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STRICKLAND CURATOR IN THE UNIVERSITY

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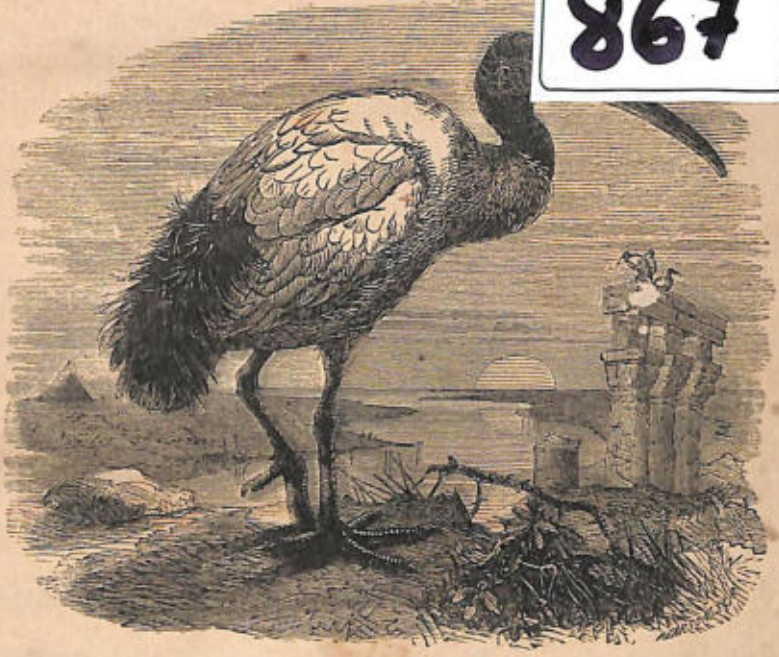

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PREFACE.

THE completion of the present volume brings the Third Series of 'THE IBIS' to a close. Pressure of other duties preventing my continuing the sole charge of the Journal, Mr. P. L. SCLATER has, with the approval of a Meeting of the British Ornithologists' Union held in May last, consented to join me in editing a Fourth Series, which will be commenced in January next.

In thanking the many contributors to the pages of 'THE IBIS' for their support during my past term of office as Editor, I beg leave on behalf of Mr. SCLATER and myself to solicit their further aid in maintaining the high character 'THE IBIS' has hitherto borne in advancing the science of Ornithology.

OSBERT SALVIN,
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65,	7,	*for* 370 *read* 484.
136,	35,	*for* 16 *read* 656.
188,	6,	*for* TSCHITREA *read* TCHITREA.
349,	23,	*for* IX. *read* X.
350,	30,	*for* IX. *read* X.
353,	29,	for *Trichastoma* read *Trichostoma*.
363,	34,	for *Gliciphila* read *Glyciphila*.
376,	34,	for *Trichastoma* read *Trichostoma*.
385,	13 & 23,	*for* Brüggeman *read* Brüggemann.
420,	28,	for *Œdemia* read *Fuligula*.

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THIRD SERIES.

No. XXI. JANUARY 1876.

I.—*Second Thoughts on the Genus* Micrastur. By Robert Ridgway, of the Ornithological Department, U.S. National Museum, Washington.

Having recently examined the entire series of the smaller members of this genus contained in the collection of Messrs. Salvin and Godman, sent to me for that purpose, I have been induced to modify to some extent my views given in the 'Proceedings' of the Boston Society of Natural History for 1873.

The series is a splendid one, and has, I think, enabled me to get the right idea of the species of this exceedingly perplexing group.

Setting *M. melanoleucus* (sive "*semitorquatus*") and *M. mirandollii* aside, as being distinct enough to need no notice in connexion with the smaller species, I identify the names of previous authors as follows:—

Sparvius ruficollis, Vieill., = *M. ruficollis*, Scl. & Salv., rufous phase, adult.

Sparvius gilvicollis, Vieill.*, = *M. leucauchen*, Scl. & Salv.,

* This cannot, according to the terms of the diagnosis, be *M. gilvicollis*, Scl. & Salv., if the latter = my *concentricus*, which = *concentricus* of

M. gilvicollis, Pelz. Orn. Voy. Novara (=*M. ruficollis*, plumbeous phase, adult).

Falco leucauchen, Temm., = *M. ruficollis*, Scl. & Salv., rufous phase (?), young.

Falco xanthothorax, Temm., = *M. ruficollis*, rufous adult.

Nisus concentricus, Less., is undeterminable; and if the type does not exist, the name may be thrown aside as entirely worthless, though Pelzeln distinguished a very distinct species by this name, which should be adopted for that bird*.

Micrastur guerilla, Cass., = *M. guerilla*, Scl. & Salv.

Micrastur zonothorax, Cabanis, = *M. zonothorax*, Scl. & Salv.

My *M. leucauchen* (paper in Pr. Boston Soc.) is the young of *M. leucauchen* of Scl. & Salv.; and they, together, are young and old plumages of *M. ruficollis*.

I was certainly wrong in referring so many of the recognized forms to one species; but this was partly owing to the impossibility of making desirable comparisons.

Before proceeding to give a diagnosis of the species I now distinguish, it will be best to make a few remarks regarding the stages of plumage assumed by them, and which, if clearly borne in mind, will remove the greatest obstacle towards understanding the species. In the first place, *there is no sexual difference* in coloration, beyond what results from irregular variations of an individual character; in the next place, in *M. guerilla* and *M. ruficollis*, there are two quite different "phases" of plumage, corresponding in every particular to the grey and rufous plumages of certain Owls (notably *Scops*, *Glaucidium*, and *Syrnium aluco*), and which are most unquestionably entirely *independent of sex, age, or season*. The grey phase may be taken as the normal one, since the other is merely the evidence of a colour-variation,

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Pelzeln. It is distinctly stated to have the posterior lower parts barred, which the latter has not; and there are other points which point to *M. leucauchen*, Scl. & Salv. [At our request Mr. D. G. Elliot searched for Vieillot's type of *M. gilvicollis* in the Paris Museum, but failed to find it. We now think, with Mr. Ridgway, that the name *M. concentricus* had best be used for the Guiana bird.—Ed.]

* [Lesson's type does exist, and is doubtless the bird here called *M. concentricus*, and also by v. Pelzeln.—Ed.]

termed by Pelzeln "erythrism," and entirely analogous to the condition of melanism. The condition is most exaggerated in *M. ruficollis*, but it is plainly visible in *M. guerilla*. No rufous specimens have been seen of *M. concentricus*, Pelz., nor *M. pelzelni*; and, on the other hand, I have seen no plumbeous examples of *M. zonothorax*. But such probably occur, and should be borne in mind before any new form is described.

Synopsis of the Species of Micrastur.

A. Outer toe decidedly longer than the inner.

a. Size large (wing more than 8 inches).

1. Above black, with a nuchal collar of white or ochraceous. *M. melanoleucus**.

2. Above plumbeous, without a nuchal collar . . *M. mirandollii*.

b. Size small (wing less than 8 inches).

3. Wing 6·50–7·10, tail 6·90–7·50. Tail crossed by 3–6 (*terminal bar not counted*) indistinct bars of white or pale greyish. *Adult.* Tail-bars 3–4; above plumbeous, the dorsal region sometimes chocolate; throat light grey; jugulum, breast, and entire lower parts barred with white and dusky. *Young.* Above dark clove-brown, plain or indistinctly spotted posteriorly; beneath white or buff, rarely immaculate, usually coarsely barred. *M. guerilla*.

4. Wing 6·90–7·50, tail 7·60–8·40. Tail with 4–7 distinct white bars. *Adult.* Above, including neck and most of head, rusty chocolate, less reddish anteriorly; throat light chocolate; jugulum and entire lower parts everywhere barred with white and dusky. Tail-bands 4–5. *Young.* Above dark sooty brown, indistinctly barred with rusty; crown and nape sooty black; lower parts white or buff, rarely immaculate, usually barred, and *without rufous tinge* on the breast; tail-bars 6–7. *M. zonothorax*.

5. Wing 6·60–7·10, tail 7·30–7·80. Tail with 4–8 usually distinct white bars. *Adult.* Breast washed with rufous; throat light grey; other lower parts everywhere barred with white and dusky; crown plumbeous; other upper parts varying from clear light bluish plumbeous to rusty brown. Tail-bars 4. *Young.* Above varying from greyish brown to dark rusty chocolate; throat and half-crescent behind the ear-coverts white, in abrupt contrast; beneath white, coarsely barred with dusky brown *M. ruficollis*.

* I cannot identify *Sparvius semitorquatus*, Vieill., with this species, since that is said to have the top of the head white, barred with black, whereas it is always plain black in this bird, which, in the adult plumage is *S. melanoleucus*, Vieill.

6. Wing 6·50, tail 6·30. *Adult.* Tail crossed by 2 bars of pale brownish grey. Above uniform dark plumbeous, the tail darker and wings browner; throat light grey; rest of lower parts white, barred everywhere with dusky, these bars very narrow and distant on the flanks and crissum ..... *M. pelzelni.*

B. Outer toe not longer (sometimes shorter) than the inner.

7. Wing 7·10–7·75, tail 6·30–7·00. *Adult.* Tail-bands 1–4, narrow, white; upper parts dull plumbeous, the tail darker, and the wings browner; throat greyish white; other lower parts white, *the crissum immaculate*, the other portions barred with plumbeous. *Young.* Similar, but a whitish crescent behind the ear-coverts, the upper parts browner, the lower tinged with ochraceous, and the tibiæ and flanks also immaculate.

M. concentricus.

The following table will serve to elucidate the synonymy of the species, as understood by me :—

1875 (*Ridgway*).	1874 (*Sharpe*).	1873 (*Ridgway*).	1869 (*Scl. & Salvin*).	1865 (*Pelzeln*).
1. melanoleucus	semitorquatus	semitorquatus	semitorquatus	brachypterus
2. mirandollii	mirandollii	mirandollii	mirandollii	macrorhynchus
3. guerilla	guerilla	ruficollis, pt.	guerilla	guerilla
4. zonothorax	zonothorax	ruficollis, pt.	zonothorax	
5. ruficollis	ruficollis	leucauchen	leucauchen	xanthothorax
		ruficollis, pt.	ruficollis	gilvicollis
6. pelzelni	.....	.....	gilvicollis (pt.)	
7. concentricus	gilvicollis	concentricus	gilvicollis	concentricus

The following is a description of *M. pelzelni* :—

Micrastur pelzelni, Ridgway.

Sp. Ch. Outer toe decidedly longer than the inner; tail shorter than the wing. *Adult* ♂* above uniform (continuous) dark plumbeous. Tail darker, narrowly tipped with white, and crossed by two narrow bands of dull brownish grey, becoming white on inner webs. Sides of head and neck plumbeous grey; throat light grey; rest of lower parts white, marked *everywhere* with narrow transverse bars of dark plumbeous or slate, these bars widest on the breast (where they are narrower than the white interspaces), and

* Type of species in Mus. Salvin and Godman, from Sarayacu, Upper Ucayali, Peruvian Amazons, collected by E. Bartlett, August 2, 1865.

narrowest on the flanks and crissum, where they are very distant. Wing 6·50 inches, tail 6·30, culmen ·60, tarsus 2·30, middle toe 1·20.

Remarks. At first sight this species has a very close resemblance to the plumbeous phase of *M. guerilla*; but upon a close comparison it is found to differ essentially in having the tail shorter than the wing, instead of longer, and to be crossed by much fewer (two instead of three or four) light bars. With respect to the shortness of the tail, it agrees with *M. concentricus*; but that species differs (not only from this, *but all others of the genus*) in having the lateral toes of nearly equal length, the outer, if either, being the shorter, and also in having the crissum unbarred white. *M. mirandollii*, one of the large species, alone agrees with the present bird in having the tail shorter than the wing, and, at the same time, the outer toe longer than the inner.

II.—*Remarks on some Type Specimens of* Trochilidæ *from the Museums of Neuchâtel and Florence.* By D. G. Elliot, F.R.S.E., F.L.S., &c.

The receipt of three of Tschudi's types from the Museum of Neuchâtel, through the kindness of M. Coulon, the director, has given me an opportunity of making several comparisons, the results of which may not perhaps be uninteresting to ornithologists.

Bourcieria insectivora.

Trochilus (*Lampornis*) *insectivorus*, Tschudi, Fauna Peruana, p. 248, t. 28. f. 1.

Bourcieria insectivora, Gould, Intr. Troch. p. 135, sp. 278.

Hab. Peru.

In the 'Fauna Peruana,' Tschudi described and figured a Humming-bird obtained by him between Huari and Chagacancha, at a height of 14,600 feet above the sea, in Peru, as *Trochilus insectivorus*. It was evidently either a young bird or a female; and as, until lately, no other specimens than those obtained by Tschudi have reached us, naturalists have

been in some doubt whether Tschudi's bird belonged to a distinct species, or to one already described; at the same time the examples presented certain differences not reconcilable with any specimens in our collections. Through the kindness of M. Taczanowski, director of the Warsaw Museum, I have lately received a specimen of a fine adult male, shot by M. Jelski in Peru, the country whence Tschudi's bird came, and which, I have no doubt, I am right in attributing to *B. insectivora*. In order to satisfy ourselves in the matter, Mr. Salvin wrote to M. Coulon, at Neuchâtel, for the loan of Tschudi's type, a request which, with his characteristic liberality, was at once acceded to. On comparison it appears to be a female; and therefore, as the male has never been described, and as it is quite different from any known species of *Bourcieria*, I have thought it might be useful for ornithologists to become acquainted with it in the adult dress. It is nearest to *B. fulgidigula* in the group to which it belongs, and not to *B. conradi*, as supposed by Mr. Gould. It may be described as follows:—

Head and back of neck jet-black; centre of the crown brilliant metallic golden green, very bright and conspicuous. Throat metallic green, this colour extending over the sides of the neck, but much less brilliant, being a kind of metallic gloss on the black of that part. Back and upper tail-coverts metallic grass-green. Wings like the back, primaries purplish brown. Upper part of breast, extending to the green of the throat, pure white; rest of underparts and under tail-coverts shining grass-green. Median tail-feathers shining grass-green; remainder pure white tipped with green, this last becoming more extensive as it proceeds towards the outermost rectrices, which are nearly one third green from the tip, and running much further towards the base on the outer web than on the inner. The bill is long, straight, and pointed, black throughout. The feet flesh-colour.

The female (Tschudi's type) differs in having the head, throat, and upper parts shining green, with none of the black observable in the male. Median rectrices green; rest white, tipped with black glossed with green. The white is much

more extensive upon the tail-feathers than on those of the male; but this appears to be characteristic of the females of all the various species of the genus *Bourcieria*.

The present species is one of the very handsomest of this genus, being only exceeded in beauty by *B. inca*, Gould.

HELIODOXA LEADBEATERI.

Trochilus leadbeateri, Bourc. Rev. Zool. 1843, p. 102.

Trochilus otero, Tschudi, Consp. Av., Wiegm. Archiv, 1843, p. 390; id. Faun. Per. p. 249, taf. xxiii. fig. 2 (1845–46).

Leadbeatera grata, Gould, Intr. Troch. p. 75, sp. 112.

Leadbeatera otero, Gould, Intr. Troch. p. 74, sp. 110.

Leadbeatera grata, Bonap. Trochil. Rev. Mag. Zool. 1854, p. 251.

Leadbeatera otero, Bonap. Trochil. Rev. Mag. Zool. 1854, p. 251.

Leadbeatera splendens, Gould, Intr. Troch. p. 74, sp. 111.

Heliodoxa otero, Gould, Mon. Troch. ii. pl. xcvi.

Heliodoxa leadbeateri, Gould, Mon. Troch. ii. pl. xcvii.

Hab. Venezuela, Columbia, Peru, Bolivia.

This bird was first described by Bourcier in the 'Revue Zoologique' for April 1843, from New Granada; and in the same year Tschudi described and figured it from Peru as *T. otero*. Succeeding authors have kept these birds separate, notably Mr. Gould, founding the species upon the size, chiefly that of the bill. In his 'Introduction' to the Trochilidæ, Mr. Gould further distinguishes the bird from Venezuela as *Leadbeatera splendens*, stating that it is allied to the Bolivian bird, but differs in having a "straighter and shorter bill and in the green tint of the under surface." Lately Mr. Buckley has brought specimens from Chairo, in Bolivia, a place about 6000 feet above the sea; and these are not to be distinguished from the Columbian bird. Tschudi's type of *Trochilus otero* is quite a young bird, and in length of bill and general size is like specimens from Columbia; while the Venezuelan birds, *L. splendens*, and adult so-called *otero*, from Bolivia, with the long bills, are, so far as I am able to see, precisely alike; and intermediate lengths of bill are obtainable in specimens from

Columbia and Bolivia respectively. Besides the great difficulty of recognizing more than one species by size (for there is absolutely no change of colour or brilliancy in the plumage to warrant any specific rank being granted to more than one form), there is the geographical distribution of the species. If three species are to be accepted, we find that *L. splendens* in the north is separated from *L. otero* in Bolivia by *L. grata* of Columbia, and that the last two become mingled together in Bolivia—not at all a probable state of things for really distinct species. As in many groups of Hummingbirds, a variability in size of bill and length of wing, and perhaps also of tail, is discernible; but if these, unsupported by other more important characters, are to be accepted as always denoting distinct species, much confusion is certain to be the result, and no limit can be fixed beyond which any naturalist, possessed with keen sight and enthusiastic appreciation of minute difference, may not go. It may, however, be advanced, with much probability, that there is only one species of those birds consigned to the genus *Leadbeatera*, whose range extends from Venezuela, through Columbia, into Bolivia, being somewhat variable in the size of the bills of individuals from some localities, though it is almost certain that a large series of specimens would yield a regular series of intermediate measurements. I do not see that Bonaparte had any reason for taking this bird out of the genus *Heliodoxa*, and, therefore, have not adopted his term.

LEUCIPPUS LEUCOGASTER.

Trochilus leucogaster, Tschudi, Consp. Av. in Wiegm. Archiv, 1844, p. 297.

Trochilus chionogaster, Tsch. Faun. Peruan. p. 247, t. 22. fig. 2.

Leucippus chionogaster, Gould, Intr. Troch. p. 150, sp. 321.

Trochilus (——?) *hypoleucus*, Gould, P. Z. S. 1846, p. 90, sp. 16.

Leucippus pallidus, Tacz. P. Z. S. 1874, p. 542.

Hab. Peru and Bolivia.

This species, first procured by Tschudi in Peru, has received

many names by different authors. The specimens with white spots in the tail, which may possibly be females, were named by Mr. Gould *L. hypoleucus*; but this has been placed as a synonym of Tschudi's appellation by that naturalist. Recently Mr. Buckley has brought specimens from Bolivia, which, on comparison with Tschudi's type, are found to be the same. This genus, therefore, will consist only of two species*, the present and the *L. chlorocercus*, Gould, described in the 'Proceedings' of the Zoological Society for 1866, p. 194, which differs chiefly in having the throat spotted with brown, instead of being pure white. Tschudi's bird was first described as *T. leucogaster* (*loc. cit.*), a name afterwards altered to *T. chionogaster* in the 'Fauna Peruana;' the name first applied must, of course, be the one adopted.

In the year 1865, in the 'Annals' of the Florence Museum, Sig. Benvenuti described four species of Hummingbirds, coming from New Granada, as new. The descriptions given, and the comparisons made, did not indicate them as belonging to unknown forms; but it was impossible to determine their real specific value without having access to the examples themselves. Having requested Dr. Giglioli to forward the types to me, he most kindly sent three of them (all that were in the museum); and I am now able to determine

* In the P. Z. S. for 1874, M. Taczanowski described a specimen of *Leucippus* as *L. pallidus*, from Peru, differing from *L. leucogaster* in being slightly larger, and having a "nuance grisâtre" on the back and head. This is undoubtedly "*Trochilus turneri*," Bourcier (Revue Zoologique 1846, p. 313), the type of which is in my collection, and which is characterized in his description as having "la tête, cou, dos, couvertures alaires et caudales *vert grisâtre* luisant." This has long since been placed among the synonyms of *L. leucogaster*, as being simply a phase of plumage that is met with in nearly every group of the Trochilidæ, where specimens are found that exhibit a colour slightly at variance with the typical style, as, for instance, yellowish green, or, as in this case, greyish green, instead of pure green. These differences, however, like those of slight variations in length of bill, wings, or tail, have no specific value. I have therefore placed *L. pallidus* among the synonyms of *L. leucogaster*; for it does not seem to be at all necessary to elevate *L. turneri* into a separate species, of which *L. pallidus* of Taczanowski would certainly be a synonym.

these without any doubt whatever. The birds named were *Polytmus* (*Campylopterus*) *ceciliæ*, *Mellisuga* (*Panoplites*) *judith*, *Mellisuga* (*Cynanthus*) *salvadorii*, and *Mellisuga* (*Eriocnemis*) *ridolfii*. The first of these I have not seen, as it is in the Museum of Turin; but on writing to Count Salvadori, he assures me that it is only a female of *Campylopterus lazulus*; and I believe this identification to be perfectly correct. The second is

Mellisuga (Panoplites) judith.

Mellisuga judith, Benv. Ann. del R. Mus. Florent. 1865, p. 203, sp. 11.

This bird proves to be the *Panoplites flavescens*, with which Signor Benvenuti had compared it; and I cannot perceive that the differences given by him were in any way of sufficient consequence to cause him to give the specimen a new name. It is a male, in adult plumage; and the name of *M. judith* must become a synonym of *P. flavescens*.

The third was named

Mellisuga (Cynanthus) salvadorii.

Mellisuga salvadorii, Benv. Ann. del R. Mus. Floren. 1865, p. 204.

The type of this so-called species is an adult female of *Cynanthus cyanurus* in the ordinary state of plumage, such as is commonly observed in all the specimens of this sex coming from Bogotá. There is nothing to distinguish it as distinct; and the name given by Sig. Benvenuti must become a synonym.

The last described is

Mellisuga (Eriocnemis) ridolfii.

Mellisuga ridolfii, Benv. Ann. del R. Mus. 1865, p. 205.

This bird, on examination, proves also to be a female of a well-known species, *Eriocnemis vestita*, one of the commonest and best-known among Humming-birds. The name *ridolfii* must sink into a synonym.

It is a pity that before naming these birds as distinct, Signor Benvenuti had not followed the advice given to him by M. Sallé in the letter published in his article, and sent

them to Paris or London, where they would at once have been identified, and thus some useless synonyms have been spared from our already overloaded lists, through which the much suffering naturalist is obliged to "plod his weary way."

III.—*The Genus* Glaucidium. By Robert Ridgway, of the Ornithological Department, U.S. National Museum, Washington.

(Plate I.)

Two monographs of the genus *Glaucidium* have recently appeared—the first in the 'Proceedings' of the Boston Society of Natural History for May 1873, by the writer, and the second in 'The Ibis' for January 1875. The latter, by Mr. R. Bowdler Sharpe, is a review of the former paper, and embodies, besides certain criticisms, numerous remarks based upon very large series of the several species. The present paper represents the conclusions arrived at after a careful reconsideration of the subject, with much additional material, and the benefit of Mr. Sharpe's monograph, and is intended as a special discussion of the points of variance between the two memoirs.

The following table will show the main points of relationship between the conclusions of the two papers referred to and those arrived at in the present one:—

Ridgway, 1873.	*Sharpe*, 1874.	*Ridgway*, 1875.
1. G. passerinum, var. californicum, *Scl.*	1. G. gnoma (*Wagl.*).	1. G. gnoma (*Wagl.*).
	3. G. pumilum.	5. G. pumilum.
2. G. pumilum.	2. G. griseiceps, *Shrp.*	
3. G. lansbergii.	5. G. jardinii.	2. G. jardinii.
4. G. jardinii.		
5. G. ferrugineum.	7. G. phalænoides.	4. G. ferrugineum.
6. G. infuscatum.	6. G. ferox.	
„ var. gnoma.	8. G. ridgwayi.	
7. G. nanum.	4. G. nanum.	3. G. nanum.
8. G. siju.	9. G. siju.	6. G. siju.

The species may be determined by the following characters:—

A. Nostril opening in the middle of the cere.

a. Sides of the breast distinctly spotted.

1. G. GNOMA. Colour varying from brownish plumbeous to reddish umber. Markings on the pileum guttate or circular. Tail dusky greyish brown or blackish dusky; bands white, not complete, 7–8. Wing 3·30–4·00 inches, tail 2·40–2·80.

2. G. JARDINII. Colour varying from umber to dark sepia or bright ferruginous. Markings on the pileum larger, more generally distributed, cordate or circular. Tail dusky black or dusky ferruginous; bands white and incomplete, 5–7, or clear rufous, 7–8 (*"lansbergi"*). Wing 3·80–4·25, tail 2·55–3·00.

3. G. NANUM. Colour varying from brownish grey to reddish grey. Markings on the pileum partly linear and partly guttate. Tail dusky brown; bands clear rufous or reddish white, continuous, 8–12. Wing 3·85–4·60, tail 2·90–3·40.

b. Sides of the breast not spotted.

4. G. FERRUGINEUM. Colour varying from brownish grey to bright ferruginous. Markings on the pileum narrowly linear. Tail dusky brown, brownish black, or ferruginous; if banded, the bands clear rufous, reddish white, or pure white; if not banded, the colour uniform bright rufous. Wing 3·50–4·60, tail 2·20–3·50.

5. G. PUMILUM. Colour varying from umber to rich chocolate, the pileum abruptly greyer. Markings on the pileum minute, circular or elliptical. Tail black; bands white, not continuous, 4–5. Wing 3·30–3·70, tail 2·10–2·40.

B. Nostril opening in the anterior edge of the cere.

6. G. SJUU. Colour greyish brown. Markings of the pileum diamond-shaped. Tail dusky brown; bands continuous, white, white and rufous, or rufous, 6–7.

1. GLAUCIDIUM GNOMA.

Glaucidium passerinum, var. *californicum*, Ridgw. Proc. Boston Soc. N. H. May 1873, p. 94.

Glaucidium gnoma, Sharpe, Ibis, Jan. 1875, p. 56, pl. i.

Hab. Western Province of North America, from Puget Sound to Arizona (*Nat. Mus.*); Colorado (*C. E. Aiken*); Vancouver Island (*fide Sharpe, l. c.*); Tablelands of Mexico (*cab. G. N. Lawrence*); Guatemala (*fide Sharpe, l. c.*).

This form is very much more nearly related to the *G. passerinum* of Europe than to any of the other American species, *G. jardinii* being its nearest ally. After a very careful comparison of specimens, I find it to differ from its European

analogue in just the same respects that *Surnia hudsonia*, *Nyctale richardsoni*, *Syrnium cinereum*, and *Otus wilsonianus* do from their Old-World representatives *S. ulula*, *N. tengmalmi*, *S. lapponicum*, and *O. vulgaris*, viz. in darker shade and greater area of the dark tints. The case is exactly parallel; only the differences are in this instance less exaggerated. There can be no question that the two forms are derivatives from a common ancestral circumpolar stock, and that they have not yet become very widely differentiated, although perhaps now isolalated geographically. Evidence, however, is wanting to show that the present form extends northward along the Pacific coast to Alaska, so as to connect its range with that of *G. passerinum* in Eastern Siberia. It is but another instance of Palæarctic birds finding their only American representatives in the Western Province of the Nearctic Region, other examples of which are to be seen in the genera *Cinclus*, *Nucifraga* (*"Picicorvus"*), *Coccothraustes* (*"Hesperiphona"*), *Pica rustica*, *Cypselus* (*"Panyptila"*), *Falco saker*, &c. Whether the American form is to be called *G. passerinum*, var. *gnoma* (*G. passerinum gnoma* is the form which I now prefer), or simply *G. gnoma*, is, perhaps, a matter of individual taste.

The original description by Wagler of his *G. gnoma* had been consulted by me; and it was only after a long consideration of the question whether the term "guttate" was intended to mean a form of spot inclining to a circular or to a longitudinal form, that the latter conclusion was adopted, and Wagler's species accordingly identified with the streaked-crowned Mexican bird. This conclusion seemed at the time the more reasonable, from the fact that the latter bird was extremely common where Wagler's *G. gnoma* came from, while the bird which Mr. Sclater called *G. californicum* was at that time known to American writers only from within the United States, Mr. Lawrence's specimen having been seen by me subsequently. In fact it is only after a careful reading of Wagler's description, and comparison with specimens of the two species side by side, and exceedingly careful weighing of all questions, that Dr. Coues and I at last,

hesitatingly, agreed that the grey form of *G. ferrugineum* was meant*.

Mr. Sharpe includes this species among those which "do not, so far as he can learn, ever have a rufous phase." Although this is true, if comparison is made with the extremely rufous phase of *G. ferrugineum* and *G. jardinii*, there is nevertheless a distinctly marked *rusty* extreme, very different from the ordinary greyish brown, and still more so from the opposite plumbeous extreme. Mr. Sharpe's plate, above cited, does not quite represent either phase in its extreme, as represented in the series before me. These differences of plumage I consider to be neither sexual, seasonal, nor progressive, and to represent just the same variation that we see in the other species above mentioned, as well as certain species of *Scops* and *Syrnium aluco*†, only in a less exaggerated degree.

A young specimen from Arizona differs from the adult (grey phase) only in lacking the spots on the pileum, which is uniform brownish grey.

2. Glaucidium jardinii. Plate I.

Glaucidium jardinii, Ridgw. *l. c.* p. 99; Sharpe, *l. c.* pp. 43, 57.

? *Glaucidium lansbergii*, Ridg. *l. c.* p. 98.

Hab. Northern South America: Bogotá (*Nat. Mus.*); Ecuador? (*Cab. G. N. Lawrence*, rufescent); Caracas (*Mus. Philad. Acad.*, rufescent); Guiana (*Cab. G. N. Lawrence*, brown).

While admitting the probability that *G. lansbergi* represents the rufous plumage of the same species as *G. jardinii*, I am by no means certain that such is the case. The large, round, and generally distributed spots on the pileum, and the conspicuous transverse markings of the upper parts, certainly suggest their close relationship; but the wide differences in

* The following is to be added to the synonyms of this form:—

"*Strix elata*, Natterer, Mus. Vindob." *apud* Bonap. Consp. i. p. 36, 1850.

Glaucidium elata, Bonap. *l. c.* p. 36 ("*Similis* S. passerinæ, *sed cauda longiori.*" From Mexico.)

† Also certain species of the Falconine genus *Micrastur*.

J. G. Keulemans lith.

M. & N. Hanhart imp.

GLAUCIDIUM JARDINII.

the pattern of the tail-markings are hard to reconcile with a belief in their identity, especially in view of the great constancy of this feature in the two phases of *G. ferrugineum*.

Had I been able to compare the two forms side by side, I should probably have been induced to hint at the possibility of their identity; but the only specimens of *G. lansbergi* seen at the time my descriptions were prepared, were in a collection which contained no example of *G. jardinii*.

3. Glaucidium nanum.

Glaucidium nanum, Ridgw. *l. c.* p. 104; Sharpe, *l. c.* pp. 41, 57.

Hab. Chili (*Nat. Mus., Mus. Boston Soc.*); "Patagonia as far north as Rio Negro" (*fide Sharpe*).

4. Glaucidium ferrugineum.

Glaucidium ferrugineum, Ridgw. *l. c.* p. 100.

Glaucidium infuscatum, Ridgw. *l. c.* p. 102 (et "var. *gnoma*, p. 103).

Glaucidium ferox, Sharpe, *l. c.* pp. 45–55, 57 (nec *Strix ferox*, Vieill.!).

Glaucidium phalænoides, Sharpe, *l. c.* pp. 51, 58.

Glaucidium ridgwayi, Sharpe, *l. c.* pp. 55, 58.

?? *Glaucidium cobanense*, Sharpe, Ibis, April 1875, pp. 259, 260.

Hab. The whole of Tropical America, southward to Peru and Bolivia (*fide Sharpe*), and northward to the southern border of the Western United States, Tucson, Arizona (*Bendire*, spec. in *Nat. Mus.*); both coasts and interior of Middle America, Mazatlan, Colima, Tehuantepec, Mirador, Orizaba, Yucatan, Guatemala, San Salvador, Costa Rica, Guyaquil, Ceará, Brazil (*Nat. Mus.*); Matamoras and Honduras (*Cab. G. N. Lawrence*); Trinidad (="*phalænoides*"), Caracas, Ecuador, Peru, and Amazon, Bolivia, (*fide Sharpe*).

The above synonymy will at once indicate that while I agree with Mr. Sharpe in considering my *G. ferrugineum* and *G. infuscatum* to be the same species, I differ from him regarding the name to be used to designate the species, and also in reference to the number of names included among its

synonyms. Mr. Sharpe is certainly at fault in his identification of the *Strix ferox* of Vieillot, the description of which distinctly states that the crown is spotted with white*, whereas in every plumage of the present bird it is narrowly streaked. The tail is also stated to be spotted with white. This form is perhaps to be referred to *G. pumilum*; but this is uncertain.

Although seventy specimens have been examined† by me (nearly twice the number inspected by Mr. Sharpe), I cannot recognize the local differences upon which Mr. Sharpe bases his *G. phalænoides* and *G. ridgwayi*, and consider them untenable even as climatic or geographical races, and consequently include these names among the synonyms of a species far more variable individually than climatically.

5. Glaucidium pumilum.

Glaucidium pumilum, Ridgw. *l. c.* p. 97; Sharpe, *l. c.* pp. 40, 56.

Glaucidium griseiceps, Sharpe, *l. c.* pp. 41, 56.

Hab. Eastern South America, north to Guatemala.

Mr. Sharpe remarks that he considers this species to be "confined to Brazil, and not to range, as Mr. Ridgway supposes, into Central America . . . . . Consequently the two specimens from Guatemala in Mr. Ridgway's paper are *G. griseiceps* and not *G. pumilum*" (pp. 40, 41). This statement prompted a re-examination of my Guatemalan specimen, which proves to be an extreme example of *G. pumilum*, as distinguished from "*G. griseiceps*," and corresponds exactly with the figure on plate ii. fig. 1, except that it has even more chestnut lower parts and back. This specimen was procured by exchange from the Boston Society of Natural History, in whose collection were several similar ones, obtained in Guatemala by Van Patten. The immature example in Mr. Lawrence's collection, mentioned on page 98 of my monograph, is exactly

* "Capite nigricante fusco, *albido maculato*; superciliis albis; corpore suprà obscurè fusco; *rectricibus albo maculatis*; gulâ, jugulo pectoreque fuscis; ventre albo; rostro virescente."—*Enc. Méth.* 1289.

† Of these but one South-American specimen has the tail white-banded; this is the type of the "*G. infuscatum*, var. *infuscatum*," of my monograph.

intermediate between *pumilum* and "*griseiceps*." The latter I consider to be unquestionably the grey extreme of the same species, the rufescent phase of which is *G. pumilum*—the differences being exactly parallel with those noticeable in *G. gnoma*.

6. Glaucidium siju.

Glaucidium siju, Ridgw. *l. c.* p. 105; Sharpe, *l. c.* p. 59.

Hab. Cuba.

IV.—*Notes on the Ornithology of Corsica.*

By C. Bygrave Wharton, F.Z.S.

It must not for one moment be thought that these notes profess to give a complete list of the birds of Corsica. They simply embody the results of my personal experience during a residence of nearly eight months in the island. Unfortunately by far the greater part of that time was spent on the west coast (undoubtedly the worst for birds), or I feel sure many more species would have been noticed than are included in the following list. Of the 113 species enumerated, 90 were killed by myself, and the remaining 23 were otherwise carefully identified.

Landing at Ajaccio on Sept 26th, 1874, my researches were confined to the west coast until the beginning of March 1875; I then crossed the island and spent a short time at Bastia and Aleria on the east, returned to Ajaccio on March 19th, and remained till April 7th, then recrossed the island, and, spending only two days in Corte, passed till May 20th in or near Bastia.

Though the laws concerning guns hampered me considerably during the latter part of my stay, I had not much to complain of till the 2nd of May: on that day three weeks' work in the swamps of Biguglia told on me in the shape of fever; and though not as bad as it might have been, I was advised by my doctor to leave the island as soon as my health permitted. Thus was my chance of noticing several more

spring migrants, and of getting a few good nests, completely extinguished.

There is what they call a museum at Ajaccio; but as it contains birds from all quarters of the globe, which seem to be arranged according to size, and have only a number (and not always even that) attached to them, and as I was unable to discover the existence of a catalogue to which the numbers might refer, the whole thing was of course practically worthless.

My best thanks are due to Messrs. H. E. Dresser and Howard Saunders for their kindness in assisting me in the identification of a few small Warblers, sent to England for that purpose.

1. Falco peregrinus.

Very few observed. One seen in captivity, that had been taken winged at Porto Vecchio in March, appeared to be less than the usual size.

2. Falco tinnunculus.

Several seen during the winter, but fewer towards spring.

3. Milvus ictinus.

Fairly distributed over all the parts of the island visited.

4. Circus æruginōsus.

Numerous about the plains and swamps on both sides of the island.

5. Circus cyaneus.

Two or three seen during the winter on the west side of the island.

6. Otus brachyotus.

On April 17th saw one in the flesh that had just been shot at Biguglia. No others seen or heard of.

7. Cypselus apus.

Numerous after April 15th.

8. Hirundo rustica.

Very common after March 14th.

9. Cotyle riparia.

Fairly numerous after the end of March.

10. Cotyle rupestris.

None noticed until the beginning of December; but after that date numbers were seen on both the west and east coasts and at Corte.

11. Chelidon urbica.

Very common after March 14th.

12. Alcedo ispida.

A few seen on the sea-coast at Ajaccio in November, but never noticed afterwards or elsewhere.

13. Merops apiaster.

At Biguglia on April 30th and May 1st I noticed several small parties of six or eight flying in a northerly direction. None seemed to settle, though every now and then one would halt in its flight as if with the intention of doing so. Once, on firing at the leading bird of a party of six, about fifty yards up, they all halted for a few seconds straight over my head, and then flew on as if nothing had happened, not altering their former course in the least.

14. Upupa epops.

First seen at the beginning of April, but nowhere numerous.

15. Certhia familiaris.

A few seen in the large chestnut-groves at Corte on April 8th, but observed nowhere else.

16. Troglodytes parvulus.

Fairly common, but more so on the west than the east side of the island.

17. Cisticola schœnicola.

Numerous at Biguglia, but observed nowhere else.

18. Calamodyta arundinacea (L.).

The Great Sedge Warbler seems to occur but sparingly, none being observed on the west side, and only four or five on the east, three of which I shot, all proving to be males.

19. Calamodyta phragmitis.

Fairly numerous at Biguglia during April.

20. Calamodyta aquatica.

Several seen at Biguglia at the end of April, but by no means so numerous as the preceding species.

21. Calamodyta melanopogon.

I shot one in the Campo dell' Oro, Ajaccio, on January 4th, and another close to the same spot on the 7th. Unfortunately my dog, having any thing but a tender mouth, and reaching both birds before I could, completely spoiled them for skinning, though there was enough left to send to England to make sure of the identification. One or two others were noticed in the vicinity; but no one who has not tried to shoot small marsh-frequenting Warblers can appreciate the difficulty there is in getting far enough from your bird to save cutting it all to pieces, and yet keep it in sight.

22. Potamodus cettii.

Very common in all the swamps on both sides of the island.

23. Sylvia melanocephala.

Common both in gardens and on the hills.

24. Melizophilus sardus.

This little Warbler is not uncommon in the low "maquis" on the west coast; but it is most difficult to shoot, owing to its creeping habits, only rising when you are close to it, and almost instantly dropping again. The only way I ever got a specimen fit to skin was by making the dog range about twenty yards ahead, and then making the most of my time when the bird did show itself. The only one seen on the east coast I shot at Biguglia on April 27th. Of its breeding-habits I know nothing; but, judging from the localities it frequents, the nest must be most difficult to find, even more so than the bird is to shoot.

25. Curruca cinerea.

Two seen at Biguglia in April were the only ones noticed.

26. Curruca atricapilla.

First noticed on December 24th, several seen in January, and fairly numerous afterwards.

27. Phylloscopus sibilator.

Several seen after April 10th.

28. Phylloscopus trochilus.

Fairly numerous after the beginning of April. None noticed during the winter, though I was constantly on the look-out for them.

29. Phylloscopus rufus.

Very numerous during the whole winter, but considerably less so in April.

30. Regulus ignicapillus.

By no means numerous, and the only species of *Regulus* noticed. Two or three seen near Ajaccio in November, a few near Cavro in January, and two near Bastia in March.

31. Philomela luscinia.

First noticed at Biguglia on March 16th, after which date they were numerous.

32. Ruticilla phœnicurus.

Several seen after April 10th, the date on which this species was first noticed.

33. Ruticilla titys.

A few seen in the neighbourhood of Ajaccio during the winter, but none after February. This species does not appear to breed in the island.

34. Erithacus rubecula.

Fairly numerous, and to be found both in gardens and on the hills.

35. Cyanecula wolfi.

I saw one shot by Mr. W. Jesse at Biguglia on April 12th, it being the only one noticed.

36. Saxicola œnanthe.

First noticed at Corte on April 8th, after which date they became numerous in all suitable localities.

37. Pratincola rubicola.

One of the commonest birds on the west side of the island, but only a few seen on the east.

38. Pratincola rubetra.

First noticed at Biguglia on April 17th, after which they were fairly numerous.

39. Accentor modularis.

Probably more common than it appears, but, owing to its habit of keeping in the low "maquis" on the hills, and not frequenting gardens or cultivated lands, is often overlooked. All I saw were in the low cover on the hill-sides of the west coast. None noticed on the east side of the island or at Corte.

40. Parus major.

Common.

41. Parus ater.

I shot two specimens of this Titmouse in the woods above Cavro on January 13th; and they were the only ones noticed in any part of the island.

42. Parus cæruleus.

Common, but less so than *Parus major*.

43. Acredula irbii.

Scarce. A few seen near Ajaccio in November, and one pair, evidently breeding, noticed in a large clump of thick brambles near Biguglia on April 17th.

44. Motacilla alba.

Common during the winter, but none seen after March.

45. Budytes flava (L.).

Several seen during April; but I am unable to say for certain whether they breed in the island or not.

46. Budytes cinereocapilla.

A few found at Biguglia in April, consorting with the previous species.

47. Budytes boarula.

Numerous during the winter on the shores of the Gulf of Ajaccio, and found breeding along the small mountain-streams

on the east coast in April. Two nests that I found (one on the 21st, containing six eggs, and another on the 26th, containing nearly fledged young) were both placed in most conspicuous positions, in the face of bare rocks overhanging the stream.

48. Anthus trivialis.

Several seen on the east coast after April 10th, but none noticed during the winter.

49. Anthus pratensis.

Common and resident.

50. Turdus musicus.

Excessively numerous during the winter; but by March most seemed to have left, and none were seen in April or May. I think few, if any, remain to breed.

51. Turdus iliacus.

Only two seen. One I shot at Porto Pollo on the west coast on February 6th; and the other I saw in the Ajaccio market a few days afterwards.

52. Turdus merula.

Very numerous during the winter; but the numbers decrease in March, though several remain and breed in the island. This bird appears to breed considerably later in Corsica than in England, the first nests (and those without the full complement of eggs) not being found till the middle of April.

53. Petrocossyphus cyanus.

A few seen in all parts of the island visited. During the winter they were often to be found tied up with the Thrushes and Blackbirds in the Ajaccio market.

54. Cinclus aquaticus.

I noticed a few Dippers on the mountain-streams on the east coast; but as I was unable to shoot a specimen, and so make sure of the identification, the birds seen *may* have been *Cinclus albicollis*.

55. Oriolus galbula.

Noticed large numbers (nearly all being males) at Biguglia on April 27th, though but few were seen afterwards.

56. Muscicapa grisola.

Several seen on the east coast after April 20th.

57. Muscicapa atricapilla.

After April 13th this species was not uncommon in the neighbourhood of Bastia and Biguglia.

58. Muscicapa collaris.

I shot the only specimen of this bird seen, close to Bastia, on April 10th.

59. Lanius auriculatus.

I shot the first seen at Sisco, on the east coast, on April 20th, after which date several were noticed.

60. Garrulus glandarius.

Not uncommon on the east coast; none seen on the west.

61. Corvus corax.

Fairly common.

62. Corvus corone.

Scarce. Apparently a late breeder in Corsica; I watched one in the act of building its nest on April 30th.

63. Corvus cornix.

Very common and resident. The first eggs were taken on April 12th; and the nests seem always to be placed in low trees, in or on the borders of swamps. The Hoodie in Corsica is a very wary bird, even leaving the nest before it is possible to get within shot; he then generally watches operations from the topmost branch of some neighbouring tree, but on the slightest sign of approach moves off again to a safe distance.

64. Sturnus vulgaris.

Not common, and only noticed in the months of February, March, and April.

65. Fringilla cœlebs.

One of the commonest birds in the island.

66. Carduelus elegans.
Common and resident.

67. Chrysomitris citrinella.
Only noticed during the winter, when they were to be found congregating in flocks with Serin Finches, Linnets, and Goldfinches.

68. Serinus hortulanus.
Numerous during winter; and though all do not seem to remain, numbers breed in the olive-groves. First eggs found on April 10th.

69. Ligurinus chloris.
Not uncommon.

70. Pyrgita petronia.
For about a week at the end of December there were several of these birds in the immediate neighbourhood of Ajaccio; but I never saw them afterwards. On the 28th I shot two out of one of my windows; and all the time they stayed with us they were exceptionally tame.

71. Passer cisalpinus.
The commonest bird in the island.
Though constantly on the look-out for *Passer hispaniolensis*, I never noticed it.

72. Linota cannabina.
Common, but most so in the winter.

73. Emberiza cirlus.
Common; but all those seen during winter do not seem to remain to breed.

74. Emberiza hortulana.
A few seen at Biguglia on April 30th and May 1st.

75. Emberiza miliaria.
Common and resident.

76. Emberiza schœniclus.
I shot the only one seen, on March 17th, at Biguglia.

77. Alauda arvensis.

Not at all common during the autumn or early winter; very numerous in January, February, and March, but only a few seen in April. I killed many Larks, in the hopes of finding *Galerita cristata*; but the above and following species were the only two seen.

78. Alauda arborea.

Very numerous on the west coast all the time I was there, but only a few seen on the east coast in April.

79. Yunx torquilla.

Only two seen. One I shot near Ajaccio on November 23rd, and the other at Biguglia on April 15th.

80. Cuculus canorus.

None heard till April 21st; but after that date they were fairly numerous.

81. Columba livia.

On April 3rd I shot one of six disturbed from an old tower on the west coast; and these were the only ones seen.

82. Columba palumbus.

Not uncommon during the winter, but none noticed in the spring.

83. Turtur auritus.

Noticed several on and after April 27th.

84. Coturnix communis.

Not many seen.

85. Caccabis rubra.

Common during winter, but apparently less so in spring.

86. Vanellus vulgaris.

Fairly numerous during the winter.

87. Ægialitis hiaticula.

I only noticed this bird twice. On April 22nd I put up four on a river near Biguglia, and on the 30th saw four (possibly the same birds) on the borders of the lake. On each occasion they were very shy.

88. Ardea cinerea.
A few seen in the marshes on both sides of the island.

89. Herodias alba.
One seen at Biguglia on April 30th.

90. Ardeola comata.
On May 17th I saw one in the flesh that had been shot at Biguglia on the 15th.

91. Ardetta minuta.
The only one seen was a live specimen that had been taken in the neighbourhood of Bastia about the middle of April.

92. Botaurus stellaris.
By no means common. The only two seen were shot by myself at Biguglia on March 17th, and were both females.

93. Totanus ochropus.
A few seen and one shot at Biguglia in April.

94. Actitis hypoleuca.
A few seen along the shore at Ajaccio during the winter, and a pair seen near Biguglia on April 22nd.

95. Gallinago media.
Numerous during the winter, a few seen on the west coast in March, and two seen at Biguglia in the middle of April.

96. Gallinago gallinula.
Only a few seen.

97. Scolopax rusticola.
By no means numerous on the west coast, but, I believe, common on the east.

98. Rallus aquaticus.
Seen on both sides of the island, but does not appear to be numerous.

99. Ortygometra porzana.
Noticed on both coasts in March and April.

100. Gallinula chloropus.
Two seen at Biguglia in April were all I noticed.

101. Fulica atra.

Thousands on the lakes on the east coast during winter, numbers remaining to breed. None seen on the west coast.

102. Mareca penelope.

The only one seen on the west coast was a male that had just been shot in the Campo dell' Oro, Ajaccio, on March 27th.

Except by shooting them, it is exceedingly difficult to make out for certain the different species of Anatidæ that swarm on the east-coast lakes in winter; and as I was unfortunate enough never to be at Bastia at the time of any of the large drives, I was able to identify but few Ducks.

103. Anas boschas.

Common on the east coast, where numbers remain and breed.

104. Querquedula circia.

I shot the only one seen in the Campo dell' Oro on January 26th.

105. Querquedula crecca.

Not many noticed.

106. Fuligula cristata.

Thousands on the lakes on the east coast in winter; and numbers were still there at the end of April. None seen on the west.

107. Erismatura leucocephala.

The only one seen was on Lake Biguglia on March 8th, in company with innumerable Coots, Tufted Ducks, &c.

108. Mergus serrator.

Only one seen; and the shooting of this was lucky, to say the least of it. On the morning of December 4th I noticed on the gulf at Ajaccio two birds (this and a Shag) swimming about twenty yards apart, right in front of my window (my house was a little distance out of the town, and had only a road between it and the sea); so, loading my sporting-rifle, and putting up the 300-yards sight, I let go the right barrel at this bird, not knowing for certain at the time what the

species was; the bullet carried away the back part of the head, and naturally laid the bird motionless. The Shag, on hearing the shot, instead of leaving, as he should have done, merely raised himself in the water and flapped his wings; instantly I let him have the contents of the left barrel, the bullet cutting the back-bone about four inches from the tail, and throwing the bird backwards completely out of the water. Sending one of the servants to hail a fishing-boat that was fortunately near, within ten minutes from first seeing these two birds they were both lying on my table. During the day the birds, which were of course spoilt for preserving by the bullets, were seen by the Consul and one or two other English friends; but I am afraid such a lucky right-and-left with a rifle occurs but once in a lifetime.

109. Podiceps nigricollis.

I noticed a few on the lakes on the east coast in March, but none in April.

110. Larus canus.

Fairly numerous.

111. Larus leucophæus.

Not uncommon.

112. Larus ridibundus.

Numerous.

113. Phalacrocorax cristatus.

Several seen on the west coast during the winter.

V.—*Contributions to the Ornithology of Borneo.*—Part I.

By R. Bowdler Sharpe.

(Plate II.)

I am indebted to the kindness of Mr. Arthur Everett for the collection of birds which I have the pleasure of describing in the present paper. Mr. Everett is well known as the discover of the beautiful *Pitta arcuata*, described a few years ago by Mr. Gould (Ann. N. H. (4) vii. p. 340), and figured

by him in the 'Birds of Asia' (part xxiv.); he is also known as the collector of a series of birds from the district of Sarawak, described by Lord Walden (Ibis, 1872, p. 360). The present consignment is also from the same part of the island, most of the birds being from the immediate neighbourhood of Sarawak. Sibu Island and the Matu river are situated in the northern part of the Brunna district, the former being some little way up the Bruit river. Although many of the species now recorded have been already mentioned by Lord Walden, I have included them in the present paper for the sake of the excellent notes as to the coloration of the soft parts &c. for which Mr. Everett's collections are always so favourably distinguished. It is to be hoped that his exertions will be continued, as there remains a vast amount of ornithological work to be done in Borneo, and even a small consignment like the present adds several species to the avifauna of the island. I must not conclude these introductory remarks without acknowledging the great assistance I have derived from Count Salvadori's work on the ornithology of Borneo, as is evidenced by the frequent references to it in the following pages:—

1. Circus spilonotus, Kaup; Sharpe, Cat. B. i. p. 58.

a. No. 160. Sibu. Iris bright yellow; legs greenish yellow.

b. Sibu, Dec. 15th, 1874.

As hitherto no Harrier had been found in the island, this must be considered an interesting addition to the avifauna of Borneo, if I am correct in referring the species to *C. spilonotus*, and not to *C. æruginosus*. The birds are both young, and are in the brown plumage with whitish heads which usually distinguish immature Marsh-Harriers; they are apparently male and female, and measure as follows:—

a. Total length 20 inches, wing 15·6, tail 9·7, tarsus 3·5.

b. Total length 23 inches, wing 16·6, tail 10·0, tarsus 3·7.

It is quite certain that some time must elapse before the Harriers will be understood by ornithologists; and at present every fresh specimen examined by me seems to present in-

creased difficulties. I have, however, re-examined the Marsh-Harriers in the Museum collection, and I find that a comparison of measurements between *C. spilonotus* and *æruginosus* gives the following result:—

	Wing. inches.	Tarsus. inches.
C. spilonotus ad.	15·5–16·0	3·45–3·6
„ ♀ ad.	15·5	3·1
C. æruginosus ad.	15·7–16·1	3·4–3·6
„ juv.	15·45–16·8	3·35–3·6

As undoubtedly adult specimens of both species are here measured, it is evident that dimensions will not help much in the determination of the species, and although in their adult stages they are widely different, in their young plumages they are scarcely distinguishable: if this supposition be correct, the chances are that the bird identified by me as *C. æruginosus* from the Philippines, on the authority of which Lord Walden included the species as an inhabitant of that archipelago, is really nothing but the young of *C. spilonotus*; and in this case it is possible that some of the young Harriers from China and Formosa belong to the latter bird and not to *C. æruginosus*. The fact is, that the plumages of the Philippine-Islands bird have never been properly worked out; and until this has been done, it is impossible to do more than guess at the truth. We may, however, learn something by analogy from its nearest ally, *C. maillardi*; and as it is now pretty clear that this species has at least three very distinct plumages, so we may fairly credit *C. spilonotus* with a brown immature dress, as in the Réunion species.

The male of *C. spilonotus* is a very handsome bird with white under surface and black-streaked breast. The plumage of the female is probably correctly described in the 'Catalogue' (*l. c.*); and that the young male also goes through a stage very similar to the old female, is pretty clear from the remains of such moultings on the maturing birds: both wing and tail are barred; and it is evident that these bars are gradually dissolved as the bird becomes adult. As far as I can see at present, there is no gradual change from the white-

headed brown dress to the female plumage; and this stage is therefore probably assumed by a moult.

2. Astur trivirgatus (Temm.); Salvad. *l. c.* p. 17.

a. No. 12. ♀. Sibu, June 12, 1874. Iris bright orange; legs yellow.

b. ♂. Sibu, Aug. 1874. Iris chrome; legs and feet ochreous; bill black, the base greenish yellow; lores greenish yellow. "*Draco volans* in gizzard."

The male is in younger plumage than the female, though neither are very old, and a corresponding difference in the soft parts is to be noted.

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

Spilornis bacha (Daud.); Salvad. *l. c.* p. 7.

a. No. 19. ♂. Sibu, Nov. 1874. Iris chrome-yellow; legs dirty ochre; bill dark leaden; "antorbital patch to cere brownish yellow-orange."

4. Haliastur intermedius, Gurn.; Sharpe, Cat. B. i. p. 314.

Haliastur indus (Bodd.); Salvad. *l. c.* p. 12.

a. "No. 158. ♂. Sibu Island, April 28, 1874. Iris dark chocolate; feet pale greenish yellow; bill black."

The specimen sent is in immature plumage.

5. Microhierax fringillarius (Drap.); Sharpe, Cat. B. i. p. 368.

Hierax cærulescens, Salvad. *l. c.* p. 3.

a, *b*, *c*. No. 196. ♂. Sibu, July 1874. "Iris chocolate."

The three specimens sent by Mr. Everett are apparently all rather young, as they have the forehead, cheeks, and eyebrow stained with orange.

6. Polioaetus humilis (Müll. & Schl.); Salvad. *l. c.* p. 6.

a. "No. 157. ♂. Sibu, Aug. 14, 1874. Iris bright yellow; feet and tarsi pale blue."

This is a very interesting occurrence, as Count Salvadori first included the species in his work on the probability of its occurring in Borneo, as it had been found in the neighbour-

ing islands. In a note at the end of the volume he refers to a skeleton of a bird of this genus with more certainty as being *P. humilis*; and the correctness of this view is now borne out by the skin sent by Mr. Everett.

7. Macropteryx comatus (Temm.); Walden, Tr. Z. S. ix. p. 158.

Dendrochelidon comata, Salvad. *l. c.* p. 123.

a, *b*. "No. 101. ♂, ♀. Sibu, Sept. 1873. Iris chocolate." The pair sent agree with Sumatran examples, and have, like the latter, the wing shorter than Philippine birds, as duly noted by Lord Walden (*l. c.*). I cannot, however, perceive any material difference in plumage.

8. Macropteryx longipennis.

Dendrochelidon longipennis (Rafin.); Salvad. *l. c.* p. 122.

a. "No. 100. ♀. Jambusan, Sept. 1874. Iris chocolate."

9. Merops bicolor (Bodd.); Salvad. *l. c.* p. 90.

a. "No. 36. ♀. Bruit Sands, August 1873."

b. "♀. Bruit, April 20, 1874. Iris dragon's-blood; bill black; feet blackish."

The female has the chestnut of the upper surface washed with green, as is so often seen in other Bee-eaters, especially in *M. superciliosus* of Africa. For this mixture of plumage I have never yet seen any satisfactory explanation.

10. Pelargopsis leucocephala (Gm.); Sharpe, Monogr. Alced. pl. 31; Salvad. *l. c.* p. 95.

a. "No. 102. Sibu, June 1874. Iris chocolate; bill and feet coral-red."

Of the ordinary Bornean type, as distinguished by me in my 'Monograph.'

11. Halcyon pileata (Bodd.); Sharpe, Monogr. Alced. pl. 62.

Entomobia pileata, Salvad. *l. c.* p. 102.

"No. 94. ♂, ♀. Sibu, Nov. 15, 1873. Iris chocolate; legs and bill scarlet."

12. Eudynamis malayana (Cab. & Heine); Salvad. *l. c.* p. 68.

a. "No. 142. ♂. Sibu, Dec. 1873. Iris brick-red; bill greenish; legs lead-grey."

b. "♂. Sibu, Nov. 1873. Iris crimson; bill greenish lead; legs lead-grey."

Both these specimens seem to be changing their plumage, the bird killed in November being in full dress, excepting some rufous brown bars at the tips of the tail-feathers, while the other male specimen is in full moult.

13. Rhinortha chlorophæa (Raffl.); Salvad. *l. c.* p. 69.

a. "No. 29. ♀. Jambusan, Sept. 10, 1874. Iris chocolate; bill pure whitish green, the orbital patch similarly coloured; legs pale leaden."

b. "♂. Sibu, July. Iris chocolate; cere pale green."

The male (so marked by Mr. Everett) is the chestnut-headed bird, and the female the grey-headed, thus confirming the determinations of the Marquis Doria. All the specimens dissected by Mr. Wallace likewise agree.

14. Centrococcyx javanensis (Dum.); Salvad. *l. c.* p. 76.

a. "No. 52. Sibu. Iris crimson; legs dark lead."

15. Cacomantis merulinus (Scop.); Salvad. *l. c.* p. 64.

a, b. "No. 89. ♂. Sibu Island, April 25 and 28, 1874. Iris pale carmine; bill dark brown; feet reddish."

Mr. Motley's Banjermassing specimen, determined by Dr. Sclater as *C. sepulchralis* (Müll.), is in the Museum, and is referable to the above species, as Count Salvadori suspected it would be. It has the throat a little tinged with rufous; this, however, appears to be a variable character, as it exists in one of the Sibu skins and not in the other.

16. Calorhamphus fuliginosus (Temm.); Salvad. *l. c.* p. 39.

a, b. "No. 25. ♂, ♀. Jambusan, Sept. 11, 1874. Iris brownish ochre; bill black; legs coral-red. Fruit in the gizzard."

Fully shows the red colour which induced the Messrs.

Marshall to keep the Bornean bird distinct from *C. hayi* of Malacca. The female is precisely like the male.

17. Megalæma mystacophonus.

Chotorea mystacophonus (Temm.); Salvad. *l. c.* p. 34, t. 1.

a, b, c. "No. 33. ♀. Jambusan, Sept. 12, 1874. Iris chocolate; legs greenish."

d. "♂. Jambusan, Sept. 9, 1874."

Three specimens now sent by Mr. Everett are in the state of plumage described by the Messrs. Marshall as *M. humii*. They are all different one from the other, but show pretty conclusively that the last-named species cannot be upheld. The five figures given in Count Salvadori's work prove this also; and Mr. Everett's specimens show the gradual transition from green- to bright-plumaged birds. At the same time he has also sent a full-plumaged male example, killed in the same locality; and I do not think there can be the slightest doubt as to the absolute identity of *M. humii* with *M. mystacophonus*.

18. Megalæma versicolor.

Chotorea versicolor (Raffl.); Salvad. *l. c.* p. 33.

a. "No. 75. ♂. Kucking, August 1874. Iris chocolate."

b. "♀. Jambusan, Sept. 11, 1874. Iris chocolate; legs pale greenish."

19. Megalæma duvaucelii.

Xantholæma duvaucelii (Less.); Salvad. *l. c.* p. 38.

a. "No. 111. ♂. Jambusan, Sept. 12, 1874. Iris chocolate; legs greenish."

20. Callolophus malaccensis (Lath.); Salvad. *l. c.* p. 50.

a. "No. 54. ♂. Sibu."

b. "♀. Matu, August 1873."

But little difference is to be seen in the sexes, according to the two specimens now sent. The bars on the back are much more distinct in the female; but this may be partly due to the worn plumage of the male bird.

21. Callolophus puniceus (Horsf.); Salvad. *l. c.* p. 49.

a. "No. 14. ♂. Kucking, August 30, 1874. Iris crimson; feet dirty green; maxilla blackish brown; mandible chrome-yellow; bare space about the eye pale blue."

This specimen is apparently either immature or in worn plumage; for the head is earthy brown, with the red feathers appearing here and there.

22. Meiglyptes tristis (Horsf.); Salvad. *l. c.* p. 56.

a, *b*. "No. 24. ♂. Jambusan, Sept. 12, 1874. Iris crimson."

c. ♀. "Sibu, July 1874."

There is considerable difference in the amount of barring on the breast in the two males, showing that this is a variable character.

23. Meiglyptes tukki (Less.); Salvad. *l. c.* p. 57.

a. "No. 66. ♀. Jambusan, Sept. 16, 1874. Iris crimson; bill black, mandible whitish; legs dark olive-brown."

Agrees tolerably well with Malaccan and Sumatran examples (*Wallace*), but is not so rufescent as the specimens recorded by me from Labuan (P. Z. S. 1875, p. 103).

24. Xylolepes validus (Temm.); Salvad. *l. c.* p. 43.

a. "No. 96. ♀. Jambusan."

25. Loriculus galgulus (L.); Salvad. *l. c.* p. 26.

a. "♂. Sibu, Jan. 19, 1875. Iris chocolate."

b. "♀. Sibu. Iris chocolate; legs greenish brown."

26. Copsychus problematicus, sp. n.

C. chalybeo-niger: tectricibus alarum et secundariis intermediis extùs albis: gutture et pectore superiore chalybeo-nigris: corpore reliquo subtùs albo, hypochondriis cinereis: alis ut in speciebus reliquis picturatis: rectricibus sex intermediis nigris, proximâ albâ, pogonio interno obliquè nigro notato, duabus reliquis albis versus basin pogonii interni nigris: subalaribus nigris, quibusdam angustè albo terminatis.

"No. 82. ♂. Sibu. Iris chocolate."

I cannot unite this species to *C. saularis*. I have carefully examined our series of the above bird; and I consider that one species alone inhabits the peninsula of India, ranging

into China, and down the Malayan peninsula, all the specimens from Northern India being rather paler in colour, especially as females.

Great variation in size exists, and this alone would not serve to separate species of this genus: thus the tarsus varies from 1·05 to 1·2 inch, being, however, generally smaller in the hen birds. A Burmese female has it 1·15 inch in length. The wing varies from 3·75 to 4 inches in the male, and from 3·65 to 3·8 in the female, the example from Burmah measuring only 3·35 in the wing, and 3 inches in the tail.

I am not disposed to separate the Malaccan species (usually, though erroneously, called *C. mindanensis*; *cf.* Walden, Tr. Z. S. ix. p. 194) from *C. saularis*. The amount of white on the third pair of rectrices is a character which must be received with a great deal of caution, as it increases with age. This is certainly the case with *C. saularis*, and, I doubt not, with the allied species also; and I have examined Malaccan examples which have the same tail-markings as Indian birds. Then, again, with regard to the dark coloration of the Malaccan females, this is certainly noteworthy to a certain extent; but a Madras female in the Museum is quite as dark: the birds from Northern India and Burmah seem paler.

Of the Andaman species I am only able to judge by a single female in the Museum; and this bird is apparently different on account of its rufescent flanks. Mr. Hume separates the bird from this locality as *C. andamanensis*; and in this he is probably right.

The Javan *C. amœnus* is distinguished by its grey under surface in the female, the male being entirely blackish below. It is represented in the Museum by specimens from W. Java (*Wallace*), Bali (*Wallace*), Labuan (*Low*), and Banjermassing (*Motley*). The Bali bird is glossy black on the under surface, and has no admixture of grey like the Javan and Bornean skins.

Lastly, Mr. Everett's Sibu skin remains; and its specific characters may be shortly summed up as follows:—Similis *C. saulari*, sed tectricibus alarum inferioribus nigris, vix albo angustè limbatis distinguendus. Long. tot. 8·6, alæ 4·05 caudæ 3·8, tarsi 1·25.

A specimen from W. Java is also in the Museum, obtained by Mr. Wallace, and marked by him *C. mindanensis*, showing that he regarded it as identical with the Malaccan bird, and distinct from *C. amœnus*. The female is rather light grey, the flanks strongly washed with fulvous brown. Whether this bird is only a stage of *C. amœnus*, or a distinct species, remains to be proved.

The true *C. mindanensis* from the Philippines is a very different bird with wholly black tail.

27. Trachycomus ochrocephalus (Gm.); Salvad. *l. c.* p. 196.

"No. 74. Sibu."

28. Pycnonotus euptilotis.

a. "♂. Sibu, July 10, 1874. Iris pale reddish; legs brown; bill dark brown."

b. "No. 161. Jambusan."

The above birds agree with three others in the Museum, determined respectively as *Jole tympanistrigus* (Müll.), ex Malacca (*Wallace*), *Pycnonotus euptilotis* (J. & S.), ex Java, *Pycnonotus susanii* (Müll.), ex Borneo.

It is evident therefore that great confusion in nomenclature exists here.

29. Pycnonotus plumosus, Blyth; Salvad. *l. c.* p. 198.

a. "♂. Jambusan, Sept. 18, 1874. Bill black; legs dark brown; iris crimson."

30. Pycnonotus analis.

Pycnonotus analis (Horsf.); Salvad. *l. c.* p. 197.

"No. 164. ♂. Sibu, 1874. Iris chocolate; bill and legs black. Fruit in gizzard."

I am by no means certain that Philippine examples, *P. goiavier* (Scop.), are really distinct from the Malaccan and Bornean bird; for a Malaccan skin in the British Museum has the ear-coverts nearly as dark as in a Philippine bird.

31. Pycnonotus pusillus, Salvad. *l. c.* p. 200.

a. "No. 18. ♂. Puak, Upper Sarawak. Iris reddish orange; legs light brown."

This specimen appears to agree with Count Salvadori's description. Other specimens are in the Museum from Borneo, but to which no title had been affixed by Mr. George Gray.

32. BRACHYPODIUS IMMACULATUS, sp. n.

Brachypodius melanocephalus (Gm.); Salvad. *l. c.* p. 201.

a. "No. 43. ♂. Sibu. Iris cobalt-blue."

This species is evidently rare in Borneo, as it has only occurred once at Sarawak to the Marquis Doria. Count Salvadori knows of no other instance of its capture, and refers the Sarawak skin to *B. melanocephalus*. I find, on comparison, that Mr. Everett's specimen agrees best with Sumatran examples in the Museum; and these I am induced to consider distinct from the Malaccan species, *i. e.* the true *B. melanocephalus*, as none of the latter shows the outer tail-feathers entirely yellow, as the Sumatran bird does. The Sibu skin now sent is probably a young bird, as it has the back dull olive-green; but it has scarcely any trace of a dark shade on the outer feather, and is nearly as bright yellow as the Sumatran skins. I therefore propose to separate the latter as a distinct species.

Adult. General colour above yellowish green, more or less inclining to olive, the lower back and rump mottled with black, the bases to the feathers being of the latter colour, the tips yellow; upper tail-coverts bright lemon-yellow; crown, sides of head, and entire throat shining green, slightly washed with purple under certain lights; breast olive-green, gradually shading off into bright yellow on the abdomen, flanks, and under tail-coverts; under wing-coverts pale yellow; upper wing-coverts olive-green, the greater series brighter and more yellow; bastard wing, primary-coverts, and primaries dark sepia-brown, very narrowly bordered with olive-green, the secondaries blackish on the inner web, bright yellow on the outer; tail bright yellow, shading off about the middle of the feather into olive-green, and thence into black, the latter forming an irregular subterminal spot before a brilliant yellow tip, this dark shading becoming gradually imperceptible on the outer feathers, which are consequently entirely yel-

low; bill and feet blackish. Total length 6·2 inches, culmen ·6, wing 3·05, tail 2·8, tarsus ·6. (Sumatra, *Wallace*.)

Javan specimens collected by Mr. Wallace agree with the Malaccan rather than with the Sumatran skins; and Tenasserim birds are, as might be expected, the same as the Malayan. I may mention that, of the ordinary *B. melanocephalus*, I have had before me no less than twelve skins for the purpose of comparison.

33. Phyllornis cyanopogon, Temm.; Salvad. *l. c.* p. 194.

a. "No. 78. ♂. Sibu, August 1874. Iris chocolate-brown; bill black; legs light green."

b. "Jambusan, Sept. 1874. Iris chocolate; bill and legs black."

The difference in the colour of the legs is noticeable, as I can perceive but little difference in the actual specimens, except that the black-legged bird is rather duller in plumage, and has a few green feathers in the black of the cheeks, and one green plume in the middle of the left cheek-spot.

34. Iole olivacea, Blyth; Salvad. *l. c.* p. 210.

a. "No. 11. ♂. Jambusan, Sept. 13, 1874. Iris white; bill black, mandible dirty lead-colour; legs light warm brown. Fruit and insects in gizzard. Shot in old jungle by road-side. Not breeding."

35. Criniger phæocephalus (Hartl.); Salvad. *l. c.* p. 207.

a. "No. 162. ♂. Jambusan, Sept. 10, 1874. Iris pale orange-brown; legs and feet pale transparent brown."

36. Brachypteryx malaccensis, Hartl.; Salvad. *l. c.* p. 222.

a. "♀. Kucking, August 1874. Iris dark crimson."

37. Macronus ptilosus (Jard. & Selb.); Salvad. *l. c.* p. 216.

a. "No. 185. ♂. Jambusan, Sept. 10, 1874. Iris crimson."

38. Cyanoderma bicolor (Blyth); Sharpe, P. Z. S. 1875, p. 105.

Cyanoderma erythropterum, Salvad. *l. c.* p. 213.

One specimen, without indication of the exact locality.

J.G.Keulemans del. Mintern Bros. imp.

1. ORTHOTOMUS BORNEONENSIS
2. CALAMODYTA DORIÆ.

39. Herpornis brunnescens, sp. n.

♂. *H.* affinis *H. xantholeucæ*, sed magis brunnescens nec viridis; loris et facie laterali omninò cinerascentibus distinguenda. Long. tot. 4·8 unc., culm. ·55, alæ 2·7, caudæ 1·9, tarsi ·65.

A single specimen of this undoubtedly new *Herpornis* was obtained at Sarawak by Mr. Wallace, and was named by him *H. xantholeuca*. It is, however, certainly distinct from that species, being of an olive-brown colour above, shading into green on the rump and tail; the lores and sides of the face also are entirely ashy brown, whereas in *H. xantholeuca* they are white, shaded with ashy grey; the tinge of colour on the chest and sides of the body is not grey, but brown, in the Sarawak bird. No species of *Herpornis* has been before recorded from Borneo; and the genus is not included in Count Salvadori's work.

40. Orthotomus borneonensis. (Plate II. fig. 1.)

Orthotomus borneonensis, Salvad. Ucc. Born. p. 247.

"No. 3. ♂. Jambusan, Sept. 18, 1874. Iris Naples yellow; bill horn-brown; legs pale warm brown."

Agrees very well with Count Salvadori's description, all the differences alluded to by him as existing between the Bornean species and *O. sepium* of Java holding good in Mr. Everett's specimen.

41. Calamodyta doriæ. (Plate II. fig. 2.)

Calamodyta doriæ, Salvad, Atti R. Accad. Sc. Tr. iii. p. 531; id. Ucc. Born. p. 250.

"No. 21. ♂? Sibu, Nov. 21, 1874. Iris sepia-brown; legs white; bill dark brown, mandible ochraceous."

The single specimen sent by Mr. Everett agrees very fairly with Count Salvadori's description, excepting that the superciliary streak is olivaceous brown, of the same colour as the breast and sides of the body; the cheeks also show traces of triangular dusky spots.

42. Acrocephalus orientalis.

Acrocephalus orientalis (T. & S.); Salvad. *l. c.* p. 251.

"No. 209. ♀. Sibu Island, April 27, 1874. Iris pale umber-brown; legs greenish lead-colour; bill blackish."

The above specimen is more striped on the breast than are ordinary examples, the bird most approaching this Bornean specimen being one collected by Mr. Cuming in the Philippines; all the others in the Museum are more or less uniform.

43. Henicurus ruficapillus (Temm.); Elwes, Ibis, 1872, p. 257.

a. "No. 16. ♂. Puak Hill, Sept. 14, 1874. Iris chocolate; bill black; legs pinkish white. Not breeding."

This is a very interesting addition to the avifauna of Borneo. Having compared this specimen with Temminck's plate, I came to the conclusion that it agreed; but the figure does no justice to the beauty of the species.

44. Anthreptes malaccensis (Scop.); Salvad. *l. c.* p. 178.

a. "No. 48. ♂. Sibu, Jan. 7, 1875. Iris brick-red; legs greenish."

b. "♀. Sibu, Jan. 16, 1874. Iris brown; legs greenish."

Another female killed in January is described as having the iris "brick-red;" so that specimen *b* is doubtless a young bird. This is also apparent from the bill, which is pale brown instead of blackish.

45. Æthopyga eupogon, Cab.; Salvad. *l. c.* p. 173.

a. "No. 104. ♂. Sibu, Jan. 18, 1875. Iris chocolate."

b. "♀. Matu Beach, May 8, 1874. Iris dark chocolate."

46. Dicæum trigonostigma (Scop.); Salvad. *l. c.* p. 166.

a. "No. 204. ♂. Jambusan, Sept. 16, 1874. Iris raw sienna; bill black; legs dark leaden colour. Pairing."

b. "♂. Jambusan, Sept. 10, 1874. Iris grey-brown; legs brown."

The second specimen is a young male, which I have had considerable difficulty in determining. Mr. Wallace obtained a similar male bird in Malacca, but did not identify the species; moreover I have never seen an authentic female of this *Dicæum*. I have, however, been enabled to determine a female Malaccan bird in the British Museum from Count Salvadori's description, and I therefore characterize this sex as follows:—

♀ mari omninò dissimilis: olivaceo-viridis, uropygio et supracaudalibus flavicantibus: rectricibus et remigibus brunneis, secundariis olivaceo-viridi limbatis: subtùs virescenti-cinerea, gulâ vix albicante: abdomine medio et supracaudalibus lætè flavis.

♂ juv. similis feminæ adultæ, sed ubique saturatior: rectritricibus nigris: remigibus nigris, primariis pulchrè cinereo, secundariis flavicanti-olivaceo limbatis: subtùs flavicans, gutture et pectore superiore vix cinereo lavatis; abdomine lætiore, flavo.

47. Prionochilus maculatus (Temm.); Salvad. *l. c.* p. 164.

a. "No. 92. ♀. Jambusan, Sept. 10, 1874. Iris crimson; bill black."

It was, of course, as Count Salvadori remarks, an error of Blyth's to suppose this species to be the female of *P. thoracicus*; and as the hen bird of *P. maculatus* is yet undescribed, we have to thank Mr. Everett for its discovery. We have also in the British Museum a pair collected by Mr. Wallace at Sarawak; and by him the sexes have been correctly determined; so that we have additional security respecting the identity of the hen bird, which may be characterized simply as follows:—

♀ mari persimilis, sed plagâ verticali flavâ nec aurantiaco-rubrâ distinguenda.

48. Hirundo javanica, Sparrm.; Salvad. *l. c.* p. 126.

a, b, c. "No. 85. ♂, ♀. Sibu, Oct. 20, 1874. Iris dark brown."

49. Philentoma pyrrhopterum (Temm.); Salvad. *l. c.* p. 138.

a. "No. 10. ♀. Sibu, August 1874. Iris bright brown; legs pale leaden; bill dark horn-colour."

50. Alseonax latirostris (Raffl.); Salvad. *l. c.* p. 129.

a. "♂. Kucking, Oct. 8, 1874. Iris chocolate; legs dark vandyke-brown."

51. Lanius lucionensis, L.

Lanius schwanerii, Bp.? Salvad. *l. c.* p. 159.

a. "♂. Sibu, Nov. 20, 1873. Bill black; legs dark lead-colour; iris chocolate."

The acquisition of this specimen will, I trust, extinguish Bonaparte's *L. schwaneri* as a species; for I have carefully compared Mr. Everett's bird with a series of *L. lucionensis*, lent me by Mr. Swinhoe, and there cannot be any doubt as to their complete identity. Count Salvadori and Mr. Swinhoe have both expressed their belief that this would be the case.

52. Irena turcosa.

Irena cyanea (Begbie); Salvad. *l. c.* p. 151.

a. "Sibu. Iris red."

b. "No. 45. ♂. Jambusan, Sept. 11, 1874. Iris fiery orange-red."

The latter specimen is somewhat immature, as is evidenced by the remains of a few green plumes on the abdomen; the mixture of orange-colour in the iris, as noted by Mr. Everett, is also a probable sign of immaturity.

With reference to the different species of *Irena* Lord Walden's excellent remarks (Ibis, 1871, p. 171) should be studied. At present four species are known, viz.:—1. *I. cyanogastra*, Vig., from the Philippines; 2. *I. turcosa*, Walden, from Java; 3. *I. puella* (Lath.), from Malabar; 4. *I. cyanea* (Begbie), from Malacca. The length of the tail-coverts is a distinguishing feature in these birds; but as Count Salvadori notices a tendency to vary in this respect, I have examined the series of skins in the British Museum with a view to test the stability of this character.

Travancore (*Capt. Biddulph*). Both upper and under tail-coverts short, not reaching within 1½ inch of tip of tail; three of the inner greater wing-coverts tipped with blue.

Tenasserim (*J. D. C. Packman*). Two specimens agreeing with the foregoing example, resembling it in size, length of under tail-coverts, and in having large blue tips to the three innermost greater coverts.

Siam (*Mouhot*). This bird seems a little deeper in colour, but is otherwise the same as the Indian species; four greater coverts tipped with blue.

All the above are referable to *I. puella*.

Malacca (*Wallace*). The tail-coverts are here very much longer, but do not come within half an inch of the tip of the

tail; only two of the inner greater coverts have the blue spots at the tip.

Two other specimens from Malacca are precisely similar.

Sumatra (*Wallace*). The male has the under tail-coverts reaching to the end of the tail itself. No blue spots on the inner greater coverts.

Borneo. A specimen presented by Rajah Brooke has the tail-coverts reaching to the tip of the tail, and agrees both in this respect and in the absence of blue spots on the coverts.

Banjermassing (*Motley*). Agrees with the foregoing example in both respects.

Lastly, both Mr. Everett's birds have the long tail-coverts, but show a small blue spot on the innermost coverts.

Of course nothing but adult males have been compared. I have little hesitation in keeping the Sumatran and Bornean birds distinct from the Malaccan; but the question now to be settled is their identity with the Javan *Irena turcosa* of Walden.

53. Chaptia malayana, Hay; Salvad. *l. c.* p. 153.

a. "No. 17. ♂. Jambusan, Sept. 15, 1874. Iris dark blood-red; bill and feet black."

54. Dissemurus brachyphorus (Temm.); Salvad. *l. c.* p. 154.

a. "No. 5. ♂. Sibu. Iris crimson."

55. Artamus leucorhynchus (L.); Salvad. *l. c.* p. 140.

a. "No. 194. Sibu Island, May 5, 1874. Iris dark chocolate; bill pale bluish; legs pale leaden. Pairing."

This specimen has a much more robust bill than any of the others from various localities with which I have compared it.

56. Calornis chalybea (Horsf.); Salvad. *l. c.* p. 271.

a. "No. 49. ♂. Sibu, Dec. 1873. Iris crimson; bill and legs black. Pairing.

b. "♀. Sibu Island, April 29, 1874.

c. "♂. Sibu Island, May, 4, 1874. Iris crimson; bill and feet black. Pairing."

The latter bird is a young male, white below, with black

streaks, the female in full green plumage, like the first-mentioned male.

I have compared these Sibu birds with a large series from Sarawak (*Wallace*), Malacca (*Wallace*), E. Java (*Wallace*), and Tenasserim (*Packman*), and I find them all identical. The Philippine bird is duller and more bronzy, with a slightly stronger bill, as pointed out by Count Salvadori; but the slight purplish violet shade mentioned by him is not a character, as it exists in Malaccan skins sometimes. The Philippine species is *C. panayensis* (Scop.), and measures 4·15 inches in the wing, which is about the size of *C. chalybea*.

C. tytleri, from the Andamans and Nicobars, must be kept distinct: it is dull-coloured, like the Philippine species, but very much larger: wing 4·5 inches. Lord Walden considers it to be the same as continental examples of *C. affinis* (Ibis, 1874, p. 145). I have four specimens before me from the Islands of the Bay of Bengal; and I cannot consider them quite the same as two Tenasserim birds, which, in tint of green and in size, agree with Malaccan ones. *C. tytleri*, however, is not a very strongly marked species. [*Cf.* also Lord Walden's recent observations (Ibis, 1871, p. 461).]

The following remarks apply to Lord Walden's synopsis of the genus *Calornis* (Tr. Z. S. viii. pp. 79, 81), where the best review of the genus is to be found:—

C. neglecta, Walden, *l. c.*. *Hab.* Celebes and Sula Islands. The single Celebean specimen (*Meyer*) in the Museum not being quite full-plumaged, I cannot speak with certainty as to its complete identity with the Sula-Island bird; but the shade of green seems darker in the latter. Lord Walden, however, who has had better series to examine than I have, says they are the same. The long tail (4·4 inches) will distinguish this species from *C. chalybea*, which it approaches in colour; it measures nearly an inch more than in the latter bird, whose tail does not seem to exceed 3·5 inches.

Calornis obscura, Forst. A very dull green species, of which the Museum has a series of specimens from Batchian, Gilolo, and Morty, all collected by Mr. Wallace.

Calornis crassirostris, Walden, *l. c.* p. 80. This species I

do not know, and I should doubt its locality being Lombock. Of its habitat, however, Lord Walden is not certain.

Calornis mysolensis, Gray. *Hab.* Mysol, Bouru, Ceram, Salwatti. From all of these places Wallacian specimens are before me. The species, as Lord Walden observes, is scarcely separable from *C. obscura*, but it is rather stouter. The *C. cantoroides* of Mr. G. R. Gray, considered by Mr. Wallace to be a good species, is, in my opinion, nothing but *C. mysolensis* before it has quite completed its long tail: none of the four specimens before me seems to be full-plumaged.

Calornis pacifica (Gm.), of which I have an example from the Caroline Islands, is nothing but a slightly more metallic race of *C. mysolensis*, with a still stouter bill.

Calornis metallica. The figure in the 'Planches Coloriées' suits best the Australian bird. Temminck gives the habitat of his species as Timor and Celebes, from neither of which places has such a *Calornis* yet been seen. I therefore unite *C. purpurascens* of Gray to *C. metallica*, as a pair of birds collected at Cape York by the late Mr. Macgillivray agree well with Temminck's figure. A Goram specimen is also identical. At the same time the only difference between *C. metallica* and *C. viridescens* is the greater amount of purple on the sides of the body, a very variable character.

Calornis amboinensis, Gray. Lord Walden gives its characters as closely resembling the Australian species, but smaller. It is intermediate between that and *C. viridescens*, and has only a little purple gloss on the sides of the body; its bill, however, is slightly shorter than either, but the wing agrees with some examples of each of the above species; so that the smaller size does not go for much. The Ceram bird is identical; and I see no reason for separating either from *C. viridescens*.

Calornis viridescens, Gray. I cannot find any difference between examples collected by Mr. Wallace in the following localities—Sula Island (1), Gilolo (2), Ternate (1), Matabello (2), N. Ceram (1), Aru Islands (4).

Calornis gularis. The type specimen, from Mysol, is now lying before me; and I must pronounce this, contrary to Lord

Walden's opinion, a very good species, distinguished by its purple throat and small bill, the culmen only measuring ·65 inch, as against ·85 in *C. viridescens*.

C. minor, Müll., is, of course, a very good species, belonging to the short-tailed group, but possessing the purple and green coloration of *C. viridescens* and its allies. Mr. Wallace's specimens in the Museum collection are from Lombock (2), E. Timor (3), Flores (1).

C. nitida, Gray. The Museum contains a single example from New Ireland; and this differs from all the large series of *C. viridescens* (to the group of which Lord Walden has correctly assigned it) in wanting the distinct metallic purple mantle-patch, this part of the back being scarcely at all shaded with purple.

57. Corydon sumatranus (Raffl.); Salvad. *l. c.* p. 111.

a. "♀. Sibu, Sept. 26, 1873. Iris dark brown; bill tinged crimson."

The individual sent by Mr. Everett has a very deep rose-coloured dorsal patch, and agrees with Banjermassing and Malaccan skins in the Museum. Two Sumatran examples, collected by Mr. Wallace, have a very pale yellowish dorsal patch.

58. Eurylæmus javanicus (Horsf.); Salvad. *l. c.* p. 107.

a. "No. 150. ♀. Sibu, Oct. 2, 1873. Iris pale green; bill greenish blue; legs leaden grey."

59. Eurylæmus ochromelas, Raffl.; Salvad. *l. c.* p. 108.

a. "No. 103. ♀. Jambusan, Sept. 5, 1874. Iris bright gamboge; legs pink opalescent; bill pale bright blue; anterior half of maxilla yellow-green; both maxilla and mandible margined with blackish purple. Coleoptera in the gizzard. Two tolerably large *cæca coli*. Black collar interrupted in the female."

This bird, Mr. Everett says, is common all over Sarawak. It will be seen that he affirms the absence of the pectoral band in the female.

60. Cymbirhynchus macrorhynchus (Gm.).

a. "No. 125. ♂. Sibu. Iris dark green; beak cobalt."

Another specimen, more adult, has no label attached; the outer tail-feather has an obscure oblique spot of white. The Sibu specimen has two outer tail-feathers on each side distinctly spotted with white.

I have lately examined a bird from Saigon, in Cochin China, which was pale in coloration when compared with Malaccan examples; but I believe this to be merely the result of bleaching, as the parts not exposed to the light are of the normal colour.

Count Salvadori has separated the Malaccan *Cymbirhynchus* from the Bornean one, as the latter is supposed to have no white spots on the tail. As we have a large series of these birds, I have passed them under review in order to test the characters of these two species, and give the following results. I may premise by saying that all the specimens marked *C. affinis* by Mr. George Robert Gray, are nothing but the ordinary species. Our examples are chiefly from Malacca; but some show the extension of the range of this species into Camboja and Siam; so that Dr. Salvadori was naturally led to include these countries within the habitat of *C. affinis* (*cf.* Atti R. Accad. Tor. xi. p. 418). The following remarks refer to the Museum specimens :—

a. ♀. Sumatra (*Wallace*). *Two* outer tail-feathers marked with white.

b. ♂. Malacca (*Wallace*). *Three* outer tail-feathers marked with white; wing-coverts tipped with small white dots (? remains of immaturity).

c. Malacca. *Two* outer rectrices marked with white.

d. Ditto. Ditto.

e. Ditto. Ditto.

f. Malacca (*Harvey*). *Three* outer rectrices *largely* marked with white.

g. Malacca (*Harvey*). *Three* outer rectrices marked, the spot disappearing on the third; a few wing-coverts terminally spotted with white.

h. Malacca. *Three* rectrices marked with white; spots on wing-coverts large.

i. Tenasserim (*Packman*). *Five* outer rectrices marked with white, being all but the two centre ones.

k. Tenasserim (*Packman*). Tail imperfect, but all the feathers marked with white, except the two centre ones.

l. Tenasserim (*Packman*). *Four* outer tail-feathers marked with white.

m. Siam (*Mouhot*). All but the two centre feathers marked with white, the spots, however, decreasing towards the centre of the tail.

n. Camboja (*Mouhot*). *Three* feathers on one side and four on the other marked with white.

o. Saigon. *Three* outer rectrices marked with white.

It will be evident from this that the white spot on the tail-feathers is a very variable character; nor does difference of age seem to account for this variation. Specimens from the same locality are not always marked in the same way; but those from the more northern localities seem to carry a greater number of white marks, as a rule. The only Bornean specimens in the collection tend to bear out Count Salvadori's characters,—a young bird having a uniform tail, with nothing but a faint white shade near the apex of the inner web of the outermost rectrix; this cannot be called a *spot*; but an adult bird has a decided spot on the outer tail-feather, and a faint one on the penultimate one: but in neither of these specimens is the mark so distinct as in the Malaccan examples.

61. Munia atricapilla (V.); Salvad. *l. c.* p. 265.

a. "No. 9. Jambusan."

62. Erythrura prasina (Sparrm.); Salvad. *l. c.* p. 268.

a, ♂; *b*, *c*, ♀. "No. 8. Sibu. Iris chocolate; legs pale claret-colour."

Count Salvadori states that one of the females in the series collected at Sarawak by the Marquis Doria and Dr. Beccari had a tinge of rose-colour on the abdomen. The old female shot by Mr. Everett has a strong tint of rose-colour on the breast, and is otherwise coloured like the male, excepting that the plumage is duller, the tail not so long, and the rosy tint below is confined to the upper breast. The other female sent

by Mr. Everett has not the pointed tail, and shows no blue on the face or throat, nor is there any rose-colour on the underparts; this is probably a much younger bird.

63. Treron olax (Temm.): Salvad. *l. c.* p. 289.
a, b. "No. 153. Sibu, August, 1873."

64. Carpophaga ænea (L.); Salvad. *l. c.* p. 290.
a. "No. 116. ♂. Sibu, Dec. 18, 1874. Iris, feet, and lores crimson; bill greenish lead-colour."

65. Rollulus rouloul (Scop.); Salvad. *l. c.* p. 308.
a. "No. 134. ♂. Puak, Upper Sarawak, Sept. 24, 1874. Iris purple-brown; orbital space, legs, base of maxilla, and basal half of mandible deep coral-red, the rest of the bill black."

66. Charadrius fulvus (Gm.); Salvad. *l. c.* p. 313.
a. "No. 62. ♂. Sibu, Oct. 1873. Iris brown."
b. "♀. Sibu, Oct. 20, 1874. Iris chocolate; legs greenish lead-colour."

67. Ægialitis dubia (Scop.); Salvad. *l. c.* p. 316.
a. "♀. Sibu, Sept. 1873. Iris chocolate; legs chrome."
a. "♀. Sibu. Iris chocolate; legs greenish yellow."
The specimen with the greenish legs is immature.

68. Glareola orientalis, Leach; Salvad. *l. c.* p. 319.
a. "No. 67. ♀. Matu beach, May 8, 1875. Iris chocolate; gape orange."
b. "♂. Sibu."
c. "♂ juv. Sibu, Oct. 1874."
The male has rather a stouter bill than the female, and has the colours decidedly brighter, the loral spots and black throat-ring being much more strongly defined.

The young bird has all the feathers of the upper parts narrowly edged with rusty fulvous, especially on the hind neck, where there is a slight indication of the light collar of the adult; the throat is much paler than in the old bird, and has traces of dusky brown spots; but there is no sign of the white crescent round the throat, nor is the black ring continuous, but is rather formed of disconnected black spots. The mark-

ings on the wings and tail are the same as in the adults; but the colours of both are browner.

Besides the localities given by Count Salvadori, the Museum possesses examples from Penang (*Wallace*) and Bangkok (*Conrad*).

69. Numenius uropygialis.

a. "No. 7. Bruit, Nov. 30, 1873. Iris chocolate; legs lead-blue; bill brown."

70. Butorides javanica (Horsf.); Salvad. *l. c.* p. 351.

a. "No. 172. ♀ ad. Sibu, Nov. 13, 1873. Iris bright yellow; legs light greenish; bill dark greenish."

b. "♀ juv. Sibu, Nov. 1873. Iris bright yellow; legs yellowish green; bill greenish black."

c. "♂ juv. Sibu, Nov. 1874. Legs bright yellowish green, darker on the tarsus and the toes."

71. Tringa albescens, Temm.; Sharpe & Dresser, B. Eur. pt. xii.

Actodromas albescens, Salvad. *l. c.* p. 323.

a, *b*. "No. 22. ♂. Matu beach, May 8, 1874. Iris brown."

These beautiful little Stints are in full summer-plumage, and have the appearance of miniature Sanderlings.

72. Tringoides hypoleucus (L.); Salvad. *l. c.* p. 326.

a. "No. 58. ♀. Sibu Island, Oct. 20, 1874. Iris chocolate; legs pale lead-grey."

VI.—*Descriptions of two new Species of South-African Birds.* By R. Bowdler Sharpe, F.L.S., F.Z.S., &c., Senior Assistant, Zoological Department, British Museum.

My friend Mr. F. A. Barratt has recently returned to England with a small but interesting collection of birds, made in a district of South Africa as yet uninvestigated by the ornithologist. Having worked for some time in the Transvaal, he proceeded to the Lydenberg district, and collected particularly in the neighbourhood of the Macamac goldfields here, on the western slope of the Drakenberg mountains, he

obtained the most interesting of his specimens, a full account of which he proposes to give in a separate paper. Many species hitherto supposed to be restricted to the coast-line of Natal, are now found to extend much further in the interior; and his researches have therefore contributed in no small degree to extend our knowledge of the geographical distribution of the South-African avifauna. Two species obtained by him appear to me to be undescribed.

ANDROPADUS FLAVOSTRIATUS, sp. n.

Adult female. General colour above olive-brown, with somewhat of a yellowish tinge; head dusky grey, the lores and feathers round the eye greyish white; ear-coverts grey, with narrow white shaft-streaks; cheeks greyish white; throat pure white; rest of under surface whitish, the feathers edged with greenish yellow, causing the breast to appear *streaked* with that colour; sides of the body dull greenish olive, deepening on the lower flanks and under tail-coverts; thighs greenish olive; under wing-coverts dull yellow, marked with brown near the edge of the wing; scapulars and least wing-coverts coloured like the back; rest of the wing brown, all the feathers externally washed with olive, inclining to golden brown on the outer webs of the secondaries; upper tail-coverts and tail brown, strongly washed with olive-green; "bill, tarsi, and feet ash-colour; iris ashy hazel." Total length 7·4 inches, culmen ·75, wing 3·45, tail 3·5, tarsus 1.

Mr. Barratt obtained two specimens at Macamac on the 1st of July, 1874. Another example was obtained by Dr. Kirk on the Shiré river, and has been for some time in the British Museum, without a name. It is quite possible that the species may be ultimately placed in the genus *Criniger*; but it has the serrations in the bill as plain as most *Andropadi*, and, until the much-needed revision of the African Bristle-necked Thrushes takes place, this species must be placed near *A. gracilirostris* (Strickl.).

BRADYPTERUS BARRATTI, sp. n.

General colour chocolate-brown, rather more rufous on the rump, and decidedly more so on the wings and tail, which are

washed with rufous; feathers in front of the eye fulvescent; cheeks and ear-coverts dark brown, narrowly streaked with whitish; throat white, the chin unspotted, but the rest of the throat broadly streaked with dark brown, these streaks becoming plainer on the breast, which, like the sides of the neck, is more ashy grey than the rest of the back; flanks brown, as also the thighs and under tail-coverts; centre of abdomen white; under wing-coverts ashy brown, mottled with dark brown markings. Total length 5·8 inches, culmen ·55, wing 2·45, tail 2·6, tarsus ·85.

A second specimen is more dingy underneath, and is not so clearly marked as the one described. It seems to me to differ from all the other African *Bradypteri*, of which the Museum has a large series, by its black bill and distinctly striped throat and breast.

VII.—*Notes on the* Trochilidæ. *The Genus* Lampropygia.

By D. G. Elliot, F.R.S.E., F.L.S., &c.

The genus *Lampropygia* contains only a few species; but they are large handsome birds, possessing a considerable amount of metallic colouring. They are closely allied on the one hand to the members of the genus *Bourcieria*, and on the other to those composing the genus *Aglæactis*; indeed I am not altogether satisfied of the necessity of separating them from the first-named genus, and think perhaps it may be better, in some future arrangement of the family, to retain the species treated of in this paper in the genus *Bourcieria*. The birds usually restricted to the genus *Lampropygia* are met with from Venezuela down the western coast of South America to Bolivia, no species having been found inhabiting Eastern South America or any portion of Central America. Venezuela contains *L. cœligena*, described by Lesson, and erroneously attributed by him to Mexico; Columbia has three species, *L. columbiana* (characterized in this paper), *L. prunelli*, and *L. wilsoni*, the last being also an inhabitant of Ecuador; while Bolivia, as yet, has only given us *L. boliviana*,

obtained at a height of 8000 feet. Two doubtful species remain:—one, *L. purpurea*, stated to be a native of Popayan; and the specimen mentioned hereafter as like *L. prunelli* with a purple throat, whose habitat is said (perhaps in error) to be Ecuador. These are all the species of *Lampropygia* known at the present day, good or bad, so far as I am aware. The members of the genus naturally form two divisions or groups—those with white crescentic marks on the sides of the neck, and those without this character. The first of these sections contains two well-marked species, and two doubtful; the latter, three that are well distinguished from each other. The following table exhibits these sections and the differences by which the various species may be recognized:—

A. White crescent-shaped marks on either side of neck.	
a. General plumage purplish brown.	
a'. Throat dark grey without metallic lustre	*L. purpurea.*
b'. Throat bright metallic purple	*L. wilsoni.*
b. General plumage black.	
a'. Gular spot metallic green, sometimes with blue reflections	*L. prunelli.*
b'. Gular spot dark metallic purple	sp. ——
B. Without white marks on side of neck; throat without metallic colouring.	
a. Upper parts coppery red; tail dark rufous olive ..	*L. cœligena.*
b. Upper parts dark olive; tail bright olive	*L. columbiana.*
c. Upper parts blackish brown; tail dark olive, tinged with purple	*L. boliviana.*

LAMPROPYGIA CŒLIGENA.

Ornismya cœligena, Less. Troch. p. 141, pl. 53 (1832).

Mellisuga cœligena, G. R. Gray, Gen. Birds, i. p. 112, sp. 15.

Cœligena typica, Bonap. Consp. Av. i. p. 73; Gould, Mon. Troch. iv. pl. 255.

Lampropygia cœligena, Cab. & Heine, Mus. Hein. Theil iii. p. 78; Gould, Intr. Troch. p. 136, sp. 281.

Hab. Venezuela.

This species was first described by Lesson in his 'Trochilidæ,' and also a good figure given. He was in error in stating its habitat to be Mexico, as it is not found in that country. Great confusion exists in the synonymy of this

species, from the fact that Lesson's bird seems to have been overlooked by Trochilidists, and confounded with one sent in great numbers to Europe from the neighbourhood of Bogota, and to which Lesson's name, *cæligena*, has been applied. But the truth is that the Bogota bird belongs apparently to a distinct species, presenting many and constant characters whereby it differs from its Venezuelan relative, and which at all times render it easily to be distinguished. It may be considered somewhat a matter of surprise that these birds should ever have been confounded together; for Lesson's figure is an unusually good one, representing his species coloured in a manner not often surpassed for its fidelity. To enumerate some of the differences which distinguish *L. cæligena* from the Bogota bird, which I have characterized in this paper as *L. columbiana*, I may state that it is much larger, its total length being six inches, whereas the other is not over five inches and a half. *L. cæligena* has the top of the head, back, and shoulders of the wing dark coppery red, with a metallic lustre, while these parts in *L. columbiana* are brown, inclining to olive, being lightest on the head. The tails of the two also are differently coloured, that of the Venezuelan bird being a reddish bronze, while the Bogota species has it of an olive hue. Between the bronze feathers of the back and the metallic ones of the rump, when viewed from behind, there is in *L. cæligena* a well-marked (indeed, conspicuous) dividing line; but in *L. columbiana* the rump-feathers blend gradually with those of the back, leaving no appreciable mark of division. The two forms seem better qualified for a specific separation than is usually the case in closely allied members of the Trochilidæ. For facility of comparison, I here give a description of Lesson's bird:—

Upper part of head, back, and shoulders of wing dark coppery red, metallic in certain lights. Rump, viewed from behind, very brilliant metallic green, more extended than in the same part of *L. columbiana*. Throat white, central portion of feathers blackish brown. Breast dark grey. Abdomen smoke-colour; flanks reddish bronze. Wings bright purple. Tail dark olive, with coppery reflections. Bill

straight, black. Feet black. Total length 6 inches, wings $3\frac{1}{8}$, tail $\frac{1}{4}$, bill $1\frac{1}{4}$.

LAMPROPYGIA COLUMBIANA.

Hab. Columbia (common in the vicinity of Bogota), Ecuador (*Gould*).

In the preceding article on *L. cœligena*, I have given the chief characters of the two species, which apparently make it requisite that they should be separated; and by conferring upon this one a distinctive appellation, both are rescued from the great confusion now existing in their synonymy, and ornithologists are enabled to distinguish without difficulty which form may be before them. The present bird is sent to Europe in great numbers from Bogota—in fact, is one of the commonest species of Humming-birds. Lesson's species, on the contrary, is by no means so generally met with; and as they bear a resemblance to each other, this may be the reason that the two have been confounded together under his name, especially if the accuracy of his plate has been viewed with distrust. In order to avoid further difficulty in the recognition of this species, I append a description of it, which, when compared with that given above of *L. cœligena*, will enable any one to ascertain the differences between the two birds.

Top and sides of head and nape of neck olive-brown, with a rufous reflection; back same as head, slightly darker in colour; rump (viewed from behind) brilliant metallic green. Wings purple; shoulders olive-brown, similar to the back. Throat white, centre of feathers blackish brown; upper part of breast smoky white, growing dark towards the abdomen, which last, together with the flanks, is very dark rufous brown. Under tail-coverts reddish brown, central portion of the feathers blackish brown. Tail olive-brown, iridescent. Bill straight, black. Feet black. Total length $5\frac{1}{2}$ inches, wing 3, tail 2, bill $1\frac{1}{16}$.

LAMPROPYGIA BOLIVIANA.

Lampropygia boliviana, Gould, Intr. Mon. Troch. p. 137, sp. 282.

Hab. Bolivia (*Buckley*).

This species is but little known, and only a few collections possess examples of it. Mr. Gould first described it in the 'Introduction' to his monograph of the Trochilidæ, but did not figure it in the body of his work. This is to be regretted, as his description does not convey an adequate idea of its distinctness from *L. cæligena*, with which he compares it. For a long time the specimen in Mr. Gould's cabinet was the only one known; but last year Mr. Buckley brought a limited number from Bellavista, in Bolivia, procured at a height of 8000 feet. It is very distinct from all the other members of this genus. Although darker, it is similar to the two previous species in its underparts; but above it is almost black upon the head and back, while the tail is extremely dark olive-brown, the central feathers being slightly shaded with purple. Wings glossy purple. Measurements of a specimen in my collection give, total length 5½ inches, wing 3¼, tail 2⅜, bill 1¼.

LAMPROPYGIA PRUNELLI.

Trochilus prunelli, Bourc. & Muls. Ann. des Sc. & d'Agric. Lyon, p. 36, pl. 1 (1843).

Mellisuga prunellei, G. R. Gray, Gen. of Birds, i. p. 112.

Bourcieria prunelli, Reich. Troch. Enum. p. 7, pl. 750, figs. 4721, 4722.

Cæligena prunelli, Gould, Mon. Troch. vol. iv. pl. 257.

Lampropygia prunellei, Gould, Intr. Troch. p. 137, sp. 284.

Hab. Columbia.

This is a very common and well-known species, plentiful in collections from Bogota, and easily recognizable from its black plumage and green metallic throat-mark. It is not to be confounded with any other species of *Lampropygia*, unless the bird that I am about to call the attention of Trochilidists to should really prove to be a distinct species. I have had for a long time in my collection a specimen of *Lampropygia* similar in all respects to *L. prunelli*, save one, which, however, is sufficiently striking to make it readily distinguishable from that species. This character is the colouring of the throat. In all specimens of *L. prunelli* that

I have seen (and I have examined a very large number) the throat-mark is green, with sometimes a shading of blue, as might be expected. In the specimen before me the throat is a dark metallic purple, more like in colour the spot in *L. wilsoni*, but darker. Not wishing to add what might be a doubtful species to a family of birds that already possesses so many, and thus increase a sufficiently overburdened synonymy, I have never characterized this specimen, hoping to get some more examples similar; but thus far I have been unsuccessful. It was said to have been procured in Ecuador, which, if true, is a new locality for *L. prunelli*, and my specimen may belong to an allied species. It will be sufficient for me to call the attention of ornithologists to the existence of such a bird, and at present the bestowal of a name upon it is practically unnecessary.

LAMPROPYGIA WILSONI.

Trochilus wilsoni, Delatt. & Bourc. Rev. Zool. 1846, p. 305.

Mellisuga wilsoni, Gray & Mitch. Gen. Birds, i. p. 112, sp. 16.

Lampropygia wilsoni, Reich. Enum. Troch. p. 7, t. 751. figs. 4723, 4724; Gould, Intr. Troch. p. 137, sp. 285.

Cœligena wilsoni, Gould, Mon. Troch. iv. pl. 258.

Hab. Ecuador; San Buenaventura, Columbia (*Bourcier*).

This species was first described by Bourcier and Delattre in the 'Revue Zoologique' for 1846, from a specimen procured at San Buenaventura, in Columbia. It is apparently more abundant in Ecuador, as most of our specimens come from that portion of South America. Although allied to *L. prunelli*, it is very distinct from that species, and easily recognizable. Formerly rare, it is now generally observed in large collections, and is apparently quite abundant in the districts it inhabits.

LAMPROPYGIA PURPUREA.

Cœligena purpurea, Gould, Mon. Troch. iv. pl. 256.

Lampropygia purpurea, Cab. & Heine, Mus. Hein. Theil iii. p. 71 (note); Gould, Intr. Troch. p. 137, sp. 283.

Hab. Popayan? (*Gould*).

Two specimens of this form are in Mr. Gould's collection, no others being known to exist. The characters these examples present are not sufficiently satisfactory to entitle them to an independent specific rank without giving rise to great doubts regarding the propriety of such an acknowledgment. Mr. Gould, in his work, compares them with *L. cæligena*; but their affinity is doubtless with *L. wilsoni*, of which species they are probably a dark variety. As we become better acquainted with the Trochilidæ, we find that no family of birds presents a larger number of individuals that vary more or less, in the colour of their plumage, from the typical style of the species to which they belong; and whenever one of these is encountered, greater service is rendered to the science of ornithology by waiting for further information regarding it, than by describing it as distinct. Had such a policy been followed, one of the most fruitful sources from which have come so many useless synonyms would have been dried up long ago, and Trochilidists would have been spared much unnecessary labour. In the meanwhile, until we have further evidence that will substantiate its claims to a distinctive rank, *L. purpurea* cannot but hold a very doubtful position among the species of this group.

VIII.—*Ornithological Notes from Constantinople.*

By P. L. Sclater and E. C. Taylor.

During a few days spent in Constantinople in the months of September and October last, with our attention principally directed to other objects, we could not hope to be able to do much for our favourite science. We are nevertheless disposed to think that some of the notes made during our recent visit to that great eastern city may be of some little interest to our brother ornithologists.

First, as regards birds observed by ourselves on "field and flood" we may say a few words. Coming down the Danube we had occasion to remark that the Crane (*Grus cinerea*) is, as yet, by no means extinct in Eastern Europe, as we saw

large flocks of this noble bird on both the Roumanian and Bulgarian banks. Crossing the Black Sea from Varna to the Bosphorus, our ship was visited by several Ring-Ouzels (*Turdus torquatus*), apparently on their way south (Sept. 23rd) and the same species was subsequently noticed suspended, along with Rollers, Jays, and Quails, amongst the spoils of the "*chasseurs*" at Constantinople. On the Bosphorus, at this time of the year, the commonest Gulls are certainly the Yellow-legged Herring-Gull (*Larus leucophæus**) and the Black-hooded *L. melanocephalus*. These were, in fact, the only species noticed, except a single pair of *L. fuscus* at the entrance to the Sea of Marmora. The Terns observed were the Common and Sandwich (*Sterna hirundo* and *S. cantiaca*), though others doubtless occur. Flocks of the well-known Shearwater of the Bosphorus†, varying from five to fifty in number, were seen every day.

The following were the land-birds that most attracted our attention in Constantinople and its vicinity:—

1. Muscicapa parva.

This Flycatcher is common along the old walls of the city, amongst the trees and gardens, and also in the Turkish cemeteries, where the tall grave-stones form a most convenient resting-place for it whilst on the look-out for insects. Birds of the year (or females) are most abundant; but the full-plumaged red-breasted male was also, at least on one occasion, observed‡. The Spotted Flycatcher (*M. grisola*) is likewise

* We call the Mediterranean Herring-Gull thus in obedience to Mr. Dresser, although Sclater had previously decided that its name should be *fuscescens*. See *Larus fuscescens*, Sclater, P. Z. S. 1867, p. 315, and Rev. Cat. Vert. p. 316,—synonyms ignored by Mr. Dresser.

† The correct scientific name of this Shearwater seems to be still in question. Strickland (P. Z. S. 1836, p. 101) observed it in the Levant in 1835, and referred it to *Puffinus anglorum*, which determination is usually followed. But Acerbi had previously named it *yelkouan* (scribe *yel-kovan*, "wind-driver" in Turkish, as Dr. Dickson informs us), and Salvadori (Fauna d'Italia, Uccelli, p. 299) has recently attempted to vindicate its claims to specific distinctness.

‡ MM. Alléon and Vian (Rev. Zool. 1873, p. 261) seem to think that, of this species, only the young birds are found on the Bosphorus during

abundant in the same spots; but the present bird (which we had never seen in life before) is at once recognizable by the conspicuous white in the tail as it flits away.

2. Turtur risorius.

One of the most striking ornithological features of Constantinople, at the season when we visited it, is certainly the great numbers of Collared Turtledoves (*Turtur risorius*), which absolutely swarm all over Stamboul. You see them flying about the Golden Horn, and perching on the masts and rigging of the ships. The trees in the Seraglio gardens, and in the courts of the mosques, are alive with them; and we often saw them resting on the roofs of the houses in company with the tame Pigeons. They are not nearly so abundant in Pera or Galata as in Stamboul; and out in the country we never observed them at all. Mr. Taylor, in this Journal for 1864 (p. 410), first called attention to the claim of *Turtur risorius* to a place in the list of European birds, having observed it in Constantinople in April of that year. M. Alléon subsequently (Rev. Zool. 1867, p. 5) published an article on the same subject.

One day when walking in the middle of the city of Stamboul, Taylor was surprised to see an example of a very familiar old friend, the Egyptian Turtledove (*Turtur senegalensis*), perching on a wall just over his head. This species swarms all over Egypt, both in town and country, but was hardly expected to be met with here. We were afterwards told by Mr. Pearse that it not unfrequently occurs; and we found a specimen of it at Bebek College.

3. Garrulus glandarius.

We were on the look-out for Jays, which are found wherever trees grow on the shores of the Bosphorus, in order to ascertain whether the ordinary form here is *G. glandarius* or the Black-headed *G. krynickii*. We saw them several times flying about among the cypress trees in the great cemetery at Scutari, and also in other places in the environs of Con-

the autumn migration. But there are several adult males in the Bebek College collection, besides the one mentioned above, which we saw.

stantinople, but were not able to distinguish the species. Numerous specimens, however, which we saw hung up in the poulterers' shops in Constantinople and in other towns on the Bosphorus were all *Garrulus glandarius*; so that our observations do not quite agree with Mr. Dresser's statement in his article on the Black-headed Jay, that that "is the commonest species near Constantinople."

We notice that MM. Alléon and Vian (Rev. Zool. 1873, p. 243) speak of an intermediate form as being prevalent, which might be well expected where the two representative species inosculate.

So much (or so little, perhaps we should say) for what we saw in life. As regards museums of natural history at Constantinople, we believe there is but one, that of the American College at Bebek, on the European bank of the Bosphorus, about six miles from the imperial city. This museum is, indeed, still in embryo, but contains a good series of stuffed specimens of the birds of the Bosphorus and its vicinity, originally made by Mr. T. Robson, and lately acquired from him by the authorities of the institution. Dr. Albert L. Long, to whom the care of the collection is confided, was obliging enough to give us every facility for examining it. Many of the birds were of considerable interest; and we may offer the following notes upon some few specimens which especially attracted our attention.

Syrnium aluco (?).

The collection contains a very curious black Owl which we consider to be a melanism of *Syrnium aluco*; and Dr. Long told us that Robson, who shot the bird near Constantinople, was of the same opinion. This specimen is rather smaller than average examples of *Syrnium aluco*, and is nearly black; but in a favourable light one can see traces of the markings characteristic of that species, showing faintly, like the nearly obsolete spots on the skin of a black leopard.

Coracias indica (Linn.).

A single mounted specimen of the Indian Roller is in the collection, which is stated to have been shot on the railway-

line on the Asiatic side of the Bosphorus, between Haider Pacha and Ismidt. Mr. William Pearse, of Haskeui, who is engaged in obtaining specimens to supplement the series, told us that he received the skin of the bird when quite fresh, and that it was shot in company with a flock of the common Roller (*C. garrula*). The Indian Roller is already known to occur on the Persian Gulf. Sclater has examined specimens obtained at Bunder Abbas by Doria in 1862, now in the Civic Museum of Genoa; and Mr. Blanford, we believe, likewise met with it in Southern Persia; so that its occasional occurrence in Asia Minor is not very surprising. *Halcyon smyrnensis* has, we know, a somewhat similar range.

Ruticilla mesoleuca (Hempr. & Ehr.) (?).

