Lin* Pratincola 40
rubicilla, *Guld.* Carpodacus ... 108, 112, 169
rubicola, *Lin.* Pratincola 274
rubricauda, *Bodd.* Phæton ... ... 427, 481
rubropygialis, *Malh.* Chrysonotus ... 399
rudis, *Lin.* Ceryle ... 34, 254
rufa, *Scop.* Dendrocitta 35, 251, 260, 331
rufa, *Lath.* Phylloscopus 275, 276
rufescens, *Hume.* Drymoipus ... ... 229
ruficauda, *Swains.* Cyornis 36, 257, 396, 397
ruficeps, *Swains.* Pellorneum 251, 258, 265, 399, 406
ruficollis, *Blanford.* Montifringilla ... 486, 487, 488
rufifrons, *Hume.* Stachyris 274, 501
rufigastra, *Wald.* Alcedo 288
rufilata, *Hodgs.* Janthia 229
rufina, *Pall.* Branta ... 30, 93, 100, 201, 264
rufipennis, *Illiger.* Centrococcyx ... ... 415
rufipennis, *Illiger.* Centropus ... 34, 255, 353, 456
rufiventer, *Jerd.* Buteo... 358, 359
rufiventra, *Jerd.* Cacomantis ... ... 312
rufiventris, *Vieill.* Ruticilla 35, 44—46, 108, 109, 144, 259
rufogularis, *Mandelli.* Minla ... ... 491
rufonuchalis, *Brooks.* Aquila ... ... 269, 271
rufula, *Vieill.* Corydalla 38, 260, 320, 401, 458
rupestris, *Scop.* Cotile ... 36, 45
rupestris, *Scop.* Ptionoprogne 103, 109, 112, 131, 254, 265
rupicola, *Pallas.* Columba 44, 48, 50, 55, 56, 58, 108—114, 118, 176, 262
rustica, *Lin.* Hirundo ... 39, 63, 71, 90, 92, 99, 101, 105, 107, 120, 131, 254, 286, 303
Rutherfordi, *Swinhoe.* Spilornis ... ... 281
rutila, *Pall.* Casarca 28, 89, 91, 93, 96, 100, 129, 198, 264

Sacra, *Gmel.* Demiegretta 466
salicicolus, *Vieill.* Passer 89, 90 92, 100, 164
sannio, *Swinhoe.* Garrulax 502
saturatior, *Hume.* Halcyon 279
saularis, *Lin.* Copsychus 38, 259, 327, 415, 458
saxatilis, *Lin.* Monticola 61, 113, 139
scapularis, *Horsf.* Ægithina ... ... 224
schisticeps, *Hodgs.* Ruticilla ... ... 497
schœnicola, *Bonap.* Cisticola ... 35, 234
schœnicola, *Lin.* Emberiza 81, 82, 86, 89, 166,
Schwarzii, *Radde.* Phylloscopus ... ... 277
scindianus, *Gould.* Picus 41
scolopacinus, *Bonap.* Gallinago ... 15, 35, 96, 100, 186
scutatus, *Bodd.* Rhinoplax 493
scutulata, *Raffl.* Ninox... 285, 286, 303, 373, 374
Seebohmi, *Dresser.* Anthus ... ... 278
seena, *Sykes.* Sterna ... 32, 264
seloputo, *Horsf.* Syrnium 224, 283
semipalmatus, *Gmel.* Pseudoscolopax ... 346
semipalmatus, *Gmel.* Tringa ... ... 347
semistriata, *Hume.* Munia 291
senegallus, *Lin.* Pterocles 4, 39, 40 230, 508
senex, *Leach.* Anous ... 480
severus, *Horsf.* Hypotriorchis ... ... 354
Shawi, *Elliot.* Phasianus 75, 77, 80, 83—86, 89, 90, 93, 100, 122, 128, 179
sibilatrix, *Bechst.* Phyllopneuste ... ... 290
sibirica, *Middendorff.* Sylvia ... ... 497
sibiricus, *Eversm.* Bubo... 129
sibiricus, *Gmel.* Hemichelidon ... ... 322
similis, *Jerd.* Agrodroma 260, 266
simillima, *Hume.* Spizalauda ... 1, 39, 239, 241, 278
sinensis, *Gray.* Cotyle ... 254
sinensis, *Shaw.* Graculus 33