The collection contains a stuffed specimen of a Redstart closely resembling the ordinary *R. phœnicurus*, but having less white on the forehead, and a conspicuous white wing-patch, formed by a narrow external white edging to the inner primaries and the secondaries. It would seem to belong to the form called *mesoleuca* by Hemprich and Ehrenberg, of which Messrs. Blanford and Dresser have given us an account in their excellent article on Hemprich and Ehrenberg's types (Ibis, 1874, p. 343). Mr. Pearse informs us that the bird was captured by bird-lime near Haskeui, in the autumn of 1874.

A skin of the same form, or nearly so, obtained by Dr. Krüper near Smyrna, is in Taylor's collection. Whether this bird is fairly separable from *R. phœnicurus* is perhaps doubtful; but whatever view may be taken of it, the form certainly occurs occasionally within European limits.

Terekia cinerea (Guld.); Degland & Gerbe, Orn. Eur. ii. p. 171.

Although this Wader is a well-known inhabitant of Eastern Europe, we are not aware that its occurrence in Turkey has been recorded. Mr William Pearse, of Haskeui, shot a pair of these birds near the Sweet Waters last summer, which are now in the Bebek collection. The species would appear to

be scarce hereabouts, as Mr. Pearse, who has an extensive practical acquaintance with the ornithology of the district, was not acquainted with it, and had not previously met with specimens.

IX.—*Notes on a 'Catalogue of the* Accipitres *in the British Museum,' by* R. Bowdler Sharpe (1874). By J. H. Gurney.

[Continued from vol. v. p. 370.]

(Plate III.)

Mr. Sharpe places at the head of his subfamily "Buteoninæ" the "Radiated Goshawk" of Gould's 'Birds of Australia,' under the title of "*Urospizias radiatus*."

I have already pointed out (Ibis, 1875, p. 364) that the generic name of *Urospizias* is not properly available for this species; and Mr. Sharpe has subsequently applied to it the new generic appellation of "*Erythrotriorchis*," which had been suggested as a suitable substitute (*vide* Notes by R. B. Sharpe on the rarer Accipitres of Australia, in P. Z. S. 1875, p. 337).

The two measurements given in Mr. Sharpe's Catalogue as those of a male and female of this species, have evidently both been taken from male birds; and in the paper above referred to, Mr. Sharpe corrects this inadvertence, and gives the measurements of an actual male and female, recently obtained by the British Museum from the interior of Queensland, together with a description of the female, which is in immature plumage, a stage in which this species had not been previously described.

Having myself had a recent opportunity of measuring an adult female of this rare Hawk, I may here add a note of its dimensions, viz. wing from carpal joint 16 inches, tarsus 3·5, middle toe s. u. 3.

I have never examined a skeleton of this species; but the considerable difference in size between the sexes, and the great prolongation of the middle toe, lead me to doubt whether Mr. Sharpe has taken a correct view in placing it among the Buzzards, instead of allowing it to remain among the Hawks,

where a place had been assigned to it in the most recent systematic works of Gould, Schlegel, and G. R. Gray.

The second genus in Mr. Sharpe's arrangement of the Buteoninæ bears the title of *Heterospizias*, under which name Mr. Sharpe has separated, and, I think, legitimately, *Falco meridionalis* of Latham, a species which has been referred to no less than ten different genera by previous ornithological authors.

Mr. Sharpe places the genus *Tachytriorchis* third on his list; but it will be convenient for my purpose to postpone its consideration till after I have referred to the first species enumerated by him as belonging to the genus *Buteo*, the so-called "Chilian Sea-Eagle"*.

I quite agree with Mr. Sharpe in placing this fine species in the Buteonine subfamily; but I think it sufficiently distinct to make it advisible to retain for it the subgeneric name of *Geranoaëtus* proposed by Kaup, and adopted by some subsequent authorities, amongst the most recent of whom are Messrs. Sclater and Salvin, in their 'Nomenclator Avium Neotropicalium,' p. 119.

According to D'Orbigny ('Voyage dans l'Amérique Méridionale,' Oiseaux, p. 77), this species does not attain its full plumage till it has reached its fourth year; and its intermediate stages are described in considerable detail by that careful observer; but neither he nor Mr. Sharpe mentions a phase of plumage which occurs when the bird has nearly completed its progress towards maturity†, and which I will therefore describe from a specimen in the Norwich Museum, a female, obtained in Ecuador:—Upper surface as in Mr. Sharpe's de-

* *Vide* 'Gardens and Menagerie of the Zoological Society,' 1831, p. 85, also 'Revised List of the Vertebrated Animals in the Gardens of the Zoological Society,' 1872, p. 214.

† This phase does not occur in the case of every individual, and perhaps only in the females—as a young male from Chili, in the Norwich Museum, is evidently changing from the plumage designated by Mr. Sharpe as "young" into that which he defines as "adult," without passing through the intermediate stage to which I have here alluded. In the normal adult female the slaty black on the chest extends about an inch lower than it does in the adult male.

scription of the adult; the slaty black of the breast without any whitish tips to the feathers, and extending down to the extremities of the under tail-coverts, and over all the intermediate parts except the thighs, but intermingled on the abdomen with a few mottled feathers of two shades of grey, and with the under tail-coverts inconspicuously tipped with grey; the thighs clothed with mottled grey feathers, which, for the most part, resemble those interspersed amongst the black plumage of the abdomen; but in some of them the mottlings have already begun to assume the arrangement of the transverse markings with which, in the succeeding stage, all the tibial feathers are barred, in common with the remainder of the under surface except the chest.

In the succeeding stage the bird bears a remarkable general resemblance in its coloration and markings to its somewhat more northern and much scarcer ally, *Leucopternis princeps*.

In very old males of *Geranoaëtus melanoleucus* (and possibly in old females also; but of this I am not sure) the transverse bars of grey entirely disappear from the whole under surface, except the wing-linings, the flanks where covered by the wings, and the under tail-coverts; in such specimens the portions of the plumage from which these bars have disappeared are then pure white.

I think that Mr. Sharpe is mistaken in stating that the white tips to the grey feathers of the breast are "the remains of immaturity," as I have met with them in very old individuals, and do not recollect having ever seen an adult specimen in which they were absent; in some adult examples these white tips are to be found on several of the interscapulary feathers as well as on the breast.

I may add that those portions of the upper surface in the adult bird which Mr. Sharpe describes as black are all slightly tinged with slate-colour; so that they may perhaps be more correctly described as "slaty black" than as "black" simply.

To return to the genus *Tachytriorchis*, Mr. Sharpe, following the late Dr. Kaup, separates under this title two species, *Buteo albicaudatus* and *B. abbreviatus*; but as I greatly doubt whether these two species really follow each other in natural

sequence, I propose to treat them both as comprehended in the genus *Buteo*, that genus being one which consists of an aggregation of several natural subgeneric groups, easy to perceive in studying the genus, though difficult to define by any characters save such as chiefly rest on peculiarities of coloration and markings at different ages.

Mr. Ridgway, in an able paper to which allusion has already been made in an editorial notice in 'The Ibis' for 1875, p. 500, proposes that the genus *Craxirex* should be used to include all those Buzzards which have "only three of the outer primaries emarginated on their inner webs;" but I fear that this is scarcely a character which can be satisfactorily used as a basis of generic or subgeneric distinction, inasmuch as it occasionally happens that the outline of the fourth primary varies somewhat as to the degree in which it is emarginated, or sinuated, in different individuals of the same species; and this is especially the case in *Buteo erythronotus*, in which most of the specimens which I have examined have had the fourth primary distinctly emarginated, though I have seen two examples in which the emargination was barely visible; and the latter seems to have been the case with the specimens examined by Mr. Ridgway, since he includes this species amongst those which have but three emarginated primaries, as he also does *B. poliosomus*, of which I have never examined a specimen with less than four primaries distinctly emarginated.

In considering the genus *Buteo* in the extended sense to which I have just alluded, I propose to commence by referring to *B. erythronotus*, and to those species which appear to me to be its nearest allies.

Mr. Sharpe gives the length of the wing in the female of *B. erythronotus* as 18·5 inches, which I think must be a misprint, as in the largest female that I have measured the length from the carpal joint to the tip of the wing is only 16·5.

From an examination of the series of specimens of this Buzzard in the Norwich Museum, I am led to believe that the male bird passes through three distinct phases of plumage, the first being that which is described by Mr. Sharpe as "young," and which is common to both sexes, the second

resembling the dress of the adult female, and the third that which Mr. Sharpe correctly designates as the plumage of the "adult male."

Mr. Sharpe includes *Buteo varius* of Gould amongst the synonyms of *B. erythronotus*—which I am able to confirm, as the type specimen is now in the Norwich Museum, and is an immature example of this species.

There is also included amongst the synonyms of *B. erythronotus* in Mr. Sharpe's work *Buteo unicolor* of D'Orbigny; but this I am convinced is a mistake, as the Buzzard described by D'Orbigny under that name is decidedly smaller than *B. erythronotus*, and very differently coloured.

In the list given by Mr. Sharpe of the specimens of *B. erythronotus* preserved in the British Museum, there is included an immature skin from the island of Masafuera, that should no doubt be referred to the very interesting allied species *Buteo exsul*, which has only been obtained on that island, and which, subsequently to the publication of Mr. Sharpe's volume, has been described by Mr. Salvin at page 371 of 'The Ibis' for 1875.

Messrs. Salvin and Godman have very kindly permitted me to examine their specimens of this fine Buzzard; and I have thus been enabled to observe that the white margins to the lesser wing-coverts and interscapulary feathers are broader and more numerous in the adult female than in the adult male; but, beyond this remark, I have nothing to add to the full description which Mr. Salvin has already published, except to note that in this species the fourth primary is but very slightly emarginated.

Another species closely allied to *Buteo erythronotus* is *Buteo poliosomus*. The first plumage of this Buzzard is not described in Mr. Sharpe's work; and I therefore propose to give some particulars respecting it, taken from three specimens in that stage obtained in the Falkland Islands, and now preserved in the Norwich Museum. These bear a general resemblance to the corresponding plumage of *B. erythronotus*, but are much more fuliginous in the tone of their colouring. On their upper surface the scapulars, interscapulars, and wing-

coverts, especially the latter, exhibit a considerably larger proportion of fuliginous markings, and a proportionately smaller admixture of fulvous spots, than are to be found in the young of *B. erythronotus*, in contrast with which there is, however, in the young of *B. poliosomus*, a conspicuous nuchal patch of pale luteous, varied by dark brown shaft-marks in the centre of each feather.

On the under surface the young *B. poliosomus* is by far the darker bird of the two, except as regards the throat, which is of an equally deep brown in both species. In the first plumage of *B. poliosomus* the entire colouring of the underparts of the body is dark fuliginous brown, with the exception of narrow fulvous edgings to the feathers on the throat, of some small fulvous spots on the sides of the breast and abdomen, and of similar but larger spots on the thighs and under tail-coverts. The tail is alike in both species.

The specimen described by Mr. Sharpe as a "female (? in changing plumage)" appears from its dimensions to be more probably a male not fully adult*; and this circumstance, combined with the fact that a very nearly adult male from Chili (in the Norwich Museum) still retains slight rufous tips to some of the feathers on the sides of the neck, leads me to believe that in this species, as in *B. erythronotus*, the male assumes a plumage resembling that of the adult female, intermediately between its first dress and the final stage of its adult coloration.

I believe that the plumage described by Mr. Sharpe as "adult" is that of the adult male only, and that the adult female is always rufous on the back, and more or less so on the under surface also.

Assuming this view to be correct, the following are the measurements of two males and four females preserved in the Norwich Museum, all of which are either nearly or fully adult:—

* The "blackish" tint of the slate-coloured parts of the plumage in this specimen is indicative of its not being a fully mature bird, the slate-coloured portions of the plumage being a clear grey in fully adult birds of both sexes.

	Wing from carpal joint. inches.	Tarsus. inches.	Middle toe, s. u. inches.
Males.....	14·9 to 15	3·2 to 3·5	1·6 to 1·8
Females	15·8 to 16·4	3·25 to 3·5	1·6 to 1·8

In one of these females the entire head, throat, sides and front of neck, and upper breast are clear unbroken slate-colour; the hinder neck, mantle, and upper scapulars rufous; the lower scapulars rufous mingled with slaty, most of the last-named feathers being particoloured, with the shafts slaty, and with that tint spreading, on the feathers nearest the wing, to the right of the shaft, and on those nearest the centre of the back to the left of the shaft; the remainder of the upper portion of the plumage resembles that of the adult male, except that the interspaces between the dark transverse bars on the tertiaries are white instead of pale grey; the lower breast, abdomen, and sides are rufous, darker than the mantle, and slightly mingled with slaty; the under tail-coverts slaty, transversely barred with white, and the thighs entirely slate-coloured.

Another female, shot from the nest in the month of October, differs from the above in having the whole under surface, from the chin to the vent, dark rufous; this, however, is mingled and tinged with a dark slaty hue on the upper breast and on the abdomen, but not on the lower breast.

A third female resembles that last described, but with a larger admixture of slate-colour on the under surface. This specimen was marked as a female by the collector, who has also attached to it a memorandum that the irides were "reddish brown."

The fourth female much resembles the second, but still retains on the wing-coverts the fuliginous plumage of its immature dress.

Passing on to the consideration of *Buteo albicaudatus*, I may observe that though this species in its adult plumage exhibits a remarkable general resemblance to *B. erythronotus*, it always differs from that Buzzard in three particulars, viz. that the rufous on the back never extends to the interscapulary feathers, that it is common to the adults of both sexes,

and that the wings reach up to or slightly beyond the extremity of the tail.

Mr. Sharpe describes the "general plumage" of the young birds of this species as "black;" but in the youngest specimens which I have seen its colour is dark brown, which subsequently deepens into black in the intermediate stage, and ultimately passes from black to slate-colour when the bird assumes its fully adult dress; the "rufous spots" on the scapulars, and the similarly coloured margins of the lesser wing-coverts, spoken of in Mr. Sharpe's description of the "young" bird, are indicative of the commencement of the second stage of plumage, being absent in the first phase of coloration which this species assumes; the second plumage, when more completely developed, exhibits a deeper tint of rufous than exists in the fully adult bird, and often extending over a large scapulary area, the rufous feathers being also variegated, in this stage, by broad blackish shaft-marks.

Mr. Sharpe, in his description of the young bird, mentions the lores as being "conspicuously white;" this white, or yellowish white spot, which I should rather describe as covering the parotic region, seems always to disappear when the second stage of plumage has been fully attained.

Messrs. Salvin and Godman's collection contains a specimen in the first stage of plumage from the Pacific slope of Guatemala, in which the fuliginous colouring so greatly predominates over the fulvous on the under surface, as to be almost unbroken from the chin to the vent; but it is more usual in individuals of that age to find the under surface more or less variegated, as indicated by Mr. Sharpe.

In describing the adult plumage, Mr. Sharpe alludes to the axillaries as being "sometimes tinged with rufous." I have never met with this in fully adult specimens; but in the penultimate stage a rufous tinge more or less pervades not only the axillaries, but also the under wing-coverts and the sides of the body; on all these parts the rufous tints are more or less mingled with black, forming transverse bars of intermixed dark coloration with white interspaces between them. At this stage a somewhat similar transverse barring exists on the

abdomen, and a paler brownish barring on the thighs; but both these parts are ultimately of a pure white.

The collection of Messrs. Salvin and Godman and that of the Norwich Museum both comprise specimens of a Buzzard from tropical South America nearly related to *B. albicaudatus*, but principally differing from that species by a peculiarity somewhat resembling that which distinguishes *B. poliosomus* from *B. erythronotus*, viz. the slaty colouring of the underparts in the adult plumage. This Buzzard is not mentioned in Mr. Sharpe's work; but Mr. Salvin agrees with me in considering it to be a distinct species, and has suggested for it the specific name of "*B. hypospodius*," which I propose to adopt as appropriately characteristic of the peculiar coloration of its under surface.

I subjoin a description of the examples of *Buteo hypospodius* which have come under my notice, premising that in this species the characters of the legs, feet, and wings resemble those of *B. albicaudatus*: the upper part of the tarsus is feathered in front for about an inch; the wings have the three first primaries only emarginated; the third primary is the longest; but the fourth nearly equals it, and in some specimens is not perceptibly shorter.

The first three specimens to which I shall allude are in the collection of Messrs. Salvin and Godman; the remaining three are preserved in the Norwich Museum.

No. 1, from Medellin, in New Granada, has the entire head, neck, and throat of a dark slate-colour, the scapulars and interscapulars a little paler, the former with broad brownish grey tips to most of the feathers, the latter with similarly coloured tips, but narrower, and with concealed white bases to the feathers; the lower back and rump are of a similar slate-colour, which becomes paler as it approaches the tail-coverts, and is crossed with alternate but irregular transverse bars of grey and white on the basal portions of the feathers; the upper tail-coverts are white, with dark shaft-marks and dark grey transverse bars, the latter narrowest on the feathers nearest the tail; the general colour of the upper surface of the wings is slaty, darkest on the lesser and middle wing-coverts, where

most of the feathers show narrow indistinct brownish tips; the primaries are black below the level of the emargination, above which they are crossed with irregular alternate bars of darker and lighter grey; the secondaries and tertiaries are similarly but more regularly barred throughout, and with the paler bars darker than those on the primaries; all the secondaries and tertiaries have a broad dark tip, narrowly edged at the extremity of each with a shade of pale brown, which is also just perceptible on the tips of the primaries; the tail is white, but with a tinge of grey on the external webs of all the rectrices except the central ones, this tinge being deepest on the outermost pair, the tail is also barred with eight narrow and irregularly dark transverse lines, which are more distinct on the outer than on the central rectrices, and least so on the latter as they approach the upper tail-coverts; below these transverse lines there is a broad black band, succeeded by a much narrower band of greyish brown, below which the tail is narrowly tipped with white.

The breast and wing-linings are of a slate-colour, resembling that of the head, neck, and throat; the feathers of the bastard wing are barred on their under side with alternate markings of darker and lighter grey, succeeded by a dark slaty tip; the outer axillaries are dark grey, the inner axillaries similar, but with irregular white transverse bars divided by dark shaft-marks; the under surface of the remiges resembles the upper surface, but with the inner webs near the base finely mottled with intermingled white and grey; the abdomen and thighs grey, but with many of the feathers, especially on the thighs, transversely barred with white; the under tail-coverts resemble the upper tail-coverts, both in colour and in markings.

No. 2, from the mountain region of Merida, in Venezuela, and marked as a female by the collector, only differs from No. 1 in the following particulars, viz.:—the lesser wing-coverts and scapulars, especially the former, are tinged with rufous, which also appears, though less decidedly, on the rump, bastard wing, axillary feathers, and abdomen; the thighs are dark rufous, crossed by narrow bars of white, the

latter being most distinct on those feathers which overhang the upper portion of the tarsus; on the outer sides of the thighs the rufous is mingled with transverse bars, not only of white, but also of dark and pale grey; the under tail-coverts are crossed by alternate bars of rufous and white.

No. 3, from the same district of New Granada as No. 1, resembles No. 2, but exhibits a considerable amount of deep rufous on the upper portion of the wing-lining, the rufous feathers in that part having blackish shaft-marks of varying breadth, and the broadest of these being situate below the carpal joint. In this specimen the rufous on the thighs does not assume the arrangement of transverse bars.

No. 4, from Venezuela, and marked as a female by the late M. Jules Verreaux, resembles No. 2; but the rufous portions of the plumage are not so strongly tinged with that colour, except on the thighs; the wing-lining also exhibits some rufous, but much less than is the case in No. 3. It also differs from No. 2 in the absence of rufous from the under tail-coverts, some of which are barred alternately with white and grey, also in having white interspaces between the transverse bars on the inner webs of the tertiaries, and in the grey tint of the tail being diffused over the central as well as the lateral rectrices.

No. 5, from the river Amazons, but without any more definitely known locality, differs from No. 1 in having all the parts which in that specimen are of different shades of slaty grey, black with only a very slight tinge of slate-colour (though the transverse bars on the wings are discernible in two different shades of slaty black), also in having no white transverse bars on the abdomen and thighs (the latter of which show in places a very slight tinge of rufous), in the transverse bars on the tail, as well as those on the upper and under tail-coverts, being broader, darker, and more distinct, and, lastly, in the interspaces between the transverse bars on the inner webs of the tertiaries being more or less entirely white.

No. 6, from Brazil, but from what part of that country I am unable to say, resembles No. 5, except that the slaty black plumage of the breast is slightly tinged with rufous brown,

and that the scapulars are crossed with concealed transverse bars of white and pale grey, some of which are also slightly tinged with rufous.

The following are the comparative dimensions of the six specimens above described :—

	Wing from carpal joint.	Tail.	Tarsus.	Culmen from cere.	Middle toe, s. u.
No. 1	16·7	6·8	3·4	1·1	1·75
No. 2	16·5	6·9	3·5	1·1	1·7
No. 3	16·8	7·1	3·6	imperfect.	1·6
No. 4	16·8	7·1	3·4	1·1	1·7
No. 5	17·7	7·1	3·4	1·1	1·7
No. 6	16·6	7·1	3·6	1·1	1·5

Nos. 1 and 2 have been portrayed in the annexed plate (Plate III.), which will assist the reader in recognizing this interesting Buzzard.

I believe that the first plumage of *Buteo hypospodius* is still undescribed, that Nos. 5 and 6 in the above list are in the second plumage, Nos. 2, 3, and 4 in the third plumage, and No. 1 in the fourth. I would further hazard a conjecture that the fourth plumage will prove to be attained by the males only, and that the third plumage will be found, though common to both sexes, to be the final dress of the female.

The five species to which I have just referred, *Buteo erythronotus, B. exsul, B. poliosomus, B. albicaudatus,* and *B. hypospodius,* appear to me to form a natural group, for which the name of *Tachytriorchis* might, I think, be conveniently retained, and legitimately so, as it embraces the species *B. albicaudatus,* which was the only one originally included by Kaup under that subgeneric title.

Nearly allied to this group, but, I think, not properly to be included in it, is the curious *Buteo galapagensis,* for the reception of which Mr. Gould instituted his subgenus *Craxirex.*

I have nothing to add to Mr. Sharpe's account of this species, except to remark that the sexes differ in size only, and not in coloration, that being a point to which Mr. Sharpe does not in this instance refer.

[To be continued.]

J. G. Keulemans lith.

M & N. Hanhart imp.

BUTEO HYPOSPODIUS.

X.—*Notes on Severtzoff's 'Fauna of Turkestan'* (*Turkestanskie Jevotnie*). By H. E. Dresser.

[Continued from vol. v. p. 342.]

Not long after the former portion of this paper was published in last year's 'Ibis,' I received a visit from Dr. Severtzoff himself, who came over here for the purpose of looking over my collection of Palæarctic birds, and of comparing some of his specimens which he brought with him. During his stay I had an opportunity of going through his work with him; and he also spent some time in adding MS. notes to my copy of his work, of which I make use in the following article.

127. Ruticilla phœnicurus (L.); Severtzoff, p. 65.

Horizontal range. Occurs on passage in districts I., II., III., and IV., and breeds in all but the last.

Vertical range. Is found on passage in district 2, breeds in districts 3 and 4, and is a summer visitant to district 5.

128. Ruticilla semirufa, Ehrenb.

Ruticilla erythroprocta, Gould; Severtzoff, p. 65.

Horizontal range. Breeds in districts II., III., and IV.

Vertical range. Occurs on passage in district 2, and breeds in districts 3 and 4.

Dr. Severtzoff informed me that he had compared his birds with Ehrenberg's type of *R. semirufa*, and that they are certainly specifically identical.

129. Ruticilla erythrogastra, Güld.; Severtzoff, p. 65.

Horizontal range. Breeds in districts I., II., and IV., occurs in winter in districts III. and IV., though rarely in the former, and has been met with on passage in district III.

Vertical range. Is found on passage in district 2, breeds in districts 3 and 4.

130. Ruticilla erythronota, Eversm.; Severtzoff, p. 65.

Horizontal range. Breeds commonly in districts I. and II., less so in district IV., and may breed in district III.; during winter it is found in districts III. and IV.

Vertical range. Is found on passage in district 2, breeds in

districts 3 and 4, and possibly in 5, and is found in winter in district 2, and possibly also in district 3.

131. Ruticilla cærulocephala (Vigors).

Ruticilla lugens, Severtzoff, pp. 65, 121.

Horizontal range. Breeds in district I., and is rare on passage in district III.

Vertical range. Is found on passage in districts 2 and 3, rarely in the former, and breeds in district 4.

Severtzoff gives a detailed description of both sexes of this bird, which I need not reproduce, as he now identifies it with the plate in Henderson and Hume's 'Lahore to Yarkand' (pl. xiv. p. 211).

Ruticilla aurorea? Pall.; Severtzoff, p. 65.

This species, which is included with a note of interrogation, is stated, with a query, to breed in district I. in the horizontal, and in districts 2 and 3 in the vertical range.

132. Calliope pectoralis, Gould.

Calliope baillonii, Severtzoff (*C. pectoralis*? Gould), pp. 65, 122.

Horizontal range. Breeds in districts I. and IV.

Vertical range. Breeds in districts 3 and 4.

At page 122 Dr. Severtzoff gives a description of the bird obtained by him, which clearly shows that it is identical with Mr. Gould's species. I may, however, mention that Dode brought a specimen of *Calliope camtschatkensis*, which he said was obtained by Dr. Severtzoff in Turkestan. This specimen I have examined and compared with examples from China and the Ural.

133. Cossypha gutturalis (Guér.).

Irania albigula, nob. (*Bessonornis gutturalis*, Guér.?), Severtzoff, pp. 65, 122.

Horizontal range. Breeds in districts III. and IV., and is found on passage in district III.

Vertical range. Is found on passage in district 2, and breeds in district 3.

Dr. Severtzoff states (p. 122) that in Turkestan there are

three forms of the present species, which he describes, but without giving them separate names. I have carefully read these descriptions, and cannot but think they refer to but one species, especially as he adds that he has found many intermediate examples.

134. Sylvia nisoria, Severtzoff, p. 65.

Horizontal range. Breeds and occurs on passage in districts I., II., III., and IV.

Vertical range. Occurs on passage in district 2, and breeds in districts 3 and 4.

135. Sylvia rufa, Bodd.

Sylvia cinerea, Severtzoff, p. 65.

Horizontal range. Breeds in districts I., II., III., and IV.

Vertical range. Breeds in districts 1 and 3, and occurs on passage in district 2.

136. Sylvia curruca (L.); Severtzoff, p. 65.

Horizontal range and *vertical range* similar to those of *Sylvia rufa.*

137. Hypolais languida, Ehr.

Sylvia magnirostris, Severtzoff, pp. 65, 123.

Horizontal range. Breeds and is found on passage in district III.

Vertical range. Is found on passage in district 2, and breeds in district 3.

Dr. Severtzoff informs me that after comparing his specimens with the type of *H. languida* in the Berlin Museum, he has no doubt as to their being identical. He also points out to me that the bird I described (Ibis, 1874. p. 420) under the name of *Acrocephalus sogdianensis*, is a true *Hypolais*, closely allied to *H. languida*, but differing in the arrangement of primaries and length of the wing; and judging from the variation in specimens of *H. languida* obtained by him, he thinks it not improbable that the two (*H. languida* and *H. sogdianensis*) may prove to belong to the same species.

138. Sylvia orphea, Temm.; Severtzoff, p. 65.

Horizontal range. Breeds and occurs on passage in district III.

Vertical range. Occurs on passage in district 2, and breeds in district 3.

139. Sylvia mystacea, Mén.; Severtzoff, p. 65.

Horizontal range. Breeds in districts III. and IV.

Vertical range. Breeds in districts 1 and 2.

Dr. Severtzoff assures me that he has good reason to believe that Ménétriés's *S. mystacea* is really specifically distinct from *S. subalpina*, although Ménétriés himself afterwards considered them to be identical. I have therefore treated *S. mystacea* as a distinct species, although I have doubts as to the propriety of so doing.

140. Sylvia nana (Ehr.).

Atraphornis aralensis (Eversm.); Severtzoff, pp. 65, 124.

Horizontal range. Breeds in district III.

Vertical range. Breeds commonly in district 1, and is found, though rarely, in summer in district 2.

At page 124 Dr. Severtzoff writes as follows :—"I may add that the iris of this species is yellow. It does not frequent the reeds, but the most arid desert places, which are covered with bushes of *Haloxylon ammodendron* or *Atraphaxis*, where it runs about on the ground and picks up small insects. The generic term *Atraphornis* I have given to this bird on account of its predilection for the latter plant; and I separate it from *Salicaria* on account of its habits, its white legs, yellow iris, and sharp bill. The young differ from the old birds only by having the plumage softer, and are a little lighter."

He further describes a species (at p. 121) under the name of *Atraphornis platyura*, which he now informs me is identical with *Drymœca inquieta*, Rüpp., which stands under the name of *Drymœca gracilis* (Licht.). This species, he says, "does not occur in Turkestan, but in the south-western part of Turcomania. In 1859 it was found on the western shores of the Caspian."

141. Aedon familiaris, Mén.

Aedon galactodes, var. *familiaris*, Severtzoff, p. 65.

Horizontal range. Breeds in districts III. and IV.

Vertical range. Breeds in districts 1 and 3, and is found on passage in district 2.

142. Phylloscopus superciliosus (Gm.).

Ficedula superciliosa (Cab.); Severtzoff, p. 65.

Horizontal range. Breeds and is found on passage in districts I., II., III., and IV.

Vertical range. Is found on passage in district 2, and breeds in districts 3 and 4.

143. Phylloscopus viridanus (Blyth).

Ficedula middendorffi, Meves; Severtzoff, pp. 65, 125.

Horizontal range. Breeds and is found on passage in districts I., II., and III.

Vertical range. Occurs on passage in district 2, and breeds in district 3.

At page 125 Dr. Severtzoff writes as follows:—"Turkestan specimens of this bird differ so much in the form of the bill, that I deem it best to refer those with the broad bill to *Hypolais*, under the name of *H. graminis*, and those with the narrow bill I call *Phyllopneuste intermedia*, as being an intermediate form between the former species and *P. superciliosa* (Cab.), as my *Ficedula middendorffi* is intermediate between *Hypolais* and *Phyllopneuste*. The descriptions of these two forms are as follows:—

"*a.* var. *intermedia*. Bill narrow at the base, and at the nostril its breadth is equal to its height; one third of the bill is broader than it is high, and two thirds narrower; thus it is awl-shaped; quills 3=1>5>6>2>7; first primary short, being twice as long as the coverts; tail even. Length 4″ 8‴–4″ 9‴, extent 7″ 2‴, wing 2″ 4‴, tail 1″ 9½‴, tarsus 7½‴, middle toe 4‴, culmen 3½‴, breadth of bill at the nostril 1‴.

"*b.* var. *hypolania* (*Hypolais graminis*, nob.). The bill narrows gradually from the base to the point, as in *Hypolais*, being narrower than in that group, but broader than in true *Phyllopneuste*; the wing is blunt, first primary short, nearly twice as long as the coverts, 3=4>5>6>7>2>8, or 3=4, 2=7, or the 4th the longest, 3=5>7>2>8, or 4=5, 3=6, 2=9; the latter form, with a very blunt wing, was a spring-

killed bird, and the first quill may not have been fully grown; tail short, and a little forked, the middle and exterior rectrices $\frac{1}{2}'''$, shorter than the 3rd, which is the longest. Length 4″ 7‴–5″, extent 7″–7″ 6‴, wing 2″ 3$\frac{1}{2}'''$–2″ 5‴, tail 1″ 7‴–1″ 9‴, tarsus 7‴–7$\frac{1}{2}'''$, middle toe 4$\frac{1}{2}'''$, culmen 4‴ in the male, and 3$\frac{2}{3}'''$ in the female; breadth of the bill at the nostrils 1$\frac{1}{2}'''$, height $\frac{1}{4}'''$."

He further remarks that this form is subject to extreme variation, both as regards the wing and the bill, and adds that Mr. Meves, after having compared his specimens, identified them with his *P. middendorffi* (which = *P. viridanus*, as I can positively state, having compared Mr. Meves's specimens with examples from India). This species, Dr. Severtzoff writes (*l. c.*), "was found by me throughout the Thianshan and Karatau, viz. the variety *intermedia* in the valley of Cora, near Copal, in the Alexander Mountains, not far from Aulje-ata, and at Karatau; but this form is rare. The var. *hypolania*, and specimens intermediate between this and the other, were more numerous in the Karatau and at the foot of the Thianshan range; both forms frequented grass-steppes in the plains or at the foot of the mountains."

144. Phylloscopus indicus (Jerdon).

Ficedula obscura, Severtzoff, pp. 65, 124.

Horizontal range. Breeds and is found on passage in districts I., II., III., and IV.

Vertical range. Is found on passage in districts 2 and 3, breeds in district 4, and occurs in summer in district 5.

145. Phylloscopus tristis (Blyth).

Ficedula fulvescens, Severtzoff, pp. 65, 126.

Horizontal range. Common during passage in districts I., II., III., and IV.

Vertical range. Occurs on passage in districts 1 and 2.

At page 126 Severtzoff gives a detailed description, which I need not reproduce, as I have compared and identified his specimens. He further writes as follows:—"This bird is only a migrant in Turkestan, as also on the lower and central Ural and the Kirghis steppes. It has been obtained for the Mos-

cow Museum from Irkutsk, and probably breeds in Western Siberia and at Irkutsk."

146. Acrocephalus arundinaceus (Linn.).

Salicaria turdoides, Severtzoff, p. 65.

Horizontal range. Breeds sporadically in districts II., III., and IV.

Vertical range. Breeds in districts 1 and 2.

I may here name that Dr. Severtzoff informs me that *Acrocephalus brunnescens* was also found by him in Turkestan, though not included in his work.

147. Acrocephalus streperus (Vieill.).

Salicaria arundinacea, Severtzoff, p. 65.

Horizontal range. Breeds in districts I., II., III.

Vertical range. Breeds in district 1, and rarely in district 2.

148. Salicaria brevipennis, Severtzoff, pp. 66, 127.

Breeds in the Karatau mountains. At page 127 Severtzoff writes, "*Salicaria brevipennis*, nob., closely resembles *Salicaria arundinacea*; but the bill is smaller, the wing shorter and not so sharp, the tail slightly rounded, and in spring it is greyer and lighter in colour. The first primary is short, being twice as long as the coverts, the 3rd and 4th are equal, being the longest, the 2nd =7th, or is a trifle longer, but is shorter than the 6th; the head, nape, cheeks, back, shoulders, and rump are yellowish grey; wings and tail darker, being greyish brown, with yellow edges; lores yellowish white, and a superciliary stripe of the same colour extends to the ear; the entire underparts and under wing-coverts are whitish, tinged with yellowish brown, which is lightest on the throat. Total length 5″ 6‴–5″ 8‴, extent 7″–7″ 2‴, wing 2″ 2½‴–2″ 4‴, tail 1″ 9‴–2″, the outer tail-feathers 1‴ shorter than the central ones, tarsus covered with eight scutellæ and 7¾‴ long, middle toe 4¼‴, culmen 3¾‴; bill brown, lower mandible yellow at the base; legs grey, but yellow on the sole. This species is intermediate between *Salicaria arundinacea* and *Salicaria scita*, and, like the latter, is often found in grass steppes far from water. It was also found on the Thian-shan and Karatau mountains."

149. Salicaria capistrata, Severtzoff, pp. 66, 127.
Horizontal range. Breeds in district III.
Vertical range. Breeds in district 2.
At page 127 Severtzoff describes this bird as follows:—
"*Salicaria capistrata*, nob. Bill thin, with three bristles on each side at the base; tail rounded, tail-feathers narrow, the three outer rectrices shortened; wings short, 4th quill the longest, 3=5, 2=8, the 1st short, being equal to the coverts; entire upper parts olive-brown; eyebrows pure white; crown blackish brown; quills and larger coverts greyish brown, with lighter edges; throat white; underparts yellowish. Total length (of a skin) 5″ 1‴, wing 2″ 2½‴, tail 2″ 2‴, culmen 4‴. It is found in Turkestan and on the eastern shores of the Caspian."

150. Acrocephalus dumetorum (Blyth).
Salicaria magnirostris, Lilj.; Severtzoff, p. 127.
This species, which Severtzoff at page 66 includes under the name of *Salicaria palustris*, with a note of interrogation, he describes at page 127, from a specimen obtained at Karaburgaza on the 23rd May, as follows:—"First primary equaling the wing-coverts in length, 3=4>5>2>6. Total length 5″ 3‴, wing 2″ 3‴, tail 2″ 1½‴, culmen 5‴. Colour as usual."
He further describes (p. 128) a bird which he now informs me he believes to be true *Acrocephalus palustris*, as follows:—
"*Salicaria turcomana*, nob. ♂ in fresh plumage from the eastern part of the Caspian. Upper parts brown, shaded with yellow, cheeks and sides of the neck lighter; eyebrows indistinct; underparts light yellowish white; throat pure white; quills and tail brown, as in the preceding species, but the wings are longer, and the arrangement of the primaries is different. First quill equal in length to the coverts, 3rd longest, 2=4>5>6. One killed on the 18th July near Krasnovodsk Bay measures as follows:—Total length 5″ 2‴, wing 2″ 6‴, tail 1″ 9‴, culmen 5‴, tarsus 8‴."

151. Salicaria macronyx, Severtzoff, pp. 66, 128.
Horizontal range. Breeds in district III.
Vertical range. Breeds in district 1.

At page 128 Severtzoff writes as follows:—"Resembles No. 150; but its note is different, and it differs in lacking the light eyebrow, this being replaced by a white spot over each eye. It resembles *S. macroptera* in length of wing, but differs from it and No. 150 in having long distinctly scutellated legs and long toes, and the hind claw is as long and stout as the toe itself. First quill shorter than the coverts, 2=5, 3=4; bill smaller; tail rounded. Total length 5″ 6‴, wing 2″ 6‴, tail 2¼″, culmen 4½‴, tarsus 10‴, middle toe 5½‴, hind toe 3¼‴, the hind claw the same length. It inhabits the reeds on the Syr-Darja, where it is resident."

152. Salicaria eurhyncha, Severtzoff, pp. 66, 128.

Horizontal range. Breeds in districts I., II., and III.

Vertical range. Is found on passage in district 2, and breeds in district 3.

At page 128 Severtzoff writes as follows:—"I first obtained this bird at Mangishlack, on the eastern side of the Caspian; and it was also found in Turkestan. It inhabits the steppes or shores of the rivers, where there is grass or bushes; and it differs therefore from *S. macronyx* in habits, which species it otherwise closely resembles; but the underparts are whiter, the hind toe is very blunt, the bill is larger, broader, and thicker, and the arrangement of the primaries is different, viz. 4>3>5>6>2>7, sometimes 3=4=5. Total length 5″ 4‴, wing 2″ 5‴, tail 2″ 1½‴, culmen 5‴, tarsus 9‴. Turkestan specimens have nearly the same arrangement of quills, viz. 1st shorter than the coverts, 3=4>5>6>2>7, the exterior rectrices 3‴ shorter than the central ones; upper parts greyish olive-brown, greyer than in *A. palustris*; underparts and eye-stripe yellowish white, the latter commencing only from behind the eye, in which it differs at a glance from *palustris*, *macronyx*, and *macroptera*, as also by its larger size; bill brown, base of the lower mandible yellowish; legs grey. Total length 5″ 5‴–5″ 7‴ in the skin, and 6″–6″ 3‴ in the flesh, wing 2″ 4‴, tail 2″ 2‴, tarsus 8¾‴, middle toe 5‴, culmen 5‴, breadth of bill at nostril 1¾‴, height 1¼‴."

153. Salicaria sphenura, Severtzoff, pp. 66, 128.

Horizontal range. Breeds in district III.

Vertical range. Is rare in summer in district I, and breeds in districts 2 and 3.

At page 128 Severtzoff writes respecting this bird as follows:—"The tail is not only rounded, but even quite sharp, although the central rectrices are only 3‴ longer than the outer ones; for all the feathers are sharpened towards the tip in fresh plumage. The bill is very broad, like that of a Fly-catcher. 3rd quill longest, 2=6, 1st shorter than the coverts, or 5>2>6. Colour as in No. 147; but the breast is light yellow, not yellowish brown, and it has no superciliary stripe. Total length 6″–6″ 4‴, extent 8″–8″ 4‴, wing 2″ 6‴, tail 2″ 2½‴, tarsus 9‴, middle toe 5‴, culmen 4½‴, breadth of bill at nostril 1½‴–2‴, height 1‴. It inhabits woods along the Syr Darja, but is commoner in the bush and grass-covered banks of its tributaries to the altitude of 1000–4000 feet."

In concluding his remarks on the above birds (Nos. 147–153 inclusive), Dr. Severtzoff states that he believes them all to be forms of *Acrocephalus streperus*, and only deserving of subspecific rank, but that he deems it best to describe each form under a separate name. In this I quite agree, except that I think that at least *Acrocephalus palustris* and *A. dumetorum* should be looked on as distinct species. The same view may be taken of the following species, included under Nos. 154–160 inclusive, which appear to be all forms of *Hypolais caligata* and *H. rama*; and Severtzoff also informs me that this is the case; but still I have deemed it advisable to give his description of each form. In a note, Dr. Severtzoff says that in all probability Nos. 154, 155, 156, and 157 are all identical with *Hypolais rama*, Nos. 158, 159, and 160 being referable to *H. caligata*, but that, before he can positively state this to be the case, it will be necessary to make a critical comparison of his types.

154. Salicaria gracilis, Severtzoff, pp. 66, 130.

Horizontal range. Breeds in district III.

Vertical range. Breeds in district 1.

At page 130 the following description is given:—"Bill short and stout, nostrils broad and oval; upper parts, with wings and tail, olive-brown; eyebrows white; underparts white; breast and flanks greyish brown in tinge; iris brown; legs and lower mandible flesh-coloured, upper mandible brown; 4th rectrix the longest, the two middle and the outermost 2‴ shorter; 1st primary rather longer than the coverts, 2=8, 3=4=5, or 3=4=5, 7>2>8. Total length 5″ 3‴–5″ 5‴, extent 7″ 5‴–7″ 6‴, wing 2″ 3‴–3″, tail 2″ 2‴–2″ 3‴, culmen 3¾‴–4‴, tarsus 9‴. It inhabits the Syr Darja river, and frequents the thorn bushes; arrives in April, and remains to breed. Adult specimens were obtained directly after their arrival in spring; but we got none during the breeding-season, as they hide so closely in the bushes. In July they are seen about in company with their young."

155. Salicaria obsoleta, Severtzoff, pp. 66, 129.

Range. Same as No. 154.

At page 129 Dr. Severtzoff writes as follows:—"Only one specimen was obtained, near the Petroffsk fortress; for it is a very shy bird. Its bill resembles that of *S. pallida*; but there are ten scales on the tarsus, the first primary is twice as long as the coverts, 3>4, 2=5; thus the wing is more pointed. The tail is similar to that of *S. pallida*; but the outer rectrices are 1‴ shorter. It is darker and duller in colour; upper parts greyish brown; tail and wings rather darker, with light edges; superciliary stripe whitish; throat pure white."

156. Salicaria pallida, Eversmann, nec Ehr.; Severtzoff, pp. 66, 129.

At page 129 Dr. Severtzoff writes as follows:—"This bird inhabits the eastern shores of the Caspian, the central part of the Syr Darja, the Aris, Karatau, and the Thian-shan mountains. Bill small; tarsus with seven scutellæ; tail nearly even; quills 3>4>5>6>2>7, the 3rd, 4th, and 5th nearly equal, the 1st short, but twice as long as the coverts; upper parts yellowish brown; superciliary stripe whitish and reaching from the base of the bill to the eye; underparts

white tinged with brown; wings and tail dark olive-brown, with light edges. ♂. Total length in skin 5″ 1‴, in flesh 5″ 5‴, wing 2″ 5‴, tail 2″ 2‴, culmen 4‴. ♀. Total length 4″ 9‴ in skin, 5″ 3‴ in flesh, tail 1″ 9‴, wing 2″ 4‴."

157. Salicaria tamariceti, Severtzoff, pp. 66, 131.

Range. Same as No. 154.

At page 131 Dr. Severtzoff describes this bird as follows:—"Bill large, broad, and like that of *Hypolais*; middle rectrices 1½‴ longer than the outside ones; 1st primary longer than the coverts, 3=4, these being the longest, 2=7, and sometimes =6. Total length 5″ 3‴–5″ 5‴, extent 7″–7″ 3‴, wing 2″ 4‴–2″ 5‴, tail 2″–2″ 1‴, culmen 4½‴–5‴, tarsus 9‴."

158. Salicaria modesta, Severtzoff, pp. 66, 129.

Range. Same as No. 154.

At page 129 the following description is given:—"Bill small, head large, legs long, tarsus covered with eight scutellæ, 1st primary rather longer than the coverts, 3=4, 2=7, the 4th tail-feather the longest, the central one 1‴ shorter. In coloration similar to *S. obsoleta*, but the light eye-streak passes 2‴ beyond the eye."

159 Salicaria concolor, Severtzoff, pp. 66, 130.

Range. Same as No. 154.

This bird is described (p. 130) as follows:—"Bill slightly larger than in *S. gracilis*; outer tail-feather 3¾‴ shorter than the central ones; 1st primary rather longer than the coverts, 3=4, 2=6." Lighter in colour than *S. gracilis*.

160. Hypolais caligata (Licht.).

Salicaria scita, Eversm.; Severtzoff, pp. 66, 130.

Horizontal range. Breeds rarely in districts III. and IV.

Vertical range. Breeds in districts 2 and 3, rarely in the former.

Dr. Severtzoff's specimens, labelled *S. scita*, are, I find, undoubtedly referable to *H. caligata*; so I do not translate his description; but at page 130 he describes a subspecies under the name of *Salicaria scitopsis* as follows:—"Smaller than *S. scita*; bill thinner; tail shorter, the 4th rectrix the

longest; 1st primary twice as long as the coverts, 3=4=5>6>2>7; tarsus with eight scutellæ; upper parts greyish olive-brown; underparts much lighter, shaded with yellow; breast and flanks darker; wings and tail olive-brown, with lighter edges. Total length in flesh 4″ 8‴, wing 2″ 3‴, tail 1″ 9‴, culmen 3½‴, tarsus 8‴. Thus this bird has the bill of a *Phylloscopus*, the wings and tail of *S. tamariceti*, and the colour of *S. capistrata*. Only one was obtained, on board a steamer on the Caspian, on the 3rd of May, 1859."

161. Locustella luscinioides (Savi).

Cettia fusca, Severtzoff, pp. 66, 131.

Horizontal range. Breeds in districts III. and IV.

Vertical range. Breeds in districts 1 and 2.

Dr. Severtzoff describes this under the above name as a distinct species (p. 131); but he now informs me that he has, by comparison, found it to be nothing but Savi's Warbler.

162. Bradypterus cettii (La Marm.).

Cettia albiventris, Severtzoff, pp. 66, 131.

Horizontal range. Breeds in district III.

Vertical range. Breeds in district 3, and is found in district 2 on passage.

Although this was described (p. 131) by Dr. Severtzoff as distinct from our European Cetti's Warbler, he now informs me that he does not think it differs constantly, and that the name should sink into a synonym. He further states that it is the same as the somewhat larger eastern form of Cetti's Warbler, usually known under the name of *Cettia orientalis*, but which, he adds, cannot be specifically separated. When here, Dr. Severtzoff examined Mr. Hume's *Cettia stoliczkæ*, a specimen of which was sent over here to be figured; and in his notes he writes that it is identical with his *Cettia albiventris*, and is therefore, in his opinion, a bad species.

A mere variety or local form of the present species is the following, viz.:—

163. Cettia scalenura, pp. 66, 131.

Horizontal range. Breeds and occurs on passage in district III.

Vertical range. Breeds and is found on passage in district 2.

I need not transcribe Dr. Severtzoff's description of this bird (p. 131), as he sums the whole matter up in a note he has given me, in which he states that it is only "a Uralo-Kirghis, north-eastern variety of Cetti's Warbler, which cannot well be made out from a written description, but appeared to be distinct by comparison with Spanish specimens in the Berlin Museum, collected by Herr A. von Homeyer." This appears therefore to be a somewhat doubtful species.

At page 132 Dr. Severtzoff describes, under the name of *Cettia nigricans*, what he now informs me is merely a small rather dark form of *Locustella fluviatilis*. I need not, therefore, reproduce his detailed description, but only give the measurements as follows:—First primary equal in length to the coverts, 2nd quill longest, 3rd $\frac{1}{2}'''$ shorter than the 2nd, 4th $2'''$ shorter than the 2nd. Total length in skin $5'' 3'''$, in flesh $5'' 8'''$, wing $2'' 9'''$, tail $2''$, tarsus $9'''$, culmen $5'''$. The specimen in question flew on board a steamer near the eastern shore of the Caspian, on the 21st August, 1859, and was captured.

164. Acrocephalus schœnobænus (L.).

Calamoherpe phragmitis, Severtzoff, p. 66.

Horizontal range. Breeds and occurs on passage in district III.

Vertical range. Breeds in district 1, and occurs on passage in district 2.

165. Locustella nævia (Bodd.).

Acridiornis locustella, Severtzoff, p. 66.

Horizontal range. Breeds in districts I., II., and III.

Vertical range. Breeds in districts 2, 3, and 4.

166. Locustella lanceolata (Temm.).

Acridiornis lanceolata? (*A. straminea*, nob.), Severtzoff, p. 66.

Horizontal range. Is found on passage, and possibly breeds, in districts I. and III.

Vertical range. Occurs on passage in district 2, and possibly breeds in district 3.

167. Accentor atrogularis, Brandt; Severtzoff, p. 66.

Horizontal range. Occurs in winter in districts I., II., III., and IV., and breeds in districts I. and II.

Vertical range. Is found in winter in districts 2 and 3, and breeds in district 4, and possibly in 3.

168. ? Accentor montanellus (Pall.).

Accentor fulvescens, Severtzoff, pp. 66, 132.

Horizontal range. Is found in winter in districts I., II., and III., and breeds in districts I. and II.

Vertical range. Occurs in winter in districts 2 and 3—rarely, however, in the former; breeds in district 4, and possibly in district 5, as it is found there in summer.

Dr. Severtzoff's description of this bird suits closely my specimens of *A. montanellus*, and I should say that the species found by him must be this; but not having compared examples from Turkestan, I cannot speak with certainty, as there may possibly be some trifling difference in the Turkestan bird.

169. Accentor altaicus, Brandt; Severtzoff, pp. 66, 133.

Horizontal range. Breeds in districts I., II., and IV.

Vertical range. Breeds in districts 4 and 5.

Dr. Severtzoff states that the present species somewhat resembles *Accentor alpinus*, being its representative in Central Asia. He describes it as follows:—"Crown, nape, cheeks, sides and back of the neck, and fore and hind parts of the back greyish brown with an olive tinge; centre of the back, scapulars, and wings blackish, with rust-coloured edges; tail-feathers, except the central ones, with white ends on the inside of the feathers; throat white, with a narrow black stripe below; the sides marked with black spots; below the black stripe is a brownish bar across; rest of the underparts rust-coloured, with broad white edges; centre of the abdomen white; 1st primary very short, $4>3>2>5$, or $2=3=4$; central rectrices $1\frac{1}{2}'''$ shorter than the outer ones. Male—total length 7″, extent 11″, wing 3″ 7‴, tail 2″ 4‴, tarsus 9‴, middle toe

6‴, culmen 5‴, breadth of bill 2¼‴, height 2‴. Female—total length 6″ 6‴, wing 3″ 5‴, tail 2″ 2‴, culmen 4½‴, height of bill 1¾‴. *Accentor alpinus* is greyer; the lower throat is pure grey; breast, flanks, and underparts grey, with rust-coloured shaft-spots; the upper parts are similarly coloured to those of the above species; only the scapulars have rust-coloured edges, and the quills and tail-feathers have grey edges, the 3rd quill is the longest, the 4th=2nd. The bill of *A. altaicus* is black, the legs yellowish brown, whereas in *Accentor alpinus* the upper mandible is brown, and the lower one yellow.

170. Accentor montanellus (Pall.); Severtzoff, p. 66.

Horizontal range. Breeds in district I.

Vertical range. Breeds in districts 3 and 4.

171. Regulus cristatus, Koch; Severtzoff, p. 66.

Horizontal range. Breeds and is found in winter in districts I., II., and III.

Vertical range. Occurs in winter in districts 2 and 3, in the latter also on passage, and breeds in district 4.

172. Parus bokharensis, Licht.; Severtzoff, p. 66.

Horizontal range. Resident in districts I., II., III., and IV.

Vertical range. Resident in districts 1 and 2, rare in the latter.

173. Parus major, L.; Severtzoff, p. 66.

Horizontal range. Resident in district I.

174. Parus flavipectus, sp. nov., Severtzoff, pp. 66, 133, pl. viii. fig. 7.

Horizontal range. Breeds in districts I., II., III., and IV., rarely, however, in district I., and is found in winter in districts III. and IV.

Vertical range. Occurs in winter, though rarely, in district 2, and breeds in district 3, where possibly it is resident.

This is an undoubtedly good species, as I am able to state from an examination of specimens presented to me by Dr. Severtzoff. It is well figured by him, and may be described as resembling *Parus cyanus*, but smaller, and having the breast yellow. Total length 5″ 7‴, wing 2″ 5‴, tail 2″ 5‴, tarsus 6‴, middle toe 4‴, hind claw 2¼‴, culmen 3‴.

175. Parus cyanus (Pall.); Severtzoff, p. 66.

Horizontal range. Resident in district I.

Vertical range. Occurs in winter in district 2, and is resident in district 3.

176. Parus rufipectus, sp. nov. Severtzoff, pp. 66, 134.

Horizontal range. Resident in district I.

Vertical range. Occurs in winter in districts 3 and 4, and breeds in district 4.

At page 134 Dr. Severtzoff writes as follows:—"*Parus ater*, var. *rufipectus*, differs from the European species by the reddish brown coloration of the back and underparts; the breast, axillaries, and under tail-coverts are yellowish; the abdomen, flanks, and a broad stripe over the back light greyish brown: other parts as in *P. ater*; crown, hind neck, fore part of the back, and throat metallic black; centre of the back, shoulders, and rump bluish grey; quills and tail-feathers black, with bluish edges; wing-coverts tipped with brownish white, forming two bands across the wing; the three innermost secondaries white; bill black; legs lead-grey; 1st primary twice as long as the coverts, 2=10, 3>7, 4=5=6, or 2=8, 3=6, 4=5; the outer and two central rectrices are 1‴ shorter than the rest of the tail-feathers. Total length 5″, extent 7″ 4‴, wing 2″ 4½‴, tail 2″ 1‴, tarsus 6½‴, middle toe 3½‴, culmen 3¼‴.

177. Parus rufonuchalis (Blyth).

Parus melanolophus, Gould; Severtzoff, p. 66.

Horizontal range. Resident in district IV.

Vertical range. Resident in district 3, and possibly in district 4, where it breeds.

No description is given of this bird; but in the MS. notes inserted by Dr. Severtzoff in my copy of his work he has struck out the name *melanolophus*, and inserted in its place that of *rufonuchalis*, without further comment.

178. Parus songarus, Severtzoff, p. 66.

Horizontal range. Resident in district I.

Vertical range. Is found in winter in districts 3 and 4, and breeds in the latter district.

This bird, Severtzoff states, belongs to the same group as *Parus palustris, P. borealis, P. cinctus,* and *P. lugubris,* but differs from the last two as much as from *P. palustris.* The crown, nape, and hind neck are black, this colour extending to the centre of the back; throat black, the feathers edged with brownish white in autumn; cheeks dirty white, tinged with greyish brown; back, rump, shoulders, lower throat, breast, abdomen, and flanks, as well as the under tail-coverts, brownish, darkest on the shoulders, and lightest, almost white, near the black patch on the throat; wing-coverts and the three innermost secondaries dark brownish grey, with broad light edges, the remaining quills and the rectrices blackish brown; bill black, with greyish brown end and margins; legs dark bluish lead. First primary short, $4=5>6>7>3>8>9>2>10$, or $4=5=6>7>3>8>9>10>2$; the 4th and 5th rectrices longest, the central ones being 1‴ shorter, and the outer ones 2‴ shorter. Total length 5″ 6‴, extent 9″, wing 2″ 8‴, tail 2″ 5‴, tarsus 7½‴, middle toe 4½‴, hind claw 3‴, culmen 4½‴.

It inhabits the fir-forests on the Thian-shan range.

179. Panurus biarmicus (L.).

Panurus barbatus, Severtzoff, p. 66.

Horizontal range. Resident in districts I., II., and III.

Vertical range. Resident in districts 1 and 2.

[To be continued.]

XI.—*On the Assignation of a Type to Linnæan Genera, with especial reference to the Genus* Strix. By Alfred Newton, M.A., F.R.S., &c.

That some of my brethren should demur to the opinion I expressed a few years ago (Yarrell, British Birds, ed. 4, vol. i. p. 150) as to the species which ought properly to be considered the type of the Linnæan genus *Strix,* was a thing fully expected by me; indeed I had anticipated a stronger resistance than any which my views have hitherto encountered. So far as I am aware, the only opposition offered thereto lies in the comparatively mild protest of the editor of

'The Ibis' (1875, pp. 66, 67, footnote), and in one of the papers by which Mr. Sharpe has enriched the well-endowed literary history of the *Accipitres* (*tom. cit.* pp. 324–328). Still the authority which each of these gentlemen wields, and the learning which they both possess, is so great, that all must feel that as much as can be said on their side of the question has been said; and when I add that this has not shaken my belief, I cannot but entertain a hope that I shall not be driven from the position I found myself (not without considerable reluctance) compelled to take up. But it seems to me that a fuller statement of the facts of the case than I had room originally to make, may not be without its use to those who perhaps may be halting between the two opinions; while courtesy itself requires of me some reply to my friendly critics. Besides this I have an error, which they have not detected, to acknowledge, and, if possible, to repair; while, furthermore, it appears to me that some advantage may follow from a consideration of the method which should be adopted in assigning a "type" to the genera of authors to whom the notion of a type species, as we nowadays understand it, was altogether strange. This last, indeed, may be said to underlie the whole question I propose to discuss; and, having an important general bearing, I proceed to take it first.

When the existing notion of a type species was first propounded, and when it became generally adopted, are matters upon which I need not now enter, even if I felt myself competent to treat of them. They may for the present be left until some one shall write the history of systematic biology. It will hardly be denied, I think, by any one having a moderate acquaintance with the works of Linnæus, that no such notion was ever entertained by him, though one would suppose that it must have presented itself to his mind, from the fact that it was familiar to, and was almost constantly acted upon by his contemporary, Brisson. Yet we may search the writings of Linnæus in vain not only for the word "type," used in the meaning of modern systematists, but, if I mistake not, even for any expression equivalent to it. It therefore follows that extreme caution must be used in the assignation

of a type to any of his genera; and the only mode of avoiding errors in so doing, is by making him the interpreter of his own intentions. It is not that we have to put ourselves in his place, but to imagine him put in ours, and called on to show which he would consider his type species according to modern ideas.

Fortunately this process is by no means so difficult to effect as might at first sight appear; and, after some study, I think the types of Linnæan genera can be determined to the satisfaction of any reasonable mind, accurately in more than two thirds of the cases, and within very narrow limits in several others. All naturalists have long been accustomed to look upon Linnæus as a great reformer; and so he unquestionably was; but he showed himself in nothing greater than in the manner of effecting his reforms. Wherever he could he built on ancient foundations. No man could be more conservative than he in retaining, when possible, an old name; and hence it only requires some degree of attention to the works of his predecessors, to hunt down almost every name used by him, and, so far as ornithology is concerned, care and common sense seem to be all that is wanted. When we find Linnæus using an old name, we generally find him citing the author from whom he borrows it; and therefore the discovery of its origin costs but little trouble; for we all know that the amount of ornithological literature in his day was very small.

Of the 78 genera which Linnæus, in the 12th edition of his 'Systema Naturæ,' established for the class *Aves*, I cannot find more than twelve the name of which he can be said to have invented; and I will not answer for it that the use of some of these by prior or contemporary authors may not have escaped me. Howbeit these twelve seem to be:—

Rhamphastos,	*Diomedea*,	*Mycteria*,	*Didus*,
Buceros,	*Phaeton*,	*Cancroma*,	*Numida*,
Procellaria,	*Palamedea*,	*Parra*,	*Pipra*.

All the rest are names adopted from his predecessors, by whom the majority were used absolutely and in a specific sense. When this was the case there can scarcely be a reasonable

doubt that Linnæus, had he known our modern practice, would have designated as the type of his genus that species to which the name he adopted as generic had formerly been specifically applied. This has long appeared to me such an obvious truth, that I cannot but wonder at those who invented an arbitrary rule for the selection of a Linnæan type*. It is true that there are some names which had been used by the præ-Linnæan authors in a generic sense; and we know that in such cases they were very apt to distinguish the different species by a numeral or other epithet; but it is curious to find how few names of this kind were adopted by Linnæus, not perhaps more than a dozen in all. Such are

Vultur,	*Gracula,*	*Larus,*	*Emberiza,*
Falco,	*Mergus,*	*Tetrao,*	*Motacilla,*
Psittacus,	*Colymbus,*	*Columba,*	*Parus.*

Of course in most, or all, of these instances it would be hopeless to attempt to fix the type accurately, though we may do so approximately, as with *Tetrao* and *Parus*, and that within very narrow limits.

However, the old names, previously used in a specific sense, but taken and applied by Linnæus to his genera, form, as I have said, the majority of his 78. The authors from whom he adopted them, as proved by his reference to their works, are Gesner, Belon, Aldrovandus, Clusius, Johnston, Brown, Barrere, Klein, Mœhring, Brisson, and perhaps one or two others. It is, of course, an undoubted fact that with Lin-

* I refer particularly to the rule, followed to some extent by the late Mr. G. R. Gray, which enjoined the selection of the first species named in a genus as its type. It is needless to observe that though Mr. Gray professed to regard this rule, in practice he was constantly doing otherwise. I cannot help remarking that it seems to have been thought by Linnæus, and by others of his school, that all nature might be deployed in a single linear series; and thus he arranged his species so that one genus should follow naturally upon another. By this means the most normal forms were of course placed in the middle, and the most aberrant at the beginning and the end; so that the effect of the rule which Mr. Gray admired would be that one of the most aberrant species of a genus would often have to be considered its type.

næus, and with him only at a late period of his life, begins the binomial* method of nomenclature which we employ; and assuredly I have no desire to set aside, or even to impugn, that system of terminology which naturalists have for more than a century found so useful and have so generally adopted. But it must not be forgotten that great men lived before Linnæus; and every one who wishes to interpret him must study the works by which he was so much guided. I have heard it rumoured that the principle I am now advocating is of a most revolutionary tendency, and that its effect will be to upset the foundations of the so-styled "science" of nomenclature. I would therefore beg a little space to see if this be so or not. I have tried to find how that principle, if accepted, would work; and here is the result.

According to this view, I take it that the type species of

* It surprises me to find that there are still some who write and speak of the "binominal" method of nomenclature. A "binomial" method signifies a method involving the use of *two terms*—that is, in biological nomenclature, a generic and a specific term which, together, make up the name of the object. A "binominal" method, as almost any dictionary would tell us, would mean a method in which each object should have *two names*. Unfortunately far too many species are in the strict sense "binominal," or even "multinominal;" for there are comparatively few which have not a synonym, or synonyms, as well as a name. The hero who was indifferently known as Ascanius or Iulus, the river called by some Eridanus and by others Padus, may be each properly spoken of as being "*binominis*," *i. e.* "binominal;" but that appellation could not be applied to Numa Pompilius or Ægos Potamos. Consider, too, the awkwardness of the work "binominal" in the sense that some would use it. We should have a "binominal" name—a name, that is, having two names! Now a "binomial name" is an expression grammatically and logically correct, a name composed of two terms, just such a name as botanists and zoologists use for the creatures they study and speak of. But then it may be objected that "binomial" is a hybrid word, and, accordingly, not to be used by any writer who cares for the purity of his style. Such an objector, if he exists, ought in consistency to eschew such words as "nomenclature" and "terminology," and certainly ought not to use such a barbarism as "polynominalism"! Sufficient to say that *nomos* had been engrafted in Pliny's time on the Latin tongue to render its composition with *bi-* classical or semiclassical; but even if this were not the case, who could justly object to a word which has been in universal use since the greatest of mathematicians bestowed it on the Binomial Theorem?

56 Linnæan genera may be, without fear of error, determined. They are as follows:—

Genus.	*Type.*
Strix (of which more presently).	
Lanius:	L. excubitor.
Buphaga:	B. africana.
Crotophaga:	C. ani.
Corvus:	C. corax.
Oriolus:	O. galbula.
Paradisea:	P. apoda.
Bucco:	B. capensis.
Cuculus:	C. canorus.
Jynx:	J. torquilla.
Picus:	P. martius.
Sitta:	S. europæa.
Alcedo:	A. ispida.
Merops:	M. apiaster.
Upupa:	U. epops.
Certhia:	C. familiaris.
Trochilus:	T. colubris.
Alca:	A. torda.
Procellaria:	P. pelagica.
Diomedea:	D. exulans.
Pelecanus:	P. onocrotalus.
Plotus:	P. anhinga.
Phaeton:	P. æthereus.
Rhynchops:	R. nigra.
Sterna:	S. hirundo.
Phœnicopterus:	P. ruber.
Platalea:	P. leucorodia.
Mycteria:	M. americana.

Genus.	*Type.*
Cancroma:	C. cochlearia.
Ardea:	A. cinerea.
Tantalus:	T. loculator.
Recurvirostra:	R. avocetta.
Hæmatopus:	H. ostralegus.
Fulica:	F. atra.
Parra:	P. jacana.
Rallus:	R. aquaticus.
Psophia:	P. crepitans.
Otis:	O. tarda.
Struthio:	S. camelus.
Didus:	D. ineptus.
Pavo:	P. cristatus.
Meleagris:	M. gallopavo.
Crax:	C. alector.
Phasianus:	P. colchicus.
Numida:	N. meleagris.
Alauda:	A. arvensis.
Sturnus:	S. vulgaris.
Turdus:	T. viscivorus.
Ampelis:	A. garrulus.
Loxia:	L. curvirostra.
Tanagra:	T. tatao.
Fringilla:	F. cœlebs.
Muscicapa:	M. grisola.
Pipra:	P. leucocilla.
Hirundo:	H. rustica.
Caprimulgus:	C. europæus.

The result does not seem to me so very subversive of currently accepted nomenclature. Out of the 56 genera in the foregoing list, (excepting *Strix*, which I must treat in detail,) only about three or four would appear to have, from my way of regarding them, a type other than that commonly assigned to them. Indeed I can fancy some of my readers exclaiming, Why should all this fuss be made about a matter on which ornithologists are generally agreed? My answer to this is, that ornithologists have almost always acted upon the principle I enjoin, and this is a strong point in its favour. The few cases in which the principle has been departed from

are so few that they may be safely and wisely discarded for the sake of uniformity and consistency. It is possible that there may be some three or four more Linnæan genera (but certainly not half a dozen) in which, by the application of this principle, the true type is discoverable; but even these, supposing them all to go against the generally accepted view (and it is, of course, by no means certain that they would), could not disturb more than a very small number of genera and ought not to flutter the most conservative of ornithologists, while only by those (if unhappily there are such) who have sinned against light and knowledge should the principle be regarded with disfavour.

I now return to the genus *Strix*, which is the cause of these tedious remarks, and first have to deal with Mr. Salvin's note (Ibis, 1875, pp. 66, 67). According to him I "truly" said "that *Strix aluco* is Brisson's type of the Linnæan genus *Strix* as restricted." Now, unfortunately, I did not say this truly; and herein lies the error I have to acknowledge. I shall urge little or nothing in extenuation of my crime. It would only protract the present paper to show how many others, from Savigny to my critics, have fallen into it; but error it undoubtedly is, as I hope to prove without fear of contradiction.

The type assigned by Brisson (Orn. i. p. 500) to his genus *Strix* (which is, saving the species removed to form his genus *Asio*, also that of Linnæus) is *le Chat-huant*. On that point all will agree; and all will also agree that his *Chat-huant*, or type of *Strix*, is, as Brisson's excellent description shows, the bird which we in England know as the Brown or Tawny Owl, the species which has been frequently called *Syrnium aluco*, and repeatedly figured under that name or some admitted equivalent of it. But this species was not only described by Brisson. He also gave a long list of references to other authors whom he, rightly or wrongly, believed to have mentioned the same bird. The only one of these with which we need now trouble ourselves is the first, from the 'Fauna Suecica' (p. 18) —the edition of 1746 of course. Brisson correctly quotes Linnæus's short diagnosis of the latter's "No. 55," with a refer-

ence to that number. Turning thereto we further read, "Habitat in sylvis frequens per Sueciam;" and then, coming to the second edition of the 'Fauna' (1761), we have (p. 26):—

"77. STRIX *Stridula* [. . . .], Fn. 55."

—this being Linnæus's mode of quoting the former edition of his work, and one more addition:—

"*Svecis* Skrik Uggla."

Now no one can doubt what Linnæus meant by this bird. His diagnosis may not be the most accurate; but the "Skrik Uggla" of the Swedes, the Owl which is common in the forests throughout Sweden—that is, except in the then little-known north of that country—is just as surely our Brown or Tawny Owl as Brisson's "Chathuant" is. Thus the last, or Brisson's type of *Strix*, is also the *S. stridula* of Linnæus; for I need not say that in both of the subsequent editions of the 'Systema Naturæ' (10th and 12th) the same species retains that name; but I must add that if there be any truth in the opinions I have above advanced, this, and this only, can be interpreted as the Linnæan type of the genus *Strix*; for, as Linnæus himself rightly states, it is emphatically the "*Strix*" of Gesner, of Aldrovandus, of Willughby, and of Ray. Finally, to clinch the whole matter, Linnæus himself asserts in the 12th edition that it is the "*Strix*" of Brisson.

In rectifying my error, I wish it were possible for me to prove as clearly what the *S. aluco* of Linnæus really was; but the matter does not very much signify, and it will be unnecessary for me here to repeat each step of the investigation. A very little trouble will show that this species is founded upon an Owl which, he tells us (Œländska och Gothländska Resa, p. 69), he, on the 5th of June, 1741, had an opportunity of describing at the woodman's (*hos Skogwachtaren*) at Åhrby, in the south of Œland; and the description which he there gives is but a briefer form of that which appeared five years afterwards in the 'Fauna.' I express no very decided opinion; but my impression is that the bird was most likely a Barn-Owl*, a species known to be rare in Sweden and its islands,

* He writes "*Remiges* 1. 2. 3. sensim breviores." Now this is not absolutely true of the Barn-Owl, wherein the second primary is longer than

but occasionally occurring there. Had the bird been a Tawny Owl, one would think he would have recognized its specific identity with that which is so common in the Swedish woods. Besides this, though in the 1746 edition of the 'Fauna' he had cited as the same as this bird the "*Ulula*' of Gesner, Aldrovandus, Willughby, and Ray, in his subsequent edition of the same work (1761) he substituted for these references the "*Aluco*" of the last two authors, and of Albin, who had in the mean time published a recognizable figure; and there cannot be a doubt of their *Aluco* being the Barn-Owl. Be that as it may, the *S. aluco* of Linnæus is not (as I unfortunately said it was) the type of his genus *Strix*, nor of Brisson's, but the *S. stridula* is the type of both.

Now the evidence as to what must be deemed the original type of the Linnæan genus *Strix* is either "perfectly clear and indisputable"*, or it is not. From what I have above urged I think it may be regarded as clear. One cannot doubt what is meant by the *Strix* of Gesner, Aldrovandus, Willughby, Ray, and Brisson. Switzer, Italian, Englishmen, and Frenchman agree. Was the Swede, coming after them and quoting them all, likely to have intended that a new meaning should be attached to the word by his use of it without indicating that such was the case? If an ornithologist of the present day had the power of questioning Linnæus as to which species, according to modern notions, he would designate the type of his genus *Strix*, who can doubt what his answer would be? "*Quod semper, quod ubique, quod ab omnibus—id accepi.*"

But supposing this view of the case to be disallowed, owing to the difficulty of obtaining any answer from the great departed, and the evidence as to the Linnæan type be deemed inconclusive, then, in the words of the British-Association Code†, "the person who first subdivides the genus may affix

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the first and third, which are equal; but the difference between all three is not much. On the other hand, in the Tawny Owl the first primary is very short, and the fourth is the longest.

* Rules of Zoological Nomenclature, § 5.

† *Loc. cit.*

the original name to any portion of it at his discretion, and no later author has a right to transfer that name to any other part of the original genus." This will bring about exactly the same result; for there is no question as to Brisson having been the first to subdivide the genus. But, says the Editor of 'The Ibis,' "does the rule which admits the *additional* Brissonian genera give Brisson any right to define other Linnæan genera? We think not." I think very differently. Where is any limitation of Brisson's rights in regard to genera expressed? His genera are brought in by a special enactment; but, once admitted, they are exactly on the same footing, to stand or fall, as those of anybody else. His specific names, we know, are rejected, but that is simply because he did not adhere to the binomial system of nomenclature which we adopt, and very rightly are they rejected. Had his book been published a few years later, or had the Code enacted that the 10th edition of the 'Systema' should be the point of departure, there would have been no need to treat him exceptionally as regards his genera. If the law is to be followed, it must be followed in all things save such as are especially excepted; and of such excepted things there is in this case but one, the matter of specific names. Why are Brisson's privileges, which, owing to his great merits, have been deservedly recognized, to be pared down beyond the letter of the law? Mr. Salvin's principle appears to me to be not only arbitrary, but contrary to the principle of all law, or English law at least. It is well known that any statute of disabilities has to be construed in the sense most favourable to the person disabled; and if Brisson's specific names are disallowed, the disability rests there, it can have nothing to do with his generic divisions and their natural consequences.

But I am not sure that I am not here arguing needlessly. I have already said that if Brisson's book had been published a few years later, there would have been no need for any exceptional treatment of him whatever. Now I once before pointed out in this Journal (Ibis, 1865, p. 97, note) that an "edition of his work was published in 1788; and being thus subsequent to the appearance of Linnæus's *twelfth* edition,

but occasionally occurring there. Had the bird been a Tawny Owl, one would think he would have recognized its specific identity with that which is so common in the Swedish woods. Besides this, though in the 1746 edition of the 'Fauna' he had cited as the same as this bird the "*Ulula*" of Gesner, Aldrovandus, Willughby, and Ray, in his subsequent edition of the same work (1761) he substituted for these references the "*Aluco*" of the last two authors, and of Albin, who had in the mean time published a recognizable figure; and there cannot be a doubt of their *Aluco* being the Barn-Owl. Be that as it may, the *S. aluco* of Linnæus is not (as I unfortunately said it was) the type of his genus *Strix*, nor of Brisson's, but the *S. stridula* is the type of both.

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But I am not sure that I am not here arguing needlessly. I have already said that if Brisson's book had been published a few years later, there would have been no need for any exceptional treatment of him whatever. Now I once before pointed out in this Journal (Ibis, 1865, p. 97, note) that an "edition of his work was published in 1788; and being thus subsequent to the appearance of Linnæus's *twelfth* edition,

the genera defined in it can stand of their own right from that date, under the exact words of the rule." That this edition exists, I believe there is no doubt, though I have never set eyes on a copy. Had I done so, and found it to agree in this respect with the edition of 1760, I should be sure that the preceding paragraph was unnecessary; but lacking the opportunity of knowing whether this is the case or not, I am unable to substantiate what would be absolutely conclusive.

And now to meet such of Mr. Sharpe's objections as I have not already, I trust, disposed of. It is clear that considerable doubt must exist as to Linnæus's *Strix aluco*; and therefore one cannot declare that his "No. 9 is identical with No. 7." It is impossible that Brisson's arrangement "influenced Linnæus in his classification;" for Linnæus had already divided the Owls into "*Auriculatæ*" and "*Inauriculatæ*" in the 10th edition of his 'Systema,' written three years before* Brisson's work appeared; but it is probable that both authors followed the earlier systematists, Willughby and Ray, in this obvious division. It is hardly consistent with fact to say of the genus *Strix* that "no type had previously been assigned" until Savigny designated *S. flammea* as such; for, even if Linnæus's type be disallowed, we have that of Brisson plainly determined, and consequently Savigny was not "perfectly justified" in doing as he did, while, on the other hand, Fleming, in separating *S. flammea* as the type of his new genus *Aluco*, and restoring *S. stridula* to the genus *Strix*, was acting strictly within rule. Of the praise which Mr. Sharpe awards to Savigny, I have only to say that perhaps, had the latter's ambitious work been completed, we might possibly have hailed him as a reformer of nomenclature superior to Linnæus; but perhaps it is as well that the 'Oiseaux de l'Egypte et de la Syrie' remains a fragment; for no one can go over the long list of references to ancient authors, on which most of his decisions are based, without seeing that a large number of them are, and must be, hypothetical in the highest degree.

* This edition was published in 1758; but the preface is dated 24th May, 1757.

To sum up my answer to the objections made. I maintain :—

(1) That the type, according to the modern notion, of the Linnæan genus *Strix*, is clearly and indisputably *S. stridula*.

(2) That in subdividing a genus Brisson's right to affix its original name to the portion of it he chose is not affected by his exceptional position as regards specific names, and that the type of his restricted genus *Strix* is also *S. stridula*.

(3) That should ornithologists, in the teeth of the law, persist in disregarding this right, there is a strong probability, which may at any moment become a certainty, of its being indefeasibly established without reference to any exception whatever.

Finally, if the first of these positions be good, there is no need of the other two; for, according to our Code (§ 4) :— "The generic name should always be retained for that portion of the original genus which was considered typical by the author."

Magdalene College, Cambridge.
12th December, 1875.

XII.—*Notes on the Birds of the Lower Petchora.* By Henry Seebohm, F.Z.S., and John A. Harvie Brown.

The ornithology of the valley of the Petchora has remained up to the present time, if not altogether unknown, at least undescribed. The geology, botany, and ethnology of the district have been described by Keyserling, Schrenk and Castren; but nothing has been published upon the birds of the Petchora. We ascertained in Archangel that Hencke and Hoffmannsegg visited the great river, and sent consignments of skins and eggs to a dealer in Dresden, through whom some rare eggs (doubtless from this district) found their way to Dunn and were distributed amongst English collectors. In consequence of the trade-jealousy of the dealers, these eggs were sold without authentication, and of course possess no scientific value whatever. We have been unable to ascertain that either of the above-named ornithologists has ever written

any thing upon the birds of the Petchora. When we planned our excursion to the valley of the great river we looked upon it as virgin ground. In St. Petersburg we learned that Dr. Pelzam visited the Petchora last year to collect for the museum at Kasan; but we were afterwards told in several towns and villages where we stayed, that he spent most of his time in dredging, and did not pay much attention to the ornithology of the country.

We left London on 2nd March, and arrived at Ust Zylma on 14th April. The ground was covered with from two to three feet of snow; and winter, *i. e.* frost or snow-storm, continued until 7th May. Up to this date we only succeeded in identifying seventeen species of birds. From 8th to 15th May we had spring; *i. e.* the sun was powerful enough to thaw the snow during the day-time, but it generally froze again at night. During these eight days migratory birds began to arrive much more rapidly, and we succeeded in adding thirteen to our list. On 16th May we suddenly plunged into midsummer; the snow melted like butter upon hot toast, and the river began to rise rapidly. We shot new species of migratory birds on almost every excursion we made, and by the 20th May we increased our list of birds from thirty, at which it stood on the 15th, to fifty. By the 21st May the Petchora had risen nearly thirty feet in height; and on that day the ice on the great river broke up, and marched past Ust Zylma in a stream a mile and a half wide, at the rate of four miles an hour for ten days, during which we added another score of birds to our list.

We gave the ice ten days' start, and then followed it down the river, stopping frequently on the islands to collect. During these ten days we explored the forests in the neighbourhood of Ust Zylma, and made our excursion to Habariki, and succeeded in identifying fifteen more species of birds.

We finally bade goodbye to Mons. Znaminski and our other kind friends in Ust Zylma on the 10th June. The first five-and-twenty miles are a tolerably straight run of broad river. Then come a hundred miles of broad river full of islands, a sort of elongated delta, which the arctic circle cuts nearly in

the centre. This is followed by a hundred miles of true delta, ending in a further seventy-five miles of submerged delta or lagoon, bounded by the range of islands called the Golievski banks, where the Petchora enters the Arctic ocean between the promontory of Russki Zavarot and the island of Varandai. We made Alexievka our headquarters, occupying some of the houses belonging to the Petchora Timber-trading Company. The voyage occupied ten days, during which we added fifteen more birds to our list. We remained six weeks at Alexievka, making numerous visits to the neighbouring islands and to the tundra, and extending our excursion to the mouth of the river, adding about another dozen fresh species to the list of birds. On 2nd August we sailed from Alexievka in the schooner 'Triad,' 149 tons register, chartered with larch to Cronstadt, and landed at Elsinore after a passage of thirty-five days.

The whole of the north of Russia through which we sledged is one vast forest of spruce, Scotch fir, and larch, with occasionally birch and willow. Now and then we came upon an oasis of cultivated land surrounding a village; and occasionally we crossed a flat open plain which would doubtless be a swamp in summer, too wet for trees to grow upon. The country is gently undulating, with no hills of any magnitude. The timber gradually lessened in size as we proceeded northward, and finally ceased altogether soon after we had crossed the arctic circle. We then came upon the tundra, a dreary flat extent of country reaching to the sea—not a dead flat, but a gently undulating moor, an arctic prairie, a Siberian tundra, with occasionally distant bluffs upon the horizon. The east bank of the Petchora is generally a steep cliff of mud, clay, gravel, sand, or turf, but never rock, rising sometimes sixty or seventy feet. The foot of this cliff is sometimes stony; and now and then we came upon a boulder upon the tundra, probably dropped there by some iceberg during the glacial period. In the bed of the Petchora, before the flood came, we sometimes picked up limestone and other fossils washed down from the interior; but the whole country is obviously of diluvial origin. Occasionally the

banks are low swampy land, covered, like the islands of the delta, with dwarf willow. These islands, as well as the swamps near the shore, are three to four feet under water when the river is swollen by the rapidly melted snow. The shores of the delta, as well as of the lagoon, are strewn with drift-wood, trees of all sizes from the inland forests, squared balks from the stores of the Petchora trading-company, and spars of luckless ships that have been wrecked upon the coast. Some of these piles of drift-wood lie far inland, and are overgrown with centuries of moss, suggesting the idea that a gradual upheaval of the land is taking place, or that ages ago the breaking up of the ice upon the Petchora was attended with higher floods than are experienced now. The west bank of the river is flat as far as the delta, and is in some places flooded for many miles inland when the ice breaks up. We had left the forests before the spring flowers were out; but on the tundra they almost rivalled the alpine flora in their abundance and brilliancy, especially on the banks of the great river. The tundra is full of lakes, large and small, generally with steep banks of peat, sometimes with flat banks of rushy grass, and rarely of sand. In some places the lakes seem to have been almost dried up, or choked with coarse grasses, rushes, and carices, and have become swamps, with frequently a little open water in the middle. The tundra is gay with many-coloured lichens, mosses, and liverworts, of which the well-known reindeer-moss is the most abundant. As soon as the long winter snow has disappeared, there is no lack of food for fruit- and seed-eating birds. Last year's crowberries and cranberries, preserved by the frost for nearly seven months, were common enough everywhere; and early in July the white flowers of the cloudberry and the red flowers of the arctic strawberry were very brilliant. The delicious cloudberry, the 'maroshka' of the Russians, and the 'moltebeere' of the Norwegians, is undoubtedly the fruit of the tundra *par excellence*, and deserves to be better known in this country. There was no heath; but the pale magenta flowers of *Andromeda polifolia* represented it very fairly. An aromatic Rhododendron-like dwarf shrub (*Ledum palustre*) was common,

as well as the creeping birch. In the more sheltered hollows dwarf-willow copses gave variety to the scene.

The short arctic summer on the tundra must be a millennium for insect-eating birds. Mosquitoes abounded to such an extent that life without a 'komarnik,' or mosquito-veil, would probably have been simply unbearable, if not impossible. We were also obliged to wear cavalry-gauntlets to protect our hands. Our gloves and veils were a complete protection; but we suffered very much from the heat and closeness. Fortunately, however, we frequently had a few days' grace. A cold north-east wind came down from the arctic ice; the mosquitoes vanished like magic; and we were often compelled to put on our furs again. We were obliged to take active exercise to keep ourselves warm; but we were only too glad that the plague of mosquitoes was for the time stayed.

We found most of the birds in the valley of the Petchora to be somewhat local, though perhaps scarcely so much so as they were observed to be in the valley of the Dwina by Alston and Harvie Brown. Even on the comparatively monotonous tundra we found this to be the case; and we soon gave names to the different sorts of ground. The dry grassy hills are the Shore-Lark ground. The dead flat bog intersected with tussocky ridges is the Grey-Plover ground. The swampy marsh covered with long grass is the Reeve-ground. If in the centre of this there is any open water, it becomes Phalarope-ground. If the grass is shorter and more tangled and knotted it becomes Dunlin-ground; and if this short grassy swamp is sprinkled over with tussocks of turf covered with moss and flowers, then it becomes Lapland-Bunting or Red-throated-Pipit ground. When the tussocks are close together, and the swampy ground is almost hidden, or traceable only by rows of cotton-grass, then we called it Little-Stint ground. If we came upon a thicket of dwarf willow on the tundra, we expected to find a brace of Willow-Grouse or a pair of Wood-Sandpipers. The sandy shore of a lake was generally frequented by Ring-Dotterel. The dense willow thickets on the islands always swarmed with Yellow-headed Wagtails; and if

the willows were few and far between, we almost always found abundance of Temminck's Stints.

The following list of the birds which we identified is necessarily very meagre. It is impossible to exhaust the ornithology of any district in a single season. In a tract of country extending three hundred miles north and south, the varieties of situation, temperature, &c. are great. If we had remained during the summer in the forests, we should no doubt have added largely to our list of forest-birds; on the other hand, if we had pushed on to Varandai and the sea-coast, we should have met with many Sea-ducks and other birds. There is abundant scope for future work; and we hope that other field-naturalists will be encouraged by our great success, and take up the running where we have left it off.

Aquila chrysaetos (L.).

Haliaetus albicilla (L.).

We frequently saw Eagles both at Ust Zylma and on our journey down the river. On the tundra we saw one near Alexievka, and another near Dvoinik. The former species we identified at Habariki, and the latter on various occasions.

Pandion haliaetus (L.).

The only Osprey we identified flew overhead at Habariki, and when fired at dropped a large bunch of damp moss, which doubtless it was bearing away to its nest. A nest, presumed to be of this species, was seen in the distance, about 15 feet from the top of an almost branchless larch in the same place.

Buteo lagopus (Gm.).

We only saw the Rough-legged Buzzard once, a fine light-coloured male, sitting on the branch of a willow on the banks of the Petchora, about 40 miles north of Ust Zylma. We shot him as we silently drifted past, about midnight.

Falco peregrinus, Gmel.

The first we saw of this species was on the 13th May, at Ust Zylma, the same day upon which we first saw Ducks. A week later we visited the great feeding-grounds of the Ducks on the banks of the river Zylma, and there also met with the

Peregrine. We did not see it again till we found several pairs breeding on the steep clay banks of the river Petchora, at Stanavoialachta. We had a fresh egg brought to us at Ust Zylma by a Samoyede on the 27th May; and we found two nests, with eggs considerably incubated, on the 27th June.

Falco subbuteo, L.

We shot a fine male Hobby at Habariki on the 5th June.

Falco æsalon, Tunstall.

The first Merlin we saw was on the 5th May. Their favourite food seemed to be Snow-Buntings; and they timed their arrival about the date when the peasants began to sledge out the manure on to the frozen snow, and the Snow-Buntings were able to find food in the fields. As long as the Snow-Buntings remained, the Merlins could be found in some numbers; but after the former had left we only saw one solitary Merlin, flying northward on the 28th May.

Astur palumbarius (L.).

The only example of the Goshawk we saw was shot near the river Yorsa on the 13th June. It was disturbed in a dense alder-thicket in the act of devouring a female Widgeon.

Accipiter nisus (L.).

We only identified one Sparrow-Hawk, which was shot on the 29th May, whilst carrying off a Tree-Sparrow from a farm-yard in Ust Zylma.

Circus cyaneus (L,).

We saw the first Hen-Harrier on the 24th May, and continued to see them almost daily as long as we remained at Ust Zylma. We occasionally met with them on our voyage down the river, and on the tundra as far north as Stanavoialachta.

Surnia nyctea (L.).

The first Snowy Owl was seen by us on the 10th May at Ust Zylma. We saw them occasionally in the neighbourhood afterwards as long as the frost continued. We did not meet with the species again until we visited the tundra at Dvoinik.

Asio accipitrinus (Pall.).

We only saw four Short-eared Owls—the first on the 23rd May, at Ust Zylma, and the last about 60 miles down the river.

Bubo ignavus, Forst.

We did not meet with this Owl, but twice saw skins of birds shot near Ust Zylma.

Dryocopus martius (L.).

Piottuch chased one of these birds for an hour or more on an island of the Petchora, near Ust Zylma; and we once or twice recognized its cry in the woods; but we did not succeed in obtaining a specimen.

Picus minor, L.

This species is not uncommon in the birch-forests, as far north as the latter extend.

Picus tridactylus (L.).

The Three-toed Woodpecker is not so common as the preceding; but we occasionally saw it in the birch-forests. On the 14th June we took a nest, with newly hatched young, in a birch tree at Chuvinski. We only met with it once in the pine-forests at Habariki; but the larch trees, which composed a considerable portion of the timber growth at that locality, had the bark completely riddled with holes, made either by this or some other species of Woodpecker. These larch trees were perfectly sound to the core, as we had abundant opportunity of proving when they were cut down for firewood.

Cuculus canorus, L.

We first heard the Cuckoo on the 3rd June. It appeared to be not uncommon near Ust Zylma and at Habariki; but we did not meet with it north of the river Yorsa.

Corvus corax, L.

Ravens were abundant at Ust Zylma during the whole time of our stay there; and young birds were brought to us on the 2nd June. We afterwards met with the species, but only rarely, as far north as Vassilkova, near Alexievka.

Corvus cornix, L.

The Hooded Crow is one of the commonest residents in every town and village in Russia through which we passed, becoming gradually scarcer north of Ust Zylma. We were told that at Gorodok* it is only a summer migrant, arriving about the 10th May. At Alexievka we only occasionally saw it. In the neighbourhood of Ust Zylma it breeds in the forests. The first eggs were brought to us on the 30th May.

Corvus frugilegus, L.

We had one specimen brought to us at Ust Zylma on the 17th May. This was the only example we saw during our trip.

Corvus monedula, L.

We found this bird common, as far as Mezen, in the villages. The only examples which we saw further east were a solitary pair, one of which we shot, at Ust Zylma on the 3rd May. Piottuch told us that it is only during the last four or five years that the Jackdaw has appeared at Mezen, but that it is now a resident there. Many of the birds we saw were very white on the neck, being possibly the *Corvus collaris* of some authors.

Pica rustica (Scop.).

This is one of the commonest resident birds in North Russia, becoming still more frequent towards the east. At Ust Zylma they are very abundant; but we found them scarcer further north, as the villages become smaller and further apart. We did not see any Magpies north of Gorodok, where, however, we were told the bird is found all the year round. We found them building in the small pines near Ust Zylma, and beginning to lay early in May.

Perisoreus infaustus (L.).

The Siberian Jay is not rare throughout the pine-forests of North Russia through which we passed. They are, however, somewhat difficult to find in early spring. When engaged in

* This is the Pustozero of Purchas (Purchas's 'Pilgrimes,' vol. iii. chap. viii.); and it is known at Mezen and Archangel by its true name, Pustozersk. On the Petchora the only name recognized is Gorodok, or "the town."

incubation they are very retiring and silent, frequenting the thickest parts of the forests, except when engaged in feeding, when they may be seen on the roads or at the forest station-houses. After the young can fly, the parents become bolder and more noisy, and show themselves more freely. We did not meet with the species north of Habariki. A nest and eggs were brought to us at Ust Zylma on the 27th April; and we obtained young birds well grown in the beginning of June, at which time the old birds are moulting their wing- and tail-feathers.

Passer domesticus (L.).

The distribution of the House-Sparrow in North Russia is somewhat curious, it being generally confined to the larger towns. In the neighbourhood of Archangel, however, it appears to be quite as abundant in the villages of the delta of the Dvina as it is in the town itself, and almost entirely supplants the next species. Eastward we did not meet with it until we reached Ust Zylma, where we first obtained it on the 18th May, though its presence was suspected in smaller numbers at the time of our arrival on the 15th April. About the middle of May there must have been a considerable accession to their numbers, though they apparently confined themselves to the vicinity of a part of the town occupied by the houses of the richer inhabitants, the House-Sparrow being rather fond of good living. Northwards it is plentiful at Kuya, and apparently as numerous as the next species. Only stragglers were obtained further north, at Alexievka, which was the northernmost point where we found them.

The extremely bright colouring of the males as compared with all other specimens we have seen, is deserving of passing notice.

Passer montanus (L.).

The distribution of the Tree-Sparrow is almost the converse of that of the House-Sparrow, it being found for the most part in the smaller villages, almost to the exclusion of the other species. Curiously enough, however, it appears to be quite absent from the small villages of the delta of the Dvina,

where it is replaced by the House-Sparrow. In the summer of 1872, Alston and Harvie Brown did not obtain or see a single example on the well-cultivated delta, nor in the town of Archangel. In March this year, among the large flocks of Sparrows frequenting the manure heaps and farm-yards of Archangel, the Tree-Sparrow was represented by a very small percentage. Eastwards it was found in greater or less abundance in all the villages, and at Ust Zylma it was seen in numbers. Northwards we met with it up to and within the arctic circle, finding it plentiful at Kuya, where it lived apparently in harmony with equal numbers of House-Sparrows. It was absent from Alexievka; but we obtained a solitary straggler as far north as Stanavoialachta. This bird breeds in holes in the wooden houses. We never met with it in the forests.

Pyrrhula vulgaris, Temm.

In spring, before the snow melted, we found the Bullfinch sparingly and in small flocks in the neighbourhood of the forest-stations, where there was abundance of food. As the season advanced they seemed to disperse through the woods, without receiving any accession to their numbers. After the snow was mostly gone, or only lying in the deep valleys and hollows in the pine-woods, we only met with one male; and we did not again see the species to the northward.

Carpodacus erythrinus (Pall.).

We saw two examples only of the Scarlet Bullfinch, both males, at Ust Zylma, on the 7th June, and we shot one of them. The note uttered by these birds was high-pitched, and may be rendered by the syllables *tu-wit-tu-tui*, uttered at intervals. That heard by Alston and Harvie Brown at Archangel in 1872, uttered by females of this species, was a low Greenfinch-like single *zh-zh-zh*.

Corythus enucleator (L.).

We met with Pine-Grosbeaks at Ust Zylma for the first time this season on the 24th May, and we were at first quite deceived by their rich Thrush-like song. We thought when we first heard it that we were going to find some one of

the rare eastern Thrushes. We shot specimens also at Habariki, but did not see it to the north of that locality.

Fringilla montifringilla, L.

The first Bramblings made their appearance at Ust Zylma about the 24th May, when we shot one and saw and heard others. Afterwards we found them not uncommon as far north as Abrámoff, some 20 miles within the arctic circle. They were haunting the low islands, which are covered with alder, birch, and willow, but principally those on which birch predominates. We find no entries in our journals of their occurrence north of this point, though it is not improbable that they are to be found in diminishing numbers up to the limit of the birch-growth, some 40 miles further north, to near Viski, at the head of the delta.

Linota rufescens, Vieill.

Linota canescens, Gld.

Both these species of Redpoles are very abundant along the Petchora valley. They remained in the town of Ust Zylma in flocks up to the second week in May, and then dispersed to their breeding-quarters in the woods. The first eggs were found on the 10th June; and the young of the latter species were seen in the nest on the 13th June. Both the Common and Mealy Redpoles are found as far north as Stanavoialachta.

Emberiza citrinella, L.

The Yellowhammer is not uncommon south of Archangel, in the opener parts of the roads, in March, but is much scarcer to the eastward and northward later in the season. At no time during our stay at Ust Zylma did we find it common, although we shot a few specimens between the 20th April and 6th May, after which date we have no further record of its occurring to the northward.

Emberiza pusilla, Pall.

We obtained the first example of the Little Bunting on the 31st May; and we found them afterwards common all the way down the river. They even reach the willow-swamps of the

delta around Alexievka, where, however, they are decidedly rare. We never had any of their eggs brought in by the Zyriani. The Little Bunting is fond of frequenting the mossy and marshy open hollows in the forests around Habariki and elsewhere in search of insects, in company with Wagtails (*B. viridis* and *M. alba*), Temminck's Stints, Fieldfares, Blue-throated Warblers, and other species. They paired shortly after arrival, as we found them mated on the 10th June.

Emberiza schœniclus, L.

On the 15th May we got the first Reed-Buntings; and on the 19th we found them abundant, frequenting the low alder and birch forests on the banks of the river opposite Ust Zylma. At Habariki they are less abundant, haunting the skirts of the pine-woods and edges of the marshy lakes and overflows from the river. Eggs were procured in the beginning of June at the latter locality; and we afterwards found them common down the river, beyond the arctic circle; beyond this, however, they became scarce. We traced them as far north as Alexievka, where the Zyriani got eggs for us. Seebohm found a nest of this bird built inside an old Fieldfare's nest, in an alder-swamp, nine feet from the surface of the water. The bright clean plumage of these birds is worthy of passing notice. They are much *mealier* than those found further west.

Plectrophanes lapponicus (L.).

The handsome Lapland Bunting is one of the commonest birds at Ust Zylma during migration. From the 18th May, when we first saw them, till the 27th, they frequented the fields behind the town, flying often in company with the equally large flights of Shore-Larks, and mingling with them, but just as commonly keeping in large independent companies. The great body of the females appeared to arrive somewhat later than the males, as the later flocks, when flying close past, exhibited fewer black heads and breasts. One flock seen, and fired into, on the 27th, appeared to be composed almost entirely of females.

We did not again meet with the Lapland Bunting after

the last-mentioned date until we found them scattered over their great breeding-haunts on the northern tundras. Nests and eggs were brought to us by the Zyriani on the 22nd June—the nests invariably lined with feathers, which serve to distinguish their contents from the eggs of *Anthus cervinus*, the nest of which latter bird is lined with wiry grass, and contains no feathers. By the 24th June the eggs were considerably incubated; and on the 6th July we found young able to fly. The Lapland Bunting is essentially a bird of the tundra, and is widely and numerously distributed over the whole tundra-land as far as we went, viz. to Dvoinik, where we obtained young birds. On one occasion we saw the species on one of the willow-covered islands opposite Stanavoialachta, a solitary example which may or may not have been breeding there.

Plectrophanes nivalis (L.).

The Snow-Bunting is exceedingly abundant all the way north and east from Archangel to Ust Zylma during the spring; and great numbers of these lovely birds are caught by the village boys in horsehair nooses, and sold at the rate of 100 for half a rouble; and very good eating they are. Large flocks were feeding on the great manure heaps by the side of the river Mezen, close to the town, in the beginning of April; and they were even more abundant at Ust Zylma, in the irregular streets and yards of the town, and on the hill-slopes behind, where the snow had disappeared during the partial thaws, and where manure had been sledged out and spread by the natives. By the 24th May nearly every Snow-Bunting had disappeared from Ust Zylma.

It was not until long afterwards that we saw a few at Dvoinik, where we secured the full-grown young on the 23rd July, and also the old birds in full breeding-dress. They were flying about and settling upon the great piles of drift-wood close to the beach, which appeared to be a suitable haunt; but we cannot say whether they were reared there or on the Pytkoff Mountains, some 15 miles inland.

During the migration we constantly saw Snow-Buntings

alight on trees, both singly and in flocks, and both on spruce-firs, willows, and bare high larches. They perched freely, and flew from tree to tree, alighting without the slightest hesitation.

Nothing can be more beautiful than the evolutions of a flock of these handsome birds as they drift with a high wind like actual "snow-flakes," or struggle against it with flickering butterfly flight, uttering at the same time their musical tinkling note.

ALAUDA ARVENSIS, L.

We only met with two examples of the common Sky-Lark—the first at Ust Zylma, on the 22nd May, and the other, a single bird also, at Viski, near the head of the delta, on the 17th June.

OTOCORYS ALPESTRIS (L.).

The Shore-Lark was amongst the first of the earlier smaller migrants to arrive. We saw and shot our first specimens on the 10th May. A small party of seven or eight was haunting the small spaces left bare by the melting of the snow by a rapid sun-thaw, on an island opposite Ust Zylma. A day or two later they were seen in larger flocks; and they soon became very plentiful around the town, and continued to be so until about the 25th May, when they rapidly dispersed to their breeding-haunts, or continued their migration to the north.

We did not again see any until we arrived at Gorodok. There we found a nest containing newly hatched young, upon the sandy scrub-covered tundra near the town. This was on the 18th June. The Shore-Lark appears to be only very locally distributed on the tundras which we visited. A sandy tract of country to the north of Vassilkova, and the clay slopes of the river-bank at Stanavoialachta and Dvoinik, were the only localities where we saw them afterwards, and only at the latter place in any numbers. Nowhere did we find them so plentiful as we were led to expect we should by the immense numbers which passed Ust Zylma in spring. We obtained young able to fly on the 6th July.

Anthus seebohmi, Dresser.

During our voyage down the great river we moored our boat, on the evening of the 15th June, on the shore of an island a little to the north of the arctic circle. The land was flat and marshy, for the most part covered with willows, with here and there a birch and an alder. Seebohm turned out at three in the morning to shoot; and his attention was soon arrested by the song of a bird with which he was unfamiliar. The bird remained for nearly half an hour in the air, wheeling round and round, like a Lark hovering, with expanded wings and tail, whilst it was singing. The first part of its song was like the trill of a Temminck's Stint, or like the concluding notes of the Wood-Warbler's song, so aptly described by Gilbert White as its "shivering note." This was succeeded by a low guttural warble, such as the Bluethroat sometimes makes, as if the bird were attempting to trill whilst inhaling breath. After some time the bird alighted on a willow, and continued its song there. It was afterwards heard to sing on the ground, and was finally shot in a swamp, where it appeared to be feeding, almost up to its belly in water. An hour afterwards Harvie Brown's attention was called to another bird of the same species, singing in like manner; and after watching it for a short time, he succeeded in securing it. Both birds proved to be males, and quite distinct from any species with which either of us was acquainted. The hind claw is long, like that of *A. pratensis*; and the general character of the bird resembles a large and brilliantly plumaged *A. trivialis*. Upon our return home five skins of this bird were submitted to our friend Mr. Dresser, who, after comparing it with all the known Indian and other species of this genus, pronounced it to be new. He will describe and figure it in the next Part of his excellent work the 'Birds of Europe.' At Gorodok we spent the whole night of the 17–18th June shooting on the shore. The country here is a sort of rolling prairie-land, some parts dry moor, with birch or juniper and a few pines, and the lower land willow-swamps and marshes. On the marshy ground we saw many Ruffs and Red-necked Phalaropes, and found our new Pipit by no

means uncommon. Sometimes two or three were singing at the same time. By dint of patient watching and waiting, part of the time in a drizzling rain, we each secured another specimen, both males. At Alexievka we frequently saw the Petchora Pipit on the willow-swamp on the island, and obtained several nests of this species between the 24th and 29th June. The nest is somewhat similar to that of the Red-throated Pipit; but instead of being composed of fine round grass, it is generally made of flat-leaved grass and knotted water-plants and small leaves; and in two of them we found small *Equiseta*. The eggs are like large varieties of those of the Meadow-Pipit; five seems to be the usual number. This bird would appear to be a somewhat later breeder than *A. cervinus*. All the eggs we obtained were fresh, whilst those of the latter bird, taken at the same time, were too much incubated to be worth the trouble of blowing. At Alexievka we were not so fortunate in procuring birds; but just before we sailed we succeeded in shooting three more specimens as they were feeding on the sandy banks of the river. One of these proved to be a female. This bird is ultra aquatic in its habits. We did not meet with it on the tundra at Stanavoia-lachta or Dvoinik.

Anthus trivialis (L.).

Only one specimen of the Tree-Pipit was obtained. It was shot at Ust Zylma on the 22nd May. This was the only one we saw.

Anthus pratensis (L.).

We got the Meadow-Pipit for the first time on the 12th May. This species is far less abundant than the next at Ust Zylma at the time of migration; and afterwards we found them quite a scarce and local bird on the tundra. They frequented principally the opener parts of the alder and birch thickets on the banks of the river Zylma, where they perched freely upon alder and birch trees, and more rarely on willows, both flying up from the ground and from tree to tree. We were surprised at this; but the habit seemed to be perfectly well known to Piottuch, who informed us of it before

we shot them in the act. They seldom alighted in the open fields, and in this respect differed completely from the next species.

The tundra at Stanavoialachta was the only locality where we found them breeding; and there we procured two nests. There also the birds, on two occasions, were seen to perch on the low stunted willows.

Anthus cervinus, Pall.

The Red-throated Pipit is an extremely abundant species during migration at Ust Zylma; and large straggling flocks were constantly passing over for days together between the 17th May, when we first got specimens, and the 29th, when no less than ten were secured out of one flock. These migratory flocks did not rest much at Ust Zylma; but when they did pitch to feed or rest, they preferred the marshy, hummocky, open ground, like their native tundra, of which there were one or two patches near the town. They rested also in the fields, perching on the heaps of manure; but they were generally to be seen passing overhead against the wind at a considerable elevation, the bright sun glancing on their breasts, enabling us easily to identify them. We saw no more at Ust Zylma after the latter date, but found them again sparingly on the islands of the upper delta between Viski and Gorodok. Northwards they became abundant on the willow-covered islands of the lower delta, and on the tundra around Vassilkova and up to Stanavoialachta, but were not found at Dvoinik in such large numbers.

Both at the time of migration and at their breeding-haunts we frequently saw them perching on low trees and bushes.

Many of their eggs and nests were brought to us by the Zyriani, or found by our men and ourselves after our arrival at Alexievka; but by that time (say June 26th) by far the larger number of the former were deeply incubated. Young able to fly were procured on the 20th July.

Budytes viridis, Scop.?

This handsome species is abundant around Ust Zylma, but becomes scarcer further north, and at last finally disappears,

giving place to the next species. We got it first at Ust Zylma on the 23rd May, and continued to shoot numbers of them up to the time of our leaving that locality. But though plentiful at Ust Zylma, northwards we found them much rarer, only occurring here and there in pairs in the opens and clearings near the villages as far as Abrámoff, or to about 20 miles within the arctic circle. North of that locality we did not again see it. The northern range of this species appears to overlap the southern range of the next species during the breeding-season, and *vice versâ*. Along the banks of the Petchora stray pairs, as already noted, occur to the north of the arctic circle; and only stray pairs of the Yellow-headed Wagtail occur to the south of the same degree of latitude. A considerable belt of country lying along the arctic circle, and for some distance north and south of it, may be looked upon as a neutral territory of the two species, where neither seems to have gained a firm footing. To the north of this belt the Yellow-headed Wagtail becomes the commonest bird of the delta; and to the south of the same belt the present species is abundant.

Budytes citreolus (Pall.).

We did not find the Yellow-headed Wagtail at all at Ust Zylma; and only one small party, of five birds, was seen at Habariki, on the 3rd June, when a single example was shot. We again met with a pair on the Yorsa river, of which we shot the male, and we found them sparingly here and there in pairs, as already stated, frequenting the opener parts of the woods, as far as Abrámoff. After leaving Viski we found them more numerously. At Kuya they were common, and at Alexievka they were daily seen in abundance; indeed this species appeared to be quite the commonest bird on the islands. It was present also, but not in such numbers, on the tundra. At Stanavoialachta comparatively few were met with; and none were seen at Dvoinik. The first eggs were brought to us by the Zyriani at Alexievka on the 19th June, the day of our arrival at that place; and we continued to get eggs in a fresh state for some time. We procured the young able to fly on the 20th July.

The Yellow-headed Wagtail's favourite haunts are the opens in the willow-thickets; and in such localities they literally swarm and are excessively tame. They perch on the tops of the bushes, often sitting in a peculiar bunched-up position, fly round an intruder in circles, or hover overhead, much after the manner of the other Wagtails or Pipits, and utter their monotonous chirping note, which, when often repeated, runs into a confused song. As many as a dozen were sometimes in the air at one time, above and around us. They often came from a distance towards us and followed us, accompanying us off their premises, until relieved by a fresh relay. Their general habits closely resemble those of the last species. The nests are carefully concealed amongst the tangled grass and wild flowers, which usually cover the dryer open spaces, and are composed of fine grasses, lined with reindeer's hair and roots or fibres. One we examined, whether by accident or design, contained two Pintail's feathers and one spray of Duck's down. The nests are difficult to find, owing to the males giving the females early warning of the approach of danger, and the above-mentioned habit of flying overhead and constantly uttering their alarm-notes and perseveringly convoying the intruder as long as he is in the vicinity, in which the females also take part. The thick nature of the undergrowth makes it a difficult matter to watch the female to the nest. At the distance of a few yards it would be almost impossible. The eggs closely resemble the eggs of other Wagtails of the *Budytes* group.

Concerning the migration of this species on the Kama river and near Kasan, the editors of the "Descriptive Catalogues of the High School of the Imperial University of Kasan" inform us that it arrives there when the other Wagtails have young, about the middle of April, and that a few pairs are seen as late as the beginning of June (new style). The migratory flocks in all probability pass on down the river Petchora from the head-waters of the Kama as far as Ust Ussa, then, leaving the banks of the river and crossing over the intervening country, reach it again somewhere north of Ust Zylma, the neighbourhood of which town they do not

appear to visit; at least, there we did not meet with a single specimen up to the 10th of June, when we left on our further journey down the river.

Motacilla alba, L.

The White Wagtail appeared for the first time on the 12th May, was plentiful while the migration lasted, and was perhaps most numerous about the 17th and 18th. We did not, however, find it plentiful afterwards, only a few pairs haunting each village or farm; but we traced it all the way down the river as far as Alexievka. We got the first eggs on the 15th June, at Abrámoff. A nest of this bird taken at Alexievka is similar in appearance to those found in Norway and at Archangel, but is lined entirely with Reindeer's hair and two or three spider's cocoons. We did not find the White Wagtail north of Alexievka.

Turdus pilaris, L.

The Fieldfare was first seen by us at Ust Zylma in flocks on the 17th May; and we afterwards found it common as far north as Stanavoialachta, where we saw the young birds frequenting the scrub which clothes a great part of the slope of the river-bank. We did not see it at Dvoinik. The first eggs were procured by us at Habariki on the 3rd June. It appears to be a somewhat later breeder here than the Redwing.

Turdus iliacus, L.

The Redwing appeared at Ust Zylma on the same date as, and flying in the same flocks with, the last species. We did not meet with it north of Stanavoialachta, though probably it is to be found, and also the Fieldfare, on the lower islands of the delta, which we did not visit.

Cyanecula suecica (L.).

The Swedish Nightingale is an extremely abundant species in North Russia; and in early summer it enlivens by its admirable mimicry every patch of underwood in the forests of pine and juniper on the sides of the valleys near Ust Zylma. It is abundant also in the birch- and willow-thickets and swamps

along the river-banks, and on the islands all the way north to Stanavoialachta. Even such dips and hollows of the tundra as can boast a patch of willow-scrub hold a few pairs. We got the first of the migrants of this species at Ust Zylma on the 23rd May; and they soon became very plentiful in the woods and valleys around Ust Zylma.

Often were we puzzled by the mimicry of this fine songster. On one occasion, after listening for some time to the well-known musical cry of the Terek Sandpiper, *tirr-r-r-whui*, blended with the songs of scores of other birds on approaching we saw our little friend perched high in a willow-bush, with throat distended, bill rapidly vibrating, and uttering the *tirr-r-r-whui* with perfect distinctness. We have heard the Blue-throated Warbler also imitate, amongst other bird-voices, the trilling first notes of the Wood-Sandpiper, or the full rich song of the Redwing. Sometimes he runs these together in such a way as to form a perfect medley of bird-music, defying one who is not watching to say whether or not the whole bird-population of that part of the forest are equally engaged in the concert at the same time.

[To be continued.]

XIII.—*Letters, Announcements, &c.*

The following letters, addressed "To the Editor of 'The Ibis,'" have been received:—

Sir,—I notice that Mr. Gurney, in his notes on Mr. Sharpe's Catalogue of the Accipitres, remarks on the omission of *Circus æruginosus* and *C. melanoleucus* from the Ceylon list. I fancy that Mr. Sharpe includes Ceylon under the head of "India" in the habitat he gives for eastern Raptors, as there are a number of similar omissions, such as *Falco communis, F. peregrinator, F. chicquera, F. severus, Cerchneis tinnunculus, C. amurensis, Nisaëtus fasciatus, Lophotriorchis kieneri, Polioaëtus ichthyaëtus, Buteo desertorum, Neophron ginginianus*, which are all visitors or stragglers to this island. With regard to *C. æruginosus*, I may say that it is our most abundant Harrier, arriving at the end of October, and fre-

quenting chiefly the west and south-west maritime regions. I have shot it, however, in the south-east and in the north of the island. It is more numerous in some years than in others. In 1872 I met with more birds than before or since that year; and I then got a fine series of young birds in all stages of the immature luteous head-dress; no two birds were alike. There appears to be an intermediate stage (that of the second year) between yearling birds, with the buff head and throat, yellowish chest, point of wing, patch over the elbow, and dark tail, and those handsome examples (evidently in the third year) in which the buff striated plumage of the head extends down on to the back and over the lesser wing-coverts, and in which the chest and throat are tawny and buff, the lower parts as rufous, almost, as in the adult, the primary wing-coverts washed with grey, and the tail uniform chocolate-grey. I refer to the plumage, in which the rich buff of the head extends down to the back, but not so far as in the above in which the wing-coverts are partially overcast with the same, the upper tail-coverts edged ferruginous, the under wing-coverts light rufous, the tail light rufous brown slightly washed with grey, and showing light beneath, and the iris *light brown*. I would remark that in the third stage the iris is yellow, as in the adult, and so are the tarsi, showing that the soft parts, in their march towards maturity, gain on the plumage.

Circus melanoleucus is very rare in Ceylon. I have only seen one example during my seven years' tour of collecting. While on the subject of Raptors, I may mention that Messrs. White and Co., taxidermists in Kandy, inform me that a second example of *L. kieneri* has been procured in the hills. I was fortunate to shoot a magnificent *F. communis* (♀) on the cliffs of this fort last month. A pair visit us every October; but their haunt is so inaccessible, that hitherto I have been unable to get at them. The weight of this specimen equals, I suppose, that of any ever shot in the east—2 lb. 4 oz., and carefully weighed! It is true, its crop and stomach were full; but I conclude this condition is taken into account in the weights given by Hume and others. This was a comparatively young bird, brownish feathers still remaining on the head

and back, and a few chocolate-coloured immature signs on the thigh-coverts and under wing-coverts. The wing measured 14·5 inches; another Ceylon-killed specimen in my collection has the wing the same length.

I have just returned from a tour through the "park" country of the eastern province and the eastern slopes of the mountain-zone. As regards the distribution of our species, the latter district presents very remarkable features, owing to the mountains being bare and rising up immediately from the low country (which is, itself, intersected by innumerable hills, based on a low level), without a barrier of forest as on the western side; the consequence is, that low-country birds range all through Madoolseema and Uva* to great altitudes, and some hill-birds range down into the low country. *Palæornis calthropæ* is abundant in the "park" country at 400 feet elevation; *Xantholæma indica* ranges up to 3000 or 4000 feet, *Buchanga cærulescens* the same, *Picus mahrattensis* up to 3000, and so on. This Barbet and Drongo are *the* species of the eastern province. But more of all this anon.

I am, dear Sir,

Faithfully yours,

W. V. Legge, Capt. R.A.

Trincomalie, Ceylon.
8th November, 1875.

P.S. There is a misprint in the last volume of 'The Ibis,' p. 283, where the length of the wing of *Chrysocolaptes festivus* is given as 2·8 instead of 5·8.

Sir,—In a letter to me, dated Nov. 16th, 1875, Heligoland, Mr. Gätke observes:—"This fall has been 'awfully bad,' nothing but storms from all quarters, with cold downpours. The last autumn was bad, but this one infinitely worse: all I got is a fine specimen of *Emberiza rustica*, an *E. pusilla*, also a *Muscicapa parva*; Woodcocks, Thrushes, and Blackbirds scarcely any."

Mr. Gätke also remarks that, on running up all notes about *Phylloscopus superciliosus*, he finds some fifty have undoubtedly been seen, and of these about twenty captured, since Oc-

* Our two eastern coffee-districts.

tober 1846, besides about twenty reported as seen, but not noted down, as somewhat doubtful.

I am, faithfully yours,

Great Cotes, Ulceby.
December 6th, 1875.

JOHN CORDEAUX.

SIR,—Through the kindness of Mr. Edward Newton, I have had an opportunity of examining an adult pair of *Circus maillardi*, recently brought by that gentleman from the island of Réunion, where, I understand from Mr. Newton, they are rapidly becoming scarce in consequence of a reward being given by the local authorities for their destruction.

In 'The Ibis' for 1875, I have given at page 229 some particulars tending to show that the race of *Circus maillardi* inhabiting Réunion is somewhat smaller than that found in Joanna Island.

Having only seen male birds from the latter locality, my comparison has been limited to that sex; but the result is confirmed by the measurements of Mr. Newton's Réunion male, which I here give in juxtaposition with the other measurements, previously published but here repeated for the sake of comparison:—

Adult males—	Wing, from carpal joint. in.	Tarsus. in.
From Réunion, in the collection of Mr. E. Newton	14·35	3·25
From Réunion, in the Leyden Museum, as measured by Mr. Sharpe	14·1	3·35
From Joanna Island, in the Norwich Museum	16·8	3·65
Also from Joanna Island, in the Norwich Museum	16·8	3·62

In the notice of the two males from Joanna Island, in 'The Ibis' for 1875, some particulars are given at page 230 of the coloration of the tail and upper tail-coverts, to which I would refer, and at the same time would mention, for comparison, that in Mr. Newton's Réunion male the rectrices are grey, but have acquired a brownish tinge where exposed to the action of the weather; one of the middle rectrices shows

a narrow longitudinal dark spot near the upper portion of the shaft; and both show a broad terminal bar of blackish brown, slight indications of which are also perceptible on some of the other rectrices. Those feathers of the upper tail-coverts which are nearest the tail are white; but those nearest the rump are black, with very narrow white tips, and also an irregular white spot on the inner web of one of them. In other respects the markings of this specimen appear to me to agree with those of the Joanna-Island examples.

I may take this opportunity of mentioning that Mr. Edward Newton feels quite certain as to the correctness of the diagnosis by dissection which showed the type specimen of *Circus macroscelis* to be a male (*conf.* Ibis, 1875, p. 231).

Whilst on the subject of Harriers I may remark that in 'The Ibis' for 1875, pp. 226–228, I published some notes on the various plumages of *Circus melanoleucus*; as an addition to these, I now give some particulars of a Harrier of that species, obtained in the month of March in the Darrany district of Assam by Major H. H. Godwin-Austen, and ascertained by that gentleman to be a female; premising that an ordinary adult male was obtained by the same ornithologist in the same month and in the same locality, and that I have been indebted to the good offices of Lord Walden for the opportunity of examining both these specimens. In this female the feathers on the entire upper surface of the head are blackish brown, with narrow rufous edgings; those of the nape are still darker, and without rufous edgings; the entire mantle is of a similar tint, increasing in intensity as it approaches the tips of the lower scapulars, which are almost black. The general hue of the mantle is apparently unbroken, except by narrow buff edgings to the upper interscapulary feathers; but on lifting up the lower scapulars, the feathers which they conceal are found to be grey, barred with blackish brown, which is darkest towards the tip, and in places mottled with white on the inner web; the feathers on the rump are blackish brown, more or less tipped with white; the upper tail-coverts white, with one, or at most two, irregular brown spots in each feather; the tail

grey, with six irregular transverse bars and a whitish tip, but with no tinge of rufous. The under surface is marked very much as is represented in 'The Ibis' for 1874, Plate X., but with considerably more white on the abdomen, owing to the brown streaks being fewer and narrower; the thighs and under tail-coverts are also white, with a few streaks of brown, varying in both length and breadth. The wings in this specimen show a remarkable approach to the plumage of the adult male: the whole of the lesser wing-coverts are white, but with a broad sagittate mark of dark brown in the centre of each feather, the same coloration being extended over the bend of the carpal joint, and along the anterior edge of the wing to the commencement of the greater coverts; the black band which, in the adult male, extends from the neighbourhood of the carpal joint to the tips of the tertials, is, in this specimen, represented by a corresponding band of dark chocolate-brown, varied by some of the brown feathers passing, in part, into a decided black, and by a few white spots in that part of the band which is near to the carpal joint; that portion of the wing which is grey in the full-plumaged male is also grey in this female, but with transverse bars of dark brown as in the ordinary plumage of male specimens of intermediate age.

The principal measurements of this female are as follows—wing from carpal joint 15·8, tarsus 3·3, middle toe s. u. 1·45.

I am, &c.,

Northrepps, Norwich. J. H. Gurney.
3rd December, 1875.

Sir,—In the October number of 'The Ibis' for 1875, Dr. N. Severtzoff, in a paper upon some new Central-Asian birds, gives descriptions of three Pheasants, which he calls respectively *Phasianus semitorquatus*, *Phasianus chrysomelas*, and *Phasianus persicus*.

Of the first of these Dr. Severtzoff seems to be undecided about the specific distinctness from *P. mongolicus*. Without having seen the specimen, I am of course unable to give any decided opinion; but it is not improbable that it may be only a

dark form of *P. mongolicus*. Of the next species, by the kindness of yourself and Mr. Dresser, I have had an opportunity of seeing the specimens brought to England by Dr. Severtzoff, and am satisfied it is the same as the one I named *P. insignis* in my monograph. I had but an imperfect skin to describe from, without any head or neck, and I erred in supposing that the adult would not have any white ring. The specimen belonging to Mr. Dresser, a male, not having its adult plumage, has, indeed, no ring; but the adult seems to have an imperfect one, not nearly so well defined as that in *P. mongolicus*. The third species of Dr. Severtzoff, *P. persicus*, I have not seen; but, from the description, I esteem it to be the *P. shawi* of my monograph, which, though similar in plumage to *P. colchicus*, has the white wings of *P. mongolicus* and *P. insignis*.

I am yours, &c.,

London, 14th December, 1875. D. G. Elliot.

Sir,—I find, on looking over my "List of Birds collected or observed during a journey into the Matabili country in 1873," that a few corrections and additions are required.

First, the information under "*Gyps kolbii*" (Ibis, 1874, p. 358) refers to "*Lophogyps occipitalis*."

Second, that under "*Gyps rueppelli*" refers to "*Gyps kolbii*."

Poliohierax semitorquatus.

Seen on two or three occasions in the Bamangwato district.

Bubo maculosus.

I flushed one of these Owls off her nest in the rocks among the high hills that lie to the back of Strasbourg, the chief town of the Bamangwato. The nest was merely a hole scooped out in the bank and sheltered by a rock; in this were lying two eggs, with no lining whatever; the bird sat until I almost trod on her.

Erythropus vespertinus?

One day in November I saw an enormous quantity of Hobbies, apparently this species, at a place called Holtfontein, in the west of the Transvaal.

Ceryle maxima.

Seen on one or two occasions on the Limpopo, but apparently not very common there.

Irrisor erythrorhynchus.

Common in the Bamangwato district, going about in parties of from six to eight; they are noisy and restless.

Laniarius atrococcineus.

I took a nest of this species out of a small thorn-tree on the 7th of November: it was placed in a fork of the tree, very small indeed for the size of the bird, and was made entirely of soft dead reeds, no other lining; it contained three eggs, white ground, very much spotted with light brown. The bird was extremely tame, coming down to the nest, though I was not more than a foot directly underneath it.

Megalophonus apiatus.

One specimen, obtained on the "High Veldt," in the Transvaal.

Eupodotis kori.

This splendid Bustard I only saw on one or two occasions in the bush country, and always singly.

Rallus cærulescens.

I obtained one specimen close to Pietermaritzburg; but it was too much injured for preserving.

I am, dear Sir, yours truly,

T. E. Buckley.

Sir,—In a recent article on the birds of the Pelew Islands (Journ. Mus. Godeffroy, pt. viii. p. 18), Dr. O. Finsch leaves it to be inferred that the Philippines are inhabited by two distinct species of the genus *Artamus*. One species (which he identifies as being the true *Lanius leucorhynchus*, L.), Dr. Finsch states, is restricted to the Philippine and Pelew groups of islands. The second, according to the same author, is *Artamus leucogaster*, Valenc., and is said by Dr. Finsch to be common to both the Philippine and the Sunda Islands. The closely allied New-Caledonian species of the genus, *A. melaleucus* (Forst.), Dr. Finsch considers specifically distinct from the Pelew form.

In a former paper on the birds of the Pelew Islands (P. Z. S. 1868, pp. 116, 117), Drs. Hartlaub and Finsch had already asserted in positive terms that the Philippines were inhabited by two distinct species of *Artamus*. On this assertion I ventured some remarks in my memoir on the birds of the Philippine archipelago (Tr. Z. S. ix. p. 174). But as Dr. Finsch, in his more recent paper (*l. c.*), still identifies the Pelew form with *A. leucorhynchus* of the Philippines, while treating the Pelew bird as a species distinct from the *Artamus* of the Sunda Islands, it becomes necessary to review the grounds on which this identification rests. It is not primarily a question of correct title that has to be decided, but one of fact. Is there any trustworthy evidence of the Philippines possessing two species of *Artamus*, the one identical with the species found in the Sunda Islands, the other with that confined to the Pelew Islands? As to there being two Philippine species, it is true that, while Brisson described and figured (Ornithologia, ii. p. 180, t. xviii. f. 2) a species of the genus from a specimen obtained in the vicinity of Manilla, preserved in Aubrey's cabinet, Sonnerat again separately described and figured a species observed by him in the Philippines (Voy. N. Guin. p. 55, t. 25). Sonnerat mentions that his species was the one described by Buffon (Hist. Nat. i. p. 310) under the title of *Pie-grièche des Philippines*. Sonnerat's erroneous quotation of the title used by Buffon need not now have been alluded to, were it not that Buffon really employed as the title part of the native name given by Brisson, and called it *le Langraien*, and nowhere does Buffon use the title attributed by Sonnerat. Buffon's account (for it cannot be called a description) is taken from Brisson; and he quotes the volume and page of the 'Ornithologia.' As Sonnerat identified his species with that of Buffon, and as Buffon manifestly refers to Brisson's species, we may assume that the same species was understood by all three authors. Gmelin (S. N. i. p. 305), by adopting the Linnæan title for Brisson's species, with which he associated that of Buffon, and by bestowing (*t. c.* p. 307) a separate title on Sonnerat's bird, was the first author who suggested the idea of the Philippines (or rather the vicinity of Manilla) being inhabited by two distinct species of

Artamus. If we turn to the two original descriptions, we certainly find a discrepancy. For the dark-coloured part of his species Brisson uses the word blackish (*nigricante*), whereas Sonnerat describes those portions of the plumage as being black (*noir*). Gmelin (*l. c.*) correctly adopts these distinctions in his description of *L. leucorhynchus* and of *L. dominicanus*. If we refer to the plates, the shading of Brisson's figure may be said to be consistent with his description; Sonnerat's plate represents the dark plumage as being inky black. The bird depicted by D'Aubenton (Pl. Enl. 9. f. 1) also has the dark parts of the plumage coloured jet-black. A comparison of dates renders it impossible that D'Aubenton could have figured from Sonnerat's specimen; and the presumption is strongly in favour of his having had Brisson's type before him; and the title affixed by him, *Pie-grièche de Manille*, is the one first employed by Brisson. Buffon cites the plate as representing his *Langraien*; and, as already stated, Sonnerat relates that his Philippine example belonged to the species mentioned by Buffon.

If these discrepancies had been relied on by the older authors (not Gmelin, for he was merely an indiscriminating compiler) as differentiating two Luzon species of *Artamus*, I would hesitate before asserting that they had described from examples of the same species. But Dr. Finsch in no way relies on these discrepancies. Dr. Finsch takes his stand on *Lanius manillensis*, Briss. (=*L. leucorhynchus*, L.), described as being blackish, and unites the jet-black bird of Sonnerat, *L. philippensis*, Scop. (=*L. dominicanus*, Gm.), with it, and refers the Pelew bird to them. If there are two species of *Artamus* in the Philippines, one very dark-coloured, the Pelew bird, the other lighter-coloured, the species of the Sunda Islands, the first must be Sonnerat's (*L. dominicanus*, Gm.), the other Brisson's (*L. leucorhynchus*, L.). But Dr. Finsch also unites with the Pelew bird *Ocypterus leucorhynchus*, Temm., apud Kittlitz, "von den Sunda-Inseln," although Kittlitz states (Kupfert. p. 29) he saw the same (that is, the Sunda-Islands bird) in Luzon. The figure given by Kittlitz (*op. cit.* t. xxx. f. 1) certainly represents the light-coloured known Philippine species—that is, the *Artamus* of the Sunda Islands.

The Pelew bird is also referred by Dr. Finsch to the *Ocypterus leucorhynchvs*, Cuv., of Hahn (Vög. aus As., Afr. &c. pt. xix. t. 2); and the plate is characterized as excellent. Hahn's figure represents all the dark plumage jet-black; but he describes the head, neck, wings, and tail as being slate-grey, and the back only as sooty black. Although styled a "*figura optima*" by Dr. Finsch, the upper tail-coverts in Hahn's plate are coloured black instead of white. Hahn gives the East Indies, especially Java, as the range of the species he describes and figures.

Now, putting aside the fact that there is no known species of *Artamus* whose dark shade of colouring is nearly so intensely black as that depicted by D'Aubenton, by Sonnerat, and by Hahn, not even the Pelew species, there is the still more convincing fact that there is no record of any author having ever seen authenticated Philippine examples of two species of *Artamus*. Dr. Finsch (*in epist.*), kindly replying to my queries on this point, informs me that he has never seen authenticated Philippine examples of more than one species; and they belonged to the Sunda-Islands form, *A. leucogaster*, Valenc. If, then, examples of a second Philippine species are unknown, and if, as is admitted by Dr. Finsch, the species which is known to inhabit the Philippines, and especially Luzon, is identical with that of the Sunda Islands, this last must take the Linnæan title of the Philippine bird. In this view the synonymy of the species as set forth by me in my memoir on the birds of Celebes (Tr. Z. S. viii. p. 67) will, I think, be found correct. My excuse for writing to you now so fully on the subject is not only because so distinguished an ornithologist as Dr. Finsch has differed from this interpretation of the facts, but because another most accurate naturalist, Count Salvadori, after accepting my views in his meritorious work on the birds of Borneo, has since adopted, in his notes on some Celebean birds (Ann. Mus. Civ. St. Nat. Genova, vii. p. 16), those of Dr. Finsch. If the Pelew species of *Artamus* specifically differs from *A. melaleucus* (Forst.), it would appear to require a distinctive title.

I remain, yours, &c.,

Chislehurst, December 1875. WALDEN.

THE IBIS.

THIRD SERIES.

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XIV.—*Notes on some little-known Birds of the new Colony of the Fiji Islands.* By Edgar L. Layard, C.M.G., F.Z.S., Administrator of the Government.

The arrival of the Governor, the Hon. Sir Arthur Gordon, to assume the direction of the affairs of this infant colony, and the necessity of some relaxation from the strain and worry of the previous eighteen months, which had seriously affected my health, afforded me reasons for seizing an opportunity to visit the beautiful and fertile island of Taviuni, the third largest of the Fiji archipelago, and one from which some of our most interesting birds have been procured.

As Mr. Liardet had brought from Taviuni to Levuka some indifferent specimens, which he submitted to my inspection, and amongst which I instantly detected several new species, I despatched my son, Mr. Leopold Layard, in April last to procure better skins. This he accomplished as regards all those species hitherto obtained, save one; and he also brought a report which determined me to go thither myself and see this island and its treasures with my own eyes.

On the 14th of July I started for Ngila, the hospitable residence of James Mason, Esq., which became my fixed abode

for six weeks; and in the woods at the back of his plantation the accompanying observations were made. My son at the time was up the Rewa river, among the "Kai-tholos," or mountaineers, in the centre of Viti Levu, on a collecting expedition; but on receiving my summons, despatched by a special messenger, he hurried down and joined me at Ngila; and we worked together.

The climate was delightful, the temperature being often as low as 62° Fahr. at night and in the morning, and ordinarily about 76° or 78° by day. A blanket and counterpane were usually acceptable; and we had no mosquitoes.

The forest about here rises from the back of the plantation in a gradual slope to an altitude of 800 or 1000 feet above the level of the sea. The lower portion has evidently at some time been felled and cultivated, but is now covered with a second growth of timber. This, though of fair size, contained little to interest us—an occasional *Rhipidura* or *Monarcha*, and now and then a stray "Orange Dove," in the young or green plumage. As we ascended the range the timber became finer, and resounded with the call of my new *Pachycephala torquata*, the new *Myiolestes macrorhynchus* put in an appearance, young "Orange Doves" became more plentiful; and on the flowering trees *Ptilotis carunculata* and the lovely little Parrot which I have named *Trichoglossus aureicinctus* hung pendent from the branches of the white blossoms, and chased each other with shrill screams or loud flute-like pipings. Then we gained the highest summits; and from among the lofty trees that clothed them came the loud booming "bark" of the large fruit-eating "Barking Pigeon" (*Carpophaga latrans*) and the harsh screams of the red-and-green Parrot.

As we hunted about, an odd chuckling sound, like a coachman starting his horses, was heard; and "Pretty" (the Laconi boy), knowing what we wanted, excitedly whispered "Manu-manu dum-dum," which is, being interpreted, "the red bird."

We dived into the "bush" after the boy, who peered up into the green leaves; suddenly he stopped, beckoned excitedly, whispering "Manu-manu dum-dum, Manu-manu, dum-dum" in a rapid voice, and pointed upwards. We gazed in

vain, till what we had taken for the gorgeous tints of a dying leaf, suddenly sprang to another bough. The "coachman" tried to start his horses again; and at every "chuck" the "gorgeous orange" jerked up and down in the oddest manner. It was *Chrysæna victor* of Gould, in all his glory! which in a few moments fell like an orange-and-gold ball headlong to the ground.

Brethren of the B. O. U. (I know you can rejoice with me over the acquisition of a rare bird of beautiful colours and strange appearance), picture to yourselves our delight as we handled the brilliant Orangebird, with the sun-light gleaming through its golden wings, and lighting up the emerald-green of its bill and feet, and of the cere round the yellow-buff eye, now closing, alas! in death.

We "lifted [him] up tenderly," stroked the smooth feathers of the strangely-coloured head, and recalled the moment when Mr. Gould exhibited the first specimen in the rooms of the Zoological Society. How little did I dream that I should be the first, perhaps the only one, of those present who gazed on the beautiful bird, to shoot it in its native haunts. We think of friends far away, till "Pretty" recalls us to Taviuni and the woods with a tug at the sleeve, and the magic word "Manu-manu;" and there, within easy range, with drooping wings and uplifted tail, swinging in the loop of a pendent liana, a jet-black bird, that at once reminded us of the Indian Robin (*Thamnobia fulicata*), jerked itself from side to side, while it progressed by short leaps up the liana. As I thrust a cartridge into the breech of my gun, the bird darted off through the trees, exposing to my astonished gaze the exquisite white satin patch that adorns the tail of *Lamprolia victoriæ*!

Before my trip was over, many a sable beauty lay in my hand; and probably my first acquaintance was one of them, as we found them, though distributed, pretty local, and attached to certain spots. My son and I usually brought home a row of birds, numbering from sixteen to twenty or more, pendent from a long stick, carefully carried by "Pretty," and shaded from the sun or rain by a long banana-leaf. After an

early dinner we then set to work, took out all the bodies of the birds we had shot, and stowed the skins in close-fitting tin boxes, with damp rags at the bottom. This kept them pliable; and a few drops of carbolic acid helped to retain them sweet. A few were usually finished off that day, and the remainder on the morrow; so we had alternate days fag in the forest and rest after. At night we refilled cartridges and wrote labels. This plan of working we found very advantageous; and I give it for the benefit of some of the young readers of 'The Ibis.'

Having described our country, I now proceed to particularize our birds; and the first I shot on entering the forest shall have precedence.

ZOSTEROPS EXPLORATOR, Layard, P. Z. S. 1875, p. 29.

I formerly described this species from memory, from a specimen obtained by the 'Challenger' exploring expedition, and was very glad to meet with it again, and thus be enabled to describe it more in detail.

Male. Upper surface of back, head, rump, and sides of chest greenish yellow; forehead, and line reaching to the eye, chin, throat, chest, and under tail-coverts yellow; belly whitish, tinged with yellow; flanks pale brown; circle of feathers round the eyelid well developed and white; under the eye a small black patch; wing- and tail-feathers pale black, edged externally with yellow; inside of wing white; shoulder tinted with yellow; bill livid dark blue, tip black, base of lower mandible white; legs and feet blue; iris brown. Length 4″, wing 2″ 6‴, tail 1″ 6‴, tarsi 8‴, bill 8‴.

The female resembles the male, but is slightly less brightly coloured.

This species differs considerably from our other *Zosterops* (*Z. flaviceps*, Peale) in having none of the blue (ashy) tints so very noticeable in that species. It approaches apparently most closely to *Z. flavifrons*, Gmel., from which it differs in the brown flanks and the centre of the belly being white.

It ranges in the forest in small parties of ten or more individuals, and, I am informed by the planters, often visits their cotton-fields, to devour the minute insects that infest the

cotton-buds. It utters a shrill note, and is a restless, active, prying little bird, ever on the move, examining flowers, leaves, and branches, and everywhere gleaning an abundant harvest.

Trichoglissus aureicinctus, Layard, Ann. & Mag. N. H. 1875, xvi. p. 344.

In April last my son reported the existence of a small Parrot, in size about that of the Shell Parrakeet of Australia, green, with a red neck and throat, flying in considerable numbers in company (but not mingling) with the "Kulu" (*Lorius solitarius*, Lath.). As he did not find the tree on which they were then feeding, he did not succeed in securing a specimen. In June or July subsequently, two gentlemen and my late servant Pearce, collecting in Viti Levu, obtained it.

Our bird is known to the natives of Fiji under the name of "Kula-wai," and to the Laconi boys by that of "Vuni-as."

It frequents a tree in the forests of Taviuni bearing a white flower with filamentous pistils, not unlike that of the "Jambo" of India (*Eugenia jambos*). It was often seen in parties of six or eight, and never less than a pair together, creeping about the branches and bunches of flowers with great rapidity, hanging head downwards, or in any position so that it could bite away portions of the flower to get at its favourite morsel, or chasing the noisy *Ptilotis carunculata* that attempted to share with it the flowery sweets.

The female differs very slightly, if at all, from the male; but the young birds, instead of wearing the gorgeous red breeches of the adults, have dull purple thighs, and the deep pink of the throat and other tints are less vivid.

Platycercus taviunensis, sp. nov.

On officially visiting Taviuni in the early part of 1874, a Parrot was obtained alive by some of the men of H.M.S. 'Pearl,' which I at once saw presented some marked differences from the birds I had previously seen from Viti Levu. I therefore directed my son to procure, if possible, specimens for comparison. Unfortunately, the wet weather which prevailed during his April trip prevented his obtaining more than a single female. This bird, however, convinced me

that the Taviuni race, if not specifically distinct, possessed some marked characters; and I made the accompanying memorandum respecting it, determining to lose no opportunity of seeing more of the species:—

"There is a marked difference between the red-breasted Parrots found in Taviuni and on the islands of the western portion of the group. The Taviuni bird is considerably smaller, to begin with."

A male shot by my son measures, length 14″, wing 7″ 6‴, tail 7″ 8‴ (not fully grown?), tarsi 10‴, centre toe (without nail) 1″ 1‴, bill 1″; a male shot on the Rewa measures, length 16″ 6‴, tail 9″ 6‴ (not fully grown), wing 9″ 6‴, tarsi 11‴, centre toe (without nail) 1″ 3‴, bill 1″ 2¾‴; form less robust; the whole coloration is darker, but especially the crimson, which, in the Taviuni bird, is turned into a deep maroon, much the darkest on the forehead and lores. The Taviuni bird also wants the blue patch at the back of the neck.

Just before my departure from Taviuni, a kind friend (Mr. Tempest, of Ndreketti), who had been collecting for me in Vanua Levu, brought me a small lot of birds, among which were a splendid pair of Parrots. To my astonishment the coloration was that of the Taviuni bird, *but with the addition of a blue nuchal collar*, but not so well defined as in the Viti-Levu birds, but still marked enough, and possessed by both sexes. In size it resembles the Viti-Levu bird, the male being a noble specimen, 17″ long.

This made me more anxious than ever for a fine series of Taviuni birds; and we consequently killed a lot of them, old and young of both sexes; but not one exhibited the least trace of the *blue nuchal collar*, while all were of the same deep chocolate-crimson, or maroon; moreover they all, especially the young, showed traces of dark green on the breast, body, and legs, chiefly on the latter, where in some specimens it is much developed, giving the thighs a scaly appearance. This green occupies the entire base of each feather. In some specimens the rump appears scaly with the deep maroon; this is never seen in the Viti-Levu race. Both sexes are smaller than the Viti-Levu race. But a fresh surprise awaited us. On our way down from Taviuni we anchored some hours at

Koro, an island midway between Ovalau and Taviuni, and, rambling on shore, we came across some Parrots.

We shot three birds; and on examining them our astonishment was not a little increased to find that two of them exhibited the faintest trace of the *blue nuchal collar*! while all have a large *red broken maroon* bar across the rump. Here, then, we have four distinct races in these islands (and, as I shall presently show, this is not a solitary instance):—first, the bright crimson-bellied race, with blue collar, of Viti Levu, extending, I think, to Kandavu*; second, the Mathuata bird (Bua and Ndreketti), on the other large island of Vanua Levu, maroon-bellied, with broadish blue nuchal collar†; third, the Koro bird, maroon-bellied, with the faintest trace of the blue collar‡; and, fourth, the Taviuni race (*P. taviunensis*, mihi), maroon-coloured, and without a trace of the blue collar.

In habits the races are similar. They frequent the forest, feeding on various fruits and berries as they come into season, and making descents on the planters' Indian-corn crops, where their depredations are very serious. They are very shy and wary, planting sentinels, who, with harsh cries, warn the flock of approaching danger, when off they all troop to the forest, and hide silently in the dense crowns of the broadest-leafed trees. If they find themselves discovered, they utter loud cries, swaying themselves to and fro on their perches, and holding themselves ready for flight in a moment. I have dodged them by appearing to walk past, and then, after changing my No. 10 cartridge for No. 7, crept back and dropped my quarry, who had meanwhile resumed his feeding, thinking that all was secure.

A gentleman at Ngila assured me that he had obtained three young ones from the same nest. They are capable of being tamed to any extent; and a lady on the Rewa has several pairs of these and *P. personatus* that fly about the woods

* [This is *P. splendens* (Peale). Examples from both islands are in Lord Walden's collection.—Ed.]

† [This is probably *P. tabuensis*; but Mr. Layard's speciments have not yet reached this country.—Ed.]

‡ [This appears to be *P. hysginus* (Forster); but Mr. Layard's specimens have not yet arrived.—Ed.]

unrestrained, returning to roost at night in their cages. When she walks out they fly to her and perch on her head or shoulder; and the last sight I had of my fair friend was to see her standing, on the high banks overlooking the river where her house is situated, with a pair of *P. personatus* on one shoulder, and a pair of *P. splendens* on the other.

Astur cruentus, Gould.

We saw this Hawk breeding freely in the forest. It generally selects a banyan-tree (*Ficus*), and places its nest, a rough structure of sticks, on a branch so thin as not to be able to bear the weight of a man. We had to spoon the eggs out, by tying a bag, kept open by a wire ring, to the end of a long stick.

Strix delicatula, Gould.

We took five eggs of the Australian White Owl from a banyan-tree. They were laid in a depression (without any nest) at the junction of four large branches. They are pure white. Axis 1″ 9‴, diam. 1″ 3‴.

Eudynamis taitiensis (Sparrm.).

A specimen of this bird, here very scarce, was shot a few months ago near Levuka.

Cuculus simus, Peale.

Seems to be a constant resident in the group; I have it from Taviuni, Mathuata, the Rewa, &c.

Lalage terat (Bodd.).

I cannot help thinking that our *Lalage* is wrongly identified with *Lalage terat* (Bodd.); but which of the numerous synonyms quoted by Drs. Finsch and Hartlaub will apply to it, I have no means of judging. I have received or shot specimens from all parts of the group, but not one in any plumage save that which is said to be the young stage. This it wears all the year round; and the natives everywhere declare that it breeds in this state; but I have never yet succeeded in obtaining a nest.

Monarcha lessoni, Hombr.

This species was common in the forest at all altitudes. A nest, said to be of this bird, was brought to me (23rd July,

1875), composed entirely of rootlets, and thickly covered with the yellow egg-bags of a common large spider. Diam. outside 2″ 8‴, inside 1″ 9‴; depth outside 3″ 6‴, inside 1″ 9‴. It contained two eggs, hard-set; ground-colour white, speckled, in the shape of a ring at the obtuse end, with small pink spots. Axis 10‴, diam. 7‴.

MYIOLESTES MACRORHYNCHUS, sp. nov.

This species, originally named by me from a specimen brought in a miserable condition by Mr. Liardet from Taviuni, replaces *M. vitiensis*, Hartl., in that island. It is not uncommon in the forest, roaming about in search of the insects on which it feeds. I never saw it on the ground; but I once shot it climbing up the trunk of a tree, and clinging to the bark, pecking like a Woodpecker at a decaying rotten limb. It is a thorough mocking-bird. The sexes do not differ. The edges of the basal portion of the upper, and on the major part of lower mandible, are yellow, as is the inside of the bill and throat. This species affords another instance of variation as in *Platycercus*.

The Ovalau bird, *Myiolestes vitiensis*, Hartl., is much smaller and lighter-coloured, and has always the tip of the tail almost white; but I have a specimen from Bua, in Vanua Levu, which seems intermediate. It is smaller than my *M. macrorhynchus*, paler, and with a well developed red-brown tip to its tail. But I have a still more interesting bird from Fortuna Island, outside this group, 350 miles to the N.E. It is smaller than the Bua bird, and more like *M. vitiensis*; but the throat, chin, and breast are grey; the tails, though damaged, are evidently broadly tipped with white. I propose to separate the varieties, or species, as follows:—*M. vitiensis*, Hartl. (the type species); *M. buensis*, sp. nov.; *M. macrorhynchus* and *M. fortunæ*, sp. nov. Unfortunately I have not a specimen of *M. vitiensis* at hand; but I add the measurements as given in the 'Ornithologie der Viti-, Samoa- and Tonga-Inseln' of Drs. Finsch and Hartlaub, wherein it is badly figured, the white of the tail-tip and the red of the vent being too prononcé. The measurements of the four species are as follows:—

	Long.	Al.	Caud.	Tars.	Rost.
	in. lin.	in. lin.	in. lin.	lin.	lin.
M. vitiensis	6 6	3 1	2 8	$8\frac{3}{5}$	$7\frac{1}{2}$
M. buensis	6 6	3 3	3 4	11	13
M. fortunæ	6 6	3 1	3 3	11	9
M. macrorhynchus	7 6	3 4	3 9	13	14

As will be seen, the bills of *M. buensis* and *M. macrorhynchus* much exceed the others in length, and are nearly twice as thick.

Pachycephala torquata, sp. nov.

This, another new species, is not uncommon in the forests of Taviuni—perhaps on account of its loud and varied voice betraying it oftener than that of other birds. If you listen attentively, you will probably hear a kind of running bass accompaniment of "purr purr." This comes from its mate, a little brown bird. The family are like the female, the very young ones being redder. As the young males grow up, the glorious yellow livery in which the adult rejoices is put on in patches, generally beginning with a yellow moustache on each side of the mouth.

And now for a further inquiry into species or varieties. What are the four birds we have here?—1. *Pachycephala gräffii*, Hartl.; 2. *P. vitiensis*, Gray; 3. *P. icteroides*, Peale; 4. *P. torquata*, Layard. Are they species or varieties?

As far as I know, my *P. torquata* is confined exclusively to Taviuni. The yellow of the underparts is extremely rich, and crossed by a broad black collar; the voice differs from all the others. *P. vitiensis* is much paler, and the throat paler still (Finsch and Hartlaub say "white;" but I have not seen it so), and separated from the other yellow by a narrow black collar. It is found in Viti Levu, not elsewhere that I know of yet. *P. icteroides* has no collar, and is paler than either of the two last. I fancy some specimens look as if they were assuming collars, a few black spots appearing on the neck. It is found in Ovalau. *P. gräffii* has a yellow spot on each side of the forehead, beginning at the nostrils, and a yellow bar on the rump. Its underparts equal those of *P. torquata* in richness. It is found at Bua (Vanua Levu).

My son said he saw a *Pachycephala* on the Rewa which was much lighter than *P. torquata*; probably it was *P. icteroides*, as he did not see any collar. He was so close to it that he refrained from firing, lest he should blow it to pieces. A native brought him a wonderful egg and nest; and on questioning him as to the parentage, he took him into the garden, and, pointing to a bright yellow flower, said the body was like that. We have no other bird of this colour; so I shall describe these eggs provisionally as those of this species.

The nest is a loose structure of rootless fine twigs, stems of a fern, dried ferns, and leaves; about 6 inches across by 4 deep; diameter of cup about 3 inches.

The egg is of a coffee-colour, lightest at the small end, darkest at the obtuse end, near which is a broad band of black. Axis 14‴, diam. 9‴. Surface polished.

Aplonis tabuensis, Gmel.

We did not find this species at Ngila, but in the forest at the back of "Na Mala," a second plantation belonging to Mr. Mason, some ten or eleven miles further south. It was feeding in flocks in a forest-tree bearing large black berries in clusters. It is not uncommon near Levuka; and I introduce its name here chiefly to notice another instance of variation.

I have two birds from the island of Fortuna, similar in every measurement to the Fiji species, except that the bill is *stouter* every way, but not longer; and the whole bird is imbued with a black shade. The sheen of the Fijian *A. tabuensis* is coppery, especially about the head; that of the other is of iron. I propose to call it Aplonis fortunæ, sp. nov.

Ptilotis procerior, F. & H.,

is unknown in Taviuni; and its place is supplied by a species that I at first took for *P. carunculata*, Gmel. But the more I look at it, the more I doubt its identity with that bird; without actual comparison, however, with specimens from Tonga, which is, I believe, the real habitat of *P. carunculata*, I cannot quite decide the point. Measurements go for little in this species, hardly two individuals agreeing together; but not

a single specimen we procured has the bill as short as 8‴, the maximum quoted by Drs. Finsch and Hartlaub. Then, again, they describe the iris as "white," and so figure it; in ours they are all buff, a darker shade prevailing. The wattle is very different from that of *P. procerior*, but hardly resembles that figured by Drs. Finsch and Hartlaub. If found distinct on actual comparison, I would name it *P. similis*. I would call it after the island, of the birds of which I now write; but I possess some specimens from Bua and Mathuata islands which are identical.

I shall have more to say on the identity of some of the birds of this coast with Taviuni presently; meanwhile I must refer to a species of *Ptilotis* from Fortuna Island, which is clearly quite distinct; but being one of Mr. Liardet's bad skins, is hard to describe.

It does not seem to have a pendent wattle, but a thickened, bare, fleshy, elongated yellow spot, between which and the bill is a black patch of feathers, and behind it, over the ears, a spot of bright yellow feathers. Its whole coloration is lighter than *P. procerior* and *P. similis*, especially on the chest and belly, which are rather brightly tinged with yellow; and it has nowhere that "scaled" appearance which, I find, in certain lights is exhibited by all the other species. In form it seems more slender. Length about 6″ 6 or 7‴, wing 3″ 9‴, tail 3″ 3‴, tarsi 1″ 1‴, bill 1″. If new, I propose for this species the name of Ptilotis flavo-aurita.

Lamprolia victoriæ, Finsch.

One of my chief objects in proceeding to Taviuni was to see this singular and beautiful species in its native haunts. It frequents the higher ranges of the mountains, never by any chance coming down to the sea-level. It is, as far as my present knowledge goes, confined to the island of Taviuni—though a gentleman, on whose observations I do not place much confidence, has assured my son that he has seen it on the neighbouring islands of Vanua Levu. A lad also told me, both it and the "Orange Dove" (*C. victor*) inhabit the Jasawas group of islands. It is never seen together in greater numbers

than three—a family party, father, mother, and chick; for, strange to say, *the female never lays more than one egg*. We found so many nests with solitary nestlings, and saw so many family parties, that there can be no doubt of the fact, which, so far as I can call to mind, is unique among the Insessores. We were a month or three weeks too late for their eggs, and too early for the second hatch, which I suspect they have, as the forest was full of young birds. The nests had chiefly fully fledged young ones; and only one had a single fresh egg; off this last I shot the female. This nest was built at the forked extremity of a thin horizontal twig, about four feet from the ground (none that we saw were out of reach of our hands), composed of fibres and the macerated strands of a species of flag, and lined with feathers, among which I detected the brilliant yellow breast-plumes of *Pachycephala torquata* (to which they seemed partial) and those of *Carpophaga latrans*. The structure, though light, is tolerably thick; diam. 3″ 9‴ outside, 1″ 9‴ inside; depth 2″ 9‴. The eggs have a pale pink ground, generally coloured with dark pink spots of various sizes, the colour of which seems to have run at the edges. Another egg was almost white, with minute pink freckles; but it was addled, and, I think, a season old, and consequently bleached. Axis (of the good egg) 1″, diam. 9‴.

In habits *Lamprolia victoriæ* shows considerable affinity to *Thamnobia* in its jerky motions, mode of flight, clambering up the thick (or thin) lianas, drooping its wings and elevating its tail. My son saw one clinging upright to a tree and digging into an ants' nest; one had its mouth full of white ants, destined probably for its young. It has a variety of cries, but no song (that we heard); it chattered defiance at us if near its nest, and was not at all shy. At other times it uttered a stridulous cry. The mouth of the young bird is bright yellow inside. When flying through the forest its course is pretty straight and swift, not jerky or undulating; it rarely, if ever, ascends trees of any altitude, always keeping to the undergrowth.

Rhipidura albicollis, Layard.

This pretty little "Fan-tail" is rather abundant in Taviuni.

It was breeding during our visit; and we found several nests, but mostly with young ones. The structure is always placed in the fork of a perpendicular twig, composed of very fine fibrous material and the hairs of the young shoots of tree-ferns densely felted together. The interior of the nest is lined with coarser fibre. They all end in a long tail running down the perpendicular twig to which they are attached, though at the same time they are supported by a lateral twig running through their substance. Diam. outside 2″ 9‴, inside 1″ 9‴; depth inside 1″ 9‴, from tip to end of tail 5″ or 6″; but I saw one fully 9″. The eggs are white, with various-sized brown-pink spots, rather inclining to form a ring at the greatest diameter, which is 7‴, axis 8½‴. This species is generally distributed, and, from its bold manner and loud cries of defiance, sure to attract notice. It follows the intruder on its haunts, chattering, scolding, spreading its fan-shaped tail, drooping its rounded wings, and, in fact, menacing its supposed foe till he has passed beyond its domain.

Myiagra azureocapilla, Layard, Ibis, 1875, p. 434.

This lively bird was another of my attractions to Taviuni; and we devoted many hours of special hunting for them. They haunt the densest forest, and are partial to "cane-brakes" and tangles of lianas. My son, who procured the majority of our specimens, says he rarely found them except in pairs, and that the love-making of the male was very curious: standing on his tip toes, he elevated his lovely azure crest and uttered shrill cries to his more sombre-coloured mate. On Leopold shooting a female that cried out on being captured, the male fairly attacked him, and would not leave him, even for a sufficient distance to save his being blown to pieces by the discharge, for many minutes. We failed to find any nest, though (from the sexual development) they must have been breeding, or about to do so.

Mr. Tempest has sent me a young bird of this species from Bua. He says he thought it a non-breeding female; but the throat is a brighter chestnut-colour than others in my collection, and the head has a blue tinge. I think it a young male, and that in youth this sex resembles the female.

ERYTHRURA PEALEI, Hartl.

This exquisite little Finch, instead of being, like other members of his family, an inhabitant of the open country, feeding on grass-seeds, is a dweller in the dense forest, frequenting the high trees and living on berries, such as the Orange Dove eats. I am now quite certain that the Finch I saw at Nandranga and Naudi, on the coast of Viti Levu, living in flocks in the deserted fields, was not this species, but another, probably *Amadina optata*, F. & H. I distinctly saw the red rump; and the cry was quite that of *Amadina*, and distinct from that of *Erythrura*. The latter never goes in flocks; and we rarely saw them except singly.

MERULA VANICORENSIS, Quoy.

This bird, though not included in Finsch and Hartlaub's catalogue as a Fijian bird, has been sent me from Bua by Mr. Tempest, obtained, at an elevation of over 600 feet, at a place called Kandi.

CHRYSŒNA VICTOR, Gould.

This gorgeous Dove is the glory of the forest of Taviuni, and, I now find, is more generally distributed over a certain range of country than I suspected. It certainly is found in Lanthala and Rambi islands, and on Vanua Levu, about Bua, Ndreketti, &c.; and this, coupled with the discovery of the other species of birds already alluded to in this paper as residing there, seems to point to the fact that at no very distant date (geologically speaking) these islands were joined together, and not, as now, separated by the straits of Somo-Somo. Those of 'The Ibis' brotherhood who have shot the "Cock of the Rock," can readily picture to themselves the "flame" of the Orange Dove as he pursues some rival through the green forest—the eye fairly dazzled as the orange ball on golden wings turns and twists in the sunlight. Dull days do not suit him a bit, and he hides away and mopes, never uttering a sound; but with the bright sun he emerges from his retreat, and "clucks" to his green wife from many a "cool retreat." The young males never utter this sound, and would be mistaken for females, but that the vent is more orange. They

breed about December or November, making a rude platform of small twigs for a nest, not usually above 8 or 10 feet from the ground, and laying two eggs, pure white, axis 1″ 4‴, diam. 1″.

People have told me they have taken the young birds orange-coloured from the nest, and seen orange females. I regret to say I don't believe them!

C. victor feeds on many sorts of small and large berries and fruits, swallowing them whole.

Gallus domesticus.

Among other presents left by Capt. Cook when he visited these islands, were enumerated Fowls; and some of the earlier navigators who followed him mentioned the fact of their having taken to the bush and gone wild. They are now found roaming free on many of the islands; and it was no uncommon thing to be greeted by a loud "cock-a-doodle-doo" as we wound our early way along the narrow tracks of the forest. Some of these descendants of the old stock have gone back to the "Game-fowl" colours; others still show traces of the "Dunghill." The natives catch them in snares and springes; but we shot some and captured a chick, which, with its mother and a rooster, I hope may form a group in the British Museum as a product of our new colony of Fiji.

Strepsilas interpres (L.).

Our short visit to Koro Island procured us a specimen of this bird, a female, in fine spring plumage. It is very scarce in the colony, and does not, I think, breed with us.

XV.—*Notes on the Ornithology of Fiji, with Descriptions of new or little-known Species.* By E. L. Layard, C.M.G., F.Z.S., &c., H.B.M. Consul.

As there are several collectors of birds now in Fiji, who are transmitting specimens to Europe and Australia, I deem it advisable to forward descriptions of such novelties as fall under my own observation, as they occur, for publication in the pages of 'The Ibis.'

MYIOLESTES COMPRESSIROSTRIS, n. sp.

This apparently new species is intermediate between my *M. macrorhynchus* and *M. vitiensis*, Hartl.; but the remarkably thin compressed bill, with its very white base, at once distinguishes it. In size it is nearest to *M. vitiensis*, Hartl., being, length 6″ 6‴, wing 3″ 4‴, tail 3″, tarse 10‴, bill 12‴. In coloration it closely resembles *M. macrorhynchus*, but is rather redder in general tint, and *has the broad whitish tips to the tail-feathers* found in *M. vitiensis*.

My old servant, C. Pearce, who has been collecting in Kandavu, at my suggestion, has brought thence several new birds; but as they are for Mr. Ramsay, of Sydney, I refrain from naming them. Among them, however, is a gigantic *Myiolestes*, far exceeding *M. macrorhynchus* in size, though resembling it somewhat in colour; but its bill is the chief feature; this measures, length 1″ 3‴, depth 6‴, breadth at gape 7‴.

This variation is most interesting; and I am convinced that had I the opportunity of working all of the larger islands of the group, I should find that each (or at least certain congeries) possessed distinct faunas.

Pearce informs me that my Green Dove (*Chrysœna viridis*, is *the* Dove of Kandavu; and it certainly is not found elsewhere. He also has procured my *Merula bicolor*, *Petræca pusilla*, a new *Rhipidura*, a new Warbler of a genus unknown to me, and fine specimens of my two new birds, *Ptilotis provocator* and *Zosterops explorator*. *Z. flaviceps* is also found there, he tells me.

MERULA BICOLOR, Layard.

Of this species I can now add a more detailed description from specimens brought by Mr. Pearce. Length 7″, wing 4″, tail 3″, tarse 1″ 3‴, bill 13‴. Throughout, with the exception of the head and chest, sooty black, not iridescent; the whole of the head and chest is cinnamon-red; bill and feet orange. The female is less brilliant than the male, and the separation between the red of the chest and black of the body not so well defined.

Mr. Pearce tells me they scrape about the ground under bushes in the forest, for worms &c., and are quite like Blackbirds in their habits and note.

PACHYCEPHALA VITIENSIS, Gray.

Abundant at Kandavu, and apparently the only species there. Mr. Pearce obtained nests and eggs, shooting the male off one. The egg (a single one), hard-set, was large, irregularly marked at the obtuse end, somewhat in the shape of a ring, with large ill-formed purplish blotches. Breeds in September.

The nest is a coarse transparent structure of thickish rootlets, with here and there a patch of cobweb. No lining of any kind. External diam. 4″, intern. 2″ 6‴; ext. depth 2″ 6‴, intern. 1″ 6‴; placed in a low shrub between two lateral branches.

The genus *Pachycephala* is widely distributed over these islands; and the species composing it differ, as do those of *Myiolestes*; I am only just getting to have some clear idea of them. On Ovalau, and up the Rewa, the true *P. icteroides* (Peale) seems to prevail; but in the former place specimens are sometimes found with the yellow patch on the nostril that characterizes *P. graeffii*, Hartl., but the yellow of the underparts is not nearly so dark. About Tai Levu, on the N.E. coast of Viti Levu, a species is found with the light-yellow underparts of *P. icteroides*, but with a *perfect though narrow black ring* round the neck. I propose to call this *P. intermedia*, Layard, as it is intermediate between *P. icteroides* and my *P. torquata* on the one hand, and between the former and *P. vitiensis* on the other, the last-named having a *white throat*.

At Bua, on Vanua Levu, *P. graeffii*, Hartl., prevails, and on Tavinui only my *P. torquata*.

I suspect that a close investigation of some of the remaining islands of the group will reveal other varieties of this genus.

Mr. Klinesmith has just discovered a new *Lamprolia* near Savu-Savu Bay, on Vanua Levu, which resembles *L. victoriæ*,

but is about a third smaller, and the head is entirely covered with the brilliant blue feathers. He has named it *L. minor*.

Ptilotis provocator, Layard, P. Z. S. 1873, p. 28.

Mr. Pearce obtained at Kandavu in September three nests of this species, each containing a single egg. The nest is a light structure, composed of fine rootlets, and lined with bents of a thin wiry grass, with a base of cotton and feathers. Ext. diam. 4″, intern. 2″ 6‴; ext. depth 2″ 6‴, intern. 1″ 6‴.

The egg is a pale salmon-colour, spotted throughout with dark red, and indistinct, very pale, purple blotches, small, and the latter grouped chiefly in the form of a ring at the greatest diameter. Axis 13‴, diam. 9‴.

It is singular that I have to chronicle two other Fijian birds apparently only laying one egg! Is this the rule or the exception? If the former, it accounts for the paucity of individuals one sees in the forest.

Rallina pœciloptera, Hartl.

On the 9th October, 1875, a male and four eggs of this species were brought to me from the Rewa. The latter are of a warm brown cream-colour, marked throughout, but especially at the thick end, with irregularly shaped and sized spots and blotches, of indistinct pale purple and dry blood-colour. Axis 2″, diam. 1″ 6‴. On blowing them they were found just beginning to be hard-set.

The male, judging from two pairs I have in my collection, is rather smaller than the female.

The natives say this bird never takes wing. On the point of the spurious winglet there is a small stiff spur, black, with a white tip, and about half an inch in length.

Sterna melanauchen.

I am induced to give the following description of this species, taken from a fresh-killed specimen, as it differs considerably from that given by Jerdon in his 'Birds of India':—

Bill and feet black; tip of bill and claws *white*; eye brown; inside of bill (mouth) deep orange-red. The whole of the

under plumage suffused with delicate pink, which is visible even under the delicate grey of the back; it extends over the underside of the wings. An outer tail-feather, just growing, is a rich pink, deepest near the root, the shaft is also pink; this fades as the feather grows older and more elongated; outer vane of first wing-primary jet-black.

Shot on the reef at Ovalau, October 4th, 1875, by my son. Stomach contained bones and scales of small fish. Other specimens have since been obtained and seen; and on the 10th of October I saw what I am convinced were three examples of *Anous cinereus* (Néboux). I believe that visits to the Yassawas and low-lying islands to windward would add largely to the list of sea-fowl inhabiting Fiji. I obtained *A. cinereus* abundantly, nearly twenty years ago, on the coral islands to the N.E. of Madagascar.

ARDEA SACRA, Gmel.

A reference to the synonyms of this bird, given by Drs. Finsch and Hartlaub in their 'Fauna Central-Polynesiens,' and Jerdon's 'Birds of India' (vol. iii. p. 748), shows the confusion that exists as to the identity of the Indian and Australian birds.

I perceive that Jerdon says, on my authority, that the young birds are *white*. I have not my notes of Ceylon birds with me; but if I remember rightly, after so many years, I found it breeding near Tangalle in tolerable plenty.

I have just obtained (2nd November) a pair of young ones, male and female, from the nest, of the species that inhabits these islands; and they are *dark slate*-coloured—much *blacker* and *glossier*, in fact, than a slate-coloured bird in full plumage, although long filaments of white down still remain on the head &c. Europeans and natives assure me that they breed in both phases of plumage, and that sometimes a *white* bird will be mated with a *blue* one.

It nests indifferently on rocks, on the ground, or in the mangrove or other trees that line the sea-shore.

Now, if the Indian bird is always *white* when young, and our bird is *slate*-coloured, may not that fact indicate that the

two are distinct? or are the white and slate birds only dimorphic varieties? Has any one seen the Asiatic race slate-coloured when in the nest, or observed the slate-coloured and white birds breeding together in India?

XVI.—*Ornithological Notes from the Neighbourhood of Buenos Ayres.* By Henry Durnford.

The following notes were made during the first five months of my residence near this town, and, under many difficulties, at such times as I could spare from other employment. The determination of the names of the skins I have made I owe to Dr. Burmeister's kindness, who has ever been ready to render me all the assistance in his power*. Most of my notes have been made at Belgrano, where I live, a place situated about six miles to the north-west of Buenos Ayres, on the shores of the La Plata. I have also visited other localities, the names of which appear in the body of my notes.

Sylviidæ.

I saw two individuals of *Polioptila dumicola* on 10th October of the present year (1875), in some marshy ground near San Isidro. They were hunting amongst the reeds, somewhat like Tits (*Parus*).

Troglodytidæ.

Troglodytes furvus (called "Ratoncito" by the natives) is very abundant; it has a pretty little song, which it pours forth from the top of some bush, or perched on an aloe-leaf. On the 10th October I found eggs; the complement in a nest is usually five. The eggs are small and much speckled with red. I have seen many; and they differ considerably in different nests. These are made of bits of rush and grass, warmly lined with wool and feathers, and are generally placed in the stump of an old ombra-tree—the only indigenous tree, I be-

* [These names we have altered to correspond with those used in the 'Nomenclator Avium Neotropicalium.'—Ed.]

lieve, of the country, and useful for nothing but to keep off the rays of the sun.

MOTACILLIDÆ.

Anthus rufus is very common, occasionally perching on trees, bushes, &c. In its flight it circles upwards, like our Sky-Lark, its voice, however, being far inferior to the song of that bird. On September 28th a friend of mine took three fresh eggs from a nest of grass lined with hair; and on October 5th I took three slightly incubated eggs from a nest made entirely of cow's hair.

MNIOTILTIDÆ.

A single specimen of *Parula pitiayumi* is the only member of this family I have yet met with. It came so close to me that I knocked it over with my stick.

HIRUNDINIDÆ.

Progne purpurea was first seen on September 22nd; by October 13th it was common. On April 3rd I saw a specimen of *Hirundo leucorrhoa* flying over the island of Flores, to the east of Buenos Ayres; and on August 10th I observed others at Belgrano; from the latter date to the 18th they appeared sparingly, the weather being cloudy and unsettled; by October 9th they were busily engaged in building their nests, and were very abundant. I often observe birds of this species clinging to the trunks of large willow trees which are full of holes; they also perch on twigs just outside the holes; and once I saw one sitting on the edge of a large opening in a branch. On October 3rd I saw two pairs of *Atticora cyanoleuca* frequenting some holes in a sand-pit near Flores; as they often returned to the pit, and clung to the face of its perpendicular sides, I think they had nests near. I thrust the whole length of my walking-stick into two or three of the holes, without touching the end of any of them. I am told this Swallow remains the whole year near Buenos Ayres; and a friend assures me that he once shot one when Duck-shooting in the winter.

FRINGILLIDÆ.

Zonotrichia pileata, the Sparrow of this country, is very

abundant, and is now (October) nesting everywhere. The nest is made of moss, lined with hair, and sometimes a little wool; it is usually to be found at the foot of a small tree or bush. The complement of eggs seems to be four; they vary exceedingly, but always have the appearance of belonging to a Finch. From the 5th to the 10th of September I saw *Chrysomitris magellanica* common near Ranchos, about 70 miles from Buenos Ayres; they were frequenting the *Eucalyptus* trees planted in the neighbourhood.

ICTERIDÆ.

Molothrus bonariensis I frequently see, being most common in marshy ground. *Agelæus thilius* was in flocks at Punta Lara on June 29th, when I shot a male; the females were scarcer, and did not mix with the other sex, but were also in flocks. In October the species was common at Belgrano, but in pairs. On July 8th I saw four individuals at Punta Lara; one of those I shot had been feeding on some aquatic plants, the seeds of which were in its mouth when I picked it up. I have not seen this bird since, but am told that it is common and resident here. *Sturnella defilippii* is common in the winter in large flocks.

TYRANNIDÆ.

Sisopygis icterophrys is pretty common in damp situations amongst trees and low bushes, from the 1st to 13th October. From May to September I saw many *Lichenops perspicillata*, usually singly, at most in pairs. I feel pretty sure that the female is the ferruginous, and the male the black bird, as I have constantly seen the two paired. On October 13th they were still common, but not yet building.

On August 3rd I shot a specimen of *Machetornis rixosa* from a flock that were dusting themselves in the road; it does not appear to be a common bird. *Hapalocercus flaviventris* is abundant in rushes and low bushes from October 1st to the middle of the month. *Serpophaga subcristata* is common here; its nest is a beautiful little structure of lichen and horsehair, lined with feathers. I have taken several nests, none of which contained more than two eggs.

Sometimes the nest is placed in the fork of a tree, sometimes in a low bush about three feet from the ground. *Cyanotis azaræ* was pretty common at Punta Lara on July 8th, in the extensive tract of marsh-land which lies about thirty miles from Buenos Ayres, to the south-east; at Belgrano I have not yet seen it. It is very Tit-like in its movements, diligently hunting over every little clump of reeds. The male and female are apparently alike. *Megarhynchus pitangua* (called here "Bien te veo" (well do I see you) from its note) is common everywhere, being a conspicuous bird. It often leaves its post of observation to chase some large dragonfly or other insect, returning many times to its perch. On October 3rd I found a deserted nest containing a broken egg; it was an untidy structure, made of bits of rags, wool, feathers, and hair. On October 6th I found another, which the birds were still building. The first *Pyrocephalus rubineus* I saw was on September 20th; they are now (15th October) abundant everywhere at Belgrano, but are not yet nesting. They have a habit of leaving the twig or bough on which they perch and making a forage for insects, just as our common Flycatcher does at home; they hover in the air, too, for many seconds together. *Milvulus tyrannus*, the Tijereta or Scissor-bird, I first saw on October 9th at Belgrano. At Flores it was first seen on October 16th; now it is common, but has not yet commenced nesting.

Dendrocolaptidæ.

Furnarius rufus, the "Hornero," or Oven-bird, is very common here. On August 1st I watched a pair repairing their nest; but the eggs seem to be laid much later in the year; for on October 9th I examined another empty nest, and a friend visited a nest without eggs on the 13th. The bird utters a loud piping note whenever the vicinity of its nest is invaded. Of *Synallaxis* I have noticed several species, but have not yet made them out sufficiently to say what they are. One species makes, for its size, an enormous nest; and this, placed in a tree at various heights from the ground, is constructed of sticks and lined with hair and wool, the aperture being near the top.

Inside there are two rooms as it were, a passage leading from one to the other; in the lower the eggs are laid, the upper one, it is supposed, being used as a roosting-place all the year round. *Placellodomus frontalis* is not at all rare, frequenting damp places; I have found and identified three nests, all of which were placed at the ends of boughs about eight feet from the ground, being always of an oblong shape, never so round as that of the next species. The nest consists of sticks and twigs, lined with hair, and sometimes wool; the full complement of eggs is four. This species has very skulking habits. *Placellodomus ruber* is also common in marshy ground; its nest is similar to that of the last-mentioned species, and constructed of the same materials, but is rounder in shape. The bird is not easy to identify, as when disturbed it hides itself amongst thick reeds or bushes. The eggs are white, the full complement being four or five. They are similar to those of *P. frontalis*, but rather larger.

Strigidæ.

The Short-eared Owl (*Otus brachyotus*) is common in open lands, but is not often seen here; it flies towards dark, and feeds on beetles. The Burrowing-Owl (*Pholeoptynx cunicularia*) is abundant, building in holes in the ground; it is an Owl of diurnal habits, being fond of sitting on a thistle or clod of earth, whence it flies to seize insects on the wing. Its flight is undulatory, and performed by rapid strokes of the wings. From May to September this bird was common near here; after that they appear to have betaken themselves to the campo to build in the Biscacha- and Armadillo-holes, which there abound.

Falconidæ.

Two or three pairs of *Buteo pterocles* frequent a wood near Chirilcay, about 100 miles from Buenos Ayres; the male is slightly smaller than the female. The "Chimango" (*Milvago chimango*) is very common, frequenting the open campos in preference to the enclosed country. *Polyborus tharus* (the "Carrancha") is common, especially in marshy places; it feeds indiscriminately on dead fish, lizards, carcasses of

horses, cattle, sheep, or other carrion, and it is said sometimes to pick out the eyes of very young sheep. On September 18th an undoubtedly genuine egg was sent me from Entre Rios. A nest I found myself near Belgrano was in the middle of a large swamp; it was a massive structure, composed of sticks and lined with a little coarse hair and sheep's wool, and was full of putrid bits of horse-skin and bones of fish; it measured 5 feet round and $1\frac{1}{2}$ deep, and contained three young ones about a week old. Two of these I preserved, leaving one in the nest; but it was gone on October 6th, and the nest relined with cow's-hair, evidently for a second brood. On the 13th no eggs had been laid.

PHALACROCORACIDÆ.

Phalacrocorax brasilianus I often see. I shot one, March 25th, on Flores Island.

ARDEIDÆ.

Ardea cocoi is tolerably common both in Banda Oriental and the banks of this river. On October 3rd I saw a Little Bittern, probably *Ardetta involucris*. I have also met with another species of Heron, which I take to be *Ardea sibilatrix*; but I have not yet made it out satisfactorily.

CICONIIDÆ.

Ciconia maguari is common in every marsh of any extent.

PLATALEIDÆ.

Falcinellus igneus is very common; it has a strong smell, owing to the carrion it eats. During the last fortnight in September I noticed a large flock flying northwards; a friend who lives on the other side of Buenos Ayres noticed one also. There are still (Oct. 15th) some about here.

PALAMEDEIDÆ.

Chauna chavaria is common on all sides of Buenos Ayres. On October 3rd I observed a pair near here; but I have not yet ascertained if they breed in the neighbourhood. When wounded it is said to defend itself with its formidable spur.

ANATIDÆ.

Two Swans (*Cygnus nigricollis* and *C. coscoroba*) are occasionally to be seen at this time (Oct. 15th), usually flying southwards, most of them having left for breeding-quarters. *Querquedula cyanoptera* is not uncommon; I have shot a few at intervals between May and September. *Dafila spinicauda* is abundant, and may even now (Oct. 15th) be seen in flocks, though doubtless many are breeding. *D. bahamensis* I found pretty common at Espartilla, a place about 100 miles south of Buenos Ayres; I have not seen it elsewhere, though I am told it is not uncommon. The Chilian Wigeon (*Mareca chiloensis*) is not very common, though I have shot several. *Spatula platalea* is abundant, and the easiest to shoot of the Ducks of this district. *Metopiana peposaca* is a most wary species, but the best of all for the table; it is common everywhere. I procured a specimen of *Erismatura ferruginea* in the market, but have not yet seen it alive. I have shot a smaller species, but of which I have not yet made skins; and this, I suppose, is *E. dominica*.

COLUMBIDÆ.

Zenaida maculata is, I believe, common in the province; but, as yet, I have only once met with it; and this was on August 2nd, at Chirilcay, about 100 miles from Buenos Ayres, when a vast flock passed over my head. *Columbula picui* is very common, keeping in large flocks during the winter: it is an early breeder; for on September 26th I found a nest with two eggs, and on October 3rd one with two young about a week old. The nest is very small for the size of the bird, so that when she sits she shows the whole of her head and neck on one side and her tail on the other.

RALLIDÆ.

Porphyriops melanops. Of this species I flushed and shot one on the banks of a lagoon about 100 miles south of this place, and saw another. Birds of this species may possibly be commoner than they seem; for their skulking habits keep them out of sight. There is a Coot here which goes in large flocks, and has the habits of our Bald Coot.

CHARADRIIDÆ.

Vanellus cayennensis is very abundant; and fresh eggs are to be obtained on September 10th; on the 27th I saw young on the wing, which must have been bred quite early in the season. The nest is exactly like that of the Peewit, but larger, though the eggs are not larger than those of that bird. It frequently cries at night just as our bird does. *Eudromias modesta* is very good eating; one was shot on Flores Island out of a flock on 30th March; I have often observed it out on the campo.

THINOCORIDÆ.

Thinocorus rumicivorus I found common from May to September, and always in flocks. It seems equally fond of wet swamps and the dry campos. When disturbed they fly round, uttering a low whistle, and invariably alight head to wind. They remind me of flocks of *Calidris arenaria* as they stand motionless on the ground.

SCOLOPACIDÆ.

Himantopus brasiliensis is a very common species here, both in small flocks and singly; on May 27th I shot one changing to winter plumage, its head mottled with black and grey; on June 29th I found them common at Punta Lara, all in winter plumage. *Gallinago frenata* is the only true Snipe here, and is abundant in every marsh in the country; it is now (15th Oct.), I believe, breeding; but I have not yet found a nest, though a marsh near contains two or three pairs. *Rhynchæa semicollaris* in habits much resembles a Snipe, flying but a short distance, and lying close until nearly trodden upon; I have found two nests of this species, one on September 20th, the other on October 5th; they were in a swamp about a mile from this; each was formed of a few pieces of reed in a slight depression in the ground; one was quite exposed in an open spot, the other under the shelter of a tuft of grass; each contained two eggs, from which the old birds of both were flushed. The eggs measure 1·5 by ·9 inch, and are not very sharply pointed; they are of a dull dirty white ground, which is almost hidden by numerous spots and

blotches of dark umber-brown and black distributed over the whole egg. *Gambetta flavipes* are common, and on October 10th were still in flocks; so that they cannot be nesting, though the time must be near.

LARIDÆ.

A Tern I saw in March on Flores Island, and again in May on the shores of the La Plata, near Monte Video, I believe to have been *Sterna trudeaui*; but of this I am not certain. I saw a flock of *Sterna superciliaris* during a very stormy day in May, beating against the wind close inshore, near the custom-house at Monte Video; I have no doubt about the species, which appears on the wing to be a little larger than *S. minuta*. Of Gulls, *Larus dominicanus* is pretty common; and on September 10th I shot one in full summer plumage. This Gull goes far inland; for in September I found it common about 100 miles south of Buenos Ayres, in the campo, where it feeds upon dead sheep, horses, &c. *Larus maculipennis* is the commonest species here; they commence assuming their spring dress about the middle of July; they feed on worms and insects, and also on carrion. This bird much resembles our *L. ridibundus* in its actions and flight and voice. I believe it nests in the open campo, some distance to the south of Buenos Ayres; there are eggs in the museum from this neighbourhood which resemble those of *L. ridibundus*, except that they are larger. I have not as yet, so far as I am aware, seen *L. cirrhocephalus*.

PODICIPITIDÆ.

Æchmophorus major I have observed frequently in Banda Oriental, as well as near Buenos Ayres. I have also seen *Tachybaptus dominicus* near Monte Video in full summer plumage; in August and September I saw it here on small streams, but during these months always in pairs.

TINAMIDÆ.

Nothura maculosa is abundant wherever there is cover; a friend of mine found a nest with one egg as early as July.

It is not so good to eat as a Partridge, and shows but poor sport, seeking to evade dogs by running, and when flushed flying low. *Rhynchotis rufescens* was some years ago quite common near Buenos Ayres; but now "civilization" has driven it backwards, so that it is not to be found in any numbers within 100 miles of this place. It is still abundant at Chirilcay, where it is caught by men and boys on horseback. When a bird is sighted the horseman commences riding round it in narrowing circles, until he can pass a horsehair noose over its head from the end of a long stick. The bird, when alarmed, invariably squats instead of running away. In the country they are to be bought for 2*d.* a piece; in the town they fetch from 1*s.* 6*d.* to 2*s.* 6*d.* each. The flesh is white and dry. One I flushed in the campo rose straight up, like a Pheasant, and then flew with a steady flight about 300 yards before it settled again.

XVII.—*Notes on the Genus* Helminthophaga.

By Robert Ridgway.

The genus *Helminthophaga* ranks second in importance in the family Mniotiltidæ, one of the most characteristic of the Nearctic avifauna of all belonging to that region; and its numerous species are all strictly North American. They are distinguished for their graceful form, and, with few exceptions, for their very pretty or even beautiful colouring.

As is the case with the species of the genus *Dendræca*, the most numerous of all the Mniotiltidæ, the species of *Helminthophaga* belong chiefly to the Eastern Province, only four of the ten that are known being found in the country westward of the Rocky Mountains; and two of these are common to both halves of the continent. But this remark may be deemed superfluous when it is recalled that the same may be said of the family in general, of whose sixty-one species known to occur within the United States, as many as thirty-nine, or about two thirds, are confined to the Eastern Province; while the proportion of peculiar genera stands as nine eastern to none

western†. During the breeding-season the species of *Helminthophaga* are distributed as follows:—

	Eastern Province.					Western Province.		
	Hudsonian.	Canadian.	Alleghanian.	Carolinian.	Austroriparian.	Sonoran.	Rocky-Mountain.	Sitkan.
1. *H. pinus*	..	..	..	*	*			
2. *H. lawrencii*	..	..	..	*	?			
3. *H. chrysoptera*	..	..	*	*				
4. *H. leucobronchialis*	..	..	..	*				
5. *H. bachmani*	..	..	..	..	*			
6. *H. ruficapilla*	?	*	*	..	..	..	?‡	
7. *H. virginiæ*	..	..	..	..	..	..	*	
8. *H. luciæ*	..	..	..	..	..	*		
9. *H. celata*	?	..	..	..	..	..	*	*§
10. *H. peregrina*	*	*						

Regarding the characters of this genus little need here be said, beyond that it is distinguished from all other Mniotiltidæ, except *Parula* and *Perissoglossa*, by its very acute bill, with nearly straight culmen and gonys, and from these two genera by the absence of a notch on the superior tomium of the bill, and of rictal bristles at its base. The species all nest on or near the ground (as is the habit of *Geothlypis*, *Oporornis*, and *Siurus*), and lay white eggs, speckled, rather faintly, with

† It is, of course, understood that I do not here refer to the Mexican genera *Granatellus*, *Ergaticus*, *Cardellina*, and *Basileuterus*, all of which have representatives within our south-western border.

‡ Specimens of a western race (*gutturalis*, Ridgway, Hist. N. Am. B. . p. 191) have been taken in the autumn at various localities in the western portions of the United States, including even Southern California; is therefore presumed that they were bred on the mountains to the orthward or in the interior.

§ This species occurs in two well-marked geographical races:—the true *elata*, Say, belonging to the Eastern Province, including Florida and Illinois, in winter, and the Rocky Mountains and Alaska; the other, *descens*, Ridgw., belonging to the Pacific district of the Western Province, in summer.

reddish brown, chiefly round the larger end. Several of the species (notably *ruficapilla, virginiæ, luciæ,* and *celata*) are pleasing though rather weak-voiced songsters, while the song of *H. pinus* closely resembles the monotonous lisping of certain grasshoppers.

The species and geographical races may be distinguished by the following characters:—

A. Wings variegated with white or yellow. Forehead yellow.
  a. Wing with two white bands; belly yellow; back olive-green.
    1. H. PINUS. Throat gamboge-yellow; auriculars yellow, bordered above by a short postocular streak. Eastern province of the United States, in summer.
    2. H. LAWRENCII. Throat deep black; auriculars deep black. Eastern Province of the United States (New Jersey, *Herrick*).
  b. Wing with a large patch of yellow covering both rows of coverts; belly white; back bluish grey.
    3. H. CHRYSOPTERA. Throat deep black (♂) or dull grey (♀) auriculars deep black (♂), or black along upper edge (♀). Eastern Province of the United States.
    4. H. LEUCOBRONCHIALIS. Throat pure white; auriculars white, bordered above by a short postocular streak. Eastern Province of the United States (Eastern Massachusetts, *Brewster*).

B. Wings not variegated. Forehead not yellow (except in *H. bachmani*).
  a. Forehead yellow; inner web of the two outer tail-feathers with a terminal white patch.
    5. H. BACHMANI. Above olive-green; forehead and belly gamboge-yellow; crown grey, in the ♂ bordered anteriorly by a black bar; throat black (♂) or dusky greyish (♀). Eastern Province (Southern Atlantic States) and Cuba.
  b. Forehead greyish; inner webs of outer tail-feathers without distinct white patches.
    6. H. RUFICAPILLA. Above olive-green; the head greyish; lower parts gamboge-yellow; a whitish orbital ring. Male with a concealed patch of chestnut on the crown. North America (rare in the Western Province).
    7. H. VIRGINLÆ. Above grey, beneath whitish; upper tail-coverts yellowish green; lower tail-coverts and patch on the jugulum gamboge-yellow; crown with a concealed patch of chestnut (sometimes obsolete in the ♀). Western Province.
    8. H. LUCIÆ. Above grey, beneath buffy white; crown-patch and upper tail-coverts chestnut. Western Province (south-western district).
    9. H. CELATA. Above olive-green, beneath pale yellowish; crown

with a concealed patch of orange-rufous (obsolete in young, and sometimes in adult ♂ also).

Above greyish, the head sometimes decidedly grey; beneath pale greenish yellow; inner web of outer tail-feathers distinctly edged with white. Eastern Province of North America (including Rocky Mountains) ..... *a. celata.*

Above bright olive-green, below greenish gamboge-yellow; inner webs of outer tail-feathers without distinct white edges. Western Province of North America (Pacific district) .. *β. lutescens.*

10. H. PEREGRINA. *A dusky streak through the eye*; no rufous on the crown; above olive-green, the head and neck grey; beneath white (*adult*), or pale dingy yellow (*young*). Eastern Province of North America.

Of the foregoing species only the two recently described admit of any doubt as to their perfect distinctness, all the others having been so long known and thoroughly studied, that all their variations of plumage are familiar. In *H. lawrencii* the exactly intermediate coloration between *H. pinus* and *H. chrysoptera* prompts strong suspicion that the unique example upon which the species is based may be a hybrid between the two; there are, indeed, only two reasons for giving this theory serious consideration, viz. the very strongly marked and rich coloration, and the reluctance with which we are wont to resort to the belief as to the possibility of hybridism as the real solution of the origin and nature of such intermediate specimens. Should the bird eventually prove to illustrate the stable characters of a distinct species, it will be one of the most remarkable illustrations of the evolution doctrine in the North-American *ornis**.

The case of *H. leucobronchialis* is somewhat different, there being, instead of a combination of the coloration of two species, simply an imperfect development, as it were, of a

* The combination of the characters of two very distinct and differently coloured species, in this instance, calls to mind several parallel cases, one of which it may be well to mention here. This one is noted in the 'American Sportsman' for December 12th, 1874 (p. 117), as the capture, by Mr. Christopher D. Wood, of Philadelphia, of a "black-crested and throated Titmouse, the first one ever heard of." It is there suggested that the bird must be "either a sport or a cross between the common Crested Titmouse (*Leophophanes bicolor*) and the Black-cap Titmouse (*Parus atricapillus*)."

single one of them. The coloration in this instance is as if the black had been entirely removed from the gular region and auriculars of a typical adult male of *H. chrysoptera*, leaving these parts entirely pure white, even to the roots of the feathers. The first plumage of the latter species is undescribed and unknown to me; the adult female, however, has, at all seasons, these parts of a dull ash-grey on the surface, darker on the concealed portion of the feathers.

The names adopted are based on the following references:—

1. Helminthophaga pinus, Baird, Birds N. Am. 1858, p. 254.

Certhia pinus, Linn. S. N. i. 1766, p. 187.

2. Helminthophaga lawrencii, Herrick, Pr. Acad. Nat. Sci. Philad. Nov. 1874, p. 220, pl. 15.

3. Helminthophaga chrysoptera, Cabanis, Mus. Hein. 1850–51, p. 20.

Motacilla chrysoptera, Linn. S. N. i. 1766, p. 333.

4. Helminthophaga leucobronchialis, Brewster, American Sportsman, Oct. 17, 1874, p. 33.

5. Helminthophaga bachmani, Cabanis, Journ. für Orn. iii. 1855, p. 475.

Helinaia bachmani, Aud. Orn. Biogr. ii. 1834, p. 483, pl. 183.

6. Helminthophaga ruficapilla, Baird, B. N. Am. 1858, p. 256.

Sylvia ruficapilla, Wilson, Am. Orn. iii. 1811, p. 120, pl. xxvii. fig. 3.

7. Helminthophaga virginiæ, Baird, B. N. Am. 1858, (under expl. plates, 1870) pl. lxxix. fig. 1.

8. Helminthophaga luciæ, Cooper, Pr. Cal. Acad. Sc. July 1861, p. 120.

9. Helminthophaga celata.

α. celata.

Helminthophaga celata, Baird, B. N. Am. 1858, p. 257.

Sylvia celata, Say, Long's Exped. i. 1823, p. 129.

β. lutescens.

Helminthophaga celata, var. *lutescens*, Ridgway, Am. Nat. vii. Oct. 1873, p. 606.

10. HELMINTHOPHAGA PEREGRINA, Cabanis, Mus. Hein. 1851, p. 20.

Sylvia peregrina, Wilson, Am. Orn. iv. 1811, p. 83, pl. xxv. fig. 2.

XVIII.—*Notes on Severtzoff's 'Fauna of Turkestan'* (*Turkestanskie Jevotnie*). By H. E. DRESSER.

[Continued from p. 94.]

180. LEPTOPŒCILE SOPHIÆ, sp. nov. Severtzoff, pp. 66, 135, pl. viii. figs. 8, 9.

Stoliczkana stoliczkæ, Hume, Stray Feath. ii. p. 513.

Horizontal range. Resident in district I.

Vertical range. Winters in district 3 and breeds in district 4.

At page 135 Dr. Severtzoff writes as follows:—"In form this bird approaches the Tits, but in habits and in the form of the bill, as well as in the sexes being different, it differs from these; and I have therefore deemed it best to separate it generically. The characteristics are as follows: bill slender, broader than high, compressed towards the end, nostrils narrow; bill half covered with a membrane; at the base of the upper mandible are a few feathers, which are downy at the base and hairy towards the point; legs stout, tarsus long, coarsely scutellated; hind toe large, with a long arched claw, other toes also long, but the claws are short; wings short and broad; tail long and much graduated, composed of twelve feathers; tarsus with three long and then four short broad scales; 4th and 5th rectrices longest, the two central ones 1‴ shorter, and the outer ones 3‴ to 3½‴ shorter; 1st primary short, twice as long as the coverts; 2nd quill shorter than the 10th, 3=9, 4=10, 5=6, the last two the longest. *Male.* Crown bright brownish chestnut, glossed with violet; a broad yellowish white stripe passes over the eyes; back greyish brown, washed with bluish; rump rich violet-blue; cheeks, sides of the neck and of the body, and throat bright blue,

with a violet or greenish gloss; centre of the abdomen brownish yellow; under tail-coverts short and downy, brownish, tipped with violet; wings blackish brown, with light brown margins to the feathers; rectrices nearly black, with bluish green edges, outer web of outer rectrix white; iris dark brown; beak and legs black. *Female.* Greyish, the lower flanks and rump violet-blue, nape light brown, the superciliary stripe narrower than in the male; cheeks and shoulders greyish brown; throat, breast, and belly light brownish yellow; sides light brown, the feathers near the vent tipped with blue; crissum brownish; wings blackish brown, with greyish brown margins to the feathers; tail black, tipped with brown, the outer feather externally margined with white. Male—total length 4″ 9‴, wing 2″, tail 2″ 1½‴, outer tail-feathers 1″ 8½‴, culmen 3½‴. Female—total length 4″ 8‴, extent 6″ 1‴, wing 2″, tail 2″ 1‴, outer tail-feathers 1″ 8½‴. This bird was met with in the pine-woods near Issik-kul, where it was seen amongst the branches of the trees."

At page 135 he also describes a long-tailed Titmouse as new under the name of *Mecistura pöltzami*; and it is figured on pl. ix. fig. 1. I do not, however, give a translation of his description; for he now informs me that he has little doubt that it is referable to *Acredula tephronota* (Günth.). This bird, he says, was found near Astrabad and on the island of Ashir-ade by Mr. Pöltzam, the curator of the Kasan Museum.

He also enumerates five species of Penduline Tits as occurring in Turkestan, viz. *Ægithalus pendulinus*, *Æ. atricapillus*, *Æ. rutilans*, *Æ. macronyx*, and *Æ. coronatus*, the last four being described as new; but he brought his specimens of these birds with him when he paid me a visit a short time ago, and then told me that he had since found that *Æ. atricapillus* and *Æ. coronatus* belong to the same species, and should stand under the name of *Æ. coronatus*, and that *Æ. rutilans* is the young of *Æ. macronyx*, under which latter name it stands; and he also informed me that Mr. Hume's *Ægithalus stoliczkæ* is nothing but his *Æ. coronatus*. He further (p. 136) describes another species of Penduline Titmouse from Astrachan (which does not, however, range as far as Turkestan)

under the name of *Ægithalus castaneus*, respecting which he writes as follows:—"This species has been described by Prof. Eversmann as the adult male of *Æ. pendulinus* (Est. Ist. Orenb. iii. pp. 145–147); but so far as I have ascertained from researches in Orenburg, the male of true *Æ. pendulinus* is very different. The present species has the forehead, cheeks, and sides of the head dark-coloured; crown, nape, and down to the back chestnut-red, becoming paler towards the rump, where it is greyish brown; otherwise coloured as *Æ. pendulinus*, but smaller in size. Eversmann says that the dark marking on the cheeks extends over a smaller area, and the crown is greyish in the female. But does he mean greyish brown or true grey? for in the latter case it would be a female of *Æ. pendulinus*. Specimens obtained by Pöltzam near Astrachan, and now in the Kazan Museum, all agree in having the crown and nape chestnut; but the sexes of none are marked."

I have a very good series of the present bird, and consider it an excellent species, quite distinct from *Æ. pendulinus*. As already stated, Dr. Severtzoff describes *Ægithalus coronatus* under two names (*Æ. atricapillus and Æ. coronatus*), and *Æ. macronyx* also under two names (*Æ. macronyx* and *Æ. rutilans*); but it will be sufficient to give one description of each. His description of *Æ. coronatus* (p. 136) is as follows:—"Forehead, sides of the head, both above and below the eye, a portion of the nape and hind neck black; some of the nuchal feathers tipped with white, and a small spot on the centre of the crown is also yellowish white; below the dark portion of the neck is a brownish white collar, and below this, again, a band of chestnut; rest of the upper parts brownish grey; upper tail-coverts whitish, with broad dark greyish fawn-coloured shaft-stripes; upper part of the throat pure white; lower throat, breast, and flanks marked with rust-coloured spots, which are paler on the flanks; abdomen pale brownish; under tail-coverts white, marked with greyish stripes; lesser wing-coverts pale brownish, with a yellow tinge; the larger coverts black, with brownish white tips, externally broadly margined with chestnut-red, so that when the wing is closed the darker portion of the feather is con-

cealed; quills dark greyish fawn, with pale brownish edges; tail-feathers margined with white; beak small, thin, and pointed; hind toe longer than the claw; tarsus covered with two long and four short scales; tail forked, the central rectrices 2‴ shorter than the outer ones; 1st primary short, a little longer than the coverts, 2=6, 3=4=5, the last the longest. Total length 4″ 7‴, extent 6″ 6‴, wing 2″ ½‴, tail 1″ 7‴, culmen 3‴, thickness 1‴, tarsus 5¾‴, middle toe 3½‴, hind toe 2‴, hind claw 2‴. I met with this bird at Chodjent in May 1868; and Mr. Fedchenko found it at Samarcand in April 1869." The next species (*Ægithalus macronyx*) is described (p. 137) as follows:—"Larger than *Æ. pendulinus*, the claws longer and stouter, and the legs stronger; 1st primary short, being equal in length to the coverts, 2=7, 3=6, 4=5, the two last the longest; beak rather flat and broad towards the tip, much larger than in *Æ. pendulinus*. Colour much as in *Æ. pendulinus*; but the black on the head covers the forehead, sides of the head, and fore part and sides of the crown; centre of the crown, nape, and hind neck pale brownish yellow, this colour being separated from the pure brown of the back by a narrow light chestnut band; throat greyish white; breast and abdomen clear pale brownish; wings and tail as in *Æ. pendulinus*; but the margins of the quills are not whitish, but pale brownish; beak nearly black; legs plumbeous. Total length 5″ 1‴, extent 7″, wing 2″ 3½‴, tail 2″, tarsus 6¾‴, middle toe 4½‴, hind toe 3‴, middle claw 2¾‴, hind claw 3¾‴, culmen 4‴, thickness 4‴."

In the table of geographical distribution (p. 66) the range of the above species is given as follows:—

181. Ægithalus pendulinus.

Horizontal range. Breeds rarely, and is also rare in winter, in district II., resident in district III.

Vertical range. Resident in district 1, breeds and occurs in winter in district 2, breeds in district 3.

182. Ægithalus atricapillus.

Horizontal range. Breeds in district III.

Vertical range. Probably occurs in passage and breeds in district 1; breeds in districts 2 and 3.

183. ÆGITHALUS RUTILANS.

Horizontal range. Resident in district III.

Vertical range. Resident in district 1, and occurs in winter in district 2.

184. ÆGITHALUS MACRONYX.

Range. Same as No. 183.

185. ÆGITHALUS CORONATUS.

Horizontal range. Breeds and possibly resident in district IV.

Vertical range. Breeds in district 2.

All the above are figured on plate 9, viz. *Ægithalus pendulinus* (fig. 2, s. n. *Æ. pendulinus*, var. *jaxartica*), *Ægithalus coronatus* (fig. 3, s. n. *Æ. coronatus*; figs. 4 & 5, s. n. *Æ. atricapillus*), and *Ægithalus macronyx* (fig. 6, s. n. *Æ. rutilans*, var. *cucullata*; fig. 7, s. n. *Æ. rutilans*, var. *pectoralis*; fig. 8, *Æ. macronyx*).

186. CINCLUS ASIATICUS, Sw.; Severtzoff, p. 66.

Horizontal range. Resident in all four districts.

Vertical range. Resident in winter in district 3, breeds commonly and is rare in winter in district 4, and possibly breeds in district 5.

187. ?CINCLUS LEUCOGASTER, Eversm.; Severtzoff, p. 66.

Horizontal range. Resident in all four districts.

Vertical range. Resident in districts 3 and 4, and occurs in summer in district 5.

I have not had an opportunity of examining a specimen of the Dipper from Turkestan; but it appears to me not improbable that the species found there may prove to be *C. cashmiriensis*, and not true *C. leucogaster*.

188 & 189. TROGLODYTES PARVULUS, Koch.

Troglodytes nepalensis et *T. europæus*, Severtzoff, pp. 66, 138.

Horizontal range. Resident in all four districts.

Vertical range. Breeds and is possibly resident in district

1, is found in winter in district 2, and breeds in district 4, and possibly in district 3.

Dr. Severtzoff refers to two species of Wren as above; but in a note pencilled on the margin of my copy of his work he says that the Wren of Turkestan is not specifically distinct from our European bird, being only a very slightly different climatic variety, which he designates as *Troglodytes europæus*, var. *tianshanicus*.

190. Sitta neumayeri, Mich.

Sitta syriaca, Severtzoff, p. 66.

Horizontal range. Resident in all four districts.

Vertical range. Occurs in district 2 in winter, breeds and is resident in district 3.

191. Tichodroma muraria (L.).

Tichodroma phœnicoptera, Severtzoff, p. 66.

Horizontal range. Resident in all four districts.

Vertical range. Is found in winter in districts 1 and 2, but rarely in the former, breeds in districts 3 and 4, and is resident in the former.

192. Certhia familiaris, Severtzoff, p. 66.

Horizontal range. Resident in district I., and occurs accidentally in winter in district III.

Vertical range. Rare in winter in district 2, resident in district 3, and breeds in district 4.

193. Certhia himalayana, Vig.

Certhia tæniura, Severtzoff, pp. 66, 128.

Horizontal range. Resident in districts III. and IV.

Vertical range. Similar to that of No. 192.

Of this species Dr. Severtzoff gives a careful description and details of measurements, which I need not reproduce, as he informs me that he has identified it with *Certhia himalayana*.

194. Motacilla alba, L.; Severtzoff, p. 66.

Horizontal range. Is found on passage in districts I., II., and III., and occurs in winter in district IV.

Vertical range. Occurs on passage in districts 1 and 2.

Under the name of *Motacilla alba, β. dukhunensis*, Dr.

Severtzoff also (pp. 66, 139) gives the following particulars as to range, viz. :—

Horizontal range. Breeds in district I., and occurs on passage in districts II. and III.

Vertical range. Breeds and occurs on passage in districts 1 and 2, breeds in district 3, and is met with on passage in districts 4 and 5.

195. Motacilla personata, Gould; Severtzoff, pp. 66, 139.

Horizontal range. Breeds in districts I., II., III., commonly in the two latter; and breeds and is common in winter in district IV.

Vertical range. Breeds in districts 1, 2, and 3, rarely in district 1, and commonly in district 2.

I possess a specimen from Turkestan labelled by Dr. Severtzoff *M. personata*, which differs from European examples of *M. alba* merely in having more white on the wings, especially on the coverts, and less white on the sides of the head, this colour being there restricted to the forehead and a space round and, to a slight extent, behind the eye.

195 β. Motacilla maderaspatana, Gmel.

Motacilla maderaspatensis, Severtzoff, pp. 66, 139.

Horizontal range. Breeds in districts II. and III.

Vertical range. Breeds in districts 1 and 2, rarely in the former.

195 γ. Motacilla japonica, Swinh. (*M. lugens*, Temm. nec Illig.).

Motacilla personata, γ. *melanota*, Severtzoff, pp. 67, 139.

Horizontal range. Breeds in districts III. and IV.

Vertical range. Breeds in districts 2 and 3.

Specimens in my collection obtained by Dr. Severtzoff agree closely with examples from Japan.

196. Motacilla melanope, Pall.

Motacilla sulphurea, Severtzoff, p. 67.

Horizontal range. Breeds in districts I., II., III., and IV., and is found rarely in winter in district III.

Vertical range. Occurs on passage in districts 1 and 2,

breeds in districts 3 and 4, and occurs rarely in winter in district 2.

197. Motacilla flava, L.

Budytes flava, Severtzoff, p. 67.

Horizontal range. Is common on passage in districts I., II., and III., and is found on passage, and rarely in the breeding-season, in district IV.

Vertical range. Is common on passage in districts 1 and 2.

197 *a*. Motacilla viridis, Scop.

Budytes flava, β. cinereocapilla, Severtzoff, p. 67.

Horizontal range. Occurs on passage in all four districts, and but rarely in the first three.

Vertical range. Occurs on passage in district 2.

198. Motacilla melanocephala, Licht.

Budytes melanocephala, Severtzoff, p. 67.

Horizontal range. Breeds in all four districts.

Vertical range. Breeds commonly in districts 1 and 2, and possibly in 3.

199. Motacilla raii, Bp.

Budytes rayi, var. *flavifrons*, Severtzoff, p. 67.

Horizontal range. Rare on passage in district III., is found on passage and breeds rarely in district IV.

Vertical range. Occurs on passage in district 2.

200. Motacilla citreola, Pall.

Budytes citreola, Severtzoff, pp. 67, 139.

Horizontal range. Occurs on passage in districts II., III., and IV.

Vertical range. Occurs on passage in districts 1 and 2.

200 *a*. Motacilla citreoloides, Hodgs.

Budytes citreola, var. *melanota*, Severtzoff, pp. 67, 139.

Horizontal range. Breeds and occurs on passage in districts II. and III.

Vertical range. Occurs on passage in district 2, and breeds in districts 3 and 4.

201. Anthus campestris, Severtzoff, pp. 67, 141.

Horizontal range. Breeds in districts I., II., and III.

Vertical range. Breeds in districts 2 and 3, and occurs on passage in the former.

Severtzoff includes also two subspecies of this species which, so far as I can judge from a large series of Tawny Pipits I have examined, I should not consider to be specifically separable from true *A. campestris*. The first of these he calls

Anthus campestris, β. orientalis, Brehm.

Horizontal range. Breeds in all four districts.

Vertical range. Breeds in district 3.

This form, he says (p. 141), has long legs, small hind claws, is greyish brown above, and has light yellowish brown markings on the outer rectrices. The second so-called subspecies, of which he gives no description, is called

Anthus campestris, γ. brachycentrus, Heugl.

Range. Similar to that of the preceding subspecies, but it breeds also in district 2.

202. Anthus trivialis, L.

Anthus arboreus, Severtzoff, pp. 67, 139.

Horizontal range. Breeds and occurs on passage in all four districts, but rarely in the first three.

Vertical range. Occurs rarely on passage in district 1, and commonly in district 2; breeds rarely in districts 3 and 4.

202*a*. Anthus pratensis, Severtzoff, pp. 67, 139.

Horizontal range. Occurs on passage in all four districts, and in winter in district IV.

Vertical range. Occurs on passage in districts 1 and 2.

At page 139 Severtzoff goes into detail to show that there are in Turkestan intermediate forms between the Tree-Pipit and Meadow-Pipit, which he consequently treats as being two forms of the same species. These notes I need not reproduce; but it may be well to insert the following MS. note written for me by Dr. Severtzoff, viz.:—"I can only consider that the Tree-Pipit and the Meadow-Pipit are locally specifically distinct; for in Turkestan there are several intermediate forms, which I term varieties, as they run into each other, and the differences are not specific. These varieties are:—

"*Anthus intermedius,* Severtzoff, which has the hind claw

of varying length, and the typical long slender bill of *Anthus pratensis*.

"*Anthus microrhynchus*, which has the hinder claw as in *Anthus trivialis*, the beak stout, as in *A. pratensis*, but shorter; in shape it is like that of *A. trivialis*, but is considerably smaller.

"*Anthus trivialis* is distinguishable from *A. pratensis* not only by the hind claw, but in having a stouter bill, though about equal in length. The true Meadow-Pipit is only seen in Turkestan on passage, and is scarce; but the two forms *A. intermedius* and *A. microrhynchus* are those which breed commonly in the mountains, on grassy places, where a few bushes are scattered about, at from 5000 to 9000 feet altitude. Typical *A. trivialis* also breeds at similar altitudes, or even higher, say from 7000 to 9000 feet, but is rare. The form known as *Anthus agilis*, Sykes, was also found in 1874 in the mountains east of Kuldja."

I cannot help surmising that, amongst the so-called intermediate forms between the Meadow- and Tree-Pipits, Dr. Severtzoff must have obtained the species which breeds in the Petchora district, in North Russia, and which I have lately described in the 'Birds of Europe' under the name of *Anthus seebohmi*; for this bird has the long hind claw of *Anthus pratensis*, and the wing-formula and general coloration of the upper parts are as in *A. trivialis*; but one good characteristic is that it always has the outer rectrices marked with smoke-grey, and not with white.

203. Anthus cervinus, Pall.

Anthus cervinus, var. *rufogularis*, Severtzoff, pp. 67, 140.

Horizontal range. Rare on passage in district III.

Vertical range. Rare on passage in district 2.

204. Anthus spinoletta, L.

Anthus aquaticus, Severtzoff, p. 67.

Horizontal range. Breeds and occurs in winter in all four districts; but it is somewhat uncertain as to whether it really breeds in the last.

Vertical range. Rare in winter in district 1, and common at the same season in district 2; breeds in district 4.

205. Otocorys alpestris, Severtzoff, p. 67.
Horizontal range. Rare during winter in district III.
Vertical range. Rare during winter in district 1.

206. Besides the common Shore-Lark, Severtzoff (p. 67) only includes one other species under the name of *Otocorys albigula*; but he now informs me that under this name he has included the following, viz.:—

1. Otocorys brandti, Dresser, B. of Eur. pt. xxxiii. Oct. 1874.
Horizontal range. Resident in district III.
Vertical range. Resident in district 1.

2. Otocorys longirostris, Gould.
Horizontal range. Breeds, and occurs also in the winter-season, in districts I. and II.
Vertical range. Breeds and occurs in winter in districts 4 and 5.

3. Otocorys penicillata, Gould.
Horizontal range. Resident in district III.
Vertical range. Resident in district 3.

207. Alauda arvensis, L.; Severtzoff, p. 67.
Horizontal range. Occurs on passage in all four districts, and is very rarely found breeding or in the winter.
Vertical range. Occurs on passage in all five districts, and very rarely breeds in districts 3, 4, and 5.

208. Alauda gulgula, Frankl.
Alauda inconspicua (*A. cantarella*, Bp. ?), Severtzoff, pp. 67, 142.
Horizontal range. Breeds in district III.
Vertical range. Breeds in districts 1, 2, and 3.
Dr. Severtzoff gives (p. 142) detailed description and measurements of this species, which I do not reproduce, as he now informs me that he has identified it with *Alauda gulgula*; but he adds a MS. note as follows:—"*Alauda cantarella*, Bp., = *Alauda intermedia*, Swinh., = *A. triborhyncha*, Hodgs., also breeds in Turkestan, and ranges N.W. to the Ural river."

209. Galerita cristata, L.

Alauda cristata, Severtzoff, p. 67.

Horizontal range. Resident in all four districts.

Vertical range. Resident in districts 1 and 2; breeds in district 3.

210. Calandrella brachydactyla (Leisl.), Severtzoff, pp. 67, 141, 142.

Horizontal range. Breeds in all four districts.

Vertical range. Breeds in districts 1, 2, 3, and 4, commonly in 1 and 2; and occurs on passage in district 4.

At page 142 he writes as follows:—"*Calandrella brachydactyla* during summer inhabits districts around those inhabited by *C. leucophæa* on the west, north, and east, and ranges from the Thian-shan to the steppes of the Syr Darja, Chuish, and Ilish, where, however, in the winter it is replaced by *C. leucophæa*." As a subspecies he further includes a bird under the name of

Calandrella brachydactyla, β. *tenuirostris*, at p. 67

(*Horizontal range*. Breeds in district IV.

Vertical range. Breeds in district 2),

but gives no characters by which it may be distinguished.

385. Calandrella pispoletta, Cab. nec Pall.; Severtzoff, p. 67.

Horizontal range. Breeds in district IV.

Vertical range. Breeds in district 1.

211. Calandrella leucophæa, Severtzoff, pp. 67, 142, 143.

Horizontal range. Breeds and is resident in district III., being, however, numerically scarce.

Vertical range. Breeds and is resident in district 1.

Of this species a careful description is given at page 142; but I cannot describe it better than by calling it a pale desert form of *Calandrella pispoletta*, the species which occurs on the Volga. The measurements are given as follows:—Total length 7″, extent 11″ 6‴, wing 3″ 8‴, tail 2″ 7‴, tarsus $7\frac{3}{4}$‴, middle toe $4\frac{3}{4}$‴, hind toe 3‴, hind claw $4\frac{1}{2}$‴, culmen $3\frac{3}{4}$‴, thickness of the bill 2‴. He further states that it is found in the Syr Darja district, but is not very common, being met

with only on passage; for it breeds further north and east in the naked steppes. He met with it on the Lower Emba and Irgisa, in Caracuma, on the northern and western coasts of Lake Aral, on the Ust-Urta, and further south on the eastern shores of the Caspian. When the young are fledged it leads a roving life, but does not range westward as far as the Ural; and in a MS. footnote he adds that in 1874 he found it breeding sporadically in open places in the saxaul-region between the Oxus and the Jaxartes.

212. Melanocorypha calandra (L.); Severtzoff, pp. 67, 143.

Horizontal range. Breeds in districts I., II., III., and IV., commonly in all but the last, and occurs rarely in the winter.

Vertical range. Breeds in districts 1 and 2, rarely in 1, and commonly in 2.

213. Melanocorypha bimaculata (Ménétr.); Severtzoff, pp. 67, 143.

Horizontal range. Similar to that of the preceding species.

Vertical range. Breeds commonly in district 2.

Severtzoff also includes, at page 67, under the name of *M. bimaculata, β. minor,* without description, a subspecies, the range of which is similar to that of *M. bimaculata.*

214. Melanocorypha siberica, Gm.

Melanocorypha leucoptera, Severtzoff, p. 67.

Horizontal range. Occurs on passage and in winter in districts I., II., and III.

Vertical range. Occurs on passage and in winter in districts 1 and 2.

215. Melanocorypha yeltonensis, Forst.

Melanocorypha tartarica, Severtzoff, p. 67.

Horizontal range. Breeds in districts I., II., and III.

Vertical range. Breeds in districts 1 and 2, commonly in the former.

216. ? Lanius excubitor, Severtzoff, p. 67.

Horizontal range. Occurs on passage and in winter in districts I., II., and III.

Vertical range. Occurs on passage and in winter in districts 1 and 2.

Dr. Severtzoff now informs me that the species he included under the name of *Lanius excubitor* is not that bird, as the true *L. excubitor* does not occur in Turkestan; but he has not determined which species it really is, and I am therefore compelled to give it, and Nos. 217–220, under the titles used by him. I may, however, add that he informed me that his *Lanius leucopterus* (No. 217) is, he believes, identical with *Lanius homeyeri*, Cab.

217. Lanius leucopterus, Severtzoff, p. 67.

Horizontal range. Breeds in districts I. and II., and occurs on passage in districts I., II., and III.

Vertical range. Occurs on passage in regions 1, 2, and 5, and possibly breeds in district 4.

218. Lanius major, Pall.; Severtzoff, p. 67.

Horizontal range. Is found on passage and in winter in district I., but is rare.

Vertical range. Occurs on passage in district 2, winters in districts 2 and 3, and possibly breeds in district 4.

219. Lanius leucopygus, Hempr.; Severtzoff, p. 67.

Horizontal range. Breeds rarely in district III.

Vertical range. Breeds in district 1, and is found on passage in district 2; rare in both.

220. Lanius pallidirostris, Cass.; Severtzoff, p. 67.

Horizontal range. Breeds rarely in district III.

Vertical range. Breeds rarely in district 1.

221. Lanius schach, Gmel. (*erythronotus*, Gould); Severtzoff, p. 67.

Horizontal range. Breeds in districts II., III., and IV.

Vertical range. Breeds in district 1 and 2.

222. Lanius minor, Severtzoff, p. 67.

Horizontal range. Breeds in all four districts, commonly in I., II., and III.

Vertical range. Breeds rarely in district 1, and commonly in districts 2 and 3.

223. LANIUS COLLURIO (L.) : Severtzoff, p. 67.
Horizontal range. Breeds in districts III. and IV.
Vertical range. Breeds in districts 2 and 3.

224. ? LANIUS PHŒNICURUS, Pall.; Severtzoff, pp. 67, 144.
Horizontal range. Breeds in all four districts, commonly in the first three.
Vertical range. Breeds commouly in districts 1, 2, and 3.

225. LANIUS ISABELLINUS, Ehr.; Severtzoff, pp. 67, 144.
Horizontal range. Breeds commonly in districts III. and IV.
Vertical range. Breeds commonly in district 1, and occurs on passage in district 2.

Respecting the two preceding species, Nos. 224 and 225, Dr. Severtzoff gives a long note (p. 144), of which it may be advisable to give a detailed translation as follows:—

"In Turkestan there are three forms of *Lanius phœnicurus*, the first of which inhabits the mountains (var. *montana**), the second the lowlands (var. *caniceps*); and the third, the steppe-form, which differs constantly, though slightly, and may be considered a distinct species, is *L. isabellinus*. On examining a considerable series, I did not find any specimens intermediate between *L. phœnicurus* and *L. isabellinus*.

"*L. isabellinus* is larger than *L. phœnicurus*; the tail is rounded, the four central rectrices alone being of equal length, and the rest are graduated so that the outer ones are 4‴ to 5‴ shorter than the central ones; the 1st quill is short, being once and a half as long as the coverts, 4=3>5>2>6, or 4>3>5>6>2.

"*Adult male in spring.* Crown, nape, and two thirds of the back and shoulders same colour; lores, lower part of the cheeks, and a line above the eye brownish white, and on the upper part of the cheek there is a black line; rump and tail light brown; underparts light brownish, with a yellowish tinge, in old birds with a rose tinge, which is most apparent on the sides; throat and breast sometimes pure white; quills dark greyish brown, with pale yellowish grey margins, the

* *Sic.*—H. E. D.

Vertical range. Occurs on passage and in winter in districts 1 and 2.

Dr. Severtzoff now informs me that the species he included under the name of *Lanius excubitor* is not that bird, as the true *L. excubitor* does not occur in Turkestan; but he has not determined which species it really is, and I am therefore compelled to give it, and Nos. 217–220, under the titles used by him. I may, however, add that he informed me that his *Lanius leucopterus* (No. 217) is, he believes, identical with *Lanius homeyeri*, Cab.

217. Lanius leucopterus, Severtzoff, p. 67.

Horizontal range. Breeds in districts I. and II., and occurs on passage in districts I., II., and III.

Vertical range. Occurs on passage in regions 1, 2, and 5, and possibly breeds in district 4.

218. Lanius major, Pall.; Severtzoff, p. 67.

Horizontal range. Is found on passage and in winter in district I., but is rare.

Vertical range. Occurs on passage in district 2, winters in districts 2 and 3, and possibly breeds in district 4.

219. Lanius leucopygus, Hempr.; Severtzoff, p. 67.

Horizontal range. Breeds rarely in district III.

Vertical range. Breeds in district 1, and is found on passage in district 2; rare in both.

220. Lanius pallidirostris, Cass.; Severtzoff, p. 67.

Horizontal range. Breeds rarely in district III.

Vertical range. Breeds rarely in district 1.

221. Lanius schach, Gmel. (*erythronotus*, Gould); Severtzoff, p. 67.

Horizontal range. Breeds in districts II., III., and IV.

Vertical range. Breeds in district 1 and 2.

222. Lanius minor, Severtzoff, p. 67.

Horizontal range. Breeds in all four districts, commonly in I., II., and III.

Vertical range. Breeds rarely in district 1, and commonly in districts 2 and 3.

223. Lanius collurio (L.) : Severtzoff, p. 67.
Horizontal range. Breeds in districts III. and IV.
Vertical range. Breeds in districts 2 and 3.

224. ? Lanius phœnicurus, Pall.; Severtzoff, pp. 67, 144.
Horizontal range. Breeds in all four districts, commonly in the first three.
Vertical range. Breeds commouly in districts 1, 2, and 3.

225. Lanius isabellinus, Ehr. ; Severtzoff, pp. 67, 144.
Horizontal range. Breeds commonly in districts III. and IV.
Vertical range. Breeds commonly in district 1, and occurs on passage in district 2.

Respecting the two preceding species, Nos. 224 and 225, Dr. Severtzoff gives a long note (p. 144), of which it may be advisable to give a detailed translation as follows:—

"In Turkestan there are three forms of *Lanius phœnicurus*, the first of which inhabits the mountains (var. *montana**), the second the lowlands (var. *caniceps*) ; and the third, the steppe-form, which differs constantly, though slightly, and may be considered a distinct species, is *L. isabellinus*. On examining a considerable series, I did not find any specimens intermediate between *L. phœnicurus* and *L. isabellinus*.

"*L. isabellinus* is larger than *L. phœnicurus*; the tail is rounded, the four central rectrices alone being of equal length, and the rest are graduated so that the outer ones are 4‴ to 5‴ shorter than the central ones; the 1st quill is short, being once and a half as long as the coverts, 4=3>5>2>6, or 4>3>5>6>2.

"*Adult male in spring.* Crown, nape, and two thirds of the back and shoulders same colour; lores, lower part of the cheeks, and a line above the eye brownish white, and on the upper part of the cheek there is a black line; rump and tail light brown; underparts light brownish, with a yellowish tinge, in old birds with a rose tinge, which is most apparent on the sides; throat and breast sometimes pure white; quills dark greyish brown, with pale yellowish grey margins, the

* *Sic.*—H. E. D.

three inner secondaries lighter brownish grey; the base of the 5th to the 8th primaries white, forming a white patch, which is sometimes concealed by the coverts.

"*Adult female.* Differs from the male merely in having the black line on the side of the head shorter, this line being surrounded by white feathers.

"The young of both sexes are varied with brown and greyish spots and lines; the larger wing-coverts and the inner secondaries have broad light edges; there is no white patch on the wing; and the underparts are barred with brown, the barrings being narrower and wider apart than those on the upper parts; the dark markings on the cheeks are not black, but brownish, the feathers having black edges; tail light brownish, barred with brown; rump light reddish brown.

"After the first moult the crown, nape, and back are as in the adult, the wings, tail, and cheeks as in the younger bird; the lower throat and sides are marked as in the very young bird, but the throat and centre of the abdomen as in the adult. The male has the barrings on the abdomen narrower in this plumage than the female After the third moult the male gets his full plumage,—but the female not until after the fourth moult, as after the third moult the sides are still marked as in the young; but it breeds in this dress.

"In all plumages the legs are blackish plumbeous; the bill is black in the adult, and yellowish grey at the base and brown at the tip in the young. Total length 8″–8″ 5‴, extent 11″ 1‴–12″, wing 3″ 5‴–3″ 8‴, tail 3″ 1½‴–3″ 2½‴, culmen 5½‴, thickness of bill 2½‴, tarsus 9‴–9½‴, middle toe 6½‴.

"In *Lanius phœnicurus* the ten central tail-feathers are uniform in length, the two outer ones being 4‴ shorter; the alar patch is larger, and extends over nine primaries, from the 2nd to the 10th, and is not concealed by the coverts; the upper parts are darker and greyer (brownish grey); the wings are blackish brown, the feathers having light edges; tail reddish brown; lores black, like the upper part of the cheeks; underparts light rose-coloured; sides brownish. The differences in plumage are similar to those in *L. isabellinus*. First primary short, longer than the coverts, 3=4>5>2>6, or 3rd longest, 2=5. Length of the male 7″ 5‴, extent

10″ 8‴, wing 3″ 5‴, tail 3″; length of the female 8″ 1‴, extent 11″ 4‴, wing 3″ 7¼‴, tail 3″ 2‴: but these differences in size are not constant.

"The mountain form of *L. phœnicurus* (var. *ruficeps**) differs in being darker in colour; the back and scapulars in fresh plumage are pure brown slightly shaded with grey; but in spring these parts are greyer; the head is always brownish mixed with red, almost as rufous as the tail, which, with the rump, is dark reddish brown, with a chestnut tinge in fresh plumage. The lowland form (var. *caniceps*) has the upper parts greyer, being grey tinged with brown, being purer grey in the males and young birds; head similarly coloured; wings, tail, and underparts as in the mountain form. The mountain form inhabits chiefly the wooded portions of the Thian-shan to an altitude of from 7000 to 8000 feet; and the lowland form occurs in the bushes and thorn-thickets near Syr Darja, Mi, and Lepsa, below 1000 feet. In the cultivated districts both forms are found in gardens, and intermediate specimens may be found. As regards *L. isabellinus*, numbers were obtained on passage in spring in Chimkent and Tashkend, between the 20th February and the 20–25th March; but in the autumn it was not observed there, though it was seen in Aulje-ata early in September. It breeds in the steppes near Balchash, Chu, and Talass.

"Neither of the two forms of *L. phœnicurus* arrives in Tashkend and Chimkent before the early part of April."

In a MS. footnote he adds that the species he includes as *L. phœnicurus* should stand as *L. phœnicuroïdes*, Severtz.

226. Oriolus galbula, L.; Severtzoff, p. 67.

Horizontal range. Breeds commonly in all four districts.

Vertical range. Breeds in districts 1, 2, and 3.

In a MS. note Severtzoff adds that *Oriolus kundoo*, Sykes, also occurs in Turkestan, as he has lately discovered by an examination of his specimens of Orioles obtained there. The range of this species is as follows:—

Horizontal range. Breeds in districts II., III., and IV.

Vertical range. Breeds in districts 2 and 3.

* *Sic.*—H. E. D.

227. Ampelis garrulus, L.
Bombycilla garrula, Severtzoff, p. 67.
Horizontal range. Rare in winter in districts I., II., and III.
Vertical range. Rare in winter in districts 2 and 3.

228. Tschitrea paradisi, L.
Muscipeta castanea (Temm.); Severtzoff, p. 67.
Horizontal range. Breeds and occurs on passage in districts I. and III.
Vertical range. Occurs on passage in district 2, and breeds in district 3.

229. Muscicapa grisola (L.); Severtzoff, p. 67.
Horizontal range. Occurs on passage in all four districts, and breeds in districts I., II., and III.
Vertical range. Occurs on passage in districts 1 and 2, commonly in the latter, and breeds in district 3.

230. Muscicapa parva, Bechst.; Severtzoff, p. 67.
Horizontal range. Is rare on passage in districts III. and IV.
Vertical range. Occurs rarely on passage in district 2.

231. Hirundo rustica, L.
Hirundo domestica, Severtzoff, p. 67.
Horizontal range. Breeds in all four districts, commonly in the first three.
Vertical range. Breeds in districts 1 and 2.

232. Hirundo rufula, Temm.
Hirundo alpestris, Severtzoff, p. 67.
Horizontal range. Breeds in all four districts.
Vertical range. Occurs on passage in district 2, and breeds in district 3.

233. Chelidon lagopoda, Pall.
Hirundo lagopoda, Severtzoff, p. 67.
Horizontal range. Occurs on passage in all four districts.
Vertical range. Occurs on passage in districts 2 and 3, and possibly breeds in the latter.

234. Cotyle riparia (L.); Severtzoff, p. 67.

Horizontal range. Occurs on passage in districts I., III., and IV., and breeds in the two latter.

Vertical range. Occurs on passage and breeds in districts 1 and 2.

235. Cotyle rupestris, Scop.; Severtzoff, p. 67.

Horizontal range. Breeds in districts II., III., and IV.

Vertical range. Occurs on passage in district 2, and breeds in districts 3 and 4, rarely in the latter.

236. Cypselus apus, L.

Cypselus murarius, Severtzoff, p. 67.

Horizontal range. Occurs commonly on passage, and breeds rarely, in all four districts.

Vertical range. Occurs on passage in districts 1 and 2, and breeds rarely in districts 3 and 4.

237. ? Cypselus affinis, Gray; Severtzoff, p. 57.

Horizontal range. Possibly breeds in district IV.

Vertical range. Possibly breeds in district 3.

238. Cypselus melba (L.); Severtzoff, pp. 67, 145.

Horizontal range. Breeds sporadically in districts III. and IV.

Vertical range. Breeds in districts 2 and 3.

At page 145 he writes as follows:—"The sporadic occurrence of *Cypselus melba* is somewhat remarkable. I only obtained one specimen in Karatau, on some rocks, and met with it again about 300 versts to the south, in a small rocky chain called Mogot-tau, near Chodjent; but it has not been observed between these two places, nor east of Karatau. Mr. Fedchanko, however, observed it in 1869 in Samarcand. It breeds numerously near Boroldai, and a few pairs near Chodjent, as also in Samarcand. Specimens from Turkestan agree closely with European examples."

239. Caprimulgus pallens, Sev.

Caprimulgus europæus, var. *pallens*, Severtzoff, pp. 67, 145.