sinensis, *Gmel.* Pyctorhis 34, 251, 258, 265, 504, 505
sinensis, *Gmelin.* Sternula 246, 469
sirkee, *Gray.* Taccocua 40
sivalensis, *Hutton.* Palæornis ... .. 308
smyrnensis, *Lin.* Halcyon 34, 254, 306. 383
socialis, *Sykes.* Prinia ... 36, 259, 497
solaris, *Blyth.* Pericrocotus ... ... 206, 210
solitaria, *Hodgs.* Gallinago ... ... 51
solitarius, *Mull.* Cyanocincla ... ... 368
Sommervillei, *Sykes.* Malacocircus ... 258, 265, 456
Sonneratii, *Lath.* Cuculus 255, 265
Sonneratii, *Temm.* Gallus 5, 36, 262, 266, 404
Sophiæ, *Severtsov.* Leptopœcile ... 112, 113, 153
sordida, *Stol.* Fringillauda ... 109, 172, 504
spadiceus, *Gmel.* Gallo-perdix ... 5, 36, 251, 262, 266
sparveroides, *Vigors* Hierococcyx ... 311
speciosa, *Shaw* Cissa ... 509
speciosus, *Lath.* Pericrocotus 206, 207, 208, 210, 232
spilonota, *Frankl.* Salpornis ... ... 37, 232.
spiloptera, *Vigors.* Saraglossa ... ... 334
spinoletta, *Lin.* Anthus ... 39,
splendens, *Tem.* Corvus 157, 260 463
spodiopygia, *Peale.* Collocalia ... ... 375
stagnatilis, *Bechst.* Totanus ... 18, 263, 348
stellaris, *Lin.* Botaurus 24, 75, 77, 81, 83, 85, 87, 89, 91, 100, 196
stentorius, *H. & E.* Acrocephalus ... ... 259, 266
stenura, *Tem.* Gallinago ... 340
Stewarti, *Blyth.* Prinia ... 229, 497
Stoliczkæ, *Hume.* Turtur 62—90, 100, 105, 178
stolidus, *Lin.* Anous 247, 429, 430, 478, 480
streperus, *Lin.* Chaulelasmus ... .. 29, 264
striata, *Lin.* Hypotænidia ... ... 294, 349
striata, *Lin.* Munia ...260, 266, 291
striatulus, *Hume.* Blanfordius ... ... 41
striatus, *Jerd.* Chætornis 231
striatus, *Drapiez.* Cuculus 288
striatus, *Sw.* Malacocircus ... ... 458
striolata, *Blyth.* Corydalla ... ... 260, 266
striolata, *Licht.* Emberiza 35
striolatus, *Blyth.* Gecinus ... ... 36, 267
strophiatus, *Hodgs.* Accentor ... 278, 491, 492
strophiatus, *Hodgson.* Archibuteo ... 272, 359, 362, 371
Struthersii, *Vigors.* Ibidorhynchus ... ... 227
subarquata. *Gmel.* Tringa 40, 66, 187, 342, 510, 511
subbuteo, *Lin.* Hypotriorchis 36, 39, 92, 99, 106, 107, 119, 267
subfurcatus, *Blyth.* Cypselus ... ... 224
subnævia, *Brehm.* Aquila 269
subochraceum, *Swinhoe.* Pellorneum ... 406
subrufa, *Jerd.* Layardia 258, 265
subviridis, *Brooks.* Reguloides ... ... 491, 496
suecica, *Lin.* Cyanecula 35, 89, 90, 92, 99, 102, 103, 106—108, 135, 145, 223, 233, 259, 266
sulphurea, *Bechst.* Calobates ... ... 35
sultaneus, *Hodgs.* Chrysocolaptes ... ... 310, 311
sumatrensis, *Lafr.* Baza... 247, 248
sunia, *Hodgs.* Scops ... 283
superciliaris, *Jerd.* Larvivora ... ... 259, 265
superciliaris, *Jerd.* Muscicapula ... ... 231, 257
superciliaris, *Blyth.* Sturnopastor ... ... 331
superciliosus, *Gmel.* Reguloides 260, 329, 494—496
suratensis, *Gmel* Turtur ... 3, 35, 262, 424
sutorious, *Gm.* Orthotomus ... ... 259
Swainsoni, *A. Smith.* Circus 34, 108, 110, 125, 253, 372
Swinhoei, *Hume.* Merops ... 254, 264, 305
Sykesii, *Hayes Lloyd.* Megalaima ... ... 391, 392
Sykesii, *A. Smith.* Turnix 9
Sykesii, *Strickl.* Volvocivora ... ... 37, 256
sylvatica, *Tick.* Acanthylis 231
sylvicola, *Jerd.* Tephrodornis ... ... 393