Horizontal range. Breeds in all four districts.

Vertical range. Breeds in districts 1, 2, and 3, rarely in the first.

In a MS. note at page 145, Dr. Severtzoff writes as follows :—"My *C. pallens* is a somewhat doubtful species, and may prove identical with a Chinese specimen in the Paris Museum labelled *Caprimulgus stictomus*, but which Mr. Swinhoe considers to be merely a pale specimen of *C. monticola*, and says that the true *C. stictomus* is confined to Formosa, and does not occur on the mainland of Asia. I have taken an accurate description of the Paris bird to compare with my specimen, which is in Russia. The pale form of *C. europæus*, from the Ural river, is not intermediate between *C. europæus* and my *C. pallens*. This pale form I have found breeding on the east side of Lake Aral, and near the Lower Oxus, where the bird runs rather smaller than in Europe, but in coloration it is identical with Ural examples. It would be well to compare these with *C. indicus*, Lath., and *C. mahrattensis*, Sykes, as the matter requires further investigation."

240. Caprimulgus arenicolor, Severtzoff, Ibis, 1875, p. 491.

Caprimulgus isabellinus, Temm.; Severtzoff, p. 68.

Horizontal range. Breeds in districts III. and IV., rarely in the former.

Vertical range. Breeds in district 1.

A careful description of this species is given in 'The Ibis' (*l. c.*) by Dr. Severtzoff, who, in a MS. note, gives me the following particulars :—"There is no constant difference in colour between the young and old birds; but the former are recognizable by their laxer plumage on the body. This lax plumage is moulted in July, soon after the young leave the nest, and when they are in family parties with their parents; and, judging from these parties, two or three young are reared from each nest. About the end of August these family parties break up; and then the young have lost the immature plumage, except as regards the under tail-coverts. After leaving their parents they are found in pairs; and the old birds leave the Lower Oxus about the first half of September, the young remaining till the end of that month, and some few until the

middle of October. I met with the present species near the Lower Oxus, and in the undulating thinly bush-covered sand-wastes, as also in the densely bush-covered alluvial marly-clay country, never very far from water, round which they fly after sunset. On the Lower Syr (Jaxartes) it was rarer; and here I first noticed it,—and received specimens also from Krasnovodsk, on the east coast of the Caspian."

[To be continued.]

XIX.—*Ornithological Notes made during Trips between Bloemfontein and the Lydenburg Gold-fields.* By F. A. Barratt.

(Plate IV.)

On my first journey I started from Kingwilliamstown in the Cape colony, having well stocked my light waggon with all the ammunition and apparatus necessary for collecting, not forgetting my "Layard;" but I did not keep any particular record of the birds obtained in the district, and I propose to treat in the present paper only of the birds observed in the northern part of the Orange Free State, from Bloemfontein onwards; my notes made during sundry expeditions in the Transvaal Republic will also be embodied.

Leaving the capital in the month of February, we had scarcely proceeded two or three miles, when we came upon about a dozen Stanley Cranes (*Anthropoides stanleyanus*) sporting and dancing; to their considerable astonishment I dropped a bullet among them, which made them stalk off majestically, shaking their beautiful long plumes as they went. About four miles further on we came to Rhinoceros Spruit, where large numbers of Coursers were gliding, as it were, in and out of the stunted herbage; whilst Plovers (*Hoplopterus coronatus*) were wheeling about in every direction, uttering their harsh cries. Thence we went to the Modder river; and in the vleys running parallel with the stream were to be seen the pretty Weaverbirds (*Euplectes taha*) bobbing up and down like a golden ball, and *Chera progne* with its gracefully sweeping tail. It was in the bush near the above-named river that I first shot the Great Spotted Cuckoo (*Coccystes glan-*

darius) in November 1874. A short distance from this I found some Francolins (*F. afer*) near the foot of the mountains, and from the long grass my dog started a few Quail.

Proceeding towards Sandy's River, leaving Wynberg a few miles to the right, we met with many water-birds, such as Wild Geese, Duck, Coots, Moorhens, and Grebes, started out of the vleys and ditches, whilst in the long waving grass the cackling noise of the "Scolding Cock" (*Eupodotis afra*) often startled us as it flew up suddenly from under our feet, the more wary *E. scolopacea* only allowing us to approach it in circles. Ten miles or so to the north of Sandy's River the route lay through a lonely glen threaded by a sparkling stream, in which could be detected large fish of all shades of colour, rolling over in the deepest pools: here it was that I first saw the Night-Heron and the Great African Kingfisher, the latter falling to my gun. This glen is a favourite collecting-ground of mine; and I have at different times procured Guinea-fowl, Golden Cuckoos, many species of Hawks (notably *Melierax niger*), and the Spotted Eagle-Owl (*Bubo maculosus*). I also found *Euplectes capensis* and *E. oryx* breeding in considerable numbers in the reeds on an adjoining farm, where also many of the smaller Warblers were abundant. A few miles further on some mountains are reached; and here, hopping about among the stones, were Thrushes and Stonechats. The mountainous country is followed by a large flat, varied by a few slight undulations, after which the village of Kronstadt is reached. About ten miles from this I saw for the first time the Crowned Crane (*Balearica regulorum*) in a wild state; nor have I ever observed them south of this point. On a "spruit" about twenty miles distant, I came across some Spoonbills and sundry Herons (*Ardea cinerea*), which I afterwards found were in the habit of building in a willow tree from year to year. Hence onward to Rhinoster Kop, where formerly wild dogs abounded, and where the cry of the Jackal is frequently heard: many Shrikes and Doves formed the conspicuous ornithological feature of this place; but perhaps the non-observance of other species was due to my short stay there. We now come to another flat, much the same style of country as the others, where

we see the Secretary-bird stalking about, until we arrive at Rhinoceros River. Here are to be found more Guinea-fowl in the Mimosa thorn trees, the Hoopoe (*Upupa minor*), a few Woodpeckers, many of the Puff-backed Shrikes, Martins, &c. Hence we proceed to the Vaal river, where *Ardea goliath* is to be met with; and from this place to about ten miles north of Potchefstroom you get a great variety of Egrets and Herons, which birds are my especial favourites. Of this family I have seen and shot in the above district *Ardea egretta* (one of the most lovely, if not, indeed, the lovliest of all the Egrets of South Africa), *A. cinerea, A. atricollis, A. purpurea, A. bubulcus, A. garzetta, A. leucoptera, Ardetta minuta, Botaurus stellaris, Nycticorax griseus,* as well as Spoonbills, Storks, and Pelicans; so that it will be seen that the locality is a good one for water-birds. At about thirty miles north of Potchefstroom the Mooi river takes its rise, followed, more or less, by an open country; and then we get what in the colony are called Kops, or Rants, with quantities of sugar-bush, on which we found several kinds of Sun-birds. Our way then lay to Pretoria, thence to Nazareth, and afterwards to Lydenburg, the country being similar all the way. Near the latter place, however, we get a partially wooded and mountainous country; and as we draw nearer the chain of the Drakenberg the scenery increases in wildness and grandeur; here, in the deep kloofs, the loud note of *Corythaix musophaga* was heard. At the base of these mountains, in the neighbourhood of the Macamac goldfields, I found the country to be very rich in birds, and many species hitherto supposed to be peculiar to Natal occurred to us. Most of the rarer species, including the new *Bradypterus,* were obtained in this district. I must add that the neighbourhood of Rustenberg I have since found to be a favourite resort for many of the migratory European birds.

I need hardly mention a fact that I fear will be only too painfully apparent from a perusal of this paper—that I can lay no claim to a scientific knowledge of ornithology; the few notes here put together have been written at the request of Mr. Bowdler Sharpe, who has named my collection for

me; and by his advice I have applied myself on the present occasion to the distribution of the birds through the different districts traversed by me. I hope to revisit the Macamac Gold-fields; and I shall then pay even greater attention to the birds, now that I am aware of the interest that attaches to them. The collection which I brought to England is a very small one compared with that which the government of the Orange Free State took from me as a contribution to the forthcoming Philadelphia Exhibition.

The nomenclature employed is that of Mr. Sharpe's edition of Layard's 'Birds of South Africa,' his 'Catalogue of African Birds,' and of the first edition of Layard's 'Birds of South Africa.'

1. Otogyps auricularis.

I killed a fine female specimen of this Vulture with a bullet from behind a rock, in the Orange Free State; it had the ear-lappets well developed, as have all the specimens which I have noticed in South Africa. According to my experience they do not associate with the other Vultures, but keep aloof, and remain in pairs; or a single bird may sometimes be seen on a tree or rock.

I kept one in confinement, which became exceedingly tame; and it was always able to hold its own against a tame baboon which I kept in the same yard.

2. Serpentarius secretarius.

I have seen this bird near Lydenburg, Rustenberg, and sparingly throughout my travels in the Transvaal and Free State. They are preserved in both places; and a heavy fine is inflicted on any person found out by the authorities to have shot one. The Secretary stalks about very majestically, and now and then makes a pounce upon something, which he swallows at once. I had two tame ones at my farm at Chalumna, British Kaffraria, which used to run about the garden; but they were very weak on their legs. In attacking a snake they would shade (or, rather, cover) the tibia with the wing, and then strike with the lower part of the tarsus and foot; when the snake was stunned it would be seized by the back

of the neck in the bird's strong beak, the foot still remaining firm, and then swallowed. My two birds were very stupid: one was killed by being squeezed to death by a pig; and the other had its leg broken by a waggon. Their note is very similar to that of the young Stanley Crane. The eggs, which are two in number, are of a dull white, dotted with light brown at the obtuse ends.

3. Circus pygargus.

I received this bird from the district of Lydenburg. I have never, to my knowledge, seen them in any quantity.

4. Circus macrurus.

This I also received from near Lydenburg, where they frequent the swampy ground, and, I am informed, feed on small quadrupeds, snakes, &c.

5. Melierax gabar.

Two specimens were sent to me from Marico; and I have seen the species near Potchefstroom. My man brought me one from near Pretoria, which he said he had shot while it was in the act of whistling. I shot two young birds off a nest near the Modder river. On examining the nest I found it to contain the limbs of a species of lizard, of a field-mouse, and various bones of little animals which I could not determine.

6. Astur polyzonoides.

I shot one of these on a bush near the Vaal, and another between Potchefstroom and Rustenberg. I also received one specimen from near Marico.

7. Buteo jackal.

The well-known shrill note of this species is to be heard at almost any time. It is a heavy-flying bird, but rather difficult to kill, being well feathered. I shot one near Bloemfontein, on our farm, where, I was told, it had been for some time. I have observed it near the Drakenberg mountains; and I received a specimen from Lydenburg. The latter is smaller than the ordinary Buzzard of the Colony.

8. Milvus korschun.

I first observed this bird near Kronstadt, but I did not manage to shoot it. I have since procured it in Potchefstroom district, also near Rustenberg. I think I have seen it catching locusts with its feet; but the locusts were so thick that I could not observe the fact with certainty.

9. Elanus cæruleus.

Procured one near Rustenberg. It attracted my attention by a harsh cry, high in the air, which I thought to be that of an Eagle; but, to my surprise, I found it proceeded from this bird.

10. Cerchneis tinnunculoides.

I procured this bird near Rustenberg, also in the district of Potchefstroom. They feed on locusts; and after feeding, they will sit on a high tree, occasionally cleaning themselves, in sleepy repose.

11. Cerchneis rupicoloides.

This Kestrel appears to me to be the commonest one in the Transvaal. I have shot it in the Lydenburg district, near Pretoria, Potchefstroom, Rustenberg, and on my journey from Bloemfontein to Potchefstroom. One day I had shot a Black Knorhaan, which skulked away in the grass; and on turning my head I perceived a Kestrel (*C. rupicoloides*) hovering within a few yards of the place. He came down, and a battle ensued; I, being anxious, ran to procure my bird, when the Kestrel flew off to a neighbouring bush; and while I turned to look at him the Knorhaan had gone. As I had not time to search for him I conclude the Kestrel had a good meal. They appear to be gregarious, as I have often counted nine or ten of them on one tree.

12. Bubo maculosus.

Very common in the Transvaal. I have shot and observed it between Bloemfontein and Potchefstroom, between the latter place and Rustenberg, and near Pretoria. The cracking noise they constantly make with their bill, more especially when wounded, at once distinguishes them from most of the

other South-African Owls. I have obtained them near Potchefstroom during the greater part of the year; and I procured the last one in the month of June, near Bloemfontein. I should say they are partially gregarious, as I have often seen a number together, perched in willow trees, on the points of rocks and old trees.

13. Syrnium woodfordi.

I obtained one of this species at Potchefstroom, and I have seen another from near that place. I shot my specimen towards evening, when it was flying about, no doubt, in pursuit of its prey.

14. Caprimulgus europæus.

I have often observed these birds flitting about at dusk; and they will sometimes settle on the ground and there remain till you have passed. I shot specimens near Kronstadt and Potchefstroom, have observed them near Rustenberg, and have also received one from Marico.

15. Cypselus caffer.

I shot these birds as they were in the act of appropriating a Martin's nest in Potchefstroom.

16. Merops superciliosus.

I noticed many of these birds near the mouth of the Mooi, at the junction of that river with the Vaal, generally close to the banks. I also received specimens of the species from Marico.

17. Merops bullockoides.

I saw a great quantity of these birds at Olifants Nek, near Rustenberg; and I have seen a few near Potchefstroom. I shot several in January 1875, which seemed to be in very imperfect plumage, as I only got one in good feather. They will sit motionless on a mimosa thorn-bush, only flying off occasionally to catch an insect. On the approach of an intruder they will erect their tails, give a squeak, and flit off to another bush.

18. Merops pusillus.

Found this species in January 1875 near Rustenberg. They are rather more shy than *M. bullockoides*, and are not so plen-

tiful; I have never seen more than a pair together. I met with one or two near Pretoria.

19. Coracias garrula.

I found this Roller in the same localities as *C. caudata*; and it appears to be similar in its habits to that bird, but is not so shy and is easier to approach. I have often observed them sitting motionless on the dead branch of a tree.

20. Coracias caudata.

I obtained this bird near Rustenberg and on the Vaal river, and have also received it from Marico, about twenty miles north of Pretoria. The first specimen I shot was flying from tree to tree, uttering a harsh note, and throwing its head about in perfect confidence. On my wounding it and attempting to pick it up, it screamed and furiously attacked my hand. I have often chased one for hours unsuccessfully, sometimes having to cross water up to my waist, so shy and wary are these birds. They generally frequent large trees near running brooks.

21. Corythornis cyanostigma.

I have shot this lovely little bird in different places throughout my journey from Bloemfontein to Potchefstroom, from the latter locality to Pretoria, and thence to Lydenburg. I also met with it on my trip to Rustenberg, in British Kaffraria, and over the Kei, in the Fingoe country. It does not appear at all shy; and when I have been fishing in the Mooi river at Potchefstroom, I have often observed it flitting past, dropping in the water as if shot, and then rising with a small fish; or it would sit on a reed or twig and seem to be greatly interested in my proceedings.

22. Halcyon albiventris.

I have shot this Kingfisher near Rustenberg and Olifants Nek. I noticed several of them in the thick bush near the Megaliesberg range of mountains, and also near Pretoria.

23. Upupa africana.

I saw a great many of these birds flying about the mimosa thorns on the Rhinoster river, between Kronstadt and Vaal

river. I have met with a few specimens in the Colony, and on the Modder river near Bloemfontein, Orange Free State. I shot one on my trip from the Mooi river to Rustenberg. They have a silent flight; and I have never observed them on the ground.

24. Irrisor erythrorhynchus.

I saw numbers of these Wood-Hoopoes at Olifants Nek, near Rustenberg, or rather heard them; for they keep up such an incessant chattering noise when disturbed that one is glad to get away from them. I have also seen them in British Kaffraria, Cape colony, and Olifant Hook, district Alexandria.

25. Rhinopomastes cyanomelas.

Mr. Lucas, a friend and fellow sportsman, brought me two specimens of this bird from Marico, where he shot it in the bush in January 1875.

26. Corythaix musophaga.

I have shot this bird between the Karkama and Chalumna rivers, in the dense bush a few miles from the coast. I have also observed it near Lydenburg and Macamac gold-fields, where it abounds; but owing to its shy habits and to its concealing itself in the thick foliage, I cannot speak much of its habits. I did not see it near Rustenberg; but I saw many *Schizorhis concolor*.

27. Schizorhis concolor.

This species is common about Rustenberg; and I have received it from Marico. It makes such a noise that one cannot fail to perceive its whereabouts. Dr. Exton, of Bloemfontein, has given such an accurate description of the bird, that I shall not attempt to describe its habits (*cf.* Sharpe's ed. Layard's B. S. Afr. p. 146).

28. Cuculus canorus.

This bird was procured at Potchefstroom in December 1874; and I have received it from Marico and the Vaal river.

29. Cuculus cupreus.

I have shot this well-known bird on the Modder river, near Bloemfontein. Near Kronstadt I found them in great quan-

tities about the mimosa thorns, and their call could be heard the whole day. I have also shot them at Rustenberg, Potchefstroom, and Pretoria.

30. Coccystes glandarius.

I shot this bird in November 1874, on the Modder river, also near Potchefstroom. They are more shy than *C. jacobinus*.

31. Coccystes jacobinus.

These birds seem to have a pretty general range; for I found them on the Modder and Vaal rivers, at Potchefstroom, and Rustenberg; and I think I saw two in the bush near Pretoria. I have shot them in December, January, and February. They seem to be more common than *C. glandarius* and the other Cuckoos; at least it was so in 1874 and 1875 at Potchefstroom and through the Transvaal.

32. Pogonorhynchus torquatus.

I have observed these birds near Pretoria and in Kaffraria. I shot several near Rustenberg, where they abound, especially about the fruit gardens; they have a harsh disagreeable note.

33. Pogonorhynchus leucomelas.

I have often seen this Barbet in the Transvaal, and have also received it from Marico. It appears to feed on fruit and berries.

34. Trachyphonus cafer.

This remarkable-looking bird I first observed in the bush under the mountains at Rustenberg, where I shot one from a tree, only wounding it, when it ran away on the ground. I secured it after some trouble.

35. Dendropicus cardinalis.

I have seen a few of these birds and shot one on the Rhinoster river, south of the Vaal, and have also received it from Marico.

36. Dendropicus menstruus.

I have received this species from Marico, in the Transvaal; and I have seen it at the Macamac Gold-fields, near Rusten-

berg, as well as in the bush near Pretoria; at the last place it was running up a tree.

37. Psittacus meyeri.

I saw several of the birds in the bush near Rustenberg, and shot one. I have received them from Marico and from the northern parts of the Transvaal.

38. Turdus litsitsirupa.

I shot one of these Thrushes amongst some brushwood about twenty miles north of Potchefstroom. I have often caught a glimpse of this bird in the underwood; but it seems to be rather shy in its habits.

39. Turdus olivaceus.

This species is pretty plentiful in the bush at Macamac. I had one given to me which was said to have been shot somewhere in the Potchefstroom district. I never observed any in the Free State.

40. Crateropus jardinii.

I have seen this bird in the district of Potchefstroom, but never killed one myself. I was told by one of my men that he had shot it not far from the river; and I have seen a specimen said to have been procured at Marico.

41. Cossypha caffra.

I received this species from Lydenburg, and saw a few at Macamac.

42. Saxicola bifasciata.

But few specimens of this bird came under my notice. I procured a male, however, on a journey from Potchefstroom to Lydenburg; it was flitting about the stones on a hill-side near Wittewater Rand. I have since seen it between Potchefstroom and Bloemfontein, Orange Free State, always on elevations, and never on the plains.

43. Pratincola torquata.

I procured a female of this bird at Macamac, and received a specimen from near Pretoria in 1874.

44. Apalis thoracica.

I have never seen this species elsewhere than at Macamac and Pilgrim's Rest Gold-fields.

45. Bradypterus barratti, Sharpe, *anteà*, p. 53. Plate IV.

I shot one of these birds near Pilgrim's Rest, Lydenburg Gold-fields; but I cannot say much about it, as I had no time to examine its habits. Another specimen was shot by one of my people at the same place.

Captain Shelley has also recently obtained a pair from one of his collectors at Natal.

46. Pindalus ruficapillus.

Met with at Macamac and between that place and Pilgrim's Rest Gold-fields.

47. Chloropeta natalensis, Smith.

Sylvia natalensis, Layard, B. S. Afr. p. 102.

Between Macamac and Lydenburg.

48. Zosterops virens.

I shot this only at Macamac.

49. Promerops gurneyi.

This species was procured only between Pretoria and Lydenburg. I found it in the zuikerbosch, or sugar-bush.

50. Nectarinia famosa.

Common at the Lydenburg Gold-fields and Macamac, and about the bush near the Drakenberg mountains, also on the sides of the hills amongst the aloes near Rustenberg. My man brought me specimens from several places in the Transvaal. I have seen it in the Colony and British Kaffraria. I have had specimens in different plumage; and they appear to be at their best, at the Gold-fields, in January, in the rainy season. They come out between the showers and fly about, looking very gay in their light-green plumage.

51. Nectarinia chalybea.

I have procured this Sunbird at Macamac, near Lydenburg, Rustenberg, near Pretoria, Bloemfontein, and in British Kaffraria, where they are very abundant. I have seen as many

J.G. Keulemans lith. Mintern Bros. imp.

BRADYPTERUS BARRATI.

as thirty or forty fluttering about and inserting their long beaks into the scarlet blossoms of the Kaffir boom-tree, visiting first one flower and then another.

52. Nectarinia amethystina.

Shot one or two near Rustenberg, and observed it more than once during my journey through the bush between Potchefstroom and Rustenberg. I also saw a few in the bush near Pretoria, and I have killed it in British Kaffraria, near East London, in company with *N. chalybea*; it is, however, much more shy in its habits than the latter bird.

53. Butalis undulata.

From Macamac.

54. Pogonocichla stellata.

Common at Macamac Gold-fields. I did not observe them near Rustenberg.

55. Lioptilus nigricapillus.

From near Lydenburg and Pilgrim's Rest Gold-fields.

56. Batis capensis.

From Macamac. Procured on the stony coppices on the sides of the hills, where I observed them flitting about among the stunted brushwood.

57. Terpsiphone viridis.

I shot one of these birds near the town of Rustenberg; and I found them also near the waterfall under the mountain, and by the side of an old stone wall. I have also seen them in the bush near Pretoria.

58. Hirundo rustica.

I brought home two specimens killed in the neighbourhood of Potchefstroom. One is a male, apparently adult, but not quite in full plumage, not having the long outer tail-feathers. The other is in the curious young plumage, which, it appears, the Common Swallow assumes only during its sojourn in South Africa: the head is brown, with no trace of a frontal patch; and the throat is white. These Swallows appear every year in the district of Potchefstroom during our summer months.

59. Psalidoprocne holomelæna.

Both at Rustenberg and Macamac this bird was rather scarce. I shot them in the forest as they flew up and down in the open spaces.

60. Dicrurus musicus.

This Drongo Shrike I observed in great quantities in the bush near the Magaliesberg mountains, on the Rhinoster river (Free State), in the bush about the Vaal, and in many other places in the Transvaal. They chase one another about, occasionally making a swoop on some insect, returning to a twig to enjoy their meal; at the same time any thing but a musical chorus is kept up by them.

61. Colius capensis.

I noticed this bird in the Potchefstroom district, and killed it on the Vaal river. I have also received it from Marico, but did not observe it at Macamac.

62. Colius striatus.

This bird was often observed at Macamac and elsewhere on my route from Potchefstroom to the Gold-fields. All the species of this genus, as far as I could make out, closely resemble each other in their habits. In British Kaffraria one cannot give a Kaffir a greater treat than a few "Mouse-birds," as they are called; and if one of them flies from a bush, sticks and knobkeries will be thrown with such precision that the poor bird has very little chance of escape.

63. Dryoscopus boulboul.

Shot near Lydenburg. I also received it from Macamac Gold-fields, near the Drakenberg mountains. It has a peculiar habit of puffing itself out, which is thought by some to be a habit it assumes in order to terrify other birds. It is certainly very pugnacious, and will not allow others to molest it.

64. Lanarius atrococcineus.

This bright-coloured little bird I shot in some low underwood on the slopes of the Magaliesberg mountains. They do not appear at all shy, and are very quick in their movements.

65. Prionops talacoma.

This bird somewhat resembles in its habits *L. atrococcineus*, but, although frequenting the low bushes, does not confine itself to the underwood, but comes out in the open and hunts about for insects. Sometimes they are to be seen on a high bush; but this is seldom the case. I shot my specimen at Oliphants Nek, near Rustenberg, where I found them in flocks of five or six together.

66. Lanius collaris.

Have seen this bird on the Rhinoster river a few miles south of the Vaal; and I have also received it from Macamac, and shot it myself in the neighbourhood of Potchefstroom and Bloemfontein. The peculiar habits of this bird in killing its victims would astonish any one not acquainted with the habits of Shrikes. I have seen the bare side of a bush in our garden near Bloemfontein covered with locusts and sometimes as many as twenty insects in a state of decomposition; occasionally, too, bones are observed hanging about. I have noticed this species frequently in British Kaffraria.

67. Lanius collurio.

Shot one in the Potchefstroom district; and I think I have seen it in the Colony itself.

68. Oriolus galbula.

I observed several of these birds in the bush near Rustenberg; and I think I saw them at Lydenberg Gold-fields. I also received a specimen from Marico. They are rather abundant, but at the same time so wary of approach that it was some time before I got a specimen. They frequent the tops of trees; and I have never observed them on the ground.

69. Oriolus larvatus.

I shot this species, after some trouble in approaching it, about four miles west of Rustenberg.

70. Amydrus morio.

This species is found distributed at certain seasons throughout the greater part of the Transvaal and Free State; the birds are generally to be found in the fruit-gardens.

71. Lamprocolius phœnicopterus.

This bird I met with in several parts of the Transvaal and Free State. They congregate in vast flocks, and keep up a harsh chattering noise. I have also shot them near Pretoria, Rustenberg, Potchefstroom, and near Bloemfontein; and I noticed them on my farm on the Chaumna, British Kaffraria, where they frequented the barns and buildings, continually flying to and fro, like English Starlings.

72. Pholidauges verreauxi.

Specimens were procured by me near Rustenberg, associated with the *Amydrus*. I also saw odd ones here and there about the old fruit-gardens.

73. Hyphantornis capensis.

Procured this bird at Potchefstroom and adjoining district. They build their nests in the trees, and seem to be continually on the move, always appearing too busy to notice the presence of a stranger.

74. Ploceus oryx.

The Red "Caffre-Fink" breeds in reeds near gardens, and is plentiful about Bloemfontein, in the Free State, thence to the Vaal river, Kronstadt, near Rustenberg, Pretoria, and Potchefstroom. It is a very local bird; and I found it in only a few places along the Vaal near the Diamond-fields; but I did not observe it flying everywhere, like *Chera progne*.

75. Euplectes taha.

Found this bird flying about the reeds which skirt the ditches &c. I shot my first specimen near the Modder river, near Bloemfontein. It is very plentiful at Potchefstroom about the skirts of the vleys or swamps adjoining the town. I have got them all the way up from the Modder river to Potchefstroom, near Bloemfontein, Rustenberg, Pretoria, Nazareth; and I think I saw a few near the Gold-fields.

76. Euplectes capensis.

Common in the Free State and Transvaal. I have found them breeding near Kronstadt, in the Free State, also about Potchefstroom and elsewhere in the Transvaal, where they

are to be seen in company with *Euplectes oryx* in the reeds near homesteads. The male birds are generally observed perched on, or rather clinging to the tops of the reeds above their dome-shaped nests.

77. Chera progne.

I first met with this graceful bird in the district of King-williamstown; thence I found it on my journey through Queenstown, Alliwal North, Basuto Land, Orange Free State, through the Transvaal, Potchefstroom, Pretoria, Lydenburg, up to the Gold-fields, near the Drakenberg mountains, and at Rustenberg. Its favourite resorts are swampy ground, vleys, and the long reeds about ponds. After a sharp shower of rain, or in a strong wind, they are scarcely able to fly, and can easily be knocked down; when flying they very gracefully arch the tail. They leave their nuptial district in the Transvaal about the end of April or the beginning of May.

78. Vidua paradisea.

Obtained my specimen near Rustenberg, where they seem rather scarce. I have observed it near the Diamond-fields within a short distance of the Vaal river.

79. Vidua ardens.

I shot this little bird between Potchefstroom and Rustenberg, and also near Pretoria. I have seen it at Macamac Gold-fields; but I have not noticed it further south than Rhinoster river.

80. Hypochera chalybeata.

I found a few of this species in and around a large fruit-garden, a few miles from Rustenberg. The ones procured were scattered about the hedgerows, where I shot them.

81. Pyrenestes albifrons.

I shot this bird at Macamac Gold-fields, but have never received it from anywhere else.

82. Estrelda cyanogastra.

Shot this Finch round about the old gardens at Rustenberg. I did not see many of them in flocks; and they appear to be rather local birds.

83. Estrelda astrild.

I recognized this little bird nearly all over the country, Orange Free State, Diamond-fields, Potchefstroom, Pretoria, Lydenburg Gold-fields; and I have seen it in the Kaffir gardens a few miles further north. I also met with it at Rustenberg. They congregate in large flocks, and are said by the Boers and farmers to do considerable damage to the grain crops.

84. Macronyx croceus.

This bird is often killed by waggon-drivers with the whip; and I have frequently done so myself when I wanted a specimen. I have seen it from Bloemfontein up to Pretoria and Nazareth, and on my trip to Rustenberg. I have never observed them elsewhere than in the grass.

85. Columba guineæ.

Common in the Transvaal. They fly about in vast flocks among the crops and on newly ploughed land. I have shot several near Potchefstroom and Pretoria.

86. Turtur semitorquatus.

Have shot this species on Vaal river near Rustenberg. I received it from Marico, and have seen it in many places throughout the Transvaal and Free State.

87. Peristera larvata.

Received this bird from Macamac Gold-fields, where it is not very uncommon.

88. Coturnix dactylisonans.

Have shot this Quail in the Chalumna district, British Kaffraria, where it arrived in great numbers about the end of August. In the Transvaal it is widely distributed. I have shot it near Pretoria, Rustenberg, Nazareth, and many other places. I received my last from Marico district.

89. Francolinus afer.

Have shot this species in the district of Potchefstroom. I obtained all my specimens in stony elevations and on the sides of mountains, where they are found in considerable quantity early in the morning.

90. Francolinus nudicollis.

I procured this bird in the district of Lydenburg and in Chalumna district, British Kaffraria, always in the thick bush, where their loud cackling note is heard during the greater part of the early morning.

91. Francolinus natalensis.

I shot one near Rustenberg in the thick brushwood: it ran rapidly for some time before we could get a shot at it.

92. Francolinus swainsoni.

This species I observed on my route between Lydenburg and the Gold-fields. They appear to be fond of water, especially small streams, where they are found at early morn. At night they frequent the dead brushwood, and the open in the daytime. I am not certain whether I observed them on my trip to Rustenberg; but I have received specimens from Macamac.

93. Anthropoides stanleyanus.

The Stanley Crane is generally distributed throughout the Transvaal and Free State; and I have met with it in great quantities between Bloemfontein and Potchefstroom. In the winter I have seen as many as fifty in a flock, besides many more in the neighbouring vleys; they are difficult to approach, but they can be shot with a rifle. They breed in the reeds, and I have received eggs from the district of Potchefstroom. Their long drooping feathers are readily bought by traders from up the country, who sell or exchange them to the native tribes. They become very tame in confinement, and will eat out of the hand, and follow one about. I have never shot them further north than within a few miles south of Lydenburg.

94. Balearica regulorum.

In the district of Potchefstroom this bird is not at all uncommon. I have seen them between Bloemfontein, Potchefstroom, and Pretoria. In the winter they may be seen half a dozen together; but in the time of nidification they are only found in pairs. I have never found two pairs breeding to-

gether in the same vley, but always some distance apart; and they can be heard a long way off, calling out "mahem" with a delightful mellow note. At the present time I have four living which I brought over from the Orange Free State and Transvaal. They all, with the exception of the young one, have the white cheek: I have seen birds from the western coast with it red; but I have never seen them so from the Transvaal. All I have shot, heard of, or seen, have had the cheek white. The eggs I have always found to be white with a bluish cast; some state, however, that they are spotted; but I have never found them so. I have seen these birds a few miles north of Pretoria.

95. Ardea purpurea.

The Purple Heron I have met with throughout my travels in the Free State and the Transvaal, but not further north than Nazareth, in the latter State. I found it became less common in the southern portions of the Free State, and *A. cinerea* seemed to take its place to a great extent. It is not so shy as most of the Herons; for I could generally easily procure a specimen near Potchefstroom when required.

96. Ardea garzetta.

I shot specimens of this lovely little Egret near Pretoria, and I have shot them near Potchefstroom both in winter and summer.

97. Ardea egretta.

This graceful bird, with its long sweeping plumes, is too well known to need any description. It is, however, generally very shy, and not easily procured.

98. Ardea ardesiaca.

This Heron was shot near Potchefstroom while sitting on a stone.

99. Ardea leucoptera.

I shot the best of my specimens of this lovely bird in October, when it was in magnificent plumage. It is, however, a rather wary bird; and I have often watched them from a distance standing near a vley and occasionally curving their long necks.

100. Ardea bubulcus.

I shot a fine male of this species in a flock which were hopping about under some oxen, from which they were picking off the ticks. I have obtained them close to Lydenburg and Potchefstroom, and I have seen them near Pretoria, Rustenberg, and near the Vaal river. They congregate in flocks, standing on one leg basking in the sun.

101. Ardetta minuta.

The Little Bittern is considered to be rather rare in the Transvaal. I procured two specimens on one occasion only, in December 1874. As these birds have a knack of hiding in the reeds, they, no doubt, often pass unobserved.

102. Botaurus stellaris.

The Bittern is found plentifully in the district of Potchefstroom. Their booming note used at one time to so frighten the Boers that they would never go into a vley, even on horseback, when they heard it, believing it was a large snake. I have shot them near Bloemfontein, Orange Free State, but never further north than about thirty miles north of Potchefstroom.

103. Tantalus ibis.

I procured one of these at Potchefstroom, where, I am told, a few are sometimes seen together; but in 1875 mine was the only specimen obtained in the district. It is said that they inhabit similar places to *G. æthiopicus*.

104. Geronticus æthiopicus.

I have observed these birds in flocks of about ten or a dozen at the sides of vleys and swampy places near Potchefstroom and towards the mouth of the Mooi river, where their white plumage and black shining necks cannot but attract the notice of the bystander. They walk about thrusting their long bills into the mud, and then will stop suddenly and appear to listen with their heads on one side, when they fly off, and circling round alight a few yards further away. They have their favourite feeding-places, which I generally found to be in corners near the bends of the rivers. I have also shot

them near Bloemfontein, and I have observed them a few miles south of Pretoria.

105. Glareola melanoptera.

I have seen quantities of these birds among a flight of locusts, darting about and destroying thousands of them in a very short time. Have shot them near Pretoria, Transvaal, in 1874, also in March 1875.

106. Cursorius bicinctus.

I first found this little bird running rapidly along between the herbage growing on the flats near Sandy River, Orange Free State. I have often watched the waggon-drivers run after them with their whips; and the birds would run a long way before flying, and then only for a few yards. I have seen them further north, but do not remember having seen them close to the Lydenburg Gold-fields.

107. Hoplopterus armatus.

In great abundance about Potchefstroom; and their continual clicking makes more noise than all the other birds together. I met with them in suitable places close to Lydenburg and in the greater part of my journey from Bloemfontein to the Gold-fields. I found them also on my trip to Rustenberg.

108. Gallinago æquatorialis.

This Snipe is distributed through the greater part of the Transvaal; and they breed in considerable quantities in the swamp below Potchefstroom. In the winter months (May, June, and July) they appear in great numbers and are shot for forwarding to the Diamond-fields, where they command a fair price.

109. Rhynchæa capensis.

This beautiful Snipe does not frequent the marshy ground about Potchefstroom in such great numbers as the last; as I have never known more than five or six to have been seen in a month or so. That is about the same place where one can see thousands of *G. æquatorialis*, which breed there; but I have never found the eggs of *Rhynchæa*.

110. Totanus canescens.

Shot this on a vley near the Modder river, also near Kronstadt and near Potchefstroom. They are often seen with *Totanus ochropus* flying about the farmers' dams.

111. Numenius arquatus.

I have observed these birds near the vleys and in the swamps near Potchefstroom, curling round and uttering loud cries; but I have never observed it further north. They are rather shy, and I only succeeded in procuring a single specimen.

112. Ortygometra crex.

I received one specimen from the district of Lydenburg, where, I am told, they are rather rare and not easily killed, being shy in their habits.

113. Rallus cæruleus.

This species is considerably abundant in the Transvaal; and I have shot them as they flew among the rushes and reeds bordering the Mooi river, but have often lost them in the reeds.

114. Limnocorax niger.

Not uncommon in the vleys and reeds about the Mooi river, Potchefstroom; and I have seen it a few miles south of Pretoria. They are rather shy, and are very quick in their movements.

115. Gallinula chloropus.

I have shot this species near the Orange river in vleys and swamps, and in the Transvaal as far as Lydenburg. I have also received specimens shot in December near Pretoria.

116. Fulica cristata.

The Crested Coot is by no means rare, frequenting the same places as *G. chloropus*. It is very quick in its movements, and can run very rapidly on its feet as well as being a swift swimmer. I have seen the young ones swimming with the egg-shell still attached to them; and it is curious to see the manner in which they disappear when alarmed. Towards the mouth of the Mooi river, near the Vaal, I found

them in great abundance. I have shot them a few hours north of Pretoria.

117. Sarkidiornis africana.

This bird was shot near Potchefstroom in company with *Dendrocygna viduata*.

118. Dendrocygna viduata.

I shot this near Potchefstroom, where, I am informed, it is rare.

119. Podiceps minor.

This species frequents vleys and reeds near Potchefstroom and the mouth of the Mooi river; they are very quick in their movements and not easily shot.

120. Graculus carbo.

I shot one of these near Kronstadt, Orange Free State, the only one I have ever seen in that state or the Transvaal. I found it resting on an overhanging branch near a small stream. When I fired it dropped into the water and dived; on its rising I gave it the second barrel, which brought it down.

121. Graculus africanus.

This little Cormorant is extremely common near Potchefstroom, where they can be seen in dozens. I have shot them near Pretoria, and found them to vary a great deal in their plumage. They dive with great rapidity, but when first rising from the water are rather slow, so are easily killed; but if they attain an elevation they fly swiftly and are very watchful, twisting their long necks from side to side.

122. Plotus congensis.

The Anhinga, or Snake-bird, is found in certain localities throughout the Transvaal. I have shot them near Potchefstroom and Lydenburg, and I have seen them near Pretoria and near the Modder river, Orange Free State. I have often seen them sitting on a dead bush overhanging the water; but on shooting at them they have dived so quickly that I have lost them, not being able to see which way they had gone. I observed several in the Chaumna district, between the Kaskama and Buffalo River, British Kaffraria.

XX.—*Notes on the Birds of the Lower Petchora.* By Henry Seebohm, F.Z.S., and John A. Harvie Brown.

[Continued from page 126.]

(Plate V.)

Ruticilla phœnicura (L.).

We shot the first Redstart on 12th May, in the streets of Ust Zylma. We afterwards found it sparingly on the outskirts of the birch-forests both near Ust Zylma and Habariki; but we did not meet with it further north. We found it to be one of the shyest of the small birds of the district.

Saxicola œnanthe (L.).

We saw the first Wheatear on 21st May, at Ust Zylma. It afterwards became rather common there. Further north it was rarer, but we saw it as far as Dvoinik.

Pratincola rubicola (L.).

The Asiatic form of the Stonechat, with white upper tail-coverts, was not uncommon in suitable localities near Ust Zylma and Habariki; but we did not meet with it further north.

Phylloscopus trochilus (L.).

The Willow-Wren is by far the commonest Warbler in the extreme north of Europe. Seebohm found it abundant on the fjelds of Norway from the North Cape to the Varanger fjord. Harvie Brown and Alston found it equally common at Archangel. In their paper in 'The Ibis' (Jan. 1873), *P. eversmanni** only was mentioned; but a re-examination of the skins proves that *P. trochilus* is the commoner bird. In the valley of the Petchora we found it common, both in the forests of Ust Zylma and the willow-swamps on the islands of the delta and the tundra. As we proceeded far north it became somewhat rarer; but we found it among the dwarf willows at Dvoinik, the most northerly point on the tundra which we visited. We never before so thoroughly realized its right to the name of Willow-Warbler. We first heard the familiar note of this

* *P. eversmanni* (Midd. nec Bp.) will probably rank as a synonym of *P. borealis* (Blasius).

bird on the 20th May, but did not succeed in obtaining a specimen until the 23rd, by which time it had become common. At one time we were under the impression that there must be two species of these birds, one of them a smaller, more buff-breasted, and much more silent bird; and we consequently brought home more than forty skins for examination. We are now convinced that the difference in size and habits is merely the difference of sex.

On the 12th June, as we were slowly creeping down the great river, we stopped to cook under the lee of a steep bank of the Petchora, just before we entered the delta. The bank was wooded to the water's edge; and Seebohm spent some hours exploring the dwarf forest. Willow-Wrens were common; and his attention was arrested by one which was most vociferously uttering a note unlike any that he had ever heard from a Willow-Warbler. The note reminded him somewhat of the spitting of a cat, a hissing sound, which he attempted on the spot to express in words. He shot the bird and tied to its leg a label marked *Tuz-zuk Warbler*, to remind him of the note. The bird proved to be a female. The respective lengths of the wing and tail agree with female *P. trochilus*; but the wing-formula is different. Out of at least a hundred skins of *P. trochilus* which Seebohm has examined, he has always found the second primary intermediate in length between the fifth and sixth. In the bird in question the second primary is intermediate in length between the sixth and seventh. Whether this bird be a different species or not requires further investigation.

Phylloscopus borealis (Blasius).

In Seebohm's collection there are three skins of this species from North-east Russia. One was shot by Harvie Brown and Alston near Archangel; a second was procured by Piottuch at Mesen; and the third was shot by Seebohm in the same locality as the variety of *P. trochilus* just mentioned, and whilst he was searching for a second specimen. He remarked in his diary at the time that the note was more rapid than that of *P. trochilus*, and more resembling that of the Whitethroat. In fact the

song is more that of a *Hypolais*, a genus which the bird also resembles in the large size and width of the bill. This species is a very distinct one. In size and colour it resembles *P. trochilus*, but has a distinct pale bar across the wings, caused by the wing-coverts being pale at the tips. The wing-formula is the same, except that the bastard primary is very much less, in fact as small as that of *P. sibilatrix*. It further resembles *P. sibilatrix* in having a comparatively shorter tail. We only met with this one specimen of *P. borealis*, and are consequently unable to give any further information respecting it.

Phylloscopus tristis (Blyth).

On 22nd May we shot a small Warbler uttering a plaintive call-note (a single note repeated at intervals) that we were unfamiliar with. The bird resembled a Chiffchaff in size, length of wing and tail, and wing-formula, but differed from that bird in having no yellow on the belly and under tail-coverts, and also in having black legs, instead of dark brown. On the following day we heard a loud call-note, reminding us of that of the Chiffchaff, but somewhat different; and shortly afterwards we watched the bird singing on a spruce-fir. The song was a repetition of its call-note with a few more musical notes introduced. This bird proved to be the same as that we had shot on the previous day. We met with it repeatedly in the same valley near Ust Zylma, but found it very difficult to shoot. It was still more abundant on the willow-covered islands of the delta, and we obtained several more specimens and one nest and seven eggs. Upon our return home we submitted our skins to our friend Mr. Dresser, who pronounced the bird to be *P. tristis* of Blyth. We are fortunate in being able to add this species to the fauna of the Western Palæarctic region, and have ventured to give it the English name of the Siberian Chiffchaff. This bird has hitherto been known as a winter visitor to India, though Mr. Brooks states, but without naming his authority, that it breeds in Ladak, mentioning the eggs, however, as being still amongst the desiderata in collections (*vide* Ibis, 1872, p. 31).

Phylloscopus neglectus (Hume).

In 'The Ibis' for 1869, p. 236, Mr. W. E. Brooks writes:—"I have, however, a single specimen, a female, of a *Phylloscopus* which I cannot make out. This bird exactly resembles in size and colour *P. brevirostris*" (*tristis*), "but is entirely without any yellow under the wings, nor is there any tinge of greenish yellow on the edges of the lesser wing-coverts. This bird Mr. Hume pronounced to be the English Chiffchaff (*P. rufus*), because it was white under the wings instead of yellow." To this Mr. Allen Hume replies in 'The Ibis' for 1870, page 143, "there has been some mistake between Mr. Brooks and myself about the *Phylloscopus* with a white wing-lining. The bird he refers to is the species I call *Phylloscopus neglectus*," &c. If this species be a good one, which there seems to be some reason to doubt, we have much pleasure in being able to add it to the European fauna. On 3rd June Seebohm shot a male *Phylloscopus* which agrees with Mr. Hume's description. It differs from *P. tristis* in having white instead of yellow axillaries, in having the edges of the primaries without any tinge of yellow, in having a decidedly shorter tail, and a slightly smaller bastard primary. It was frequenting some tall willows in a pine-forest at Habariki. We may also remark that some of the small *Phylloscopi* which we observed in the same neighbourhood, appeared to have a richer and more varied song than those we heard at Ust Zylma, and may have been this species.

Calamodyta phragmitis (Bechst.).

Next to the Willow-Wren the Sedge-Warbler is certainly the commonest songster on the willow-swamps of the islands of the delta. Curiously enough, we did not meet with this bird either at Ust Zylma or at Habariki. We first met with it on the Yorsa river. As the Bluethroat became rarer the Sedge-Warbler became commoner. We did not find it north of the delta; nor did it appear to frequent the willow-swamps which we frequently met with on the tundra.

Parus kamchatkensis, Bp.

We met with this eastern representative of the Northern

Marsh-Tit sparingly at Ust Zylma and Habariki as long as snow continued on the ground, but did not see it afterwards.

PARUS CINCTUS, Bodd.

We found one pair of the Lap Titmouse at Ust Zylma, and met with it more abundantly at Habariki. Further north it again became rarer, and the last specimens we procured were frequenting a willow-swamp a few miles to the north of the arctic circle. On comparing our specimens with the bird figured in Dresser's 'Birds of Europe,' and with his type of *P. grisescens*, we remark that our birds approach the latter species in being less russet on the flanks, and showing more conspicuously the white edgings to the wing- and tail-feathers than the western form.

AMPELIS GARRULUS, L.

We shot a pair of Waxwings at Habariki on 4th June; and Seebohm saw a party of six flying north on the 12th, shortly before we reached the Yorsa river. In the frozen-market at St. Petersburg we bought a dozen of these beautiful birds for eighty kopecs; but they all turned out to be males. The pair we shot at Habariki were not in very good plumage, having very few and small wax appendages on the secondaries. The eggs in the female were very large, and the testes of the male very fully developed. As the yellow on the primaries is I-shaped and not V-shaped, we presume the male to be a young bird. In this pair the male differs from the female in the following particulars:—It is a larger bird, with longer wings and tail, and slightly larger crest. The black on the throat is much deeper in colour, and much more sharply defined. The bar of yellow on the tail is much broader. The wax appendages are larger, and there are more of them. The yellow on the primaries is more brilliant, and the white on the secondaries and on the wing-coverts is larger. Finally, the chestnut on the under tail-coverts is decidedly darker in shade. The difference in the colour of the under tail-coverts of the two sexes is about the same as that between a ripe horse-chestnut freshly taken from the husk, and one which has been exposed for a day or two to the air. This will probably be

found to be the easiest mode of distinguishing the sexes, as, so far as our observations extend, we have found it constant at all ages. Alston and Harvie Brown observed it at Archangel in 1872, and were always able to separate the sexes at a glance when the birds were procured.

Hirundo rustica, L.

On the 26th May a Common-Swallow was seen at Ust Zylma skimming along the river-bank close to the houses of the town; and on the 3rd June we shot a single bird which was chasing the insects round the houses at Habariki. This appeared to be the single Swallow which makes a summer on the Lower Petchora; at least we saw no more afterwards. It is possible, however, that we left these localities before the main body arrived.

Cotyle riparia (L.).

We saw the first Sand-Martin on the day we left Ust Zylma (10th June), between that place and Habariki. Afterwards we met with the species in small numbers at Gorodok and at Kuya, and obtained specimens. The unusually dark plumage was remarked in these and other specimens as being quite in striking contrast to that of specimens obtained in Great Britain (*vide* also Ibis, 1873, p. 59). Nowhere on the Petchora did we find the Sand-Martins so abundant as they are in summer on the islands of the Dvina at Archangel, where nearly every suitable bank holds a large colony (*loc. cit.*).

Lagopus albus (Gm.).

Although we bought numbers of the Capercaillie and Hazel-Grouse for food from the native peasant sportsmen during our stay at Ust Zylma, we did not have a single Willow-Grouse brought to us until the 9th June. We were told by M. Známinsky and M. Sacharoff, and others, that "Kouropatki" are remarkable for their abundance in some seasons, and just as remarkable for their scarcity in others. On the tundra, in certain localities, as at Yooshina and Stanavoialachta, we found them plentiful; and they formed, along with Ducks and Geese, a staple article of our diet for many a day.

We met with them as far north as we went on the tundra,

viz. to Dvoinik, frequenting the low willow-bushes or knolls, and avoiding the long level stretches of bare tundra.

TETRAO TETRIX, L.

We only once met with this species, viz. between Yorsa and Chuvinski, some forty versts north of Habariki, where we found a nest containing five eggs on an island. The surrounding ground was covered with tall alder and birch; and long grass covered the raised bank which formed a breakwater between the river and a lagoon, and upon which the nest was placed. The Greyhen was flushed off the nest, but not shot.

TETRAO UROGALLUS, L.

As with the last species, many Capercaillie hens were brought in for sale, at forty kopecs per brace. The peasants do not shoot the males, as they are not considered good food. Although we saw several Capercaillie cocks southward from Ust Zylma, we met with none there in the forests, nor at Habariki.

TETRASTES BONASIA (L.).

Many of these birds were sold to us by the peasants, costing twenty kopecs per brace, at Ust Zylma; but we had not the good luck to meet with any ourselves, either at that place or further north. Being a pine-forest species, it probably does not occur further north than Bougáeffskia, which is said to be upon the northern limit of the pine-woods along the river-banks.

CHARADRIUS PLUVIALIS, L.

Many Golden Plovers passed during the time of migration, alighting occasionally in the fields on the hill-slopes behind the town to feed. At this season it is not difficult to call these migratory birds within range by an imitation of their note. We obtained the first specimens on the 17th May, and again met with the species at Habariki, where a single pair was haunting the newly sown fields close behind the village. After that a specimen was shot at Kuya by Seebohm, which has one of the axillary feathers slightly splashed with smoky

brown; and we again met with Golden Plovers at Vassilkova, Yooshina, Stanavoialachta, and Dvoinik. They frequented totally different ground from the Grey Plovers, affecting the round exposed knolls in preference to the flat bogs, and being almost always found where the tundra had more of the rolling character of prairie, intersected by willow-patches and miniature valleys, narrow deep streams of pure sparkling water, and clear tarns surrounded with brushwood. It is worthy of note that we scarcely ever found the Golden and Grey Plovers frequenting the same kind of ground. If a patch of Grey-Plover ground lay surrounded by knolls of dryer tundra, that patch might hold its pair of Grey Plovers, which, when disturbed, would occasionally alight on the higher ground; but it was rarely that we saw a Golden Plover settle on the hummocky ground at the base of the knolls, though in other countries (as, for instance, Scotland) the latter is often their favourite ground for breeding on. Several pairs of Golden Plovers were watched to their nests or shot at them. They exhibited, if any thing, rather more shyness than the Grey Plovers did, though in general habits and mode of approaching the nest there was scarcely any perceptible difference.

Squatarola helvetica (Linn.).

We arrived at Alexievka on the 19th June, after a ten days' voyage down the river from Ust Zylma. We had left far behind us the thick forests of small spruce which crown the heights behind Ust Zylma, and the older forests of pine and spruce and larch at Habariki. We had glided past the dense thickets of tall birch, leaving the last of these behind at Viski, and had entered upon the true delta, the flat willow-covered islands of which had only a short time before been three or four feet under the overflow of the great river. As we approached Alexievka, we had seen afar off, with longing eyes, the low outline of the skirts of the Great Zémelskaya tundra upon the eastern bank of the river; and we knew that it stretched away eastward to the Ural Mountains, and north-eastwards to the gates of the Kara Sea. We had landed on the willow-covered islands here and there during our voyage

C.J.Fleming del. M&N.Hanhart lith.

EGGS OF SQUATAROLA HELVETICA.

down the river, and had secured some interesting species of birds; but on the whole we felt disappointed in the delta, with its never-ending almost impenetrable willow-swamps and winding "Kurias" and little pools of water. Our experience of every island was almost the same—the same landscape, the same conditions, the same bird-life; and we looked forward with eagerness to the real *new land*, the land of promise —Arkya Ya, the great land of the Samoyedes.

During all the time we remained at Ust Zylma, while the migration was going on, we had seen nothing of the Grey Plover. We saw many Plovers passing over, or resting or feeding in little flocks in the ploughed or newly sown fields; but all those which we shot or identified belonged to the common species. We had therefore little expectation of afterwards meeting with it at its breeding-haunts*.

But a glad surprise awaited us. On the 22nd June we at last had our wishes gratified. We crossed from Alexievka in our clumsy unmanageable boat, to the eastern or right bank of the river, and, climbing up the steep clay slope, stood upon the tundra. We had a large party on this our first day on the tundra—all our little force in fact,—Piottuch and ourselves, and our four men—Simeon the Samoyede, Little Feodor the half-breed, Gavriel and Big Feodor, Russians. Little did we guess as we stood on the top of the steep river-bank and gazed away inland over the wide expanse of moor and

* Much valuable information concerning the migrations and arrivals of some of our rarer European Waders on the Volga and Kama rivers is contained in a Russian work, of which we give the complete title below, and which we had an opportunity afterwards of consulting with Piottuch's assistance. In it the authors, speaking of the present species, inform us that it is seen on both migrations in May and September, in small flocks, in the neighbourhood of Kasan, but not every year. Thence, doubtless, these migratory flocks in spring descend the Petchora river as far as Ust Ussa (the mouth of the river Ussa), and spread over the Great Zémelskaya tundra northwards, without going round by Ust Zylma. The full title and reference to the above-mentioned work is as follows:—"Materials for forming a Biography of the Birds of the Volga," being Chapters II., III., and IV. of Part 1, vol. i. of 'Descriptive Catalogue of the High School of the Imperial University of Kasan.' Edited by MM. Kovalevsky, Levakovsky, Golovinski, and Bogdánoff. Kasan: 1871.

bog, how soon one of the great prizes we had come so far in the hopes of gaining would be within our grasp.

After crossing over a tract of moor sloping gently inland some versts from the river, and which was comparatively destitute of bird-life, raising a few Lapland Buntings and Red-throated Pipits, or an occasional Willow-Grouse or Dunlin, we came in view of a vast stretch of low hummocky tundra, its surface studded over with bright little pools and lakelets glancing in the sun. The low rounded hills beyond Vassilkova form the boundary-line to this great plain; and further off a higher range, appearing blue in the distance, is to be seen in the direction of Stanavoialachta, some forty versts lower down the river. Dotted over the tundra, as already observed, are tarns and round pools of water. These have overhanging peat- or green mossy banks. Curious hollows, apparently the dried-up beds of former lakes, occur also, having the same peat banks or mossy edges, the bottoms covered with long grass, marshy ground, thickets of Willow-scrub and stunted birch, and here and there a little open pool of water. Over the surface of the moor, where we found the birds breeding, are small patches of level black or brown peat-bog, which are destitute of vegetation in the centre, but covered with a species of yellowish brown *Sphagnum* round the edges. Crossing over these the foot sank to the depth of about 18 inches, and was then supported by the hard-frozen ground beneath. Winding about amongst these black bogs, like the network on the rind of a melon, are low narrow ridges, or wider plateaux, a foot or two in height, formed by innumerable hummocks of peat, covered with reindeer-moss, cranberries, and patches of the green leaves and red flowers of the arctic bramble (*Rubus arcticus*). A few plants also of the sweet-smelling *Ledum palustre* are scattered here and there over the ground. On these higher and drier ridges were the Grey Plovers' nests—simple shallow depressions in the moss or peaty soil, lined with a small handful of broken twigs and leaves of the surrounding plants. This description may be held generally to apply to all the places where we found the Grey Plover breeding. They preferred these low-

lying boggy tracts to the higher and more undulating parts of the tundra, in which latter situation we afterwards found the Golden Plover nesting.

Accompanied by Piottuch and the men, Harvie Brown walked on rapidly towards this seeming land of promise, keeping a sharp look-out for any species of Plover (because on the 18th Seebohm had shot a Golden Plover which had one of the axillary plumes splashed with smoky brown). They had not much hope or even thought, at the time, of finding the Grey Plover. When therefore a bird was seen about 200 yards off to rise from the tundra, and heard to utter a Plover's whistle, Harvie Brown at first took it for one of the common species; but he quickly saw his mistake when it again alighted somewhat nearer, and the strong contrast of the black and white parts of the plumage showed distinctly. He lost no time in putting the identity of the bird beyond a doubt by using his binocular. This was no sooner accomplished than the bird again took wing, and, rising high in the air, joined four others which were flying in erratic circles high overhead. These, as we afterwards came to learn, were the male birds. A reward was now offered to the men for the first nests they should find. Simeon set to work in a persevering patient manner, threading with slow step and sure the mazes of the network of hummocks, his hands crossed behind his back, and his eyes fixed upon the ground. Gavriel, the tall Russian, stalked away over the tundra until he disappeared over a distant rise. After a good hour's search Simeon was rewarded, and, waking up from his usual phlegma, cried out, "Yaitsa-yaitsa! dobra yaitsa!" ("The eggs, the eggs! the good eggs"); and Harvie Brown ran up to him.

Simeon was kneeling beside the nest with a quiet pleased smile on his face. The nest contained four eggs, intermediate in appearance between Golden Plover's eggs and Lapwing's. Immediately after, Seebohm joined in, and together we feasted our eyes for a brief space of time. It was then agreed that Harvie Brown should remain behind and wait for the bird, while the others moved away to renew the search. The following is extracted from Harvie Brown's Journal:—"I lay

down about forty yards from the nest, well concealed behind a ridge of the dryer ground; and very soon after I heard the cry of the birds. Then I saw them fly round, low over the tundra, and alight on the tops of the hummocks. Presently one ran towards me, stood up again on a hummock, and cried "Pl-wee," the first syllable short and low, the second louder and prolonged—shriller, I thought, than a Golden Plover's. The birds' behaviour near the nest appeared to me to be exactly similar to that of a Golden Plover—sitting erect on the higher hummocks, running rapidly across the hollows, whistling at intervals, then flying in a wide circle round the nest—*not*, like the more cautious Dotterel, running round the hummocks or grey stones, pausing in the hollows, silent, running over a ridge out of sight, head down, and reappearing from a diametrically opposite direction. I missed both barrels at the bird. I misjudged the distance, my eyes being almost level with the tops of the hummocks, and the intervening hollows being shut out from my range of vision. But it came again, and after a stalk I shot it. It was the male bird."

Early in the season we found it an easy matter to watch the birds to the nests; and it was thus that we found most of our nests. On this day, however, we found four nests by simply searching for them, Simeon finding two, Gavriel one, and Harvie Brown the fourth; at each of these nests one of the birds was shot. As we afterwards came to learn, the habits of the male and female differ somewhat, as with the Golden Plover, as the season advances. When the eggs are fresh, or slightly incubated, the hen is the more anxious parent, and is far more restless than the male, running backwards and forwards near the nest, approaching and retreating, and uttering the alarm-note, whilst the male stands for the most part silent, and for a considerable length of time in the same place. Later in the season, when the eggs are almost hatched, the male becomes as solicitous as the female, constantly uttering the alarm-note and shamming lameness or a broken wing. In one instance a male bird, when near the nest, suddenly ran across a grass-covered bit of flat bog, head down and bill open, lay down on his breast, and stretched out his wings to the full

extent along the ground, and for quite half a minute remained in this singular position.

The following are a few extracts from Harvie Brown's Journal.

(Concerning the cries of the birds, considerable difference exists between our respective opinions as to how they should be rendered in words. They are, however, three in number:—*first*, the call-note between male and female, a double whistle, the first syllable short, the second drawn out; *second*, the alarm-note, a single plaintive whistle, about a half note higher than that of a Golden Plover; and, *third*, a treble whistle, the second syllable having a lower intonation than the first and third. This latter is not so commonly used, and appears to be the call-note of the males to one another when flying apart from the females, and is generally uttered when the birds are flying high in the air. The males associate in small parties of three and four; and a peculiar phase of flight is then observable. They rise to a great height and dash about in erratic curves, or diving down impetuously, rapidly rise again; they then remain almost stationary, like a Temminck's Stint, raising the wings over the back until they nearly meet, and finally, flying with long Tern-like sweeps of the wings, utter their musical treble note.)

"*9th July*, 1875.—About 12 o'clock we went across to the tundra, this time higher up the river, beyond the ruined hut. Seebohm and I again renewed our search for Grey Plovers, and having found a pair, watched the female to the nest. This nest was placed at the foot of a ridge, close to damp ground, not on the top as was the case with the previous nests. We were a long time over this nest, quite an hour and a half, having at first lain down within ten yards of it. The bird, after we shifted our position, went on very quickly; and I shot her as she again moved off. These four eggs are lighter-coloured than any we have got hitherto.

"Shortly afterwards we saw a bird fly off just where Simeon some time before had been searching. We at once lay down; and in about ten or fifteen minutes the bird went onto the nest, which contained also four eggs. This nest was on

the top of a hummock, one of a ridge of dark peaty loam; and the eggs are much darker. At the first nest to-day the birds were remarkably silent, and the female only once or twice uttered the single note before going onto the nest. The males generally arrive in the vicinity of the nest after the females do, remain stationary in one spot for a long time, and when the females settle on the nests, take wing and fly off. The males appear darker to the eye, blacker-breasted, and whiter over the eye; but some females are much darker than others, and are nearly as dark as some males. As the season advances, the males retain their full plumage longer, whilst the female becomes much lighter, and the black on the breast becomes narrower.

"25*th July*.—At 150 yards distance a female appeared of a dull grey colour; and at 15 yards only a narrow strip of black on the breast was discernible; but at 150 yards the breast of the male seemed as black as ever.

"It was trying work to-day waiting to find these nests; the mosquitoes swarmed over our hats and veils and clothes. As we lay looking along the ridges and across the hollows, they seemed like a mist on the tundra, and the unceasing hum of the legions around us dulled the sounds of the smaller bird-voices further off. They got inside our veils, they crept up our cavalry gauntlets and bit our wrists, or searched patiently for openings in the sewing, and they found out rents and thin places in our clothes. They blinded us with their legions, deafened us with their hum, nearly beat us off by their force of character and determination.

"12*th July*.—Later in the day Seebohm and I watched another pair of Grey Plovers; but on this occasion, as with the last pair of birds, the male showed more finesse and anxiety than the female. We failed in marking the female to the nest, but went forward to the places where we had respectively seen her twice disappear. As it afterwards turned out, Seebohm went about 20 yards too far to the left, and I about the same to the right. Both birds flew round us in circles. I concluded that they had young, and Seebohm that they had eggs. We had despaired of finding them, eggs or

young, and were walking away, when we stumbled upon the nest, which contained three eggs. A young bird, apparently only very lately hatched, crouched within two feet of the nest, its yellow colour being very conspicuous against the grey lichen-covered ground. The young closely resemble the young of *Charadrius pluvialis*, but have the darker parts of the upper plumage larger and more conspicuous*.

"To-day we found great areas of tundra quite unoccupied by the species. They appear to be thinly scattered over the tundra, preferring the lower-lying damper portions, and where the hummocks lie in ridges and not broadcast. Doubtless they prefer these situations partly, if not wholly, on account of the greater quantity of yellow-green moss growing there, which must afford excellent concealment for the young, to which it closely approximates in colour. We have observed before, in Scotland, how difficult it is to detect young Golden Plover (as compared with some other young of Waders) as they lie flat upon the yellow patches of moss, head down, and legs drawn in under the body."

We obtained several nests of eggs, besides the above, which were deeply incubated. These we laid upon warmed cotton-wool along with the young bird, and covered them all over lightly with goose's down. Early the following morning we started on a trip to the Golievski banks, which stretch across the entrance of the Petchora Gulf, in the Company's steamer; and we took the precious boxful of young and eggs along with us, having covered them over, down, cotton, and all, with a mosquito-veil. The sun was hot and the day fine; and five of the young were successfully hatched out, and were strong and healthy.

As will be seen from the plates, the eggs of the Grey Plover

* Since returning home Harvie Brown has compared specimens of the young of both species. Besides the above distinction, not to speak of the absence or presence of the hind toe, he finds that the young of the Golden Plover are brighter in colour, and that the white of the lower parts, where it joins the upper, is suffused with yellow, as also is the light-coloured collar on the back of the neck. In the young of the Grey Plover the dorsal plumage is duller in tinge, greener, and the white parts bordering on the yellow are purer.

are intermediate in appearance between those of the Golden Plover and Lapwing. The very dark variety is one of the set of four found on dark peaty ground, above alluded to; and the light-coloured variety is one of the set found at the base of the ridge of hummocks, where a quantity of dead and bleached *Sphagnum* covered the edges of the flat peat-bog. The former set of eggs was the only one found actually laid on peaty dark soil, and the latter the only set found at the base of the ridge amongst the bleached *Sphagnum*; and they present the extremes in darkness and lightness of ground-colour. In a series of sixteen eggs, measured by Harvie Brown, they are found to vary in size from $2\frac{4}{10}$ by $1\frac{7}{10}$ of an inch to $1\frac{33}{40}$ by $1\frac{14}{40}$ of an inch, agreeing with measurements of the eggs brought by Herr A. von Middendorff from Siberia (Dresser, 'Birds of Europe,' temporary vol. i.).

[To be continued.]

XXI.—*Notes on a 'Catalogue of the* Accipitres *in the British Museum,' by* R. Bowdler Sharpe (1874). By J. H. Gurney.

[Continued from p. 76.]

Having concluded my last paper by a reference to the Buzzard of the Galapagos Islands, it may be convenient that I should next advert to another insular species, a native of a still more isolated habitat in the Pacific Ocean—*Buteo solitarius* of Peale.

The type specimen, which is preserved in the Academy of Natural Sciences at Philadelphia, and which, I believe, is still unique, was obtained near Karakaloa Bay in the island of Hawaii, the largest of the Sandwich group, and was described by Peale under the above name in the first edition of 'The Zoology of the United-States Exploring Expedition,' published in 1848; but in the later edition of that work, published in 1858, and edited by Cassin, this species was removed by that ornithologist to the genus *Pandion*, with the following remark:—"This bird is strictly a member of a subgenus of the generic group *Pandion*, designated *Polioaëtus* by Dr. Kaup" (*vide op. cit.* p. 98).

Mr. Sharpe, in a footnote at p. 452 of his work, adopts Cassin's view, and refers to this species under the title of *Polioaëtus solitarius*, stating, however, that he is not personally acquainted with it.

On the other hand, Mr. Ridgway, who has been so good as to write to me respecting this remarkable bird, and whose words I now quote, describes the result of his examination of the type specimen to be, that he considers it "a Buteonine form, differing from the true *Buteones* only, so far as I can see, in the system of coloration, which reminds one somewhat of *Milvago chimachima*. Like *B. borealis*, *B. desertorum*, &c., four primaries have their inner webs cut; but they are sinuated rather than emarginated, and more as in *Leucopternis*; the fifth is the longest, the first shorter than the ninth."

The figure given in the plates to Cassin's edition of the United-States Exploring Expedition appears to me to favour Mr. Ridgway's view, and to confirm Peale's original allocation of this species in the genus *Buteo*.

To return to the Buzzards of the American continent, I now propose to allude to *Buteo abbreviatus*, a species which seems to me to occupy a somewhat solitary position in the Buteonine family, not grouping very closely with any of its congeners. Both the specimens of this Buzzard, of which Mr. Sharpe gives the measurements, appear by their dimensions to be females, those of two examples (one an ascertained male) given in Baird, Brewer, and Ridgway's 'Land Birds of North America' (vol. iii. p. 273) being very considerably less.

The type of *Buteo zonocercus* in the Norwich Museum, which is now ascertained to be an adult example of *B. abbreviatus*, is also, from its small size, no doubt a male bird. I have recently remeasured this specimen, and find the wing a little longer, and the tarsus rather shorter, than originally described in the P. Z. S. for 1858, p. 130; the correct measurement of the wing appears to me to be 15 inches, and that of the tarsus 2·7.

Messrs. Baird, Brewer, and Ridgway (*loc. cit.*) describe a

very interesting specimen of this Buzzard in a state of change from the immature to the adult plumage, and also a specimen which they consider to be fully adult, as well as a young male.

From a comparison of the two first-mentioned descriptions with that given of the adult by Mr. Sharpe, and with the specimen in the Norwich Museum already mentioned as the type of *B. zonocercus*, it would appear that the mature birds of this species vary in some degree as regards the markings on the tail; and this probably indicates that the final adjustment of coloration on the rectrices is only very gradually attained in this, as in some other species of the genus *Buteo*.

An immature specimen in the Norwich Museum agrees generally with Mr. Sharpe's description of the type of *B. albonotatus* (now also recognized as a synonym of *B. abbreviatus*), with the exception that the ground-colour of the plumage is dark brown instead of black as in the specimen described by Mr. Sharpe.

I now come to two North-American Buzzards that appear to me to form a group, which (including a third local race not yet acknowledged as specifically distinct) is notable for peculiarities of marking and coloration, by which these birds, when in adult dress, are readily distinguishable from any other members of the genus *Buteo*. These are *Buteo lineatus* and *Buteo elegans*, the former being an inhabitant of the eastern regions of North America, from Texas to New Brunswick, the latter of the western from Mexico to California—both meeting in Texas during the winter months, according to the observations of Mr. Dresser recorded in 'The Ibis' for 1865, p. 325.

Mr. Sharpe merely gives *B. elegans* as a synonym of *B. lineatus*; but to me it appears sufficiently distinct to be at least admitted as a good subspecies.

Full descriptions of *B. elegans* in both its immature and adult dress will be found in the 'Birds of North America,' by Baird, Cassin, and Lawrence, p. 28, and in the 'Land Birds of North America,' by Baird, Brewer, and Ridgway, vol. iii. p. 277. The adult and immature of this species are figured

in plates 2 and 3 of the former work, to which figures Mr. Sharpe has omitted to give a reference.

According to the authors of the 'Land Birds of North America,' a third race is found in Florida, differing from the typical *B. lineatus* in its smaller size and in the darker coloration of its immature plumage; and I am indebted to that work for the materials for the following table of comparative measurements.

	Wing from carpal joint. inches.	Tarsus. inches.	Middle toe. inches.
Buteo lineatus:			
Smallest of twenty northern males	11·25	2·7	1·3
Largest of twenty northern males	13·5	3·25	1·5
Smallest of seven northern females	13·35	3·1	1·35
Largest of seven northern females	14·25	3·2	1·5
Buteo elegans:			
An adult male	12·5	2·9	1·4
A young male	12	2·82	1·35
A young female	13	2·9	1·52
Florida race:			
Smallest of twelve specimens (sex not given)	10·9	2·9	1·25
Largest of twelve specimens (sex not given)	12·75	3·2	1·45

It would probably be convenient and permissible to apply a specific appellation to distinguish this small Florida race; but I am not aware of this having as yet been done.

The two next species in Mr. Sharpe's work are those which stand under the respective names of *Buteo latissimus* and *Buteo obsoletus*, both of which are included by Mr. Ridgway, in his recent paper on the genus *Craxirex* to which I have already referred, among those Buzzards which have only the first three primaries emarginated; but this character is, according to my experience, more constant in the first of these species than in the second, the fourth primary being in the latter not unfrequently sinuated, and in one instance within my knowledge, an adult female from Mexico, in the Norwich Museum, distinctly notched.

In other respects both species show affinities with the central section of the genus *Buteo*, of which *B. vulgaris* is

the type; but *B. latissimus* appears also to form a link between the typical Buzzards and the genera *Rupornis* and *Butastur*, and it especially bears a strong general resemblance in its markings to one species of the latter genus, *Butastur indicus* of Mr. Sharpe's work.

Buteo latissimus has hitherto been usually known by the specific name of "*pennsylvanicus*;" but Mr. Sharpe has adopted for it in preference that of "*latissimus*," and has favoured me with the following explanation of his reason for doing so: "Wilson first named *Accipiter fuscus* '*Falco pennsylvanicus*.' He subsequently gave the same name to the Buzzard; but afterwards finding his mistake in naming two birds thus, he himself altered that of the Buzzard to '*Falco latissimus*.' This must be the name, as the older one was preoccupied"*.

In the case of the allied species, for which Mr. Sharpe has adopted the specific name of "*obsoletus*," he has also dropped a more accustomed appellation, that of "*swainsoni*," and in this instance apparently on insufficient grounds. The name of *Falco obsoletus* was given by Gmelin to the "Plain Falcon" of Pennant's 'Arctic Zoology;' but on reference to the description of this bird given in Pennant's work, I am decidedly of opinion that it was taken from an immature specimen either of *Falco gyrfalco* or of *F. islandicus* (including under the latter term *F. holbœlli*† of Mr. Sharpe's work), and I therefore look upon *Buteo swainsoni* as the correct name for the present species. I may add that Mr. Sharpe includes among the synonyms of *Buteo swainsoni* the "Buzzard Falcon" of Pennant's 'Arctic Zoology,' which, so far as it relates to an American Buzzard, appears to me to refer to the immature plumage of *B. borealis*, as it is styled, according to Pennant, "The great Hen-hawk," which is known to be an appellation of *B. borealis*‡.

* [As the application of the name *pennsylvanicus* has remained practically unchallenged for about sixty-four years, we trust that Mr. Sharpe's proposed change will not be adopted, based, as it is, upon a strained application of the law of priority.—Ed.]

† I reserve for future consideration, in its proper place, the question of the specific distinctness of *Falco holbœlli*.

‡ *Conf.* Audubon's 'Ornithological Biography,' vol. i. p. 270.

Mr. Sharpe does not mention in his account of *Buteo swainsoni* the difference in coloration which exists between the adult male and female in their normal state of plumage. This difference is thus summarized by Mr. Ridgway, in his paper on the Subgenus *Craxirex*, to which I have already referred :—

"♂. Breast-patch rufous, with darker shaft-streaks ;

♀. Breast-patch dark greyish-umber or blackish-brown (like the back)."

According to the measurements of this species given by Mr. Ridgway, a very remarkable disparity exists in the dimensions of different individuals of the same sex, especially in the length of the wing from the carpal joint to the tip of the primaries. In twenty-two adult males whose dimensions are given by Mr. Ridgway, the length of this measurement of the wing varies from 12 inches to 16, and in thirty adult females from 14·75 to 17·25. Having regard to these differences, it seems to me probable that the investigations of American ornithologists will ultimately result in the discrimination of two distinct races, a larger and a smaller, both at present referred to *Buteo swainsoni*, but not in reality identical, in which case the smaller race will, I think, be entitled to the name of *Buteo fuliginosus*, Sclater.

I may here mention that I have recently remeasured the type specimen of *Buteo fuliginosus* in the Norwich Museum, and make the wing 12·6, and the tarsus 2·05, both these measurements being slightly different from those given in the original description of this specimen (P. Z. S. 1858, p. 356).

Mr. Sharpe speaks of the melanistic phase of *Buteo swainsoni* as being "fully adult;" but if this means that every individual which lives to be "fully adult" attains this state of plumage, it is a statement in which I cannot concur. It may possibly be correct as regards the smaller race, which I am disposed to look upon as separable under the title of *B. fuliginosus*; but in the larger and commoner form, to which I would restrict the name of *B. swainsoni*, melanistic specimens are comparatively so rare that in my opinion they can only be looked upon as accidental.

With reference to this question, it may be interesting to quote the opinion of Dr. Elliott Coues, as expressed at p. 357 of his recent work on the Birds of the North-west. Dr. Coues there remarks:—"This dark plumage is an individual peculiarity, not a normal stage of regular occurrence."

The remaining American species of the genus *Buteo* may, I think, be regarded as belonging to the central group of that genus, of which *B. vulgaris* is the type; and in considering these, I propose first to refer to *Buteo borealis* and its western representative, to which Mr. Sharpe assigns the subspecific name of "*montanus*." With reference to this appellation, Messrs. Baird, Brewer, and Ridgway write thus in vol. iii. of the 'Land Birds of North America,' p. 288:—"It being certain that the *Buteo montanus* of Nuttall is really the *B. swainsoni*, and not the variety of *borealis* so called by Mr. Cassin, it becomes necessary to drop the name in connexion with the present bird, and transfer it as a synonym to *swainsoni*. In its place Mr. Cassin's name *calurus* must be substituted, under which was described the melanistic condition of the present variety of *B. borealis*."

It would therefore appear that *Buteo montanus* of Mr. Sharpe's work should rather bear the name of *B. calurus*.

To define with precision the distinction between the true *B. borealis* of North-eastern America and its darker and more ferruginous western congener, *B. calurus*, is a difficult and, I suspect, an impossible task; for, great as is the difference in coloration between typical examples of the two races, intermediate gradations occur which it is hardly possible to divide by any satisfactory line of demarkation.

Mr. Sharpe, in his article upon *B. calurus*, speaks of the "western birds" as being "much larger, more powerful, and darker-plumaged than the eastern, or ordinary specimens of *B. borealis*."

This observation is undoubtedly correct as to the darker plumage in the great majority of western specimens, but, according to the measurements supplied by Messrs. Baird, Brewer, and Ridgway, can hardly be said to hold good as regards the alleged larger size of *B. calurus*.

The following particulars are given at pp. 283 and 287 of vol. iii. of the work of the above-named authors on the Land Birds of North America.

	Wing. inches.	Tarsus. inches.	Middle toe. inches.
In fifty North-American specimens of *B. borealis*:			
Males	13·5 –16·5	2·4*–3·2	1·6–1·7
Females	15·25–17·75	3·15–3·4	1·7–1·8
In forty-six North-American specimens of *B. calurus*:			
Thirty males	13·5 –16	2·9 –3·3	1·7–1·8
Sixteen females	16 –17·25	3·3 –3·4	1·8–1·95

The authors of the work from which I have extracted the above dimensions, in endeavouring to define the typical or eastern *B. borealis*, describe it, in vol. iii. p. 257, as having the "tibiæ and lower tail-coverts without transverse bars at any age;" and again, at p. 283, as having the "tibiæ and lower tail-coverts immaculate.' In the same page they remark that "the true *Buteo borealis*, as restricted, may always be distinguished from the var. *calurus*, its western representative, by its having the posterior lower parts (tibiæ and lower tail-coverts) entirely free from transverse bars, and by lacking indications of transverse bars on the tail anterior to the conspicuous subterminal one†."

On the other hand, it is stated at p. 284 of the same volume, under the head of "var. *borealis*, Eastern Red-tail," that an immature specimen . . . from Philadelphia has the tibiæ quite distinctly barred, but less conspicuously than in young of var. *calurus*."

My own observations prove that some specimens from the eastern regions of North America, the acknowledged home of the typical *B. borealis*, do not possess the immaculate tibiæ which are considered by the authors above quoted to be a distinctive attribute of that race; and I therefore believe

* This stands in the original 1·4, which I take to be an obvious misprint.

† The last character is probably intended to apply only to the adult bird.

that, though in *B. calurus* the tibiæ are never immaculate, the converse does not always hold good in the case of *B. borealis*. The following instances in point may serve to illustrate this fact:—An adult male from Pennsylvania in the collection of Mr. Dresser, which in all other respects is a thoroughly typical *B. borealis*, has the entire hinder surface of the thighs (and to a certain extent the front also) distinctly barred with transverse fulvous stripes. An immature specimen in the same collection, also from Pennsylvania, has the tibiæ strongly marked with transverse bars of brown, which are broader than in the adult specimen previously mentioned, but considerably further apart from each other. Two other immature specimens in Mr. Dresser's collection, both from New Brunswick, also have the tibiæ barred with brown, but less strongly than in the young bird from Pennsylvania; in one of these specimens many of the markings assume the form of triangular spots rather than of bars. The last-named specimen is very similar to two immature Canadian examples in the Norwich Museum, one of which was obtained near Quebec, and both of which have the tibiæ similarly marked.

With regard to the geographical range of the two races, Mr. Sharpe gives that of *B. borealis* as the "Eastern States of North America, extending to Cuba, Jamaica, and the West Indies," and that of *B. calurus* as "Western North America, throughout Central America, and ranging in winter to the southernmost parts of the South American continent."

Messrs. Baird, Brewer, and Ridgway define the respective habitats of these Buzzards somewhat differently. Under the head of *B. borealis* they say, "*Hab.* Eastern North America, not in the West Indies, nor west of the Missouri. *Localities.* (?) Bahamas (Bryant, Pr. Bost. Soc. 1867, p. 64);" and under the head of *B. calurus* (p. 286), "*Hab.* Western region of North America from the Rocky Mountains to the Pacific, south into Mexico, West Indies (Jamaica and Cuba)."

The only West-Indian specimen which I have had an opportunity of examining is one from Hayti in the Norwich Museum, an immature bird, which I am disposed to refer to

B. calurus; but a typical adult *B. borealis* is figured in Mr. Gosse's 'Birds of Jamaica' from a specimen which that gentleman has kindly informed me "was shot in Jamaica."

The Norwich Museum contains two adult specimens, one from Mexico, the other from Guatemala, which so closely resemble Mr. Dresser's adult male from Pennsylvania that I cannot do otherwise than refer them to *B. borealis*; and the same collection contains a still more typical example of the same race, which is said to have been obtained in Chili, as well as an adult male from Florida, which lived for some years in my possession, and which exhibits markings and coloration of such a thoroughly intermediate character that I feel doubtful whether to consider it an example of *B. borealis* or of *B. calurus*.

I may add that the same collection contains unmistakable specimens of *B. calurus* from Mexico, both normal and melanistic, and one of the latter from Central America, which I believe was obtained as far south as Panama.

Mr. Sharpe, in the addenda to his volume, briefly refers at p. 458 to the descriptions given in Messrs. Baird, Brewer, and Ridgway's work (vol. iii. pp. 258, 284 & 285) of three other races of Buzzard more or less nearly allied to *B. borealis*, and severally designated as:—"*Buteo krideri*, Hoopes," inhabiting "the plains from Minnesota to Texas;" "*Buteo borealis*, var. *leucasanus*, Ridgway," from the "peninsula of Lower California;" and "*Buteo borealis*, var. *costaricensis*, Ridgway," found in "Central America and South-western Mexico, Costa Rica, Veragua, and Tres Marias Islands."

Of these three forms I have only seen the last, which seems to me to be a well-defined race, meriting certainly subspecific, and possibly full specific distinction. An adult *B. costaricensis* in the Norwich Museum from Panama agrees with the description of the adult plumage given by Messrs. Baird, Brewer, and Ridgway, with the following exceptions, which may probably be due to individual variation. The feathers of the nape are edged with rufous, and the penultimate scapulars are similarly, but more broadly, edged; the lowest scapulars are broadly tipped with fuliginous brown,

above which are narrow bars of that colour alternating with broad bars of dark grey; the upper tail-coverts are an unbroken rufous, as is the tail itself, except that it is crossed about half an inch above the tip with a narrow irregular blackish-brown band, nowhere more than a quarter of an inch in breadth, and excepting also four very small dark spots adjacent to the shafts of the middle pair of rectrices.

I proceed to refer to another and very rare species, *Buteo harlani*, the type of which (an adult female) is preserved in the British Museum, and has been fully described by Mr. Sharpe, who also adds a description of the young plumage; but the latter must be cancelled, as Mr. Sharpe informs me that it was erroneously taken from an immature example of an allied species*.

In consequence of this error, I think it desirable to insert a description of a Buzzard obtained by M. Sallé in the state of Vera Cruz, and preserved in the Norwich Museum, which I believe to be an immature example of the veritable *B. harlani*, though it does not precisely agree with the description of another immature, but possibly rather more advanced, specimen from Texas, given by Messrs. Baird, Brewer, and Ridgway in vol. iii. of their work, p. 294.

The following are the principal measurements of this specimen:—

	inches.
Culmen from cere	1
Wing from carpal joint	16
Tarsus	2·5
Space between the tip of the tibial feathers and the base of the toes	0·3
Middle toe s. u.	1·7

The upper surface of the head is dark brown, with the bases of the feathers slightly showing white on the forehead adjoining the cere, and also about the occiput; ear-coverts dark brown, longitudinally streaked with brownish-black; chin and upper throat similarly streaked on a white ground; the entire remainder of the upper surface (excepting the quill-feathers of the wings and tail) similar to the upper

* [*Cf.* Ibis, 1874, p. 314.—Ed.]

surface of the head, but without any intermixture of white; the lower scapulars have, however, concealed broad transverse bars of greyish-brown; similar concealed bars are on the inner webs of the quill-feathers of the wing, the remaining parts of these quills being blackish-brown, with very narrow paler tips; these transverse bars are paler and more conspicuous on the under than on the upper surface of the primaries; the upper tail-coverts (except the central feathers) are transversely barred with faint markings of a paler brown than the remainder of that portion of the plumage; the upper surface of the tail is dark grey, crossed by seven bars of greyish black, of which the lowest is subterminal, with a very narrow pale edging to the rectrices below it. The under surface is similar, but paler, and especially so as regards the grey interspaces between the dark bars. The upper portion of the breast is like the back, but with very slight rufous edgings to some of the feathers; the lower part of the breast resembles the upper, but with broader rufous edgings to the feathers; and this is also the case with the abdomen, flanks, and thighs, the rufous edgings being broadest and most conspicuous on the tibial feathers; the under tail-coverts are ochraceous white, transversely but not closely barred with rufous-brown, the lowest of these bars having somewhat the appearance of a line of sagittate spots rather than of an unbroken bar; the bastard wing is dark grey, the wing-lining ochraceous white, with dark rufous-brown shaft-marks on each feather, many of which are in the form of sagittate spots.

I may add that melanistic examples of *B. calurus* have been occasionally mistaken for specimens of *B. harlani*, from which, I believe, they may always be distinguished by their rufous tails, as that portion of the plumage seems, in the case of *B. calurus*, to be exempt from a tendency to melanistic coloration.

There remains but one other North-American species of the genus *Buteo* to be noticed, *B. cooperi*, which Mr. Sharpe merely refers to in a footnote at page 172 of his work. The type specimen of this Buzzard was shot in 1855 in Santa-Clara

Valley, California, and was the only example known up to the time when Messrs. Baird, Brewer, and Ridgway drew up the description given of it in the third volume of their work, which is very full, and is accompanied by a woodcut of the bird itself, and also by one of the foot and leg in detail. This account contains the following remark, which it may be useful to transcribe:—"The nearest ally of this species is the *B. ferox* of the Palæarctic region, which has exactly the size and proportions of the present bird, and, in certain stages, a very similar plumage."

Since the article above referred to was written, a second specimen of this Buzzard has been obtained: this example was procured from Denver, in Colorado; and Mr. Ridgway, who has had the goodness to inform me of its occurrence, adds that it agrees closely with the type specimen.

Before proceeding to the consideration of the Buzzards of the Old World, I am desirous to recur to an obscure South-American form, to which I have already briefly alluded (*anteà*, p. 69), *Buteo unicolor* of D'Orbigny, described by that traveller at page 109 of his 'Oiseaux de l'Amérique Méridionale.'

The type specimen, which appears to have been the only one obtained, was met with by D'Orbigny near Palca, in Bolivia, and is still preserved in the Museum of the Jardin des Plantes at Paris, where it has been recently examined by Mr. Salvin, who kindly permits me to furnish my readers with the following notes which he has made respecting it:—

"Measurements: wing 14·5 inches, tail 8, tarsus 2·5, middle toe s. u. 1·3.

"The whole plumage is sooty brown; the forehead on either side has a small white spot; the tail is barred with fourteen narrow black bars on a brown ground; these bars were counted on the upper side of the middle rectrices, and the whole fourteen are exposed between the end of the upper coverts and the tip of the tail; the upper tail-coverts and the uropygium were hardly paler than the rest of the back."

I may supplement the above by the following extract from D'Orbigny's original description:—"Toutes les parties su-

périeures et inférieures sont noirâtres; la base des plumes est blanche; du blanc à la base du bec, au derrière de la tête et au col; les rémiges et les rectrices rayées transversalement de gris ardoisé; le dessous de l'aile rayé de blanchâtre et de noirâtre; les lignes des rectrices plus étroites; le dessous au côté interne presque blanc; quelques indices de taches rousses sur les couvertures inférieures de l'aile et aux cuisses."

Correction. I take this opportunity of correcting an error or misprint in one of my former papers: in 'The Ibis,' 1875, p. 365, the asterisk in line 6 should be affixed to "*poliocephalus*," not to "*haplochrous*."

[To be continued.]

XXII.—*On Recent Ornithological Progress in New Guinea.*

By P. L. Sclater.

In my address last year to the Biological Section of the British Association at Bristol I gave a short summary of the information at that time accessible to us upon the ornithology of New Guinea. But so much has been added to our knowledge of this strange land even within the short period that has since passed that I propose to offer to the readers of this Journal some supplementary remarks upon the same subject. In Italy, Germany, and England alike, during the past six months there have appeared contributions of greater or less importance towards our knowledge of the Papuan avifauna, concerning each of which I propose to say a few words.

Commencing with the first-named country, we have an ornithological letter of Dr. O. Beccari*, the quondam companion of D'Albertis, of the greatest interest, communicated by our ever active friend Dr. Salvadori. Dr. Beccari dates from Ternate on the 4th of last August, whither he had

* "Lettera ornitologica di O. Beccari intorno agli Uccelli osservati durante un suo recente Viaggio alla Nuova Guinea," Ann. del Mus. Civ. di St. Nat. di Genova, vol. vii. p. 704 (1875). I am indebted to Mr. Elwes for writing out an English translation of this letter, of which I have largely availed myself.

just returned from New Guinea. Of this highly successful expedition a full account is given in the third volume of Cora's 'Cosmos,' from which we extract the following particulars*. Beccari left Amboyna in the schooner 'Deli' on the 22nd January last year, and arrived at Salawatti on the 31st. The next day he crossed to Sorong on the opposite (western) coast of New Guinea, whence he made an excursion to Ramoi, and obtained a fine pair of *Casuarius uniappendiculatus*. From Sorong he proceeded along the north coast of New Guinea to Dorei Hum, where he ascended the adjoining mountain-range "Gunong Morait" to a height of about 1200 feet. On the top of the mountain he shot with his own gun two splendid specimens of *Dasyptilus pecqueti*, one of the rarest of the Parrots, of which the exact habitat was until recently quite uncertain. Not being sufficiently satisfied with the view into the interior from Gunong Morait, Beccari proceeded some miles further along the coast, to Has, and again ascended the mountain-range to the height of about 1000 feet. Thence he descended to the banks of a new and hitherto quite unknown river, the Wa-Samson, which appears to drain the south-western slope of the Arfak Mountains, and runs into the sea near Sorong. In this excursion the principal rarity obtained was *Seleucides alba*; but *Sericulus aureus*, *Gymnophaps albertisi*, and other scarce species were seen. Rejoining the schooner at Sorong, Beccari crossed to Wakkeré, at the south-eastern point of Waigiou, and remained four days in search of *Diphyllodes wilsoni*, of which, on the last day, one of his hunters obtained a fine male bird. He also obtained information of the existence here of an *Epimachus*, which will perhaps turn out to be *E. ellioti*, the habitat of which is unknown; and was told that the newly discovered *Diphyllodes gulielmi III.* is really from Sorong, and not from Waigiou, as is supposed by Dr. Meyer. Two days' voyage from Waigiou brought Beccari to Havre Dorey, whence, after an excursion to Andai, he again departed for a tour round the great Bay of Geelvink. From Dorey he first visited Momi and Warbusi, two places im-

* "Recenti Spedizioni alla Nuova Guinea," Cosmos, vol. iii. p. 73.

mediately to the south. At Momi he bought a small living Cassowary, apparently of a new species, distinguishable by having a small median as well as two lateral throat-wattles, which he proposes to call *C. tricarunculatus* * from this feature. It is not true, he observes, that, as Schlegel has stated, each Cassowary is limited to a certain district. At Dorey two species are certainly met with, of both of which he has obtained specimens. At Ansus, a port in the island of Jobi to which Beccari proceeded from Warbusi, are likewise probably two species †. In Jobi, Beccari also obtained a series of specimens of *Paradisea papuana*, slightly differing from those of the mainland of New Guinea, and examples of *Diphyllodes speciosa*, distinguished by their longer bills and the more brilliant yellow of the wings. These latter are, no doubt, referable to Mr. Gould's *D. chrysoptera*, spoken of below, of which therefore Jobi is the true patria. From Jobi Beccari sailed northwards to Kordo or Korido, and the adjoining islet of Sowek, thence westwards to Mafor, where a fine series of *Tanysiptera carolinæ* was obtained, and from Mafor back to Dorey. From Dorey he made an excursion into the Arfak Mountains, where he spent a month, first at a station of about 5000 feet altitude, and then at another of about 3500 feet, rather lower than the place inhabited by D'Albertis. Beccari maintains that neither Rosenberg nor Meyer ever penetrated into these mountains. Rosenberg, he declares, never got further than the home of Hr. Waelders, a missionary at Andai, about a kilometre distant from the coast, although he proudly labelled his birds (as may be seen by reference to Schlegel's Catalogues), "Interior of the northern peninsula of New Guinea." Of Dr. Meyer, Beccari tells the same tale; Andai was likewise his furthest point visited personally. After D'Albertis and Beccari had left

* Ann. Mus. di St. Nat. di Genova, vii. p. 717.

† One of these Dr. Salvadori describes as new, in a footnote, from a coloured sketch of Beccari's, under the name *Casuarius occipitalis* (*op. s. c.* p. 17). The other he supposes to be my *C. westermanni*. But is Dr. Salvadori sure that his *C. occipitalis* does not = my *C. westermanni*? —P. L. S.

Andai on the previous occasion, Hr. Waelders sent some Papuan boys up to Atam, and obtained a collection of bird-skins, which in March of the following year were acquired by Dr. Meyer. "It is, therefore, only Italian naturalists that have had the good fortune to hunt the most rare and most beautiful Paradise-birds in their native forests." The very first day of collecting at Atam, Beccari obtained two specimens of *Epimachus maximus*, two of *Astrapia gularis* (only found on the most elevated ridges, and almost always above 6000 feet in altitude), besides examples of *Drepanornis albertisi*, *Paradigalla carunculata*, *Parotia sexsetacea*, and various other wonderful species.

Beccari's departure from this true naturalist's Paradise was hastened by intelligence that the men on his schooner were sick, and that quarrels had arisen between them and the natives. Descending to Mansinam on the 18th of July, he left for Salawatti, and arrived there on the 21st. The 23rd he proceeded to Batanta, an island lying immediately to the north of Salawatti, and remained there four days. Returning thence to Ternate in haste, on account of the sickness of his crew, Beccari was able to stop only 30 hours at Koffiao (called Poppa or Pope on the charts), but obtained thirty bird-skins in this little-known Moluccan island, amongst which were those of *Tanysiptera ellioti**, a *Pitta*, and *Rhipidura vidua*.

The collections amassed during this most successful expedition have not yet arrived in Italy, or at any rate are not yet worked out. But we are told that they were sufficient to fill twenty-one cases, of which six contained birds, and that the Papuan birds exceed 2000 in number. In his ornithological letter above referred to, Dr. Beccari gives the following details respecting the principal rarities.

"Having referred to my journey, I will tell you what I think are the most remarkable in my collection of birds. I obtained several birds of prey, not including, however, *Astur leucosoma*, which is not rare at Mansinam (three specimens are in Bruijn's collection). Of the Owls there are, with mine

* Sharpe's Mon. pl. 105, where the locality given is "Mysol."

and those of Mr. Bruijn, a good number; but three species in his collection are wanting in mine. I did my best to obtain many specimens of *Podargus*; but, though not rare, they are difficult birds to find, as they have the habit of sitting lengthways on the large branches of trees, and in that position are hard to see, as also on account of their colour, which much resembles the lichen-covered bark of the trees. I firmly believe that *Coracias papuensis* is not a Papuan bird; but I do not think I can say the same of *Eurystomus gularis*, which, if I mistake not*, is a bird common enough in New Guinea (some specimens are larger and deeper in colour). *Peltops blainvillii* is fairly abundant in the mountains from 2000 to 3000 feet; but it is also found in plains near the sea, as at Ramoi. I believe that I have found all the Alcedinidæ which are known in New Guinea: among these are several specimens of *Melidora macrorhina*, and some of *Halcyon nigrocyanea* and of *Alcyone pusilla*: all these are species which are not very numerous. Of *Tanysiptera nympha* I could only get one specimen. It is not very rare among the mangroves near Ramoi, and in the low places surrounding it. On several occasions it was met with by my hunters without their being able to kill it. It is wanting near Dorey, but reappears at Rubi, in the south of the Bay of Geelvink, a locality which seems very interesting, and which I was sorry not to have visited, because several species which are only known from Salwatti and Sorong are found there, among others *Seleucides alba*. *Tanysiptera riedeli* is common at Kordo; at Mafor I obtained many splendid specimens of *Tanysiptera carolinæ*. I think I have found all the new species of Meliphagidæ recently described from Mount Arfak, except *Myzomela cruentata*, one specimen of which is in Bruijn's collection. Of *Orthonyx novæ-guineæ* I got male and female; the sexual difference is remarkable. The three species of *Eupetes* are represented by good specimens. I have two of *Melanopitta lugubris*, and several of *Pitta rosenbergi*,

* Certainly Beccari is mistaken. He doubtless intends to speak of *Eurystomus pacificus*, and perhaps of another blue species, of which I have seen several specimens.—T. S.

also of *Pitta maforeana*, though I stayed a very short time at Mafor. *Sericulus aureus* I killed on the same fig-tree near Atam where D'Albertis obtained the greater part of his birds. It has much the same habits as a bird of *Paradisea*, lives on fruits, especially on figs; one does not find more than two or three individuals together, usually only one male and one female; the young males and females are very different in colour; the iris is clear straw-yellow. It is a very lively and shy bird; when the male is killed the female and another, perhaps a young male, return again to their food on the same tree, and then are seen no more. Although it is found at an elevation of 3000 feet or more, it seems more abundant in the hills near the sea, but is always most difficult to find, because in each of the localities which it frequents there are only a few pairs. Its song, according to my hunters, has much resemblance to the 'zigolio' of the Nectarinias, but rather more strong and sonorous. Only the crest of feathers on the head is erectile. The Arfaks call it 'Komeida.' I have a great series of specimens of *Machærorhynchus*. There is also a violet-coloured species*. The *Monachella saxicolina* is abundant by the torrents of Arfak, but only in those near the sea. I have, however, only a pair of specimens. I have the three kinds of *Todopsis*; of *T. grayi* there is a single one in Bruijn's collection. Of the genera *Rhipidura* and *Monarcha* I think I want several species; but I have got together a fine series. At Kordo I obtained *Monarcha brehmi*. The genera *Pachycephala* and *Campephaga* are very richly represented. *Artamus maximus* is very common from 3000 to 5000 feet, and has the same habits as *A. papuensis*; it is enough to say that it flies like a Swallow, and sits on the branches of dead trees, especially in the middle of plantations. I have only got one or two specimens, because, through some fatality, I missed all the shots I fired at this bird. I do not believe that *Cracticus crassirostris* is a good species; but you will be able to judge better from the various specimens you will have to examine. *Gymnocorvus senex* is a very common bird, and goes in flocks

* Probably this is a new species.—T. S.

of from eighteen to twenty or more; after the first shot they become very shy: they are seldom killed by the hunters, because they look on them as dull and uninteresting birds, and because they are infested with an immense number of little parasites, which spread in all directions, and cause a most unpleasant itching. As to the Paradise-birds, I have obtained all the species belonging to the region. At Ansus I got two specimens of *Diphyllodes chrysoptera*, which seems to be found also at Amberbaki and elsewhere. It seems most improbable to me that *Diphyllodes gulielmi-tertii* should be found at Waigiou, because the type specimen (which I have seen) was, if I do not mistake, prepared in the manner of the Alfuros of New Guinea, and was acquired at Salwatti from a 'Bugis Nakoda' (captain of a Celebes boat), to whom it had most likely come from Has. It seems to me hardly probable that the female is the bird that has been described as such. I have had information of this bird at Wa-Samson; and it is not improbable that it may also be found at Salwatti. The *Epimachi* have been separated from the other birds of Paradise; but I think this is paradoxical. The form and length of the beak of *Epimachus maximus* is most variable; the young males and females are found with the beak only half the length of that of the adult males and females. This fact made me think at first that I had found the female of *Epimachus ellioti*; but I was mistaken. An *Epimachus* seems to be found at Waigiou, and will probably be *E. ellioti*; but I was not able to return there as I had intended. *Epimachus maximus* and *Astrapia gularis* are only found on the highest and most difficult peaks of Mount Arfak, nearly always above 6000 feet elevation. Specimens in dark plumage are common enough; but those which have attained perfect plumage are rare, perhaps because they take some years to acquire it. Both of them live on the fruits of certain *Pandanaceæ*, and especially on those of the *Freycinetiæ*, which are epiphytous on the trunks of trees. The irides of the large *Epimachus* are dark brick-red, those of the *Astrapia* almost black; the neck-feathers of the latter are erectable, and expand into a magnificent collar round the head. The

first day I went out at Atam on June 23, I got both these species (two specimens of each), besides one *Drepanornis albertisi*, three *Paradigallæ*, one *Parotia*, and several other wonderful kinds of birds. It was a memorable day, because I also ascended one of the peaks, and was surprised to find myself surrounded by four or five species of *Vaccinium* and *Rhododendron*. I also found an Umbellifer (a *Drymis*) and various other plants common to the mountains of Java. There were also some mosses a foot and a half in height. But I must speak to you of birds, and not let myself be distracted from the Paradise-birds.

"The Arfaks call *Astrapia gularis* 'Haroma,' and the adult *Epimachus maximus* 'Kambiloja;' the young ones and females are called 'Lessoa.' *Drepanornis* is well known to the Arfaks under the name of 'Sagroja;' it is not very rare, but difficult to find, because, as the hunters assure me, it has no peculiar cry, so that it is only met with by chance. Its inconspicuous colour also makes it difficult to see. It is partial to places near recent clearings, from 3000 to 5000 feet, as it has the habit of flying to dead trees and fallen trunks, about which it finds the insects which form its food. In the stomachs of the two specimens I dissected I found only insects of various orders, ants predominating, and the larvæ of a Lepidopterous insect. The iris of the adult male is violescent brown. I preserved a male which was in bad condition in spirit for anatomical study. As to *Paradigalla carunculata*, I shot one from my hut whilst it was eating the small fleshy fruits of an *Urtica*. It likes to sit on the tops of dead and leafless trees, like the *Mino dumonti*. The finest ornament of this bird are the wattles, which in the dried skin lose all their beauty. The upper ones, which are attached one on each side of the forehead, are of a yellowish green colour; those at the base of the lower mandible are blue, and have a small patch of orange red beneath. The Arfaks call the *Paradigalla* 'Happoa.' Of *Parotia sexpennis* I got one adult male alive; but it only lived three days. Its eye, with the iris azure surrounded by a yellow ring, is extremely beautiful. The six feathers which ornament the head are

not raised up vertically, but moved backwards and forwards in a horizontal and oblique direction, and are moved forward parallel to the sides of the beak. It is the commonest Paradise-bird at Mount Arfak; but, as usual, the adult males are much scarcer than the females and young males.

"*Lophorina atra* is rather rarer than *Parotia*; but I must tell you that the abundance of fruit-eating birds in a given locality depends principally on the season at which certain kinds of fruit are ripe; therefore a species may be common in a place one month, and become rare or completely disappear in the next, when the season of the fruit on which it lives has passed.

"*Diphyllodes speciosus* is also pretty common, and easy to kill when one has learnt to know its song, which resembles a kind of 'teia-teia-teia' repeated several times with diminishing force. The sound produced by kissing the palm of the hand is a very good imitation. When once you have heard the song, if you approach carefully, especially early in the morning, you will find some small spaces about a yard and a half in diameter cleared of sticks and leaves, where one or two males are paying court to a female. The males then erect all their feathers; the skin of the neck swells up like a bladder; the head seems like the centre of an aureola, which is formed beneath by the expanded feathers of the breast, and above by those of the yellow mantle, which are carried in a perfectly vertical position and spread like a fan. I kept a bird of this species alive for some days. It is found sometimes at little distance from the sea, on the plains, but perhaps more often on the hills at 1000 to 2000 feet of elevation, preferring open places and the vicinity of streams.

"*Diphyllodes wilsoni* is almost identical in habits with the last. I only got one specimen at Waigiou and five at Batanta, which were found very near the sea. Of both of these species I have preserved in spirit those which were not in good plumage.

"*Seleucides alba* is one of the Paradise-birds most difficult to procure. It is common enough at Salwatti; but the natives

always prevented my hunters from going to the places where it is easy to shoot.

"The eggs of *Ptilorhis superbus* have been found by one of Signor Bruijn's hunters. The nest was in the branches of a tree called at Ternate 'Kaju Tjapilong,' which is the *Calophyllum inophyllum*. At present I have not the eggs before me; so I will write about them more fully another time, when I have been able to examine the man who found them.

"Of *Paradisea rubra* I have only got some young specimens from Waigiou, and others from Batanta, but none in perfect plumage.

"The form of the trachea of *Manucodia keraudreni* is most variable; and the number of circumvolutions seems to change with age, and to be a peculiarity of the male. On the labels of those examined by me I have marked whether or not they had the trachea external.

"The *Buceros ruficollis* of New Guinea has the neck of a much lighter colour than those from Ceram and Amboyna.

"My collection of Papuan Psittacidæ is very rich, and nearly complete. You will find three specimens of *Dasyptilus pecqueti*, two of which, females, were killed at Gunon Morait, near Has; the other, a male, on Mount Arfak. It lives on fruit, and prefers that of a species of *Sterculia*, as I noted at Gunon Morait, tearing the pericarp to get at the seeds. It often goes in pairs, but sometimes in parties of three or four. When alone it makes a loud and very harsh cry, which can be heard at a great distance. Its tongue is not papillose or brush-like, but callous. It is often kept in confinement, but does not live long. It is very voracious, and may be fed on bananas. Sometimes it descends to the plains, but generally prefers the mountains from 2000 to 3000 feet. It has such a tough skin that an ordinary charge of shot has little effect on it, and it is usually only brought down by a blow on the head or a broken wing. Most of the living birds, as well as the skins prepared by natives, are got by the Ternate merchants at Salwatti; but all come from Has, and I do not yet know whether the bird inhabits Salwatti. I was able to get specimens of several kinds of *Nasiterna*. I shot some myself;

and when one knows their haunts they are not difficult to find. Their habit is to climb about the trunks of trees and along the lianas. They are often caught alive by the Papuans in the hollow trees where they make their nest. *Nasiterna geelvinkiana* seems to me very distinct, on account of its spiny tail. The species which inhabits Mount Arfak also seems to be separable. I did not get *Cyclopsitta gulielmi-tertii*; but several skins of it are in Bruijn's collection. Among the *Charmosynæ* I found *C. arfaki* common enough. Though it seems strange, it is nevertheless true, that the green *Eclecti* are males of the red ones. I learnt this at Aru from my hunters; and the young have the same difference. Is *Microglossum alecto* different from *M. aterrimum*?

"At Kordo I found a most beautiful *Centropus*. Of *Cuculus leucolophus* I got one specimen, and there is another in Bruijn's collection. It is one of the rarest birds of the north-west peninsula of New Guinea. *Chrysococcyx meyeri*, Salvad., seems to be found at Salwatti and at Kordo. If, however, the specimens from that place do not belong to another species, they are slightly different.

"I paid special attention to the Pigeons, because they are rarely preserved by the Ternate hunters, being too difficult to skin, and too good to eat. Besides *Ptilonopi bellus, miquelii, speciosus, musschenbroeckii, ornatus, pectoralis, humeralis*, &c., I found *P. aurantiifrons* and another, which I had found at Aru. One, however, is unknown to me, viz. *P. jobiensis*, of which there is one bad skin in Bruijn's collection. *Carpophaga chalconota* seems a good species. It is abundant at Atam; but I did not preserve many specimens, as it was the principal resource of my table.

"Of *Gymnophaps albertisi* I only got two specimens. It is a very rare species, though Sig. Bruijn's hunters got it, and also those of the missionaries at Andai and Dorey. *Henicophaps albifrons* is a scattered species, and in some localities not very rare, as also *Eutrygon terrestris*, which is more common at Salwatti than elsewhere. I really think that there is more than one species of *Chalcophaps*. *C. stefani* is the commonest; another kind I found at Miosnom and at

Koffiao. A terrestrial Pigeon found at Ansus by Sig. Bruijn's hunters, and another very small terrestrial species of Atam, are both of them on the whole nearest to *Chalcophaps*, and probably new. The queen of all the Papuan Pigeons is *Otidiphaps nobilis*, which, though rare, is found in various localities, generally close to the sea. It was seen by my hunters at Dorey, and is found at Andai and Batanta, and seems to have been this year discovered at Mysol. On Mount Arfak it is not rare. It has the habits of a Pheasant, and is very shy; its note is loud, and resembles that of *Megapodius*. I have got two specimens of this bird; the flesh is white and excellent; it might be easily introduced into Europe, as it endures a rather low temperature. Near my hut at Atam there were a couple, though the morning temperature was often as low as 10° to 11° Cent. It lives on fleshy fruits, which, in the gizzards of those I examined, belonged to a Myrtaceous plant and to a *Syzygium*, and were mixed with many pebbles.

"At Jobi I naturally found *Goura victoriæ*, but not so abundantly as I hoped. It is also found at Kordo and at Sowek, but not at Miosnom or Mafor. It is certainly in error that Wallace, 'Malay Arch.' ii. 190, cites *G. coronata* as an inhabitant of the Aru Islands. I think I told you that a *Goura* was killed in the woods near my house at Amboyna, and a Cassowary near the same place; but I cannot be sure that they had not been in captivity and had escaped to the woods.

"*Talegallus jobiensis* and *Megapodius geelvinkianus* are easy to be distinguished when alive; but when the skins are dry you might easily doubt their being good species. I found a nest of *Talegallus* or *Megapodius* at more than 6000 feet elevation."

So much for Dr. Beccari's ornithological letter, one of the most interesting contributions to our favourite science that I have ever read. We must now turn to Dr. Salvadori's account of Bruijn's collection, to which frequent reference has been made by Beccari. This, as Dr. Salvadori informs

us*, consists of 404 skins, belonging to 158 species, mostly from Halmaheira and New Guinea. Many of the new species recently described by Meyer and myself from the Arfak Mountains are contained in it, and there are besides many novelties of special interest, such as :—*Nasiterna bruijni*, a new pigmy Parrot from the Arfak Mountains, making the fourth of this extraordinary genus; *Megalestes albonotatus*, a new form of Muscicapidæ allied to *Philentoma* from the same locality; and a new *Ptilonopus* (*P. geminus*) from Jobi.

We must now pass on to the opposite extremity of New Guinea, and see what D'Albertis, who has established himself in a little island off the main coast, called Yule Island†, has been doing to advance ornithological science. Of D'Albertis's adventures we have several accounts :—first, his letters in Cora's 'Cosmos,' in the article already referred to; secondly, some letters that have been published by Dr. Bennett in the 'Sydney Morning Herald' of December 21st last, and of which Dr. Bennett has kindly sent me a copy; and thirdly, the account of his first collections in this district‡, which has just been published by Salvadori. D'Albertis travelled by the Queensland mail from Batavia to Somerset, Cape York. After some weeks' sojourn there, he left on the 5th of March last, and, after touching at various islands in Torres Straits, arrived at Roro or Yule Island, situated on the coast of New Guinea at the entrance to Hall Bay (lat. 8° 50′ S., long. 146° 32′ E.), on the 16th of the same month. Here he fixed his headquarters for exploring the opposite mainland, and has already succeeded in sending home several important collections, and making many noteworthy discoveries. Of his first ornithological exploits we have already

* "Catalogo di una collezione di uccelli del gruppo di Halmaheira e di varie località della Papuasia, inviati in dono al Museo Civico di Genova dal Sig. A. A. Bruijn." Per T. Salvadori. Ann. Mus. Civ. Genova, vii. p. 749 (1875).

† See letter from D'Albertis in P. Z. S. 1875, p. 530.

‡ "Catalogo di una colezione di uccelli dell' Isola Yule e della vicina costa della penisola orientale della Nuova Guinea raccolti da L. M. D'Albertis." Per T. Salvadori e L. M. D'Albertis. Ann. del Mus. Civ. di Genova, vii. p. 797.

an excellent account in the paper above mentioned. The collection contained 222 specimens, belonging to 85 species, amongst which 9 appear to be new to science. Besides the novelties there are other species worthy of special notice, such as further examples of the large bird of prey recently described by Salvadori as *Harpyopsis novæ-guineæ* *, skins of *Rhipidura leucothorax*, hitherto only known from Atam, and a fine series of *Paradisea raggiana*, the southern representative of *P. papuana*.

The Crowned Pigeon of this part of New Guinea is certainly quite distinct from *Goura coronata* and *G. victoriæ*. In the present paper Dr. Salvadori refers it to Finsch's recently described *G. scheepmakeri* (P. Z. S. 1875, p. 631, pl. lxviii.); and such, indeed, was fully my opinion after examining D'Albertis's specimens, which I had an opportunity of doing when in Genoa last autumn. Dr. Salvadori, however, as he writes to me, has recently changed his opinion, and has come to the conclusion that D'Albertis's bird is distinct, and has proposed to call it after its discoverer. One striking feature of D'Albertis's collection is the presence in it of many birds hitherto only known to occur in Northern Australia, such as *Astur cruentus*, *Cyanalcyon macleayi*, *Lamprococcyx lucidus*, *Myiagra concinna*, *Chlamydodera cerviniventris*, and other well-known species. This might have been fully expected from the close proximity of the two coasts.

We must now turn to Germany, and see what our Teutonic brethren have contributed towards our knowledge of the avifauna of New Guinea during the past six months. Dr. A. B. Meyer, who, since his return from the East, has received the well-merited appointment of Director of the Royal Zoological Museum of Dresden, has inaugurated his rule by the commencement of a new periodical devoted to the illustration of the collections under his charge †. The first number of this

* Ann. Mus. Civ. vii. p. 682.

† Mitthleilungen aus dem k. zoologischen Museum zu Dresden; herausgegeben mit Unterstützung der Generaldirection der königl. Sammlungen für Kunst und Wissenschaft von Dr. A. B. Meyer. Heft I. Dresden: 1875.

journal commences with some ornithological contributions from the editor's pen. The newly discovered Bird of Paradise, *Diphyllodes gulielmi-tertii*, is first described, and figured in a plate to which we cannot accord much praise. Dr. Beccari's doubts about the true habitat of this species have already been alluded to. Dr. Meyer gives it as Waigiou; but Dr. Beccari believes the species to be from Salawatti or the adjacent district of New Guinea. Then follow descriptions of four new Papuan birds, two of which are of great interest as belonging to the northern genera *Parus* and *Budytes*. The discovery of these forms in the Arfak Mountains is of special interest when taken in connexion with Beccari's having found northern plants (*Vaccinium* and *Rhododendron*) on the same mountains. Other notes upon rare Papuan species, amongst which are additional remarks upon the red and green Parrots of the genus *Eclectus*, terminate Dr. Meyer's most acceptable memoir.

Herr von Rosenberg, the German naturalist who made such splendid collections for the Leyden Museum, has also lately issued a very interesting account of his two excursions to New Guinea during his travels in the Eastern Archipelago. The memoir is in Dutch, and is published at the Hague by the Geographical and Ethnological Society of the Netherlands Indies*. Herr von Rosenberg's first journey to New Guinea was at the end of 1868, when he left Ternate in the month of December, and went to Sorong and Dorey. Thence he made an excursion to the islands in the Bay of Geelvink, Soek, Biak, Mefoor, and Jobie, or "Jappen," as he terms it, and returned to Ternate in July 1869. The second visit to New Guinea was made in 1870, when large collections were made at Andai, and Herr von Rosenberg's hunters penetrated into the Arfak Mountains, and obtained the many novelties which were described by Prof. Schlegel in his 'Obser-

* Reistochten naar de Geelvinkbaai op Nieuw-Guinea in de Jaren 1869 en 1870 door C. B. H. von Rosenberg, ambtenaar belast met wetenschappelijke onderzoekingen Nederlandsch-Indie. Uitgegeven door her Koninklijk Instituut voor de Taal-, Land-, en Volkenkunde van Nederlandsch-Indie. Met Kaarten en Afbeeldingen. 'SGravenhage: Martinus Nighoff. 1875. 1 vol. 4to, pp. 154.

vations Zoologiques.' A number of nicely drawn lithographic plates accompany the work, amongst which are reduced coloured figures of *Tanysiptera carolinæ, T. riedeli, Ptilopus speciosus, Trichoglossus rosenbergi, Pachycephala schlegeli,* and *Myzomela rosenbergi,* all new birds discovered during these two journeys. There is also a coloured figure of the head of *Casuarius papuanus* (which may perhaps after all turn out to be not different from *C. westermanni*, nobis*), and an outline of the head of *Drepanornis albertisi* under Hr. von Rosenberg's name of "*Epimachus veithii,*" which, as I have already pointed out in this Journal ('Ibis,' 1874, p. 187), has no real claim to priority. Finally, there is a useful chart of the Bay of Geelvink and its islands.

There remains now to be noticed what has been done in this country since last August towards the elucidation of the Papuan avifauna. Mr. Gould, having long since completed his 'Supplement to the Birds of Australia,' has now commenced a second supplement to his great work, in conjunction with a series of illustrations of the birds of New Guinea and the adjacent islands†. Of this the first two parts have appeared, one dated 1875, and the other 1876. They contain life-sized figures in Mr. Gould's usual style, of the following species :—

PART I. (1875).

Peltops blainvillii. New Guinea.
Parotia sexpennis. New Guinea.
Drepanornis albertisi. New Guinea.
Ailurœdus melanotis. Papuan Islands.
—— arfakianus. Arfak Mountains.
—— maculosus. Queensland.
—— buccoides. New Guinea and Waigiou.
Climacteris placens. New Guinea.
Aprosmictus insignissimus. Darling Downs, Queensland.
Cyclopsitta maccoyi. Rockingham Bay, Queensland.

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* *Cf.* P. Z. S. 1875, p. 84.

† The Birds of New Guinea and the adjacent Papuan Islands, including any new species that may be discovered in Australia. By John Gould, F.R.S. &c. Parts I. & II. Folio. 1875–76.

Collocalia terræ-reginæ. Rockingham Bay, Queensland.
Xerophila pectoralis. Port Augusta, S. Australia.
Sericornis minimus. Australia.

PART II. (1876).

Charmosyna papuensis. Atam, New Guinea.
Diphyllodes gulielmi-tertii. Mountains of Eastern Waigiou.
—— speciosa. New Guinea.
—— chrysoptera. Waigiou.
Pitta maxima. Gilolo.
Melampitta lugubris. New Guinea.
Campephaga strenua. Atam, Arfak Mountains.
Melithreptus lætior. Australia.
Ptilotis frenata. Cardwell district, Queensland.
—— flavostriata. Rockingham Bay, Queensland.
Rhipidura dryas. Australia (North-western).
Ptilonopus nanus. Triton Bay, New Guinea: Mysol.
Amytis goyderi. S. Australia.

The only other English work bearing upon New Guinea that has lately appeared is Captain Moresby's account of his surveys of the south-eastern and northern coasts*. There is nothing strictly ornithological in this volume; but it will be read with interest by those who study the fauna of Papua as giving accurate geographical details about many little-known localities, and as containing the only map we know of in which "Yule Island," D'Albertis's headquarters, is correctly marked.

XXIII.—*Notes on a Collection of Birds from the New Hebrides.* By H. B. TRISTRAM, F.R.S.

I HAVE lately received, through the kindness of Rev. J. Inglis, who has been for many years a missionary at Aneiteum, in the New Hebrides, a small consignment of birds and eggs collected at Aneiteum, Aniwa, and Erromanga. It may be of some little interest to give a list of the collection, inas-

* Discoveries and Surveys in New Guinea and the D'Entrecasteaux Islands, a cruise in Polynesia and visits to the Pearl-shelling stations in Torres Straits of H.M.S. 'Basilisk.' By Captain John Moresby, R.N. London: Murray. 1876. 1 vol. 8vo.

much as I am not aware of the existence of any separate paper on the avifauna of this group.

Unfortunately the box was about a year on its way to me, and the greater part of the contents, especially the parcel from Erromanga, have been utterly destroyed by damp and sea-water—so much so that many of the specimens are reduced to a mass of pulp, and utterly unrecognizable. Of those that have escaped utter destruction there seem to be twenty-seven species; only one, however, of these is new to science.

1. Strix delicatula, Gould.

The collection contains two specimens, with the remark, "lives in woods and not much seen. Native name 'Nalithmot.'" The specimens no way vary from others I possess from Australia, Fiji, and the Samoa Islands. I may mention in passing that, though the Pacific specimens I have seen are for the most part of a much purer white on the lower surface than the British *Strix flammea*, yet one from Samoa is as much spotted as many English specimens. The specimens are from Aneiteum.

2. Collocalia uropygialis, G. R. Gray.

This is one of the brightest-coloured species of the group. The whole upper surface has a fine resplendent sheen; and the pure white rump is very conspicuous. The lower surface is white slightly mottled with grey. The bird is figured in Brenchley's 'Cruise of the Curaçoa.' There are specimens from Aneiteum and Aniwa; and it is stated to be plentiful. Native name "Jumat-juma."

3. Halcyon juliæ, Heine.

Of this pretty Kingfisher there are specimens from Erromanga, Aneiteum, and Aniwa. It would seem to be one of the most abundant species in the group. There are specimens of the young as well as of the adult, corresponding well with Mr. Sharpe's figure in his "Alcedinidæ," excepting that the collar is of a deeper chestnut and very clearly defined. Mr. Inglis merely states of it that it lives near the shore, and is known to the natives of Aneiteum as "Nedeng."

4. Halcyon sanctus, Vig. & Horsf.

A pair of this species are in the collection, obtained at Aneiteum; the first authentic instance of the New Hebrides as a habitat for this Kingfisher, though Mr. Sharpe observes that Mr. G. R. Gray has given them as one of its localities. Both my specimens are adult, and have not the slightest tinge of cinnamon on the plumage. The under wing-coverts are pure white, while in *H. juliæ* they are always rich cinnamon; the upper wing-coverts and back are also darker than in that species.

5. Myzomela cardinalis (Forst.).

Of this brilliant little Honeybird there are several specimens both from Aneiteum and Aniwa, in various stages of plumage. Gray's description, in his 'Catalogue of the Birds of the Tropical Islands of the Pacific,' of an immature specimen is rather applicable to the female. The adult male is very like *M. nigriventris*, Peale, from Samoa, but larger, with much more scarlet on the back, and the rich scarlet of the breast not extending so far down.

The female is smaller than the male by ·2 inch, and the wing by ·15. It has only red on the forehead and throat, and a faint tinge of red on the occiput and rump. The natives seem to imagine it a distinct species, calling the male at Aneiteum "Inhenaug," at Aniwa "Ta-manume," and the male on the former island "Inyara," at the latter place "Ta-wenwene." A nest from Aniwa attributed to this bird is a very neat structure, reminding me somewhat of the nest of a *Drymœca*, small, compact, and well finished; the outer portion of cocoanut fibres, and the lining of very fine vegetable fibre or rootlets. Eggs, said to be those of *Myzomela* by the natives, are pale blue; but they are doubtless those of *Zosterops*, and were not identified by my kind and careful correspondent or his friend Mr. Paton.

These birds resort much to the gardens, sucking the flowers.

6. Myzomela ——?

Specimens too much damaged for identification, but a very much smaller species than the above.

7. Zosterops flavifrons (Lath.).

This, the largest and finest of the White-eyes with which I am acquainted, is stated to be very plentiful about gardens. I have it both from Aneiteum and Aniwa. The species is most remarkable for the great size of its bill. The nests sent me resemble exactly those of *Zosterops flaviceps* as described by Mr. Layard (not by Finsch and Hartlaub), suspended neatly in the angle of two horizontal twigs by loops of fibrous rootlets, and composed throughout of fibres, fine roots, and cobwebs. The eggs, pale turquoise-blue, like those of the whole genus without exception, are of course much larger than any of their congeners in my collection. Native name at Aneiteum "Inheleng," at Aniwa "Tafurusiu." Nests taken 24th October and 14th November.

8. Petroica similis, G. R. G.

There is a pair of this pretty little bird from Aneiteum in the collection. It is very like *P. pusilla* of Samoa, but is larger, and the male has the throat dark brown instead of black. Native name "Katamal."

9. Rhipidura, sp. ?

One specimen of an undoubted *Rhipidura* was in the Erromanga collection, but so utterly decayed that it crumbled to a mass of feathers at once, and there was no possibility of identifying it. This is the more disappointing as the species given by Forster as from the New Hebrides seems to be as yet undecided. One egg out of three came safely, and is precisely like those in my collection of *R. albiscapa* from Australia, and very distinct from any other Flycatcher's.

I may mention that, while the skins arrived in such deplorable condition, the nest and eggs, in a tight box within, were unharmed by damp or water, which had penetrated every thing else.

10. Myiagra melanura, G. R. Gray.

From Aneiteum and Aniwa. The glossy black throat and breast of the male strikingly contrasts with the rich chestnut of the female. There are two nests, each with eggs, from Aniwa. The nests are most peculiar, very like those of *M.*

castaneiventris described by Mr. Layard, P. Z. S. 1875, p. 435, but more coarsely lined with merely rough grasses and fibres. Outside they are covered with small circular patches of some lichen like fish-scales, and pure white, as though to make the nest appear like a knot grown over with lichen. I fancy Mr. Layard's informant was mistaken in supposing the eggs of the Fiji species to be blue, as those from Aniwa are remarkable for their peculiarity. They are, to my eye, the most handsome of any Flycatcher's, of a pallid clay-colour, with a broad belt of blotches, almost a mass of dark umber, forming a zone near the thick end of the shell. The rest of the surface is unspotted. They approach in coloration and character the eggs of the American *Pyrocephalus rubineus*. The native name at Aneiteum is "Laknuh," at Aniwa "Manusa." Both nests taken 24th October, containing one three, the other two eggs.

11. Pachycephala chlorura, G. R. Gray.

One specimen from Aneiteum. Native name "Inmanatahing."

12. Campephaga caledonica (Gm.).

One specimen from Erromanga.

13. Lalage nævia (Forst.) ?

There is one specimen of a *Lalage* from Aneiteum, but so decayed that I cannot with certainty decide the species. It seems, however, to agree with Gray's description, P. Z. S. 1859, p. 163.

14. Trichoglossus massenæ, Bp.

This beautiful Parrakeet is stated by Mr. Inglis to live in small flocks in the tops of the cocoanut-trees. There are a pair in the collection from Aneiteum, where it is known to the natives as "Kula." There is a very accurate figure in Brenchley's work, whose specimen was obtained in the Solomon Islands. It is nearly allied to *T. cyanogrammus* from Bouru, but may be at once distinguished by the peculiar bronze copper-colour of the occiput and throat.

15. Carpophaga pacifica (Gm.) ?

One specimen of a *Carpophaga* from Erromanga has arrived

in a condition which renders it impossible to identify it satisfactorily. So far, however, as it can be made out it agrees with Bonaparte's description of *C. pacifica*, which is stated to occur in the New Hebrides.

16. Macropygia, sp.?

A skin of some species of this group occurs from Aneiteum in a condition too much damaged by damp to enable me to identify it. It is one of the smaller species of this genus, and known to the natives as "Inman-aleng."

17. Chalcophaps chrysochlora, Gould.

Mr. R. B. Sharpe has kindly identified for me this species, of which I have the remains of several specimens. They are from Aneiteum, where Mr. Inglis states the bird is very plentiful. Its native name is "Naloupa." It seems to have considerably more white on the shoulder than have Australian specimens. There is also a specimen from Aniwa, where the natives know it as "Tafoitu." Eggs sent along with it are considerably smaller than those of our Turtledove, and are cream-colour instead of white, in this resembling *Geotrygon*.

18. Ptilonopus greyi, G. R. Gray.

A specimen of this beautiful Pigeon is sent by Mr. Paton from Aniwa, where it is known as "Ta-foikuku." He also sends two eggs, taken on 24th October. They are a trifle smaller than those of the species last named, and are of a dark cream-colour, darker than *Œna capensis*. It will be interesting to ascertain if this peculiarity is shared by any other *Ptilonopus*, those Mr. Layard has found in Fiji being pure white.

19. Charadrius fulvus, Gm.

Abundant on the shore. Sent in various stages of plumage. Native name at Aniwa "Ta-kuriri," at Aneiteum the small "Nagag."

20. Limosa baueri, Naum.

Lives on the shore, and is very plentiful. Native name large "Nagag' at Aneiteum. The specimens are in various states of winter plumage.

21. Limosa melanuroides, Gould?

One specimen from Aniwa, among seven of the fan-tailed species, is rather smaller, and with the tail not barred, yet not black, but dark brown. I believe, therefore, that it is an immature bird of Mr. Gould's *L. melanuroides*.

22. Ardea sacra, Gm.

Two specimens in good state from Aneiteum are in the collection. They are considerably larger than *A. sacra* from Samoa. I observe that they sustain the remarks made by G. R. Gray, who would have separated them under his name of *A. albolineata*, P. Z. S. 1859, p. 166. The difference seems to be too slight and uncertain on which to found a species; but if not two species, there are certainly two races in these Pacific Islands, a larger and a smaller, and the two do not appear to be found in the same locality anywhere. Native name "Inpaing." Mr. Inglis observes that it wades in the sea rather than in streams.

23. Rallus philippensis, L.

From Aneiteum. Native name "Nebutch." "*Note.* Lives in the bush, and flies little."

24. Porphyrio aneiteumensis, sp. nov.

Long. tot. 18·5, alæ a carp. 9·4, caud. 3·6, rostr. a rict. 1·35, mand. super. cum scuta 2·4, tars. 3·5, dig. med. cum ungue 3·75. Coloribus non aliter distributis quam in *P. indico* et *P. vitiensi*, sed dorso non tam læte cærulescente quam in *P. indico*.

I have been induced to describe the Purple Gallinule of the New Hebrides as a new species, since I cannot identify it by any of the descriptions within my reach. I think a confusion has arisen in this group owing to an error in Cassin's 'Ornithology of the United States Exploring Expedition.' He there gives *P. indicus* as the species found in Samoa; but in a footnote he gives measurements corresponding exactly with those I have given above for the New-Hebrides bird. Now these measurements do not agree in the least with those of true *P. indicus*, as correctly given by Finsch and Hartlaub and by Schlegel, and proved by specimens before me from Sumatra and Macassar.

I have on the table four Samoan specimens. Their measurements run all slightly smaller than those of *P. indicus*; and besides they have not the suffused blue on the back, which is black-brown instead of blue-black. The Samoan bird is, I think, distinct from the *P. indicus*. Whether it be distinct from *P. vitiensis*, Peale, I cannot say, not having a specimen from the Fijis. Peale distinctly states that *P. vitiensis* is much smaller than the Samoan bird; and he gives measurements which accord pretty nearly with my Samoan specimens. Probably, then, Mr. Whitmee is correct in his conjecture that his bird is *P. vitiensis* (Ibis, 1875, p. 446); but it is, perhaps, a little larger. My solution of the confusion is that Cassin got hold of a specimen of the species I am now describing, which was erroneously marked as from Samoa, and identified it as *P. indicus*, the real Samoan bird being very close to that species.

The New-Hebrides bird is halfway between *P. indicus* and the large *P. melanotus* of Australia and New Zealand, both in size and coloration.

Mr. Inglis writes of its habits that it lives inland, and eats taro and sugar-cane (as Mr. Layard says of the Fiji bird). It is known to the natives as "In-nga."

25. Anous stolidus, L.

From Aneiteum. Native name "Ketipup."

26. Gygis candida, Sparrm.

From Aniwa.

27. Phaeton rubricauda, Bodd.

From Aneiteum, where its tail-feathers are much prized by the natives, who call it "Intoneg."

Besides these, there are memoranda in Mr. Inglis's letter of three other species of birds which have perished in transit. There are also several nests bearing numbers corresponding to those of birds which have perished. One is probably the nest of the *Rhipidura*, a very fine Flycatcher-structure resting on two horizontal branches. Another I can only refer to *Myzomela*. It is exceedingly fine, compact, and tough, of a consistency between a Humming-bird's and a Tree-wasp's nest.

It is built among some twigs, after the fashion of a Long-tailed Titmouse's, and has a singular pendent tail, giving it the form of an inverted cone or jelly-bag. The inside is lined with very fine rootlets; and the outside, the rim, and halfway down the interior are, as it were, solidly felted with cobwebs. In it are the fragments of two eggs, of a pinky white ground, covered with brown blotches. Outside diameter of nest 2¼ inches, depth inside 1½, from rim to end of tail 4¼.

XXIV.—*On* Sericulus xanthogaster, *Schl., and* Xanthomelus aureus (*Linn.*). By T. Salvadori, C.M.Z.S.

Among the birds from New Guinea collected by D'Albertis, Beccari, and Bruijn's hunters, or obtained by them from the natives, are seven specimens (six males quite adult, and one in transitional plumage) of *Xanthomelus aureus*, and two birds which quite agree with Schlegel's *Sericulus xanthogaster*, figured by Elliot in his 'Monograph of the birds of Paradise' under the name of *Chlamydodera xanthogastra*; with the latter name they have been mentioned by Mr. Sclater (P. Z. S. 1873, p. 697).

Working lately at *Xanthomelus aureus* for my book on the birds of New Guinea, I have been struck by the fact that the male in transitional plumage, mentioned above, shows characters intermediate between those of the fully adult *X. aureus* and those of the so-called *Sericulus xanthogaster*; and having gone through the subject, I have arrived at the conclusion, which I think will be rather unexpected, that *Sericulus xanthogaster* is the young of *Xanthomelus aureus*.

The specimen in transitional plumage which has led me to this conclusion is, unfortunately, a native skin, without feet: it has the upper part of the head orange-red; some of the feathers round the eyes and on the sides of the head are black; on the throat there are a few blackish feathers; all the upper parts, the wings and the tail, from above, included, are olive-brown, with a slight yellow tinge on the upper tail-coverts; the feathers of the mantle are rather elongated and

abundant, and each of them has a concealed mesial yellow line, which only appears on moving the feathers; the greater upper wing-coverts and the scapulars have yellowish tips; the quills are olive-brown above, and have a great part of the inner web towards the base yellow; the shafts of both the remiges and rectrices are brown above and yellow underneath; the underparts are yellow, with a slight tinge of olive on the front neck, especially on the middle of the feathers; the bill is black, a little paler at the base.

Now it is quite evident that this specimen has several characters of the adult males of *Xanthomelus aureus*, and others of the bird named *Sericulus xanthogaster*. In common with *X. aureus* it has the head above orange-red, some black feathers on the sides of the head and on the throat; and the feathers of the mantle, although of an olive-brown colour, begin to show the shape of those of the adult males. From these characters it appears quite certain that the above-mentioned bird is a male of *X. aureus* in transitional plumage.

The characters in common with *Sericulus xanthogaster* are the olive-brown colour of the upper parts, the long and narrow concealed yellow stripes on the middle of the feathers of the mantle, the similar colouring of the quills, olive-brown externally, and with the greater part of the inner web yellow, the shafts of the remiges and of the rectrices brown above, yellow underneath, and the reddish or fulvous colour of the sides of the head.

Turning now to the two specimens collected by Signor D'Albertis, which agree with *Sericulus xanthogaster*, one of them seems a little older than the other: in the younger one the feathers of the mantle are shorter, with the concealed mesial yellow marks narrower, the throat is pure fulvous reddish, while in the other it is tinged with yellow; and in the former the lower part of the front neck and upper part of the breast have dark irregular lines or bands, as is shown in Elliot's figure of *Chlamydodera xanthogastra*, while in the other specimen those bands have already disappeared, and only the middle of each feather of the same region appears a little darker.

It is worth while to mention that in the plate 25 *bis* of Lesson's 'Oiseaux de Paradis' a male is figured not quite adult (but older than the specimen in transitional plumage, which I have described above, having the orange mantle and the black throat), which has the wings olive-brown, and on the upper part of the breast those dark marks which have been described in *Sericulus xanthogaster*; besides, in that plate of Lesson's the shafts of the tail-feathers are yellow underneath.

If now I arrange in a series, first the two specimens collected by D'Albertis (which agree with *Sericulus xanthogaster*), first the younger one and then the older—second, the specimen of *Xanthomelus aureus* in transitional plumage, which I have described above—third, the figure of *X. aureus*, which is to be found in the plate 25 *bis* of Lesson's work—and last the fully adult males of *X. aureus*, we have a gradual series, which demonstrate most clearly that *Sericulus xanthogaster*, Schleg., is nothing else than the young bird of *X. aureus*.

I wish also to mention that in all these specimens the bill, the feet, the wings, and the tail have exactly the same shape and dimensions. The bill in the younger specimen of the two referable to *Sericulus xanthogaster* is nearly all black, a little paler at the base of the mandible underneath; in the other, which is a little older, the base of the bill is all round a little paler; in the young male in transitional plumage the base of the bill is more decidedly pale, but not so whitish as in the adult birds.

I think that we can now fix the systematic position of *Xanthomelus aureus* more satisfactorily than it has been done hitherto.

The young specimens of this species, which have been named *Sericulus xanthogaster*, show most certainly, as has been pointed out by Mr. Elliot, a great likeness to some species of the genus *Chlamydodera*; and, besides, when we consider the characters of the bill, of the feet, and of the wings of the adult birds of *Xanthomelus aureus*, we must admit that there is a great similitude between this most brilliant bird and the somewhat more plain ones of the genus

Chlamydodera, near to which I think that *X. aureus* must find its place.

Also Signor Beccari, in his "Lettera Ornitologica" recently published*, remarks that *X. aureus*, or *Sericulus aureus* (as he calls it), has not the habits of the true Birds of Paradise. Who knows if, before long, we shall not hear of its building some kind of bower, like the true Bower-birds?

As regards the systematic position of *X. aureus*, I wish to point out that while Mr. Elliot has very nearly approached the truth by placing *Sericulus xanthogaster* with the *Chlamydoderæ*, Prof. Schlegel seems to have better seen another side of the question, placing his *S. xanthogaster* in the same genus with *Sericulus aureus*.

In conclusion, I think we have good reasons to believe:—1st, that the bird called *Sericulus xanthogaster*, Schleg., is the young of *Xanthomelus aureus*; 2nd, that *X. aureus* does not belong to the true Paradiseinæ, but to the less typical group of the Paradiseidæ, which Mr. Elliot has called Tetronarchinæ, and others call Ptilorhynchinæ. It seems also that Prof. Sundevall is of the same opinion, as in the last-named group he includes the genus *Sericulus*, in which, I suppose, he comprises *Xanthomelus aureus*.

Turin, March 18th, 1876.

XXV.—*Notices of recently published Ornithological Works.*

Since the discontinuance of the "Index of Ornithological Literature," begun in 1871 and continued for three years, we have confined our notices of books to a great extent to special ornithological works, to the exclusion of papers published in current periodicals. We can fairly make an exception to this rule in the case of the extra number of the 'Journal of the Asiatic Society of Bengal,' published in August last, and which contains a "Catalogue of the Mammals and Birds of Burma" by the late E. Blyth†.

* Ann. Mus. Civ. di Stor. Nat. di Gen. vii. p. 709 (1875).

† Journ. As. Soc. Beng. Part II. Extra Number, August 1875. "Cata-

The introduction is written by Mr. Grote, and contains a memoir of Blyth, which will be read with great interest by his many friends. This memoir is supplemented by a list of Blyth's papers in the 'Journal of the Asiatic Society of Bengal' and other journals, which will be found of great use by those consulting Blyth's numerous contributions to zoological science. The present posthumous work on the mammals and birds of Burma occupied Blyth's attention for some time prior to his death, and was, at the time it was written, destined to form a sketch of the natural history of Burma to accompany a work then being prepared on that country by Sir Arthur Phayre. The MS., after Blyth's death, was handed over to Mr. Grote, who undertook the general superintendence of its preparation for the press in the form in which it ultimately appeared. Mr. Grote invoked the aid of Lord Walden, Dr. Anderson, and Dr. Dobson to assist him in his labour of love; and the result is the useful volume now before us. It is with Lord Walden's contribution that we are now concerned.

During the last few years our knowledge of the birds of Burma has received great accessions from the labours of several competent naturalists and collectors, Mr. Davison, Mr. Oates, Major Lloyd, Captain Feilden, and Lieutenant Wardlaw Ramsay. The collections of the first two gentlemen passed into the hands of Mr. Hume; and catalogues of them have been published in 'Stray Feathers.' The specimens obtained by Major Lloyd, Captain Feilden, and Lieut. Ramsay came into Lord Walden's possession, and enabled him considerably to supplement Blyth's original list, into which he has also incorporated the species obtained for Mr. Hume. These materials have also supplied much useful information as regards the habitats of most of the species mentioned, and also suggested some valuable notes on their nomenclature.

The richness of Burma as regards its birds may be gathered

logue of the Mammals and Birds of Burma. By the late E. Blyth, C.M.Z.S. &c. With a Memoir and Portrait of the Author." 8vo, pp. 167. Hertford: 1875.

from the fact of no less than 660 species being catalogued in the present list, a number, considering the limited area investigated, indicating a bird population of great density, hardly perhaps surpassed by that of any other portion of the globe, not even excepting the richer areas of South America.

Lord Walden has not gone into any analyses to show the relationship of the Burman avifauna to that of the surrounding countries; but his list seems to show that the great richness of this country in species appears to be due to the mingling of many Himalayan forms with a number of Malaccan types, which, with a considerable proportion of "autochthones," together make up the bird population of Burma.

In his final note Lord Walden leads us to expect that considerable additions to this list will be made, both from the side of the Himalayas and also Malacca—a prediction already in part fulfilled, judging by some recent additions to the Burman avifauna communicated by Mr. Hume to his own periodical.

The second part of the new edition of Layard's 'Birds of South Africa' reached us in October last, since which time no further numbers have been issued*.

This work, to which we have already alluded (Ibis, 1875, p. 505), is now brought down to nearly the end of the Cuckoos of the arrangement adopted. As all references are omitted, it is not easy for us to say what new ornithological matter is brought forward in this revised edition of the 'Birds of South Africa'; but it seems to us that by far the greater portion of the additional material is derived from Mr. Ayres's, Mr. T. E. Buckley's, and Captain Shelley's articles on South-African ornithology published in this Journal, and Andersson's 'Birds of Damara Land,' edited by Mr. J. H. Gurney, as well as from papers by Mr. Sharpe himself. Mr. Sharpe, who, we believe, has the sole charge of seeing this book through the press, will have an opportunity of supplying his omission of

* The Birds of South Africa. By E. L. Layard, F.Z.S. &c. New edition, thoroughly revised and augmented by R. Bowdler Sharpe, F.L.S. &c. Large 8vo, pp. 81 to 160, 2 plates. London: Oct. (*errore* May) 1875.

references to some extent when, at the completion of the book, he prepares the preface. A full list and abstract of the contents of all the papers and books on South-African birds, inserted there, cannot fail to be useful.

The second volume of the 'Catalogue of Birds in the British Museum'*, upon which Mr. Sharpe is engaged, was issued in December last. It includes the whole of the Owls as far they are at present known. Mr. Sharpe adopts the outline of the arrangement submitted by the authors of the 'Nomenclator Avium Neotropicalium' to Professor Newton when engaged upon the Owls in his new edition of Yarrell's 'British Birds,' and divides the Striges into Bubonidæ and Strigidæ, the latter containing *Strix* and its ally *Phodilus*, the former the rest of the Owls. The Bubonidæ are again subdivided into two subfamilies, Buboninæ and Syrniinæ, these divisions being based chiefly upon the development of the ear-opening and the presence or absence of an opercular fold attached to it.

This, we believe, gives a fairly natural arrangement of the larger groups of the Striges, as far as they can be determined from the examination of characters which are chiefly external. As in his volume on the Accipitres, Mr. Sharpe gives "keys" to both genera and species, which add greatly to the utility of the work, and has devoted much labour and time to elaborate descriptions of each species, as well as to the different states or phases of plumage in which they are found. We regret to think that these descriptions, many of them exceeding a page in length, are not destined to be much studied; for the point sought for in determining a species from Mr. Sharpe's book will be more readily found in his "key," or in the "observations" attached to the descriptions, than in the descriptions themselves. Mr. Sharpe's difficulties in this respect are to be traced to the intricate character of the colouring of the plumage of most Owls, which defies an

* Catalogue of the Striges, or Nocturnal Birds of Prey, in the Collection of the British Museum. By R. Bowdler Sharpe. 8vo, pp. 325, 14 plates. London: 1875.

adequate description being made so as to convey to a reader a correct idea of the shades of colour and minute markings of these birds. Mr. Keulemans's brush speaks with far more eloquence on this point, as the fourteen beautiful plates which accompany this volume show.

The synonymy of each species is given in great detail, and appears to be very complete. We are glad to notice that in this volume Mr. Sharpe has succeeded in avoiding any startling changes of names of well-known species, and in this respect has not followed the precedent of his former one, a forbearance on his part on which we heartily congratulate him.

Mr. Sharpe has a long task before him, which must necessarily occupy him many years, ere this Catalogue of Birds can be finished; but we do not doubt his energy to accomplish what he has undertaken.

The American expedition to observe the transit of Venus in Kerguelen's Island has been the means of producing an interesting paper on the ornithology of that inhospitable region from the pen of Dr. J. H. Kidder, the naturalist attached to the expedition. The book is edited by Dr. Coues, who named Dr. Kidder's specimens and supplied the synonymy of the species observed*.

This little work is very welcome, containing, as it does, the first connected account of the birds of Kerguelen's Island, though some of its winged inhabitants have been known and recorded as long ago as the latter part of the last century. With the single exception of *Chionis minor*, all the species observed belong to marine or aquatic families, members of the Procellariidæ forming the greater part of the whole number. In determining these Dr. Coues reopens a subject which occupied much of his attention some ten years ago

* Contributions to the Natural History of Kerguelen Island, made in connection with the American Transit-of-Venus Expedition 1874–75. By J. H. Kidder, M.D., Passed Assistant-Surgeon U.S. Navy. I. Ornithology, edited by Dr. Elliot Coues, U.S.A. 8vo, pp. 47. Washington 1875.

(*cf.* Proc. Acad. Phil. 1864 & 1866). A species of *Œstrelata*, formerly called *Œ. grisea*, Kuhl, ex Latham, is now described under the new name *Œ. kidderi*, it being clearly shown that the species in question is not the *Procellaria grisea* of Gmelin and Latham. We have lately pointed out (Rowley's Orn. Misc. pt. iv.) that the name this bird will have to bear is *Œ. brevirostris* (Less.), an examination of Lesson's type in Paris proving, beyond a doubt, the right position of this species; and that Bonaparte, in identifying it with *P. macroptera*, Smith, was quite wrong. Dr. Coues places the name "*Œstrelata inexpectata*, Forst." (Bonap. Consp. ii. p. 189), as one of the synonyms of *Œ. kidderi*; but the bird so determined by Bonaparte (wrongly so no doubt) belongs to another species, and is identical with *Procellaria incerta*, Schl. But this is perhaps hardly the place to discuss the intricate synonymy of the Petrels, which, we may fairly say, have not their equal in respect of their nomenclature; so involved is it, in spite of Dr. Coues's meritorious labours in endeavouring to extricate these birds from this reproach.

Dr. Coues adds critical notes on the nomenclature of many of the species, which form a valuable contribution to the work.

Dr. Kidder's own observations are of great interest; and he describes the habits of the birds he saw very fully. As most of the birds found bred in the island during the stay of the expedition, ample facilities were afforded for making copious field-notes, of which Dr. Kidder most amply availed himself. We must add that the book itself is brought out under the auspices of the Smithsonian Institution, and forms one of a series, now in course of publication, intended to illustrate the collections of natural history and ethnology belonging to the United States and constituting the National Museum.

XXVI.—*Letters, Announcements, &c.*

The following letters, addressed "To the Editor of 'The Ibis,'" have been received:—

Sir,—In 'The Ibis' for 1862 (p. 183) the Editor, in reviewing a paper by Herr Meves "On the Red Colouring in *Gypaëtus*," suggested that the chemical test by which he ascertained that the ferruginous tint in the plumage of certain specimens of the Lammergeier were owing to a "superficial deposit of oxide of iron on the feathers," should be applied as well to the rufous-tinged feathers of the Whoopers and Bewick's Swans. Acting on this hint, I placed, recently, in the hands of Mr. F. Kitton, of Norwich, well known in connexion with microscopic investigations, the head of an adult male Swan, strongly tinged with ferruginous; and the following is the result of his investigations:—

"As I anticipated," he writes, "the colouring-matter is iron (peroxide, Fe_2O_3). On testing some of the deeply stained feathers from the head of the Swan with ferrocyanuret of potassium, the characteristic deep blue colour immediately appeared (sesquiferrocyanide of iron). On placing white feathers from the neck in contact with some red-crag débris and water, they acquired a pale buff tint; and these became blue, like the red feathers of the head, when treated with the ferrocyanuret of potassium. I afterwards mounted some of the tested feathers in Canada balsam, and examined them with the micro-spectroscope, and found that the spectra of the originally and experimentally stained feathers were identical. I think you are correct in your surmise that the rufous tint is produced by contact with ferruginous sand."

It remains now only to test the water and the subsoil in localities where Swans are known to exhibit the rufous colouring most vividly; and I may here add that the delicate buff tint on the white feathers placed by Mr. Kitton in water in contact with red crag, is particularly interesting, as it corresponds exactly with the colouring so often remarked on the necks of domestic Swans, just so far as they are usually submerged in feeding, occasioned more probably by the water

than by actual contact with the soil. From the above experiments, therefore, I presume that a like cause produces the same effect of colouring in the case of some Whoopers and Bewick's Swans, and on the breasts of some species of Ducks.

Yours faithfully,
H. Stevenson.

Norwich, Feb. 18th, 1876.

Turin, February 26th, 1876,
Zoological Museum.

Sir,—Lord Walden, in his edition of Blyth's "Birds of Burmah" (Journ. As. Soc. Beng. xliii. pt. 2, p. 126), speaking of my *Cymborhynchus malaccensis*, says that he supposes that I have satisfied myself about the type of Latham's Great-billed Tody having a black tail, without white spots. It seems that his Lordship has overlooked that in my paper on the genus *Cymborhynchus* (Atti R. Ac. Sc. Torino, ix. p. 418) I have said that, from a letter of Herr von Pelzeln, to whom I had applied for information, I learnt that the type of Latham's species, still preserved in the Museum of Vienna, has not its own tail. Such being the case, I thought that we could safely refer to Latham's species the specimens with the tail completely black, as such have been described by subsequent writers (Raffles, Wagler, and others); and, besides, I think that Latham would have perceived the white spots on the tail had he described a specimen of my *C. malaccensis*.

I take this opportunity of mentioning that having just received the first two parts of Gould's 'Birds of New Guinea,' I have been rather surprised to find *Ptiladela boyeri* (G. R. Gr.) figured under the name of *Campephaga strenua*, Schleg., which is a much larger bird, and also otherwise different. I will also mention that *Diphyllodes speciosa* must stand as *D. magnifica*, as Pennant gave to this bird the name of *Paradisea magnifica* (Faunula indica in Forster's Zool. Ind. p. 40) (ex D'Aubent, Pl. Enl. 631) in 1781, two years before Bod-

daert called it *P. speciosa*. Ought not the credit of having named *D. guglielmi-tertii* to be given to Van Musschenbrock, as is done by Meyer himself?

I remain,
Yours very truly,
T. Salvadori.

Northrepps, 13th March, 1876.

Sir,—In the late Mr. Blyth's valuable 'Catalogue of Mammals and Birds of Burma,' recently published by the Asiatic Society of Bengal, the ornithological portion of which is edited and enriched with notes by Viscount Walden, the following editorial note occurs at page 62, under the head of *Accipiter virgatus*:—"Thayet Myo (*F.*). Captain Feilden was good enough to send me the example here noted, and which I provisionally identify with *A. virgatus*. In Mr. Sharpe's opinion it may belong to the race named *A. stevensoni* by Mr. Gurney; the latter gentleman, however, as will be seen below, identified, though with doubt, this Thayet-Myo example as belonging to '*A. rhodogaster*, nearly adult.'" Through the kindness of Lord Walden I have had a second opportunity of examining this specimen; and having since I first saw it, some years since, become better acquainted with the variations of plumage incident to *A. virgatus*, I am now able to state decidedly that it is a male of that species in the second or intermediate plumage, described by me in 'The Ibis' for 1875, p. 480. I was quite wrong in supposing that it might be an example of *A. rhodogaster*; and it is equally a mistake to refer it to *A. stevensoni*. I may add that this specimen precisely agrees with one from India which is preserved in the Norwich Museum.

I wish also to mention that through the kindness of Professor Newton, and of his brother Mr. Edward Newton, I have had an opportunity of examining a specimen of *Circus macroscelus* lately received by the latter gentleman from Madagascar. The sex of this individual has not been recorded; but as its dimensions somewhat exceed those of the type speci-

men, which was ascertained by dissection to be a male, I think it probable that the present bird is a female; in its markings and general coloration this example agrees closely with the type, except that it shows indications of more advanced plumage on the feathers of the back and on the lower scapulars, which are slightly tinged with dark grey, also on the primary-coverts, primaries, secondaries, and bastard wing, all of which show more or less of a clear grey colouring crossed with darker transverse bars.

If I am right in considering this specimen a female, these appearances of incipient grey coloration make it probable that the two sexes in this Harrier (and probably also in the nearly allied *C. maillardi*) do not differ in plumage when fully adult.

I now consider that I have examined three Madagascar specimens of *Circus macroscelus*, of which the following are the principal measurements :—

	Wing from carpal joint. in.	Tarsus. in.
Male, immature, type specimen in Norwich Museum, *vide* Ibis, 1863, p. 358, & 1875, p. 231 (wings abraded)	15	3·85
Presumed male, adult, in British Museum, *vide* Ibis, 1875, p. 230, and Sharpe in P. Z. S. 1875, p. 73	16·9	3·55
Presumed female, immature, in the collection of E. Newton	17·9	3·9

A comparison of these measurements with those of the Joanna and Réunion Harriers, which I have previously recorded (*anteà*, p. 129), leads me to believe that the Madagascar and Joanna Harriers are probably identical, whilst those of Réunion are decidedly smaller; I therefore consider that the specific name of *Circus macroscelus* may be conveniently retained for the two first, and that of *Circus maillardi* restricted to the last.

I am, &c.,

J. H. Gurney.

Sir,—In the last issue of 'Stray Feathers,' vol. iii. p. 418, Mr. H. E. M. James records the occurrence of *Pterocles senegallus* and *P. arenarius* at the south-east corner of the Runn of Cutch, which he considers to be the most southern point at which they have been found. *P. senegallus*, however, occurs in Kattiawar; for I have skins of a pair shot in that province and kindly forwarded to me by Captain Hancock. *P. arenarius* has also been obtained there; but the skins which should have reached me long ago have evidently gone astray.

I take the opportunity of adding that Captain Hancock has also sent me skins of *Prinia gracilis, Drymœca jerdoni, Cursorius gallicus, Dromas ardeola,* and *Graculus melanognathus,* thus adding six species to my list of Kattiawar birds (Ibis, 1873).

Yours, etc.

J. Hayes Lloyd.

74 Adelaide Road,
London.

We have lately received intelligence from one of our Members, Mr. C. G. Danford, who is at present on an expedition in the Taurus Mountains, Asia Minor. Writing from Anascha, under date 8th February, he says that, after considerable loss of time from various causes, he has at last found the haunts of the Snow-Partridge (*Tetraogallus caspius*?), and is sending over skins to Mr. Dresser for determination, as he thinks that it may differ from the species found in the Caucasus. This bird, he adds, is tolerably common. They had already been paired about three weeks, and were living on or near the snow in rocky places at an elevation of about 6000 feet, never descending lower down the mountains. Of other rare birds he has as yet seen but few. *Saxicola erythræa* appears to be the common Chat of the country, and had just arrived; and the Common Chough is the most numerous of the Crow tribe.

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XXVII.—*On the* Psittaci *of the Mascarene Islands.*

By Alfred and Edward Newton.

(Plate VI.)

Unusual interest attaches itself to the members of the Order *Psittaci* indigenous to the Mascarene Islands from the fact that, while all of them are species peculiar thereto, the great majority have either already become extinct within the last two hundred years or must be regarded as expiring. A good deal of misapprehension, too, prevails as to the proper habitat of some of them; and this it may be desirable to correct.

The Mascarene Islands are most conveniently considered to form three groups:—(1) the Seychelles; (2) Mauritius and Réunion (formerly Bourbon)—which, from their proximity, should be taken together, though there is much difference in the *ornis* of each; and (3) Rodriguez. The first group consists of an archipelago, the Land-birds of which have before been treated in this journal (Ibis, 1867, pp. 335–360); the second group, of the two islands just named—Mauritius, with a few subsidiary islets attached, and Réunion, having no such appendages, but rising from deep water without even the intervention of a coral-reef. The third group is composed of one

main island almost surrounded by reefs and beset by several small islets.

Of the Parrots of the Seychelles nothing new is now to be added to what has been said of them in the paper above mentioned. A few more specimens of each of their peculiar species, *Coracopsis barklyi* and *Palæornis wardi*, have come into our hands; and we gladly avail ourselves of the Editor's offer here to illustrate both sexes of the latter (Plate VI.), one of the finest members of the genus. It is certain that, owing to the clearing-away of the natural forests and replanting of the ground with cocoa-nuts—which do not contribute to the subsistence of the Parrots—both species are decreasing in numbers. Add to which the fact that they are everywhere ruthlessly killed by the people as opportunity offers, on account of the damage they do to the crops of Indian corn, and there cannot be much doubt that they are doomed to extinction.

The Mauritian fauna once included two Parrots. The large species described by Prof. Owen (Ibis, 1866, p. 168) from a fragmentary mandible found with Dodos' bones in the Mare aux Songes, has had more light thrown upon it by recent investigations; and M. Alphonse Milne-Edwards in 1866 (Ann. Sc. Nat. ser. 5, vi. pp. 91–111) proved that it could not be referred to any of the established genera or subgenera of *Psittaci*. A few other bones of it—a second mandible and a tibia being the chief—have since been discovered (*op. cit.* xix. art. 3, p. 25), and two very characteristic figures of it have been recognized by Prof. Schlegel in the MS. journal of an ancient Dutch voyager (Ibis, 1868, pp. 503, 504). Tracings of these show that the bird had a frontal crest of a shape quite unlike, so far as we are aware, that found in any other form of Parrot, and suggest that it had wings so short as possibly to be inadequate for flight. It has hence been proposed to be regarded as forming a distinct genus (P. Z. S. 1875, p. 350), and it will probably stand as *Lophopsittacus mauritianus* (Owen), under which name it has lately been figured (Encycl. Brit. ed. 9, iii. p. 732). There is no doubt that this bird has long been extinct.

J.G.Keulemans lith.

M&N.Hanhart imp

PALÆORNIS WARDI.

A smaller species of Parrot—commonly known as *Palæornis eques*—still survives in Mauritius, but its numbers are gradually failing, though in the district of Grand Port, where the monkeys have been thinned, it seems to be enjoying a transient prosperity. It is shy, and frequents the forests only, retiring before cultivation. It appears to feed exclusively on the seeds and fruits of the indigenous trees, generally keeping to their upper branches*. When going from one place to another it usually flies high, over the tree-tops and out of gun-shot, uttering a short call-note, "kek," "kek," repeated quickly four or five times, and something like that of a Water-hen (*Gallinula*). While feeding or sitting on the tops of the tall trees it not unfrequently whistles melodiously.

To the excellent diagnosis and description of this species by Dr. Finsch (Papag. ii. pp. 35–40), from specimens in our collection, little is to be added; but, in consequence of Mr. Hume's appeal (Stray Feathers, ii. p. 15), we may state that the example described by the former as "Jüngeres ♂ (oder ♀)" was one of the earliest we obtained, and was thus doubtfully marked before it was submitted to his examination. We now believe it to be an adult female, and may say that that sex seems to differ from the adult male in having a black bill, a very slight trace of the male's black gular ring, but none of his red or blue collar, and that in general colour she is as intensely green as he is. We have a young male which is hardly distinguishable from the female, except that the bill is blackish-brown, while in another the red is beginning to show itself at the base, though there is not a trace of the black ring. Through the kindness of Mr. Caldwell we have two eggs of this species, which were taken with the mother from the nest in a hole of a tree. They measure 1·26 by 1·04 and 1·24 by 1·04 respectively, and are of the lack-lustre white usual among the eggs of this Order of birds.

* In only one instance did I ever see a "Catau" (as its name should be spelt, not Carteau) in the low brushwood. Littré (Dict. de la Langue Française) says of this word:—"*Catau.* Fille de ferme ou d'auberge. Fille malpropre et de mauvaise vie. Abréviation populaire de Catherine."—E. N.

Here it is to be remarked that the specific term *eques*, conferred by Boddaert on the subject figured in the 'Planches Enluminées' (No. 215), properly belongs to the Parrakeet of Réunion—the bird there represented being called "*Perruche de l'île de Bourbon*," whence De Buffon (Hist. Nat. Ois. vi. p. 144) expressly says it was brought, identifying it also with the "*Perruche à collier de l'Isle de Bourbon*" of Brisson (Orn. iv. p. 328, pl. xxvii. fig. 1), who likewise states that it is found there. It now no longer inhabits Réunion, and whether a specimen from that locality anywhere exists is not known to us. Judging from the general dissimilarity of the avifauna of that island and of Mauritius*, we should be inclined to suppose that each had its peculiar *Palæornis*; and, in the event of this being found to be the case, we would venture to suggest the term *echo*† being applied to the Mauritian bird, which, no doubt, answers in nearly all particulars to the true *eques*.

It has just been stated that the *Palæornis* is extinct in Réunion. That island, indeed, is at present destitute of any indigenous Parrot; for though M. Maillard ('Notes sur l'île de la Réunion,' p. 162) includes *Coracopsis vasa* as being found there, it has obviously been introduced thither from Madagascar‡. But Parrots there were once, and of several species,

* The only indigenous species of Land-birds common to the two islands are, we believe, *Collocalia francica*, *Phedina borbonica* and *Tchitrea borbonica*. The *Hypsipetes*, the *Oxynotus*, and all the species of *Zosterops* are distinct. The original *Foudia* of Réunion (*Emberiza borbonica*, Gmel. Syst. Nat. i. p. 886, founded on the *Mordoré* of De Buffon, Hist. Nat. Ois. iv. p. 366, Pl. Enl. 321. fig. 2) we have never seen, the species now found in the island being *F. madagascariensis*, believed to be an importation.

† Ἤχώ, nympha quædam, imitatrix *equitis*—sc. Narcissi. *Ov. Metam.* iii. 380.

‡ The introduction of the other species of *Coracopsis* seems also to have been once effected; for in the 'Voyage dans les quatre principales iles des mers d'Afrique' of Bory de St. Vincent, performed in 1801 and 1802, where the author is telling of an excursion in Réunion, we have this passage (i. pp. 350, 351):—"Nous nous étions arrêtés un instant pour tuer des merles [*Hypsipetes borbonicus*, of course], dont nous trouvions une prodigieuse quantité, lorsque j'entendis quelques sifflemens aigres, que notre guide me dit être ceux d'une espèce de perroquet noir; nous nous

in Bourbon; and the proper *habitat* of one of these appears to us to have been so seriously mistaken by many recent authors, that some little space may well be devoted to the investigation of the matter.

Whatever may have been the *Psittacus obscurus* of Linnæus (S. N. ed. 12, p. 140), founded on a "Parrot from Africa" which came under Hasselquist's notice during his travels in the East (It. Palæst. p. 236, *fide* Linn.), and at first (1766) identified by Linnæus with "Le Perroquet Mascarin" of Brisson (Orn. iv. p. 315), there can be no question as to the latter, on which, in 1771, was established the *P. mascarin*—an abbreviation most likely for *P. mascarinus*—of Linnæus (Mantiss. p. 524), that author citing also Daubenton's figure (Pl. Enl. 35), and adding "*Habitat in Mascarina*"—the last piece of information being doubtless obtained (for Brisson had said, "J'ignore dans quel pays on le trouve. Je l'ai vu vivant à Paris.") from De Buffon, who stated (Hist. Nat. Ois. vi. p. 121), "M. le Vicomte de Querhoënt nous assure qu'on le trouve à l'île de Bourbon où probablement il a été transporté de Madagascar." This probability appears very questionable, as much so as Buffon's assertion that the bird received its name "parce qu'il a autour du bec une sorte de masque noir qui engage le front, la gorge et le tour de la face." Du Bois, who visited Madagascar and Bourbon in 1669–72, gives the following account of the Parrots of the latter:—

"*Perroquets gris*, qui sont aussi bons que des Pigeons.

"Voila le meilleur Gibier de l'Isle.

"Il y a de plusieurs autres sortes de Perroquets, dont on ne mange point; sçavoir.

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mîmes à la recherche de cet oiseau, et nous en tuâmes deux. Le *perroquet noir* vit solitaire dans les bois les plus élevés; il mord violemment: la tristesse de ses mœurs répond à celle de son plumage." In a footnote he refers his birds to *Psittacus niger*, Gmelin (S. N. i. p. 336) *i. e.* *Coracopsis niger* (Linn.). Speaking of the same island in another place (iii. p. 64), he says:—"Quelques perroquets solitaires, dont j'entendis des sifflemens aigus, mais dont je ne pus tuer un seul, peuplent la circonférence du volcan." In this last passage he does not refer the birds to any species; but, from the similarity of phrase, he most likely considered them the same as those he had before seen and determined.

"Perroquets un peu plus gros que pigeons, ayant le plumage de couleur de petit gris, un chaperon noir sur la teste, le becq fort gros, & couleur de feu.

"Perroquets verts gros comme pigeons, ayant un collier noir.

"Perroquets verts de n esme [mesme] grosseur, ayant la teste, le dessus des ailes, & la queuë couleur de feu.

"Perroquets tout verts de la mesme grosseur.

"Perroquets des trois façons comme cy-dessus, qui ne sont pas plus gros que des Merles."*

Now, considering that Du Bois was not a technical ornithologist, his indication of these different kinds of Parrots seems to be reasonably good, and the first of those which he says are not eaten may fairly be identified with "*Le Mascarin*," though the black on the face of that bird cannot be correctly described as forming a "chaperon." But if we reject this identification we shall find that we have to account for two species of Parrot, both connected with the same island and, so far as we can judge, very similar in appearance, differing, indeed, only in the position of a black mark on the head.

De Querhoënt's assurance was confirmed in 1784 by Mauduyt, who says (Encycl. Méth. ii. p. 196):—"On trouve le *mascarin* à l'île de Bourbon ; j'en ai vu plusieurs vivans à Paris ; c'étoient des oiseaux assez doux ; ils n'avoient en leur faveur que leur bec rouge qui tranchoit agréablement sur le fond sombre de leur plumage; ils n'avoient point appris à parler."

It is true that for many years past Madagascar has been given as the habitat of *P. mascarinus*; it is therefore worth while enquiring into the evidence in favour of that locality; and it will be found that—apart from the supposition, already

* 'Les Voyages faits par le Sieur D. B. aux Isles Dauphine ou Madagascar, & Bourbon, ou Mascarenne, és années 1669. 70. 71. & 72. . . Paris . . . M.DC.LXXIV.' (pp. 172, 173). This work, it may be remarked, attracted no attention from naturalists till, Telfair having given the Zoological Society a MS. copy of it, Strickland quoted therefrom the passage relating to the *Solitaire* and *Oiseau bleu* of Bourbon (P. Z. S. 1844, p. 78), but was not aware, even in 1848, of the author's name, or that the journal had ever been printed—a fact, indeed, generally overlooked until pointed out in 1852 by Mr. Pinkerton ('Notes and Queries,' vi. p. 83), and afterwards by Dr. Coquerel ('Album de l'Ile de la Réunion,' 1863), but still more prominently set forth by M. Milne-Edwards, who, in 1866, reprinted the whole of the ornithological portion of the work (Ann. Sc. Nat. Zool. ser. 5, vi. p. 42, note).

quoted, of Buffon—there was nothing to point to Madagascar till Levaillant in 1805 declared (Hist. Nat. Perroquets, ii. p. 112) :—"Le Mascarin se trouve à Madagascar, et même, assure-t-on, à l'île de Bourbon." Thus the locality commonly assigned really rests with this writer, so notoriously untrustworthy in the matter of localities; and it may be remarked that he does not adduce the shadow of a fact in support of his assertion. Buffon and Brisson are the only authors he cites, and therefore most likely the only authors whose books on this point he had consulted. He says it is rare, and that he had only seen three examples—one in Mauduyt's possession, another in that of Aubry, and the third in the Paris Museum, which last still exists. This is, of course, totally insufficient to contravene the direct statements of De Querhoënt and Mauduyt, that the species was found in Bourbon, to which statements the account of Du Bois lends greater strength. Yet nearly all succeeding writers have followed the assertion of Levaillant. The derivation of the name "Mascarin" furnished by Buffon (which, seeing that *Mascarène* or *Mascarina* was the older name of the island, is quite untenable) has doubtless been the chief cause of the error which has misled Bechstein, Kuhl, Vieillot, Lesson, Wagler, Hahn, and finally Dr. Finsch, or rather, perhaps, has hindered them from the right path. It may be remarked that not one of these authors has been able to add a single jot of information on the question of locality. Only two specimens of the species seem to have been preserved to the present time—that in the Paris Museum, already mentioned, and that in the Museum of Vienna, noticed in 'The Ibis' (1873, p. 32). Hahn's figure (Orn. Atlas, Papageien, pl. 39), published in 1834, was taken, he says, from a living bird then in the menagerie of the King of Bavaria; but what became of its remains at its decease (and it seems to have died since) is not known.

We now come to Rodriguez. Here we know of two species :—one, the *Necropsittacus rodericanus* of M. Alphonse Milne-Edwards (Ann. Sc. Nat. Zool. ser. 5, viii. pp. 145–156, xix. art. 3, p. 18), a large species, not inferior in size to *Lophopsittacus mauritianus*, whose remains were found in com-

pany with those of *Pezophaps solitaria*, and of which the latest trace is afforded by an anonymous manuscript, 'Relation de l'Ile Rodrigue,' contained in the Archives of the Ministère de la Marine at Paris (P. Z. S. 1875, pp. 39–42); and the other, *Palæornis exsul* (Ibis, 1872, p. 33, 1875, p. 342). The former has doubtless been extinct for many years; but the latter may perhaps still survive, and since the last mention of it in these pages a second example has come into our hands, through the kindness of Mr. Caldwell of Mauritius†. This is that of a male bird; and though not possessing the red alar patch, by which it was hoped it would be adorned, it is of considerably greater beauty than the previously known female. The specimen was killed by Mr. Vandorous, 14th August, 1875; and its sex is vouched for by him. He also states that the eyes were "black with a yellow ring." It (♂) differs from the type (♀) at first sight by its maxilla, which is of deep crimson at the base, gradually paling to horn-colour at the tip. The mandible, in life, seems to have been of a dark reddish brown. The top of the head is less grey and of a clearer glaucous than in the female. From the nostril to the eye on each side there is a distinct narrow black stripe, which is so faintly indicated in the female that no notice was taken of it in the original description. The black chin-stripe on each side is also well defined, and is prolonged upwards so as almost to meet on the nape of the neck. Most of the primaries are marked each by a dull black patch on the inner web near the tip; and the middle secondaries are also dusky black. In other respects the two specimens closely agree; but that of the male is slightly the larger.

The following is a list of the indigenous species of Mascarene *Psittaci* known to us.

(1) Seychelles.

**Coracopsis barklyi*, E. Newton.

**Palæornis wardi*, E. Newton.

† *Cf.* P. Z. S. 1875, p. 647, where Mr. Caldwell adds, "I have seen several of them, though I never could get near one myself."

* Diminishing in numbers.

C.J.Fleming del. M&N.Hanhart lith.

EGGS OF TRINGA MINUTA.

(2) (*a*) Mauritius.

†*Lophopsittacus mauritianus* (Owen).

**Palæornis eques* (auctorum, *sed quære* Bodd.?).

(*b*) Réunion.

†*Coracopsis mascarinus* (Linnæus).

†*Palæornis eques* (Boddaert).

(3) Rodriguez.

†*Necropsittacus rodericanus*, A. Milne-Edwards.

‡*Palæornis exsul*, A. Newton.

It will be observed that we do not regard *Psittacula cana*, of which we may mention we have now seen specimens from Rodriguez, as indigenous to the Mascarene Islands. Its proper home is Madagascar, whence it has doubtless been introduced, though probably very many years ago.

XXVIII.—*Notes on the Birds of the Lower Petchora.* By Henry Seebohm, F.Z.S., and John A. Harvie Brown.

[Continued from page 230.]

(Plate VII.)

Eudromias morinellus (L.).

The Dotterel is one of the species which we did not meet with during its migration, but which we afterwards found upon the tundra. We saw two pairs on the 26th June at Stanavoialachta, frequenting the low round hills on either side of the bay, and secured specimens. Judging from their actions, we do not think they had, at that time, begun to lay.

Ægialitis hiaticula (L.).

The Ringed Plover was first noted by us at Ust Zylma on the 26th May. A few were seen and shot at Habariki; and they were found sparingly in suitable localities along the river to Gorodok, where they became rather more abundant, frequenting the sandy tongue of land opposite the town. At

* Diminishing in numbers. † Extinct. ‡ Barely surviving.

Dvoinik they were plentiful among the sand-hills and on the gravelly beach, and we occasionally met with them on the tundra some versts from the shore.

ÆGIALITIS FLUVIATILIS (Bechst.).

On the 8th June we obtained a single specimen of the Little Ringed Plover at Ust Zylma. It was identified and shot as it rose from, and again alighted upon, a marshy, hummocky strip of tundra-land near the town. Only one or two other specimens were seen during our trip, one of which was upon the tundra, at the edge of a small lake. It is decidedly scarce, or else a late migrant not going far to the northward in any numbers.

HÆMATOPUS OSTRALEGUS (L.).

Oystercatchers were first seen by us at Ust Zylma on the 26th May, where we also obtained eggs on the 8th June; and we found them afterwards in small numbers up to about 20 miles within the arctic circle. We did not find them on the islands of the delta, or on the shores of the mainland north of that point.

PHALAROPUS HYPERBOREUS (L.).

We obtained the Red-necked Phalarope at its breeding-haunts on the islands as we descended the river for the first time on the 17th June; and the following day we got the eggs on an island opposite Kuya. Afterwards we found them extremely abundant upon all the islands, and in suitable localities upon the tundra, especially at Dvoinik. During the last week in July at Dvoinik we found the Red-necked Phalarope in small flocks, consisting of birds in two distinct stages of plumage. The new dress differed from the usual summer plumage in the following particulars:—The bill was very soft and flexible, instead of being comparatively stiff and hard. The back of the legs and the under surface of the feet were pale yellow; the front of the legs and the upper surface of the feet were a grey flesh-colour, whilst in the breeding-plumage the legs and feet were a uniform dark lead-colour, with a faint tinge of yellow on the margin of the lobes. The primaries and the whole of the upper plumage

were bluish grey instead of brown. There was a distinct white superciliary streak over each eye, extending down each side of the neck and almost meeting on the forehead. The feathers on the crown of the head, on the back, including the bastard wings, and on the tail were richly edged with rufous ochre. The red on the neck was entirely wanting; and the dusky band across the breast was broader and faded almost imperceptibly into the white of the belly. The soft and flexible bill certainly indicates immature birds; but, on the other hand, the fact that we caught three young in down, only recently hatched, on the same day, and shot several adult birds in the moult about the same time, and obtained most of our fresh eggs of this species between 20th June and 4th July, points to an early assumption of the winter plumage of adult birds.

Totanus glottis (L.).

We first identified the Greenshank at Ust Zylma by its well-known note, and saw it flying high overhead. This was on the 19th May, when the snow still lay deep in the woods but was disappearing from the higher parts of the meadows along the course of the river Zylma. We afterwards found it abundant at Habariki, frequenting the large marsh in the forest behind the village, and the sides of the numerous pools and marshy hollows which are there found through the woods. We obtained eggs at Habariki on the 11th June. We did not again meet with the species to the northward.

Totanus glareola (L.).

The first Wood-Sandpipers were shot by us at Ust Zylma on the 26th May. They were frequenting the pools in the middle of the town, and were exceedingly tame, allowing us to approach within a few yards of them. They were very common at Habariki, and we shot specimens, which had perched on the tops of the high dead larches, quite 70 feet from the ground. Northward they became scarcer; and between Abrámoff and Alexievka we lost sight of them altogether. Later, however, on the tundra we found a few pairs, and obtained the young at Vassilkova. We did not see any further north than Stanavoialachta.

Totanus fuscus (L.).

The only place where we saw the Dusky Redshank was along the sides of the great marsh at Habariki, which was doubtless their breeding-ground. Unfortunately we did not procure any specimens, although we fired at them several times. When we saw them they were still going in small flocks. This was in the beginning of June.

Actitis hypoleuca (L.).

The Common Sandpiper was far from being an abundant species on the Petchora, as far as we had opportunities of judging; and it was only upon one stretch of the river that we saw or obtained specimens, viz. between Habariki and the Yorsa river. It is worthy of note that, though more abundant in the neighbourhood of Archangel, they were also very locally distributed in that locality (Ibis, 1873, p. 68).

Terekia cinerea (Güld.).

We first noticed this species at Habariki on the 3rd June, and afterwards procured it at Ust Zylma, and traced it all the way down the river, but did not find it quite so plentiful as Alston and Harvie Brown did on the Dvina in 1872 (Ibis, 1873, p. 68). We did not see it upon the tundra. The Terek Sandpiper is extremely fond of running over the bits of floating driftwood on the submerged outskirts of the forest, uttering its musical "tir-r-r-whui."

Limosa ægocephala (L.).

Only one specimen of the Bar-tailed Godwit was seen, upon the tundra, near the sea-shore, at Dvoinik. It was extremely shy, and evaded several attempts to get within range, always rising out of gun-shot, and settling again some distance off upon the hummocks. When resting it drew in the neck, the bill pointing in an almost horizontal position.

Machetes pugnax (L.).

A Ruff was brought to us for sale at Ust Zylma on the 30th May; and when we visited the marsh behind Habariki, on the 3rd, 4th, and 5th June, Ruffs were going in small flocks. At the latter locality we procured the first eggs, on

the 12th June. Descending the river we saw Ruffs at their "hills" on the 17th June, and procured eggs as late as the 27th on an island opposite Stanavoialachta. Flocks of Ruffs were seen frequenting the marshy estuary of a small river, on the tundra opposite Alexievka, on the 9th July; and the autumn plumage was fully assumed by the 29th July, when we shot a Ruff at Dvoinik out of a flock in the same plumage in which they are shot in this country in September. Ruffs and Reeves were abundant on the islands, but comparatively scarce, or local, on the tundra.

Tringa subarquata, Güld.

During a short half-hour that we visited Dvoinik, on the occasion of our first visit, Seebohm succeeded in securing a single example in full breeding-plumage, which was all we saw of the Curlew Sandpiper, unless six or seven other birds, which were feeding along with it at the time it was shot, were of the same species. We obtained no definite clue to its breeding-haunts; but from the accounts we heard, conflicting and untrustworthy as these often were, we gathered that marshy plains and swamps of great extent lie along the courses of the numerous rivers and small streams which flow from the Pytkoff Mountains to the sea, to the north-eastward of Dvoinik. Of this fair land of promise we were only permitted to obtain a very distant and unsatisfactory view, as, on the only occasion when we might have seen it had the air been clear, from a height upon the tundra to the north of the inlet, a white mist lay along the distant hollows, completely concealing the features of the landscape. The Curlew-Sandpiper, as we learn from Mr. Bogdánoff, is seen on the Volga and Kama rivers during both migrations.

Tringa cinclus, L.

We did not see the Dunlin at all during the time of its migration; nor did we meet with it until the 22nd June, when we landed for the first time on the tundra opposite Alexievka. There we found a few pairs scattered over the grassy swamps, and afterwards saw them in great numbers at Dvoinik and on the Golaievskai islands. At the latter locality immense

flocks were seen feeding at or flying along the edges of the sand-banks when the tide receded. We supposed that these large flocks came from some locality distant from their feeding-grounds; and we noticed that the majority of them arrived from the northward. This was on the 14th July. We are somewhat at a loss to know whence they came, and where their especial breeding-grounds were, unless they came along shore from the westward from the tundras of the Timanskai land. The Timanskai coast, as we were informed, and the whole promontory of Russkai Zavarod are sandy; and this information confirms the accounts of the earlier voyagers (*vide* Hakluyt's 'Voyages,' "Voyage of Steuen Burrough," vol. i. p. 279). Thus it is quite possible that the low-lying Golaievkai banks may be the nearest available and suitable feeding-grounds for the Dunlins and other Waders which breed on the northern parts of the Timanskai tundra. We fired several times into these flocks, but failed to discover any immature examples amongst those we killed, as we naturally expected to do upon finding such large flocks at this season; nor was it, indeed, until some days afterwards that we procured the first young we had seen, viz. on the 20th July, at Vassilkova.

Tringa minuta, Leisl.

The short arctic summer was already far advanced; it was the 13th July; and we had almost despaired of reaching the breeding-haunts of the Little Stint. During the migration of the birds at Ust Zylma, and on our voyage down the river, nothing had been seen of the species, though every passing "trip" of Temminck's Stint had been eagerly scrutinized, and many birds shot for identification. We made a point of shooting every Stint about which we had the least doubt. Clearly there were no Little Stints on any of the islands, nor at any point visited by us between Ust-Zylma and the sea; and clearly also they had not migrated past Ust Zylma. One of two things remained for us to do—either to induce M. Arendt to allow us the use of the river-steamer to visit the distant island of Varandai, near the eastern entrance to the

Petchora gulf, or lagoon of the Petchora, or to go to the far-out islands called the Golaievskai Banks, which stretch from Cape Kuskoi Zavarod across the north side of the same sheet of water. The former of these plans was considered impracticable, owing to the unsatisfactory state of the only compass, and the danger of certain sand-banks or sunken rocks lying near the course, upon which, on a former occasion, Captain Engel had lost his vessel. The latter plan was more easily accomplished, as it is part of the annual duty of the Captain to visit these far-out islands, and to erect beacons upon two of them, to guide vessels from the sea into the only safe channel.

At 6 o'clock on the morning of the 13th July we were awakened by M. Arendt; and shortly afterwards we were on board the steamer, which was bound for the Golaievskai Banks. At the river-bar, about thirty-four miles from Alexievka, we took the cutter in tow alongside, and after a tiresome navigation of an intricate channel through the Shallow Sea (Sookhoy'e More of the Russians), we landed about midnight upon the island upon the east side of the channel, which is marked in the Admiralty Chart as "No. 4." While the men were engaged in erecting a wooden beacon, the old one having been carried away by the ice when it broke up in spring, we had an hour or two's shooting upon the low sand-bank, and, amongst other things, obtained the old and young in down of the Glaucous Gull and our first Sanderlings. Leaving No. 4, the steamer was obliged to lie-to in the midst of a dense fog, after a vain search for the island known as "No. 3," which is upon the western side of the navigable channel, and upon which another beacon had to be erected. About 4 o'clock A.M. on the 14th July the fog lifted, and we soon after landed. Here the last year's beacon having been only upset, and not, as is usually the case, carried away, we had only a short run upon the sand-bank, and were soon obliged to hurry again on board. As ships from the sea might arrive at any time now, it was of the utmost importance that a third beacon should be erected without loss of time upon the mainland on the south-east shore of the lagoon of the

Petchora, near the Dvoinik (or Twin) Capes. Accordingly the steamer moved off, and, getting into the proper channel, steamed south for the place in question.

About 4 P.M. she came to an anchor opposite the wreck of a sloop, which formerly belonged to the Petchora Timber Company, and which was now lying on an even keel on the shore, about two versts south-west of Dvoinik. We accompanied the men on shore. Harvie Brown went away inland, finding nothing of interest except a wing-feather of a Snowy Owl, and seeing only a few pairs of Grey Plover frequenting the tundra. Seebohm had grand success during that short hour on shore. He had walked along the shore to the north-eastward and came upon a large shallow inlet of the sea, with muddy edges, frequented by many flocks of wading birds; and he returned to the steamer, after a short half-hour's stay at the inlet, laden with treasures. He produced from his fishing-basket first a Grey Plover, then a Snow-Bunting (the first we had seen since leaving Ust Zylma, then a Curlew-Sandpiper (the only one obtained by us), and lastly, and most triumphant success of all, five Little Stints. It may be imagined with what disgust he had seen the last man descend from the beacon just as he had secured these rare birds, and how reluctantly he had turned his steps away from this fair land of promise. We did not then know that we should be able to return; but from that day we strained every nerve to secure the services of the steamer for another trip to Dvoinik, and at last we succeeded. This was not, however, until the 23rd July, M. Arendt up to that time having been uncertain whether the steamer might not be required on what *he* considered more important business. The vessel that was to take us home to England had arrived, and was already engaged in lading with larch timber at Alexievka; and we had put all our belongings on board, so that we might be ready to leave at once on our return. It was arranged that the steamer should land us close to the wreck, along with our small boat, and sufficient provisions for a week, and return for us at the end of that time. Piottuch and our four men came also; so we went fully prepared to have a thorough

search for the nest of the Little Stint, and possibly also that of the Curlew-Sandpiper. We left Alexievka at 10 A.M. on the 22nd July, and landed at the wreck about 4 P.M. After hurriedly bearing the baggage, provisions, &c. on board the wreck, which was in a habitable condition, and which was to be our home for the next week, we started off along the shore in the direction of the inland sea where Seebohm had first discovered the flocks of Little Stints.

We will now endeavour to describe this part of the coast and tundra, which is situated as nearly as possible on the parallel of 68½° N. lat.

Along the water's edge at high tide the shore is gravelly and sandy, and is about thirty yards in breadth, sloping gradually up to the base of the peat cliff which forms the termination of the tundra, and which is about twenty to thirty feet in height. Close to the base of the peat-cliff great quantities of drift wood have been washed up and left high and dry by the tide, and afforded us abundant fuel for our camp. From the top of the bank, or level of the vast tundra, a distant view of the Pytkoff Mountains (piet kova, five peaks or caps) can be had on a clear day. These hills are 583 feet high (*vide* map of the Petchora published by the Petchora Timber-Trading Company), and about twenty-five versts distant from the beacon in an easterly direction, forming the highest land between the Petchora river and the Ural Mountains. The coast-line runs in a general N.E. and S.W. direction; but after passing the inlet it trends more to the northward as far as Cape Constantínovka. On either side of the entrance to the inland sea lie the low points of sand known as Dvoinik or the Twin Capes. The inland sea is shut off from the Petchora Gulf, to the north of the Boluanskai Bucht*,

* The headland between the gulf and the Petchora-mouth, north of Stanavoialachta, is called Boluanskai Noss; but it must not, of course, be confounded with the cape of the same name—meaning, as we are informed by Mr. Lamont, *Idol Cape* ('Yachting in the Arctic Seas,' 1876, p. 134)—which forms the N.E. extremity of the Waygatch Islands, at the eastern entrance of the Kara Gates. The Boluan there mentioned is the place where Purchas relates ('Pilgrimes,' vol. iii. p. 533,

except at their point of junction, by a peninsula, the seaward side of which consists of a range of sand-hills covered with esparto-grass, lowering towards its extremity to a gravelly sandy ridge, which latter, sweeping inland in a circle, comes to a sharp point, and forms a promontory on the shore of the inland sea*. Inside the sand-hills there is a level green meadow studded over with many small pools, and intersected by narrow winding lanes of brackish and stagnant water. Many of these pools are of curious shapes, having almost an artificial appearance, their edges, about a foot in height, being perpendicular and even, as if cut by a spade. At the bottom, below a foot or two of water, is a deep, tenacious, bluish black mud, which, if disturbed, gives off a powerful and offensive smell. Quantities of water-plants grow on the surfaces of some of them, sometimes almost choking them up. It is upon the edges of the pools and on the shores of the inland sea adjoining, that the flocks of wading birds are found at feeding-time. Red-necked Phalaropes settle on the surface of the pools; Ruffs and Dunlins and the little flocks of Stints feed along the edges; and a few Grey Plovers come down from the tundra and run over the meadow. Buffon's Skuas fly overhead from time to time; and Seebohm obtained a fine Snowy Owl, which perched on the gravel ridge. Snow-Buntings were seen here occasionally; but they seemed to prefer the piles of drift wood near the sea-shore and the barer ground. Ducks—Long-tailed and Pintail—with their young, were also found; and Wild Swans were sometimes seen far

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A.D. 1611) that "an airie of Slight- [sic] Falcons" was purchased. It was near this also that we found two nests of the Peregrine Falcon. The persistent return of Falcons to favourite breeding-places year after year has been recorded before, notably in 'Ooth. Woll.,' part 1, p. 99; and it is possible that in this instance also the same sites may have been occupied continuously, or at intervals, since the date mentioned by Purchas.

* The geographical position of the inland sea, as shown upon the Admiralty Chart (Chart of Norway and White Sea—Supplementary Sheet) is as nearly as possible 68½° N. lat., and 55° 55' E. long. In this chart even the above-mentioned promontory is delineated with tolerable exactitude.

out on the surface of the waters of the inland sea, or their footprints detected on the damp sand or mud. The sand-hills and gravelly ground were frequented by Ringed Dotterels, and the sea-shore by a few Sanderlings, Gulls, and Arctic Terns.

The inland sea is a large sheet of water connected with the Petchora Gulf by a narrow channel between the two low sand capes of Dvoinik, and is about 2½ versts across in any direction. It is surrounded by a strip of grassy meadow-land on a gentle slope above high-tide mark, which is from 40 to 100 yards in width, except, as already mentioned, on the seaward side, where it is replaced by the level meadow with a different and coarser vegetation. The whole stretch of this sloping meadow is covered with yellow grasses and carices; and here and there over its surface are diminutive plants of dwarf-willow (*Salix glauca*), considerable quantities of wild leeks, and isolated patches of a species of *Sphagnum*. Surrounding this, again, is the tundra, which, in some places, rises abruptly in a great wall 6 or 8 feet high, and in others slopes gently till it meets the meadow. At the latter points the vegetation of the tundra proper is found to blend with that of the meadow. A ridge of bleached and weather-worn drift wood of all sizes—branches, huge trunks, and roots—lies piled up close to the margin of the tundra; and small pieces are strewn over the surface of the meadow. The high-tide mark at the lower edge of the meadow is, in most places, sharply defined, an abrupt bank, a foot or two in height, having been formed by the action of the water. At low tide about forty yards of the black ooze is exposed; and upon this, as already noted, flocks of Dunlins, Stints, and other Waders are usually seen at feeding-time.

The river Dvoinik runs into the inlet close to the sea, flowing from a southerly and easterly direction. It is a muddy still stream, with oozy bottom; and the tide ascends its tortuous course for several versts. The tundra on either side dips sharply down, forming steep banks on the upper reaches; but these give place, near its confluence with the sea, to low perpendicular banks cut through level meadow-land

similar to what has already been described. A smaller stream runs into the inland sea on its south-western shore, the bottom of which is a quicksand, formed by a deposit of fine sand upon the top of the ooze, which quicksand stretches out some distance from its mouth. This little stream rises in a low marshy meadow studded with small pools, and seems to be connected underground with these latter, and does not, as we at first supposed, flow from a range of lakes upon the higher tundra, unless, indeed, there be underground communication with them also.

It was upon the sloping tundra, and upon the sloping meadow, that we found all our nests of eggs and young in down of the Little Stint. Four of these sets of eggs and young—which, for convenience, we will call Nos. 1, 2, 3, and 4, in the order in which they were found—were got not far from the neck of the peninsula, on the slope facing the N.E. This part of the tundra bears a thick growth of arctic bramble (*Rubus arcticus*), which, in some places, scarcely leaves a square yard free of vegetation. The dwarf rhododendron (*Ledum palustre*) is also abundant, but is small and inconspicuous. Large quantities of deep, soft, faded *Sphagnum* cover also a considerable part of the ground; and growing through this are *Carices* (*Carex rariflora* and another) and grasses, and a green star-shaped moss, the latter being the same which is often found on the ground frequented by the Grey Plovers. Reindeer-moss is scarce upon this Little-Stint ground, growing only in patches here and there; but the innumerable small round hummocks, with which parts of it are thickly covered, bear a thin crust of minute white lichen, which, blending with the darker colour of the peat soil upon which it grows, gives a hoary appearance to the higher portions of the slope. In many places this grey hummocky ground is sharply defined, giving place at its edges to tracts of slightly damper ground, which are covered with matted white and green grass, or patches of cotton-grasses (*Eriophoron vaginatum* and *E. polystachyon*, var. *latifolium**),

* We are indebted for assistance in naming a small collection of plants of the tundra, formed by us, principally at Dvoinik, to Professor A. Dick-

bunches or single stems of which are also found growing through the *Sphagnum*-covered portions.

The grey hummocky ground is curiously intersected by narrow natural trenches, about a foot and a half deep, which are probably formed by the snow-water as it trickles down towards the pools and inland sea in spring. These trenches are mostly at right angles with one another and connected, forming raised squares of tundra between. Their edges and sides bear arctic brambles in greater profusion than the rest of the surrounding slopes; and the bottoms are usually covered with grasses and *Carices*, though sometimes bare of vegetation, and showing only the dark peaty soil. Looking at the thick beds of arctic brambles and the dry, conveniently deep, comfortably broad trenches, one could not help thinking of how luxuriously one might rest in them, and—to use the happy expression of a travelled friend, in reference to the "multebör" of Norway—"milk the rich juices of their fruits into his up-turned lips;" but, alas! the mosquitoes!!

Having now endeavoured to describe the general aspect of the inland sea and its surroundings, and the more characteristic features of the Little-Stint ground, we propose to go even a little further into detail, and relate the discovery of each of the sets of eggs and young which we obtained, and which, for more convenient reference, we will number 1, 2, 3, 4, 5, 6, and 7—Nos. 1 and 2 being young in down, and the others complete sets of eggs. Besides these we obtained another single young bird somewhat older than these.

As already mentioned (p. 297), after landing and depositing our baggage on board and in the hold of the wreck, we went along shore towards the inlet. Here we searched the edges of the pools in the meadow and of the ooze of the inland sea for Stints. Dunlins were abundant; and small "trips" of Stints were frequently detected careering overhead, or wheeling over the water; but they were wild, and seldom offered a fair shot. We went over the whole of the peninsula, and shot

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son, of Glasgow University, and Mr. John Sadler, Vice-Secretary, Royal Botanical Society, Edinburgh.

a few birds, but saw no place there which appeared to be likely ground for nests of the Little Stint. It was by that time late in the evening of the 22nd July; but we had nothing to fear from light failing us in these latitudes; so we continued our search. Meanwhile Piottuch, and our Samoyede servant Simeon, had also come out, and having crossed over the tundra to near the neck of the peninsula, had sat down on the edge just where the sloping tundra joins the meadow. Seebohm had gone on along the S.W. shore of the inland sea; and Harvie Brown was a considerable way behind, having diverged in order to obtain a view of the coast-line. As the latter approached, Piottuch shouted and waved his hand. We quote the following from Harvie Brown's journal:—

"As I came nearer I saw a small bird flying in circles round him (Piottuch) and Simeon, and alighting now and again close to them. Seeing this I ran forward, and Piottuch held out two young Little Stints, not more than a day, or at most two days out of the shell. I sat down; and ere many seconds elapsed the old bird alighted within a yard or two of our feet, uttering a very small, anxious, whistling note. My gun lay on the ground beside me, within reach of my hand; and I put down one of the young about six inches beyond it. Almost immediately the old bird advanced close up to it, and, uttering its low notes, endeavoured to lead it away. Piottuch then held out the the other young one in his left hand, and it uttered a scarcely audible cheep. The old bird advanced fearlessly to within twelve inches of his hand; and he nearly caught it. I then shouted to Seebohm to come, being at the same time prepared to shoot the bird if it flew away to any distance; but no, it only flew about ten or fifteen yards, and then began to sham lameness, tumbling about amongst the little hummocks and hollows, and never going further from us than about thirty paces. Seebohm now came up, and took his seat beside us. The old bird became a little shyer, but still flew round us in circles, alighting, as before, from time to time. We watched it for some little time; and then, at Seebohm's suggestion, I shot the bird, and we proceeded to search for more young or a nest, offering Simeon

two rubles if he found a nest with eggs. Almost immediately Piottuch and I ran forward, he being a little in advance, and in a trice we had three more young, a little older than the last. Within fifteen yards of these last young a bird rose, and again we ran forward together. 'Hurrah!!' shouted Piottuch, 'Hurrah!! Monsieur, les œufs!! les œufs!!'—he was the first to see them—and the next instant we were sitting one on each side of the nest, the birds of both eggs and young flying closely round us or alighting within twenty paces. Seebohm came up; and we all sat round the nest admiring it; Simeon had also come up; and he caught the fourth young of the second set. And the eggs? Miniature Dunlin's, three richly marked, and the fourth light and more faintly marked, but also just like a variety of the Dunlin's egg. And the nest? Rather untidy, rough and uneven round its edges, very shallow, and sparingly lined with a few small leaves, which may have been plucked by the bird as she sat on her nest. Round it were masses of yellow sphagnum, dark green leaves and empty calices of the arctic bramble, and a tuft of round-stemmed *Carex* (*Carex rariflora*). A little further off were some, now flowerless, plants of the aromatic dwarf rhododendron, bunches and patches of long white grass, and a few single stems of the cotton-grasses. Both birds were shot —the bird with the eggs and the parent of the four young. The turf, a foot square, holding the nest was cut out carefully with a knife, and the mass, including the plant of arctic bramble, the yellow *Sphagnum*, and the tuft of round-stemmed carex, placed carefully in a handkerchief, with a bit of cloth rolled up and put into the nest to preserve its shape as much as possible. The three old birds were put in paper bags, and the bags carefully numbered 1, 2, and 3 (two young, four young, and four eggs). It is worthy of remark that the old birds did not hover in the air above the eggs or young, as Temminck's Stint does, but only, as above described, flew in small circles round us, alighting fearlessly close to us, and never out of gun-shot."

The following day, 23rd July, was a blank as regards Little Stint's eggs, although we offered our men five rubles reward for the nest and eggs, and all went on the search.

Late in the evening of the 24th July, however (most of which day Seebohm and Harvie Brown had spent in exploring the tundra on the north-east side of the inlet, and the course of the Dvoinik river, having punted our small boat along shore amongst the sand-banks, and across the narrow channel, and landed close to a small deserted hut made of logs of drift wood, Seebohm and Piottuch found another nest, also containing four eggs, close to the place where we had got the others. Harvie Brown had gone on along the shore to the wreck, to prepare dinner. This nest was very neatly formed. Seebohm heard a bird utter a low note behind him, and, turning sharply round, said to Piottuch, "C'est le rare *Kuleek*." They saw the bird flying up from its feeding-grounds on the margin of the pools; and shortly afterwards it alighted on the sloping face of the tundra. This bird had probably come straight away to cover its eggs; and a dense mist coming down suddenly, over sea and land, had doubtless quickened its movements. Seebohm and Piottuch watched it to its nest; and after giving the bird two or three minutes' grace, they walked straight up to the nest. The bird was very tame, running round them and coming close up, like the bird of the first young (No. 1). On alighting it preened its feathers, and then walked leisurely on to its nest. It had not apparently the slightest idea of danger. Seebohm shot the bird, cut out the turf with the nest, and brought them, along with the eggs, to the wreck. The eggs are like the others, little Dunlin's all over; and we think we may conclude that the eggs of this species run through the same varieties as those of the Dunlin.

Piottuch also reported another nest containing four eggs, which he had found during the day. He had shot the bird, left the nest and eggs, which he wished us to see *in situ*. Accordingly, about 7 P.M. on the 25th July, Piottuch took us to this Little Stint's nest (the fifth set), about three versts from the wreck. The nest, which Piottuch had carefully marked, was on the sloping edge of the tundra—the neutral ground between tundra and meadow—on the left bank of the

small river before mentioned. The turf was rather different from that surrounding the first nest. The yellow sphagnum was quite absent, though the arctic bramble was still present; and when the turf was cut out it was found to be a dark peaty loam only thinly covered with vegetation, whereas the turf cut out with the first nest consists almost entirely of *Sphagnum*, to the depth of four inches. This last nest was lined with more leaves—dried dwarf willow (*Salix glauca*) and arctic bramble, either gathered by the bird herself or drifted into it by the wind. Piottuch told us that the bird had approached to within a gun's length of the nest, near which he was sitting, and had preened its feathers quite unconcernedly. These eggs show another variety, and are intermediate in colour between the other two sets.

On the 26th we searched diligently over the old ground, carefully following the lines of the natural trenches, and missing as little ground as possible; and after some hours spent in this way, we somewhat unwillingly came to the conclusion that there were no more nests to be found at that place, and that new ground must be visited.

On the 27th Harvie Brown rose at 5 A.M. with the intention of reaching the far side of the inland sea, beyond the little river, and of finding out, if possible, the source of the latter, and also to institute a careful search for more Little Stint's nests. As notes taken on the spot are usually more exact than after-recollections, we make no apology for again quoting from his journal:—

"I struck across the tundra, passed the lakes whence we believed the little river flows, and descended from the higher tundra to a low marshy tract studded with pools, and discovered the source of the river, which appears to run underneath the ground for some part of its course before appearing on the surface. In all this stretch of tundra and bog I only saw a solitary Willow-Grouse, a few Red-throated Pipits, Lapland Buntings, a pair or two of Grey Plovers, and a solitary Red-necked Phalarope. The banks of the river were equally destitute of bird-life until they neared the inland sea. There I saw a few Temminck's Stints hovering over

their young or eggs, a pair of Buffon's Skuas, and a pair of Arctic Terns." [The Buffon's Skuas, I may mention, each carried off a Dunlin out of a flock, and, bearing them away to the hummocky tundra opposite, proceeded to tear them to pieces and devour them. This I watched them do through my glass later.] "On arriving at a point on the river's bank (neutral ground between tundra and meadow) almost immediately opposite the place where Piottuch found the fifth nest the day before yesterday, I saw a Little Stint fly up from its feeding-ground and alight by the side of a small pool of water. Afer ten minutes spent in preening its feathers, our little friend flew up and again settled on the slope close to an isolated bunch of wild leeks. Here it again preened its feathers for a few seconds, and then, running down a little slope towards me, disappeared behind a low ridge. I watched for its reappearance for three or four minutes, and then walked straight up (about forty yards) to the nest, flushing the bird off when not more then ten yards from it. The nest contained four eggs. The bird settled fifteen yards further off, and then flew straight away, being, I believe, more alarmed at the presence of the black dog, Isaac, which had accompanied me, than at mine. I waited by the side of the nest for some time, seated on the end of a trunk of drift wood, and at last got a shot at the bird and wounded her slightly. She was very shy and evidently alarmed. After I wounded her she flew away and did not return, though I waited quite an hour. This nest (No. 6) was in quite different ground from the others, and was hollowed out amongst loose half-sandy soil, which was sparingly covered with short green grass. Further inland were many plants of dwarf willow. The real tundra was 150 yards distant from the nest. I took occasion to pace the distance as I returned from gathering sphagnum wherewith to pack the eggs. Close to the nest was a quantity of small drift wood, and one stem of considerable size, the former scattered over the meadow, and a few small pieces touching the edge of the nest. The nest was lined with dried willow-leaves and bits of carex, and contained four eggs, handsome dwarf Dunlin's, richly blotched at the large ends.

. . . . . About 400 yards further on along the shore, and on the sloping dwarf-willow-covered meadow between the sharply defined tundra proper and the equally well-defined basin of the inland sea, and close to three stranded roots of large trees, I found another nest with four eggs, having watched the bird fly up, as before, from the ooze and alight, and having flushed her from, and watched her again to the nest. This nest was on the top of an isolated clump of sphagnum, through which a few stems of dwarf willow were growing*. In every respect the behaviour of the bird was the same as at the other nests, save that the presence of the dog seemed to cause her more alarm and make her shyer of approaching. She once shammed broken wing, and once flew away to the mud-flat. I lay within twenty yards of the nest, with my back resting against one of the roots, saw her approach, preen her feathers, advance, raise her wings and settle upon the nest. I then put her off and shot her. I afterwards continued for a verst or two along the meadow, but saw no more Little Stints; and I then retraced my steps to the wreck. There I found Seebohm busy at work preparing the breast of a Bewick's Swan† for dinner, baking it in clay under a roaring fire of drift wood on the beach. It proved not unpalatable aided by stewed prunes, *especially the prunes*, as Paddy would say."

The Samoyede, Simeon, yesterday brought in another young bird in down, a good deal older than those procured before; and this was the last we saw of young or eggs of the Little Stint, although we continued to see the old birds in small flocks both on the shores of this inland sea and of

* Nests found upon the soft sphagnum had every appearance of having been formed by the pressing-down of the moss by the bird's body; but those found upon barer ground could scarcely have been prepared in this way, and were probably *dusted* out by the bird's feet and wings; or they may have been natural hollows chosen for the purpose. The Temminck's Stint, we have reason to believe, sometimes avails itself of natural hollows in sandy localities.

† Which Swan Feodar and Simeon had brought from the big lake at the sources of the Eevka and Erisvanka rivers (*vide* article on Bewick's Swan, *infra*).

another somewhat similar locality about seven versts to the south-west along the shore. We left Dvoinik in the steamer on the evening of the 30th July, and, after shooting a Peregrine at Stanavoialachta, landed at Alexievka about mid-day. On the 1st August we set sail for Elsinore in the 'Triad,' of Campbeltown, Captain Charles Taylor, a brigantine of 149 tons, laden with squared balks of Petchora larch, and bound for Cronstadt. After a five-weeks' voyage we landed at Elsinore, and there, amongst the first things we did, we telegraphed the news of our arrival to our friends at home, and of our discoveries to Professor Newton and Mr. H. E. Dresser.

Tringa temminckii, Leisl.

We got the first Temminck's Stints at Ust Zylma on the 26th May, and afterwards found the species extremely abundant in all suitable localities, but especially so on the delta. The first eggs were obtained on the 17th June, and the male bird watched to and shot off the nest. Afterwards their eggs were amongst the commonest brought to us by the Zyriani, often more coming in than we could find time to blow. Amongst the many eggs of this bird which we saw there were none at all resembling those of the Little Stint. We found them breeding occasionally at some height above the level of the river, as at Stanavoialachta, where we obtained a nest of eggs on the tundra, on the summit of the steep river-bank, which is there from 100 to 250 feet high.

Calidris arenaria (L.).

On the Golaievskai Islands, at the entrance of the Petchora Gulf, we found Sanderlings in small parties associating with Dunlins and feeding on the low wet sand-banks, which are only a foot or two above the level of high tide, and procured a few specimens already beginning to undergo the autumnal moult. Afterwards at Dvoinik a few more were obtained, but we failed to discover their breeding-stations. Had our visit to the Golaievskai Islands not been so hurried, and had we found time even to walk to the far end of one of those we landed upon, a distance of ten versts, where, we were told, there was higher and dryer ground covered with

grass, it is possible that we might have added their eggs to our list; but the accounts we received, like many other items of information, were most conflicting, one person affirming from personal observation, that the said islands are grass-covered, and another being equally positive that they are not. We cannot but believe, however, that their breeding-haunts were not far distant, whether upon the islands of the Golaievskai group, unvisited by us, or upon the coast east or west of Dvoinik, or upon the coast of the Timanskai tundra, or upon all of these.

In regard to the migration of the Sanderling in the south of Russia, the authors of the Russian work already referred to tell us that it has been seen in spring on the Sarpa, and in the autumn at Kasan.

This species must have an extensive circumpolar distribution during the breeding-season, although comparatively little as yet has been recorded of its breeding-habits. Prof. Newton (P. Z. S. 1871, p. 56) notices a Sanderling's egg obtained by McFarlane near the Anderson river, in N.W. America, which was sent to him by the Smithsonian Institution, a figure of which will be found (*tom. cit.* pl. iv. fig. 2). Shortly afterwards, as we are further informed by Prof. Newton, the eggs collected by the German North-Pole Expedition were sent to him; and among them were some which he could hardly doubt to be those of *C. arenaria*. These he exhibited to the Zoological Society (20th June, 1871), and stated that an examination of the series showed that an egg which Wolley and he bought in Iceland in 1858, was almost unquestionably a Sanderling's also* (P. Z. S. 1871, pp. 546, 547). The eggs obtained by the German Expedition were found on Sabine's Island, east coast of Greenland, in 1869, and have been described by Prof. Newton (Zweite deutsche Nordpolarfahrt, ii. pp. 240–242).

Scolopax gallinago, L.

We found the Common Snipe rather abundant at Habariki

* Canon Tristram also exhibited three eggs, supposed to be of this bird (P. Z. S. 1864, p. 337), along with two birds.

in the beginning of June, and afterwards traced it down the river as far as the head of the delta, where, however, it was scarce, and much scarcer than the next species. We did not see it at Alexievka, nor anywhere upon the tundra. We were not a little surprised when we first became acquainted with the arboreal habits of the Snipe at Habariki, and saw one of these birds perched, seventy feet from the ground, on the topmost upright twig of a bare larch, where, one would have thought, it could scarcely find sufficient foot-hold. With its head lower than its body and tail, it sat there, uttering at intervals the curious double "clucking" note, *tjick-tjuck, tjick-tjuck,* whilst others of the same species were "drumming" high in air over the marsh. To put all beyond a doubt, Harvie Brown shot one in this peculiar position. Nor is the Common Snipe the only bird which, not practising the habit with us, we found perching freely in Northern Russia: the Snow-Bunting and Pipits have already been instanced; and we may also mention the Common Gull, as will be seen under the notice of that species further on. The Curlew also was seen to perch on bushes and trees at Sujma, near Archangel, by Alston and Harvie Brown in 1872 (Ibis, 1873, p. 70). There can be little doubt, we imagine, that this habit was induced in the first instance, by the flooding of great tracts of country by the annual overflow of the rivers in spring, just at the time of the passage of the migratory flights, and, further, that what was originally forced upon them has become, by use, a favourite habit.

Scolopax major, L.

We shot a couple of Great Snipes in the forest tract behind Habariki, which were the first examples we saw of the species. This was on the night of the 3–4th June. Afterwards we found it not uncommonly on the river and abundantly on the delta, especially between Viski and Gorodok, where we fell in with a large migratory flight on the 17th June. The specimens of the latter which we shot proved to be all male birds. The following day we found a nest containing three eggs on an island opposite Kuya. We did not find it anywhere on the tundra.

Numenius phœopus (L.).

Three Whimbrels passing over Ust Zylma on the 18th May, were whistled round and induced to alight within fifty yards, when all three were secured. These were the only ones we saw during our trip, though one other was heard calling on the following day.

Grus cinerea, L.

Only three Cranes were seen passing to the northward, over Ust Zylma, at a great height—one on the 21st May, and two others on the 25th May.

[To be continued.]

XXIX.—*Notes on the* Trochilidæ. *The Genera* Cyanomyia *and* Heliotrypha. By D. G. Elliot, F.R.S.E. &c.

Cyanomyia.

The genus *Cyanomyia*, although not remarkable for possessing species resplendent in brilliant metallic colours of many hues, nevertheless contains some sufficiently adorned to excite admiration, while the pure white and glittering blue and green which compose the dress of the various species cannot but afford pleasure to all who see them. It is a genus whose members are restricted to the western portion of South America and Central America, Mexico being its northern limit, and Peru the most southern country from which any specimens have yet been received. The genus contains seven species, some of which, however, cannot be said as yet to be firmly established, or entitled to specific rank, but more as occupying a probationary state, waiting for passports bearing more satisfactory visés than they can at present bear.

The various species seem naturally to form two groups, viz. those having the underparts of the body pure white, without any metallic colouring, and those having the sides of the neck and flanks covered with metallic feathers of different hues. The first of these groups contains three species, two of which, however, may be but local races of the same form; and the four remaining species comprise the second

section. The following table will show the characters of the species :—

A. Entire underparts pure white.	
a. Tail olive-green; top of head metallic blue, sometimes with purple reflections	*C. quadricolor.*
b. Tail bronzy red; top of head metallic purple, sometimes with blue reflections	*C. violiceps.*
c. Tail metallic golden, tip bronzy red; top of head dull metallic dark green	*C. viridifrons.*
B. Breast and abdomen white; flanks metallic green or bronze.	
d. Under tail-coverts greenish grey	*C. cyanocephala.*
e. Under tail-coverts bronzy red	*C. microrhyncha.*
f. Under tail-coverts white; top of head blue	*C. franciæ.*
g. Under tail-coverts white; top of head and nape blue	*C. cyaneicollis.*

On looking at the geographical distribution of the members of this genus, we find that Mexico contains four species, viz. *C. quadricolor*, inhabiting the northern part, *C. violicep* ansd *C. viridifrons*, the western, and *C. cyanocephala*, the southern, this last species extending its range into Guatemala and Honduras. The last-named country is also stated to be the habitat of the bird I describe in this paper as *C. microrhyncha*, though I am not certain that this is the correct locality from which the unique example in my collection came. As we proceed southwards along the western side of South America, we find *C. franciæ* to be a native of Columbia, while Peru is given as the habitat of the form described by Mr. Gould as *C. cyaneicollis*. No member of this genus has yet been met with in Ecuador, so far as I am aware, though it cannot be supposed, if it is represented in both Columbia and Peru, that there is no species of *Cyanomyia* dwelling in the country that lies between these two. In no locality east of the Andean range has any species of this group been found; and Lesson was in error when he gave Brazil as the habitat of *C. cyanocephala*.

CYANOMYIA QUADRICOLOR.

Trochilus quadricolor, Vieill. Enc. Méth. p. 132, pl. 17.
Cyanomyia quadricolor, Bp. Rev. et Mag. Zool. 1854, p.

254; Gould, Mon. Troch. vol. v. p. 284; et Intr. Mon. Troch. p. 147, sp. 313.

Hab. Mexico (northern districts).

This species, a native of Mexico, was first described by Vieillot (*l. c.*). It bears a close resemblance to *C. violiceps*, but may be distinguished from that species by the colouring of the tail, which is a pale olive-green, without any of the bronze-red hue observable on the rectrices of its relative. The top of the head is a blue green, sometimes with purple reflection. In all other respects the two species are very similar. The present bird is rather rare in collections, although it is reasonable to suppose it is common in the districts it inhabits, as are the other species of the genus in the localities they frequent. I have remarked that sometimes the top of the head has purple reflections like that of *C. violiceps*. My knowledge of this fact is obtained from a specimen in my collection which has the colouring of the head like that of typical *C. violiceps*, and, were it deprived of the tail, would undoubtedly be ranked with that species; but the rectrices unmistakably belong to *C. quadricolor*. The colouring of these last, then, appear to be the only character by which the two forms may be distinguished.

CYANOMYIA VIOLICEPS.

Cyanomyia violiceps, Gould, Ann. & Mag. Nat. Hist. 3rd ser. vol. iv. p. 97; Id. Mon. Troch. vol. v. pl. 285; et Intr. Troch. p. 147, sp. 314.

Hab. Mexico, vicinity of Oaxaca (*Sallé*).

This bird, described by Gould (*l. c*), was procured by M. Sallé near Oaxaca, in Western Mexico, where it appears to be very abundant. Mr. Gould regarded it as distinct from *C. quadricolor* in its "larger and somewhat forked tail, in the violet colouring of the crown, and in having a longer and darker bill, which, moreover, is not so broad at the base." With a tolerably large series of specimens before me, I find that none of these characters are trustworthy, or sufficient to establish the species. The colouring of the head, as I have already stated, when speaking of *C. quadricolor*, varies greatly; the

bill in the adult in both shape and colour cannot be distinguished from that of the previous species; while I am not able to perceive any material difference in the shape of the tail. The only appreciable distinction between the two forms is, that the tail of the present bird possesses a bronzy red hue, which I have not yet met with in any example of *C. quadricolor*. Should such be found, however, it would seem impossible to continue the two forms as distinct species. I have one specimen from Oaxaca (*Boucard*) which has a deep bluish-green head, exactly similar to that of *C. quadricolor*, but with a bronze-red tail. It will thus be seen how close the two forms are; and if they are not the same, they are probably but local races of one species.

CYANOMYIA VIRIDIFRONS.

Cyanomyia viridifrons, Elliot, Ann. & Mag. Nat. Hist. 1871, vol. viii. p. 267.

Hab. Putla, Mexico (*Rebouch*).

Three specimens of this species were procured by M. Rebouch at Putla, and described by myself as above. It is between *C. quadricolor* and *C. cyanocephala*, having the flanks a metallic green, like the latter species. It differs from all the known forms of this genus in its dark green head, but slightly metallic, and in its brilliant tail, metallic golden, with a purplish red tip. I have never seen but the three examples mentioned.

CYANOMYIA CYANOCEPHALA.

Ornismya cyanocephala, Lesson, Suppl. Oiseaux-Mouches, p. 134, pl. 18.

Cyanomyia cyanocephala, Gould, Mon. Troch. vol. v. pl. 286; et Intr. Troch. p. 147, sp. 315.

Cyanomyia guatemalensis, Gould, Intr. Troch. p. 148, sp. 316.

Hab. Mexico (*Sallé*); Guatemala (*Salvin*); Honduras (*Taylor*).

Lesson described the present species as the young of *C. quadricolor*, called by him *cyanocephala*; but both his description and plate are sufficiently accurate to show that it was the present bird he had before him. It has a rather extensive range,

more so than any other member of the genus, reaching from Mexico, in the vicinity of Cordova (where it was procured by M. Sallé), through Guatemala, into Honduras. Mr. Gould, in his Introduction to the monograph of the Humming-birds, separates the bird from Dueñas, in Guatemala, as distinct under the name of *guatemalensis*, although in his monograph he stated that there was not the slightest difference between specimens from Guatemala and Mexico. In the Introduction he characterizes them as follows: "Guatemalan specimens have the tail bronzy green, while the Mexican are olive-green." It is true that in a series of specimens these differences are observable, in a greater or less degree; but it does not seem to me sufficient to entitle the birds from the different localities to a separate specific rank. The difference in the majority of cases is so slight that it would be well nigh impossible to decide to which species the specimens belonged. I have therefore placed the name *C. guatemalensis* as a synonym of *C. cyanocephala**.

I have had for some years in my collection a specimen of *Cyanomyia* which differs from all other described species. It was said to have come from Honduras; but for the accuracy of this habitat I cannot vouch. It is nearest to *C. cyanocephala*, but differs in several remarkable and important characters. Although possessing every indication of being an adult individual, it is much smaller than its ally, and has an extraordinarily small bill. In some groups of the Trochilidæ I am well aware that the length of the bill is of no specific value; but I have never seen any material difference in this organ among the adult specimens of the different species of this genus until I obtained the present specimen. Besides its general small size and remarkable bill, the tail and under tail-coverts are very differently coloured, the former being more like that of *C. viridifrons*, though the bird resembles that species in no other manner. Not having been successful in obtaining another specimen, I have decided to describe it, and thus call the attention of ornithologists to the bird:—

* [What is *C. faustina* (Bourc.), Muls. H. N. Ois. M. i. p. 223?—Ed.]

CYANOMYIA MICRORHYNCHA.

Top of head and occiput dark metallic blue. Hind neck and mantle shining metallic green; rest of upper parts bronzy red. Throat, upper part of breast, and centre of abdomen white, with a few metallic-green feathers scattered among the white ones. Flanks and under tail-coverts bronzy red, metallic. Wings dark brown, slightly shaded with purple. Tail brilliant metallic bronze. Total length 3½ inches, wing 2¼, tail 1⅛, bill along culmen ½.

CYANOMYIA FRANCIÆ.

Trochilus franciæ, Bourc. Ann. Soc. d'Agricul. et Hist. Nat. Lyon (1846) p. 324; et Rev. Zool. 1846, p. 316.

Cyanomyia franciæ, Gould, Mon. Troch. vol. v. pl. 287; et Intr. Mon. Troch. p. 149, sp. 317.

Hab. Columbia.

A native of Columbia, this species appears to be quite common in the vicinity of Bogota, whence numerous examples come to Europe. It is the most brilliant species of the genus, and is closely allied to *C. cyanocephala*, from which it differs chiefly in the white under tail-coverts, and in the greater brilliancy of the sides of the neck and flanks.

CYANOMYIA CYANEICOLLIS.

Cyanomyia cyaneicollis, Gould, P. Z. S. 1853, p. 61; Id. Mon. Troch. vol. v. pl. 288; et Intr. Troch. p. 149, sp. 318.

Hab. Peru, eastern slope of the Andes (*Warszewiez*).

I only know this form by the two specimens in Mr. Gould's collection. It is certainly very closely allied to *C. franciæ*, with the blue of the crown extending further down on the nape than in specimens of that species; but before being able to come to a satisfactory decision as to its specific value it is desirable to see more specimens.

Peru is further south than any of the other members of this genus are known to pass; and it is not improbable that a different species exists in that country. The type specimens were brought by M. Warszewiez; and although Peru has been fairly explored by several good collectors since his time, the bird has not again been met with.

HELIOTRYPHA.

Having lately obtained for my collection the type of *Heliotrypha barrali*, Mulsant & Verreaux, a species unknown save by the description published in 1868 by those gentlemen, I was led to examine its relations to the other known species of the genus, with the results now given.

The genus *Heliotrypha* is closely allied to *Heliangelus*; indeed at one time the species of both were placed under the latter term, until Mr. Gould, in his monograph of the family, very properly separated the two species *H. viola* and *H. parzudakii* (as given by him, *exortis*, as it should be called) under the generic name by which they are now known. They differ from the species of *Heliangelus* conspicuously in not possessing any trace of the white or buff band beneath the metallic feathers of the throat.

The species have but a limited geographical distribution, being confined to districts of Columbia and Ecuador lying on the west of the Andes. The first of these contains *H. barrali*, from the river Saldana, the only locality in which it has been found, so far as known at present, and *H. exortis*, which is plentiful in the vicinity of Bogota, and also extends its range into Ecuador, where it has been obtained near Popayan and near Quito. *H. viola* has, as yet, only been obtained in Ecuador. The following table will serve to distinguish the species, which compose but one group, easily recognizable by their differently coloured throats :—

a. Throat metallic purple; chin with light-blue reflections.. *H. viola.*
b. Throat metallic red; chin deep blue, almost black in some lights ..... *H. exortis.*
c. Throat pale olive-green ..... *H. barrali.*

HELIOTRYPHA VIOLA.

Heliangelus viola, Gould, P. Z. S. 1853, p. 61.

Heliotrypha viola, Gould, Mon. Troch. vol. iv. pl. 241; et Intr. Troch. p. 131, sp. 266.

Hab. Ecuador.

M. Warszewiez was the discoverer of this beautiful species. The specimens he brought came into the possession of Mr.

Gould, by whom they were described as above. It is a very distinct species, and very rare in collections. Although allied to *H. exortis*, it has too many and too striking differences to be confounded with that species.

HELIOTRYPHA EXORTIS.

Trochilus exortis, Fraser, P. Z. S. 1840, p. 14.

Ornismya parzudakii, De Long. & Parz. (nec Less.), Rev. Zool. 1840, March, p. 72.

Heliotrypha parzudakii, Bp. Rev. et Mag. Zool. 1854, p. 254; Gould, Mon. Troch. vol. iv. p. 240; Id. Intr. Troch. p. 131, sp. 265.

Hab. Columbia, Ecuador, Quito (*Jameson*).

This well-known species (familiar to ornithologists as *H. parzudakii*) was described by Fraser in February 1840, in the 'Proceedings' of the Zoological Society, as *Trochilus exortis*, and by De Longuemare and Parzudaki in the 'Revue Zoologique,' in March of the same year, as *Ornismya parzudakii*. The name given by Fraser will therefore stand by right of priority; and although one may regret thus to be obliged to overturn an old established name, yet in the present case the facts are too clear and unanswerable to admit the adoption of any other course, and the species must hereafter be known as *Heliotrypha exortis**.

It is a beautiful species, very common in the vicinity of Bogota, and in collections is generally the sole representative of the genus now under consideration.

I notice that specimens from Ecuador are somewhat larger, with longer bill and wings, while the throat-mark is more restricted to the centre of the throat than in Columbian birds. I do not consider these to be in any way of specific value, or even as elevating the specimens to the dubious rank of a variety.

HELIOTRYPHA BARRALI.

Heliotrypha barrali, Muls. et Verr. Ann. Soc. Linnéenne de Lyon, xviii. p. 106 (1868).

Heliangelus squamigularis, Gould, P. Z. S. 1871, p. 503.

* [Quite clear, certainly, if reading a paper before a scientific meeting is equivalent to publication. But are we all agreed on this point?—ED.]

Hab. Columbia, river Saldana, a branch of the Magdalena, province of Antioquia (*Muls.* & *Verr.*).

This curious species was described in 1868 by MM. Mulsant and Verreaux from a specimen formerly in the possession of Count Barral. The unique type was unknown to ornithologists generally, save from the description, as no opportunity has been given to examine the bird after it passed from the hands of its describers into its owner's possession. In 1871 Mr. Gould published the description of a supposed new species as *Heliangelus squamigularis* in the 'Proceedings' of the Zoological Society of London; and it was only after I had been so fortunate as to obtain the type of *H. barrali* for my own collection that it was ascertained to be the same as Mr. Gould's bird. His name will therefore become a synonym of *Heliotrypha barrali*, Muls. & Verr. It is a species remarkable for the peculiar coloration of the throat, which is a brilliant metallic pale olive-green, appearing in some lights not unlike silver, though lacking the pure whiteness of that metal*.

XXX.—*Notes on Severtzoff's 'Fauna of Turkestan'* (*Turkestanskie Jevotnie*). By H. E. Dresser.

[Continued from p. 191.]

241. Upupa epops, L.; Severtzoff, p. 68.

Horizontal range. Breeds in all four districts, commonly in I., II., and III.

Vertical range. Breeds in districts 1, 2, and 3.

242. Coracias garrula, L.; Severtzoff, p. 68.

Horizontal range. Breeds in districts I., II., III., and IV., at times commonly.

Vertical range. Breeds in districts 1, 2, and 3.

243. Merops apiaster, L.; Severtzoff, p. 68.

Range. Similar to that of *Coracias garrula*.

244. Merops persicus, Pall.; Severtzoff, p. 68.

Horizontal range. Breeds in districts III. and IV.

[* M. Mulsant has recently placed this species in a separate genus, which he calls *Nodalia* (Cat. des Oiseaux-Mouches, p. 23).—Ed.]

Vertical range. Breeds in districts 1 and 2, commonly in the former, and occurs also on passage in district 2.

245. Alcedo ispida, L.; Severtzoff, p. 68.
Horizontal range. Resident, but rare, in district III.
Vertical range. Resident, but rare, in district 2.

245*a*. Alcedo bengalensis, Gm.
Alcedo ispida β. bengalensis, Severtzoff, p. 68.
Horizontal range. Breeds commonly in districts I., II., and III., and is resident in district IV.
Vertical range. Breeds in districts 2 and 3, commonly in the former; occurs on passage, and possibly breeds, in district 4.

246. Picus leptorhynchus, Severtzoff (Ibis, 1875, p. 487).
Picus cabanisii, Severtzoff, p. 68.
Horizontal range. Resident in all four districts.
Vertical range. Resident in districts 1 and 2; breeds in district 3.

247. Picoides tridactylus (L.).
Picus tridactylus, Severtzoff, p. 68.
Horizontal range. Resident in district I.
Vertical range. Possibly occurs in winter in district 3, and is resident in district 4.
Obs. In a MS. note, Dr. Severtzoff adds that typical *Picus major* occurs in district I., north of the Kuldja, where it is sedentary, but rare.

248. Jynx torquilla (L.); Severtzoff, p. 68.
Horizontal range. Breeds and occurs on passage in all four districts.
Vertical range. Occurs on passage in districts 1 and 2, and breeds in district 3.

249. Cuculus canorus (L.); Severtzoff, p. 68.
Horizontal range. Breeds in all four districts.
Vertical range. Breeds in districts 1, 2, and 3.

250. ? Palumbus casiotis, Bp.
Columba pulchricollis, Gould; Severtzoff, p. 68.

Horizontal range. Breeds and occurs on passage in all four districts.

Vertical range. Occurs on passage in district 2, and breeds in districts 3 and 4.

251. Columba œnas, Severtzoff, p. 68.

Horizontal range. Breeds and occurs on passage in districts III. and IV.

Vertical range. Occurs rarely on passage in district 1, and breeds in district 2, possibly also in district 3.

252. Columba livia, Gm.; Severtzoff, p. 68.

Horizontal range. Resident in all four districts.