Taigoor, *Sykes.* Turnix ... 7, 262
tectirostris, *Hodgs.* Bhringa ... ... 320
teesa, *Frankl.* Poliornis 34, 253
Temminckii, *Leisl.* Tringa 17, 263
tenellipes, *Swinhoe* Phylloscopus ... ... 276
tenuirostris, *Tem.* Anous 480
tephrocotis, *Swainson.* Leucosticte ... ... 486
terricolor, *Hodgs.* Alseonax 273
terricolor, *Hume.* Drymoipus 229, 274, 407—410
terricolor, *Hodg.* Malacocircus ... ... 34
tetrax, *Lin.* Otis 77, 105, 161, 184
theiodes, *Hume.* Criniger 214
tibetanus, *Hodgson.* Corvus 43, 53, 56, 58, 111—113, 155
tibetanus, *Gould.* Tetraogallus 56, 58, 76, 77, 110, 111, 181
Tickelli, *Blyth.* Anorhinus 493
Tickelli, *Blyth.* Cyornis 37, 257
Tickelli, *Blyth.* Pellorneum 406
tigrina, *Tem.* Turtur ... 337, 424
torquata, *Blyth.* Melanocorypha ...83, 86, 173
torquatus, *Bodd.* Palæornis 34, 256
torquilla, *Lin.* Yunx ... 34, 255
tranquebarica, *Herm.* Turtur ... ... 292
tridactyla, *Lin.* Ceyx ... 287
trinkutensis, *Sharpe.* Megapodius ... ... 279
tristis, *Lin.* Acridotheres 35, 260, 279, 456
tristis, Phylloppeuste... 259
tristis, *Blyth.* Phylloscopus 35, 44, 109, 112—114, 148 275, 276
tristis, *Less.* Rhodopytes 312
Tristrami, *Brooks.* Phylloscopus ... ... 275
trivialis, *Gmel.* Anthus ... 278
trivirgatus, *Tem.* Lophospiza ... ... 355
trochiloides, *Sundevall.* Reguloides ... ... 494
trochilus, *Lin.* Phylloscopus ... ... 276, 496
Tscherniaievi, *Severt.* Falco ... ... 88, 118
typhia, *Lin.* Iora 258, 326, 410—412
typus, *Bonap.* Chiequera 252

Umbrovirens, *Rüpp.* Phylloscopus ... ... 277
undata, *Bonap.* Nisoria 92, 96, 97, 99, 135, 149
unicolor, *Jerd.* Collocalia 374, 375, 420
unicolor, *Blyth.* Cyornis ... 398
unicolor, *Tickell.* Geocichla 37, 257
Unwini, *Hume.* Caprimulgus ... ... 501

Varians, *Lath.* Crypsirina 331
varius, *Vahl.* Hierococcyx 35, 255, 392
varius, *Pall.* Oreocincla ... 244
ventralis, *Cuv.* Hoplopterus ... ... 234
vernalis, *Sparrm.* Loriculus 255, 265, 309, 388
Vigorsi, *Sykes.* Æthopyga 255, 265
Vincens, *Sclater.* Prionochilus ... 493
vindhiana, *Frankl.* Aquila 20, 34, 252, 272
virescens, *Hume,* Dicæum 498
virgatus, *Tem.* Accipiter ... 252, 280
virgo, *Lin.* Anthropoides 15, 263
viridanus, *Blyth.* Phylloscopus 44, 109, 112, 113, 148, 259, 276
viridipennis, *Blyth.* Reguloides ... 109, 149, 494
viridirostris, *Jerd.* Zanclostomus ... ... 458
viridis, *Gmel.* Budytes ... 260
viridis, *Gmel.* Megalaema 251, 255, 265, 391
viridis, *Lin.* Merops 34, 254, 304, 415
vittatus, *Vieill.* Gecinus 310
vittatus, *Dum.* Lanius 34
vulgaris, *Bechstein.* Buteo 81, 82, 86, 88, 90, 124
vulgaris, *Steph.* Francolinus 5
vulgaris, *Ray.* Merula 83, 86, 139
vulgaris, *Flem.* Otus 40, 71, 75, 77, 81, 82, 85, 86, 88, 90, 122, 127
vulgaris, *Lin.* Sturnus 66, 68, 69, 71, 75, 77, 80, 83, 86, 89, 90, 92, 96, 100, 162, 512

Waldeni, *G.-Aust.* Actinura ... ... 219

Xanthodryas, *Swinhoe.* Phylloscopus ... ... 276
xanthogaster, *Raffles.* Pericrocotus ... 206, 208

Zeylonica, *Gmel.* Iora 35, 258, 411, 412, 458
Zeylonica, *Lin.* Leptocoma 255, 266, 415




BOO
10