Vertical range. Resident in districts 2 and 3, breeding in the latter.

253. Columba rupestris, Pall.; Severtzoff, p. 68.

Horizontal range. Resident in all four districts.

Vertical range. Rare in winter in district 2, resident in district 3, breeds in district 4, and occurs in summer in district 5.

254. ? Columba intermedia, Strickl.

Columba fusca, Pall.; Severtzoff, p. 68.

Horizontal range. Breeds in all four districts.

Vertical range. Breeds in district 2.

255. Turtur vulgaris, Eyton.

Columba turtur, L.; Severtzoff, p. 68.

Horizontal range. Breeds in all four districts.

Vertical range. Breeds in districts 1 and 2.

256. Turtur rupicolus, Pall.

Columba gelastes, Temm.; Severtzoff, p. 68.

Horizontal range. Breeds and occurs on passage in all four districts.

Vertical range. Occurs on passage in district 2, and breeds in district 3.

257. Turtur intercedens, Brehm.

Columba chinensis (*Columba risoria*, Schrenck, nec Hartl.), Severtzoff, p. 68.

This species is entered with a query. In a MS. note Dr. Severtzoff informs me that he has since identified it with *Turtur intercedens*, and that it is identical with *Turtur stoliczkæ*, Hume (Stray Feathers, ii. p. 519).

258. Turtur senegalensis, L.

Columba ægyptiaca, Severtzoff, p. 68.

Horizontal range. Resident in districts II., III., and IV.; occurs in the towns.

Vertical range. Rare in summer in district 1, resident and common in district 2, possibly breeds in district 4.

259. Pterocles arenarius (Pall.); Severtzoff, p. 68.

Horizontal range. Breeds in all four districts.

Vertical range. Breeds in districts 1 and 2.

260. Pterocles alchata (Linn.); Severtzoff, p. 68.

Horizontal range. Breeds in districts II., III., and IV., and occurs on passage in district IV.; occasionally it is common.

Vertical range. Breeds in district 2.

261. Syrrhaptes paradoxus (Pall.); Severtzoff, p. 68.

Horizontal range. Is sedentary and breeds in district I., and occurs in winter in district III.

Vertical range. Resident in winter in district 1, and breeds in district 3, where it is probably resident.

262. Tetrao tetrix, L.; Severtzoff, p. 68.

Horizontal range. Resident in district I.

Vertical range. Resident in districts 3 and 4.

263. Tetrao urogallus, Linn.; Severtzoff, p. 68.

Horizontal range. Rare and probably resident in district I.

Vertical range. Rare in district 4.

264. ? Tetraogallus caspius, Gm.

Megaloperdix nigellii, Severtzoff, p. 68.

Horizontal range. Breeds and occurs in winter in all four districts.

Vertical range. Occurs in winter in district 3, breeds and is resident in district 4, and occurs in summer in district 5.

264*a*. Megaloperdix nigellii *β. minor*, Severtzoff, p. 68.
Horizontal range. Resident in district II.
Vertical range. Occurs in winter in district 3, and breeds in districts 4 and 5.

265. Caccabis chukar, Gray.
Perdix saxatilis, var. *chukar*, Severtzoff, p. 68.
Horizontal range. Resident in all four districts.
Vertical range. Occurs in winter in district 2, is resident in district 3, and is found in district 4 in summer.

266. Perdix cinerea, Lath.; Severtzoff, p. 68.
Horizontal range. Rare in winter in districts I. and III.
Vertical range. Rare in winter in districts 2 and 3.

267. Perdix barbata, Verr.
Perdix daurica, Severtzoff, p. 68.
Horizontal range. Resident in districts I. and II.
Vertical range. Occurs in winter in district 2, is resident in district 3, and is found in summer in districts 4 and 5.

268. Ammoperdix bonhami (Gray).
Perdix griseogularis, Brandt (?) (*P. bonhami*, Fras.), Severtzoff, p. 68.
Dr. Severtzoff informs me that he included this species only on the strength of a statement made to him, and thinks it probable that some mistake was made.

269. Coturnix communis, Bonn.
Coturnix vulgaris, Severtzoff, p. 68.
Horizontal range. Breeds in all four districts, and occurs in winter in districts III. and IV.
Vertical range. Breeds in districts 1, 2, and 3, and occurs in winter in district 1.
As a subspecies of the common Quail, Dr. Severtzoff gives
Coturnix vulgaris β. baldami, Br.; Severtzoff, p. 68.
Horizontal range. Breeds in district IV.
Vertical range. Breeds in district 2.

270. Phasianus mongolicus, Brandt; Severtzoff, p. 68.
Horizontal range. Resident in all four districts.
Vertical range. Resident in districts 1, 2, and 3.

271. Gallus ferrugineus, Gm.
Gallus bankiva domesticus, Severtzoff, p. 68.
Horizontal range. Resident in all four districts.
Vertical range. Resident in districts 1 and 2.

272. Pavo cristatus, L.
Pavo cristatus domesticus, Severtzoff, p. 68.
Horizontal range. Resident in districts III. and IV.
Vertical range. Resident in district 2.

273. Grus communis, Bechst.
Grus cinerea, Severtzoff, p. 68.
Horizontal range. Is found on passage in all four districts, and breeds in I., II., and III.
Vertical range. Is found on passage in districts 1, 3, and 4, and breeds in districts 2, 3, and 4.

274. Grus leucogeranus, Pall.; Severtzoff, p. 68.
Horizontal range. Occurs on passage, and perhaps breeds rarely, in district III.
Vertical range. Occurs on passage, and perhaps breeds, in district 1.

275. Grus virgo (L.); Severtzoff, p. 68.
Horizontal range. Breeds in all four districts.
Vertical range. Breeds in districts 1, 2, 3, and 4, and occurs on passage in the last two.

276. Ciconia nigra (L.); Severtzoff, p. 68.
Horizontal range. Breeds in all four districts.
Vertical range. Occurs in summer in district 2, and breeds in district 3.

277. Ciconia mycteriiarhyncha, Severtzoff.
Ciconia alba, var. *major* (*C. azretti*, n. sp.?), Severtzoff, p. 68.
Ciconia alba asiatica, id. p. 145.
Horizontal range. Breeds in districts II., III., and IV.
Vertical range. Breeds in district 2.
At p. 145 he describes this bird as differing from *Ciconia alba* in having a shorter and stouter bill, and gives the measurements as follows:—Males, total length 46–48½″, extent

87½–88½″, wing 25–25¼″, tail 10″ 7‴–10″ 11‴, culmen 8″–8″ 4‴, thickness of bill 1″ 6‴–1‴ 7‴, tarsus 9‴–9″ 2‴; females, total length 42½–44½″, extent 83–87″, wing 23½–24½″, tail 9½–10″, culmen 7″ 5‴–8″, tarsus 8″ 3‴–8″ 6‴.

In a MS. note Dr. Severtzoff writes as follows:—"This bird is *Ciconia mycteriiarhyncha*, mihi, and is more closely allied to *C. boyciana* than to *C. alba*; but it differs from that species in having the bill entirely red: the bill, however, is shaped as in that species, and not as in *C. alba*."

278. Ardea cinerea, L.

Ardea cinerea, var. *brag*, Isid. Geoff.; Severtzoff, p. 68.

Horizontal range. Breeds in all four districts.

Vertical range. Breeds in districts 1 and 2, and occurs in the latter on passage.

279. Ardea purpurea, L.; Severtzoff, p. 68.

Horizontal range. Breeds in district III.

Vertical range. Breeds in district 1.

280. Ardea alba, L.; Severtzoff, p. 68.

Horizontal range. Breeds in all four districts, occasionally commonly, and occurs, though rarely, in winter, in districts III. and IV.

Vertical range. Breeds, and occurs in winter, in districts 1 and 2.

Dr. Severtzoff also includes a subspecies under the name of *Ardea alba β. melanorhyncha.*

Horizontal range. Breeds in district III.

Vertical range. Breeds in district 1.

281. Nyctiardea nycticorax, L.

Scotæus nycticorax, Severtzoff, p. 68.

Horizontal range. Breeds in districts III. and IV.

Vertical range. Breeds in districts 1 and 2.

282. Botaurus stellaris (L.); Severtzoff, p. 68.

Horizontal range. Breeds in districts I., II., and III., and occurs rarely in the winter in the last of these.

Vertical range. Breeds in district 1, and occurs rarely in winter and on passage in district 2.

283. Ardetta minuta (L.).

Ardetta minuta, Severtzoff, p. 68.

Horizontal range. Breeds in district III., and is occasionaly common.

Vertical range. Breeds in district 2.

284. Platalea leucorodia (L.); Severtzoff, p. 68.

Horizontal range. Breeds in districts II. and III.

Vertical range. Breeds commonly in district 1, and occurs rarely on passage in district 2.

285. Ibis falcinellus (L.); Severtzoff, p. 68.

Horizontal range. Breeds and occurs on passage in all four districts.

Vertical range. Breeds in districts 1, 2, and 3, commonly in the first, and occurs on passage in district 2.

286. Otis tetrax, L.; Severtzoff, p. 68.

Horizontal range. Breeds and occurs on passage in districts I., II., and III.

Vertical range. Occurs on passage in district 1, and breeds in districts 2 and 3.

287. Otis macqueeni, Gray; Severtzoff, p. 68.

Horizontal range. Breeds in districts I., II., III., and IV., and occurs on passage in all but the last.

Vertical range. Breeds in district 1, and occurs on passage, though rarely, in district 2.

288. Otis tarda, L.; Severtzoff, p. 69.

Horizontal range. Breeds and occurs in winter in districts I., II., and III., and is resident in district IV.

Vertical range. Breeds and occurs in winter, being possibly resident, in district 2, and breeds in districts 3 and 4.

289. Œdicnemus crepitans, Temm.; Severtzoff, p. 69.

Horizontal range. Breeds in districts I., II., and III.

Vertical range. Breeds in districts 1 and 2, rarely in the latter.

Dr. Severtzoff further includes, without any description, the following subspecies :—

Œdicnemus crepitans β. senegalensis.

Horizontal range. Breeds in districts II., III., and IV.

Vertical range. Breeds in districts 1 and 2, rarely in the latter.

290. Charadrius pluvialis, L.; Severtzoff, p. 69.

Horizontal range. Occurs rarely on passage in districts I., II., and III.

Vertical range. Occurs on passage in districts 1 and 3.

291. Squatarola helvetica, L.

Charadrius squatarola, Severtzoff, p. 69.

Horizontal range. Occurs rarely on passage in district III.

Vertical range. Occurs rarely on passage in district 1.

292. Eudromias morinellus, L.; Severtzoff, p. 69.

Horizontal range. Occurs on passage in districts I. and III.

Vertical range. Occurs on passage in district I.

293. Eudromias caspius (Pall.); Severtzoff, p. 69.

Horizontal range. Breeds in districts I., II., III., and IV.

Vertical range. Breeds in district 1, and occurs rarely on passage in district 2.

At page 146 Dr. Severtzoff gives a careful description of what he considers to be a new species, and which he calls *Eudromias crassirostris*; but I need not reproduce this, as he now informs me that it is identical with *Eudromias geoffroyi*. He says that he has only seen three specimens of this bird, the first of which was obtained near Fort Peroffsky on the 30th June 1858, the second near Lake Chatir-kul, at an altitude of 11,000 feet, on the 26th July 1867, and the third on the east coast of the Caspian, near the Krasnovodsk Bay, on the 3rd August 1867.

294. Eudromias mongolicus (Pall.); Severtzoff, p. 69.

Horizontal range. Breeds rarely in district II., and occurs rarely on passage in district III.

Vertical range. Occurs in summer and on passage in district 1.

295. Ægialitis hiaticula, L.; Severtzoff, p. 69.

Horizontal range. Breeds rarely in district III.

Vertical range. Breeds rarely and occurs on passage in district 1, and breeds in district 2.

296. ÆGIALITIS CURONICA (Gm.).
Ægialites minor, Severtzoff, p. 69.
Horizontal range. Breeds in all four districts.
Vertical range. Breeds in districts 1 and 2.

297. ÆGIALITIS CANTIANA (Lath.).
Ægialites cantianus, Severtzoff, p. 69.
Horizontal range. Breeds rarely in district III.
Vertical range. Breeds in districts 1 and 2.

298. VANELLUS VULGARIS, Bechst.
Vanellus cristatus, Severtzoff, p. 69.
Horizontal range. Breeds in all four districts, and occurs in winter in districts III. and IV.
Vertical range. Occurs on passage in district 1, breeds in districts 2, 3, and 4, and occurs in winter in district 2.

299. CHETTUSIA GREGARIA (Pall.).
Vanellus gregarius, Severtzoff, p. 69.
Horizontal range. Occurs on passage in districts I., II., and III.
Vertical range. Occurs on passage in districts 1 and 2.

300. CHETTUSIA LEUCURA (Licht.).
Vanellus leucurus, Severtzoff, p. 69.
Horizontal range. Breeds in districts III. and IV.
Vertical range. Breeds in districts 1 and 2.

301. GLAREOLA PRATINCOLA, L.; Severtzoff, p. 69.
Horizontal range. Breeds in districts II., III., and IV.
Vertical range. Breeds in districts 1, 2, and 3, commonly in district 2.

Dr. Severtzoff includes, without description, the following subspecies of *Glareola pratincola*:—
Glareola pratincola β. limbata.
Horizontal range. Breeds in districts III. and IV.
Vertical range. Breeds in districts 1, 2, and 3.

302. STREPSILAS INTERPRES (Linn.).
Strepsilas collaris, Severtzoff, p. 69.

Horizontal range. Occurs in summer and on passage in district III.

Vertical range. Occurs in summer and on passage in district 1.

303. Recurvirostra avocetta, L.; Severtzoff, p. 69.

Horizontal range. Breeds in districts I. and III.

Vertical range. Breeds in district 1.

304. Himantopus candidus, Bonnat.

Hypsibates himantopus, Severtzoff, p. 69.

Horizontal range. Breeds in all four districts.

Vertical range. Breeds in districts 1 and 2.

A subspecies, without description, is included under the name of

Hypsibates himantopus β. nigricollis.

Horizontal range. Breeds in districts III. and IV.

Vertical range. Breeds in district 2.

305, 306. Ibidorhynchus struthersi, Gould.

(305) *Falcirostra kauffmanni*, Severtzoff, pp. 69, 146, pl. x. figs. 1, 2.

Horizontal range. Resident in districts I. and II.

Vertical range. Resident in districts 3 and 4, and occurs during summer in district 5.

(306) *Falcirostra longipes*, Severtzoff, pp. 69, 147.

Horizontal range. Possibly resident and breeds in districts I. and II.

Vertical range. Breeds in districts 3 and 4.

So far as I can ascertain, by comparing notes with Dr. Severtzoff himself, both these refer to true *I. struthersi*. The only difference or doubtful question is the fact that *I. struthersi* has the upper tail-coverts black, and in Dr. Severtzoff's description the colour of these is not mentioned; and as he did not bring with him any of his specimens, we were unable to decide this, though there is very little doubt as to the Turkestan bird being really referable to *I. struthersi*.

307. Hæmatopus ostralegus, L.; Severtzoff, p. 69.

Horizontal range. Breeds in district III.

Vertical range. Breeds rarely in district 2.

308. Scolopax gallinago (L.); Severtzoff, p. 69.

Horizontal range. Breeds and is found on passage in all four districts, and occurs in winter in districts III. and IV.

Vertical range. Occurs on passage in districts 1 and 2.

309. Scolopax hyemalis, Eversm.; Severtzoff, p. 69.

Horizontal range. Occurs in winter in all four districts, and breeds in districts I. and II.

Vertical range. Occurs in winter in district 2, breeds in districts 3 and 4, and is found in summer in district 5.

No description is given of this Snipe; but in a MS. note Dr. Severtzoff informs me that it is a good species, and, compared with *Scolopax solitaria*, Hodgs., it differs slightly though it very closely resembles that species.

310. Scolopax gallinula, L.; Severtzoff, p. 69.

Horizontal range. Occurs on passage in districts II., III., and IV.

Vertical range. Occurs rarely on passage in district 2.

311. Scolopax rusticola, L.; Severtzoff, p. 69.

Horizontal range. Occurs on passage in districts I., III., and IV., rarely in the first two.

Vertical range. Occurs rarely on passage in districts 1 and 2.

[To be continued.]

XXXI.—*On the Contents of a third Box of Birds from Hakodadi, in Northern Japan.* By R. Swinhoe.

(Plate VIII.)

A third box of birds has come to hand from Mr. T. W. Blakiston, from Hakodadi, Northern Japan, containing unfortunately only thirteen specimens, but accompanied by a series of valuable notes, which I think will be acceptable to the readers of 'The Ibis,' as throwing more light on the ornithology of North Japan. I will continue my numbers as before from where I last left off (Ibis, 1875, p. 458).

Mr. Blakiston says that he has now a pair of *Tinnunculus japonicus*, and a specimen possibly of *Accipiter gularis*, but

he has nothing to compare the latter with. Length 17⅝, wing 9⅝.

He mentions having received a male Osprey from Kamtchatka, giving its measurements 20¼ × 19½. This, from its large size, would appear to be the *Pandion haliaëtus* (L.).

He also adds, "*Hirundo*, an example from Kamtchatka, agrees with Wilson's description of *H. americana* ♂, 7¼ × 4⅜. (Baird's description in 'Pacific R.R. Report,' 1858, is imperfect.) Differs from *H. gutturalis* in having whole underparts, except breast-collar, fine bright chestnut, but lighter than forehead and chin. No white, except on tail-feathers, which are also tinged with chestnut. N.B. *H. gutturalis* is sometimes tinged with light chestnut about the neck and under wing-plumes." This is Pallas's Siberian variety of *Hirundo domestica* (=*H. rustica*, L.), to which he (Zoograph. Rosso-Asiat. i. p. 228) gives no special name. Wilson's name is a synonym of *H. horreorum*, Barton (=*H. erythrogaster*, Bodd.).

Blakiston notes *Cypselus pacificus*, but sends no specimen; so I do not enter it under a number. Last time, he sent *Acanthylis caudacuta* under this name; but this time I think he is right. He says, "Only one example. Length about 7 inches, wing 6⅝. Upper parts dull sooty black, except white rump. Underparts same, with white on chin and at end of its breast-feathers."

127. Caprimulgus jotaka, T. & S.

The wings and head of this species have come.

128. Ceryle rudis.

No specimen sent. "Males and females do not differ materially." This is the first occurrence of this bird so far north. I did not find it in China further north than the Yangtsze.

He asks if I was right in identifying the two Shrikes he sent the last time, the one as *Lanius bucephalus*, the other as *L. superciliosus*. If so, his specimen sent in 1862 was misnamed. I can vouch for mine being rightly determined.

129. Turdus naumanni.

"I have obtained this species for the first time this year. It agrees exactly with my Shanghai specimen." No bird sent. He had his Shanghai specimen to identify it with; so I think we can fairly enter it.

130. Calamodyta insularis, Wallace.

A female of this Moluccan migrant received. Passes north to breed.

131. Arundinax blakistoni, sp. nov. Plate VIII. fig. 1.

Upper parts brownish olive; underparts dusky yellowish, on sides of breast brownish olive; a yellowish olive supercilium; wing olive-brown, margined paler; tail brown, with whitish tips; axillaries pale yellowish, with blackish mottlings; dingier on yellow under tail-coverts. Upper mandible brownish, with yellowish edges; under yellowish, with brownish tip; legs and lores yellowish brown. Length 4·7, wing 2·7, tail 2·1, tarse ·85, first quill ·48, second ·15 shorter than third, narrow, 1·4 shorter than fourth, or longest.

This is like a miniature *A. fasciolatus*, Gray; and I took it at first for Salvadori's *A. doriæ*; but Mr. Sharpe has lately figured the latter in 'The Ibis' (1876, p. 41) from Borneo, showing that Salvadori's species is nothing more than the *Locustella ochotensis*, Midd., = *L. rubescens*, Blyth.

Blakiston adds, "I have two specimens similar to *Calamodyta maacki*; but they differ from one another too much. Unfortunately the specimen I sent you in 1873 was lost; and I must therefore keep these till I get duplicates."

He further states, "I have also one specimen of what I take to be *Locustella subcerthiola*; but the typical specimen that you identified was also lost in the 'Ariel.'" This may at once be recognized from its resemblance to Savi's Warbler, *Lusciniopsis savii*.

132. Phylloscopus xanthodryas, Swinh.?

"I have a specimen of Willow-Wren which is much larger than all my others. I put it down as distinct. It measures $5\frac{4}{8} \times 2\frac{7}{8}$, ♂. General appearance of *P. coronata*, but more

J.G.Keulemans lith.

M.& N. Hanhart imp.

Fig 1. ARUNDINAX BLAKISTONI
Fig 2. SCHŒNICOLUS PYRRHULINUS

yellow on underparts." I conjecture it to be the species indicated. If I am right in my identification, this makes three species of this group from Japan. I have seen *P. borealis*, Blas., in the Leyden Museum, from Nagasaki; but it is possible this may be the same as the last.

Blakiston states that he has two specimens of *Motacilla japonica* from Kamtchatka, and one *Emberiza rustica*.

133. Schœniclus pallasi.

No bird sent.

"I have a male specimen distinct from *S. yessoensis*, $5\frac{3}{4} \times 3$, black on throat separated from black on head by a white line from corner of mouth; nape white."

134. Schœniclus pyrrhulinus, sp. nov. Plate VIII. fig. 2.

The acquisition of the last species was needed to show how this species originated. I mentioned this species in my last paper (Ibis, 1875, p. 451), and will now describe it. It is a form of S. *pallasi* with Bullfinch-like bill, just as the European Black-headed Bunting has a similar form (*S. pyrrhuloides*) in Italy. Blakiston gives no particulars about it. Length 5·5, wing 3·1, tail 4·7, tarsi ·71.

135. Uragus sibiricus.

No specimen sent; but Blakiston refers to the number in my list indicating this bird, writing, "one specimen, $6\frac{1}{4} \times 3\frac{5}{8}$, ♂. Like a large edition of *U. sanguinolentus*. However, it may only be a large race of that species, as the true *U. sibiricus* differs in many respects of colour."

He sends a specimen of *Pica media* from Kamtchatka, and says that he has not as yet found the Magpie at all about Hakodadi.

He sends a veritable *Garrulus glandarius*, L., and writes, "I have a Jay from Yedo, which I take to be *G. lidthi*. I send a specimen of a Jay from amongst my collection, which I imagine I must have got from you. I have marked it [A], and put it in so that I may explain the appearance of the Yedo specimen. The Yedo bird has the back of the same shade of colour, the black dashes on the crown rather larger, and the white there more pure. The tail is quite black. No

material difference on the underparts." There can be no doubt from his description that this is only *Garrulus japonicus**, and the larger bird, whose origin he cannot account for, an ordinary English Jay, put into his collection by Mr. Whitely before he left home for Japan.

He mentions a specimen from Yedo which he identifies with *Turtur janthina*, T. & S. But he describes it as "in colour like *T. humilis* ♀, but much larger. Length about 12, wing 7. Delicate neutral tint on shoulder of wing." It is easy to see that he refers to the well-known Barbary Dove, *Turtur risorius*, which has not yet been recorded from Japan; but as we are on the birds of Northern Japan, we will not give it a number.

He sends a specimen of *Vanellus cristatus*, which is also not from Northern Japan, though probably found there as well.

From Kamtchatka he records *Totanus glareola*, *T. glottis*, *Tringoides hypoleucus*. No specimens sent.

136. Numenius australis.

He sends a male of this species, and gives as measurements of the fresh bird $21\frac{3}{4} \times 11\frac{1}{2}$, bill along culmen $3\frac{5}{8}$. He also gives the measurements of a female, $22\frac{1}{8} \times 11\frac{5}{8}$, bill $3\frac{3}{4}$.

137. Numenius major, T. & S.

He has not sent this; but from the measurements he gives I take it to be this species, "♀, 25 × 12, bill 8."

He sends a specimen of *Strepsilas interpres* (L.) from the neighbourhood of Yedo.

"*Tringa damacensis*, from near Yedo, seems larger than China specimens. Length $10\frac{1}{2}$, wing $5\frac{1}{2}$, bill $1\frac{3}{4}$. Black on breast in a large patch. I have never seen this bird from

* I will here add Bonaparte's description of *Garrulus lidthi* from the 'Consp. Av.' (p. 376):—"Rufo-vinaceus: capite colloque ex totis, alis, rectricibusque, saturate azureis: fronte lorisque nigricantibus: plumis gulæ lanceolatis, barbulis disjunctis, rhachidibus albis; tectricibus alarum nigro-fasciolatis: remigibus rectricibusque apicem versus nigricantibus, apice ipso albo: cauda elongata, æquali. Rostrum longum, altum, valde compressum.

the north." I take this to be the ordinary *C. alpinus*; but it is not easy to make out species of *Tringa* without actual handling of specimens.

138. Ardea cinerea, L.

Immature specimen received.

139. Egretta modesta, G. R. Gray.

An Egret in winter plumage, with yellow bill, like our China bird.

140. Ardetta eurhythma, Swinh.

A female sent.

"I have four specimens only, two females alike, of which I send you one. A male of this species, I think, almost certainly, has a pure cinnamon back. Another male, evidently another species, general colour of the large common Bittern, bill not so stout as other species, and legs feathered to knee-joint." This may be *Gorsachius melanolophus* (Raffles).

141. Gallinula chloropus, L.

"Compared with English specimens" (*Blakiston*).

142. Porzana exquisita, Swinh. Ibis, 1875, p. 135, pl. iii.*

Blakiston sends a female, and notes that "the male is just the same."

He notes that he has another species, of which he says, "Another species, long toes, size about the same, bill larger. This may be the *Pigmy Crake*."

From Kamtchatka he has "*Anser segetum, Spatula clypeata, Anas crecca, A. falcata, A. penelope, Clangula histrionica*, and *Somateria dispar*; also *Phaleris cristatella* (Pall.), *Mormon cirrhatum* (Pall.), *Thalassidroma furcata* (Gm.), and *Sterna*?" The last he sends a bit of; but it is such a fragment I cannot make it out.

He also notes from Kamtchatka "*Larus ridibundus* and *L. niveus*."

* [First described in 1873. *Cf.* Swinh. Ann. & Mag. N. H. ser. 4, xii. p. 376.—Ed.]

XXXII.—*Notes on the late Colonel Tickell's manuscript Work entitled "Illustrations of Indian Ornithology."* By Arthur, Viscount Walden.

(Plates IX., X.)

Among the books of the Zoological Society's library is to be found the manuscript work alluded to. It was presented to the Society by the late Colonel Tickell in 1874*, failing health and obliterated sight having prevented him from carrying out the cherished object of his later years, its publication. On Colonel Tickell's career as an ornithologist it is not my intention now to enter. An obituary by an old friend was published last year†. Suffice it to say that he belonged to that band of zoologists who, more than forty years ago, commenced in India the then much neglected study of natural history, and who worshipped as simple and single-minded devotees in the temple of nature, and not for their own self-glorification. Beyond a couple or so of papers‡; I am not aware that he published in any scientific periodical any observations on birds. His collections were generally sent to Blyth at Calcutta, some of the examples with MS. titles attached, under which that able zoologist usually made them known in the pages of the 'Proceedings' of the Asiatic Society of Bengal§. Being gifted with a ready pencil and a facile brush, Colonel Tickell, in most instances, made coloured drawings of the animals he secured; and in the course of time he had accumulated many drawings, together with copious notes relating to the species he had captured or observed. Some of his first efforts were lost, including several sketches without which, it is to be feared, one or two of his earlier species must remain unidentified. A part of the materials he brought to England were thrown together and form the work

* P. Z. S. 1874, p. 667.

† 'Field' newspaper, June 1875.

‡ J. A. S. B. 1833, pp. 569–583, 1859, pp. 448–456; Ibis, 1864, pp. 173–182. His later articles in the 'Field,' subscribed with the pseudonym of "Ornithognomon," are probably well known to the readers of the 'Field.'

§ Not always. *Conf.* Tickell, Ibis 1863, p. 111.

to which I now propose to call attention. The original intention seems to have been to make his proposed work a complete history of Indian ornithology; but illness and other circumstances prevented this laudable object from being attained; consequently the *Gallinaceæ*, the *Grallæ*, the *Anseres*, the *Insessores*, the *Sylviidæ*, the *Paridæ* and kindred genera, and the *Conirostres* are wholly wanting*.

The work consists of seven small folio volumes, the title-page of each being printed, while the whole of the letter-press is most neatly written by hand. The characters of the orders, families, and genera Colonel Tickell adopts are given in detail; and each genus is illustrated by accurately drawn outlines showing, in most instances, the bill, feet, and wing-structure. These outlines are drawn with the very greatest care, and in each case to scale, and not by eye alone. Every species personally known to the author is figured; and many of the plates are works of art. It may be affirmed that nearly all are good, and that many are almost perfection. While the ornithological characters of nearly every species are accurately rendered, the attitude of each bird discloses how well Colonel Tickell observed and how closely he studied nature. The attractiveness of the plates is moreover much enhanced by the backgrounds in which the figures are set. A knowledge of the haunts and habits of each species can almost be acquired by studying the accessories of each figure. Every plate is a highly finished landscape, true to nature, often enlivened by scenes from every-day life in India, either in the plains or in the jungle, in town or in cantonments. After the monotonous uniformity of the conventional back-

* While this paper was passing through the press I was favoured by General Boyd and the Rev. E. A. Tickell with an opportunity of examining all the original drawings and notes in their possession from which Colonel Tickell elaborated the more complete work under notice. They are bound up in two folio and three quarto volumes, and comprise notices and coloured drawings of many more species than are to be found in the Zoological Society's copy, many of them relating to birds belonging to the orders and families there omitted. I have not had time to thoroughly examine these volumes; but a cursory inspection has satisfied me that an account of their contents may be of use and interest to ornithologists.

grounds of illustrated English ornithological works, it is a relief and a pleasure to find every bird surrounded by real leaves, pecking at real flowers, or climbing real trees, or with real Indian buildings and Indian animals in the distance. The drawing of *Milvus govinda* sitting on the cornice of a town house, that of *Hirundo javanica* clinging to its nest under the eaves of an up-country bungalow, or that of *Hirundo erythropygia* skimming over the marsh where a sportsman has just dropped a Snipe, startling the black buffaloes in the foreground, may be cited, at random, as instances of the artist's art. But as if his beautiful drawings were not a sufficient adornment to the work, Colonel Tickell has appended to most of the pages descriptive of the genera small oval vignettes, done in Indian ink, illustrating the customs and ways of the people, the incidents of an Indian officer's life in quarters, in camp, and on the march, out shooting or out visiting, bits of nature in the jungle, a tiger creeping up to children by the river-side, a wild elephant wading down a shallow stream by moon-light, scene after scene recalling to the Anglo-Indian at home memories of his Indian sojourn. In some, tragic subjects are vividly depicted:—a victim of jealousy, the body of a woman lying on the ground hacked with many tulwar-cuts, an infant by the dead mother's side, the pompous Kutwal, surrounded by officials, making his investigations; a Meriah, a human sacrifice, the victim tied to a post, head hanging down, men and women tearing and cutting the flesh off the still living body. In other scenes a keen sense of humour is displayed:—an officer just arrived at a sporting rendezvous in the jungle, some fifteen miles away, and the shikarree addressing him, "Your Lordship! cherisher of the poor! governor of the country! you are my father! you are God himself! The powder is forgotten"*.

Some ninety-four of these clever sketches are scattered through five of the seven volumes; two hundred and sixty plates of birds, and seven plates containing figures of the

* Khodawund. Ghurreeb rurwur. Moolook Malik. Āp ma bâp hŷe. Āp Khoda hŷe. Baroot bhoolgya!

eggs of forty-two species, complete the illustrations. The notices of species, of which the letterpress mostly consists, may be divided under two heads—descriptions and accounts of those species known to Colonel Tickell, and descriptions of species unknown to him and copied from other authors. On these last I do not propose to observe; but I will endeavour to give a general idea of those parts of the work which are original. Want of space prevents my doing justice to all the plates, or to the many interesting accounts of habits which render the work so valuable. Indeed, if I only succeed in drawing the attention of ornithologists to the work itself, my principal object will have been attained. It is a sad reflection that ill health prevented so much patient industry, so much unostentatious labour, so much artistic skill, so much enthusiasm in the good cause, so great a fidelity to nature, from being rewarded with that universal approbation publication would undoubtedly have secured.

The first two volumes embrace respectively the RAPTORES DIURNI and the RAPTORES NOCTURNI. On forty-one plates, contained in volume i., are depicted the better-known Indian and Burman species of Accipitres; but, with the exception of *Limnaëtus kieneri* and *Falco peregrinator*, none of the rarer forms are delineated. Six species of Vultures are admirably figured. *Otogyps calvus* is stated to occur as commonly in Arracan and Burma as in Central India and the Madras Presidency, *Gyps indicus* to be common in Burma, and *Gyps bengalensis* spread all over that country.

Aquila imperialis (*heliaca*), ♀ ad. and young in its third year, both from Bengal, constitute the first two plates belonging to the Eagles. An adult male of *Aquila nævia*, Gm. apud Jerdon (B. Ind. no. 28), from Daulan, Tenasserim, is figured; and the species is stated to be not uncommon in suitable localities in that province. The next plate is entitled *Aquila fulvescens?* and a good plate of the Hmorungee (*Nisaëtus fasciatus*) feeding on a Black Partridge is followed by one containing two figures of the *Limnaëtus niveus* (T.), apud Jerd. (B. Ind. no. 34), in plumage which Colonel Tickell characterizes as that of the third or fourth moult. The one is

represented pure white underneath, with (including the terminal) five caudal bands; the other with the under-surface plumage marked with brown drops, the thigh-coverts with the usual transverse bars, and the rectrices with only four bands.

Falco lathami (Tickell*, J. A. S. B. 1833, p. 569) is incidentally alluded to in the article on *Limnaëtus cristatellus* (T.). This is the passage:—"I shot a Hawk-Eagle in 1833–34 in the jungles of Seheria, Borabhoom (Bengal), which Jerdon considers may possibly be referred to this species; but of this I am very doubtful, as it was noted by me at the time as only 18 inches in length. It had a fine long occipital crest, black, with white tips. Head, nape, and wing-coverts clouded with ashy and rusty. Back clouded with brown. Lower parts white, with a streak of black down the centre of the throat, and with rusty bars on the breast and belly. A drawing made of it at the time was lost by the sinking of my boat in the Ganges; and I have never met with the bird again, although I often subsequently traversed and explored those vast forests."

Jerdon has suggested that *F. lathami*, Tickell, might have been founded on a young example of *L. kieneri*, or perhaps on *Astur trivirgatus*†. The description may have been taken

* It is not to be concluded with any certainty, from the way Colonel Tickell introduces this name (*l. c.*), that he was bestowing an original title of his own on an undescribed species. The internal evidence is the other way. The species is the first of the list, and is entered thus:—"1. Falco lathami. *Colvy Falcon?* Latham;" and then follows the description. The *Colvy* (*Cohy*) *Falcon* of Latham is unquestionably *B. lophotes*; and on Latham's plate (G. H. i. t. 10) Mr. G. R. Gray had some four years previously founded his *F. lathami* (Griff. ed. of Cuv. An. King. *Aves*, i. p. 30). It is only at the third species in the list that Colonel Tickell begins to bestow titles of his own; and to the name of this species, *Falco herbæcola*, the following footnote is attached:—"The names of such birds as have never come under my notice before, and are necessarily of my own coining, I have distinguished by the addition of a T." All through the paper the letter T is added to a new title; but it is wanting after the title *F. lathami*.

† *L. kieneri* ad. was obtained at Oorkhia, in Singbhoom, by Colonel Tickell; with *Astur trivirgatus* he was well acquainted.

from a young male of *L. albiniger*, a species, in adult plumage, by the way, which Colonel Tickell describes as a variety of *L. cristatellus*. Mr. Sharpe (Cat. Accipitres, p. 352) identifies *F. lathami*, and without a doubt, with *Baza lophotes*. There is something to be said in favour of this opinion, but not enough to establish it. In favour, there is the fact that Colonel Tickell again refers to *F. lathami* in his article on *Baza lophotes*, a species, however, of which he was ignorant in the adult plumage. As the young he describes, with a note of interrogation, the bird he had obtained in 1833 in Borabhoom, adding to the description the words "Tickell's *Falco lathami*, 1833." And he goes on to observe, "The above description is taken entirely from Jerdon; for the adult I have never seen, and the (by me supposed) young I lost my notes and drawing of; but a slight description was sent by me, in a 'List of Birds collected in the Jungle Mahals,' to the Journal of the Asiatic Society of Bengal in 1833, of a bird shot by me in Seheria, Manbhoom (West Bengal), which, to the best of my recollection, closely resembles *Baza lophotes* in an immature plumage, and most certainly was not a *Limnaëtus*, nor an *Astur* as suggested by Jerdon." But Colonel Tickell had no previous or subsequent certain knowledge of *Baza lophotes* in any phase of plumage; and he therefore could not possibly judge whether the bird he referred to *F. lathami* was the young of *B. lophotes* or not. In opposition to Mr. Sharpe's identification, we have these two inconvenient facts: first, Tickell's bird measured 18 inches in length, and in expanse 40 inches; and, secondly, the legs are described as being "clothed with short white feathers to the feet, which are of a horny colour." The first character tells, and the last would tell conclusively, against Colonel Tickell's bird having belonged to *B. lophotes*, were it not for the inconsistent sentence which follows—"exposed part of the tarsi reticulated." No description of *B. lophotes* in first plumage appears to have been published; nor have I ever met with examples.

A mature female of *L. kieneri*, from Darjeeling, is well figured; and the title *albogularis*, Tickell (J. A. S. B. 1842,

p. 456), is admitted to be synonymous. *Polioaëtus icthyaëtus*, adult female and young bird, is well given, from Tenasserim examples, and is stated to be the commonest Eagle in Burma and Tenasserim; and two beautiful plates represent *Haliaëtus fulviventer*, from Malda, and *H. leucogaster*, from Akyab. Among the drawings of the Hawks, *A. trivirgatus* ♀ juv. ex Singbhoom, *M. badius* ♀ ad. ex Tenasserim (*poliopsis*, Hume), *A. nisus* ♀ ad. from Darjeeling, and *A. virgatus*, young of second year, from Hazaribagh, find a place. *Falco nisosimilis*, Tickell (J. A. S. B. 1833, p. 571), is not alluded to, beyond being quoted as a synonym of *A. nisus*, according to Jerdon.

Eight different species of Falcons form the subjects of as many plates, the most interesting being, perhaps, *F. peregrinator*, of which a mature female and a young example are figured on the same plate. Colonel Tickell states that it is a commoner species in Burma than in India, and that he had "frequently observed it on the sea-side at Amherst, where two or three pairs of these birds breed every cold season, building on the high Gurjan oil-trees along the shore." The plate of the common Indian Kite, *M. govinda*, may be cited as one of the most charming and characteristic in the volume. *Butastur teesa*, from a Tenasserim female, is figured on the same plate with a Bengal male; and the species is said to be more common in Burma than in Bengal.

Falco herbæcola, Tickell* (J. A. S. B. 1833, p. 570), is identified with *Circus swainsoni* ♀, a position assigned to it with doubt by Blyth (Cat. Calc. Mus. no. 90), and with certainty by Jerdon (B. Ind. no. 51).

The second volume contains twenty-one plates, on which nineteen species of Owls are depicted. A figure of a nestling example of *Syrnium indranee*, obtained in Tenasserim, leads off. The ochraceous colour of the disk is plainly indicated. Following a fair plate of *Syrnium seloputo*, from Tenasserim, is an admirable drawing of *S. nivicolum*, from Darjeeling, and then good figures of *Bubo bengalensis* and *coromandus*, from Bengal. The next represents the type of Tickell's

* I cannot find any notice of this title in the British-Museum Catalogue, *Accipitres* (1874).

J.G.Keulemans lith.

M&N Hanhart imp.

PICUS ATRATUS

genus *Ptiloskelos* and species *P. amherstii* (J. A. S. B. 1859, p. 448), which Mr. Blyth, at the time, correctly identified with *Huhua orientalis* juv. (*t. c.* p. 411, note). *Ketupa ceylonensis*, with the title of *Strix dumeticola*, Tickell (J. A. S. B. 1833), admitted as a synonym, and *K. javanensis*, are both figured, the latter from a Tenasserim adult male. A plate is devoted to *Scops pennatus* under the title of *Ephialtes scops*, and another to the young bird; and *Scops sunia*, from Tirhoot, is described and figured as a distinct species. *Athene radiata**, Tickell, is stated to be "met with throughout the forest portion and lower hills of Arakan, Burma, and Tenasserim;" and of *Glaucidium brodei* Colonel Tickell remarks that while Darjeeling and Tenasserim birds do not differ in plumage, "nevertheless it is remarkable that the notes of the bird in these two countries differ considerably."

Volume iii. treats on the Zygodactyli, and contains forty-six plates. Of these, five belong to the Parrots, twenty-one to the Woodpeckers, including *Sasia*, *Vivia*, and *Yunx*, five to the Barbets, and fifteen to the Cuckoos.

Palæornis javanicus (*melanorhynchus*); figured from a cage-bird, is represented with a red†, instead of yellow, wing-patch, the part being described of an Indian-yellow colour. The male and female are stated to have the upper mandible red, the under black, but the young to have the bill black, "which colour the female retains *till* full maturity."

Picus atratus, Blyth, ♂ ♀ (Plate IX.), is figured; and the male is for the first time described. But both description and figure of the male are taken from an immature example, the scarlet on the head only reaching the vertex, whereas in the adult this colour covers the crown and occiput as well. The fulvous grey colouring of the frontal plumes of the female is somewhat exaggerated in hue and extent. *P. atratus* is not unlike *P. macæi*, but is distinguished by having the uropygium

* Tickell's specific denomination of *radiata* (J. A. S. B. 1833, p. 572) for this Owl was, by misprint, converted into that of *undulata* by Blyth (J. A. S. B. 1842, p. 457).

† It is so described by Jerdon (B. Ind. i. no. 152).

uniform black, and not marked with white, and by the bold dark brown or black mesial stripes on the pectoral feathers.

Picus majoroides is represented with a large white patch on the middle of the back, which is not quite true to nature, the nape, back, uropygium, and upper tail-coverts in this species being uniform black.

In *Picus mahrattensis* (*auro-cristatus*, Tickell, J. A. S. B. 1833, p. 579, ♀) neither the crimson occiput of the male nor the yellow occiput of the female is represented in the plate. The fact that *Hemicercus canente* ♀ has the forehead creamy buff, and not the male, is confirmed by the figure given of "an undoubted female" by Colonel Tickell.

The little-known *Meiglyptes jugularis* is described and figured from a Tenasserim example of a so-called male; but the red cheek-stripe is omitted.

Having figured and described individuals of the Tenasserim race of *Tiga shorii* (*T. intermedia*, Blyth), Colonel Tickell gives a plate and description of a distinct species of the same genus, obtained in the forests on the Teesta river, Sikim. Under the title of *Chrysonotus biddulphi* it is thus described:—"Iris labelled 'hazel.' Bill and legs blackish neutral. Crown, crest, and entire nape, as well as lower back, silky scarlet. Forehead, ramus, and throat, and all foreneck pale brown. Rest of face and neck white. A black line from hinder rim of eye down across the auriculars to the scarlet of nape, which it borders for a short space. Another line from rictus down latero-frontal neck. Another along lower edge of ramus, joining the rictal stripe at end of ramus. And another branching from the last midway on ramus and joining the rictal-stripe lower down neck. All breast and lower parts as in *shorii*, but with browner edges to the feathers; upper parts the same, but a broad black band runs across top of back and separates the scarlet and white of nape and neck from the gold-yellow of upper parts. Wing $6\frac{1}{16}$. Tail $4\frac{3}{4}$ (beyond wing $1\frac{3}{4}$). Bill $1\frac{1}{2}$. Tarsus 1. Inn. toe $\frac{15}{16}$." This form does not appear to have been since recognized.

Cyanops franklini, from Mooleyit range, Tenasserim, is described and figured with the superciliary stripe unspotted black, the typical form.

Two birds are figured on the next plate, one being named *Megalaima indica* (Lath.), and called by Colonel Tickell the Village Barbet, the other *M. philippensis*, Temm., and which he terms the Jungle Barbet. Both figures represent *X. hæmacephala*; and as Colonel Tickell admits that the Village and the Jungle Barbets "are precisely similar in shape and colour," the object of giving a duplicate figure of the same bird is not obvious. They are, however, stated to differ in habits and voice; and the dimensions of the Jungle Barbet, as given, are a trifle greater. This bird, Colonel Tickell states, is only found in deep lofty forests in Tenasserim; and he syllabicizes the notes of the two birds.

Phœnicophaës curvirostris (*erythrognathus*) is described and figured from individuals met with on the Mooleyit range. In plumage the sexes are stated to be alike; but while the iris of the male is noted as cobalt-blue, that of the female is stated to be orange. Colonel Tickell remarks that the species feeds on insects, and not on fruits.

An example of a species of *Centropus* obtained at Hazaribagh, Bengal, is figured and described with the scapular interspace of the back coloured like the wings. It probably falls under *C. intermedius*, Hume. A Darjeeling adult example, and a young bird from Chota Nagpore, of *Cuculus micropterus* are represented under the title of *C. striatus*. The plate of *Cuculus sparverioides* contains a figure of a female whose plumage is in the hepatic stage, the tail excepted, which is that of the fully adult bird.

Together with the adult, *Polyphasia rufiventris*, in hepatic barred plumage, is depicted, both from Burman examples. The latter is described as a separate species under the title of *C. castaneus*. Colonel Tickell treats *P. rufiventris* and *P. passerinus* as being merely varieties of one species, which he identifies with *C. merulinus*, Scop. The first he terms the Indo-Chinese variety, the other the Indian variety.

The plumage, which in the Emerald Cuckoo (*C. maculatus*) of India and Burma assumes the brilliant green colouring of the adult, is known to be more or less rufous in the young bird, the rufous colouring passing into coppery green

before becoming emerald-green. Similar transitions take place in the colouring of the plumage of *C. xanthorhynchus*. The barred and rufous stage is succeeded by one in which the rufous colour is replaced by coppery green, which then passes into a darker and purer green, then turns into violet or blue amethystine before finally assuming the amethystine hue of the fully adult plumage. An example of *C. xanthorhynchus*, obtained at Rangoon, passing over from the rufous and coppery green stage to the violet and amethystine adult dress, is well figured by Colonel Tickell. He, however, considers that *C. maculatus* is in what he terms the "first adult" dress, and that *C. xanthorhynchus* represents the "second adult, or old bird" of the same species—a conclusion which is contrary to the known facts. *C. xanthorhynchus*, a smaller bird than *C. maculatus*, is a Malayan species which ranges as far north as Hill Tipperah, and occurs in the Andamans. *C. maculatus* is an Indian species, and found not uncommonly in Pegu and Siam (*C. schomburgki*). In fully adult plumage it has the chin and throat, but not the breast, unbarred emerald-green, like the upper plumage.

To the Tenuirostres, as understood by Colonel Tickell, are devoted volume iv., with thirty-two plates. By him this tribe is made to include the *Sittidæ*, *Nectariniidæ*, and genera such as *Zosterops*, *Iora*, *Phyllornis*, *Yuhina*, *Myzornis*, *Herpornis* and *Oriolus*, *Irena* and *Upupa*.

One of the most finished drawings in the work is that of *Certhia discolor*, taken from a Darjeeling example. That of *Sitta formosa* is not so happy, while the characters whereby *Sitta cinnamomeoventris* is distinguished from *S. castaneiventris* are successfully portrayed on the plate representing the two species; and, together with that of *S. himalayensis*, the tails are separately sketched in Indian-ink. The lovely *Dendrophila frontalis* (Horsf.) is worthily depicted from two Tenasserim examples. Mr. Sharpe has (Str. Feath. 1875, p. 436) recently stated that the Javan bird differed specifically from the continental *S. corallina*, Hodgs. The characters relied on are "the under surface being more richly coloured, and the throat being lilac-brown, like the breast,"

while "the Himalayan bird is larger, and is always to be distinguished by its white throat." The Javan bird seems to be generally somewhat smaller; but in all other respects I am unable to affirm that the characters stated are constant: an adult Javan example in my collection has the throat as white as continental individuals; and the under surface is not more richly coloured.

A well-executed figure of *Arachnothera magna*, from a Darjeeling example, introduces the *Nectariniidæ*. Colonel Tickell mentions having, on two occasions, obtained this species in Tenasserim. Captain Beavan obtained it at Moulmein (P. Z. S. 1866, p. 540). Mr. Blyth enumerates it (B. Burma, No. 485) as a Tenasserim and Arracan species; and specimens collected by Mr. Davison at Kyouknyat and near Yé, are identified with it by Mr. Hume (Str. F. ii. p. 473). We may therefore assume that the Himalayan bird, and not the nearly allied *A. aurata* of Pegu, inhabits Tenasserim.

The identification of *Nectarinia seheriæ*, Tickell (J. A. S. B. 1833, p. 577), has, since its description, remained a matter of uncertainty; and in great hopes of finding materials sufficiently conclusive to settle the disputed point, I turned to Colonel Tickell's later observations in this work. *Æthopyga miles* (Hodgson) is the title he adopts for the first species of the genus described; and, as a synonym, among others, he adds *N. seheriæ*, Tickell. The plate, on which the two sexes are figured, is also entitled *Æ. miles*, followed by the locality where the subject of the plate was procured, as is generally done throughout the work. This locality is stated thus—"Seheria, Borabhoom, Bengal, 1833." Here, on the face of it, we have a figure of the type; but on turning to the letterpress this contradictory passage occurs, "The individual here figured was procured in the Tongu-ngoo district, Burma." In his original account of the discovery of *N. seheriæ* (*l. c.*), and in the letterpress in this work, where that account is given in much the same words, no mention is made of a female having been obtained; and yet a female is figured as being from Seheria. Nor in the letterpress is it mentioned where the female figured on the plate, and described in the diagnosis of *Æ.*

miles, came from. Fortunately, an examination of the figure of the male, together with Colonel Tickell's later description, leaves no doubt that the bird he had before him was the Tenasserim and Tonghoo form of *Æthopyga miles*, recently named by Mr. Hume ("if really new") *Æthopyga cara* (Str. F. ii. p. 473, note). It is the *Æ. miles* (Hodgs.), *apud* Walden (P. Z. S. 1866, p. 541), ex Moulmein and the Salween river, obtained by Captain Beavan, and also the *Æ. miles*, *apud* Blyth (B. Burma, no. 491). In 'The Ibis' (1870, p. 32) I drew attention to some of the characters which seemed to distinguish the Moulmein form of *Æ. miles*; but, rather than risk adding a useless synonym, I refrained from naming it. Lately Captain Shelley kindly informed me that he was of opinion that my Burman example belonged to a species distinct from *Æ. miles*; and a careful comparison I have since made convinces me that Captain Shelley is justified in thinking that the Burman form should be specifically separated. It is a species intermediate between *Æ. miles* and *Æ. eupogon*, as will be seen by the following key :—

Æ. miles. Cap, rectrices, and upper tail-coverts dark metallic green; violet moustachial stripe simple; base of lower throat-feathers black.

Æ. cara. Cap and upper tail-coverts green; rectrices dark steel-blue, tinted with violet; base of lower throat-feathers white; violet moustachial stripe simple.

Æ. eupogon. Cap, upper tail-coverts, and rectrices metallic violet; base of lower throat-feathers white; violet moustachial stripe internally margined with black.

N. seheriæ must still therefore be looked for in Borabhoom; but as Colonel Tickell identifies it with *Æ. miles*, and as his original description of the Borabhoom bird agrees to the letter with *Æ. miles*, I have little doubt that *N. seheriæ* = *Æ. miles*, in which case Colonel Tickell's title will have precedence.

The remaining Himalayan species of *Æthopygæ* are all beautifully figured. But *Anthothreptus malaccensis*, ♂ ♀, "locality not known," is figured under the erroneous title of *N. zeylonica*, and *A. flammaxillaris* ♂, ex Rangoon, under the incorrect name of *N. jugularis*. *Nectarophila hasseltii*,

♂ ♀, ex Akyab, and *Chalcoparia phœnicotis*, ♂ ex Akyab, ♀ ex Tongungoo, adorn the last two plates, representing the true Sun-birds.

The next two plates contain figures of (according to Colonel Tickell) five distinct species of the Dicæinæ. Figure 1, on the first plate, is entitled *Dicæum minimum*, Tickell, and stated to have been drawn from a male example obtained at Yé. As described, the bird may be *D. minimum*; but as figured, it is certainly *D. cruentatum* ♀ vel ♂ juv. The upper tail-coverts are coloured red in the plate; and so is the base of the bill. The figure does not represent Tickell's type obtained in the Saul jungles of Borabhoom and Dhalbhoom, but a totally distinct bird.

The second figure is of *D. cruentatum* ♂ adult; and the third (which completes the plate) is entitled "*Dicæum chrysorhœum*, Temm., ♂, Yé, Tenasserim." As described, this is *D. trigonostigma* ♀ vel ♂ juv., and agrees well with Moulmein and Malaccan examples. As depicted, the species is difficult to identify, the yellowish green back and striated throat, breast, and flanks recalling *D. chrysorrhœum*. No description of *D. trigonostigma* ♀ appears to have been published; and I therefore give one, and also a figure of it (Plate IX. fig. 2). Chin, throat, upper breast, and cheeks pale ashy grey, palest on the chin and throat, which sometimes are tinged with yellow. Remainder of breast, abdomen, flanks, and under tail-coverts more or less yellow, inclining on the mesial line to pale orange. Plumage of upper surface ashy, in some tinged with olive-green throughout, in others almost pure ashy on the head, nape, and wing-coverts. Uropygium tinged with yellow, and upper tail-coverts almost orange-ochre. Quills dark brown, edged with ashy olive-green. Rectrices dark brown. Axillaries and under wing-coverts silky white. Inner edges of the quills, for a part of their length, white; outer edges grey or silvery white. *D. trigonostigma* ♀ vel ♂ juv. is exceedingly like *D. virescens*, Hume, ♂ ♀, ex Andamans (Str. F. 1873, p. 482); and it may be that the specimens obtained at Pahpoon and neighbourhood by Mr. Davison, and identified

by Mr. Hume with *D. virescens* (Str. F. 1874, p. 473), belong to *D. trigonostigma* ♀.

The second plate of the Dicæinæ contains two figures:—No. 1, entitled *Piprisoma agile*, ex Borabhoom; No. 2, *Prionochilus gordoni*, Tickell, ex Mergui. This last is *Dicæum trigonostigma** ♂.

It is difficult to assume that Colonel Tickell would figure a different species under a title he was the first to give to a bird he first discovered; and yet it is impossible to recognize his figure of *Piprisoma agile* as belonging to that species. His delineations are generally not only so beautiful, but so accurate, that we cannot permit ourselves to doubt that his figure of *P. agile* is a good representation of the bird it was drawn from†. The bill is that of a true *Dicæum*; and the coloring and markings more nearly resemble those of *D. chrysorhœum* than any other species. It is certainly not *Piprisoma agile*. Can it be the *Prionochilus modestus*, Hume (Str. F. 1875, p. 298), possibly founded on female or immature males of some known species of the genus? In the letterpress Colonel Tickell correctly describes *P. agile*; but the bird figured has the upper plumage yellowish olive-green, without a trace of ashy, the upper tail-coverts more yellow than olive, and the whole under surface albescent, with longitudinal streaks of olive-brown.

Zosterops siamensis, Blyth (Ibis, 1867, p. 34), is well figured and described by Colonel Tickell, from the Mooleyit range, under the title of, and confounded with, *Z. palpebrosa*, T. As I cannot find that Blyth ever described this species in preciser terms than those given in the short passage where he bestowed that title (*l. c.*), I append a short description and give a figure of the bird (Plate IX. fig. 1). Above yellow olive-green, the yellow tint being prominent and most developed on the uropygium and upper tail-coverts, forehead, and space before the eye; underneath, axillaries, and under wing-coverts bright yellow; quills and rectrices pale brown, edged more or less with the colour of the back. Lores

* Colonel Tickell was not acquainted with the genus *Prionochilus*.

† It has been already shown that the subjects of the plates do not always belong to the subjects of the letterpress, *e. g. D. minimum*.

J.G.Keulemans lith. M&N Hanhart imp.

1. ZOSTEROPS SIAMENSIS.
2. DICÆUM TRIGONOSTIGMA, ♀.

black, which colour extends to below the eye. Wing 1·95. *Z. austeni*, is an allied form of greater dimensions, above olive-green, without a yellow tint, and with only the chin, throat, and under tail-coverts clear yellow.

Colonel Tickell's observations on *Iora zeylanica* and *I. typhia*, which species are both figured on the succeeding plate, do not throw any light on the mystery which envelops their mutations of plumage. He seems to have simply recognized them as constituting two distinct species. *I. zeylanica* ♂, from Moulmein, is represented with the head and nape changing to black, and the scapulars unmargined black. *I. typhia* ♂, from Hazaribagh, is in typical plumage. *Iora lafresnayi* ♀, from a specimen shot by Colonel Tickell at Aseen, near Yé, is fairly depicted; and he states that it is a rarer bird than the two other species.

To the Leaf-birds (*Phyllornis*) four plates are assigned. On the first *P. jerdoni* ♂, ex Moulmein, and ♀, ex Pyntee, Bengal, are stated to be figured. The occurrence of *P. jerdoni* in Tenasserim is extremely doubtful, although the figure agrees best with that species. As described, both birds belong to *P. chlorocephalus*. The example of *P. javensis*, which Colonel Tickell discovered on the Mooleyit range in 1855 (J. A. S. B. xxiv. p. 277), is figured; its Tenasserim habitat has been since confirmed by Mr. Davison, who found it at Yé.

The plates and accounts given of the species belonging to the genera *Yuhina*, *Oriolus*, *Irena*, and *Upupa*, with which the volume closes, offer no matter for remark beyond this, that the figure of *Psarolophus trailli*, ex Darjeeling, applies better to *P. ardens*.

The next two volumes, v. and vi., contain the Dentirostres, vol. v. being restricted to the Laniidæ and the Muscicapidæ, with thirty-eight plates.

The Burman *Volvocivora avensis*, Blyth, is figured from Tenasserim examples under the title of *V. fimbriata* (T.).

The particoloured middle pair of rectrices found in certain examples of *Pericrocotus speciosus*, more especially among those from Assam and Burma, have been regarded by some as constituting a good specific character, sufficient to dif-

ferentiate individuals possessing them specifically from the type. For such examples the title of *P. elegans* (McClell.), founded on an Assam bird, has been adopted by Mr. Hume and others. Burman and Assam birds, however, occur with the middle pair typically coloured (that is, entirely black), while in Darjeeling birds both varieties are to be met with. Colonel Tickell figures and describes an example from Singbhoom, Bengal, with the outer webs of the middle pair of rectrices red, as in so-called *P. elegans*. *P. speciosus* being a widely spread and dominant species, exhibits that tendency to vary usual among species occupying wide areas.

The female of *Pericrocotus roseus* is correctly, and for the first time, figured, but inaccurately described as only differing from *P. solaris* ♀ by having the head no darker than the back. In *P. solaris* ♀ the ashy upper surface is dark leaden, as in the male, the under plumage being bright pure yellow, and not pallid yellow as in *P. roseus* ♀; nor is the throat greyish white. The back in *P. solaris* ♀ is strongly coloured with olive-green; in *P. roseus* ♀ the green shade is much less marked. The bird depicted by Mr. Gould as *P. solaris* ♀ (B. As. pt. i.), is clearly *P. brevirostris* ♀.

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."

Lanius hypoleucus, Blyth (*collurioides*, Less.), from Tenasserim, is figured; and so also, among the Dicruridæ, is *Dicrurus balicassius*, apud Tickell (*annectens*, Hodgs.), and *Chibia hottentata* (*Criniger splendens*, Tickell). Examples of *Hemipus picatus* ♂ ♀, from Yé, Tenasserim, are figured; and this species seems to be the only one found in Burma, unless the Mergui bird, included by Blyth (Cat. B. Burma, No. 407), was correctly identified as being *H. obscurus*.

Among the Flycatchers Darjeeling examples of *Butalis*

ferrugineus, adult and young, *Muscicapulæ superciliaris, strophiata*, and *sapphira*, adult and young, and a Tenasserim example of *Erythrosterna maculata* are well figured; while the plate of *Eumyias melanops*, taken from Akyab individuals, appears to be referable to *Cyornis unicolor*. The young, in mottled plumage, and the adult male and female of *Cyornis rubeculoides* are represented on one plate, and figured from Tenasserim examples. All three species of *Niltava* are well delineated; and *N. macgregoriæ* ♂, in the young plumage, is introduced.

Volume vi. contains Part 2 of the Dentirostres, and is confined to the *Merulidæ*, which family is made to comprise the Wrens, Pittas, Thrushes, and some of the Timeliine genera. It contains thirty plates, with figures of thirty-six species. *Pnoëpyga squamata* and *P. caudata* are prettily figured on one plate; the first species with the throat and breast rufous. In the letterpress no fresh light is thrown on the question of the perplexing changes of colour found in this species. *Rimator malacoptilus* is depicted running with long strides along the ground, and *Zoothera marginata* extracting worms from a river-bank, as observed by Colonel Tickell in Tenasserim. *Turdus ruficollis* (two plates), *T. atrigularis*, *T. rufulus*, *T. mollissimus*, *T. dauma*, and *T. albicinctus* are well figured.

The first plate of the *Timeliinæ* represents, under the title of *Turdinus macrodactylus*, the type of *Turdinus crispifrons*, Blyth (J. A. S. B. xxiv. p. 269). It was shot near Moulmein. Colonel Tickell considers it to be identical with the Malaccan form. The young bird is figured with the sides of the head white. *Trichastoma abboti*, from near Moulmein, is figured and described as distinct, with the title of *Turdinus insidiosus*, and, on the same plate, a Tenasserian example of *Stachyris nigriceps*.

The next plate represents two little-known species—*Turdinus guttatus*, Tickell (J. A. S. B. 1859, p. 450), and *Turdinus brevicaudatus*, Blyth—both discovered by Colonel Tickell on the Mooleyit range in Tenasserim. Examples of *T. guttatus* I have never seen; but, judging by the plate, it must be nearly allied to, perhaps a representative form of, the Malaccan *Ti-*

melia leucotis, Strickl. The principal differences between the two species appear to be:—first, the throat being white in *T. guttatus*, while it is black in *T. leucotis*; and, secondly, the breast being ash-coloured in the Malaccan bird, and rufous (orange-rusty), like the abdomen, in *T. guttatus*. Colonel Tickell's species was described and figured from a female; but he describes the male and female as being alike in plumage; yet, although he shot what he presumed to be the male, he did not succeed in finding it. The form of the bill in the genus *Turdinus* is so dissimilar to that of *Timelia leucotis* that is difficult to assume that Blyth would refer a species like *Timelia leucotis* to his genus *Turdinus*. Still, in Colonel Tickell's plate, the bill resembles that of a *Timelia* rather than that of a *Turdinus*; nor is the plumage that of a *Turdinus*. *Turdinus brevicauda* (so written by Colonel Tickell) is too highly coloured; and the spots on the tips of the tertiaries and greater wing-coverts are described and figured as being white, whereas in all the examples I have seen these spots are rusty fulvous, and in the excellent figure of the species given by Mr. Gould (B. As. pt. 24) they are so coloured. It may be that the Tenasserim type species differs from that inhabiting the Khasias. As some excuse for describing the Khasia bird as new under the title of *T. striatus*, I may be permitted to state that I did so at Dr. Jerdon's request, and that when he gave me the specimen which I described (Ann. N. H. (4) vii. p. 241) from, he assured me that it was new.

Lieutenant Wardlaw Ramsay discovered *Sibia picaoides* at an elevation of 5000 feet in Karennee (Blyth, B. Burma, no. 319); and its occurrence in Burma had not been previously made known; but Colonel Tickell, who figures the species from a Darjeeling example, mentions that he killed it at an elevation of 3000 feet in Tenasserim, and that "it inhabits the whole Eastern Cis-himalaya and along the Malayan spur." His plate represents the colouring of much too pale a tint.

In February 1859, on the plateau of Mooleyit, in Tenasserim, at an elevation of 6600 feet, Colonel Tickell discovered a species of *Sibia*, which has not, so far as I know, been again obtained. One example, that of a male, was secured; and on

being sent to Blyth at Calcutta, that gentleman (J. A. S. B. xxviii. p. 413) described it with the title of *Sibia melanoleuca*, Tickell. In the following number of the journal (*t. c.* no. 5. p. 451) Colonel Tickell described the bird again, calling it *Sibia picata*; and under this title it is described and figured; and the plate is one of the most valuable in his work.

The Nightjars, Trogons, Broadbills, Swallows, Swifts, Bee-eaters, Rollers, Kingfishers, and Hornbills, under the general title Fissirostres, form the subjects of volume vii., and are represented on fifty-three plates. The first illustrates a species of *Batrachostomus*, obtained near Tongu-ngoo, Burma, and identified by Colonel Tickell with *B. moniliger* (Layard). The figure very accurately represents *B. affinis*, Blyth, in bright chestnut plumage, a species which can hardly be separated from *B. moniliger*.

Caprimulgus asiaticus is beautifully and most artistically figured under the title of *C. mahrattensis*, with which totally distinct Nightjar Colonel Tickell confounds the commoner species.

From examples of male and female obtained in Borabhoom, near the northern limits of its range, *Harpactes fasciatus* is well delineated, and on the succeeding plate the Javan Trogon, *H. orescius*, from specimens obtained in Tenasserim.

Tenasserim is the radiating point of the *Eurylæmidæ*. All the generic types, one or other of which extend to the Himalayas, to the Indo-Chinese countries, the Malayan peninsula, and the three great islands of Sumatra, Java, and Borneo, are to be found in that province and Arracan*. Six of these species are figured from examples obtained in Tenasserim by Colonel Tickell, who gives interesting accounts of their habits.

None of Colonel Tickell's drawings surpass in beauty those of the Swallows; and while the delineations of all six species

* *E. ochromelas* may be an exception; but it is included by Mr. Blyth (B. Burma, no. 432). The Bornean form of *Cymbirhynchus macrorhynchus* can hardly be considered a separate species. The Sumatran *Psarisomus psittacinus* may be sufficiently differentiated from *P. dalhousiæ* to constitute a distinct species.

are particularly graceful, that of *Hirundo domicola* (*javanica*, Sparrm.) may be especially mentioned.

As a record of the fact that *Chelidon urbica* occurs in Tenasserim, an example there obtained, is figured. *Cotyle concolor* and *C. rupestris* are taken out of Boie's genus and formed into a separate genus, for which the title of *Krimnochelidon* is proposed—a generic division already anticipated by Reichenbach, who entitled it *Ptyonoprogne*.

The genus *Dendrochelidon* (*Macropteryx*) is retained among the true Swallows (and not, as by most writers, among the Swifts).

Seven species of Swifts are well represented by as many drawings. Among these are *Acanthylis caudacuta* from Darjeeling, and *A. sylvatica*, from the type specimen, killed by Colonel Tickell at Chilpil, Singbhoom, Nov. 30, 1835. A very good plate shows *Collocalia nidifica* (*francica*, Gm.) breeding on rocks near Akyab, Arracan, and a male bird in the act of flying. Colonel Tickell remarks, "I carefully compared a specimen I had shot at Darjeeling, August 8, 1848, with a pair brought to me in Akyab, Jan. 9, 1852, and found them precisely similar in plumage, and in dimensions also, within a minute fraction." The dimensions are then stated; and the differences are trifling. Interesting facts concerning this species are related in the letterpress. A good account and plate is given of *Cypselus vittatus* (*pacificus*) as observed in Tenasserim.

The Bee-eaters and Rollers, which are nearly all figured, are followed by the Kingfishers—the first plate representing the Burman *Pelargopsis burmanicus*, Sharpe, under the name of *Halcyon leucocephalus*, Linn., from a Tenasserim example, and the next the Indian form, with the correct title, *H. gurial*, Pearson.

Six species of *Bucerotidæ* are depicted, and first *B. bicornis* ♂, about to feed the female on the nest, immured in the hole of a tree. A detailed account of the breeding of this bird*, and outlines showing the progressive growth of the

* This account is published in Colonel Tickell's paper "on the Hornbills of India and Burma" (Ibis, 1864, p. 178).

casque during the first and second years are given. The type of *Aceros tickelli* ♀, first discovered by Colonel Tickell, is figured, with an account of the species, most of which has been published in 'The Ibis' (*t. c.*). A good drawing of *Aceros pusaran* (*plicatus*), together with original notes on its habits &c., closes one of the best sections and the last volume of Colonel Tickell's beautiful work.

XXXIII.—*Further Ornithological News from New Guinea.*

By P. L. Sclater, M.A., Ph.D., F.R.S.

Since my article on recent ornithological progress in New Guinea (*anteà*, p. 243) was written, I have received from Count T. Salvadori a copy of an important paper* on the collections of Beccari and Bruijn made under the circumstances before described, which requires a short additional notice in order to complete the subject up to the present period.

The collection of Beccari, made in the short space of six months, during which large quantities of specimens of other classes of animals were also procured, contains about 2000 bird-skins, referable to 313 species. It was formed principally in the Arfak mountains, in the neighbourhood of the now ornithologically-celebrated Atam, or Hatam, situated at a height of 6000 feet above the sea-level. Other stations visited in the same mountains were Warrundi (4000 feet), Mori (3500), and Profi (3400). Beccari also obtained some very fine species during his excursions to Gunong Morait and the river Wa-Samson, which was discovered by him, and reaped a rich harvest during his exploration of the various islands and localities in the great Bay of Geelvink, of which I spoke in my previous article.

Mr. Bruijn's collection was made by his hunters, princi-

* "Descrizione di cinquant-otto nuove specie di uccelli, ed osservazioni intorno ad altre poco note della Nuova Guinea e di altre Isole Papuane raccolte dal Dr. Odoardo Beccari e dai cacciatori del Sig. A. A. Bruijn. Per Tommaso Salvadori," Ann. Mus. Civ. Genova, vii. p. 896 (1875).

pally on Mount Arfak and in the islands of the Bay of Geelvink, but also contains specimens from Dorey, Sorong, Salawatti, Waigiou, and Koffiao. It contains 2644 skins, belonging to 279 species, of which 34 only are not represented in Beccari's collection.

Thus the two collections together furnish the magnificent series of upwards of 4600 specimens, referable to about 350 species, of which no less than 58 are stated to be new to science, and are described in the present paper. Amongst them are representatives of five new forms proposed to be called *Oreocharis, Ramphocharis, Œdistoma, Melilestes,* and *Timeliopsis. Oreocharis* is a new genus of Dicæinæ; *Ramphocharis* is allied to *Melanocharis,* and referable to the same group; *Melilestes* and *Œdistoma* are two new forms of Meliphagidæ. There are also in the series many new species belonging to Australian genera, such as *Grallina bruijni* and *Drymœdus affinis.* Taken together the two collections of Beccari and Bruijn contain examples of almost all the species hitherto described from New Guinea and the Papuan Islands. All the Paradise-birds yet known, with the exception of the recently discovered *Diphyllodes gulielmi-tertii* and *Epimachus ellioti,* are represented in them; and the whole series of *Paradiseæ* contains nearly 800 individuals in various stages of plumage.

Salvadori, in the present paper, separates the Pygmy Parrots of the islands of Geelvink Bay, which have been described by Schlegel as local varieties, as *Nasiterna maforensis* and *N. misorensis,* and gives a description of the female of his recently discovered *N. bruijni* of the Arfak Mountains. Salvadori has compared *Leucophantes brachyurus,* Scl., with specimens of the genus *Amaurodryas* (i. e. *Petroica*), and does not agree with Meyer's notion that they are congeneric. I may add that I am quite of Salvadori's opinion. My *Leucophantes* is by no means the same as *Petroica.* Salvadori describes two new species of this genus as *L. hypoxanthus* and *L. leucops* from Mount Arfak. The *Manucodia* of Jobi is separated from *M. chalybeia* as *M. jobiensis,* upon somewhat slender grounds it appears to me, only one specimen from Jobi being in the collection. Count Salvadori will, I trust, forgive me if I

say, with due respect, that he seems to place rather too much stress upon the differences existing between local forms of the same species, as exhibited in these specimens from the different islands of the Bay of Geelvink. That these islands *do* contain many very well-marked representative forms (such as *Goura victoriæ* and *Tanysiptera carolinæ*) is certain; but it by no means follows that there are no species in them identical with those of the mainland of New Guinea.

Of D'Albertis and his doings, since I last wrote, I have had many accounts from my excellent friend and correspondent Dr. George Bennett, of Sydney. D'Albertis, after accompanying the expedition of Messrs. MacFarlane and Chester up the Fly River in the 'Ellengowan' in December last, returned to Sydney to recruit his health. Of his voyage up the Fly River, which was ascended for 150 miles*, he has given a very interesting account in an article published in the 'Sydney Morning Herald,' from which I extract the following paragraphs. Speaking of the country in the neighbourhood of the highest point reached, he says:—

"Here the wild nutmeg and the gigantic figtrees are seen in fruit and luxuriance of foliage, attracting the fruit-eating Pigeons (*Carpophaga*), the Red Bird of Paradise (*Paradisea raggiana*), Hornbills (*Buceros ruficollis*), and other species of frugivorous birds in great numbers. At another part are the Candle-nut tree (*Aleurites*) and several species of Canary-nut trees (*Canarium*, on the fruit of which the great Palm Cockatoos (*Microglossus aterrimus*) feed."

"Where the jungle is not so dense a small bamboo grows, and is a place of resort for the *Megapodius* and *Talegalla*, being suitable for their food and the construction of their nests. Where the forest is more dense it is difficult to penetrate, from the entanglement of the vines and the strong-growing climbing palm (*Calamus australis*?), which throws up shoots of great length, covered with sharp spines, and long tendrils, similarly armed, ascending to the tops of the tallest trees. At this place we observe the Racket-tailed Kingfisher (*Tanysiptera dea*), frequently seen darting with a heavy

* See Proc. R. Geogr. Soc. March 13th, 1876.

dash upon a beetle or some other insect, while the beautiful King Bird-of-Paradise (*Cicinnurus regius*) may be seen climbing on the vines, displaying the bright tints of its splendid, rich, and varied colours to the bright rays of a tropical sun as it occasionally penetrates the dense foliage of the trees."

"A splendid and rare Kingfisher (*Halcyon nigrocyanea*) and another Kingfisher (*Ceyx solitaria*) are heard uttering their piercing notes by a rivulet in some secluded nook.

"Where the trees are more lofty but not so overgrown by vines, the large and noble Crowned Pigeon (*Goura*), of the size of a Turkey, is often seen walking majestically about, seeking for the fruits and seeds upon which it subsists; and on the top of the loftiest trees the magnificent Red Bird of Paradise (*Paradisea raggiana*) is seen displaying under the bright sunshine its rich and beautiful plumage, and endeavouring to excite the attention of the unadorned female from its elevation, out of the reach of the arrows of the natives and of the gun of the naturalist. But the king of the forest here is the Cassowary, the footprints of which are to be seen in every muddy place, mingled with the hoof-marks of the wild boar. The night at this place is disturbed by a variety of strange noises, and probably still stranger animals; whilst at the early hours of the morning we are awakened by the piercing cries of numbers of Lories and Honey-eating Parrots (*Trichoglossus*) passing over our heads, the latter darting along with the rapidity of an arrow."

"The loud *whoch-whock* emanates from the unmusical and far from celestial voice of the Birds of Paradise; and the peculiar, prolonged, loud and shrill, but mournful whistle of the great Palm Cockatoo (*Microglossus aterrimus*) and the drum-like noise of the Cassowary are heard. The scenery, if not very bold, is interesting for its novelty; and it is almost impossible to resist a kind of fascination for the wildness and novelty of our situation."

"It is difficult to express the feeling of the explorer on anchoring in a new place up a river a little before sunset, and when every object appears before him wonderful, novel, and interesting, and which, on the approach of darkness, assumes

a fantastic appearance, especially when millions of fireflies are seen flitting about in all directions; their lights reflected in clear smooth water increase the luminosity to nearly double. I may mention here that when at anchor at Kiwai Island, early in the morning and a little before sunset, thousands of the black-and-white Fruit-Pigeon (*Carpophaga spilorrhoa*) were seen, as at Yule Island, going from the east to the west to their roosting-place, and in the morning would be seen returning from the west to the east; so that I consider this species of Pigeon to be almost as plentiful in this part of the world as the American Passenger Pigeon (*Ectopistes migratorius*) is in North America."

"From our anchorage at Attack Island, on the 20th December, we saw large flocks of the *Ibis strictipennis*, or Straw-throated Ibis, flying at a great elevation in a north-west direction."

"My curiosity was very much excited on hearing of Mr. Stone's supposed discovery of a 'very large bird,' and of foot-prints of 'buffaloes' on the Baxter River, and on reading in 'Nature' of the discovery of the dung of a 'rhinoceros' in New Guinea by Captain Moresby. I do not allude to the imaginative fauna of a Captain Lawson, because the discoveries of Captain Moresby and Mr. Stone are amply sufficient to excite the most sanguine hopes of any naturalist. But, alas! I was doomed to disappointment; for I found the fauna of the Fly River very poor, considering the character of the country and the vegetation. I could not get a glimpse of the gigantic bird, with a spread of wings of 22 feet (very considerately reduced by Mr. Stone to 16 feet); nor was I fortunate enough to see the dung of Captain Moresby's rhinoceros, nor the beast itself, nor even the footprints of the buffaloes. I think I did, however, see the bird mentioned by Mr. Stone; and I have also seen common heaps of dung so large as to make me wonder when I first saw them. With respect to the large bird, from what I have heard from more than one person who was up the Baxter River, I can safely reduce it to the moderate size of the Red-necked Hornbill (*Buceros ruficollis*); probably, in the excitement for novelties, two or three birds

starting in flight at once may have been magnified into one. The flight of the Hornbill is very peculiar, being slow and steady, with the noise of a locomotive engine. The noise made by the bird in its flight was at first recognized by some on board as that of the huge bird seen on the Baxter River; and then the colour of the bird decided the question: so, although the spread of this monster's wings has already been reduced to 16 feet, I am obliged to reduce it still further, to about 4 or 5 feet.

"With respect to the dung seen by Captain Moresby, I may remark that a stranger observing for the first time the dung of the Cassowary, and not having the experience which he would have when resident for some time in the country, would never suppose it was produced by a bird; in one of such heaps I have counted upwards of forty-three almost undigested seeds of the fruit of a *Pandanus*. It is certainly a matter of surprise to see the size of the heap of dung deposited by that bird in a wild state.

"I think it will be interesting to mention that in this part of New Guinea (nearer to Cape York than Hall Sound), I observed that the flora and fauna are more decidedly Papuan than at Hall Sound, although the latitude is almost the same.

"A number of the species of birds which I procured are denizens of New Guinea only; and here I did not see a single *Eucalyptus*; whilst at Hall Sound I have found species of birds common to both Northern Australia and New Guinea, and at least two species of *Eucalyptus* very common, as well as many of the North-Australian plants. This, judging from the flora and fauna of the Fly River, evidently shows that this part of the country is more allied to the north-west part of New Guinea than to the eastern portion."

I am glad to be able to add that D'Albertis's excursion up the Fly River has attracted a good deal of attention in Sydney, and that the Government of New South Wales have provided him with a steam-launch for the further prosecution of his discoveries. Moreover a public subscription is likely to be raised to provide for the expenses of further exploration in this direction.

Accounts of D'Albertis's excursion to Nou, Bioto, and Naiabui (small villages on the mainland opposite Yule Island) in the summer of 1875 are given in a recently published number of 'Cosmos'*; but little reference is made to birds in them.

While D'Albertis has fixed his headquarters at Yule Island, a party from Sydney has established itself at Port Moresby, a little to the south, and is making successful excursions into the interior†. As this expedition, which is under the conduct of Mr. O. C. Stone, numbers amongst its members Messrs. Broadbent and Pettard, the well-known collectors and taxidermists of Sydney, there can be little doubt that ornithology will be by no means neglected by them, and that we shall before long have to record some of their discoveries in this branch.

Since I wrote my last article Dr. A. B. Meyer has sent me a separate copy of a paper from the "Sitzungsberichte" of the 'Isis' at Dresden. It contains descriptions of *Phlegœnas jobiensis, Micrœca papuana, Budytes novæ-guineæ,* and *Parus arfaki* (already characterized in his article in the first number of the 'Mittheilungen aus dem k. zoologischen Museum zu Dresden,' see above, p. 256), and a summary of our knowledge of the Papuan Psittacidæ.

Mr. Gould is preparing for issue a third part of his 'Birds of New Guinea, which will contain illustrations of the following species, many of them of rare beauty and of excessive interest:—

PART III. MAY 1876.

Tanysiptera carolinæ.
Ceyx solitaria.
Charmosyna josephinæ.
Charmosyna pulchella.
Psitteuteles arfaki.
Psitteuteles wilhelminæ.
Psitteuteles placens.
Diphyllodes respublica.
Cicinnurus regius.
Pachycare flavo-grisea.
Eupetes cærulescens.
Sternula placens.
Gliciphila subfasciata.

* "Recenti Spedizioni alla Nuova Guinea," Cosmos, vol. iii. p. 217 (April 1876).

† See Proc. R. Geogr. Soc. March 13th, 1876.

Finally, I may mention that Dr. Comrie, late surgeon of H.M.S. 'Basilisk,' under the command of Capt. Moresby, has placed in my hands for determination a small collection of bird-skins, made during the survey of the N.E. coast of New Guinea, of which Capt. Moresby has lately given us such an interesting narrative*. Amongst these are a single skin of a fine new *Manucodia*, which I described at a recent Meeting of the Zoological Society as *M. comrii*, and several examples of that rare Lory *Lorius hypœnochrous* of G. R. Gray —both fine additions to the Papuan avifauna.

May 13, 1876.

XXXIV.—*Notes on a 'Catalogue of the* Accipitres *in the British Museum,' by* R. Bowdler Sharpe (1874). By J. H. Gurney.

[Continued from p. 243.]

It will be convenient in considering the Old-World species of the genus *Buteo* to commence with *B. vulgaris*; and in doing so I would remark that Mr. Sharpe only alludes in somewhat general terms to the geographical range of this species, but that a detailed account of the localities where it has been ascertained to exist will be found in Mr. Dresser's recent article on this species in his 'Birds of Europe;' and to this account I have only to add, with reference to its western range, that the Norwich Museum contains an adult pair†, with their nestling young, obtained in the island of Madeira, and, with reference to its eastern, that the same collection possesses specimens from Trebizond and Erzeroom.

It is well known that this species is very subject to partial leucotism; but how far this is limited to young birds does not appear to have been accurately ascertained; I have, however, observed that such examples usually have a straw-coloured

* See above, p. 259.

† These specimens have been recently examined by Mr. Dresser, who agrees with me in referring them to *B. vulgaris*, of which they are, in fact, typical examples.

iris instead of the dark hazel iris which is characteristic of normal specimens.

Apart from these accidental variations of plumage, the passage from the immature to the adult dress is not marked in this species by any very conspicuous change; the dark markings on the under surface, however, are decidedly more or less longitudinal in immature specimens, whilst they are always transverse in those which are fully adult, except on the throat, where they are permanently longitudinal.

Mr. Sharpe speaks of a young bird as having the interspaces on the upper surface of the tail "strongly shaded with rufous." I have also seen a rufous tinge on the rectrices of an immature specimen; but it is by no means a characteristic of immature age, as it is most frequently absent at that period, and on the other hand, I never saw it so strongly marked as in a specimen which was known to have lived in confinement for twenty years.

At page 182 of his work, Mr. Sharpe also remarks that British specimens of this Buzzard "are certainly darker than continental birds." This statement does not altogether tally with my experience; and it is my belief that no geographical variation of tint would be found to prevail in a sufficient series of normal specimens of British and foreign origin, though I think it probable that partial leucotism will be found more rife among the individuals of this species in some countries than in others, and though it certainly is not very prevalent amongst British specimens, which are, for the most part, normal in their markings and coloration*.

It is remarkable that the island of Madagascar should possess a distinct Buzzard (*B. brachypterus*), which, but for its proportionally shorter wing, might almost be said to be a miniature of *B. vulgaris*; but as this curious species does not appear to require any further comment on the present occa-

* The 'Zoologist' for the present year contains at page 4829 an interesting note by Mr. Cordeaux on the contents of a nest of *Buteo vulgaris*, taken in North Wales in June 1872. He says, "there were two young partly fledged birds in the nest; and beside them lay two moles, two stoats, and a pine-marten."

sion, I pass on to the consideration of *Buteo desertorum*, respecting which, however, I have but little to add to my remarks in 'The Ibis' for 1862, p. 361.

In the case of this species, as in that of *B. vulgaris*, a very full article has lately appeared from the pen of Mr. Dresser in the 'Birds of Europe,' in which he gives more ample details as to the measurements, variations of plumage, and geographical range of this Buzzard than can be looked for in the briefer summary comprised in Mr. Sharpe's work. In this article Mr. Dresser mentions the fact of his having received a specimen of *B. desertorum* from the remarkably northern locality of Archangel; and since its publication he has seen a second example, which was also obtained in that vicinity.

In Mr. Dresser's article on *B. vulgaris* he remarks that subsequently to the publication of his account of *B. desertorum* he had examined the Buzzards obtained by Mr. Godman in the Azores, and had "ascertained that they were not, as was supposed, *B. vulgaris*, but *B. desertorum*"*.

Mr. Gould, in the introduction to his magnificent work on the birds of Great Britain, refers to a Buzzard of this species which was killed at Everley, Wiltshire, in September 1864. This specimen Mr. Gould kindly permitted me to examine, when it was in his custody, some years since; and there appeared to me to be no doubt of its being really *B. desertorum* in immature plumage.

I may add that Mr. Gould, in his remarks upon this species, says, "it is included by Schlegel in his 'Fauna Japonica,'" which conveys the idea that it had been received from Japan; but this is a misapprehension: the authors of the 'Fauna Japonica' give, at page 16 of their volume "Aves," a list of Buzzards which they consider to be nearly allied to *Buteo japonicus*; and it is merely *in this list and as one of these species* that they mention "la buse commune du Cap . . . . . espèce que nous désignerons sous le nom de *Buteo capensis*."

Mr. Sharpe states that *B. desertorum* "gradually gets darker with age;" but having had the opportunity of watch-

* *Conf.* Ibis, 1866, p. 94.

ing its changes of plumage in confinement, I do not think that they bear out this assertion.

The change which takes place in the passage from the immature to the fully adult dress is chiefly characterized by the bird becoming, throughout, less fuliginous and more intensely rufous; but this can only be correctly estimated by a comparison of individuals which have newly moulted; for I know no Buzzard in which the plumage becomes so worn and faded between the period of the assumption and moult of its feathers as in this species, and especially in North-African individuals, so that it seems difficult to recognize the ragged and faded bird which is approaching its moult as identical with the wearer of the rich rufous dress which distinguishes the adult of this species when the process of moulting has been but just completed.

It may be useful to note in conclusion that full details of the coloration &c. of Himalayan examples of this Buzzard are given by Mr. Hume in his 'Rough Notes,' pp. 271–274.

Buteo ferox, the next species which we have to consider, is closely allied to *B. desertorum*, but of larger dimensions and a less extended geographical range.

This Buzzard, like *B. desertorum*, though not quite to the same extent, is liable to a great loss of colour from the fading and attrition of the plumage between the period of its moults; and this circumstance must be borne in mind in studying the variations to which this species is liable.

Buteo ferox, like *B. desertorum* and *B. vulgaris*, has been recently the subject of a very full and exhaustive article by Mr. Dresser in the 'Birds of Europe,' to which I would refer my readers.

Mr. Dresser's views of the changes of plumage incident to this species differ from those propounded by Mr. Sharpe; and the observations which I have made on numerous specimens lead me to agree in this instance with the opinions of Mr. Dresser rather than with those which have been published by Mr. Sharpe.

It seems to me to be certain that, in this species, the transverse bars upon the tail are ordinarily and normally an indi-

cation of immaturity; and as all the melanistic specimens which I have seen, as well as those described by Mr. Hume (*vide* 'Rough Notes,' p. 282), are thus barred, I cannot but believe that they are immature birds, and not very old individuals, as supposed by Mr. Sharpe.

At the same time it is quite certain that this melanistic phase is not the ordinary immature plumage (*vide* Mr. Dresser's description of a nestling from Smyrna); and I therefore look upon it as an accidental and abnormal variation which, so far as I know, has hitherto only been met with in Northern, and especially in North-western India, and once also in Abyssinia*.

Mr. W. E. Brooks, to whose correspondence I have been indebted for much information upon Indian birds of prey, writes to me respecting this dark-coloured form as follows:—"It is a common bird in the Northern Punjaub, where it is commoner than the red bird; since it never leaves its northern quarters, like the other, I believe it to be distinct from *B. ferox*."

Mr. Hume, on the contrary, though he in the first instance described the fuliginous form as being probably specifically distinct (*vide* Ibis, 1869, p. 356), has subsequently inclined to the opinion that it is identical with *B. ferox*, and that the fuliginous plumage is assumed (as stated by Mr. Sharpe) by old rather than by immature individuals (*vide* 'Rough Notes,' p. 278, and 'Stray Feathers,' 1873, p. 159).

It would appear, from Mr. Hume's article in the 'Rough Notes,' that he does not take the same view as Mr. Brooks of the relative abundance of the two forms in the Punjaub; but this may, perhaps, arise from Mr. Hume's observations having reference to a more southerly district of the Punjaub than those of Mr. Brooks, and we may look with confidence to the zeal and perseverence of our ornithological fellow-labourers in Northern India as a means of clearing up, by further observations, whatever still remains doubtful and obscure in our knowledge of this fine Buzzard.

* Since the above was in print I have observed that the dark phase of *Buteo ferox* has been recorded by Severtzoff (under the title of *B. nigricans*) as occurring and breeding in Turkestan: *vide* 'The Ibis,' 1875, p. 103.

To proceed to the consideration of another allied species, I may observe that Mr. Sharpe identifies *Buteo japonicus* of Temminck and Schlegel with *B. plumipes* of Hodgson. I do not feel altogether certain that this identification is correct*; and even if it be so, I cannot agree with Mr. Sharpe's view that this dark form is the "very old" stage of plumage in this species. 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 Himalayah Mountains—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*.

Buteo japonicus, in its normal adult plumage, bears a very remarkable resemblance in the coloration of the upper portion of the breast to the adult male of *B. swainsoni* of North America; but in the case of *B. japonicus* this peculiarity is, I believe, common to both sexes.

Some valuable remarks on the partial feathering of the tarsus in this species will be found at pages 17 and 18 of the 'Fauna Japonica,' which also treats at page 19 of the still greater development of this peculiarity in another oriental Buzzard, *B. hemilasius*, a species respecting which the learned authors of this work remark, with great truth, "qu'elle tient précisément le milieu entre les buses pattues et les buses ordinaires."

As specimens of *Buteo hemilasius* are very scarce in collections, it may be desirable to record the following measurements of a female from Shanghai, which is preserved in the Norwich Museum:—culmen from front of cere 1·35 inch, wing from carpal joint 18·9, tarsus 3·2, middle toe s. u. 1·8.

This specimen agrees generally in coloration with the female described by Mr. Sharpe, but has much fewer transverse bars on the tail: the central pair of rectrices have but four such bars, above which are three irregular marks that do not appear on the other rectrices; and some of these also differ from the central pair in having only three transverse

* See Dr. Jerdon's remarks in 'The Ibis' for 1871, p. 340, and Mr. Blanford's in 'The Ibis' for 1872, p. 87.

bars; the terminal portion of the tail in this specimen is slightly tinged with rufous.

From *Buteo hemilasius* it appears to be a natural transition to pass to the consideration of the Rough-legged Buzzards, forming the genus *Archibuteo*; subsequently to which I propose to recur to the remaining Buteonine groups with unfeathered tarsi, to which I have not as yet alluded.

In treating of the genus *Archibuteo*, it may be convenient, in the first instance, to refer to *Archibuteo strophiatus* of Hodgson, a species of at least equal rarity with *Buteo hemilasius*, and of somewhat similar geographical range, as it extends from Northern India to China, where it has been obtained as far north as Shanghai; it has not, however, so far as I know, been observed in Japan.

The earliest synonyms for this species are, according to Mr. Sharpe's work, the following:—

Hemiaëtos strophiatus, Hodgson, in Gray's Zool. Misc. p. 81 (1844).

Archibuteo strophiatus, Gray, Cat. of Hodgson's Coll. of Mammals and Birds of Nepal, p. 39 (1846).

Archibuteo hemiptilopus, Blyth, J. A. S. B. vol. xv. p. 1 (1846).

Archibuteo cryptogenys, Hodgson, Calcutta Journ. N. H. p. 94, pl. 3.* fig. 1 (1847).

In considering the question whether these synonyms are all properly referable to the same species, it may be well to mention that the British Museum possesses what appears to be the undoubted type specimen of Hodgson's "*strophiatus*," as that specific name† is inscribed on a coloured drawing presented by Mr. Hodgson to the Museum, which so accurately represents the stuffed specimen in the national collection, that I think there can be no doubt of its being a portrait of that individual. This specimen is also figured in Mr. Sharpe's work, pl. 7. fig. 2.

* This plate is erroneously referred to as pl. 5 in Mr. Sharpe's book, probably from a misprint.

† I am indebted to Mr. Sharpe for the following copy of the inscription on this drawing:—"*Aquila? strophiata*. Type of the subgenus *Hemiaetus*, mihi."

The late Dr. Jerdon, writing at page 340 of 'The Ibis' for 1871 respecting Hodgson's *A. strophiatus*, remarks that "it is certainly the same as Blyth's *A. hemiptilopus*. . . . . His specimen in the British Museum . . . . perfectly resembles the type of Blyth's *hemiptilopus*."

I have no doubt that this view is correct, although it would appear from Mr. Blyth's description of the type of *A. hemiptilopus* that it wants the "broad irregular band of white across the breast" (to quote the words of Mr. Sharpe) which is conspicuous in the type of *A. strophiatus*.

This, however, seems to be but a variable character, as a male from Shanghai in the Norwich Museum has much more white on the underparts than the type specimen, agreeing in this respect with a presumed female from Kooloo, described by Mr. Hume in 'Stray Feathers' for 1873, p. 315.

Mr. Hume also mentions that in his specimen "the first three quills have the whole of both webs above the emargination pure white;" but this is probably an individual peculiarity, as in the Shanghai specimen at Norwich the outer webs above the emargination of these quills are dark grey, and in the British-Museum specimen the primaries are described by Mr. Sharpe as "having a slight greyish shade externally;" Mr. Blyth also describes the type of *A. hemiptilopus* as having the "primaries dusky, paler above the emargination of the outer web."

Unfortunately Mr. Hodgson's specific name of "*strophiatus*" is unaccompanied by any description, either in Dr. Gray's 'Zoological Miscellany" (1844, p. 81) or in his Nepal Catalogue (1846, p. 39); and I therefore apprehend that, unless such a description was published elsewhere prior to the publication of Mr. Blyth's specific name of *hemiptilopus* (which, so far as I can ascertain, is not the case), it will be right to drop the specific name of "*strophiatus*" and to adopt that of "*hemiptilopus*," assuming that the identity of these two birds is (as I think it is) sufficiently established.

There is, however, another question which arises with reference to the synonymy of this Buzzard, viz.:—Is *Archi-*

buteo cryptogenys of Hodgson really identical with his *A. strophiatus*, and consequently with Blyth's *A. hemiptilopus*?

Mr. Hodgson appears to have been very decided in his opinion that *A. cryptogenys* is a good and distinct species, as may be seen by a reference to the paper in which he described and figured it in the 8th volume of the 'Calcutta Journal of Natural History;' but unfortunately the type specimen of *A. cryptogenys* does not (so far as I know) now exist, and in its absence it is not easy to decide with certainty whether it really was or was not distinct from *A. strophiatus*, or, to use the more correct name, from *A. hemiptilopus*.

I am indebted to Mr. W. E. Brooks, who has paid considerable attention to this question, for his expression of his opinion that Mr. Hodgson's view of the distinctness of *A. cryptogenys* was correct; but, on the other hand, Mr. Hume, in the article in 'Stray Feathers' for 1873, to which I have already alluded, treats *A. cryptogenys* as identical with *A. hemiptilopus* (though apparently not admitting the identity of the latter with *A. strophiatus*); and I may add that the late Dr. Jerdon also greatly doubted the distinctness of *A. cryptogenys*, as may be seen by his remarks in 'The Ibis' for 1871, p. 340.

Without attempting to decide this doubtful question, I may nevertheless offer an observation on one point connected with it, viz. that the circumstance of the nares being nearly hidden by thickset soft plumuli in *A. cryptogenys* (as mentioned by Mr. Hodgson in his description of this Buzzard) is certainly not a specific peculiarity, inasmuch as the nostrils are similarly covered in the type specimen of *A. strophiatus*, as they also are in the example from Shanghai in the Norwich Museum.

In conclusion, it may, perhaps, be worth while to add the principal dimensions of the last-named specimen, which was marked by the collector as a male: these are—wing from carpal joint 17·8 inches, tarsus 3·1, middle toe s. u. 1·6; the culmen is imperfect.

Proceeding to the consideration of the Rough-legged Buzzard of *Europe* (*A. lagopus*), I may remark that Mr. Sharpe's

list of the specimens of that Buzzard in the British Museum includes two immature examples obtained in Natal by the late Sir A. Smith, which afford evidence of the extensive and irregular wanderings of the young birds of this species, and perhaps also make it probable that Le Vaillant was accurate in stating that he had obtained this Buzzard during his travels in South Africa, although it is, on the other hand, quite possible that the bird he obtained there was *Nisaëtus pennatus*, and that afterwards, writing from memory, he confused the Booted Eagle with the Rough-legged Buzzard.

Be this as it may, the specimens obtained by Sir A. Smith (presuming that no error has occurred respecting their locality) form an exception to the statement in Mr. Dresser's article on this species, in his 'Birds of Europe,' that "it has never been met with south of the Mediterranean." I may add that in the Catalogue of the birds in the British Museum, published in 1848, only one of these Natal specimens is mentioned, which probably arose from the other specimen not having been mounted.

The Norwich Museum contains two newly fledged nestlings of this species, which are remarkable for the conspicuous rufous margins of their feathers. In one of these this peculiarity strongly pervades both the upper and under portions of the plumage; in the other it is less conspicuous, and is limited to the upper parts only. Such rufous margins, in great measure, disappear from the plumage of the young bird in the course of the first autumn, but are frequently more or less reassumed at subsequent moults.

The change from the immature to the fully adult dress is probably not completed till the third year; and the specimen described by Mr. Sharpe as an "adult female" does not appear to me to have attained its full adult plumage, which is well described at page 119 of vol. i. of Professor Newton's edition of Yarrell's 'British Birds,' and also in Mr. Dresser's article to which I have already referred: this adult stage is especially characterized by the dark transverse bands on a white ground which appear to be always more or less conspicuous on the upper surface of the tail in fully adult

birds. In such specimens these bands are from three to four in number, in addition to the dark subterminal band, which is also found in younger individuals, and is much broader in young birds than in those which are adult.

In those specimens which are in a state of change from the immature to the fully adult dress, this broad and dark subterminal band is itself crossed by one or more comparatively narrow bands of a paler brown, which ultimately become white as the bird assumes its completely adult dress.

The iris in this species appears to be brown in some specimens and yellow in others, and to exhibit various shades of these colours in different individuals.

Melanistic varieties of this Buzzard are extremely rare, which is the more remarkable as they are of very frequent occurrence in the case of its closely allied North-American representative, *A. sancti-johannis*.

Such a melanistic specimen is mentioned by Professor Newton at page 122 of the 'Ootheca Wolleyana;' and I have recently seen a remarkably fine melanism of this species, which was one of the many examples of the Rough-legged Buzzard obtained in Great Britain during the autumn and winter of 1875.

This specimen, which was trapped in the neighbourhood of Barnstaple in December last, has been added to the collection of the Rev. Murray A. Matthew, of Bishop's Lydeard, in Somersetshire, to whose courtesy I have been indebted for an opportunity of examining it, so far as the case in which it is now glazed up would permit of my doing so. It is a very fine specimen, and unusually large in its dimensions for a male bird, which it is asserted to have been by the bird-stuffer who dissected and mounted it; Mr. Matthew, who measured it before it was cased up, informed me that he found the length of the wing from the carpal joint 17·5 inches, and that of the tarsus 3·5. The bird had, apparently, just completed its moult, and is in beautiful condition, the plumage being throughout (with very slight exceptions, hereafter to be noticed) of a very dark brown, strongly tinged with purplish reflections, especially on the interscapulary feathers;

the scapulars are slightly paler than the rest of the plumage, and show dark shaft-marks, which are not visible elsewhere; the lesser and middle wing-coverts, on the side which I was able to examine, each showed a solitary feather of the previous year still unmoulted, and decidedly paler than the surrounding plumage; the second, third, and fourth primaries also appear not to have been moulted, and are tinged with grey, the others being almost black; the lower portion of the abdomen and the tibiæ are also nearly black, being perceptibly darker than the general colour of the body; the under tail-coverts have a few white spots on them, wedge-shaped, with the narrow end of the wedge pointing downwards; these spots, and a slight tinge of white on the lores and on the extreme front of the forehead, are the only white portions of the plumage which I was able to detect; on the upper surface of the tail three irregular transverse grey bars are visible, which are especially apparent on the four central rectrices, the remainder of the tail being a dark brown; these bars are rather more than half an inch in breadth, and about twice as broad as the brown interspaces between them*; the under surface of the tail is greyish white, slightly mottled with a darker tint, and crossed by an irregular subterminal band of dark greyish brown.

Archibuteo sancti-johannis, which is the representative of *A. lagopus* in the North-American continent, approaches so closely to the European race, that I can only consider it a subspecies of *A. lagopus*.

Comparing non-melanistic specimens of *A. sancti-johannis* with normal examples of *A. lagopus*, I find them on the average slightly darker, and decidedly more rufous, the excess of rufous colouring in the American race being especially apparent on the tibial feathers; no appreciable difference in size or measurements exists between the two species.

Mr. Sharpe gives full descriptions of the different phases of plumage incident to *A. sancti-johannis*; and more detailed

* I may remark that in the melanisms of *A. sancti-johannis* which I have examined this proportion is reversed, the brown bars on the tail in these specimens being broad and the grey narrow.

particulars will be found in the article on this species (there styled *Archibuteo lagopus*, var. *sancti-johannis*) in the third volume of the 'History of North-American Birds,' by Messrs. Baird, Brewer, and Ridgway.

The iris in this species appears to be liable to variations of colour similar to those which occur in the case of *A. lagopus*.

There remains but one other species of the genus *Archibuteo*, the beautiful *A. ferrugineus* of Western North America—a species which, as it seems to me, is most obviously and unquestionably distinct, but which, nevertheless, has been unaccountably held by so high an authority as Professor Schlegel to be merely "quelque sort de leucoïsme, ou, si l'on veut, d'érythrisme" of *A. lagopus**.

This fine and well-marked species has been fully described by Mr. Sharpe, and also in the exhaustive work of Messrs. Baird, Brewer, and Ridgway. The latter authors give a table of measurements taken from six males and six females of this species, none of which, however, appear to equal the principal dimensions of the adult described by Mr. Sharpe.

The colour of the iris in this Buzzard seems to be as variable as in *A. lagopus* and *A. sancti-johannis*: Mr. Sharpe describes it as "brown" in the adult; whilst the authors of the American work above referred to mention an adult male in which it was a "clear light yellow," and an adult female in which it was a "light ochraceous brown."

[To be continued.]

XXXV.—*Description of a new Species of the Genus* Trichostoma *from the Island of Celebes*. By Arthur, Viscount Walden.

(Plate XI.)

In Jardine's 'Contributions to Ornithology' (1849, pp. 127, 128, t.) the late Mr. Strickland gave a short account, accompanied by a figure, of a Celebean bird on which he bestowed the title of *Trichastoma celebense*. On the prece-

* *Vide* Mus. des Pays-Bas, Revue de la collection des Oiseaux de Proie, p. 105.

ding page he had already shortly described a Bornean bird, which, with some doubt, he identified as being the true *Napothera umbratilis*, Temm. (a manuscript title). Both species were among some birds purchased by Mr. Wilson from M. Verreaux, and which the latter gentleman, according to Mr. Strickland, had confounded together, as both bore on their labels Temminck's MS. title already cited. Ever since it has been a matter of great difficulty in Europe to determine the species Mr. Strickland had before him, and which he named *T. celebense*—for the reason that the types of both the Bornean and Celebean species went to America, that the description of *T. umbratile* apud Strickland is very brief, while that of *T. celebense* consists of nothing more than a few words setting forth in what respect it differs from the Bornean bird (a species not even now determined), and that the figures of both birds are neither drawn nor coloured satisfactorily.

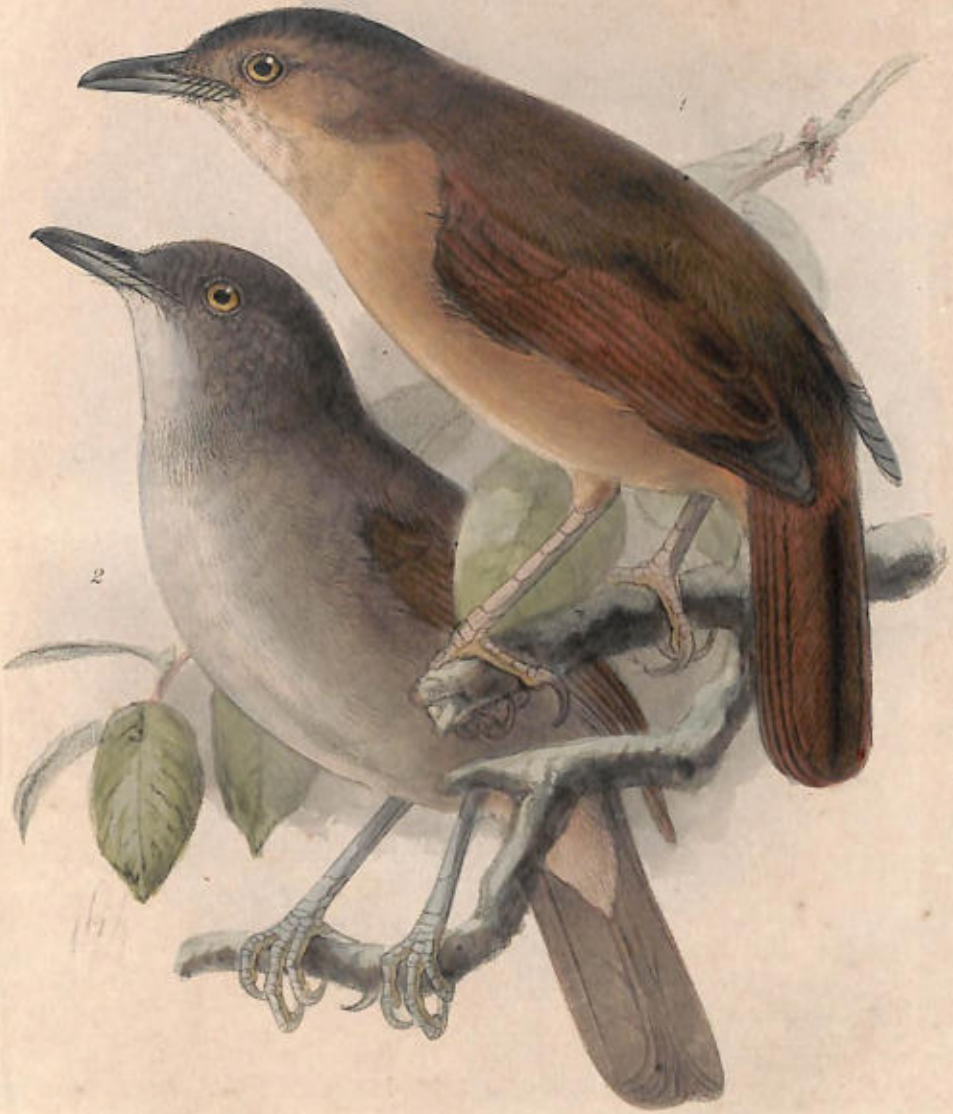
But so long as only one species of the genus *Trichostoma* was known to inhabit Celebes, and that species agreed sufficiently well with Strickland's brief description, that species was, naturally enough, referred to *T. celebense*; and a single example, obtained at Macassar by Mr. Wallace, was thus identified by me (Tr. Z. S. viii. p. 61).

Since then I have received from North Celebes several examples of a species of *Trichostoma* widely differing from what I supposed to be *T. celebense*; and it becomes therefore necessary to decide which of the two species best agrees with Strickland's account and figure of *T. celebense*. Dr. Otto Finsch has also sent me for determination an example of this genus, marked as being a male, obtained by Captain Conrad in the district of Macassar. This bird differs but slightly from the one obtained by Mr. Wallace, now in the British Museum. After comparing the two species with Strickland's description and figure, I have little doubt that the Menado, and not the Macassar bird, supplied the type of *T. celebense*, Strickl.: consequently the Macassar form requires to be distinguished by a separate title; and for it I propose that of

Trichostoma finschi (Plate XI. fig. 1). It may be thus described:—

♂ (Macassar). Chin and throat white, faintly tinged with very pale fulvous. Breast, abdomen, flanks, under wing-coverts, and thigh-coverts fulvous, tinged with rufous, pale near the mesial line. Under tail-coverts rusty fulvous, redder than the abdominal plumage. Head umber-brown, with a slight olive tinge. Space before the eye greyish white. Cheeks fulvous white. Back and uropygium rufous brown, the uropygial feathers being voluminous and fluffy, and terminally coloured pale rusty fulvous. Upper tail-coverts pure rust-colour. Quills and rectrices ruddy brown, the outer webs being distinctly rusty brown. The inner webs of the third and following quills with a pale rusty fulvous edging for part of their length, this edging being indicated at the base of the second quill. Wing-coverts ruddy brown. Legs, feet, claws, and lower mandible (in dried skins) pale yellowish white. Upper mandible horny brown, commissure and tip pale yellowish white. Iris (labelled) yellow. Wing 2·87 inches, tail 2·25, tarsus 1·0. Rictus armed with very long bristles. First primary short, second about half an inch longer, third three eighths longer than second; fourth, fifth, and sixth longer than third, the fourth and sixth being nearly equal, and the fifth the longest.

T. celebense, Strickl. (Menado) (Plate XI. f. 2). Whole head above, nape, back, uropygium, and major wing-coverts rich reddish brown, purer brown on the head. The long loose uropygial feathers tipped with ferruginous. Rectrices and outer webs of the quills dark ferruginous chestnut (in another example the outer webs of the quills concolorous with dorsal plumage); inner webs brown. Lores ashy white. Cheeks and ear-coverts brown. Chin, throat, and ventral region white or ashy white. Breast pale cinereous. Flanks brown. Thigh-coverts and under tail-coverts light rust-colour. Upper tail-coverts bright ferruginous. Legs, feet, and claws pale yellowish. Base of maxilla blackish brown; remainder, with mandible, pale horn-colour. Rictal bristles black, not very stiff, and extending beyond the basal half of the bill. Wing



J.G.Keulemans lith.

M&N.Hanhart imp.

1. TRICHASTOMA FINSCHI.
2. CELEBENSE.

2·75 inches, tail 2·37, tarsus ·93, bill ·75. Gradation of quills as in *T. finschi*.

The examples described by Dr. F. Brüggeman (Abhandl. nat. Ver. Bremen, v. p. 63. no. 57) appear to be *T. celebense*, Strickl., according to my views.

XXXVI.—*On two additional Species of Central-American* Odontophorinæ. By Osbert Salvin, M.A., F.R.S., &c.

Through Mr. Boucard's kindness I have lately been able to add to our Central-American collection of birds two species of Odontophorinæ, one of which is the tolerably common South-American *Eupsychortyx leucotis*, the other a species of *Odontophorus* which I do not hesitate to describe below as new. The two specimens (one of each species) were contained in two collections evidently made by our late collector, Enrique Arcé, in Veragua, one of which came directly, and the other indirectly into Mr. Boucard's hands. Both from the style in which the skins are made up, and from the bird-skins associated with them, there cannot be the slightest doubt as to their origin.

Eupsychortyx leucotis, Gould, P. Z. S. 1843, p. 133, et Mon. Odont. pl. x.

The specimen sent agrees closely with examples from the province of Antioquia procured by Mr. Salmon, and with Mr. Gould's plate. The only difference I can trace is in the paler ferruginous colour of the throat, a somewhat variable character in this group. Arcé has lately been working in the district round Calobre; and here, probably, this specimen was procured. I have seen no other specimen of this form from the districts northward of Panama upon the authenticity of whose origin I could rely.

Odontophorus cinctus, sp. n.

Capite, collo, dorso antico et pectore læte rufescentibus, auricularibus nigris: stria postoculari indistincta e punctulis albis formata: dorso postico cinereo, albo et nigro minute vermiculato: supracaudalibus rufescentibus, scapularibus

extimis nigris, scapis albis et pogoniis externis rufescentibus: alis fuscis, secundariis rufo variegatis: gula et ventre medio albis, hypochondriis et crisso distincte nigro transfasciatis: rostro nigro: pedibus fuscis: long. tota cir. 7·5, alæ 4·3, caudæ 1·8, tarsi 1·3, rostri a rictu ·6.

Hab. Veragua (*Arcé*).

This species is quite distinct from any hitherto described. It is smaller than even *O. thoracicus*, to which it is perhaps most nearly allied. The white throat and belly, the strongly marked flanks, together with the deep rufous colour which encircles the whole of the anterior part of the body, neck, and head, render it a conspicuous species.

XXXVII.—*Letters, Announcements, &c.*

The following letters, addressed "To the Editor of 'The Ibis,'" have been received:—

Sir,—I beg leave to offer the following short notes on several species of birds found in Corsica as an appendix to Mr. C. B. Wharton's paper on the ornithology of that island (*antea*, p. 17). I also add the names of seven species which came under my notice in the years 1865–66, as well as seven extra species observed in 1875.

The only general observation I should like to make is that a considerable proportion of the individuals of the different species seems as though they only made Corsica a temporary halting-place on their journey northwards; and I feel confident that if a really perfect and trustworthy list of Corsican birds could be noted, say during a term of three or more years, the number of species would be found to be comparatively limited, and that of the spring migrants bear but a small proportion to the entire list. In the case of several species, both Mr. C. B. Wharton and myself would come across a considerable number of individual birds during a few consecutive days, after which they were suddenly lost sight of. Could any ornithologist be found who would furnish us with a list, such as I have already suggested, of the birds of Corsica and Sardinia, coupled with a very accurate record of dates, eleva-

tion at which they were found, height of flight while migrating, &c., I think he would be rendering good service by furnishing data which would at all events assist in throwing some light on the *details* of the mystery of migratory journeys, a class of information much required.

Except for its geographical position in connexion with the question of migration, lying, as it does, in a direct line with the African coast, Sardinia, and the shores of Southern Europe, I consider that Corsica offers but a poor field to the ornithologist.

In the case of *Hirundo rustica*, I noticed, as did Mr. Wharton, that amongst a large flock seen on the 17th April, near Lake Bigulia, the colouring of the belly appeared to vary much; so we shot a large series in hopes of identifying *H. rufula*, but did not succeed. The bellies of those obtained varied from pure white to pale chestnut.

Merops apiaster merits some notice, as the conditions under which we met with that bird suggest to my mind that Corsica is only a temporary halting-place for many of the summer migrants from Africa. This bird was first observed at the end of April; and though undoubtedly many remain to breed amongst the sand banks near the lagoons on the east coast, still the main body of these birds pass on northwards to the mainland. The Bee-eaters we saw were flying northwards at a considerable altitude, out of gunshot.

Turdus merula also deserves a notice. This species is very plentiful during the winter; and a few remain to breed. Mr. Wharton and myself found two nests with eggs on the 15th and 17th April. Both *T. merula* and *T. musicus* are essentially winter visitants, arriving, as they do, in thousands—so much so, that the right of snaring these birds is let to Italians, who come over expressly for the purpose of capturing them. The greatest part of the "catch" is either converted into *Pâté de Merles de Corse*, a delicacy much esteemed on the continent, or the birds themselves are shipped to Marseilles in the flesh. They are of three qualities:—1st, those that feed on the berries of the myrtle; 2nd, those that subsist on the fruit of the juniper; 3rd, those that feed on the olive,—and are

valued in the order stated. I make mention of these facts simply to show that the migration of this species is remarkable in its character.

Perdix rubra. This species is still very plentiful. Their apparent scarcity in spring, mentioned by Mr. Wharton, is owing to the terrible persecution they receive at the hands of the natives, who poach irrespective of close time, and moreover destroy whole coveys, either by torch-light or when the birds come to drink. I may also add that the Red-legged Partridge is a very difficult bird to spring without a very good dog; and the situations in which it is found are so rocky, inaccessible, and clothed with dense cover, that the birds escape detection except by a most indefatigable sportsman.

List of Species obtained by me in Corsica in 1865 and 1866.

Aquila chrysaetus. Two specimens in the flesh, shot near Corte, both decidedly smaller than the usual type of Golden Eagle. Unfortunately I did not take measurements, and the skins have long since disappeared.

Buteo vulgaris. Common all along the east coast.

Circus cyaneus. In the flesh; procured from the plain near Lake Bigulia.

Scops giu. Bought in the market at Bastia, where they hung for sale, partly plucked, to show the fat!

Coccothraustes vulgaris. Bought in the market at Bastia.

Anas strepera. Shot by myself at Lake Biguila.

Mergus albellus ♀. Given me in the flesh; shot on Lake Bigulia.

List of Species, 1875.

Pandion haliaetus. A skin. Bird procured 1874 at Lake Bigulia. A pair or two are to be seen on most of the lagoons on the east coast.

Phasianus colchicus. In the flesh; shot at Aleria, on the east coast, where there are a few of these birds. When they were introduced into the island I cannot find out.

Podiceps cristatus. In the flesh; shot on Lake Bigulia, not uncommon on the lagoons on the east coast during winter.

Podiceps minor. Seen killed on Lake Bigulia.

Himantopus melanopterus. Fresh, and skin in course of being mounted. Shot at Aleria.

Machetes pugnax. 1st February; shot by me near Lake Bigulia; the only one seen.

Anser segetum. In the flesh. Shot near Lake Bigulia, Not very plentiful winter visitant.

Yours faithfully,

W. Jesse.

24th April 1876.

Dresden, May 15th, 1876.
Zoological Museum.

Sir,—In 'The Ibis' for April, page 246, a passage, quoted from Dr. Beccari's "Ornithological Letter," could be interpreted as if I got my Arfak birds from the missionary of Andei. I beg leave to state, as I have already in several other journals where Beccari's interesting "Ornithological Letter" was published, that my birds were hunted in 1873, partly by myself and my company on the southern slopes of the Arfak mountain-chain, partly in two expeditions of my hunters, which were organized and directed by myself, *ad hoc*, from the northern base of the mountains, where I was obliged to remain ill with fever, acquired in the swamps of the MacCluer Gulf. The heights reached on these expeditions were 3500 and 5500 feet respectively. The ornithological result of these Arfak tours amounted to 500 birds, many of which were and still are in the hands of my ornithological friends in your country. You will find the details of these trips, accompanied by the necessary notes, on the two maps which I hope soon have the pleasure of sending you.

Yours very truly,

A. B. Meyer.

June 9th, 1876.

Sir,—The name of *Astur cruentus* was first published in the P. Z. S. for 1842, when it was applied by Mr. Gould to the Goshawk of Western Australia.

It has subsequently been applied, but incorrectly, as it seems to me, to some other allied species, including the Hawk of the Fiji Islands (*Astur rufitorques* of Peale).

Mr. Layard, following Drs. Finsch and Hartlaub, has referred to this species under the name of *A. cruentus* in his interesting papers on the birds of the Fiji Islands (*anteà*, p. 144, and P. Z. S. 1875, p. 424); and I am therefore desirous of pointing out that *Astur rufitorques* is treated as a separate and distinct species by Mr. Sharpe in his recent work on the Diurnal Birds of Prey—in which, as it seems to me, he is undoubtedly correct; the descriptions of the two species given by Mr. Sharpe will suffice to show the differences between them; and I therefore need not here mention these in detail.

I desire, however, also to allude to the Harrier of the Fiji Islands (*Circus approximans* of Peale), which is referred to by Mr. Layard (again following the nomenclature of the Bremen ornithologists) as *Circus assimilis* (vide P. Z. S. 1875, p. 424).

I have only seen one example of the Fijian Harrier, an immature male, collected by Mr. Layard, and in the possession of Lord Walden, who kindly permitted me to examine it. This Harrier is not a specimen of the true *Circus assimilis* (*C. jardinii* of Gould), but resembles the immature plumage of *Circus wolfi*, and also that of *Circus gouldi*, with which latter Mr. Sharpe identifies *Circus approximans*. Whether the Fijian Harrier is really referable to *C. wolfi* or to *C. gouldi*, or is distinct from both, is a point which cannot be settled with certainty until an adult male is procured and carefully examined.

I am yours &c.,

J. H. Gurney.

P.S. Lord Walden's Fijian Harrier appears, by the ticket attached to it, to have had in its stomach lizards and shrimps, the latter a remarkable diet for a bird of this genus.

Sir,—A couple of examples of the rare Tern, *Sterna albigena*, Rüpp., shot on the Bombay coast near Hurnee (?) on

the 25th March, 1875, have recently come under my notice, and have been identified by our best authority on the Sterninæ, Mr. Howard Saunders. This Tern has, I believe, been only known to inhabit the Red Sea; and as it forms an addition to the fauna of India, its occurrence on the western shores of that country may not be unworthy of record in your pages.

Yours etc.,
WALDEN.

Chislehurst, June 15, 1876.

Turin, June 15th, 1876.
Zoological Museum.

SIR,—I have just received from Dr. Brüggeman a copy of his paper "Beiträge zur Ornithologie von Celebes und Sanghir," printed in the 'Abhandlungen herausgegeben vom naturwissenschaftlichen Verein zu Bremen,' Band v. S. 35–102, Taf. iii., iv. (1876). I wish to make a few remarks on some points already noticed in a paper which I have published in the 'Annali del Museo Civico di Storia Naturale di Genova,' vol. vii. p. 641–681, tav. xviii. (1875), with the title "Intorno a due collezioni di Uccelli di Celebes, inviate al Museo Civico di Genova dal Dr. O. Beccari e dal Signor A. A. Bruijn." Dr. Brüggeman seems not to be acquainted with my paper.

Page 51, *Halcyon cyanocephala*. The author confirms the idea expressed by me that this species is really different from *Monachalcyon princeps*.

Page 80, sp. 99, *Ptilinopus melanocephalus*, var. *celebensis*, Brügg., is my *Iotreron melanospila* (Ann. Mus. Civ. Gen. vii. p. 671).

Page 80, sp. 100, *Ptilinopus nuchalis*, Brügg., seems to be my *I. xanthorrhoa* (*l. c.*).

Page 81, *Ptilinopus sulaënsis*, Brügg., is my *I. chrysorrhoa* (*l. c.*).

Page 88, *Megacephalon maleo*. I have shown (*l. c.* p. 673) that this bird was first described by S. Müller.

Page 94. The genus *Schizoptila*, Brügg., has the same type as my genus *Gymnocrex* (*l. c.* p. 678).

In the same paper, page 82, I find named a *Ptilinopus marginalis*, Brügg., ex Nova Guinea et Salwatty, and a *P. senex*, ex Jobi, which I have already discriminated and respectively named *P. trigeminus* and *P. geminus* in another paper of mine (Ann. Mus. Civ. Gen. vii. pp. 786, 787).

I take this opportunity to point out that Mr. Severtzoff, in 'Stray Feathers,' vol. iii. p. 430, mentions a *Picus leptorhynchus* (previously described in 'The Ibis,' 1875, p. 487); to it he refers a var. *leucoptera*, which Mr. Severtzoff identifies with my *Picus leucopterus* (Atti R. Ac. Sc. Tor. vi. (1871) p. 129). I cannot make out how a species already described can be considered as a variety of one described at a later period; it would have been only fair to acknowledge a *Picus leucopterus* with a var. *leptorhynchus*.

I remain, dear Sir,

Yours &c.,

T. Salvadori.

Mr. Layard's last letters from Fiji give us an account of his own and his son's doings up to the middle of May last. He was then on the point of leaving for New Caledonia, to which island he has recently been appointed H.M. Consul. As soon as he is settled in his new home his son purposes visiting New Hebrides and the adjoining islands; and Mr. Layard promises that we shall soon hear more of both of them from their new field of operations. As a last contribution to the ornithology of Fiji, Mr. Layard sends us a paper which, received at the last moment, we regret to be obliged to defer publishing till our next number.

A General Index to the Third Series, Vols. I.–VI. (*to be bound up with Vol. VI.*), will be issued with the ensuing January Number.

THE IBIS.

THIRD SERIES.

No. XXIV. OCTOBER 1876.

XXXVIII.—*Description of a new Species of Flycatcher* (Myiagra) *from the Fijis, and some Remarks on the Distribution of the Birds found in those Islands.* By Edgar Leopold Layard, C.M.G., F.Z.S., lately administering the Government of that Colony.

Every fresh excursion in pursuit of our favourite science, made either by my son or myself, to any new ground in these islands, impresses me more and more with the interesting character of the avifauna, as exhibited in the distribution and localization of species and in their variation. The accompanying Table shows, so far as our present knowledge extends, the distribution of birds on some of the chief islands which we have visited. It will serve for a beginning; and I doubt not that further research into the interior of both the large islands of Viti Levu and Vanua Levu, of the eastern group of small islands (in the northern portion of which are Loma Loma and Mango), and of the western, or Yasawa group, will yield many additions to the list of the birds of Fiji.

A few remarks must be made as to the localities in which the birds here enumerated were collected. On Ovalau we have chiefly worked the eastern side, round the town of Levuka.

Wakaia we pretty well ransacked; from Mokane, which adjoins it, I inspected a small collection. Our knowledge of Vanua Levu is restricted to the neighbourhood of Bua (Sandalwood Bay). Here Messrs. Holmes, Swayne, and Tempest were kind contributors; and my son spent a month at the eastern end of the island. Mr. Kleinschmidt (Herr Godeffroy's collector) has worked the southern side; but, with the exception of *Lamprolia minor* (Kleinsch.), I know of nothing new that he has procured. He told me that he obtained the Orange Dove (*Chrysœna victor*), *Platycercus tabuensis*, and other known species. Taviuni was well worked by my son and myself at Ngila, on the north-eastern side, and skimmed by Mr. Tempest about Vuna Point, further south. My son and I visited Loma Loma and Mango, which I place together, but had not time for much real work. I have visited the whole of the maritime districts of Viti Levu; and though I had no opportunity of collecting, I used my eyes. My son has made several trips up the Rewa river, and stayed a month at Suva, on the south-east end. I have also paid these localities flying visits, and have received small collections from two kind contributors on the Rewa, Messrs. Storck and Abbott. At Kandavu I stayed some days, and saw the whole of the 'Challenger' collection made there; and my servant, collecting for Mr. Ramsay, of the Sydney Museum, worked there for some weeks and obtained several new species, which I do not describe, as they belong to Mr. Ramsay, but simply indicate.

The Sea-fowl and Waders require more attention. Though we have added several to the list, I am sure the low-lying Yasawa Islands and the eastern group will furnish many more; so also will the Ringgold Islands to the north-east. It was on these latter that the Earl of Pembroke was wrecked; and he describes the vast numbers of birds on the island on which they landed (see 'South Sea Bubbles. By the Earl and the Doctor'). As the Sea-fowl are naturally a wandering race, I have left a column in the Table expressly for them, indicating by the point of the compass the portion of the group where I have chiefly seen the species. The acquisition by my son of the rare little

Curlew (*Numenius femoralis*, Peale) a few days ago at "Cocoanut Point," in Sandalwood bay, adds a most interesting novelty to our list. He saw a pair of them, but only succeeded in securing the female. It must be very scarce, as we have kept a special look-out for it, but until this moment without effect.

During his visit there he also procured the very interesting new Flycatcher I am about to describe, and established the distinctness of *Myiolestes buaensis*, which is just intermediate between *M. vitiensis*, Hartl., and *M. macrorhyncha*, nob., and of *Ptilotis similis*, nob., from *P. carunculata*, Gmel. He also procured specimens of both sexes of my new Blackbird (*Merula vitiensis*) in splendid plumage.

MYIAGRA CASTANEIGULARIS, Layard, sp. nov.

Male. Upper parts dark ashy blue; crest on head short, azure; underparts, chin, throat, and upper portion of chest bright clear chestnut; thence to the vent white; tail-feathers partly white and partly of the colour of the back, the extended pair being white from the tip to two thirds of their length, the others less and less white, until the centre pair have the merest white edge to the tip; bill rich orange; legs ash-coloured; iris dark brown. Length 5″ 6‴, wing 3″, tail 2″ 10‴, bill 10‴, tarse 10‴.

Female rusty grey above; top of head dark ashy blue; below coloured like the male, but less brilliantly.

Found in the high tree-forest at Kandi (Bua) feeding on insects; in habits and note resembling its ally *M. azureocapilla*, Layard.

This elegant Flycatcher closely resembles its prototype *M. azureocapilla*, from Taviuni (which is separated from Vanua Levu by a narrow strait), and is another illustration of the variation of species found in these islands. The upper parts are precisely similar (when the tail is closed, so that the white ends of the feathers do not show), with the exception of the crest, which, though similarly coloured, is *shorter*. On the underparts the dark chestnut of the throat is changed into a singularly bright chestnut; and the white of the abdomen,

and vent especially, is purer, the latter in *M. azureocapilla* being "isabella"-coloured.

It replaces the latter species on Vanua Levu in the same way that the little *Lamprolia minor*, Kleinsch., replaces *L. victoriæ*. The two, with the exception of a trifling difference in the brilliancy of the centre portion of the back of the head, are exactly similar; but the former is a third less in size than the latter.

The same may be said of *Myiolestes buaensis*, nob.; while *Ptilotis similis*, nob., which extends to Taviuni, may be distinguished from *P. carunculata* of Loma Loma by having *pale yellowish grey ear-tufts* instead of *bright golden yellow*. It is also generally less brightly plumaged—less yellow-tinted on the breast.

The fine examples of *Merula vitiensis*, nob., which my son procured, enable me to add some additional particulars to my previous description*. The abdomen and lower part of the chest in a fine adult male are a warm ruddy chestnut, and the vent is white. In the female the chestnut is toned down to a faint brown tint, and the white vent is very circumscribed.

I have already in another place (*anteà*, p. 141) expressed my opinion that *Platycercus tabuensis* was introduced into Eoa (Tonga Islands) from Fiji. My son made a special visit to the aged chief "Tui-Bua" (lit. "King of Bua," pronounced in the missionary jargon Tuimbua) for the purpose of getting information on this point. The old man, *whose mother was a Tongan woman from Eoa*, said that from time immemorial, ever since the Tongans gained a footing in Fiji (which was only in the districts where this variety of *P. splendens* is found, not in the southern portions where the bright-coloured race exists), it has been their custom to take tamed examples of *Platycercus* and *Lorius* to Tonga for the purpose of periodically plucking their crimson feathers for ornamenting fans &c.

I feel more than ever convinced that the Eoa Parrots have sprung from introduced birds †.

* [We have not been able to find Mr. Layard's description of this Thrush.—Ed.]

† [See P. Z. S. 1876, p. 308, for an extract from Labillardière's 'Voyage in search of La Perouse,' where the introduction of Parrots into Tongataboo from Fiji is mentioned as early as 1793.—Ed.]

Bua is the great, if not the only habitat for *Pachycephala gräffii*, Hartl.; and my son procured a fine series of them.

A reference to the Table will show how the different species of this genus, and of *Ptilotis* and *Myialestes*, are distributed over the group and yet confined to circumscribed localities.

In the accompanying Table birds whose names are preceded by * are peculiar to Fiji. They amount to exactly one half of our at present known species.

Tabulated List of Fijian Birds, showing their distribution in some of the principal Islands, as far as is known up to the present date.

	Ovalau.	Wakaia & Mokani.	Vanua Levu.	Taviuni.	Loma Loma & Mango.	Viti Levu.	Kandavu.	Marine.
1. Falco lunulatus (*a*)	..	..	..	..	..	*		
†2. Astur cruentus, *Gould*	*	*	*	*	*	*	*	
3. Circus assimilis, *Jard.*	*	*	*	*	*	*	*	
4. Strix delicatula, *Gould*	*	*	*	*	..	*		
5. Otus? —— ? (*b*)	..	..	..	..	..	*		
*6. Platycercus splendens, *Peale*	..	..	..	..	..	*	*	
7. —— tabuensis, *Gmel.* (Vars. of *P. splendens.*)	..	..	*					
*8. —— koroensis, *Layard* (*c*) (Vars. of *P. splendens.*)	..	..	..	..				
*9. —— taviunensis, *Layard* (Koro only.)	..	..	..	*				
*10. —— personatus, *Gray*	..	..	..	..	..	*		
*11. Lorius solitarius, *Lath.*	*	*	*	*	*	*	*	
*12. Trichoglossus aureocinctus, *Layard*	*	..	..	*	..	*		
13. Eudynamis taitiensis, *Sparrm.*	*	*						
*14. Cuculus simus, *Peale*	*	*	*	*	..	*	*	
*15. —— infuscatus, *Hartl.*	*	*	*	..	..	*		
*16. Halcyon cassini, *F. & H.* (*d*)	*							
17. —— sacra, *Gmel.*	*	*	*	*	*	*	*	
18. Collocalia vanicoroensis, *Quoy* (*e*).								
19.* —— spodiopygia, *Peale*	*	*	*	*	*	*	*	
20. Hirundo tahitica, *Gmel.*	*	*	..	*	*	*	*	
*21. Myzomela jugularis, *Peale*	*	*	*	*	*	*	*	
22. —— nigriventris, *Peale* (*f*)	..	..	..	..	..	*		
23. Ptilotis carunculata, *Gmel.*	..	..	..	..	*			

† [According to Mr. Gurney this Hawk should be called *Astur rufitorques*, Peale. *Cf. antea*, p. 384; see also Mr. Gurney's note on the Fijian Harrier, here called *Circus assimilis*.—Ed.]

	Ovalau.	Wakaia & Mokani.	Vanua Levu.	Taviuni.	Loma Loma & Mango.	Viti Levu.	Kandavu.	Marine.
*24. Ptilotis procerior, *F. & H.*	*	*	..	..	..	*	*	
*25. —— similis, *Layard*	..	..	*	..	..	..	..	
*26. —— provocator, *Layard*	..	..	..	..	..	..	*	
*27. Tatare? viridis, *Layard*†	..	..	..	*	..	..	..	
*28. Leptornis? ——? (*g*)	..	..	..	..	..	*	..	
*29. Zosterops flaviceps, *Peale*	*	*	*	*	*	*	*	
*30. —— explorator, *Layard*	..	..	*	*	..	..	*	
*31. Myiagra castaneiventris, *Verr.*	*	*	*	*	*	*	..	
*32. —— castaneigularis, *Layard*	..	..	*	..	..	..	..	
*33. —— azureocapilla, *Layard*	..	..	..	*	..	..	..	
*34. Monarcha lessoni, *Homb.*	*	*	*	*	..	*	*	
*35. Petroica vitiensis, *Finsch*	..	..	*	..	..	*	*	
*36. Merula bicolor, *Layard*	..	..	..	..	..	..	*	
*37. —— vitiensis, *Layard*	..	..	*	..	..	..	..	
*38. —— tempestii, *Layard*	..	..	..	*	..	..	..	
*39. Rhipidura albicollis, *Layard*	*	*	*	*	..	..	..	
*40. —— ——? (*h*)	..	..	..	..	..	..	*	
*41. Lamprolia victoriæ, *F. & H.*	..	..	..	*	..	..	..	
*42. —— minor, *Kleinschmidt*	..	..	*	..	..	..	..	
*43. ——? ——? (Red-head) (*i*)	..	..	..	..	..	*	*	
44. Lalage terat, *Bodd.*	*	*	*	*	*	*	*	
*45. Pachycephala gräffii, *Hartl.*	..	..	*	..	..	..	..	
*46. —— vitiensis, *Gray*	..	..	..	..	..	..	*	
*47. —— icteroides, *Peale*	*	..	..	..	..	..	..	
*48. —— intermedia, *Layard*	..	..	..	..	..	*	..	
*49. —— torquata, *Layard*	..	..	..	*	..	..	..	
*50. ——? nigrogularis, *Layard* (*j*)	*	..	..	*	..	*	..	
*51. Myiolestes vitiensis, *Hartl.*	*	..	..	..	..	*	..	
*52. —— macrorhyncha, *Layard*	..	..	..	*	..	..	..	
*53. —— buaënsis, *Layard*	..	..	*	..	..	..	..	
*54. —— compressirostris, *Layard*	..	..	..	..	..	..	*	
*55. —— ——? (*k*)	..	..	..	..	..	..	*	
*56. Artamus mentalis, *Jard.*	*	*	*	*	*	*	..	
*57. Aplonis vitiensis, *Layard*	*	*	*	*	*	*	..	
*58. Erythrura pealii, *Hartl.*	..	..	*	*	..	*	..	
59. Ptilinopus perousii, *Peale*	*	*	*	..	*	*	*	
*60. —— fasciatus, *Peale*	..	*	..	..	*	..	..	
*61. Chrysœna luteovirens, *Homb.*	*	..	..	..	..	*	..	
*62. —— victor, *Gould*	..	..	*	*	..	..	..	
*63. —— viridis, *Layard*	..	..	..	..	..	..	*	
64. Columba vitiensis, *Quoy*	*	*	*	*	*	*	*	
*65. Carpophaga latrans, *Peale*	*	*	*	*	*	*	*	
66. —— pacifica, *Gmel.*	*	*	..	..	..	*	*	
67. Phlogœnas stairi, *Gray*	*	*	*	*	..	*	..	

† [Referred by Count Salvadori (*posteà*) to the genus *Leptornis*.—Ed.]

	Ovalau.	Wakaia & Mokani.	Vanua Levu.	Taviuni.	Loma Loma & Mango.	Viti Levu.	Kandavu.	Marine.
*68. Rallina pœciloptera, *Hartl.*	..	..	..	..	..	*		
69. Rallus pectoralis, *Less.*	*	*	*	*	*	*	*	
70. Ortygometra tabuensis, *Gmel.*	*	..	..	..	..	*		
71. —— quadristrigata, *Horsf.*	*	..	..	..	..	*		
72. Porphyrio vitiensis, *Peale*	..	*	*	*	*	*		
73. Limosa uropygialis, *Gould* (*l*)	..	..	..	..	..	..	..	U.
74. Numenius femoralis, *Peale*	..	..	*	..	..	..	..	N.
75. Actitis incanus (*Gmel.*)	..	..	..	..	..	..	..	U.
76. Charadrius fulvus, *Gmel.*	..	..	..	..	..	..	..	U.
77. Strepsilas interpres (*L.*)	..	..	..	..	..	*	..	Koro
78. Ardea sacra, *Gmel.*	..	..	..	..	..	..	.	U.
79. Ardea javanica, *Horsf.*	..	..	..	..	..	*	*	
80. Dendrocygna vagans, *Eyton*	..	..	..	..	..	*		
81. Anas superciliosa, *Gmel.*	..	..	..	..	..	..	..	U.
82. Sterna bergii, *Licht.*	..	..	..	..	..	..	..	U.
83. —— longipennis, *Nordm.* (*m*)	..	..	..	..	..	..	..	?
84. —— melanauchen, *Temm.*	..	..	..	..	..	..	..	U.
85. —— lunata, *Peale*	..	..	..	..	..	..	..	S.E.
86. —— panaya, *Gmel.*	..	..	..	..	..	..	..	U.
87. Anous stolidus (*L.*)	..	..	..	..	..	..	..	S.E.
88. —— leucocapillus, *Gould*	..	..	..	..	..	..	..	U.
89. —— cinereus, *Néboux*	..	..	..	..	..	..	..	N.E.
90. Gygis alba (*Sparrm.*)	..	..	..	..	..	..	..	S.E.
91. Larus ——? (*n*)	*	..	..	..	..	..	..	
92. Thalassidroma macgillivrayi, *Gray* (*m*)	..	..	..	..	..	..	..	?
93. Puffinus nugax, *Sol.*	..	..	*	..	..	*	..	E.
94. Procellaria cærulea, *Gould*†	..	..	*	..	..	*	..	N.E.
95. Diomedia melanophrys, *Temm.* (*o*)	..	..	..	..	..	..	..	S.
96. Phaëton rubricauda, *Bodd.*	..	..	..	..	..	..	..	N.
97. —— æthereus, *L.*	..	..	..	..	..	..	..	N.
98. —— candidus, *Gray*	..	..	..	..	..	..	..	N.
99. Dysporus sula, *L.*	..	..	..	..	..	..	..	U.
100. Tachypetes aquilus, *L.*	..	..	..	..	..	..	..	U.

(*a*) I have not seen this bird, but enter it on the authority of Baron von Hügel. It was shot on the Rewa by Mr. Storck.

(*b*) My son, Mr. Leopold Layard, and others have seen a large brown Owl on several occasions; but none have reached my hands.

† [*Œstrelata leucoptera*, Gould, may be added to this list, as we have recently examined a specimen of this species in the Paris Museum, which was brought by M. Filhol from the Fiji Islands.—Ed.]

(*c*) Intermediate between the Bua bird and the collarless variety found on Taviuni. Found on Koro only.

(*d*) I do not think this is a good species; I include it on the authority of Drs. Finsch and Hartlaub, with their mark of †.

(*e*) Included on the above authority. They give no special locality.

(*f*) Ditto. It is said to have been found in Sandalwood Bay; but none of my collectors have seen it, and I doubt the statement.

(*g*) A fine new species, entirely green, with yellowish legs and bill, just discovered by Herr Godeffroy's collector.

(*h*) Discovered by Mr. Ramsay's collector, therefore not named.

(*i*) Ditto. I know not to what genus to refer this bird.

(*j*) I originally placed this bird, provisionally, in the genus *Lalage*, not having any works of reference at hand for consultation. It certainly does not belong there, and is nearer *Myiolestes*. [A typical *Myiolestes*, fide Finsch, P. Z. S. 1876, p. 20.—Ed.]

(*k*) Discovered by Mr. Ramsay's collector. The giant of the genus.

(*l*) The letter U after this name and others stands for "Ubique," the species being generally distributed on our seaboard and in our seas.

(*m*) Included on the authority of Drs. Finsch and Hartlaub, who give, on G. R. Gray's authority, the locality Ngau Island.

(*n*) I did not see this bird, which was picked up not far from Mr. Kleinschmidt's house, and taken to him; he assures me it was a genuine *Larus*.

(*o*) Teste Baron von Hügel.

[To this list must be added the species allied to *Orthotomus* recently described by Dr. Finsch (P. Z. S. 1876, p. 19) as *Drymocæra badiceps*.—Ed.]

Levuka, May 20, 1876.

XXXIX.—*Notes on the* Trochilidæ. *The Genera* Heliothrix, Calliphlox, Catharma, *and* Petasophora. By D. G. Elliot, F.R.S.E. &c.

Genus Heliothrix.

The members of the genus *Heliothrix* are possessed of graceful form and a plumage of a pleasing contrast of green and white. They have long tails, the female's being longer than that of the adult male. The three species are distributed generally over Central and South America, not, however going south of Brazil on the east coast, nor Peru on the west. In reviewing the geographical distribution of the species, we see that Guatemala is the most northern country which any of them inhabit; and here is found *H. barroti*, which goes through Central America, Columbia, into Ecuador,

but has never to my knowledge been met with east of the Andes. No other species of the genus, beside *H. barroti*, is found in Central America. In South America the countries of Guiana, Venezuela, Columbia, Ecuador, Peru, and Northern Brazil possess *H. auritus*, which is the most widely distributed species of the genus. *H. auriculatus* is apprently confined to Southern Brazil; but how far it extends its range to the northward is not yet definitely ascertained.

The three species comprising the genus *Heliothrix*, according to this paper, can easily be distinguished from each other, and they constitute two natural groups, as follows :—

A. Head metallic green.
  a. Throat white ..... *H. auritus*.
  b. Throat metallic green ..... *H. auriculatus*.
B. Head metallic purple, throat white ..... *H. barroti*.

HELIOTHRIX AURITUS.

Trochilus auritus, Gmel. Syst. Nat. (1788) vol. i. p. 493, sp. 47.

Heliothrix auritus, Gould, Mon. Troch. vol. iv. pl. 213; id. Intr. Troch. (8vo ed.) p. 121. sp. 238.

Heliothrix longirostris, Gould, P. Z. S. 1862, p. 124.

Hab. Northern Brazil, Guiana, Venezuela, Columbia, Ecuador, Peru.

Gmelin described this species as above cited; and it was the only one belonging to this genus known to the older authors. It has not received many synonyms, the principal one being that bestowed by Lesson upon the female, which he called *Ornismya nigrotis* (Ind. Gen. et Syn. Ois. du Gen. Trochilus, p. 20. sp. 48). As will be seen, the range of this species is very extensive; and it is found from Brazil over the northern part of South America, southward to Peru on the east coast. Specimens from Ecuador were described by Mr. Gould, in the 'Proceedings' of the Zoological Society of London for 1862, as distinct, under the name of *H. longirostris*, characterized as differing from *H. auritus* in its "larger size, longer bill, and the crown devoid of the glittering hue seen in *H. auritus*; at the same time it is somewhat brighter than the back." A specimen in my collection, obtained from Mr. Gould, represents this form. I have carefully compared

it with *H. auritus*, and I fail to discover any character which should cause it to be separated from that species. The bill is slightly longer, though hardly perceptibly so; there is no difference in the general measurements of the body; and the head and back are of about the same brilliancy as is observed in ordinary specimens of *H. auritus*. I therefore placed *H. longirostris* among the synonyms of the present species.

HELIOTHRIX AURICULATUS.

Trochilus auriculatus, Nordm. Erman's Reise um die Erde, p. 5, t. 2. figs. 1 & 2 (1835).

Heliothrix auriculatus, Gould, Mon. Troch. vol. iv. pl. 214; id. Intr. Troch. (8vo ed.) p. 121. sp. 239.

Heliothrix phainolæma, Gould, P. Z. S. 1855, p. 87.

Hab. Southern Brazil; banks of Rio Napo (?) and Rio Negro (?) (*Gould*).

This bird was first described by Nordmann under a MS. name of Lichtenstein's. Although similar to *H. auritus*, it is readily distinguished by having the throat a brilliant metallic green, instead of white. It is apparently confined to Southern Brazil. In 1855 Mr. Gould described *Heliothrix phainolæma* from specimens said to have come from the Rio Napo, and which differed from *H. auriculata* in having the entire throat a metallic green. In his monograph of the Trochilidæ he states the locality of his specimens to be the Rio Negro in Northern Brazil; and the figures on his plate being represented in profile, the exact extent of the green throat-mark cannot be perceived, while his description of "chin, throat, and sides of the neck rich luminous green" answers perfectly well for adult male specimens of *H. auriculatus* lying before me. I am inclined to think that Mr. Gould is in error with regard to the locality of the specimens he described and figured (as he gives such distant places as the habitat in his two statements), and that he had merely fine adult males of *H. auriculatus* before him when he published his description.

Having, in my own collection, specimens of the present species that exhibit a varying amount of green on the throat,

in some extending a little distance below the chin, in others almost reaching to the breast, I do not deem it a sufficient character upon which to establish a species, and have consequently placed *H. phainolæma* as a synonym of *H. auriculatus*.

HELIOTHRIX BARROTI.

Trochilus barroti, Bourc. Rev. Zool. 1843, p. 72.

Heliothrix purpureiceps, Gould, P. Z. S. 1855, p. 87; id. Intr. Troch. (8vo ed.) p. 121. sp. 241; id. Mon. Troch. vol. iv. pl. 216.

Heliothrix barroti, Gould, Mon. Troch. vol. iv. pl. 217.

Heliothrix violifrons, Gould, Intr. Troch. (8vo ed.) p. 122. sp. 242.

Hab. Central America, Columbia, Ecuador.

This species was first described by Bourcier (*l. c.*) from specimens contained in the Paris Museum, sent from Cartagena by M. Barrot, who was at that time stationed there as the French Consul-General. In 1855 Mr. Gould redescribed it as *H. purpureiceps*; and in his Introduction to the Monograph of the Trochilidæ he gives to a form of this species, which he separates on account of the metallic colouring on the head being restricted to the crown, the name of *H. violifrons*. I find in my collection specimens of *H. barroti*, procured on the volcano of Chiriqui by Arcé, which represent both the forms separated by Mr. Gould, thus showing that the character he gives is not indicative of specific rank; for we cannot suppose that two species so closely allied as to require very keen examination to perceive their differences are to be found inhabiting the same country, much less the same mountain. It would thus seem necessary to place *H. violifrons* as a synonym of *H. barroti*, which I believe to be its proper place.

Genus CALLIPHLOX.

But two species are at present included in this genus, one of them being among the most common of this family. They are characterized by long, slender, deeply forked tails, and

with metallic throats, not particularly luminous. The two species form but one group, distinguished as follows :—

Tail long and deeply forked.
Throat amethyst ..... *C. amethystina.*
Throat deep violet ..... *C. mitchelli.*

Considerable confusion has arisen among the synonyms of the first of these species, owing to a distinct form, described by Lesson and belonging to a different genus, having been confounded with it; and to rectify this error is the chief purpose of this portion of my paper.

The species of *Calliphlox* inhabit both sides of South America—*C. amethystina* is found from Trinidad to Brazil, being most abundant, perhaps, in the last-named country; while *C. mitchelli* has, as yet, so far as I am aware, been only met with in Ecuador. It is not improbable that it may extend its range into Peru, as I have one specimen said to have come from that country; but I do not feel certain that the locality is correctly given.

CALLIPHLOX AMETHYSTINA.

Trochilus amethystina, Gmel. Syst. Nat. i. p. 496 (1788).

Ornismya amethystina, Lesson, Hist. des Ois.-Mouches, p. 150, pl. 47; id. Suppl. des Ois.-Mouches, pls. 20, 21, 22.

Calliphlox amethystina, Reich. Aufz. der Colibris, p. 12; Gould, Mon. Troch. vol. iii. pl. 159; id. Intr. Troch. (8vo ed.) p. 97. sp. 178.

Ornismya amethystoïdes, Less. Hist. Nat. Troch. p. 79, pls. 25, 26, 27.

Calliphlox amethystoïdes, Gould, Intr. Troch. (8vo ed.) p. 98. sp. 179.

Trochilus brevicauda, Spix, Av. Bras. i. p. 79, t. 80. fig. 2?

Hab. Brazil, Venezuela, Trinidad.

This well-marked species was first described by Gmelin (*l. c.*) from a specimen said to have come from Cayenne. Much confusion has arisen in its nomenclature from the desire among some writers to admit the examples from the province of Minas Geraes as distinct from those found in other portions of Brazil, and also to refuse specific rank to the Cayenne

bird with a short square tail. This last determination, I am led to believe, has arisen among Trochilidists simply from the lack of proper specimens to enable them to form a judgment. There are two synonyms only that at present need be considered here (that of *Ornismya orthura* of Lesson being treated under a different head), the first being *Trochilus brevicauda*, Spix (*l. c.*). The figure and description of this author have been taken from a female, the first so poorly done, and the last so insufficient, as to render it absolutely impossible to determine whether the bird belongs to this species or to that one for which I have in this paper constituted the genus *Catharma*. An examination of the type alone will enable the question to be solved satisfactorily. I have therefore placed Spix's name among the synonyms of the present species with a doubt. The second one is *Ornismya amethystoïdes* of Lesson, distinguished chiefly by its rather small size. This form is stated to come from the province of Minas Geraes, in Brazil. I fail to distinguish any characters in specimens from that locality that entitles them, in my opinion, to a specific rank, and have placed the name *O. amethystoïdes* as a synonym of *C. amethystina*. An example before me from Minas Geraes, obtained from Mr. Gould, is in every respect as large as specimens of *C. amethystina* from other parts of Brazil, thus showing that the species varies in size even in that province, and that this cannot be relied upon as a character. As I am not aware that the female of *C. amethystina* has ever been characterized, I append a full description of it.

Upper parts golden green, inclining to brownish on the head. Entire underparts pale mouse-grey, lightest on the throat, which is spotted with brown. Wings purplish brown. Median rectrices bright metallic green; remaining rectrices have the basal half light brownish grey, slightly washed with a lustrous green, rest of feather black tipped with white. The tail is rounded, and the feathers quite broad. Bill black. Feet brown. Total length 3⅛ inches, wing 1¾, tail 1¼, bill ½.

Calliphlox mitchelli.

Trochilus mitchelli, Bourc. P. Z. S. 1847, p. 47.

Calothorax mitchelli, Reich, Aufz. der Colib. p. 13.

Calliphlox mitchelli, Gould, Mon. Troch. vol. iii. p. 160; id. Intr. Troch. (8vo ed.) p. 98. sp. 180.

Hab. Ecuador.

Bourcier described this species from an example in the collection of the late Mr. Loddige, obtained at Zimapan, in Ecuador. It still continues a rare species, but few specimens having been sent to Europe. In form it is very similar to the other members of this genus; but the peculiar deep-violet throat will at all times serve to distinguish it.

Genus Catharma.

Bill longer than the head, broad at base, pointed at tip. Wings long, reaching beyond the centre of tail, which is extremely short and almost square. Throat-mark rounded, metallic.

Catharma orthura.

Ornismya orthura, Lesson, Hist. Nat. des Troch. pp. 85, 88, pls. 28, 29.

Hab. Cayenne.

As cited above, Lesson described this species, and figured a male almost adult and a young bird. It has been considered by some authors to be the same as *Calliphlox amethystina*, either the young of that species, or an old female! (*vide* Gould, Intr. Troch. 8vo ed. p. 98). Upon what grounds this last supposition should have arisen, I am at a loss to conceive, as Lesson's figure on pl. 28 is evidently that of a male in nearly adult plumage. Unfortunately the artist has not coloured the tail properly, as he has represented it nearly all black, whereas the description says of it "en dessus, les moyennes vertes et dorées, les latérales vertes et dorées à leur base, puis noires à leur extrémité, excepté les deux plus externes, qui sont terminées et œillées de blanc." This is lost in the figure, as the underside of the tail alone is given. Having lately come into possession of Lesson's types of this species, I am able to state that it not only is a perfectly distinct species, but also represents an entirely new genus, most nearly

allied perhaps to *Atthis*. It has the form of *Atthis*, but the general coloration of *Calliphlox amethystina*. Four specimens are now before me, all from Cayenne—two adult males, one young male, and one still in the dress of the female, the sex being indicated by a few metallic spots upon the throat. The males, as I have said, are similar in colour to *C. amethystina*, but at once are seen to be conspicuously different from that species by their long bills and very short square tails. Fortunately these four specimens exhibit very clearly the different stages the tail of the male assumes before the bird arrives at maturity. At first the lateral rectrices are brownish or purplish black, tipped with white; then they change to a golden green, with a terminal bar of purplish black and the tip white, which in the adult disappears, or is but faintly indicated underneath, leaving the tail golden green with an apical purplish black bar. In this style of coloration it in no way has the least resemblance to *C. amethystina*, with which it has for so long been confounded. M. Bourcier was clearly in error in his opinion, as quoted by Mr. Gould (Mon. Troch. art. on *C. amethystina*), that the *orthura* of Lesson was only the young of *C. amethystina*; and it was doubtless this opinion that led Mr. Gould astray: it is difficult to understand how so good a Trochilidist as M. Bourcier undoubtedly was should have gone so wide of the mark as to confound such distinct species together. The example figured by Mr. Gould as the female of *C. amethystina* I should consider most probably the present species; for the female "Amethyst" has quite a different dress, as my description of that sex in this paper clearly shows. The bill of *Catharma orthura* is very long, much longer than that of the "Amethyst," and is the more conspicuous probably on account of the very short tail, which just projects beyond the tips of the closed wings. Lesson's descriptions being very accurate, it will not be necessary for me to give one at present. As I have said in my remarks on *C. amethystina*, it is impossible to state what *Trochilus brevicauda* of Spix really is, or to which of these species it should be referred; I have therefore deemed it best to leave it as a synonym of the

Calliphlox (as has already been done by authors generally) until I may be so fortunate as to meet with Spix's type, when the question can be effectually decided.

Genus Petasophora.

The species forming this genus constitute a well-marked group among the Trochilidæ; and each one contains characters sufficient to distinguish it easily from the rest. The only one allowed in this paper a specific rank of which there can be any doubt is *P. coruscans*; and regarding it we can only hope to obtain some future information which may enable us to ascertain what is its proper position in the genus.

The species constitute two sections, distinguished as follows:—

A. General plumage green, metallic.
- *a.* Upper part of throat and chin, ear-coverts, and abdomen deep blue; lower part of throat and breast light metallic green ..... *P. anais.*
- *b.* Throat and upper part of breast dark metallic green; ear-coverts and abdomen dark blue ..... *P. thalassina.*
- *c.* Ear-coverts violet-blue; throat and underparts metallic green ..... *P. cyanotis.*
- *d.* Ear-coverts, chin, and abdomen dark blue; throat with metallic red reflections ..... *P. coruscans.*
- *e.* Ear-coverts metallic purplish red; under tail-coverts white ..... *P. serrirostris.*

B. General plumage brown, not metallic.
- *a.* Ear-coverts violet-blue; throat metallic green .... *P. delphinæ.*

The members of the genus *Petasophora*, with one exception, are widely distributed. *P. anais* is found from Venezuela, throughout the countries lying along the Pacific, to and including Bolivia. *P. thalassina* is very common in Mexico, and abundant in Guatemala. *P. cyanotis* has a most extensive range, stretching from Costa Rica in the north, and Venezuela in the east, as far south as Peru. *P. serrirostris* is the exception mentioned above, and is the only strictly eastern species of the genus, being confined to Brazil, where it is met with from Bahia to Rio de Janeiro. *P. delphinæ* is one of the most widely distributed of Humming-birds, being found

generally throughout Central America, Trinidad, the Guianas, and along the northern and western countries as far south as Peru. The habitat of *P. coruscans* is not known.

PETASOPHORA ANAIS.

Ramphodon anais, Less. Hist. Nat. des Troch. p. 146, pl. 55.

Petasophora anais, Gould, Mon. Troch. vol. iv. pl. 224; id. Intr. Troch. (8vo ed.) p. 124. sp. 249.

Petasophora iolata, Gould, P. Z. S. 1847, p. 9. sp. 5; id. Mon. Troch. vol. iv. p. 225; id. Intr. Troch. (8vo ed.) p. 124. sp. 250.

Hab. Venezuela, Columbia, Ecuador, Peru, Bolivia.

Lesson described this bird in his 'Histoire Naturelle des Trochilidæ,' and erroneously gave its habitat as Mexico. He also confounded with it one or two other species of the same genus, supposing them to be immature examples of *P. anais*. The specimens before me are from Columbia, Ecuador, and Peru. Mr. Gould states that the form he has called *iolata* has its true habitat in Bolivia, extending to Chili; but I do not by any means find that this race is restricted to any particular country west of the Andes. I have placed without hesitation the name *P. iolata* among the synonyms of the present species, as I do not see that it has any claims whatever to a specific rank apart from *P. anais*. That there are specimens of *P. anais* larger than others every one who has examined these birds will readily admit; but they come from no especial district, and therefore have not even the claim of being deemed to belong to a geographical race. For instance, there are before me specimens from Bogota representing the typical *P. anais*, and also others from Antioquia, brought by Salmon, which are as large as any so-called *P. iolata* from Peru or Ecuador. The measurements are:—Bogota example, total length 4⅝ inches, bill on culmen ⅞, wing 2⅞, tail 2½; Antioquia specimen, total length 5¼ inches, bill on culmen ⅞, wing 3¼, tail 2¼. The entire appearance of this latter bird is more robust than the one from Bogota. Both forms are before me from Tinta, Peru, collected by Whitely, the wings measuring respectively 2¾ and 3⅛ inches—the latter intermediate, as will be noticed, between

the specimens given above; and there is also a difference in the length of wing between specimens from the Rio Napo. It is therefore very evident that size, upon which the supposed species was given a distinctive rank, is not to be relied on any more than is a particular locality; and therefore it is impossible to keep the two separate, as there is not a single other character to distinguish them apart. And I the more readily relegate *P. iolata* to the condition of a synonym, as I do not understand wherein the study of ornithology is advanced by the creation of species so closely related that their distinctness cannot be discerned save by the assistance of a pair of compasses.

PETASOPHORA THALASSINA.

Trochilus thalassinus, Swains. Phil. Mag. 1827, p. 441.

Petasophora thalassina, Gould, Mon. Troch. vol. iv. pl. 227; id. Intr. Troch. (8vo ed.) p. 125. sp. 252.

Hab. Mexico, Guatemala.

A clearly marked species, most abundant in Mexico, but extending its range into Guatemala. Resembling somewhat in coloration *P. anais*, it is nevertheless a very much smaller bird, and cannot be confounded with that species.

PETASOPHORA CYANOTIS.

Trochilus cyanotis, Bourc. Rev. Zool. 1843, p. 101.

Petasophora cabanidis, Heine, Journ. für Orn. 1863, p. 182.

Petasophora cyanotis, Gould, Mon. Troch. vol. iv. pl. 228; id. Intr. Troch. (8vo ed.) p. 125. sp. 253.

Petasophora cabanisii, Lawr. Ann. Lyc. Nat. Hist. N. Y. vol. ix. (1868) p. 126.

Hab. Venezuela, Costa Rica, Veragua, Columbia, Ecuador, Peru.

A species with a very wide range, and apparently generally distributed in the different countries mentioned above. The birds from Costa Rica, for which Heine proposed the name of *cabanidis* (*l. c.*), are, in my opinion, not specifically distinct; and I have therefore placed this name as a synonym.

PETASOPHORA CORUSCANS.

Petasophora coruscans, Gould, P. Z. S. 1846, p. 44; id. Mon. Troch. vol. iv. pl. 226; id. Intr. Troch. (8vo ed.) p. 125. sp. 251.

Hab. ——?

For a long time this bird has been a puzzle to me. I do not altogether like its appearance *as a species*; but at the same time I cannot exactly understand what may have caused the peculiar coloration of the throat. I have only seen two specimens—one in Mr. Gould's collection, from which his figures were taken, and one in my own, precisely similar, as was proved on comparing the two together. These are the only examples, I believe, that have ever been procured; and the locality of neither is known. My specimen came in a large lot of about 4000 birds, nominally from Bogota; and there was no other in any way resembling it, although careful search was made. I have tried the effect of heat upon other specimens of *Petasophora*, to see if I could change the green metallic colours to the red so conspicuous on the throat of *P. coruscans*, but without success; and I know of no acid with which the bird in life or the skin afterwards would be likely to have come into contact, that would produce the change. With only a single specimen for us to form an opinion, we should, not unnaturally, decide that it was a curious individual variation; but with *two* exactly alike, it would seem strange that so peculiar a difference should have been produced accidentally; and if it had been, the thought naturally arises, Why does it not occur oftener among the thousands of specimens of the different species of *Petasophora* constantly brought to Europe? That a similar style does exist, in one other instance, is proved from the fact that I have an example of *Petasophora* in my collection smaller than *coruscans*, and evidently not the same species, which has the entire throat a bright metallic red. This colour does not spread to the chest, as is the case with the similar colour in *P. coruscans*, but is restricted to the centre of the throat, which it entirely covers. Now if *P. coruscans* is a distinct species, this unde-

scribed bird is unquestionably entitled to the same rank; but as I do not feel satisfied that Mr. Gould's bird should be so considered, I refrain from characterizing my specimen. Perhaps if the attention of ornithologists generally be directed to this matter, we may be able to learn if there is really existing a group of pink-throated *Petasophoræ* living in the interior of Columbia or Ecuador, of which these examples have alone reached Europe; for it has happened that specimens regarded by naturalists as *lusus naturæ*, from their unusual appearance, have eventually proved to represent very distinct forms; and, mindful of this fact, I do not at present feel inclined to place *P. coruscans* among the synonyms of *P. anais*, nor bestow a name upon the other form, which future evidence may show ought to have been left undescribed. Better "learn to labour and to wait."

PETASOPHORA SERRIROSTRIS.

Trochilus serrirostris, Vieill. Nouv. Dict. d'Hist. Nat. vol. vii. p. 359 (1817).

Petasophora serrirostris, Gould, Mon. Troch. vol. iv. pl. 223; id. Intr. Troch. (8vo ed.) p. 124. sp. 248.

Hab. Brazil.

This, the longest-known species of this genus, represents it in the south-eastern part of South America. It is distinguished from all the other species chiefly by its white under tail-coverts. It is very common in Brazil, and apparently migrates between Bahia and Rio de Janeiro.

PETASOPHORA DELPHINÆ.

Ornismya delphinæ, Less. Rev. Zool. 1839, p. 44.

Petasophora delphinæ, Gould, Mon. Troch. vol. iv. pl. 229; id. Intr. Troch. (8vo ed.) p. 125. sp. 254.

Hab. Central America, Trinidad, Guiana, Venezuela, Columbia, Ecuador, and Peru.

This widely distributed species was first described by Lesson (*l. c.*). It is remarkable among the members of this genus by having its metallic colouring restricted to the throat and ear-coverts, the rest of the plumage being devoid of brilliancy,

thus giving the impression that the bird is only in process of assuming its full dress. It is among the commonest species of this group, and, as will be noticed from the countries named above, has a very extensive dispersion.

XL.—*Description of a new Tanager of the Genus* Calliste, *and Remarks on other recently discovered Species.* By P. L. Sclater.

(Plate XII.)

The illustrated Monograph of the Genus *Calliste*, which I published in 1858, contained figures and descriptions of fifty-two species of this brilliant genus of Tanagers.

In the Catalogue of my American collection, published in 1862, forty-nine species only were given, five of those recognized in the monograph being then unrepresented in the collection, but two additional species being included, namely *C. albiventris* (united in the monograph to *C. brasiliensis*) and *C. cyanotis* (discovered subsequently).

In 1863, in an article published in this journal, "on Recent Additions to the Genus *Calliste*"*, I gave an account of the discoveries in this group which had been made up to that time since the issue of my monograph.

These were five in number, namely:—

1. *Calliste cyanotis.*
2. —— *lavinia.*
3. —— *frantzii.*
4. *Calliste dowi.*
5. —— *hartlaubi.*

In 1868, in another article published in this journal†, I gave a description and figure of *Calliste cabanisi*, mihi (= *C. sclateri*, Cab. nec Lafr.), and remarked that this was the only additional species I had met with since I had published the previous article.

In our 'Nomenclator Avium Neotropicalium,' published in 1873, Mr. Salvin and I acknowledged fifty-six species of the genus *Calliste*, our *Calliste florida*, described in 1869, having been added to the list. We have also lately charac-

* Ibis, 1863, p. 450. † Ibis, 1868, p. 71.

terized three new species of this genus from Bolivia, namely *C. punctulata*, *C. fulvicervix*, and *C. argyrofenges**, thus raising the number to fifty-nine. A skin of a new and sixtieth species, which I propose to name, is now before me; and I will take this opportunity of giving a few additional remarks on some of the lately described members of the group.

In the 'Proceedings' for 1858 (p. 294), I based a new species of *Calliste*, under the name of *C. cyanotis*, on a skin received through the MM. Verreaux, "from some part of Peru bordering on Bolivia, or perhaps from within the confines of that Republic." In 1863, in the article in this journal above referred to, I stated that I had received through the same firm, from the Rio Napo, an example of what I believed to be the same species in a more adult dress, and gave a revised description of it accordingly. I have been able to add nothing further to the history of this species until quite recently, when, on examining Mr. Buckley's last collection of Bolivian birds†, Mr. Salvin and I found in the series a single skin which seemed to belong to it. On comparing this with the two previously described specimens of *C. cyanotis* in my cabinet, it appeared at once that I had fallen into an error. The individual obtained by Mr. Buckley was certainly identical with the first example, obtained in 1858; while the second so-called *C. cyanotis*, received in 1863, which I had supposed to be a more adult specimen of the same species, was decided, on reexamination and comparison, to be clearly distinct. On this last-named individual, therefore, I propose to base a new species, as follows:—

Calliste melanotis, sp. nov. (Plate XII. fig. 1.)

Calliste cyanotis, Sclater, Ibis, 1863, p. 451 (*err.*).

Nigra: superciliis latis et elongatis, dorso postico, campterio alari et corpore subtùs splendidè cærulescenti-viridibus; ventre medio et crisso cum subalaribus cervinis: alarum tectricibus necnon rectricum remigumque marginibus angustis cærulescentibus: rostro nigro, pedibus fuscis: long. tota 5·0, alæ 2·8, caudæ 1·9, poll. et dec. angl.

* See paper on new Bolivian Birds, P. Z. S. 1876, p. 352.

† See P. Z. S. 1876, p. 352.

J.G.Keulemans lith. M&N.Hanhart imp.

1. CALLISTE MELANOTIS.
2. " CYANOTIS.

Hab. in rep. Æquatoriali (reg. sylvaticâ orientali), ad ripas fl. Napo.

Obs. A *Calliste cyanoti* (Pl. XII. fig. 2) superciliis latis et elongatis, regione auriculari interscapulioque omnino nigris et frontis vittâ cæruleâ nullâ diversa.

While the only known example of the present species is from the Rio-Napo district of Western Ecuador, *Calliste cyanotis* is, as we are now assured by the receipt of Mr. Buckley's specimen, a Bolivian species. Mr. Buckley obtained it near Tilotilo, in the province of Yungas, along with the other members of the genus which, as above mentioned, Mr. Salvin and I have described as new from his collection. Both *C. melanotis* and *C. cyanotis* are, in fact, southern representatives of *Calliste labradorides* of Columbia, with which, however, they are by no means nearly identical. In the last-named species the bright green of the lower back is continued up over the interscapulium, and the whole of the side of the head is of the same shining green, connected with the back by a posterior cervical band.

Having pointed out the characters which separate *C. melanotis* from its allies, I will now say a few words on some of the rarer species on which I have recently obtained more complete information.

Of *Calliste lavinia*, originally described by Mr. Cassin from a specimen obtained during the American Survey of the Isthmus of Darien, several examples have lately been received in this country. Messrs. Salvin and Godman's collection contains skins from Veragua (*Arcé*), Costa Rica (*Van Patten*), and Chontales, in Nicaragua*. Amongst them is a female, which is of a nearly uniform green, without any red on the head or wings, but with a cyanescent tinge on the belly. This was obtained by Arcé in Veragua. Mr. Thomas Belt also procured several skins of this Tanager during his residence on the gold-fields of Chontales; and I am indebted to him for the fine male specimen which is in my collection.

Calliste florida, described and figured by Mr. Salvin and myself in the P. Z. S. for 1869 (p. 417, pl. xxviii.), was

* *Cf.* Salvin, Ibis, 1872, p. 315.

established on a single female specimen from Costa Rica. Arcé has more recently forwarded a pair from Veragua, by which we find that the male differs in having the nape and lower back strongly overrun with golden yellow.

Of the rare *Calliste hartlaubi* (originally described by me as a *Dacnis* (!), *cf.* Ibis, 1863, p. 452), Messrs. Salvin and Godman have lately obtained a single skin, of the ordinary "Bogota" make. They have likewise been so fortunate as to secure a specimen of the *Calliste cucullata* of Swainson, peculiar, as I believe, to Western Venezuela, of which modern examples are very scarce.

Lastly I may call attention to M. Dubois's recently published memoir on the variability of certain species of *Calliste**, and remark that the question, as to what amount of difference is sufficient to entitle a local form to specific rank, must always remain an open one. With some of M. Dubois's unifications I should be disposed to concur; for instance, I have already rejoined *C. cyanescens* to *C. nigriviridis*; but I could not agree to consider such a well-marked form as *C. yeni* the same as *C. tatao*, or to unite under one name *C. gyrola*, *C. gyroloides*, and *C. desmaresti*.

XLI.—*Notes on Severtzoff's 'Fauna of Turkestan'* (*Turkestanskie Jevotnie*). By H. E. Dresser.

[Continued from p. 330, and concluded.]

312. Machetes pugnax (L.); Severtzoff, p. 69.

Horizontal range. Occurs on passage in all four districts.

Vertical range. Occurs on passage in districts 1 and 2.

313. Tringa minuta, Leisl.; Severtzoff, p. 69.

Horizontal range. Occurs on passage in districts I., II., and III.

Vertical range. Occurs on passage in districts 1 and 2.

* Remarques sur la variabilité de certaines espèces du genre *Calliste*, par M. Alph. Dubois, conservateur au Musée royal d'histoire naturelle de Belgique. Bull. Acad. Roy. des Sci. Belgique, 2me sér. t. xxxviii. (1874) p. 124.

314. Tringa temminckii, Leisl.; Severtzoff, p. 69.

Horizontal range. Occurs on passage in districts I., II., and III., and breeds on the lakes in the alpine regions of districts I., II., and IV.

Vertical range. Occurs on passage in districts 1, 2, and 3, and breeds in district 5.

315. Tringa alpina, L.

Tringa variabilis, Severtzoff, p. 69.

Horizontal range. Occurs on passage in districts I., II., and III.

Vertical range. Occurs on passage in districts 1 and 2.

316. Tringa subarquata (Güld.); Severtzoff, p. 69.

Horizontal range. Occurs on passage in districts I., II., and III.

Vertical range. Occurs on passage in districts 1 and 2.

317. Calidris arenaria (L.); Severtzoff, p. 69.

Horizontal range. Occurs on passage in district III.

Vertical range. Occurs on passage in district 1.

318. Phalaropus hyperboreus (L.).

Phalaropus angustirostris, Severtzoff, pp. 69.

Horizontal range. Occurs in districts II. and III.

Vertical range. Occurs on passage in districts 1 and 2.

319. Totanus hypoleucus (L.); Severtzoff, p. 69.

Horizontal range. Breeds in all four districts.

Vertical range. Occurs in summer and on passage in district 1, is met with on passage and breeds rarely in district 2, and breeds commonly in district 3.

320. Totanus canescens (Gmel.).

Totanus glottis, Severtzoff, p. 69.

Horizontal range. Occurs on passage in all four districts, and breeds in the first three.

Vertical range. Occurs on passage in district 1, breeds and is met with rarely in the winter in district 2.

321. Totanus fuscus (L.); Severtzoff, p. 69.

Horizontal range. Occurs on passage and breeds in district III.

Vertical range. Occurs on passage in district 1, and breeds in district 2.

322. Totanus calidris (L.); Severtzoff, p. 69.
Horizontal range. Occurs on passage in all four districts, and breeds rarely in district I.
Vertical range. Occurs on passage in districts 1 and 2, and breeds rarely in the latter.

323. Totanus stagnatilis, Bechst.; Severtzoff, p. 69.
Horizontal range. Breeds in districts I., II., and III.
Vertical range. Breeds in districts 1 and 2.

324. Totanus ochropus (L.); Severtzoff, p. 69.
Horizontal range. Breeds in districts I., II., and III., and occurs rarely in the winter in districts III. and IV.
Vertical range. Occurs on passage in district 1, breeds and occurs rarely in winter in district 2.

325. Totanus glareola (L.); Severtzoff, p. 69.
Horizontal range. Breeds in districts II. and III., and possibly both breeds and occurs on passage in district IV.
Vertical range. Breeds in districts 1 and 2.

326. Limosa ægocephala (L.).
Limosa melanura, Severtzoff, p. 69.
Horizontal range. Occurs on passage in district III.
Vertical range. Breeds rarely in district 1, and occurs rarely in winter and on passage in district 2.

327. Numenius arquatus (L.); Severtzoff, p. 69.
Horizontal range. Occurs rarely on passage in districts II. and III.
Vertical range. Occurs on passage in districts 1 and 2.

328. Rallus aquaticus, L.; Severtzoff, p. 69.
Horizontal range. Is resident and occurs on passage in districts II. and III.
Vertical range. Occurs rarely on passage in district 1, and is resident and common in district 2.

329. Crex pratensis, Bechst.; Severtzoff, p. 69.

Horizontal range. Breeds and occurs on passage in districts II., III. and IV.

Vertical range. Occurs on passage in district 2, and breeds in districts 2 and 3.

330. Porzana minuta (Pall.).

Gallinula pusilla, Severtzoff, p. 69.

Horizontal range. Occurs on passage and breeds in districts II., III., and IV.

Vertical range. Occurs on passage in districts 1 and 2, and breeds in districts 1, 2, and 3, commonly in the second.

331. Porzana baillonii.

Gallinula pygmæa, Severtzoff, p. 69.

Horizontal range. Occurs on passage and breeds in districts II. and III.

Vertical range. Occurs on passage and breeds in districts 1 and 2.

332. Porzana maruetta (Leach).

Gallinula porzana, Severtzoff, p. 69.

Horizontal range. Breeds rarely in districts II. and III.

Vertical range. Breeds rarely in district 2.

333. Gallinula chloropus (L.); Severtzoff, p. 69.

Horizontal range. Breeds rarely in districts II., III., and IV.

Vertical range. Breeds rarely in district 2.

Dr. Severtzoff inserts with a query a *Porphyrio*, without surmising which species it can be.

334. Fulica atra, L.; Severtzoff, p. 69.

Horizontal range. Breeds in all four districts.

Vertical range. Breeds in districts 1, 2, and 3.

335. Podiceps minor (Gm.); Severtzoff, p. 69.

Horizontal range. In the original notes it is stated that it occurs in winter in district III.; but in a MS. note this is altered, and it is stated that it is resident in districts I. and II.

Vertical range. It is stated in the original that it occurs in winter in district 2; but this is altered in MS., and it is stated to be resident.

336. Podiceps nigricollis, Sundev.

Podiceps auritus, Severtzoff, p. 69.

Horizontal range. Is rare on passage in districts II. and III.

Vertical range. Occurs on passage in districts 1 and 2.

337. Podiceps auritus (L.).

Podiceps cornutus, Severtzoff, p. 69.

Horizontal and Vertical ranges. Same as the preceding species; but it is said to breed on Lake Son-kul.

338. Podiceps grisegena (Bodd.).

Podiceps rubricollis, Severtzoff, p. 69.

Horizontal range. Occurs rarely on passage in districts I., II., and III.

Vertical range. Occurs on passage and possibly breeds in districts 1 and 2, but certainly breeds in district 5.

339. Podiceps cristatus (L.); Severtzoff, p. 70.

Horizontal range. Occurs rarely on passage in districts II. and III.

Vertical range. Occurs on passage and possibly breeds in districts 1 and 2.

340. Pelecanus onocrotalus, L.; Severtzoff, p. 70.

Horizontal range. Breeds in districts I., II., and III.

Vertical range. Breeds in district 1, and occurs rarely in summer in district 2.

341. Phalacrocorax carbo (L.).

Carbo phalacrocorax, var. *continentalis*, Severtzoff, p. 70.

Horizontal range. Breeds in districts I., II., and III., and occurs on passage in district IV.

Vertical range. Breeds and occurs rarely in winter in district 1, and breeds and is found on passage in district 2.

342. Phalacrocorax pygmæus (Pall.).

Carbo pygmæus, Severtzoff, p. 70.

Horizontal range. Breeds rarely in district III.

Vertical range. Breeds rarely in district 1.

343. Larus canus, L.; Severtzoff, p. 70.
Horizontal range. Occurs on passage in district III.
Vertical range. Occurs on passage in district 1.

344. Larus cachinnans, Pall.; Severtzoff, p. 70.
Horizontal range. Breeds in districts I., II., and III.
Vertical range. Breeds in districts 1 and 3.

345. ? Larus leucophæus, Licht.
Larus argentatus, Severtzoff, p. 70.
Horizontal range. Occurs on passage in district III.
Vertical range. Occurs on passage in district 1.
In a MS. note Dr. Severtzoff informs me that he believes this species to be true *L. leucophæus*.

346. Larus ichthyaëtus, Pall.
Gavia ichthyaëtos, Severtzoff, p. 70.
Horizontal range. Breeds in district III.
Vertical range. Breeds in district 1.

347. Larus ridibundus, L.
Gavia ridibunda, Severtzoff, p. 70.
Horizontal range. Breeds in all four districts.
Vertical range. Breeds in districts 1 and 2.

348. Larus minutus, Pall.
Gavia minuta, Severtzoff, p. 70.
Horizontal range. Occurs in summer in district III.
Vertical range. Occurs in summer and possibly nests in district 1.

349. Sterna caspia, Pall.; Severtzoff, p. 70.
Horizontal range. Breeds in districts I., II., and III.
Vertical range. Breeds in districts 1 and 2.

350. Sterna anglica, Mont.; Severtzoff, p. 70.
Horizontal range. Breeds in all four districts.
Vertical range. Breeds in districts 1, 2, and 3.

351. Sterna fluviatilis, Naum.
Sterna hirundo, Severtzoff, p. 70.
Horizontal and Vertical ranges. As in the preceding species, except that in the latter it does not breed in district 3.

352. Sterna minuta, L.; Severtzoff, p. 70.
Horizontal range. Breeds in districts III. and IV.
Vertical range. Breeds in districts 1 and 2.

353. Hydrochelidon nigra (L.).
Hydrochelidon niger, Severtzoff, p. 70.
Horizontal range. Breeds in districts I., II., and III.
Vertical range. Breeds in district 1.

354. Hydrochelidon hybrida (Pall.).
Hydrochelidon leucopareius, Severtzoff, p. 70.
Horizontal range. Breeds in district III.
Vertical range. Breeds in district 1.

355. Cygnus olor (Gm.), Severtzoff, p. 70.
Horizontal range. Breeds in districts I. and III.
Vertical range. Breeds in districts 1 and 3.

356. Cygnus musicus, Bechst.; Severtzoff, p. 70.
Horizontal range. Occurs on passage and in winter in districts I., II., III.; breeds early in district III.
Vertical range. Occurs in winter and on passage in districts 1, 2, and 3.

357. Cygnus altumi, Homeyer; Severtzoff, p. 70.
Horizontal range. Occurs on passage and in winter in districts I., II., and III., everywhere rare.
Vertical range. Occurs rarely on passage in district 1, and rarely also in winter in districts 2 and 3.

358. Anser middendorffi, Severtzoff, pp. 70, 149.
Horizontal range. Occurs on passage in districts I. and II., and winters in district III.
Vertical range. Occurs on passage in districts 1, 2, and 3, and winters in district 2.

At page 149 Dr. Severtzoff writes as follows:—"*Anser middendorffi*, nob. This Goose, which Middendorff discovered in North-eastern Siberia, was described by him under the name of *Anser grandis*, Pall.; but I have renamed it, as Middendorff's specimens agree precisely with mine from Turkestan, and are specifically distinct from *Anser grandis* of

Pallas, not agreeing, except as regards the large size, as pointed out to me by Brandt, who considered Pallas's *Anser grandis* to be nothing but a large form of *Anser cygnoides*. It is true that *A. grandis*, Pall., resembles *Anser cygnoides*, much as *A. grandis*, Midd. (*A. middendorffi*, nob.), does *Anser segetum*. The two latter differ as follows:—*A. middendorffi* is larger, has an orange band on the black mandible; and its head is redder, being reddish brown, and not greyish brown, as in *A. segetum*; and even this last characteristic is not constant, as is to be seen from Von Schrenck's Amoor specimens. Males of *A. middendorffi* from the Amoor measure—total length 33″ 5‴–34″ 4‴, extent 64″–64″ 7‴, culmen 1″ 9‴–2″, weight 10–10½ lb. It is therefore larger than *Anser cinereus*, which measures 33½″ in length, 62½″ in extent, and weighs 9 lb. *A. middendorffi* occurs in flocks of thousands on the Aris river and its tributaries, on the Keless and Chirchick; towards the north-east of the Aris it occurs on passage. But in 1867 and 1868 it was not so numerous as usual on the above-named rivers, and was met with more numerously on the unfrozen lakes in the vicinity, where food was more abundant throughout the winter. In these flocks were also individuals of *Anser segetum* and of another species, which was, I believe, *Anser obscurus*, Brehm, a small form of *Anser segetum*; but these birds were more wary than *A. middendorffi*, and I could not obtain a specimen. I also occasionally saw small flocks of *A. albifrons*. It is curious how the Geese may be classified into small divisions of forms which approach each other in appearance, some already constituting distinct species, whereas others are yet in the process of separation, differing only by some trifling but constant difference in size, colour, or form of beak. They may be arranged as follows:—

1. *Anser grandis, Anser cygnoides.*

2. *Anser middendorffi, A. segetum, A. arvensis, A. obscurus*, Brehm., &c.

3. *Anser cinereus, A. albifrons, A. medius, A. minutus*, and *A. cineraceus*, Brehm.

4. *Cygnopsis canadensis, Bernicla leucopsis.*

All the above species are certainly descended from four different parent forms, and have spread into the localities inhabited by the four following species, viz. *Anser skorniakovi* (*A. indicus*), *Bernicla picta*, *Bernicla ruficollis*, and *Bernicla torquata*, which do not subdivide into different forms; but the former groups are still undergoing the struggle for existence, the balance being on the side of *A. segetum* and *A. albifrons*. I also observed that when on migration in the Ural, *A. albifrons* and *A. minutus* existed together very well, but *A. medius*, the intermediate form between these two species, was not so numerous. All these facts are proofs in favour of the Darwinian theory, of which the Geese give many interesting illustrations."

359. Anser segetum (Gm.); Severtzoff, p. 70.
Horizontal range. Occurs on passage in districts I., II., and III., and winters in the last.
Vertical range. Occurs on passage in districts 1 and 2, and winters in district 2.

360. Anser obscurus, Brehm; Severtzoff, p. 70.
Horizontal range. Is rare in winter in district III.
Vertical range. Occurs in winter in district 2.

361. Anser cinereus, Meyer; Severtzoff, p. 70.
Horizontal range. Breeds in all four districts, and winters in district III.
Vertical range. Breeds in districts 1, 2, 3, and 4, and winters in district 2.

362. Anser albifrons, Bechst.; Severtzoff, p. 70.
Horizontal range. Occurs rarely on passage and in winter in district III.
Vertical range. Occurs on passage in district 1, and rarely in winter in district 2.

363. Anser cygnoides (L.); Severtzoff, p. 70.
Horizontal range. Possibly breeds in district I.
Vertical range. Possibly breeds in district 2.

364. Bernicla ruficollis (Pall.).
Anser ruficollis, Severtzoff, p. 70.

Horizontal range. Occurs rarely on passage in district III.
Vertical range. Occurs rarely on passage in district 1.

365. Anser indicus (Lath.).
Anser skorniakovi, Severtzoff, pp. 70, 149.
Horizontal range. Breeds in districts I. and II.
Vertical range. Breeds in district 5.
At page 149 Dr. Severtzoff describes this as a new species; but I do not reproduce his description, as he informs me that he is now convinced that it really is nothing but *A. indicus*.

366. Tadorna rutila (Pall.).
Anas rutila, Severtzoff, p. 70.
Horizontal range. Breeds in all four districts.
Vertical range. Breeds in all five districts.

367. Tadorna cornuta (Gm.).
Anas tadorna, Severtzoff, p. 70.
Horizontal range. Breeds in all four districts.
Vertical range. Breeds in district 1, and occurs on passage in district 2.

368. Anas boschas, L.; Severtzoff, p. 70.
Horizontal range. Winters in all four districts, and breeds in districts I., II., and III., and possibly in IV.
Vertical range. Breeds in districts 1, 2, and 3, and winters in districts 1 and 2.

369. Chaulelasmus streperus (L.).
Anas strepera, Severtzoff, p. 70.
Horizontal range. Breeds in district III., and occurs on passage in district IV.
Vertical range. Breeds and occurs rarely in winter in districts 1 and 2.

370. Querquedula circia (L.).
Anas querquedula, Severtzoff, p. 70.
Horizontal range. Breeds in districts I., II., and III.
Vertical range. Breeds in districts 1 and 2.

371. Querquedula crecca (L.).
Anas crecca, Severtzoff, p. 70.

Horizontal range. Occurs on passage in all four districts, breeds in I., II., and III., and winters in district IV.

Vertical range. Breeds in districts 1, 2, and 3, and occurs on passage in districts 1 and 2.

372. Spatula clypeata (L.).

Anas clypeata, Severtzoff, p. 70.

Horizontal range. Occurs on passage and breeds in districts I., II., and III.

Vertical range. Occurs on passage in districts 1 and 2, and breeds in district 1, 2, and 3.

373. Mareca penelope (L.).

Anas penelope, Severtzoff, p. 70.

Horizontal range. Occurs on passage in district I., II., and III., and in winter in district IV.

Vertical range. Occurs on passage in districts 1 and 2.

374. Dafila acuta (L.).

Anas acuta, Severtzoff, p. 70.

Horizontal range. Occurs on passage in districts I., II., and III., winters in districts III. and IV., and possibly breeds in district IV.

Vertical range. Occurs on passage in districts 1, 2, and 3, and winters in district 2.

375. Œdemia fusca (L.).

Fuligula fusca, Severtzoff, p. 70.

Horizontal range. Occurs on passage and in winter in district III.

Vertical range. Occurs on passage and in winter in district 1.

376. Œdemia cristata (L.).

Fuligula cristata, Severtzoff, p. 70.

Horizontal range. Occurs on passage in all four districts, and in winter in districts III. and IV.

Vertical range. Occurs on passage in districts 1 and 2, and in winter in district 2.

377. Fuligula ferina (L.); Severtzoff, p. 70.

Horizontal range. Occurs on passage in districts I., II., and III., and in winter in districts III. and IV.

Vertical range. Occurs on passage in districts 1, 2, 3, and 4, rarely in the two last, and in winter in district 2.

378. Fuligula rufina (Pall.); Severtzoff, p. 70.

Horizontal range. Breeds in all four districts, and is resident in district IV.

Vertical range. Breeds in district 1, and is found on passage in district 2.

379. Nyroca ferruginea (Gm.).

Fuligula leucophthalma, Severtzoff, p. 70.

Horizontal range. Breeds in districts I., II., and III.

Vertical range. Occurs on passage in districts 1 and 2, and breeds rarely in the latter.

380. Clangula glaucion (L.); Severtzoff, p. 70.

Horizontal range. Occurs in winter and on passage in districts I., II., and III.

Vertical range. Occurs on passage in districts 1 and 3, and in winter in districts 1 and 2.

381. Erismatura leucocephala (Scop.).

Fuligula mersa, Severtzoff, p. 70.

Horizontal range. Breeds and occurs on passage in districts I., II., and III.

Vertical range. Breeds in district 1, and occurs rarely on passage in district 2.

382. Mergus merganser, L.; Severtzoff, p. 70.

Horizontal range. Occurs in winter in all four districts, breeds in districts I. and II., and on passage in I., II., and III.

Vertical range. Occurs on passage in district 1, in winter in district 2, and breeds in districts 3 and 4.

383. Mergus albellus, L.; Severtzoff, p. 70.

Horizontal range. Occurs in winter in districts I., II., and III.

Vertical range. Occurs on passage in district 1, and in winter in districts 1 and 2.

384. Phœnicopterus roseus, Pall.; Severtzoff, p. 70.

Horizontal range. Occurs as a straggler on passage in districts III. and IV.

Vertical range. Occurs on passage as a straggler in districts 1 and 2.

XLII.—*Notes on Birds collected and observed in the Lydenburg District of the Republic of Transvaal.* By Thomas Ayres. (Communicated by J. H. Gurney.)

The portion of the Drakenbergen where I collected the undermentioned birds is in lat. 25° S. and long. 31° E., or thereabouts, and is that part of Transvaal known as the Lydenburg Gold-fields. It is on the eastern slope of the mountains, amongst very romantic scenery, precipices and ravines abounding, the latter often well wooded with timber and scrub. Clear crystal streams are found running in all directions, the altitude of the country being about 6000 to 8000 feet. The principal rocks are limestones, sandstones, shales, and trap. The climate is decidedly wet and ungenial, which is chiefly to be attributed to the mountains being so frequently enveloped in misty clouds, causing the climate to be raw and damp in comparison with most other parts of South Africa.

This part of the Transvaal is exceedingly rich in ferns and orchids, which are well suited by the climate and soil; and many of the shady ravines are made lovely by the feathery foliage of the ferns; one cannot, however, help being disappointed at the paucity of birds and insects, though the entomologist may nevertheless get many a prize not to be found in other and warmer parts of the country.

1*. Accipiter rufiventris, Smith. African Rufous-breasted Hawk.

Male adult. Iris bright golden yellow; bill blue, dusky at base; cere and eyelids greenish yellow; tarsi and feet light yellow.

* [The species numbered are those which were included in the collection made and sent to me by Mr. Ayres.—J. H. G.]

The only bird of prey sent in the collection; the Raptores are but poorly represented at the Gold-fields. I, however, observed there during my stay of a year and a half the following species, though many of them I saw but seldom, and some only once:—*Neophron percnopterus, Vultur occipitalis, Otogyps auricularis, Gyps kolbi, Gypaëtus meridionalis, Buteo jakal, Helotarsus ecaudatus, Serpentarius secretarius, Falco biarmicus*, Tinnunculus ruficollis, Milvus parasiticus, Elanus cæruleus,* and, I believe, also *Accipiter melanoleucus*. There were two or three species of Owls that frequented the precipices and woods; but I did not succeed in shooting any of them.

2. Caprimulgus europæus, Linn. European Goatsucker.

A few of these Goatsuckers made their appearance about our shanties during the summer months, having the noiseless habits of the genus, hiding away amongst the bushes during the day, and showing themselves just in the gloaming.

[Mr. R. B. Sharpe, to whose kindness I am indebted for examining several of the birds sent by Mr. Ayres, identifies this specimen with *C. europæus*, to which species he also refers *C. smithi* of Bonaparte.

The present specimen is paler-coloured than ordinary British examples, and, though a male, is destitute of white patches on the tail and wings; from which, and from the remarks respecting other South-African specimens in the first edition of Mr. Layard's work (p. 47), I infer that the young males of *C. europæus* must, during the first year, be destitute of these white patches, and also that probably the young birds of both sexes assume a paler hue than the normal tint of British specimens during their first southern migration.

For further information bearing upon this subject, I would refer to Mr. Dresser's article on *C. europæus* in his 'Birds of

* [In a subsequent communication from Potchefstroom Mr. Ayres gives the following anecdote of a Falcon of this species:—"A friend of mine saw one come down with great velocity, whilst he was out shooting, and clutch a Snipe at which his dog pointed, and which rose at the moment. The Falcon was shot at once by my friend; and the Snipe, strange to say, flew away, apparently unhurt."—J. H. G.]

Europe,' and to Mr. Sharpe's remarks in the second edition of Layard's 'Birds of South Africa,' p. 83.

Mr. Ayres notes that the present specimen was shot at Macamac on January 10, that it was a male, iris dusky hazel, bill, tarsi, and feet dusky, total length 10 inches, bill $1\frac{3}{16}$, tarsus $\frac{11}{16}$, wing 7, tail 5.—J. H. G.].

3. Caprimulgus rufigena, Smith. Rufous-cheeked Goat-sucker.

The specimen sent was the only one I came across; my dog flushed it on January 18 from a small clump of bush on the banks of the small river near the town of Lydenburg; it was a male, iris dark hazel, bill dusky, but black at the tip, tarsi and feet dusky pale, eyelids dull chrome-yellow.

4. Hirundo rustica, Linn. Chimney-Swallow.

These Swallows appeared in fair numbers amongst the mountains during the summer months, and very probably bred amongst the rocks.

[The specimen sent is an adult male in moult, killed December 31; the breast and abdomen have already assumed the vinous tinge, though not in its fullest intensity.—J. H. G.]

5. Hirundo albigula, Bonap. White-throated Swallow.

This Swallow also put in a fair appearance; they were most frequently to be seen hawking along the streams.

6. Cotyle fuligula (Licht.). Brown Martin.

Though I have seen this Martin in other parts of Transvaal, I shot specimens for the first time on the Gold-fields. They came in the autumn and winter months, but were not in such numbers as the two preceding species.

7. Cotyle cincta (Bodd.). Brown-collared Martin.

This species was tolerably common during the summer months about Lydenburg, and was evidently breeding along the banks of the river; I also observed it on the immediate Gold-fields, but not so plentifully.

I likewise noticed *Cypselus melba*, *Cypselus apus*, *Cypselus cafer*, *Hirundo cucullata*, *Atticora holomelas*, and *Cotyle palustris*; *Coracias garrula* was also sparingly distributed;

amongst the Kingfishers only two species were noticeable, *Corythornis cyanostigma* and, I think, *Alcedo semitorquata*; *Promerops gurneyi* is tolerably common, feeding on the nectar of the flowers of a scrubby tree common on the sides and summits of the mountains.

8. Cinnyris chalybea (Linn.). Lesser Double-collared Sun-bird.

Plentiful in the spring and early autumn, when they congregate on the blossoming trees and shrubs; they are also found in winter, but not commonly.

9. Nectarinia famosa (Linn.). Malachite Sun-bird.

This lovely bird is still more common than the preceding, frequenting the same localities, but is more especially to be found about the sugar-bushes with *Promerops gurneyi*.

Besides these sugar-birds, I also noticed *Cinnyris afra* and *C. amethystina*.

10. Drymœca hypoxantha, Sharpe. Yellow-breasted Drymœca.

Not uncommon amongst the jungle which abounds on the slope of the mountains. Iris light hazel; bill black, the under mandible in some specimens pale lilac at the base; tarsi and feet pale.

[Mr. Sharpe informs me that this is a new species, which he is about to describe under the above name, from a Natal specimen, in the ensuing part of the second edition of Layard's catalogue.—J. H. G.]

11. Drymœca levaillanti, Smith. Levaillant's Drymœca.

This is the commonest of the Warblers in this locality, and very generally distributed.

12. Drymœca chiniana, Smith. Kurichane Drymœca.

This species is to be found in the same localities as the preceding, and is also generally distributed.

13. Sphenœacus africanus (Gmel.). Flute-voiced Sphenœacus.

Common, but, on account of its retiring habits, not often seen.

14. Bradypterus barratti, Sharpe. Barratt's Reed-Warbler.

This species frequents the dense bush and jungle fringing the mountain-streamlets, and, though by no means uncommon, is not often seen.

Male. Iris dusky brown; bill black; tarsi and feet dusky.

Female. Iris hazel; bill dusky horn-colour, the under mandible ash-colour; tarsi and feet dusky pale.

15. Zosterops virens (Sundev.). Green Zosterops.

This bird is exceedingly plentiful, both in the forest of the Kloofs and amongst the jungle on the slopes. It builds a neat open cup-shaped nest in some low shrub; the eggs are white and, as far as I can remember, without spots.

16. Anthus capensis (Linn.). Sentinel Pipit.

This is the commonest and most regularly distributed of all the Pipits, and is as plentiful at the Gold-fields as in all other parts of Transvaal.

17. Anthus pyrrhonotus (Vieill.). Cinnamon-backed Pipit.

This species is common about Lydenburg, where it frequents the open grassy plains.

18. Turdus olivaceus, Linn. Olivaceous Thrush.

These Thrushes inhabit the dense forest, and are most easily obtained in the dusk of the evening, when they appear to be more on the move than at other times, chasing one another about, and often uttering their short clucking note. They feed on the ground amongst the dead leaves, insects forming their principal diet.

19. Turdus gurneyi, Hartl. Gurney's Thrush.

This Thrush is exceedingly scarce. It frequents the same localities as the preceding species; but of its habits I know nothing. The specimen sent was quietly hunting for insects on the ground; and being amongst the underwood, I did not know what it was till I picked it up. It proved to be a male; total length 8¾ inches, tarsus 1½, bill 1⅛, wing 4¼, tail 3⅝; iris dusky hazel, tarsi and feet flesh-colour.

[This specimen, which is only the second that I have seen, has been added to the collection at the British Museum; it agrees closely with the type figured in 'The Ibis' for 1864, pl. ix.—J. H. G.]

20. Petrocincla rupestris (Vieill.). South-African Rock-Thrush.

These birds were scarce at the Gold-fields, though a few were scattered about in our locality; they are fond of climbing low rocks and stones on the slopes of the mountains, and are pretty conspicuous on the tops of the stones, though very shy.

21. Cossypha bicolor (Sparrm.). Vociferous Chat Thrush.

Exceedingly scarce in the Lydenburg forests; I only saw two or three during my stay. They seem to prefer the skirts of the woods and bushy places to the more timbered parts.

22. Andropadus flavostriatus, Sharpe. Yellow-streaked Bulbul.

These Bulbuls are to be found, nearly always, in small companies, making much noise amongst the dry leaves on the ground as they hustle them about in search of food. On the approach of an intruder they make an incessant chattering, which immediately attracts attention; and were it not for this habit, they would not often be noticed in the dense bush, which they are fond of frequenting.

The woods would often be utterly silent but for the noisiness of these little fellows.

Male. Total length $8\frac{7}{8}$ inches, tarsus $1\frac{1}{16}$, bill 1, wing $3\frac{7}{8}$, tail $3\frac{5}{8}$, iris hazel, bill black, tarsi and feet ashy.

Female. Total length $7\frac{5}{8}$ inches, tarsus 1, bill $\frac{7}{8}$, wing $3\frac{3}{8}$, tail 3; iris tawny, bill dusky, tarsi and feet ashy.

23. Andropadus importunus (Vieill.). Sombre Bulbul.

A very silent bird, moving quietly about amongst the tops of low trees and bushes, and feeding much on fruits; occasionally they utter one loud call. I seldom saw more than two together; but they are tolerably common, frequenting the wooded kloofs.

Male. Iris tawny, bill black, tarsi and feet dusky.

[The colour of the iris in this species would seem to be somewhat variable: in 'The Ibis' for 1862, at page 29, Mr. Ayres recorded specimens from Natal in which it was "very pale green;" and Mr. Layard, in the first edition of his Catalogue, p. 137, speaks of it as "very pale yellow," whilst Levaillant describes it as "brun foncé;" Andersson, who obtained it at the Knysna, records one specimen as having the iris "white," and one "yellowish white."—J. H. G.]

24. Pycnonotus nigricans (Vieill.). Brounoir Bulbul.

This widely distributed species was most common in the spring, when some particular trees were in full blossom; they were constantly feeding on the nectar together with the Sugar-birds.

25. Lioptilus nigricapillus (Vieill.). Bush Blackcap.

Decidedly scarce, and I cannot remember ever having seen more than a pair together. They are fruit-eating birds, and are mostly seen amongst the upper branches of the trees and bushes.

Female. Iris dark lake-red; bill pinkish flesh-colour; tarsi and feet flesh-colour.

26. Pogonocichla stellata (Vieill.). White-starred Flycatcher.

These birds seem to appear in the spring and summer months, when they become tolerably plentiful, frequenting the thick forest; they are solitary, or at most in pairs, and in habits much resemble our Robin*.

Iris dusky; bill black; tarsi and feet dusky pale.

[Judging from the specimens sent by Mr. Ayres, it would seem that the female only differs from the male in wanting the white starry spots on the throat and in front of the eye. —J. H. G.]

27. Chloropeta natalensis (Smith). Natal Flycatcher.

This species much resembles in its habits many of the

* [I imagine *Cossypha caffra* to be the bird referred to under the title of "Robin," *vide* Layard's Cat. 1st edition, p. 132.—J. H. G.]

Warblers, frequenting the same localities—thick jungle and low bush on the slopes of mountains.

These birds generally keep themselves concealed, but less so towards evening, or in wet weather, or after a heavy shower; the cock bird at such times often perches on some high twig, singing a short song which reminded me much of the song of the Chaffinch, that seemed to say "Is'nt it a pretty thing to be a soldier;" this is repeated over and over.

It is not an uncommon species; but the hen bird is comparatively seldom seen.

Male. Iris hazel; bill dusky, under mandible yellow; tarsi and feet dusky.

[It seems to me that the late Sir A. Smith was justified in considering *Chloropeta natalensis* to be a Flycatcher (see his article on this species in the 'Illustrations of the Zoology of South Africa'), though it bears a considerable resemblance to some of the Warblers, amongst which it has been placed by more than one subsequent writer.—J. H. G.]

28. Pindalus ruficapillus, Hartl. Yellow-throated Flycatcher.

Found sparingly in the dense forest, generally solitary or in pairs, and mostly flitting about the thickest foliage of the trees.

They are exceedingly restless birds, seldom still for a second, and never appear to be able to get enough food, which no doubt consists of very small and delicate insects.

Iris dusky; bill, upper mandible dusky, under* mandible yellow; tarsi and feet greenish dusky.

29. Fiscus collaris (Linn.). Fiskal Shrike.

This Shrike is about as plentiful in the Lydenburg district as in most other parts of the country; a single one or a pair may often be seen frequenting some particular portion of ground. Iris dusky, tarsi and feet dusky.

* [In 'The Ibis,' 1862, p. 152, the "*upper*" mandible is said to be yellow, which appears to be an accidental error.—J. H. G.]

30. Enneoctonus collaris (Linn.). Red-backed Shrike.
This species is scarce at the Gold-fields; it is solitary in its habits, sitting stationary on the top of some low bush.
[The specimen sent is a male in immature plumage, shot December 17.—J. H. G.]

31. Dryoscopus boulboul (Lath.). Boulboul Shrike.
I think these Shrikes are always in pairs. They are not at all uncommon, though seldom seen, as they frequent the densest jungle and are retiring in their habits; their call, however, is often heard.

32. Laniarius rubiginosus, Sund. Olivaceous Shrike.
No doubt these Bush-Shrikes are amongst the mountains all the year round; but they are particularly sly and difficult to see, especially during the breeding-season, when they make the woods joyous with their varied songs and calls. Many of their notes are very liquid, and remind me much of those of the Nightingale. Often have I been very close to one of these songsters, and, though his song was pretty constant and he was frequently moving from bush to bush, I could do no more than catch a glimpse of him now and then, so skilfully did he conceal himself. During the winter they are silent.
Male adult. Iris bright hazel; bill black; tarsi and feet bluish ash-colour.
Female adult. Iris reddish hazel; bill black, but under mandible ashy at base; tarsi and feet bluish ash-colour.
Female immature. Iris dark hazel; bill pale ash-colour, dusky at the tip; tarsi and feet bluish ash-colour.
[The description of this Shrike given by Mr. Layard at p. 164 of the first edition of the 'Birds of South Africa' appears to apply to the adult male only; the adult female sent by Mr. Ayres agrees with Levaillant's figure of that sex (pl. 76. fig. 1), except that it wants the blackish spots on the head, though the ear-coverts are a darker grey than the crown of the head. In another and, apparently, younger female the buff tint on the breast is wanting, and the breast and flanks are yellowish green, freckled with small transverse markings

of dark olive-green, the throat, centre of the lower breast, abdomen, and under tail-coverts being white.

I have recently seen, for the first time, a specimen of this Shrike obtained in Natal.—J. H. G.]

33. Hyphantornis ocularis (Smith). Black-lored Weaverbird.

I only met with these birds once; this was in the middle of winter; there were two or three together, moving about and apparently feeding amongst some thick bushes in the forest.

Female. Iris pale ashy yellow; tarsi and feet pale ashy. Contents of stomach small beetles and other insects.

[Conf. Ibis, 1862, p. 37.—J. H. G.]

34. Lagonosticta rubricata (Licht.). Ruddy Finch.

This species is often to be seen about the jungle on the outskirts of the woods, where it attracts attention by its peculiar though not loud note.

It is most frequently in pairs, though three or four are often to be found together.

35. Crithagra scotops, Sundev. Black-faced Grosbeak.

Pretty generally distributed amongst the woods and bushes, but seems to prefer the forests, where it feeds amongst the foliage of the trees.

Male. Iris dusky; bill dusky, but the under mandible pale; tarsi and feet dusky.

36. Crithagra canicollis (Swains.). Grey-necked Grosbeak, or Cape-Canary.

This species appears to prefer the more open slopes of the hills. It is often seen in small companies.

Female. Iris dusky; tarsi and feet dusky; bill dusky, but pale at the tip.

37. Crithagra sulphurata (Linn.). Sulphureous Grosbeak.

This bird I found in the woods in the ravines of the mountains, often busy feeding about the upper twigs and foliage of the trees and shrubs.

Female. Total length 6¼ inches, bill $\frac{9}{16}$, tarsus $\frac{7}{8}$, wing $3\frac{1}{16}$, tail 2½.

[The specimen sent appears to be the ordinary Cape form, and not the smaller race which occurs in Natal (conf. Ibis, 1869, p. 295).—J. H. G.]

38. Mirafra africana, Smith (=*planicola*, Licht.). Plain-loving Lark.

Sparsely distributed in the Lydenburg district, where it is found singly or in pairs, frequenting the open grassy country.

39. Corythaix musophaga (Dub.). White-crested Plantain-eater.

These birds are common in all the forests of the mountains on the eastern slope; they are frequently so noisy that one cannot help finding them, but at other times so silent and quiet that I have often sat for an hour under a densely foliaged tree without being aware that they were close above me, till my attention was at last attracted by a small berry or two falling from the tree, or perhaps by the slightest rustle amongst the leaves overhead. On such occasions it is pretty easy, by keeping quiet, to get a shot.

Male. Irides hazel; eyelids bright crimson; bill a darker crimson; tarsi and feet black.

40. Mesopicus menstruus (Scop.). Olivaceous Woodpecker.

These Woodpeckers are not uncommon in the forests of the Gold-fields, and are invariably found in pairs; and if one is shot the other will not leave the spot, but for some days is to be found close by, still looking for its lost mate.

41. Coccystes jacobinus (Bodd.). Black-and-white Cuckoo.

During both the seasons when we were at the Gold-fields a few of these noisy Cuckoos appeared there in the spring, and were evidently breeding, though we could not find the nests in which they laid.

Male. Iris dusky; bill black; tarsi and feet dusky ash-colour. Contents of stomach caterpillars and other insects.

42. Cuculus solitarius, Steph. Red-chested Cuckoo.

My brother shot this bird on January 24 from a tree close to where he was digging; and this was the only individual we saw in that part of the country. It was sitting motionless, and much resembled a small Hawk.

Male. Iris dark hazel; bill black, yellowish at the gape; eyelids, tarsi, and feet yellow.

43. Peristera larvata (Temm.). White-masked Dove.

These Doves are pretty common in the dense bush and underwood of the kloofs; but more than two are seldom found together. They utter a low melancholy note, and are not very easy to shoot, as they are generally on the ground, and on the approach of any one are up in a great bustle and are immediately lost to sight.

44. Cursorius senegalensis (Licht.). Senegal Courser.

Scarce in this part of the country. My brother and I came across a pair on July 24, and shot the bird now sent.

Female. Iris dusky; bill dusky, but pale on the under mandible; shanks, tarsi, and feet white.

Besides the above-mentioned birds, I am certain of the following as found in the Gold-fields district:—*Oriolus larvatus* (=*capensis*), *Batis capensis* (=*pristinaria*), *Tchitrea viridis* (=*cristata* of Layard), *Tchitrea cyanomelas, Corvultur albicollis, Amydrus morio, Vidua ardens, Pyrenestes albifrons, Estrelda astrild, Columba arquatrix, Francolinus levaillanti, Francolinus nudicollis, Coturnix dactylisonans, Gallinago macrodactyla* (=*æquatorialis*), and *Anas sparsa.*

[Mr. Ayres's previous papers on the birds of Transvaal record 152 species (vide Ibis, 1874, p. 107). The present paper records (*inter alia*) 40 additional species, making the total number of species observed by Mr. Ayres in Transvaal 192.—J. H. G.]

XLIII.—*Notes on the Birds of the Lower Petchora.* By Henry Seebohm, F.Z.S., and John A. Harvie Brown.

[Continued from p. 311, and concluded.]

As the snow gradually disappeared from the more exposed hill-sides behind Ust Zylma, and signs of coming summer began to gladden us after our long weary waiting, we looked forward each day with increasing expectancy for the vanguard of the great flights of migratory birds, which would, ere long, fill the pine forests, and the fields behind the town, and the birch-covered banks and islands of the river with life. With scarcely less eagerness, and with even greater bustle of preparation, did our good friends MM. Známinsky and Sacharoff (keen sportsmen both) look forward to the arrival of the wildfowl; and various small excursions were undertaken to certain well-known haunts in the vicinity, to ascertain whether or not they were beginning to put in an appearance. Of the wildfowl, Swans and Geese were the first to arrive; but Ducks were not observed in any numbers until some days later, viz. upon the eve of the breaking-up of the ice on the river Zylma, which took place on the 20th May. For some days previous to that date a remarkable change in the appearance of the ice of the Petchora had become obvious; and the ice of the Zylma had become still more suggestive of approaching dissolution. Looking away down the great river as we crossed it on the night of the 18th May, it seemed vaster and calmer in the stillness; looked like a great limitless plain towards the north, with a few wooded oases (islands) on the horizon distinctly defined against the white light of the northern sky. Scarcely any snow remained on the surface; and large lakes of snow-water had formed here and there, those nearest the shore fed by considerable streams and runlets from the high grounds behind Ust Zylma. Water-holes were not scarce in the ice of the Zylma, wells of water bubbling up through holes and fissures, showing the rapid dissolution going on underneath, and the increasing upward pressure of the water. The great cavity beneath the ice had become filled up; and the water hour after hour, even minute

after minute, was gaining volume and strength, soon to burst up the solid roof of ice over which we were passing. Our horses advanced slowly with ears pricked up and heads low, and sometimes positively refused to advance at all until the "yemstchik" went before them to test the strength of the ice. We arrived at 3 A.M. on the morning of the 19th May at the log-hut on the bank of the Zylma, whither MM. Známinsky and Sacharoff had preceded us. Ducks were in countless thousands resting on the larger pools of water on the ice, and flying in all directions around. The meadows in the vicinity are favourite haunts at feeding-time of both Geese and Ducks; and we had come over to get some flight-shooting at these great bands of migratory wildfowl. About 9.30 A.M. on the 20th May the Zylma ice was on the move, and the water, rising rapidly, being dammed back by the accumulation of ice at its mouth, began to flood the meadows and rush back through the "kourias," converting, in the short space of six or seven hours, the whole country on the south bank of the Zylma into a vast lake. We had had our shooting; and it was not without some little trouble that we managed to return to Ust Zylma, with the aid of a boat brought by our men across the centre ice and across the lanes of water formed along both shores of the Petchora. The Ducks disappeared as if by magic, dispersing over the country or migrating again *en masse* further to the north. On the 21st the Petchora ice broke up; and ten days later the river was clear of ice, and a vast tract of the country on the western or left bank was flooded by the rapidly rising waters. On the 10th June we commenced our journey down the river, having seen comparatively little of the wildfowl on migration, with the exception of that one night's flight-shooting, which, however, is something to be remembered. What we did see of the different species will be found mentioned each under its own heading.

We may here mention that during our trip we procured the eggs and down of ten species of Ducks; and upon carefully examining the different kinds we were able to

institute the comparison which appears in the following table:—

A. *White down*: (1) Smew, (2) Golden-eye.

B. *White-tipped down*: (1) Pintail, (2) Widgeon.

C. *Large dark down*, without white tips: (1) Black Scoter, (2) Velvet Scoter, (3) Scaup.

D. *Small dark down*, without white tips: (1) Long-tailed Duck, (2) Shoveller, (3) Teal.

A. *White.*

(1) *Smew.* Down large, greyish white.

(2) *Golden-eye.* Down scarcely to be distinguished from the last, but has a slight bluish tinge; bluish white.

B. *White-tipped.*

(1) *Pintail.* Down smaller, brown, with pale centres, indistinctly tipped with white.

(2) *Widgeon.* Down larger, darker brown than Pintail's, pale centres, long and conspicuous white tips.

C. *Large dark, without white tips.*

(1) *Black Scoter.* Down medium size, darker brown than Pintail's, lighter than Widgeon's, centres pale but conspicuous.

(2) *Velvet Scoter.* Down larger than Black Scoter's, darker than Pintail's or Widgeon's, centres less conspicuous than Black Scoter's.

(3) *Scaup.* Down about same size as Velvet Scoter's, but darker, centres inconspicuous.

D. *Small dark, without white tips.*

(1) *Long-tailed Duck.* Down small, darkish brown, with pale centres.

(2) *Shoveller.* Down small, darker than Long-tailed Duck's, pale centres.

(3) *Teal.* Down small, darker brown than either Long-tailed Duck's or Shoveller's, pale centres.

Note. The above downs were examined in bulk in a clear but not too bright light, and *in the absence of direct rays of*

sun-light. Compare descriptions of various kinds of Duck's down given by Sommerfeldt ('Zoologist,' June 1867, p. 776), in which, however, the downs are described from single sprays. Our method, we believe, will also be found useful in assisting to distinguish them.

CYGNUS MUSICUS, Bechst.

Wild Swans were amongst the first migrants to appear; and the first note we have of their arrival is dated the 11th May. They were afterwards seen occasionally before the snow melted and up to the date of the breaking-up of the ice on the Zylma (20th May), but not again until the 12th June, when as we descended the river a flock of five or six were seen frequenting a lagoon, and were disturbed by the flag flying at our masthead as it appeared above the fringing belt of willows. Afterwards we saw Swans occasionally along the river, and numerously in the neighbourhood of Alexievka. We found a nest of eggs on an island opposite Kuya on the 17th June; and several nests were brought in by the Zyriani and by our own men, who were expressly told off to find Swans' nests, and, if possible, to secure the birds. In this latter part of their instructions, however, they signally failed; and we had almost despaired of identifying the rarer species and obtaining authentic eggs, although we felt tolerably certain that Swans of two sizes did pass Ust Zylma on migration. We saw Wild Swans frequenting the "kourias" and delta generally up to the last days of our stay. As we left Alexievka on our voyage home on board the 'Triad' we met five boats returning from Varandai; and we were told by the Russian sailors on board the steamer which was towing us out of the river that they would bring many furs and Swans' and other skins to the great markets. At the end of August boats return from the still more distant island of Kolguef with many Swans' skins, and the down of various species of wildfowl. We regretted that we could not have remained one day longer at Alexievka to have seen these Varandai fishermen as they passed. These stores of furs and birds' skins, reindeer's

flesh and seal-oil, find their way, for the most part, to the markets of Piñega, and even as far as Nijni-Novgorod.

CYGNUS BEWICKI.

To determine if possible the breeding-haunts of this species of Swan, and bring home authentic eggs to England, was one of the principal aims of our expedition. From the time of our arrival at Ust Zylma in the middle of April, to that of our departure for the delta in the beginning of June, we had acquired no satisfactory evidence of its presence. We were informed by the inhabitants at Ust Zylma, and by the best sportsmen of the town, that there were two species, but that the smaller went to the east of the Ural Mountains to breed. But we had long since ceased to attach much importance to any information we received on such subjects. Information almost invariably proved conflicting and unsatisfactory.

We had received a very small Swan's egg which had been brought the previous summer from Gorodok; but we could learn nothing further concerning it, except that it might have originally come from Varandai, or might have been taken in the neighbourhood of Gorodok. We examined two specimens of the Common Wild Swan, shot near Ust Zylma at the time of migration, and took drawings and measurements for future use. We had ourselves seen a good many Swans flying overhead or settling on the ice of the river; but in no case were we able to identify them, though we settled in our own minds that there were two of different sizes.

With nothing therefore to guide us in our search, save the last-mentioned item, we started on our voyage down the river in the beginning of June. We saw Swans here and there, but without identifying them. On arriving at Kuya, and while shooting on a swampy willow-covered island close to that place, Seebohm and Simeon found a Swan's nest containing four eggs. We lay for a couple of hours afterwards near the nest in the hope of getting a shot. Simeon was heard to remark, "If the Swan is a little blind perhaps he will shoot it." We did not shoot it, and no wonder, as a pair of Hooded Crows, which had a nest in the vicinity,

loudly proclaimed our unwelcome presence, and, moreover, the somewhat open willow-scrub offered but a very insufficient means of concealment. The mosquitos too bit badly, and we had no veils. We consoled ourselves with the fact that the four eggs were *very large*, and finally gave in, took them, and the next day continued our voyage until we arrived at Alexievka. On the islands of the delta our men searched diligently for Swans' nests, incited by the offer of a reward of five roubles for the *eggs and bird* of any species of Swan, which reward we promised to any one, either of our own men or of the Zyriani workmen, who would bring them to us. Two or three nests were found. At one a trap was set by Simeon and Little Feodor, which was too weak to hold the bird. The two eggs of this nest were smaller than any we had yet got. All chance of identifying these was lost, as the Swan had gone into the trap and left in it only a few feathers. At another nest we watched a whole day and night in a small branch-hut which had been erected previous to our own arrival at the spot, and which was quite sufficient in itself to scare any Swan away. Piottuch and Harvie Brown relieved one another at the post, but, it is almost needless to say, without success; indeed the watch was kept up more for the purpose of doing all possible justice to the finder than with any expectation of getting a shot. This nest was in the midst of dense jungle of willow-scrub between two small lakes. There were no tracks leading to it made by the birds; and the only way they could have come to it must have been from above.

It is needless to recount more failures. Suffice it to say that the difficulties of finding a Swan's nest and afterwards of obtaining the bird it belonged to are very considerable in these densely covered islands of the Petchora delta. Had we possessed a good steel trap or two, perhaps we should have had better success, perhaps not.

At last, one day, the 29th June, a Russian fisherman arrived in his boat at Alexievka, having come from his fishing-encampment lower down the river. He brought with him some eggs, and amongst them two very small Swan's eggs, which

we purchased. He then told us that the bird had been caught at the nest, and was in the possession of his mate, who was still fishing down the river. He could not have heard any thing of our offer of a reward, as we were the first to speak with him after his arrival. We took the first opportunity, which occurred some days after (on the 6th July), of going down the river with the steamer to Stanavoialachta, near which place we found the men we wanted, one of whom was known to our steersman, Big Feodor, and whom some time before we ourselves had actually spoken to when returning from our first trip to Stanavoialachta. We were promptly informed that the skin of the Swan was then lying at Mikitsa, a small village five versts south of Kuya, in the house of the fisherman who had sent it up there, and that we could get it if we paid for it. We returned to Alexievka; and next day we intrusted our most intelligent man, Little Feodor, to ferret out the bird at Mikitsa, sending him up to Kuya in the steamer. In due course he returned triumphantly bearing the skin, with feet attached, and the bill separate. He had purchased the former for one rouble, and had also secured the bill, which, in accordance with the usual practice, had been cut off and given to the children to play with. There was no other Swan's skin in the house, nor, as far as he could learn, in the village, except this. It was Bewick's Swan; and we have every reason to believe, and none whatever to doubt, that it was the veritable bird caught upon the nest which contained the two eggs which we had purchased from the other fisherman on the 29th June. We consider these eggs thoroughly satisfactory, and the chain of evidence in all reason complete.

The egg of *C. bewicki* is smaller than that of *C. musicus*, the former measuring 3·95 inches in length, and the latter 4·1 to 4·6. We may also remark that our eggs of the Wild Swan are cream-coloured and glossy, whilst those of Bewick's Swan are white and dull.

On the 26th July two of our boatmen, Little Feodor and Simeon, came to the wreck at Dvoinik carrying a fine Bewick's Swan. They had had a long day and night upon the

tundra, and had covered a considerable extent of country. According to their account, extracted by much cross-questioning, with and without Piottuch's assistance, they had been away towards the south-west and had seen a great lake near the sources of the Eevka and Erisyanka rivers. They said they had walked a distance of twenty-five to thirty versts—which, upon the North-Russian tundra, is equivalent at least to as many miles on a Yorkshire moor. They had seen nine Swans, "all of the small kind," at the edge of the big lake, and had succeeded in stalking up to within thirty paces of them. On being slightly alarmed the Swans swam close up together and stretched up their necks. Simeon and Feodor both aimed; but Feodor's "pooshka" (literally *cannon*) refused to go off. Feodor therefore was left disconsolate; but Simeon succeeded in shooting one. Afterwards we saw several Swans at Dvoinik, and the footprints of others on the damp sand or mud. The measurements of these latter agreed with the specimen procured, the middle toe of which is nearly one inch shorter than that of the larger species. We consider that Bewick's Swan is not uncommon on the delta of the Petchora, but, from what we have seen, that its distribution there does not extend so far up the river in the breeding-season as that of the Hooper, but that both species pass Ust Zylma on migration, though of this last we cannot, of course, speak positively.

ANSER SEGETUM (Gm.).

The Bean-Goose arrived at Ust Zylma on the 10th May. Small parties and sometimes large flocks continued to frequent the neighbourhood wherever there was any open water until the ice and snow had all disappeared, when the Geese disappeared also. At Kuya, on the 19th June, we got eggs of the Bean-Goose considerably incubated. At Alexievka we not unfrequently found their nests concealed in the long grass on some hillock or islet on the banks of the lakes on the tundra, and we secured a number of eggs. We did not find any of their nests on the islands of the delta. The Bean-Goose is an early breeder, and doubtless makes its nest on

the tundra before the great march-past of ice on the river is over, and whilst most of the islands are still under water. Soon after the young are hatched, before they are able to fly, these birds congregate in large flocks, and march slowly into the tundra to moult. The Samoyedes gave us glowing accounts of the grand battues which they used to have at these times, killing the Geese with sticks, and collecting large sacks full of down and feathers. Seebohm was fortunate enough to come across one of these migratory flocks of Geese. It was on the 27th July, whilst we were living in a wrecked ship on the shores of the lagoon at Dvoinik. He had crossed over to the North Twin Cape, and was skirting the margin of the river which winds inland between high banks of grass, when he heard a loud cackle of Geese. A bend in the river gave him an opportunity of stalking them. As soon as he caught sight of them a most interesting and extraordinary scene presented itself. Several hundred old Geese and about as many young were marching like a regiment of soldiers. The vanguard, all old birds, were half across the stream, whilst the goslings brought up the rear, and were running down the steep slope towards the water as fast as their legs could carry them. Both banks of the river were strewed with feathers, where they had no doubt been feeding; and a handfull of quill feathers was picked up in five minutes. They were evidently migrating to the interior of the tundra, moulting as they went along. The following day we discovered that our stock of provisions was entirely exhausted, and we sent a party after this flock of Geese. They met with them a few versts higher up the river, and succeeded in securing eleven old birds and five goslings. Most of the Geese were in full moult and unable to fly; and Piottuch told us that both old and young made for the water and attempted to conceal themselves by diving.

Anas clypeata, L.

The Shoveller does not appear to be so abundant on the Petchora as it was found to be on the delta of the Dvina, where it almost equalled in numbers those of the Pintail

(Ibis, 1873, p. 71). Only one bird, a male, was identified at Ust Zylma, on the 19th June; and on our voyage down the river only one other, a female, was seen. The Zyriani at Alexievka brought in only one set of eggs, along with the down; and upon an island called Glubauki*, opposite Stanavoialachta, we found another nest containing two eggs. There was very little down in this last nest wherewith to identify the eggs; but we distinctly saw both birds: the male alighted at the entrance of a narrow lane of water amongst the grass which led to the nest; and on being joined by the female, both flew off to their feeding-grounds.

Anas crecca, L.

Teal were first seen and one shot on the 18th May as a small party of them dashed along the course of the stream formed by the melting snow, which came surging down the valley behind the town of Ust Zylma. We also shot Teal on the meadows on the banks of the Zylma the night before the ice broke up, and procured several nests of eggs at Habariki and on the Yorsa; but we did not see any among the islands of the delta, nor upon the tundra.

It is somewhat remarkable that we saw nothing of the common Wild Duck (*Anas boschas*) on the Petchora, though it is a common species around Archangel (Ibis, 1873, p. 71); and as it is so generally distributed throughout Europe, we consider this negative evidence worthy of record.

Anas acuta, L.

The Pintail was first identified on the morning of the 18th May, when three birds flew close overhead. On the evening of the same day we accompanied MM. Známinsky and Sacharoff to the feeding-grounds on the banks of the Zylma, where we found vast numbers of Ducks congregated. From what we saw that night and the following day we believe that nine tenths of the many thousands of Ducks identified belonged to this species. When the ice broke up on the Zylma on the morning of the 20th May, these great flocks dispersed or repaired *en masse* to some more northern locality;

* Lit. *deep water*.

and when we descended the river three weeks later we found them already breeding in numbers. We found the Pintail abundant all the way down the river and as far as we went along the coast, both on the delta and on the tundra, and obtained large numbers of their eggs, which, along with those of other species were a welcome addition to our food-supply.

ANAS PENELOPE, L.

The Widgeon is certainly the most abundant species of Duck inhabiting the shores and islands of the Petchora between Ust Zylma and Alexievka, if we judge by the immense numbers of their eggs found by ourselves or brought to us by the Zyriani. At the time of migration we only identified one bird, a male, amongst the large flocks of Pintails on the Zylma; and on the 21st May another was brought to us for sale. They probably arrived somewhat later than the Pintails did, and thus escaped our notice at the time of migration; but while descending the river, on and after the 10th June, we found many nests, and met with them more abundantly than the Pintails as far north as the delta. Yooshina was the furthest north point at which we saw them, where they were seen in company with Scoters, Scaups, and Long-tailed Ducks, Bean-Geese, Black- and Red-throated Divers, and were frequenting a chain of lovely little pools and lakes on the tundra. We obtained fresh eggs of Widgeon during most of our stay at Alexievka, and as late as the middle of July.

FULIGULA MARILA, L.

On the 12th June, as we descended the river, the flag at our masthead disturbed a number of Wild Swans on a pond behind a fringing belt of willows. We landed; and while endeavouring to get a shot at another Swan upon another pool adjoining, we had an opportunity of adding the present species to our list. Peeping through the interstices of the willow-branches and old trunks, we saw a fine lot of Ducks swimming peacefully about upon the pond or lagoon formed by the overflow of the river. Before they were disturbed the seclusion and quiet of the place was perfect, reminding one

of the same sort of scene in a wildfowl-sanctuary at home. The same species of birds were there too. Two Widgeons were in the foreground, the male occasionally whistling as he floated lazily about; a little further off were two Teal; and up and down over the surface of the water were a number of fine Scaup Ducks swimming in pairs or small parties, frequently uttering their harsh cries. At the far end a solitary Swan floated, its head high, and its neck straight, already on the *qui vive*. The Scaup Ducks shortly became suspicious, and swam up close together. The Swan took the hint, and, beating the water with his wings, rose and flew off, followed by Scaups, Widgeon, and Teal.

We afterwards found the Scaup not uncommon in certain localities, but did not meet with any further north than Yooshina. They did not appear to be abundant at Alexievka, as the Zyriani only brought in one set of eggs and down.

Fuligula cristata.

The Tufted Duck appeared to be scarce upon the Petchora, as far as we could observe. The first was obtained by Seebohm at an island a little below Viski on the 17th June; and on the 19th Harvie Brown shot another on the island opposite Kuya. These were the only specimens procured; and not more than one or two others were identified.

Fuligula clangula (L.).

We did not see much of this species, as we stayed only a short time in the forest-country after their arrival. We identified one Golden-eye at the feeding-grounds on the Zylma, and obtained two sets of eggs at Habariki from the peasants. A nesting-hole was pointed out to us in a dead larch, 25 feet from the ground, from which our informant had taken the down and fourteen eggs, which we purchased from him. We did not meet with the species again lower down the river.

Harelda glacialis (L.).

We saw nothing of the Long-tailed Duck on migration, nor until we arrived at Kuya. There we found them not uncommon on the islands opposite the village, and afterwards met with them abundantly on the tundra, and less plentifully

on the islands. Almost every lakelet on the tundra held a pair; and several pairs are often seen on the larger lakes. It is certainly the commonest Duck on the tundra. In the evenings also their curious cries, "*cow-cow-w-ie*," or, as we sometimes imagined, "*kolqu-û-ef*" (the name of a large island in the Arctic Sea north of the Kañin tundra), were heard constantly at Alexievka; and a large lagoon close to the houses was pretty regularly frequented by them. We believe, however that all the eggs brought to us by the Zyriani were taken on the tundra and not on the islands, because this species does not frequent the islands for the purpose of breeding. This is the tamest species of Duck with which we are acquainted, being almost Grebe-like in its unwillingness to take wing. They are, on the other hand, experts at diving, and, although they often permit of a close approach in the open, they are difficult to shoot, eluding the charge of shot by rapid and repeated diving. On the larger lakes they sought safety by swimming out to the centre, where they could calmly repose in conscious security. We obtained the young near Kuya, on the occasion of our second visit, and at Dvoinik, when the parent bird showed great solicitude, swimming up to the brood and trying to prevail upon them to follow her out to the centre of the lake, the young apparently being more inclined to hug the shore. We did not take any eggs ourselves; but Simeon explained by signs that they were generally placed under thick bushes of dwarf willow, birch, or juniper (pointing to a plant of each), and were well concealed. Two nests, however, which we saw at Dvoinik, after the young had been hatched out, were deep cup-like hollows in the bare dry meadow, chosen amongst the vegetable scum which had been thrown up and left by the water, and which, either by accident or design, formed part of the lining and edging of the nests. We gathered the down from these nests, but did not see any shells of broken eggs lying in or near them. We obtained eggs not very far advanced in incubation at Dvoinik as late as the end of July. These were brought in by our men.

ŒDEMIA NIGRA (L.).

The first Common Scoter was identified as it flew close past the steamer at Ust Zylma on the 1st June. Afterwards, at various localities, Common Scoters were seen by us as we floated down stream; and they were common on the tundra as far north as Stanavoialachta, especially among the lakes near Vassilkova and Yooshina, and at Stanavoilachta, where the tundra has more the appearance of a rolling prairie than elsewhere. At Yooshina, on the south side of the river of that name, some parts of the tundra are very beautiful, being a rolling moor, covered on the top with reindeer-moss and carices, and quantities of crow-berries, and with thickets of low scrub-willow and birch in the hollows and beside the numerous little tarns and pools. Small streams of beautifully clear water, perhaps not more than a foot or two wide, and the same or more in depth, with gravelly or sandy bottom, unite a chain of these lakes, by the sides of which are often curiously shaped mounds, like old ant-hills, covered with dried leaves of the arctic bramble (*Rubus arcticus*), and bearing still a plentiful supply of last year's cranberries. By the side of one of these little runlets of water, in an opening in the scrub, we found quite a little forest of aureola-plant (*Veratrum album*) (Ibis, 1873, p. 62), and also quantities of marsh-marigold, golden saxifrage, and a dwarf geranium. Broad-leaved sorrel, too, in the absence of all vegetable food, was as refreshing to the palate as to the eye.

On one of the lakes we saw assembled the following wild-fowl:—two male Scaups, two pairs of Long-tailed Ducks, a pair of Bean-Geese, a pair of Widgeon, a Black-throated Diver, and a Red-throated Diver, a Red-breasted Merganser (the first we had seen), and several Red-necked Phalaropes. At the time of our visit to the Golaievskai banks, vast numbers of Black Scoters were congregated along the shore and in the water on the inside of the island called No. 3 in the Admiralty Chart. When we approached they all rose and flew away in a body to the southward. As has already been remarked, large flocks of these or other Ducks seen at a distance on a calm glassy sea, and with refraction busily at

work, were often scarcely to be distinguished from the low-lying sandbanks we were in search of. (*Vide* also Gurney's 'Rambles of a Naturalist in Egypt,' 1876, p. 92, where he makes a similar comparison regarding the flocks of Ducks at Lake Menzáleh.)

Œdemia fusca (L.).

On the 27th June, whilst wandering amongst the many lakes which dot the tundra around Stanavoialachta, Harvie Brown saw a single pair of these birds flying over the tundra some distance off, conspicuous beside a number of the Common Scoter, which were haunting a lake close by, from their superior size and large white alar specula. One of them, presumably the female, dropped amongst some dwarf willows and birch in a hollow about a verst off; and the male continued his flight. In the hope of finding the nest, Harvie Brown searched the whole of the patch of dwarf wood carefully, but failed to flush the bird or find the nest.

We visited Stanavoialachta a second time, later in the season, viz. on 6th July; and we proposed to repair together to these lakes and search again for the Velvet Scoters, the only birds of the species we had seen. Scarcely had we made up our minds to this, and were crossing the tundra together towards the lakes, when almost from amongst our feet up got the bird from the nest, and Seebohm shot it. The nest was under a creeping, matted, dwarf birch, far from any water, and contained eight eggs and a good supply of down. These were the only eggs we procured of the Velvet Scoter in Russia, and we saw no more birds.

Mergus albellus (L.).

Habariki is a small hamlet of about a dozen houses. It stands on an earth cliff on the bank of a 'kouria,' and is generally safe even from the higher floods which cover the surrounding country, being about fifty feet above the winter level of the river. This spring the floods had raised the level about twenty feet. (It is at Habariki that the river-steamer lies in winter quarters; and the captain lives in the village.) In exceptionally high floods, after the disappearance of the

ice, only a few acres of cultivated land around the village are left uncovered. On all sides the ground slopes gradually away, except on that side which faces the Kouria and the river. In the distance across the Petchora to the westward, about fifty versts distant, the low ranges of the Timan Mountains are visible; and we were told that many many versts of the intervening willow-covered meadows were under water at the time of our visit. Round the village is a cleared space of ground; and surrounding this there is a fine old forest of pine, larch, and spruce, with underwood beneath. Some parts of the forest are open, especially those where pine alone appears to flourish, light sandy soil forming a slightly higher ridge of land, covered with a soft carpet of reindeer-moss, and sprinkled with crowberry, cranberry, and bilberry plants. All over these opener pine-tracts lie great quantities of bleached and barkless fragments of pine wood, the origin, no doubt, of the great piles of drift wood along the shore at Dvoinik. They are accumulating there until a higher flood than usual lifts and carries them away. Other parts of the forest are denser and more mixed. Many noble old larches are still untouched by the axe; but many more prostrate stems and high stumps leave record of the ruthless and reckless destruction done and still going on. The finest trees are cut down for firewood; if, after being felled, they are found unsound, they are left to rot, or finally to drift away on some future flood*. Small spruce-firs comprise the bulk of the growth; but in some places the larches are also quite abundant. In the swampy places and along the river-side, on the edges of the pine-forests, are dense thickets of alder and willow, amongst the

* For statistics connected with the fuel-supply of Russia, in which the statement is made that "within fifty-four years Russia's supply of timber will be exhausted to the last faggot," see 'The Geographical Magazine' for March 1876, p. 61. It is there stated that the total amount of timber possessed by Russia at present is 193,354,000 *dessatines* (the dessatine being equal to $2\frac{1}{10}$ English acres), and the annual consumption being 72,000,000 cubic *sajens* (a sajen=7 English feet) for firewood alone. To naturalists in this connexion the question naturally presents itself, "Will the Smew retreat before the axe, or adapt itself to another mode of nidification than in hollow trees?"

stems and branches of which immense quantities of drift timber have been left by the floods, or lie upon the land piled up in masses, or spread in regular layers, or floating in the "kourias," over which latter runs the nimble Terek Sandpiper.

Behind Habariki, about half a verst distant, is an immense swamp lying in the midst of old forest, and with pools of water dotted about over its surface. It is quite two versts in length by one verst or more in breadth. Here and there also in the forest are large and small lakes, swamps, and curious circular hollows with regularly formed banks, some of the latter dry and covered with moss and decayed water-plants, chiefly *Potamogeton* (sp. ?), and some having pools of water in the middle. These appear to form a winding chain through the woods, being joined by swamps or by dry water-worn trenches. Round the lakes the forest stands like a wall, the stems of the trees bleached by sun and water and marked with constant friction of drift wood, the height of former floods being distinctly traced six or seven feet up from their bases. It is in the broken stumps or prostrate trunks the Smews breed; and the only set of eggs and down we got was brought to us by a peasant who had found it in the former situation. We saw many pairs of Smews during our visit to Habariki, on the pools on the large marsh and on the woodland lakes; but we did not meet with them elsewhere on our trip.

Mergus castor (L.).

One pair of Goosanders was distinctly identified by Harvie Brown on the waters of the marsh behind Habariki. These were the only specimens seen about which there can be no doubt, though a good many more were seen too far out for perfectly satisfactory identification.

Mergus serrator (L.).

The first bird of this species was seen by Harvie Brown at the lakes on the tundra to the south of the Yooshina river. He fired at it and wounded it severely. They were afterwards seen by him on six different occasions, and perfectly

dentified, viz. at Alexievka, Bougrai, and on the river Dvoinik nd on the small river flowing into the inland sea (*anteà*, . 300). They always defied capture, diving rapidly at the lash, swimming a long way up or down stream, and reappear- ng out of range. We failed to discover the nest.

STERNA HIRUNDO, L.

Soon after passing Chuvinski, on our voyage down the river, wo Terns were seen at a distance and were brought within ange by an imitation of their note. The species was then uspected, by the ash-grey colour of the lower parts, to be he Arctic Tern; and we soon afterwards had an opportunity f procuring both birds and eggs, and verifying our previous ecognition of the species. We found the Arctic Tern abun- lantly at different localities—more especially, however, at Kuya (on the occasion of our second visit, when we procured he young), at an island near Alexievka, along the shore at Vooshina, on an island near Stanavoialachta, and at Dvoinik. They bred higher up the river in single pairs here and there, nd not in colonies, as far as we had opportunity of observing; ut at the second of the above-mentioned localities there was considerable colony. At this place one was knocked down ith a stick by Little Feodor.

LARUS CANUS, L.

The Common Gull was seen in great numbers at Ust Zylma n the 15th May, and for several days after, resting on the ce of the Petchora by the sides of the surface-pools of melted now. They were very wild; but by a long random shot into large assemblage of these and another species (*Larus affinis*?), e were enabled to secure specimens. From what we saw of he Common Gull afterwards along the course of the river, e can almost believe that every pair which breeds on the Petchora below Ust Zylma was included in the above-men- ioned assemblage; or, in other words, all that breed upon the Petchora between Ust Zylma and the sea pass Ust Zylma on migration. We found them nowhere in abundance after- ards; and they were generally seen in single pairs, and not n colonies. We did not meet with them north of Kuya.

At the time of migration we saw several of these birds perch together on a high leafy birch tree.

Larus marinus, L.

The Great Black-backed Gull appears to be decidedly scarce, both on the river and on the shores of the Petchora Gulf. The first two we saw were resting on an island near Alexievka, where the Arctic Terns were also found in numbers. They were easily identified as they were sitting beside several individuals of *Larus affinis*, their superior size being evident at a glance. Afterwards we met with them sparingly at Dvoinik along the shore, but obtained no examples; nor did we obtain any eggs or young.

Larus affinis, Reinhardt?

The Siberian Herring-Gull arrived on migration at Ust Zylma about the 11th May. It breeds on the shores of the delta and the lagoons of the Petchora. We obtained several of its eggs, which do not differ from those of the other European Herring-Gulls. Nearly all the birds which frequent the Petchora were in adult plumage. We shot two birds in immature plumage, and may have seen a couple more. Wherever a party of fishermen was stationed there were sure to be plenty of Herring-Gulls. They hovered over the nets as they were being dragged in, and frequently secured small fish as they attempted to escape.

This species is intermediate in the colour of its mantle between the Mediterranean Herring-Gull and the Lesser Black-backed Gull. Like both those species, it has yellow legs; and the circle round the eye is brilliant vermilion, or the colour of a Seville orange. It is, however, emphatically a Herring-Gull, as the coloration of the primaries abundantly proves. It agrees in the colour of the mantle with the description of *Larus affinis* of Reinhardt; but we do not for one moment venture to assert that this is its true name. We may, however, venture to suggest that the Herring-Gulls which breed in the Petchora winter on the shores of the Arabian Sea, and are the species spoken of by Mr. Hume ('Stray Feathers,' 1873, p. 273) as *Larus occidentalis*, Audubon. In winter, no

doubt, the legs lose their yellow colour and become greyish white, but the orange-red eyelid is retained. Mr. Hume's *Larus argentatus* agrees exactly with the Mediterranean Herring-Gull (*L. leucophæus*).

Larus glaucus, L.

Our first acquaintance with the Glaucous Gull in the north of Russia was made on the night of the 13–14th July, when we landed upon No. 4 of the Golaievskai group of islands. Here we shot several old birds, and secured specimens of the young in down, which latter, upon comparison, resemble the young of the last-named species, but, as might have been expected, have fewer and fainter dark markings on the back*. The nests were heaps of sand hollowed slightly at the apex; and a few irregularly disposed tufts of coarse seaweed formed the only lining. Seaweed and small drift wood were the only materials on the low almost perfectly level sandbank which the birds could choose from. Afterwards we saw Glaucous Gulls commonly along the shore at Dvoinik, and shot specimens from the deck of the wrecked sloop. The following is a description of the soft parts of the adult birds obtained by us:—Legs pale flesh-colour with a tinge of pink; beak and round the eye straw-yellow; point of bill pale horn, and a vermilion spot on the angle of the lower mandible; pupils blue-black, irides pale straw-yellow; inside of mouth pale flesh-colour.

Stercorarius crepidatus (Gm.), Saund. P. Z. S. 1876, p. 326.

We found the Richardson's Skua upon the tundra mingling with flocks of the next species, or scattered in pairs over their breeding-haunts. Nowhere did we find them so abundant as the Buffon's Skua; but though we obtained no eggs of the latter species, we found several nests of the former. The first

* We find the young in down of this species described as pure white on first emergence from the shell (Harting, 'Fauna of the Prybilov Islands;' reprinted from the 'Field': London, 1875, p. 32), becoming gradually brownish black and grey as they become older. Those we obtained were about four or five days old.

Richardson's Skua we obtained was shot at Stanavoialachta; and we afterwards found it at Bougrai *, on the tundra opposite Alexievka, and at Dvoinik, on the occasion of our first visit to that place. The eggs were taken at three localities:—Bougrai; opposite Alexievka, by Simeon, who also shot the bird; and at Stanavoialachta. At the latter place, when coming home after a long ramble over the tundra, a pair, on a level part of the tundra, attracted Harvie-Brown's notice by their curious antics, which told of the nest being close at hand. The birds often alighted within fifteen yards, raised their wings above the back (when they did this the white or dusky quills showed light upon the raised wing), shammed lameness and sickness, and stood reeling from side to side as if mortally wounded. If followed, they tried to lead him away; but if he again approached the vicinity of the nest, they flew boldly towards him and stooped repeatedly. The nest contained two eggs, and was placed on a tussock on mossy ground, somewhat similar to the Grey-Plover ground before described. It contained reindeer-moss in small quantities, and leaves of the surrounding plants. We found another nest at Bougrai, watching the bird to the nest, and both walking almost straight up to it from different directions. Amongst all the specimens of this bird seen or obtained, there were none of the parti-coloured birds found commonly in this country.

Stercorarius parasiticus (L.), Saund. P. Z. S. 1876, p. 330.

The Buffon's Skua was first identified by Seebohm on an island near Alexievka, and was afterwards met with abundantly on the tundra, especially at Bougrai, where a flock of some hundreds had assembled, from which we shot about a dozen examples. They behaved in exactly the same way as a colony of Terns. When one was shot the rest of the flock swooped down or hovered over it. We shot some of them with dust-shot. After a time the flock would depart for a quarter of an hour and settle widely apart all over the tundra; but they came back repeatedly; and had we been sup-

* Lit. *old hut*.

plied with cartridges we might have secured many more. About a dozen or fifteen Gulls (*Larus affinis*, Reinhardt) were frequenting the same ground; but these at once took their departure and did not return. On several occasions we observed the peculiar Kestrel- or Tern-like hover of the Buffon's Skua on wing, and also saw these birds pick up from the ground, or seize upon the wing, Dunlins and Stints, in the one case acting like a Hen-Harrier, in the other seizing their prey like a Falcon. We had cause also to suspect their depredations amongst the eggs; and Grey Plovers and other birds often joined in driving them away from their domains. Sometimes, in the evenings or mornings, we saw long straggling flocks of these Skuas passing over the island of Alexievka, and crossing and recrossing the branch of the Petchora which separates that island from the fastland. We found them common all over the tundra as far north-east as we penetrated.

In the specimens of the two species which we obtained we found a marked difference in the coloration of the legs and toes, those of the Richardson's Skua being uniform dark brown, while those of Buffon's Skua were blotched with bluish grey. In one specimen of the latter there is a single feather of the under tail-coverts white, with dark brown bars; in all the other specimens procured the under tail-coverts are of a uniform smoky brown. This single feather is doubtless a last trace of immaturity.

Obs. We saw many specimens of the Pomatorhine Skua outside the Golaievskai banks on our journey home by sea, but saw nothing of this species during our stay in Russia.

Colymbus septentrionalis, L.

We added this species to our list on the 12th June as we were descending the river, when one was shot from the boat. Afterwards we met with it sparingly on the tundra and obtained their eggs; but the next species appeared to be certainly the more abundant of the two.

Colymbus arcticus, L.

We identified the Black-throated diver first at Habariki, on

the 2nd June, and afterwards met with the species abundantly, both on the islands and on the tundra as far as Dvoinik, generally in pairs, and never in large flocks, as observed by Alston and Harvie Brown on the Dvina (Ibis, 1873, p. 72). We obtained several sets of eggs, and found one nest built of water-plants on the edge of a pool in the marsh near the Dvoinik beacon. This nest was a floating structure, supported by the growing water-plants around, a very different one from those generally found on the shores of our own Highland lakes. It contained one egg of unusually small size, which caused us to carefully identify the old bird, which flew repeatedly close overhead and afforded us both ample opportunity without the necessity of shooting it. We should say, from what we observed of the Black-throated Diver, that it was not so abundant a species as at Archangel, though also plentiful in all suitable localities.

In conclusion, we beg to thank those gentlemen, too numerous to mention, to whose kind assistance so much of the success of our trip is owing. We cannot, however, refrain from especially thanking Count Schuváloff for the invaluable letters of introduction with which he was kind enough to furnish us, which enabled us to continue our journey without any delay, and ensured us a reception (in a country which has probably never been visited by Englishmen for two and a half centuries) which we shall always look back upon with pleasure and gratitude as long as we live.

XLIV.—*A Review of the Genus* Malimbus, Vieillot.

By D. G. Elliot, F.R.S.E. &c.

(Plate XIII.)

The genus *Malimbus* was first instituted by Vieillot, in his 'Oiseaux Chanteurs,' for the bird described by Daudin three years previously in the 'Annales du Muséum' as *Tanagra malimbica*. Vieillot gave no definition of the genus; and it was not generally used by ornithologists. In 1816 he substituted for *Malimbus*, in the 'Analyse,' the term *Sycobius*,

and gave the characters of the genus; and it is by this generic name this group of birds has been generally known. Afterwards this appellation was suppressed by the author; and in 1820 *Ficophagus* was proposed. Although under *Sycobius* the genus was first defined, yet, according to the strict rule of nomenclature, it will have to give way to the first term proposed, as, without any sufficient reason, an author hardly has the right to change one name for another.

The small group of African Finches which compose this genus constitute a part of the family Ploceidæ, and, with two exceptions, are conspicuous for their dress of deep black and rich crimson. Two species vary by having a cinereous plumage enriched by red and white; and one unites orange-red with the general colours borne by the majority of the species. They are chiefly inhabitants of the west coast of Africa, from Sierra Leone to Angola, apparently nowhere very abundant. According to Heuglin, *M. melanotis* is a native of Abyssinia; and, so far as I am aware, no other member of the group has been obtained on the east coast.

The geographical distribution of the nine species, as now known, is somewhat as follows:—The oldest described member of the group, *Tanagra malimbica* of Daudin (*Malimbus cristatus*, Vieillot), has been obtained all along the western shore from the Gold Coast to the Congo. This is the only crested species of the genus, and is easily distinguished from its relatives. The next in order, *M. scutatus* of Cassin, has a somewhat wider range, as the type was sent from Sierra Leone, and other specimens have been procured at various points on the coast as far south as the river Murie, a branch of the Congo, where it was obtained by Du Chaillu. The Gaboon is the only locality, so far as I know, from which *M. cassini* has been received; and this has remained since its discovery a very rare species, only four specimens, I believe, being known at present—the type and one other in the British Museum, one in Mr. Sharpe's collection, and one in the Philadelphia Academy of Natural Sciences. Two other species range from the Gold Coast to the Congo, viz.:—*M. rubricollis*, Swainson, mistaken by Daudin and Vieillot for the

female of *M. cristatus*; and *M. nitens*, Gray, which seems to be generally distributed, as it has been procured at many points between the two places named above. *M. nigerrimus*, Vieillot, is found from Fantee to Angola, and is the least-ornamental species of the genus, its black plumage being relieved by no other colour. *M. racheliæ* (type) was obtained at the river Muni by Du Chaillu, and at the Gaboon; and *M. melanotis*, with the widest distribution of all, has been sent from Senegal, Gambia, and Casamanze, and also, according to Heuglin, is found in Abyssinia. Lastly, *M. rubriceps* has been procured on the river Limpopo.

The following table gives the various distinctive characters of the species, by which each one may be easily recognized. I have divided them into four sections, as they seemed to form quite naturally such subgeneric groups, retaining for the first the term *Sycobius*, comprising the single crested species. The next five, with black and red or all black plumage and non-crested heads, I have placed under the term *Ficophagus*; while for *M. racheliæ*, which inclines towards *Euplectes* in the colour of its plumage, I propose the term *Atalochrous*, or *gay-coloured*, and retain *M. melanotis* in *Anaplectes*.

Genus Malimbus.

Sycobius.

A. Head crested.

AA. Top of head, cheeks, throat, and breast bright red, rest of plumage black ..... 1. *M. cristatus.*

Ficophagus.

B. Head non-crested.

BB. General plumage black.

a. Head, neck, and breast crimson.

1. Under tail-coverts crimson ..... 2. *M. scutatus.*
2. Under tail-coverts black ..... 3. *M. cassini.*

b. Occiput and sides of neck crimson ..... 4. *M. rubricollis.*

c. Breast alone crimson ..... 5. *M. nitens.*

CC. Entire plumage black ..... 6. *M. nigerrimus.*

Atalochrous.

DD. Black; top of head, neck, and breast orange-red; under tail-coverts yellow ..... 7. *M. racheliæ.*

ANAPLECTES.

ee. General plumage cinereous.
d. Head, throat, and breast red; chin, ear-coverts, and lores black; edge of outer web of primaries red ..... 8. *M. melanotis*.
e. Head entirely and throat scarlet; edge of outer web of primaries yellow ..... 9. *M. rubriceps*.

SYCOBIUS.

MALIMBUS CRISTATUS.

Tanagra malimbica, Daud. Ann. du Mus. (1802) vol. i. pl. 10. fig. 1, ♂; Shaw, Nat. Miscell. pl. 581.

Malimbe huppé, Vieill. Analyse (1816), p. 33.

Malimbus cristatus, Vieill. Ois. Chant. (1805) pl. 42, ♂; Sharpe, Cat. Afr. Birds, p. 60. sp. 572; Shelley & Buckl. Ibis, 1872, p. 289; Ussher, Ibis, 1874, p. 68. sp. 130.

Ploceus cristatus, Vieill. Enc. Méth. p. 700; id. Nouv. Dict. d'Hist. Nat. (1819) vol. 34. p. 129.

Sycobius ——, n. sp.? J. V. Barboza du Bocage, Jorn. Sc. Math. Lisboa, vol. i. p. 140?

Sycobius cristatus, Gray, Gen. of Birds, vol. ii. p. 352; Hartl. Syst. Ornith. W.Afr. (1857) p. 132. sp. 398; Sharpe, Ibis, 1869, p. 191. sp. 31, 1870, p. 472; Bon. Consp. Gen. Av. vol. i. p. 438. sp. 1.

Sycobius nigrifrons, Hartl. Journ. für Ornith. 1855, p. 356.

Hab. Denkera (*Ussher*); Gold Coast (*Shelley*); Rio Boutry (*Pel*); Fantee (*Sharpe*); Aguapim (*Riis*); Rio Quito (*Anchieta*); River Muni (*Du Chaillu*); Congo (*Perrein*).

This species was first described by Daudin (*l. c.*) from specimens sent from the Congo by Perrein. The type is now in the Paris Museum at the Jardin des Plantes. He called it *Tanagra malimbica*, and described as the female the species named afterwards *rubricollis* by Swainson. Uncoloured figures are given of both, and descriptions in Latin and French. Vieillot, three years afterwards, figured and described the same specimens in his 'Oiseaux Chanteurs' under the name of *Malimbus cristatus*, by which specific appellation the species has been generally known. He merely followed Daudin, and repeated his error in figuring Swainson's species

as the female. In the 'Analyse,' where he changed the name of the genus to *Sycobius*, he gives no Latin name to the species, but calls it the *Malimbe huppé*; and in the 'Nouveau Dictionnaire,' three years afterwards, he places it in the genus *Ploceus*.

The young do not much resemble the adults in plumage, and might not unnaturally be deemed to belong to different species.

Prof. Boccage (*l. c.*), describes a specimen of this genus from Rio Quito, Cabinda, which is evidently, as he states, in immature plumage. Judging from his description, I am inclined to think it is one of the phases of plumage assumed at a certain age by the young of this species.

Male. Black. Head crested. Cheeks, throat, top of head and crest, and upper part of breast bright red. Bill and feet black. Total length 7 inches, wing 3½, tail 3, bill ¾.

Female. Head not crested. Smaller than the male, dusky black, beneath fuliginous. Bill flesh-colour.

Young. No crest. Top of head, nape, side of neck, throat, and breast crimson. Front and rest of plumage black.

Still younger. Head and neck and upper part of breast light red, forehead blackish. Wings and back light purplish brown. Underneath light greyish brown. Bill light brown.

Ficophagus.

Malimbus scutatus.

Sycobius scutatus, Cassin, Proc. Acad. Nat. Sc. Phil. 1849, p. 157; id. Journ. Acad. Nat. Sc. Phil. vol. i. p. 297, pl. 41. figs. 1, 2, ♂ ♀; Hartl. Syst. Ornith. W.Afr. p. 132. sp. 400; Sharpe, Ibis, 1870, p. 472, 1869, p. 191. sp. 32; Bonap. Consp. Gen. Av. vol. i. p. 439. sp. 5.

Malimbus scutatus, Sharpe, Cat. Afr. Birds, p. 60. sp. 573; Ussher, Ibis, 1874, p. 68. sp. 133.

Hab. Fantee (*Sharpe*); Denkera, Gold Coast (*Ussher*); Rio Boutry (*Pel*); Sierra Leone (*MacDowell*); river Muni (*Du Chaillu*).

This handsome species was described by Cassin as long ago as 1849, in the 'Proceedings' of the Philadelphia Aca-

J.G.Keulemans lith. M&N.Hanhart imp.

1 MALIMBUS CASSINI. 2 M. RUBRICEPS.

demy of Natural Sciences, from two pairs which were brought from Sierra Leone by Mr. R. MacDowell. It has since been procured at various points along the West-African coast, to the south of the locality whence Cassin's specimens came, and in most of the districts appears to be rather a rare species.

Male. Top of head, neck, broad pectoral band, and under tail-coverts crimson. Throat and rest of plumage black.

Female. Pectoral band and under tail-coverts crimson, all the rest of plumage black.

Total length 5¾ inches, wing 3⅝, tail 2⅞.

MALIMBUS CASSINI. Plate XIII. f. 1.

Sycobius cassini, Elliot, Ibis, 1859, p. 392; Cassin, Journ. Acad. Nat. Sci. Phil. 1862, p. 186.

Hab. Gaboon (*Verreaux*).

I described this species in 'The Ibis' for the year 1859 from a single specimen received from the Gaboon by the Maison Verreaux, at that time the greatest commercial house for natural-history specimens in Europe. It is most nearly allied to *M. scutatus*, Cassin, but can always be distinguished by the crissum being black like the general plumage. It appears to be very rare, as I have seen but few specimens in Europe (Cassin states that there is a specimen in the Philadelphia Academy of Natural Sciences); and the female is unknown. The type is in the British Museum. As it is one of the species of this genus which has not been figured, an excellent representation of it is given on the accompanying plate.

Male. Jet black. Upper part and sides of head, nape of neck, throat, and breast rich crimson. Bill black; feet and legs brown. Total length 5¼ inches, wing 3½, tail 2½, bill ·8, tarsus ·8.

MALIMBUS RUBRICOLLIS.

Républicain à capuchon écarlate, Temm. Cat. Cabin. Ornith. (1807) p. 234.

Textor malimbus, Temm.?

Ploceus rubricollis, Swain. Menag. p. 306 (1838).

Malimbus cristatus, Vieill. Ois. Chant. pl. 43, ♀.

Euplectes rufovelatus, Fras. P. Z. S. 1842, p. 142; id. Zool. Typica, pl. 46; Sharpe, Ibis, 1870, p. 472.

Sycobius malimbus, Hartl. Syn. Ornith. W.Afr. (1857) p. 130. sp. 399; Sharpe, Ibis, 1870, p. 472; Bonap. Consp Gen. Av. vol. i. p. 438. sp. 2.

Tanagra malimbica, Daudin, Ann. du Mus. i. p. 148, pl. 10. fig. 2, ♀ (1802).

Malimbus rufovelatus, Sharpe, Cat. Afr. Birds, p. 60. sp. 570; Ussher, Ibis, 1874, p. 68. sp. 131.

Sycobius nuchalis, Elliot, Ibis, 1859, p. 393; Sharpe, Ibis, 1869, p. 191, 1870, p. 472.

Hab. Denkera, Gold Coast (*Ussher*); Fernando Po (*Fraser*); Gaboon (*Du Chaillu*); Congo (*Perrein*); Fantee (*Sharpe*).

Several authors have endeavoured to confer a name on this species. I have had a shot at it myself, and, like the majority, have been unsuccessful. As well as I can make it out, the case stands as follows:—It was mistaken by both Daudin and Vieillot for the female of the species called by the latter writer *Malimbus cristatus*. It is undoubtedly the bird described by Temminck in his Catalogue (*l. c.*) as from the Congo; but he does not confer any Latin name upon it. He states that the female has the entire plumage a brownish black. This is the only mention of the female I have met with. Somewhere about this time, as given by writers generally, Temminck calls the species *Textor malimbus*; but, so far as I am concerned, this name cannot stand, for two reasons. One is that I have been unable to find it published anywhere by Temminck, and suppose his name is merely a manuscript one in the Leyden Museum, and therefore not to be considered; and another is that his term is a repetition of the name of the genus to which the bird belongs, and therefore could not be used, even if I should find it, on account of its liability to create confusion. Temminck seems therefore to be out of this question entirely. Swainson, in his 'Menagerie,' in 1838, regularly described the species and called it *Ploceus rubricollis*; and by this specific name the bird should hereafter be known. In 1842 Fraser (*l. c.*) gave to it the name of *rufovelatus*; and in 1859 I bestowed upon the unfortunate

creature the term *nuchalis*. It is well figured by Fraser in his 'Zoologia Typica,' and by Vieillot in the 'Oiseaux Chanteurs.'

Adult. Black. Front, top, and back of head, and sides of neck red. Bill and feet black. Total length 6¼ inches, wing 3⅛, tail 2½, tarsus 1, bill 1.

Specimen in British Museum has the back of head and sides of neck red, all the rest black. This may be a female, or possibly a young male.

MALIMBUS NITENS.

Ploceus nitens, J. E. Gray, Zool. Misc. i. p. 6.

Sycobius nitens, G. R. Gray, Gen. of B. vol. ii. p. 352, pl. 87; Sharpe, Ibis, 1869, p. 192. sp. 34; Bonap. Consp. Gen. Av. vol. i. p. 439. sp. 16.

Malimbus nitens, Hartl. Syst. Ornith. W.Afr. (1857) p. 153. sp. 401; Sharpe, Cat. B. Afr. p. 60. sp. 571; Shelley & Buckl. Ibis, 1872, p. 289; Ussher, Ibis, 1874, p. 68. sp. 132.

Hab. Sierra Leone (*Sabine*); Aguapim (*Riis*); Gaboon (*Verreaux*); Fantee (*Sharpe*); Abrobouko, Cape-Coast (*Ussher*); Gold Coast (*Shelley*); Rio Boutry (*Pel*); Cape Palma, Calabar coast (*Laurein*) Paris Mus.; river Muni (*Du Chaillu*).

M. nitens was first described by Dr. Gray (*l. c.*). It is peculiar among the members of this genus by the squamiform feathers of the head and neck, resembling somewhat in texture and colour those of the members of the genus *Manucodia*. It is a clearly defined species, the black plumage and red pectoral band readily serving to distinguish it from the other birds of this group. Like the rest of the members of this section, it appears to be scattered along the West-African coast from Sierra Leone to the Congo, being nowhere very abundant. There is nothing in its synonymy calling for any especial comment, the species never having received a second appellation.

Jet black. Pectoral band crimson. Bill black on basal half, remainder yellowish. Feet black. Feathers of head and neck shining purplish black. Total length 5¾ inches, wing 3¾, tail 2¾, bill on top ¾.

MALIMBUS NIGERRIMUS.

Ploceus nigerrimus, Vieill. Enc. Méth. p. 700; id. Nouv. Dict. d'Hist. Nat. (1819) vol. 34. p. 130; Hartl. Journ. für Ornith. 1854, p. 411.

Sycobius nigerrimus, Hartl. Syst. Ornith. W.Afr. (1857) p. 133. sp. 402; Gray, Gen. of Birds, vol. ii. p. 352; Bonap. Consp. Gen. Av. vol. i. p. 439. sp. 7.

Ploceus niger, Swains. Menag. p. 306 (1838).

Malimbus nigerrimus, Sharpe, Cat. Afr. Birds, p. 60. sp. 574; id. Ibis, 1872, p. 72. sp. 250; Ussher, Ibis, 1874, p. 68. sp. 134.

Hab. Cape Lopez (*Verreaux*); Gaboon (*Du Chaillu*); Angola (*Perrein*); Fantee, scarce (*Ussher*).

Ploceus nigerrimus of Vieillot (*l. c.*) is the only species of *Malimbus* which has a plumage of one uniform colour, unrelieved by the crimson and orange which render its relatives so conspicuous and attractive. It is apparently distributed along the African coast from Fantee to Angola, as it has been obtained at various points between these districts.

The adult of this species has the entire plumage jet-black. Total length 9½ inches, wing 3¼, tail 3, bill along culmen ¾.

Young. Head and back dark olive-brown, each feather with a central line of black. Rump rufous brown. Cheeks, throat, and upper part of breast and flanks olive-yellow; rest of underparts bright yellow. Under tail-coverts dark buff. Wings and tail dark purplish brown. Edges of secondaries yellow. Total length 6½ inches, wing 3¼, tail 3½, bill on culmen ¾.

ATALOCHROUS.

MALIMBUS RACHELIÆ.

Sycobius racheliæ, Cassin, Proc. Acad. Nat. Scien. Phil. 1857, p. 36; id. Journ. Ac. Nat. Sc. Phil. 1862, pl. 23. fig. 3; Hartl. Syst. Ornith. W.Afr. p. 265. sp. 749.

Malimbus racheliæ, Sharpe, Cat. Afr. Birds, p. 60. sp. 575.

Hab. River Muni (*Du Chaillu*); Gaboon (*Walker*).

This, the handsomest species of *Malimbus*, was first described by Mr. Cassin (*l. c.*) from specimens obtained by Du Chaillu on the river Muni. It is quite different in the ar-

rangement of its colours from all the species of this genus; and in the way the bright hues of the breast extend to the flanks it resembles somewhat the species of *Euplectes*. The two examples in the Academy of Natural Sciences at Philadelphia, and one in Mr. Sharpe's collection, are, I believe, the only ones of this beautiful bird that have as yet been obtained. It constitutes the subgenus *Atalochrous*, according to the manner in which I have divided this group of birds.

Male. Top of head bright reddish orange, growing paler on sides of neck. Throat and cheeks black. Neck in front and breast orange-red, changing into bright yellow on the sides. Upper part of body, wings, tail, and abdomen black. Under tail-coverts yellow; under wing-coverts black. Bill bluish black; feet paler. Total length 5½ inches, wing 3¼, tail 2.

Young male. Similar to the male, but the plumage less bright, and the reddish orange of the crown mixed with black.

ANAPLECTES.

MALIMBUS MELANOTIS.

Ploceus melanotis, Lafr. Rev. de Zool. 1839, p. 20; id. Mag. de Zool. 1839, pl. 7; Hartl. Syst. Ornith. W.Afr. (1857) p. 133.

Hyphantornis erythrocephalus, Rüpp. Syst. Uebers. Vög. Nord-Ost-Afr. p. 71; Gray, Gen. Birds, p. 351.

Sycobius melanotis, Bonap. Consp. Gen. Av. vol. i. p. 438. sp. 3; Horsf. & Moore, Cat. B. E.Ind. Co. (1856–58) p. 520. sp. 790.

Ploceus pyrrhocephalus, Heugl. Journ. für Ornith. 1864, pp. 247, 272, 273.

Ploceus hæmatocephalus, P. Würt. Naumannia, 1857, p. 433.

Hab. Senegal (*Lafresnaye*); Gambia (*Lesson*); Casamanze (*Verreaux*); Abyssinia (*Horsfield & Moore*).

The present rare bird is peculiar amongst this group by departing from the usual style of plumage, and, instead of possessing black and red colours, takes almost the other extreme and presents itself to us in a grey and red dress, be-

coming nearly white on the lower parts. It was described by Lafresnaye in the 'Revue de Zoologie" for 1839, and a figure given in the 'Magasin de Zoologie' of the same year. The type is now in the collection of the Natural-History Society of Boston, United States. Lafresnaye's specimen came from Senegal; but it has also been procured on the Gambia and at Casamanze.

Upper part greyish, beneath ashy white, abdomen the same. Under tail-coverts whitish. Head, throat, and breast red. Ear-coverts, chin, and loral space black. Bill red. Feet flesh-colour. Wings greyish brown, outer webs bordered with red. Tail pale brown, edges of outer webs bordered with red. Total length 5¼ inches, wing 3½, tail 2½, bill on culmen ½.

Malimbus rubriceps. Plate XIII. f. 2.

Hyphantornis rubriceps, Sundev. Öfvers. Kongl. Vetensk. Akad. Förh. 1850, p. 97.

Hab. River Limpopo (*Wahlberg*).

A typical specimen of this very good species in the collection of Mr. Sharpe, received by him from Prof. Sundevall, and collected on the river Limpopo by Wahlberg, fully exhibits the perfect distinctness of this bird from *M. melanotis*. The chief differences that are at once perceptible are the absence of the black cheek-mark, the edges of the outer webs of the primaries and rectrices being yellow instead of red, and the head and breast being scarlet instead of vermilion. The figure on the accompanying plate well represents the bird.

The male has the entire head, neck, throat, and breast bright scarlet. Back and wings ashy brown, outer edges of secondaries and primaries bright yellow. Centre of the mantle washed with pale vermilion. Rump pale ash. Tail ashy brown, edges of outer webs bright yellow. Entire underparts pure white. Bill pale horn-colour. Total length 5½ inches, wing 3¼, tail 2¼, bill on culmen ½.

XLV.—*Notes on a 'Catalogue of the* Accipitres *in the British Museum,' by* R. Bowdler Sharpe (1874). By J. H. Gurney.

[Continued from p. 376.]

The continent of Africa is the home of three Buteonine species (*Buteo auguralis, Buteo augur,* and *Buteo jakal*) which are included by Mr. Sharpe in the genus *Buteo,* but which appear to me to form a natural subgeneric group, to which the name of *Pterolestes,* proposed by the late Professor Sundevall*, may be conveniently applied.

The first two of these species are intertropical in their habitat, being natives of Abyssinia and of some of the adjacent countries, and having also been obtained in West Africa within the Portuguese territory of Benguela.

So far as I am aware, nothing is known as to the range of these two species in the countries which intervene between these far-distant localities, neither is it known whether either species occurs elsewhere in West Africa; but it may be desirable to record the circumstance of the Zoological Society of London having possessed, some years years since, two living examples of *Pterolestes auguralis* which were known to have been obtained in West Africa, though from what portion of the West-African coast was, I believe, never ascertained. Neither of these interesting birds lived long in confinement; and, unfortunately, neither of them was preserved; but the sternum of one, a male, was added to the collection in the Norwich Museum, which also possesses an example of this Buzzard said to have been obtained in Nubia. As this species is very rare in collections, and as its dimensions are not given in Mr. Sharpe's work, I may here mention the principal measurements of the specimen at Norwich; these are—wing from carpal joint 13·9 inches, tarsus 2·8, middle toe s. u. 1·5.

Mr. Sharpe's description of *Pterolestes auguralis* in his Catalogue is limited to a somewhat brief note supplied by Dr. Finsch; but he has subsequently published further parti-

* *Vide* Addenda to Mr. Sharpe's Catalogue, p. 458; also Sundevall in Œfv. k. Vet. Akad. Förh. 1874, No. 2, p. 27.

culars, derived from Professor Barboza du Bocage and from Count Salvadori, in the second edition of Mr. Layard's 'Birds of South Africa,' p. 27.

With regard to *Pterolestes augur*, I have to remark that in the stage described by Mr. Sharpe under the head of "adult male," but which I have no reason to suppose is limited to the male sex, the throat is sometimes pure white. This circumstance is not noted in Mr. Sharpe's description; but such a specimen from Abyssinia is represented in Rüppell's 'Neue Wirbelthiere,' pl. 16. fig. 1, and a similar example from Benguela is in the Lisbon Museum. The Norwich Museum possesses an Abyssinian specimen, also in this stage, in which the throat is white, with the exception of three narrow blackish streaks, of which one is mesial and two lateral.

The remarkable phase of plumage in this Buzzard, in which all the underparts are black, is described by Mr. Sharpe under the heads of "old male" and "old female;" but in Mr. Blanford's 'Observations in Abyssinia,' that traveller remarks, at p. 297, "I am rather of opinion, with Rüppell, that the dark-coloured birds are young, and not a melanoid variety. I shot two black specimens, one evidently immature, the other apparently a bird of the year."

Judging from these remarks of Mr. Blanford's, and from such specimens as I have been able to examine, I should suppose the dark plumage to be an occasional melanistic phase incident both to young and to adult specimens; certainly many immature birds do not exhibit it. The youngest specimen in the Norwich Museum agrees generally with the description given by Mr. Sharpe of the "young" plumage; but the upper tail-coverts are dark brown, and are not tipped with rufous; some of the tibial feathers show conspicuous though irregular longitudinal streaks of dark brown; and the abdomen is similarly streaked throughout, but more profusely than the tibiæ.

A slightly older specimen, in the same collection, agrees more closely with Mr. Sharpe's description, but also shows the brown markings on the thighs, though not on the abdo-

men; in this bird new feathers are appearing on the mantle of the dark hue indicative of adult plumage. A third specimen shows a similar appearance on the back, and is also beginning to assume the rufous tail; in this example the tibial feathers are white, much mingled with rufous. The two last-named specimens are evidently in a state of change from the immature dress to that designated by Mr. Sharpe as the plumage of the "adult male."

Rüppell's plate of his "*Buteo hydrophilus*" (Neue Wirbelthiere, pl. 17) probably represents two immature specimens of *P. augur*—that marked "Fig. 2" being apparently the younger of the two, and perhaps partially melanistic.

There remains but one other species of the subgenus *Pterolestes* requiring consideration, the South-African *P. jakal*. Mr. Sharpe, in his description of the "adult male," has the following sentence:—"Centre of chest whitish or rufous white, more or less mottled with black, being the remains of immaturity, as also are the white edgings to the feathers of the abdomen and thighs, and rufous on the under tail-coverts." Having examined many skins of this Buzzard, and having also observed it in confinement, I feel certain that the appearances indicated in this passage are not "the remains of immaturity," but are characteristic of the fully adult normal plumage of this species.

Mr. Sharpe alludes, both at page 176 of his Catalogue, and at p. 29 of the second edition of Mr. Layard's 'Birds of South Africa,' to the occasional occurrence of specimens of *P. jakal* in which the underparts are entirely black, as in the melanistic form of *P. augur*. Such specimens must, I apprehend, be very rare, as none such have come under my notice, and as no mention of this phase of plumage is made by Mr. Layard in the first edition of his work, though he found this species "very common throughout the colony" of the Cape of Good Hope.

I now proceed to the consideration of the genus *Leucopternis*, which has been merged by Mr. Sharpe in that of *Urubitinga*; but I think it more convenient to use both these generic names as indicating two distinct groups, which are

naturally separated by the totally different character of their immature plumage—the one group, to which I would restrict the title of *Urubitinga*, consisting of *U. zonura*, *U. anthracina*, and *U. gundlachi* (if the latter be really distinct), and the other, for which I would retain the name of *Leucopternis*, consisting of the remaining species included by Mr. Sharpe in his amalgamated genus*.

Leaving the restricted genus *Urubitinga* for future consideration, I now propose to make a few remarks on some species of the genus *Leucopternis*, based upon specimens in the Norwich Museum, and upon others very kindly lent to me by Messrs. Salvin and Godman.

Commencing with that beautiful species, *L. ghiesbreghti*, I may observe that the proportion of black which mingles with the snowy white of its general plumage is greatest in young birds, and appears gradually to diminish as their age increases.

The specimen described by Mr. Sharpe as "adult" appears to me to retain a greater proportion of black in its plumage than is the case in some still older specimens; a very adult female in the collection of Messrs. Salvin and Godman differs from Mr. Sharpe's description in the following particulars: the greater wing-coverts are entirely white, and the primary-coverts are broadly tipped with white; the primaries are white above the emargination, as are the secondaries throughout, with the exception of a very few sparse and irregular remnants of black here and there.

The specimen figured and described by Du Bus (Esquisses Ornithologiques, pl. 1) appears also to be more completely adult than that described by Mr. Sharpe.

As Mr. Sharpe does not mention the first plumage of this species, I may add that a decidedly immature example in the

* Mr. Ridgway, in his recently published and very valuable 'Studies of the American Falconidæ,' whilst recognizing the distinction between the genera *Urubitinga* and *Leucopternis*, includes in the former, at p. 172, two species (*schistacea* absolutely, and *plumbea* conjecturally) which I, following Mr. Salvin (Ibis, 1872, p. 243), refer to *Leucopternis*, having no evidence that either of them exhibits when young the remarkable immature plumage which is characteristic of *Urubitinga* as distinguished from *Leucopternis*.

collection of Messrs. Salvin and Godman differs from the adult plumage in the following particulars :—The feathers on the crown of the head have faint brown shaft-marks, which become broader on the back of the neck, and especially at the nape, as well as darker, the marks on the neck being slaty black, which is also the colour of the upper ear-coverts ; some of the scapulars have black shaft-marks, and one of the outer scapulary feathers also shows two black marks on the external web ; the whole of the exterior surface of the wings is black, with the following exceptions : the feathers forming the wing-coverts are edged and tipped with white, and most of those in the greater and middle coverts are also transversely barred with white ; the secondaries are blackish brown, transversely barred with black, but tipped with white, and also edged with white on the inner web, the innermost secondary showing, in addition, a small white mark on the outer web ; the outermost tertials resemble the inner secondaries, but are rather more spotted with white ; the remaining tertials are white, with transverse black bars.

The character of the black subterminal bar on the upper surface of the tail varies somewhat in different individuals. A specimen in the collection of Messrs. Salvin and Godman, which still retains traces of immature plumage, though to all appearance decidedly older than that last described, exhibits a remarkable variation in this respect : in this example the two central rectrices are entirely white, and on the other feathers of the tail the subterminal band is merely represented by a black spot on each side of the shaft ; these spots are well marked on some of the rectrices, but on the outer pair, and also on the pair next the central ones, they are almost obsolete ; indeed, on one of the last-named feathers only one spot is visible, the opposite web being an unbroken white. The remaining plumage of this specimen does not appear to me to be in any way abnormal.

The next species to which I propose to refer is *Leucopternis palliata*, Mr. Sharpe's description of which appears to have been taken from an immature specimen, as he describes it as having "the feathers of the back and scapulars white at base,

tipped with white, and irregularly spotted or barred with the same." These white bars and tips become less numerous as the bird advances in age; and the whole appearance of the mantle in consequence becomes more uniform and more characterized by an unbroken slate-colour.

The authors of 'Exotic Ornithology,' who figure at pl. 49 of that work a specimen of this Buzzard, observe that "in very old birds it is possible that the white edgings to the feathers of the back and wings, which are more apparent in some specimens than in others, may wholly disappear." Such is, in great measure, the case with the most adult example in the Norwich Museum, in which the white edgings have almost entirely disappeared from the mantle, and, with the exception of about four of the scapular feathers, only remain on the secondaries and tertials.

It should, however, be observed that the small coverts along the ridge of the wing, between the body and the carpal joint, which in the immature plumage are slaty black edged with white, are in the adult pure white for about half an inch in breadth from the ridge, where they merge into slaty black.

Mr. Sharpe describes the head and neck as "pure white;" but in the two adult specimens in the Norwich Museum the crown of the head and back of the neck show a very fine blackish shaft-mark on each feather; in a younger bird in the same collection these marks are broader, especially on the nape, and for the most part of a browner hue.

The next species which I have to notice is *L. albicollis*, a Buzzard nearly allied to *L. palliata*, but readily distinguishable, in addition to other characteristics, by the pure white of its lower back, rump, and upper tail-coverts.

This species, which is figured by Temminck in Pl. Col. pl. 9, under the name of *Falco pœcilonotus*, is there represented with the head and interscapular region of a pure white, with the exception of a black supercilium; but Mr. Sharpe, probably taking his description from a younger bird, speaks of the head (except the sides of the face) as "white streaked with black," and of the interscapulary feathers as black "much varied with white bases and margins, sometimes also

barred with white on the outer web." Mr. Ridgway, in his 'Studies of the American Falconidæ,' to which I have already referred, describes this species (at p. 176) as having the "pileum and nape sometimes streaked" with black, and sometimes "immaculate." A specimen from Cayenne, in the collection of Messrs. Salvin and Godman, agrees with Mr. Sharpe's description in this respect, but also has the white feathers of the hinder head conspicuously variegated by broad slaty-black shaft-marks. Of two specimens in the Norwich Museum, one closely resembles the Cayenne example just mentioned; but the other has the shaft-marks on the crown of the head narrower and less conspicuous, as though they were in process of gradually disappearing: this specimen is from Quito, and is the most westerly example of this species which has come under my notice; the locality of the other specimen at Norwich is doubtful.

Mr. Ridgway thus describes the markings on the tail of this Buzzard:—"Tail white at the base and end, the middle portion black; this black band of variable width, sometimes occupying the greater portion of the tail, but in a specimen from Bogota restricted to a subterminal band about 2·50 inches wide." Mr. Sharpe's description appears to have been taken from a specimen in which the tail resembles the bird described by Mr. Ridgway from Bogota; but Messrs. Salvin and Godman's specimen from Cayenne and the two in the Norwich Museum have the markings on the tail in accordance with the first description supplied by Mr. Ridgway.

The following is a detailed description of these markings in the Cayenne specimen above referred to:—All the rectrices, save the two outermost pairs, are entirely black, except a narrow white basal band, which is hidden by the upper tail-coverts, and excepting also a white terminal band, extending across all the rectrices, and about 1·3 inch in breadth; on the outer pair the basal white band is visible for 1·5 inch below the tip of the upper tail-coverts, as it is also on the next pair; but on these it is imperfect, being intersected by black barring on the outer web; the under surface of the tail is white, with a central transverse black band 2·5 inches in width.

In the two specimens in the Norwich Museum the basal white band on the tail is somewhat less narrow, being about ·75 of an inch wide on the central rectrices, and increasing towards the outermost rectrices, on which the white base is of the width of 4 inches.

Another nearly allied but decidedly smaller species, *L. lacernulata*, presents a somewhat more marked variation between the adult and immature plumages than occurs either in *L. palliata* or in *L. albicollis*. In an adult specimen in the collection of Messrs. Salvin and Godman, from Rio Janeiro, the upper surface of the head is of a delicate grey, paler than the tint of the hind neck, but not absolutely white as in the specimen described by Mr. Sharpe; also, in this example the white bars on the upper tail-coverts are not visible, except when the feathers are disarranged. With regard to the ordinary immature plumage, I may remark that it differs from the adult, not only in the particulars mentioned by Mr. Sharpe, but also in the ground-colour of the entire mantle being of a much blacker hue than in the adult, and with a less tinge of grey. One specimen in Messrs. Salvin and Godman's collection, from Bahia, apparently a very young bird, further differs both from the second or ordinary immature plumage and also from the adult in having all the feathers of the wing-coverts narrowly tipped with rufous brown, except those nearest the carpal joint, which are similarly tipped with white, the scapulars and interscapulars are also tipped with rufous brown, but less conspicuously than the wing-coverts. In this specimen the lower part of the black portion of the tail is crossed on the outer rectrices by six irregular white bars; on the other rectrices these become fewer in number as the centre of the tail is approached, and the central rectrices show but two such bars, of which the upper one is nearly obsolete.

Messrs. Salvin and Godman also possess a specimen from Demerara of another allied species, *L. melanops*, in immature plumage of similar character to the above; in this bird the entire mantle has the feathers narrowly tipped with rufous brown, as in the first stage of *L. lacernulata*; this immature

specimen of *L. melanops* also differs from the adult in having two white transverse bars on the tail besides the white tip; the lower bar of the two measures ·7 of an inch in width, the upper bar, which is less perfect, is somewhat narrower.

In this specimen all the under surface is white, slightly tinged with buff, and the white portions of the plumage of the head and neck are also similarly tinted.

Mr. Ridgway, in his description of the adult of this species ('Studies of the American Falconidæ,' p. 177), says that these parts sometimes exhibit "a beautiful salmon-pink tinge, especially under the wing."

I am happy to learn that the very fine series of Buzzards of the genus *Leucopternis* possessed by Messrs. Salvin and Godman has very recently been enriched by an additional specimen of each of those very rare species *L. plumbea* and *L. semiplumbea*, both obtained from Veragua. Mr. Salvin, writing to me respecting this specimen of *L. semiplumbea*, adds the following information, which, by his permission, I here transcribe: it "seems to be a younger bird than I have yet seen of this species; the colour of the upper surface is darker and not so clear plumbeous; there are some well-defined longitudinal streaks on the upper breast; the central tail-feathers have two instead of a single band; and the wings are more strongly barred beneath at their extremities." Two other specimens of *L. semiplumbea* have also been recently added to the same collection, from the province of Antioquia, in the United States of Columbia, a new and more southern locality for this species*.

With regard to the remaining species of the genus *Leucopternis*, I have nothing to add to the information contained in Mr. Sharpe's volume†; I therefore pass on to the consi-

* In one of the specimens of *L. semiplumbea* in the collection of Messrs. Salvin and Godman the upper white caudal band, indicative of immaturity, has entirely disappeared, with the exception of a single small white spot still remaining on one of the central rectrices; the white bars on the tail of immature birds of this species are of a less clear white than on those of the adult.

† Since the above was written I have had an opportunity of examining the very interesting and apparently distinct new *Leucopternis*, lately ob-

deration of the remaining Buteonine genera, amongst which it will, I think, be convenient to refer first to that very interesting newly discovered form which has received from its first describer, Mr. Ridgway, the appellation of *Onychotes gruberi*.

As this species has been accidentally omitted from the index to Mr. Sharpe's volume, I may mention that his account of it will be found at page 158 of his Catalogue; and I may add that a fuller description, with woodcuts of the type specimen and of some of its details, is given at pages 252 to 254 of vol. iii. of the 'History of North-American Land-Birds,' by Messrs. Baird, Brewer, and Ridgway. Since the publication of that work a second specimen has come to light; and a very interesting account of both will be found in Mr. Ridgway's 'Studies of the American Falconidæ,' p. 134, from which I extract the following remarks:—"This Buteonine form has no very near relative among the American Falconidæ, nor, indeed, among those of the Old World * * * * General form and size most similar to that of species of *Rupornis* and *Asturina* * * * * * The general aspect of this peculiar Hawk is that of the smaller short-winged Buteones of tropical America."

Mr. Ridgway describes the type specimen as "everywhere dark greyish brown," and the second example as "above chiefly greyish brown, beneath ochraceous white," and adds further particulars in detail respecting both examples, for which I must refer my reader to Mr. Ridgway's own pages; but I may here transcribe his measurements of these two specimens, the only ones at present known:—"Wing 10·10–11·50 inches, tail 6·50–7·30, culmen about ·80, tarsus 2·70–2·80, middle toe 1·45–1·60, posterior claw 1, its digit ·80."

Both individuals are believed to have been obtained in California; but many years having elapsed since they were originally procured, though not then recognized as distinct,

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tained by Messrs. Salvin and Godman from Ecuador, and described by the former gentleman under the title of *L. occidentalis* in the present number of this Journal (*postea*, p. 496).

it is not now possible to ascertain the exact locality of either example.

The next genus to which I propose to allude is *Buteola*. Mr. Ridgway, in his account of *Onychotes gruberi*, from which I have just quoted, speaks of that species as agreeing "very nearly in size with *Buteola minuta* and *brachyura*;" but Mr. Sharpe treats *Buteola minuta* as a synonym of *B. brachyura*; and in this I think he is correct, as Von Pelzeln's original description of the *Buteo minutus* of Natterer's Brazilian Catalogue appears to be founded on two normal immature specimens and one melanistic adult of *B. brachyura*.

Von Pelzeln's reason for considering Natterer's *B. minutus* to be distinct from Vieillot's *B. brachyurus* is that the type of the latter is described by Pucheran (Rev. et Mag. d'Orn. 1850, p. 86) as being "remarquable par la brièveté de la queue et par suite par l'allongement des ailes, qui depassent d'un pouce les rectrices;" but as in ordinary specimens of *B. brachyura* the wings do not reach to the tip of the tail, I think it probable that the peculiarity observed by Von Pelzeln in the type specimen may be due to some defect in preparing or mounting the skin, as it often happens that the apparent relative length of the tail as compared with the wings is either unnaturally curtailed or extended through lack of care or skill on the part of the taxidermist.

The "distinct central tubercle" in the nostril which distinguishes the genus *Buteola* (*vide* Sharpe's Catalogue, p. 158) very frequently disappears in the process of preserving the skin; and when this has happened it is not always very easy to distinguish at first sight between melanistic specimens of *Buteo brachyura* and similarly coloured examples of *Buteo fuliginosus**. It appears to me that the former, when newly moulted, are blacker than *B. fuliginosus* on all parts except the interspaces between the dark transverse bars on the tail, which are usually greyer, but sometimes partly white; when, however, the plumage has been somewhat worn, it assumes everywhere, but especially on the breast, abdomen, tibiæ, and

* On the subject of the specific validity of *Buteo fuliginosus* as distinguished from *Buteo swainsoni*, vide anteà, p. 235.

wing-coverts, the peculiar dark brown tint which is also characteristic of the adult *B. fuliginosus*.

Messrs. Salvin and Godman have kindly lent me a melanistic specimen of *Buteola brachyura* from Veragua, killed whilst moulting, and retaining a sufficient portion of the old plumage in great measure to verify this remark, which is further borne out by another melanistic specimen belonging to the same gentlemen, and also obtained in Veragua, in which the moult appears, from the character of the plumage, to have taken place some months before the bird was killed. The first of these specimens has the interspaces on the upper part of the outer rectrices white on both webs; but this is not a constant character, and is therefore not to be relied on. Both the above-mentioned specimens retain the white forehead, which is conspicuous in normal examples, and which is probably constantly characteristic of the adults of this species, though not of immature specimens. Another and, I believe, a constant distinction is, that in *Buteola brachyura* the dark transverse bars on the tail are more strictly horizontal than in the adult birds of *Buteo fuliginosus*, in which the central portion of these bars is lower than the extremities, as shown in the figure of this species in the 'Transactions of the Zoological Society,' vol. iv. pl. 62, and in the 'Birds of North America,' by Baird, Cassin, and Lawrence, pl. 15. fig. 1. I will add one other element of diagnosis between these two Buzzards: the space between the tip of the longest tertial and of the longest primary, though somewhat variable, is, on the average, decidedly less in *Buteola brachyura* than in *Buteo fuliginosus*. The following tables will serve to illustrate this peculiarity, and also to show how closely the two species approach each other in their general dimensions:—

Buteola brachyura.

	Wing from carpal joint. inches.	Space from tip of tertials to tip of primaries. inches.	Tarsus. inches.	Middle toe s. u. inches.
Specimens in the Norwich Museum.				
Normal adult from Guatemala, supposed ♂	11·5	3·1	2·1	1·6
Ditto from Brazil, supposed ♂	11·7	3·3	2·1	1·5
Specimens in Collection of Messrs. Salvin and Godman.				
Normal adult from Para, marked by collector ♂ ..	11·5	3·1	2·2	1·4
Melanistic adult from Veragua, marked by collector ♂	11·3	3·5	2·2	1·4
Ditto from Veragua, supposed ♂	11·2	3·4	2·2	1·4
Normal immature from Rio de Janeiro, supposed ♀ ..	12·7	3·3	2·5	1·8

Buteo fuliginosus.

Specimens in the Norwich Museum.				
Type specimen from Tamaulipas, N. Mexico, apparently adult	12·6	4·1	2·05	1·5
A similarly coloured specimen from Venezuela	13·2	3·6	2·35	1·6
A similarly coloured specimen, but with slight mixture of ochreous on the underparts, from Jalapa, Mexico	12·2	4·5	2·2	1·5
Specimens in Collection of Messrs. Salvin and Godman.				
Specimen closely resembling the type, from Vera Paz, Guatemala	13·1	4·5	2·2	1·6
Immature specimen from Tinta, Peru, marked ♀ by collector	12·3	3·9	2·5	1·7

The immature specimen of *Buteola brachyura* from Rio de Janeiro, included in the first of these tables, agrees with Mr. Sharpe's description of that species in its immature plumage; the bird from Tinta, which I believe to be an immature *Buteo fuliginosus*, and which I have so included in the second table, bears a considerable general resemblance to the immature *Buteola brachyura*, from which, however, it differs in having all the feathers of the underparts, except those of the throat and crissum, which are immaculate, embellished with a conspicuous dark longitudinal shaft-mark of varying breadth, these being narrowest on the upper breast and abdomen, broader on the lower breast, and occupying almost the entirety of each feather on the flanks; on the tibiæ the shaft-marks are expanded into a double transverse bar across each feather; the transverse dark bars on the upper surface of the tail in this specimen are ten, whereas in the immature *Buteola brachyura* they are but seven.

The genus *Buteola* is followed in Mr. Sharpe's work (and, I think, very naturally so) by *Asturina*; and I would refer my readers to some valuable remarks on this genus by Messrs. Sclater and Salvin in the P. Z. S. for 1869, p. 129. As there pointed out, this genus "may be separated into three groups, as follows:—

"(1) The species allied to *A. nitida*, of which there appear to be two representive forms, one . . . . *A. plagiata*, the other the true *A. nitida* . . . .

"(2) The species allied to *A. magnirostris*, which is the type of the genus *Rupornis* of Kaup . . . .

"(3) The isolated species *A. leucorrhoa*, which appears to be a true *Asturina* in structure, but in plumage forcibly calls to mind the *Buteo* [*Buteola*] *brachyurus*, Vieill."

The similarity of plumage referred to in the last paragraph of the passage just quoted is especially apparent when the adult *A. leucorrhoa* is compared with the melanistic phase of the adult *B. brachyura*; and its existence will be a sufficient reason for dealing first with this species in our consideration of the genus *Asturina*.

I suspect that the measurements given by Mr. Sharpe as

those of the adult female have, in fact, been taken from a large male, as a female from Venezuela in the Norwich Museum is considerably larger in the wing, measuring 10·2 inches from the carpal joint.

This female is nearly adult, but retains some interesting remains of immature plumage, the axillary feathers being alternately barred transversely with white and blackish brown, whilst the tips of these feathers exhibit a guttate shaft-mark of the latter colour, surrounded by an edging of yellowish white; the tibiæ are almost entirely black on their external face, but on the opposite side of the limb are transversely barred with irregular alternate markings of blackish brown and buff; a slight tinge of rufous is just appearing at the lowest extremity of the tibial feathers; the upper surface of the tail still shows two ashy brown bars; and the lining of the wing near its external edge exhibits a greater proportion of black than is to be found in older birds. With these exceptions, and that of a slight fulvous tint upon some of the feathers of the breast, the specimen has completed the assumption of the adult dress.

The next group to which I would refer, and to which I would restrict Kaup's subgeneric name of *Rupornis*, consists of the following species, or, as they may perhaps be more appropriately termed, geographical races:—

The most southern of these is *R. pucherani**, inhabiting S.E. Brazil, Paraguay, Buenos Ayres, and the Argentine Republic.

Mr. Sharpe has included Bolivia in the localities which he gives for this species; but the Bolivian race appears to be distinct, and, subsequently to the publication of Mr. Sharpe's volume, has been so described by Messrs. Sclater and Salvin under the name of "*Asturina saturata*" in the P. Z. S. 1876, p. 357.

A somewhat more northerly range characterizes *R. nattereri*, which appears to be very generally distributed throughout Brazil, extending westward to Peru; whilst the most

* The iris in this species has been recorded by Mr. Lee as being of a "very pale amber-colour" (*vide* Ibis, 1873, p. 136).

northern of the South-American races, *R. magnirostris*, extends across the continent from Columbia to Guiana.

Many years ago I saw a specimen of *Rupornis* from the island of Martinique, which I considered to belong to this species; but I am not sure that it may not have been really referable to one or other of the two Central-American races to which I have now to allude, and which, at the period to which I refer, had not been distinguished from *R. magnirostris*.

Mr. Sharpe gives but one North-American species of *Rupornis*, viz. *R. ruficauda*, of Sclater and Salvin, extending from Panama to Mexico; but Mr. Ridgway has separated the race found to the north of Guatemala under the title of "var. *griseocauda*," mainly distinguished from *R. ruficauda* by the absence of rufous colouring from the tail. As mentioned in the article on *R. ruficauda* in 'Exotic Ornithology,' p. 176, Panama specimens are decidedly more rufous on the tail than those found in Guatemala, the latter being, in this respect, intermediate between the phase of colouring existing in Panama and that occurring in Mexico.

The Guatemalan birds, though less rufous on the tail, are somewhat more rufous on the upper breast, and less grey on that portion of the plumage than those found in Panama*.

As Mr. Sharpe does not describe the immature plumage of *R. ruficauda*, I may add that it is represented by the hinder figure on pl. 88 of 'Exotic Ornithology,' where a succinct description is also given.

For a description of *R. griseocauda*, I would refer my readers to Mr. Ridgway's 'Catalogue of the Falconidæ in the Boston Museum,' p. 49.

According to De Saussure's notes on the birds of Mexico, published in the Rev. et Mag. de Zool. for 1859, p. 120, the iris in this species is yellow; but according to Sumichrast (Bull. U.S. Nat. Mus. No. 4, p. 39) it is "bright orange-

* An adult specimen in the Norwich Museum, resembling the Guatemalan examples of *R. ruficauda*, is said to have been obtained in Honduras; but I have not entire confidence in the accuracy of the ticket which was attached to the skin, and which assigned to it that locality.

red," the latter tint being probably indicative of more advanced age than the former.

The Norwich Museum possesses two examples of *R. griseocauda* which were obtained from the Museum at Geneva, and which were said to have been collected by De Saussure in Cuba; the species, however, is not included by Gundlach in his work on the birds of that island.

The third and remaining group (that to which I would restrict the generic, or, rather, subgeneric name of *Asturina*) consists of two nearly allied species, *A. nitida* and *A. plagiata*, the former being the more southern, and the latter the more northern form; both of these exhibit a remarkable difference in marking and in coloration between the immature and adult plumages, the contrast between the two stages being much more striking than in the corresponding ages of the various species of *Rupornis*. I may add that a specimen of *A. nitida* is at the present time (August 1876) living in the Zoological Gardens, and in process of change from the immature to the adult dress; in this example the iris is hazel and the cere yellow.

There are two Old-World genera, *Butastur* and *Asturinula*, which appear to me to be essentially and somewhat closely allied to *Rupornis* and to *Asturina* respectively, but which Mr. Sharpe includes among the Aquilinæ, apparently on account of the hinder aspect of the tarsus being reticulate rather than scutellate—a mode of diagnosis which is, no doubt, technically convenient, but which does not always square (as I venture to think) with the general natural characters of the birds to which it is applied, and which I therefore, in the case of these and some other genera, feel compelled to disregard.

Between *Rupornis* and *Butastur* there is one very remarkable coincidence of colouring, in the circumstance that in the adult birds of all the species of both genera the webs of the quill-feathers of the wing are more or less conspicuously tinged with rufous; and I cannot but think that this circumstance, combined with a considerable similarity in the general build and aspect of the birds of these two genera, points them

out as to a certain extent representing each other in the western and eastern hemispheres.

Somewhat as the coloration of *Butastur* recalls that of *Rupornis*, does the tone and arrangement of coloration in *Asturinula* bring to mind that of *Asturina*, especially as regards the remarkable transverse barring of the lower breast and abdomen; but it must be observed, on the other hand, that in the case of *Asturinula* there is little, if any, distinction between the immature and adult plumage, in which respect it differs widely from *Asturina*, and also from the African genus *Melierax*, with which (as well as with *Asturina*) it otherwise exhibits some considerable affinity.

In adopting the generic appellation of *Asturinula*, Mr. Sharpe ignores the older title of *Kaupifalco*, in which he is justified by the circumstance of the latter name having been published by the late Prince C. L. Bonaparte without any description being annexed thereto.

Mr. Sharpe divides the genus *Asturinula* in his Catalogue into two supposed species, *A. monogrammica* and *A. meridionalis*; but in his subsequently published edition of Mr. Layard's work on the birds of South Africa, at page 42, he reunites them under the older title of *monogrammica*. From a comparison of a series of specimens from different localities I am convinced that the supposed distinctive characters are not constant, and do not represent two geographical races, but are due either to sex or age, or possibly, though less probably, to individual variation; I therefore concur in Mr. Sharpe's later view, that there is but one species of this genus.

I have next to notice two interesting American genera, *Buteogallus* and *Busarellus*, each consisting of but a single species, and both appearing to hold a somewhat intermediate place between *Heterospizias* and *Urubitinga* (taking the latter genus in its restricted sense), and also, by the remarkable development of the curved point of the upper mandible, to approach in some degree the piscivorous and mollusk-eating Kites of the genus *Rostrhamus*, to which they are also probably allied in their mode of feeding. The genus *Busarellus*

has moreover another noticeable feature, which is likewise common to the genus *Pandion*, in the rugose under surface of the foot, a provision specially adapted to retain a grasp on the slippery prey which constitutes the sustenance of this fish-eating Buzzard* as well as of the Osprey. As neither in the case of *Buteogallus æquinoctialis* nor in that of *Busarellus nigricollis* does Mr. Sharpe give a description of the immature plumage, I supply the following particulars, derived from specimens in the Norwich Museum :—

Buteogallus æquinoctialis, immature, from British Guiana.

The crown of the head is dark brown, with narrow yellowish white margins to many of the feathers, especially towards the sides of the head, and with an irregular yellowish white supercilium; the cheeks, ear-coverts, and throat are pale buff, with dark shaft-marks to the feathers; on the back and sides of the neck similar but broader shaft-marks occupy the greater part of the feather, leaving only a buff edging; and dark feathers of this character form an irregular gorget extending from the sides of the neck across the throat, but not quite meeting in front; the entire mantle is dark wood-brown, with paler tips to the feathers, these tips being broadest on the wing-coverts, but very narrow elsewhere; the feathers of the bastard wing, the secondaries, and the tertials are crossed by alternate transverse bars of rufous and dark brown, the rufous being brightest on the inner webs of the tertials; the upper surface of the tail is crossed by nine narrow dark brown bars, below the last of which, at an interval of about an inch, are two more narrow subterminal bars; but on the inner web of

* Col. A. J. Grayson, who obtained this species near the mouth of the Mazatlan river, writes respecting it, "the flight of this Hawk seems rather heavy, resembling somewhat the common Fish-Hawk, the wings appearing very broad, and the tail remarkably short. Upon examining the contents of the stomach I found only the remains of fish, one of which had been but freshly devoured; it was a species of perch found in the lagoons and rivers of this region." (*Vide* Mem. Boston Soc. Nat. Hist. 1874, p. 302; also Ridgway's 'Studies of American Falconidæ,' p. 144.) [See also our note on the food of this species (Ibis, 1859, p. 216).—Ed.]

the lateral rectrices this interval is occupied by another intermediate transverse bar; the intervals between the several bars are greyish brown on the central rectrices, but tinged with rufous on the external webs of the remainder, the corresponding intervals on the inner webs being pale buff; the under surface of the tail is buffy white, crossed by eleven irregular narrow dark bars; the breast, abdomen, and under tail-coverts are pale buffy white, the latter with narrow dark transverse bars at intervals of about half an inch; the wing-linings and flanks are pale buffy white, with a few dark brown feathers intermixed, especially on the flanks; the tibiæ are of a similar colour, but tinged with fulvous and mottled with irregular transverse dark markings, especially on the inner face of the thighs.

Busarellus nigricollis, immature.

The crown and back of the head, the nape, and sides of the neck are striated, each feather being dark brown, with a more or less broad buff or fulvous margin; the sides of the head are pale buff, tinged with grey on the ear-coverts; the uppermost scapulars and upper interscapulars are dark brown, with a rufous edging to each feather; all the remainder of the upper surface exhibits alternate transverse bars of rufous and dark brown on each feather, except the tips of the tail, the outer webs and all the lower portions of the primaries, the tips of the secondaries and tertials, and the feathers of the bastard wing, which are all dull black; the chin and upper throat are yellowish, the lower throat dull black; the breast fulvous, intermixed with longitudinal markings of rufous and dark brown; the abdomen and flanks are rufous, slightly mottled with irregular transverse markings of dark brown; the wing-linings and tibiæ are similarly coloured, but with the transverse markings more regular; the dark transverse bars on the tail are six above and seven below, besides the broader terminal band, the interspaces being rufous on the upper and pale buff on the under surface.

It may here be proper to notice a new genus and species, mentioned by Mr. Sharpe in the addenda to his volume, at

p. 458, as having been recently described by the late Professor Sundevall, under the title of *Plangus neogæus*, in Œf. k. Vet. Akad. Förh. 1874, No. 2, p. 28. I have no knowledge of this species beyond what is contained in Professor Sundevall's notice of it in the above-named periodical, from which I transcribe the following particulars :—

"*Plangus*, n. gen. plumis occipitis paucis oblongis, longioribus, cristam formantibus ornatus. Cauda longior (alâ cubitali antica paullo brevior).—Sp. unica cognita, ex *Brasilia*, magna, Aquilæ æqualis, præcedentibus* affinis; a Morphno præsertim naribus oblongis, longitudinalibus distincta. Ala magna, lata et longa: quiescens, apice caudæ paullo brevior, pennis cubiti anticis ⅔ alæ fere attingentibus. Tarsus ⅓ alæ cub: s æqualis; digiti longiusculi, fortes * * * *

"*Plangus neogæus*, nob., fuscus, gastræo toto albo, maculis rachidum angustis, fuscis vario, remigibus rectricibusque extus fusco-cinereis, maculis minutis, fuscis, crebre variis. Fascia caudæ nulla. Ala 580 mm. Specimen unicum in Brasilia, prope Caldas occisum, anno 1855 attulit et Musæo Stockholmiensi donavit cl. G. A. Lindberg."

The genus *Urubitinga*, to which I next propose to refer, should, I think, be restricted, as I have already mentioned, to two species, *U. zonura* and *U. anthracina*, unless *U. gundlachi* be admitted as a third, and considered specifically distinct from *U. anthracina*.

I have not much to add to Mr. Sharpe's account of these species; but it may be desirable to note that both in *U. zonura* and in *U. anthracina* the iris is brown.

I may also mention that a specimen of *U. anthracina* from the Island of St. Vincent is now living in the Gardens of the Zoological Society; this example was in immature dress when it arrived at the Gardens, but is now in full plumage, with the exception of a slight tinge of rufous brown on the back and sides of the head, and also on the tertials. I am indebted to the kindness of Mr. Bartlett for the following note respecting the moulting of this specimen, which I here insert, as it

* The species here referred to are *Urubitinga zonura* and *Busarellus nigricollis*.

does not entirely accord with the view expressed by Mr. Sharpe as to the mode in which the change from the young to the adult dress is accomplished, though at the same time I think it does not preclude the possibility of some portion of that change being effected in the manner suggested by Mr. Sharpe:—"August 22, 1876. The *Urubitinga* moulted from the immature brown plumage into a slaty ash-coloured dress in 1875. The bird has now nearly finished moulting, and the feathers of the body are very nearly black; the keeper, as well as myself, considers that the change in colour is due to change of feathers." From a conversation with the keeper who has charge of this specimen, I learned that the newly acquired feathers were in the first instance covered with a dusty powder, which gave them an ashy slate-coloured hue for a time, but which subsequently disappeared.

The *Urubitinga* found in Cuba was erected into a distinct species by Cabanis, who assigned to it the specific name of *gundlachi* (*vide* Journ. für Orn. 1854, p. 80); this, however, is treated by Mr. Sharpe as a synonym of *U. anthracina*; whether correctly or not I cannot say, as I have never seen a *Urubitinga* from Cuba. *U. gundlachi* is said by its describer to be of a dark chocolate-brown colour; and if this hue be permanent, and not merely the remains of immaturity, it no doubt indicates a distinct species; but another character given, that of two more or less distinct white bands at the base of the tail and above the central band, is not, I think, to be relied on; adult specimens of *U. anthracina* vary much in this respect, some having two basal bands, some but one, and others none. The Norwich Museum possesses specimens with two such bands from New Granada, Guatemala, and Southern Mexico; and Messrs. Salvin and Godman have a similar example from Veragua. The bird from St. Vincent, now living in the Zoological Gardens, has but one such band, in which it agrees with a Guatemalan specimen in the collection of Messrs. Salvin and Godman; but the same collection contains two other Guatemalan skins, in which the basal band is altogether absent. All these are either nearly or fully adult individuals.

In the P. Z. S. for 1870, at p. 554, Dr. Finsch describes a specimen from Trinidad with two basal bands, which he refers to *U. gundlachi*; but, judging from the description there given, I venture to doubt the correctness of this identification, and to think that, if the Cuban race be distinct, the Trinidad bird is referable to *U. anthracina* rather than to *U. gundlachi*.

The collection of Messrs. Salvin and Godman contains a curious pale-coloured Buzzard, a male bird, obtained at Chepo, on the Isthmus of Panama, which I believe to be an immature specimen of *U. anthracina* in very abnormal plumage; by the kindness of its possessors I am able to give the following particulars respecting this interesting specimen: the wing measures 13·1 inches from the carpal joint to the tip of the primaries, the tarsus 3·1, the middle toe s. u. 1·8. In connexion with these measurements, and in support of my view of the bird being really an aberrant example of *U. anthracina*, I may remark that Mr. Ridgway ('Studies of American Falconidæ,' p. 170) gives the following dimensions as the result of an examination of forty-eight individuals of that species:—"wing 13·15 to 15·80, tarsus 3·00 to 3·50, middle toe 1·60 to 1·80."

The specimen now under consideration has evidently been killed whilst moulting; and the old feathers, wherever they remain, are considerably paler than those which have been newly assumed, this being no doubt the result of their being worn and faded; the feathers on the upper portion of the head and on the back of the neck are wood-brown, edged with fulvous, this edging being most conspicuous above the ear-coverts, which are themselves buff, with dark brown tips; the interscapulary feathers are some of them a pale sandy colour, with a dark shaft-mark, on each side of which is an irregular rufous mark running from the base of the shaft and at an acute angle with it, to the edge of the web; these appear to be the older feathers; the newer are of a wood-brown of varying intensity, and edged with rufous; the scapulars and wing-coverts are of a pale dove-colour, irregularly barred and edged with rufous; the tertials are of similar colour, and transversely barred with rufous on the inner webs, the outer

webs being speckled with the same; the primaries and secondaries are wood-brown, faintly barred with transverse markings of the same colour, but of a darker hue, and slightly tinged with rufous on the inner web; the feathers on the lower back are of a darker dove-colour, tipped with rufous and with concealed white bases; the upper tail-coverts are similar, but many of them are barred with pale luteous, which occupies most of the outer web on the exterior feathers of these coverts; the upper surface of the tail is crossed by eight dark transverse bars, of which the lowest is broader than the others, subterminal, and distinct; the three bars above the lowest are edged, above and below, with rusty brown, this being especially observable on the central rectrices; the interspaces between the dark bars are white near the base of the tail, gradually becoming grey as the tip is approached; the under surface of the tail shows seven indistinct dark bars, with yellowish grey interspaces; the throat is yellowish white, and the whole under surface thence to the vent is a rich buff, varied by darker shaft-marks, which are broadest on the upper breast and flanks; the tibiæ are buff, with narrow transverse bars of a darker hue of the same; the under tail-coverts resemble the thighs, except that the transverse bars are further apart; the wing-linings are of a very similar character to the under tail-coverts, but the transverse markings are less regular.

Amongst the birds that in many respects are nearly related to the genus *Urubitinga*, must be reckoned that scarce and curious species discovered by Tschudi in Peru, and described by him under the name of *Circaëtus solitarius*, for which the late Jules Verreaux subsequently proposed the generic title of *Urubitornis*, and also that somewhat better known, but also uncommon species, *Harpyhaliaëtus coronatus*.

I agree with Mr. Sharpe that both these birds may very properly be referred to the genus *Harpyhaliaëtus*; but I cannot concur in his view that they should both be referred to the same species, as, although they agree in form and dimensions, they differ in *H. solitarius* being always (when adult)

much more darkly coloured, with a shorter crest*, and in their very distinct geographical distribution—*H. coronatus* being found in Patagonia, and thence northwards to Bolivia and Southern Brazil, whilst *H. solitarius* has been obtained in Chili†, Peru, New Granada (Antioquia), Veragua, Guatemala (San Geronimo), and probably also Southern Mexico, as a Central-American specimen in the Norwich Museum is believed to have been obtained in that country: this example is very nearly adult; and I add the following particulars respecting it, as Mr. Sharpe gives no description of this species:—The general colouring throughout is bluish black, shaded with chocolate‡; the quill feathers of the wing are blackish, but the secondaries are tinged and mottled with grey, except at the tips, which are black; the upper tail-coverts are tipped with white; the tail is black, tipped with white, and has a broad white median band and traces of an imperfect basal band, which is also white.

The following is a description of a specimen in immature plumage, from Veragua, in the collection of Messrs. Salvin and Godman:—The entire mantle is dark chocolate-brown, but with most of the feathers narrowly edged with rufous; the greater wing-coverts are much mottled with rufous, especially the inner webs of the coverts overlapping the secondaries, which, together with the tertials, are also tipped with rufous; the secondaries and the tertials resemble the greater wing-coverts, but the secondaries are somewhat more rufous; the primaries are dark, becoming black towards the tips, but with the base of the inner webs white, spotted with dark brown; the upper tail-coverts are rufescent fulvous, with large shaft-marks of dark chocolate brown; the rectrices,

* A nearly adult female of *H. coronatus* in the Norwich Museum has a crest 3·75 inches in length, whilst, so far as I have observed, the corresponding occipital feathers in *H. solitarius* do not, at most, exceed the length of about two inches.

† The specimen in the British Museum entered in Mr. Sharpe's work under the head of *H. coronatus*, "*c.* Var. st. Chili," is a nearly adult example of *H. solitarius*.

‡ This chocolate tint probably indicates a remaining trace of immaturity.

with the exception of being white at the base, are greyish brown, mottled with darker spots of the same colour; the crown of the head, the cheeks, and the neck are rufescent-fulvous, with dark brown shaft-marks; and a similar style of coloration and markings pervades the lining of the wings and the remaining portion of the under surface of the body, with the exception of the sides of the upper breast, which are dark brown, and of the thighs, which are also dark brown but with rufous tips to some of the feathers.

Mr. Sharpe does not describe the immature plumage of *H. coronatus*. The youngest specimen of it which I have seen is preserved in the Museum of the University of Cambridge, and is considerably more advanced towards maturity than the immature specimen of *H. solitarius* above described, from which it chiefly differs in the greyer tint of its dark, and the paler hue of its rufescent parts, and also by its slightly more developed occipital crest; it shows remains of rufous colouring on the tertials, but not on the secondaries; the upper tail-coverts are dark grey, with whitish edgings; the tail is as in the adult bird, with the exception of the two outer pairs of rectrices, which resemble the corresponding feathers in the immature *H. solitarius*, but with rather more white upon them; the wing-linings resemble those of the young *H. solitarius*, but the rufescent portions are paler, and with more or less white on several of the feathers; the feathers on the flanks are pale fulvous, with very long dark shaft-marks; the rufescent edgings to the tibial feathers are broader than in the young *H. solitarius*; the under tail-coverts are pale buff, with one or two transverse bars of chocolate-brown on each feather; and I may also mention that the plumage of the head exhibits an especially noticeable pale fulvescent mark running backwards from above the centre of the eye.

Mr. Sharpe mentions this streak behind the eye in his description of the adult plumage; but in fully adult birds it disappears, as does also the whitish hue on the sides of the face and neck, and the chocolate gloss on the mantle, to which Mr. Sharpe refers, his description being taken from a specimen not entirely adult; in old birds these tints are all ultimately

superseded by a clear grey, a process the progress of which I watched in a specimen which lived for many years in the Gardens of the Zoological Society.

Mr. Sharpe also includes amongst the Buteoninæ the genera *Morphnus* and *Thrasaëtus*; but as these appear to me to be, notwithstanding their scutellated tarsi, essentially Hawk Eagles, I defer their consideration until I reach that group.

XLVI.—*On some new Species of Birds from Western Ecuador.*

By Osbert Salvin, M.A., F.R.S., &c.

(Plate XIV.)

Mr. C. Buckley, who recently enriched Mr. Godman's and my collection by sending us a large series of bird-skins from Bolivia, is now collecting in Ecuador, having, on leaving Bolivia, paid a few months' visit to this country. During his absence from South America he instructed his native assistant, Señor Villagomez, whom he left at Guayaquil, to proceed to Puna Island and to make an excursion into the Province of Loxa in quest of butterflies and birds. On Mr. Buckley's return to Guayaquil from England, he found Villagomez had returned with collections; and he at once forwarded the birds to us through his agent, Mr. E. T. Higgins.

The collection altogether contains specimens of 140 species of birds, many of which are of considerable interest, and some new to science. These last I now propose briefly to describe, reserving a more detailed account of the whole series to a future occasion, by which time I trust we shall receive other collections from Mr. Buckley, who, I understand, has now proceeded into the interior of Ecuador, and is working in some of the valleys of the eastern slope of the Andes.

Euscarthmus ocularis.

Supra olivaceo-viridis, fronte media obscuriore: loris et regione ante oculos pallide fulvescentibus: gutture nigro: gula media et ventre imo albis, pectore grisescente: alis et cauda fuscis viridi limbatis, tectricibus subalaribus

flavissimis: rostro fusco, pedibus carneis: long. tota 3·7, alæ 1·8, caudæ 1·6, rostri a rictu ·55, tarsi ·6.

Hab. "Puna I.," et "San Lucas," rep. Æquat.

Obs. E. granadensi affinis, loris fulvis nec albis distinguendus.

This species agrees closely with *E. granadensis* in every respect but the colouring of the large loral spot. As the two specimens sent agree in having this mark tinged with fulvous, I conclude that they belong to a race allied to, but distinct from, *E. granadensis*.

Formicivora speciosa.

♂ fronte media, capite summo cum nucha, stria per oculos ad nucham producta et torque pectorali nigris: stria superciliari a naribus ad dorsum extensa, gutture et colli lateribus albis cervino tinctis: dorso fusco-brunneo, alis et cauda nigris, hac griseo limbata, rectricibus duabus externis utrinque albido marginatis, illis primariorum sex externorum marginibus albis, reliquis dorsi colore pictis: secundariis intimis et tectricibus alarum majoribus castaneis nigro medialiter notatis: tectricibus minoribus et alula spuria nigris albo marginatis: pectore læte castaneo, ventre pallidiore: tibiis et crisso cervinis: rostro nigro, pedibus carneis: long. tota 6·0, alæ 2·3, caudæ 2·5, rostri a rictu 0·7, tarsi 1·0.

♀ mari similis sed corpore subtus a torque pectorali ad crissum cervino unicolori, tectricibus quoque alarum castaneiis pallidioribus: long. tota 5·4, alæ 2·2, caudæ 2·4, rostri a rictu 0·65, tarsi 0·9.

Hab. "Puna I.," rep. Æquat.

This very well-marked and beautiful species, though quite unlike any other member of the genus in its coloration, comes perhaps nearer to *F. strigilata*, Max., than any other. The conspicuous markings of the head, the white throat, tinged with fawn-colour, the black pectoral band, and the deep-chestnut breast of the male, as well as other minor features, render it a remarkable bird. The collection contains only three specimens, one male and two females, all from Puna Island.

Capito squamatus. Plate XIV.

Nitenti-niger, fronte rubra, vertice albido nucham versus brunneo marginato: dorso, uropygio, et alarum tectricibus

J.G.Keulemans lith. M&N.Hanhart imp.

CAPITO SQAMATUS

stricte albo marginatis: secundariorum trium internorum pogoniis externis plaga magna albida notatis: ventre pallidissime flavo, hypochondriis nigro maculatis: rostro et pedibus plumbeis: long. tota 7·0, alæ 3·3, caudæ 2·2, rostri a rictu 1·0, tarsi 0·85.

Hab. "Santa Rita," rep. Æquat.

The collection contains but a single specimen of this remarkable species, of which the sex, unfortunately, is not marked. The prevailing rich black colour of the plumage suggests perhaps an alliance with *C. maculicoronatus*, in which the female has the whole throat and chest black, as in the present bird. This would lead one to suppose that this specimen is a female; but the colour of the head is perhaps opposed to this view. The point cannot be settled until more specimens have been examined.

PIONOPSITTA PYRRHOPS.

Prasina, facie (oculorum ambitu incluso), humeris, tectricibus subalaribus minoribus et macula ventrali coccineis: vertice antico, regione parotica, et tectricibus auricularibus aureo vix tinctis, vertice postico cæruleo lavato: primariis extus et caudæ apicibus purpurascenti-cæruleis: rostro pallido, pedibus plumbeis: long. tota 9·0, alæ 5·6, caudæ 3·5, tarsi 0·5.

Hab. "Santa Rita" et "San Lucas," rep. Æquat.

Obs. P. amazoninæ (Des Murs, Icon. Orn. t. 15) affinis sed colore coccineo capitis superioris fronti restricto et caudæ basi viridi nec rubra distinguendus.

There are two specimens of this pretty species in the collection. It is evidently a close ally of *P. amazonina*, but separable by the characters pointed out above. In addition to these the lores are rather deeper red, and not tinged with yellow, as is the case with the allied bird. *P. amazonina*, too, has the green of the upper breast and sides of the neck rather more tinged with yellow.

P. amazonina was placed by Mr. Sclater and myself in the genus *Caica* in our 'Nomenclator Av. Neotr.;' but a reexamination of this species with that now described, and with recently acquired specimens of *P. melanotis* (Lafr.), has convinced me that its proper position is in the genus *Piono-*

psitta. The tail of this genus is longer and more cuneiform than in *Caica*, and the bill is more feeble.

Pionopsitta was, by an oversight, omitted from our 'Nomenclator.' As far as I know them, the species that should be included in it are the following :—

Pionopsitta pileata . .	ex Brasilia.
P. melanotis	ex Bolivia.
P. brachyura	ex Amazonia et Æquat.
P. amazonina	ex Columbia.
P. pyrrhops	ex Æquat. occ.

LEUCOPTERNIS OCCIDENTALIS.

Supra saturate plumbeus fere unicolor : dorso postico et uropygio albis, hoc plumbeo variegato : capite summo et nucha albo vix intermixto : primariis plumbescenti-nigris, secundariis albo terminatis et nigro obsolete transfasciatis, tectricibus humeralibus albo punctatis : cauda alba, fascia lata subterminali nigra, apice alba : subtus albus, genis et colli lateribus fasciis minutis notatis : pagina inferiore alarum alba : remigibus et secundariis intus nigro transfasciatis, apicibus nigris : rostro et cera plumbeo-nigris, pedibus flavis : long. tota 18·0, alæ 14·0, caudæ 8·0, rostri a rictu 1·6, tarsi 3·0.

Hab. Rep. Æquat. occident.

Obs. L. albicolli affinis sed capite summo plerumque plumbeo nec albo, colore supra plumbescentiore et fascia caudali angustiore distinguendus.

The label giving the precise locality where this bird was shot has unfortunately been lost ; but the habitat of the species may be assigned to the Province of Loxa or Puna Island, where alone Villagomez collected.

No species of this form has hitherto been noted from Ecuador ; so that one might well have been expected from there. Moreover, as the range of most of the species of this genus is limited to circumscribed districts, it is not surprising to find this bird differing from its more eastern ally*.

* Since the above was in type Mr. Gurney's note (*anteà*, p. 473) recording the existence of a specimen of *L. albicollis* from "Quito" in the Norwich Museum has come before me. The bird I now describe is doubtless the representative of *L. albicollis* in the western forests of the

XLVII.—*Note on* Muscipeta incanescens, *Wied.*

By George N. Lawrence.

During my investigation of certain doubtful species of Tyrant-birds I examined the type of *M. incanescens*, Wied, in the American Museum of Natural History, in the city of New York. Much to my surprise I found it to be of a very different form from *Ornithion obsoletum*, *O. pusillum*, and the bird from Mexico described by Mr. Sclater under the name of *Camptostoma imberbe*, which last he considers to be identical with *M. incanescens*, and places it in the genus *Ornithion* (see P. Z. S. 1873, p. 577).

As *M. incanescens* proves to be of quite a different genus, and *C. imberbe* clearly belongs to the genus *Ornithion* (as stated by Mr. Sclater), his title must be reinstated, and the species called *Ornithion imberbe*, Scl.

M. incanescens, Wied, is greyish olive above, with the centres of the crown-feathers inconspicuously dull reddish brown; lores and a space behind the eye greyish white; under plumage greyish white, with just a perceptible tinge of fulvous on the breast and abdomen; wing-coverts and quills rather light brown, the middle and greater coverts and the secondaries ending with whitish; tail-feathers light brown, like the wings, the outer web of the outer feather paler; bill wide and of a blackish brown colour, lighter at the base of under mandible, it is furnished with rictal bristles, which are quite long though rather slender; bend of the wing and under wing-coverts white with a scarcely perceptible tinge of yellow; tarsi and toes hazel-brown.

Wing $2\frac{1}{16}$ inches, tail 2, tarsus $\frac{9}{16}$, bill from front $\frac{5}{16}$, width of bill $\frac{4}{16}$.

In general appearance it much resembles some species of *Ornithion*; but the bill differs greatly: viewed from above it is precisely of the form of the bill of my specimen of *Myiobius pulcher*, not differing in length and width; but it is rather higher, and a side view of it is much like that of an *Ornithion*;

Andes, the last-mentioned bird extending its range from Guiana to the eastern slopes of the same mountains.

consequently the two mandibles are stouter than those of *M. pulcher*, especially the under one.

The bill is in shape more like that of *Myiobius* than of any other genus with which I have compared it, and for the present I incline to place it there. In this view I only follow Mr. G. R. Gray, who puts *Platyrhynchus murinus*, Spix, in *Myiobius*, and as identical with *M. incanescens*, Wied.

XLVIII.—*Description of a new Species of* Myiolestes *from Fiji*. By E. L. Layard, C.M.G., F.Z.S., &c., H.B.M. Consul at Naumea, New Caledonia.

The discovery of another new species of *Myiolestes* in Fiji does not surprise me, as I feel confident that when the islands to the southward and eastward are examined, additional novelties will reward the explorer's trouble. I hope Mr. Kleinschmidt, collector for Messrs. Godeffroy, will be able to visit them; I have urgently advised him to do so.

The present new species was discovered on Kandavu (the largest of the southern islands) along with several other novelties, by a collector whom I counselled to proceed thither, as the locality was likely to produce new things. It may be at once distinguished from all other species of the genus by its large size, I therefore propose to call it

Myiolestes maxima, Layard.

♂. General colour throughout warm brown, clearer and paler below, lightest on the upper throat and vent; flanks slightly rufous; no grey tinge about the lower parts, as in *M. vitiensis*, Hartl., nor is there the slightest trace of the whitish tips to the tail-feathers, which are very indistinctly edged and tipped with rufous; inner and outer webs of wing-primaries the same, but more distinct; bill very large and strongly hooked, black, with the edges of both mandibles and the tip whitish horn-colour; legs bluish. Length 8″, wing 4″, tail 3″ 6‴, bill 1″ 2‴ (broad 5‴), tarsus 1″ 1‴. Iris brown. Food insects.

Habits same as those of the other known species.

XLIX.—*A few Ornithological Notes and Corrections.*

By W. E. Brooks.

Phylloscopus viridanus.

Dr. Severtzoff says (*anteà*, p. 81) that Turkestan examples of this bird differ much in the form of the bill; and he describes two varieties as *P. intermedia* and *P. hypolania*. It is strange that Dr. Severtzoff should find such variation; for in India we find the characteristics of this species remarkably constant. It is probable that Dr. Severtzoff had other species mixed with his *P. viridanus*. The female of *P. magnirostris* is difficult to separate from that of *P. viridanus*.

Anthus maculatus, Hodgson.

Dr. Severtzoff says (*anteà*, p. 180), "The form known as *Anthus agilis*, Sykes, was also found in 1874 in the mountains east of Kuldja." I have examined the type of *Anthus agilis*; and it is not the green Chinese Pipit named *A. maculatus* by Hodgson, but is the common Tree-Pipit, *Anthus trivialis*.

Alauda gulgula, Franklin (*anteà*, p. 181).

Alauda triborhyncha, Hodgs., judging from its short wing, cannot be separated from the common Indian species, *A. gulgula*. Hodgson, in a note, states that his species was founded upon an example with a peculiarly worn bill. Many ornithologists erroneously suppose that *A. triborhyncha* is a large Lark, and misapply the term to *Alauda dulcivox*.

Hypolais rama, Sykes (Ibis, 1874, p. 184).

In spite of the small total length of Sykes's bird, the type of *Sylvia rama* is the longer-billed and greyer species. The identification of *H. rama* with *H. caligata*, Mr. Dresser informs me, was a mistake. My remarks about the rufous tone of the new autumnal plumage apply to *H. caligata*, and not to Sykes's bird. My conclusions, drawn from Sykes's measurements, were right in the two instances of *Milvus govinda* and *Alauda deva*; but I was wrong as regards *H. rama*. Mr. Dresser (Ibis, 1875, p. 513) identified the larger bird with Sykes's type.

Anthus cervinus (Ibis, 1874, p. 460).

I have seen this bird from the Andamans. It is quite distinct from *Anthus rosaceus*, Hodgs. I have also seen it from Yarkand. *Anthus pratensis* and *Budytes rayi* were also collected in the same country by Dr. Stoliczka.

Sturnus vulgaris (Ibis, 1875, p. 238).

Mr. Dresser speaks of Hume's Starling as "the Indian form of our European Starling." *Sturnus vulgaris* is the common Starling of India, and must not be confounded with the little Cashmere Starling which is figured in 'Lahore to Yarkand,' the name of which I propose changing to *Sturnus humii*, the term *nitens* being preoccupied.

This small Starling is, as a rule, nearly or quite spotless; but in winter it is spotted; at least those I shot in the plains of India were fairly spotted. The spots, however, are very different from the large ones of *S. vulgaris*. The egg also is much smaller. The common Starling was not seen by me in Cashmere, where I found *Sturnus humii* breeding plentifully. The European bird breeds, I believe, in Afghanistan.

"Aquila clanga" (Ibis, 1875, p. 294).

Is the Greater Spotted Eagle here referred to, or *A. nipalensis*? The latter has been called *A. clanga* by some continental ornithologists.

"Aquila nævia" (Ibis, 1875, p. 294).

Is it the Lesser Spotted Eagle that is here referred to? If so, it is certainly not entitled to the name, as Mr. Dresser has shown (Ann. & Mag. Nat. Hist. ser. 4, xiii. p. 373).

"Aquila nævia (Gm.)," Capt. Clarke Kennedy "On the Avifauna of the Desert of Sinai and of the Holy Land," Ibis, 1874, p. 112.

Here again we cannot possibly tell what species is referred to; for *Aquila nævia* of one ornithologist is not the *Aquila nævia* of another. In referring to these worse than nameless birds, it would be convenient always to add "*Greater*" or "*Lesser Spotted Eagle*," as the case may be, until the Latin name for each be agreed upon by ornithologists.

ANTHUS SEEBOHMI, Dresser (*anteà*, p. 120).

In coloration this species very much resembles summer examples of *A. pratensis*; but the bill is very different, being almost that of a *Corydalla*. The wing-formula also differs, as described by Mr. Dresser.

ANTHUS NEGLECTUS, sp. nov.

Under the head of *Anthus spinoletta* Mr. Dresser, in 'The Birds of Europe,' refers to a similar but smaller Indian Pipit, to which I gave the name of *A. neglectus*. No description was published, as there was some doubt at the time as to it being a good species. I have since examined many *Anthus spinoletta* myself; and the small Indian bird cannot be considered identical. It differs as follows—(1) smaller size, (2) shorter wing, (3) shorter and more slender bill. In summer plumage the birds are very similar; but in winter dress the breast-spots are not large and cloudy as in *A. spinoletta*, but small and much more distinct. Another important distinction is the well-striated back of *A. neglectus*. I have the total length in the flesh of only four examples. They were all exactly six inches. The bill was dark brown, and very pale brown at base of lower mandible; irides very dark, almost black; legs and feet brown; soles of feet yellow. In general coloration it resembles *A. arboreus*, but is considerably paler and greyer; the back striation is of similar character; the breast-spots, however, are not distinct, as in *A. pratensis*, but somewhat clouded and brown in colour; they are also much smaller and more distinct than the spots of either *A. obscurus* or *A. spinoletta*. The different character of the breast-spots alone serves to separate this Water-Pipit from its affined species; the wings and tail are coloured like those of *A. spinoletta*. The summer plumage is also similar, the breast-spots being replaced by a uniform dull reddish buff. The wing-lining and axillaries are white.

This Pipit frequents extensive swamps and lakes (jheels, as they are called) in the northern parts of India during the cold season; and in the spring it takes its departure for the north. It is extremely shy and difficult of approach. I have

generally found it in company with *Anthus rosaceus*. I have not, however, always found it at "jheels" frequented by this latter species, which is a far more abundant bird. Its call- and alarm-notes are like those of *Anthus pratensis*. The following are dimensions of some examples I have by me:—

No.	Sex.	Wing.	Tail.	Bill at front.	Tarsus.
1.	♂	3·22	2·6	·45	·88
2.	♂	3·4	2·63	·45	·88
3.	♀	3·15	2·57	·45	·87
4.	♀	3·33	2·6	·46	·83
5.	♀	3·25	2·55	·46	·88
6.	♀	3·2	2·65	·45	·88
7.	♀	3·2	2·55	·43	·87
8.	♀	3·28	2·5	·45	·85
9.	♀	3·23	2·65	·45	·86
10.	♀	3·12	2·45	·43	·87
11.	♀	3·3	2·52	·45	·88
12.	♀	3·1	2·5	·45	·83
13.	♀	3·27	2·6	·46	·85

I have seen other males in addition to the two noted above. A glance at the above dimensions shows this Pipit to be very different from those of the large *A. spinoletta*.

Motacilla citreoloides, Hodgs. (*anteà*, p. 178).

The black-backed yellow-headed Wagtail is apparently referred to. I have examined Hodgson's original drawings; and both illustrations of *M. citreoloides* represent *M. citreola*, Pallas. Apparently Mr. Hodgson did not know the black-backed bird in breeding-plumage; but he discriminates it in winter dress as *M. calcaratus*. This bird has, as a rule, a stouter and longer tarsus than *M. citreola*, and also a longer hind claw. It is by the long tarsus alone that I connect Hodgson's *M. calcaratus* with the black-backed bird; for the tarsus was drawn of maximum length, with which the figured dimensions correspond. No *M. citreola* has a tarsus of such a length.

Hodgson's drawing of *M. citreoloides* hardly shows the black collar which is characteristic of *M. citreola*; but I have seen several examples of the latter in which the collar had not been acquired, being missed in the spring moult, although

the plumage was otherwise perfect. Hodgson may have drawn from this variety.

Mr. Dresser appears to have followed Mr. Gould in a misapplication of the term *M. citreoloides*.

ANTHUS PRATENSIS (*anteà*, p. 179).

Here Dr. Severtzoff gives particulars of varieties. Pipits, though differing but little in form and plumage, have very different voices and songs; but on these points Dr. Severtzoff does not inform us. When Pipits are thoroughly understood, in life as well as in the skin, "intermediate forms" disappear. I would not, however, say the same of the Skylarks, in which genus it is very difficult to determine which are good species and which are not.

PRATINCOLA RUBICOLA (*anteà*, p. 215).

The Asiatic form of the Stonechat is not *P. rubicola*. Mr. Swinhoe's distinction is infallible, and the plain unstriated upper tail-coverts of the Asiatic bird always serve to distinguish it.

PHYLLOSCOPUS TROCHILUS (*anteà*, p. 216).

I have examined the doubtful species here mentioned. The wing is rather different from usual, and the voice may also have been abnormal; but it so strongly resembles *P. trochilus* that I would not separate it unless others of the same kind were examined.

PHYLLOSCOPUS TRISTIS (*anteà*, p. 217).

I have seen skins from Ladak bearing a date which showed the bird was at its breeding-quarters; and I drew the same conclusion that I did when I saw July examples of *Reguloides superciliosus* amongst Dr. Jerdon's birds. The locality of a July *Phylloscopus* skin gives the breeding-place.

PHYLLOSCOPUS NEGLECTUS (*anteà*, p. 218).

This bird cannot yet be added to the European list. Mr. Seebohm's bird is an undercoloured example of *P. tristis*; and I showed him the specimen referred to in 'The Ibis,' 1869, p. 236. *Anthus rosaceus* is also sometimes deficient in coloration as regards the yellow axillaries.

In 'The Ibis' for July 1874, p. 300, Mr. Blanford says, "At the same time I cannot agree with Mr. Brooks that allied species do not interbreed in the wild state. I may recall a few instances to his recollection; I can assure him they are facts and not speculations. First we have the occurrence of intermediate forms between *Hypolais pallida* and *H. caligata* in Persia."

"Intermediate forms" between *Aquila fulvescens*, Gray, and *Aquila maculata*, Gm. (*A. clanga*, Pallas), and between *Anthus arboreus* and *Anthus maculatus*, have been heard of; but these were easily resolved into one of the species named, and so will it be with all other intermediate forms. *H. pallida* and *H. rama* (Mr. Blanford refers to this bird as *H. caligata*) *have different voices and songs*; and although we consider them much alike, I think their eyes and ears are better than ours, and that they would not interbreed in a wild state. When two species are much alike in colour, but differ in size, it is a very difficult thing to tell a large skin of the smaller from a small one of the larger species; but we must not on this account conclude that they are identical. The voice of the doubtful bird would probably have cleared up the difficulty; and we much need the help of the living bird when closely affined species are under consideration.

L.—*Letters, Announcements, &c.*

The following letters, addressed "To the Editor of 'The Ibis,'" have been received:—

Levuka, May 1876.

Sir,—Permit me to make a few remarks on the "List of Samoan Birds," by the Rev. S. J. Whitmee, in your number for last October (1875, p. 436), for the purpose of correcting one or two slight errors (or supposed errors) into which my friend has fallen, and in the correction of which I think he agrees with me. I say "supposed errors," for without consulting the *original description* by the *first* describer, I see how errors of identification may easily be made. The mistakes in

the synonymy of my 'Birds of South Africa' are entirely attributable to this cause; and though I shall be glad if Mr. Sharpe, with the unrivalled opportunities at his command, can purge my pages of their errors, I agree with you in regretting (Ibis, 1875, p. 505) that he has altogether suppressed the synonymy and descriptions of genera &c. in the second edition now being issued.

Since Mr. Whitmee wrote his paper I have had the good fortune to make his personal acquaintance; and together we have carefully gone over the birds of Samoa, most of which I procured whilst staying under his hospitable roof. Of course the 'Ornithologie Centralpolynesiens' of Drs. Finsch and Hartlaub was our textbook, and *only* reference; and the question then arises, Are the descriptions of species contained in it (those of Peale, Cassin, and others) *original descriptions*, or only those of the learned doctors themselves from specimens acquired by them?

The first bird that engaged our attention was the common *Pachycephala*, which Mr. Whitmee had previously sent me amongst other specimens. What was it? My friend said he had identified it with *P. icteroides*; but no mention is made, in the description, of the dark ashy grey of the chin and sides of the throat, which the Samoan bird possesses. I was inclined to call it *P. flavifrons*, as a Fijian bird, found on Ovalau, answered sufficiently to the description of *P. icteroides*; but I was met by the "*gutture albo*" of *P. flavifrons*, while all notice of the *yellow patch* near the nostrils was omitted!!

The Fijian bird (*P. icteroides*?) is not found in Samoa; nor is the Samoan bird (*P. flavifrons*?) found in Fiji. Some of the Fijian species have a yellow nostril-patch; others have not (care must be taken not to confound it with *P. gräffii*, wherein the patch is very distinct). If I am right in my conjecture, the Samoan bird will stand as *P. flavifrons* (Peale), and the description in the 'Ornithologie' must be amended by the substitution of "*loris nitide flavis*" for "*gutture albo*."

But what is *Pachycephala albifrons* (Peale)? None of us here can identify it. I fancy it must be either an abnormal

P. flavifrons, or an inhabitant of another group of islands. So far as we know, it is not found either in Samoa, Tonga, or Fiji.

Mr. Whitmee identifies the Samoan "Green Dove" as *Ptilinopus fasciatus*, Peale, and regards *P. apicalis*, Bp., as a synonym of *P. perousii*, Peale. Herein I think he is mistaken; and I think, by this time, having received *P. fasciatus* sent from here, he will now agree with me. *P. fasciatus*, though closely resembling *P. apicalis*, differs essentially from it, as I have pointed out in a paper recently transmitted to the Zoological Society, and does not, I feel sure, extend its range to Samoa, though Drs. Finsch and Hartlaub include it in their list of Samoan birds. I fear their authority, Dr. Gräffe, was not, from all I hear, sufficiently careful in recording the habitats of the species he collected; for ornithology had by no means a first claim on his attention.

The Samoan bird agrees with Bonaparte's curt description of *P. apicalis*, as given by Finsch and Hartlaub, as far as it goes; but then whose description is this? In the illustrated catalogue of the Museum Godeffroy, which I saw in Samoa, the Samoan bird is figured with the name of *P. fasciatus*, Peale.

Now, Mr. Editor, my Fijian-killed specimens are in the hands of Lord Walden and others; and Mr. Whitmee's Samoan birds are in Canon Tristram's care; I doubt not *original descriptions* are accessible to you: will you help us wanderers and sojourners in "foreign parts" to "unravel the tangled skein of our doubts."

Yours &c.,

E. L. Layard.

P.S. There is no question that *Lobiospiza notabilis*, F. & H., is the young of *Erythrura cyanovirens*, Peale. The same peculiarities characterize the young of our Fijian *E. pealii*, Hartl.

Sir,—I have just received for inspection from Count Turati a bird which, on the original label of the unknown collector, bears written, "*Tatare viridis* ♀, Viti Levu, Aug. 15."

This bird agrees pretty well with the description of *Tatare? viridis*, Layard, P. Z. S. 1875, pp. 150, 432; but it has nothing to do with the genus *Tatare*, as it certainly belongs to the genus *Leptornis*, and should stand as *Leptornis viridis*. I have compared it with a specimen of *Leptornis samoënsis* (Hombr. & Jacq.) in our Museum. It seems that Mr. Layard had some doubts about its proper position, as he has put a query after the generic name *Tatare*. The tongue *brushed* at the tip, mentioned by Mr. Layard, shows most evidently that the so-called *Tatare viridis* belongs to the Meliphagidæ.

There is also a *Leptornis aubryanus*, Verr. & Des Murs, from New Caledonia; so that *L. viridis* makes the third species known of the genus *Leptornis*.

I remain,

Yours very truly.

T. Salvadori.

Turin, Sept. 18th, 1876.
Zoological Museum.

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33 Carlyle Square, S.W.
28th September, 1876.

Sir,—You lately handed me a letter from Dr. Severtzoff, containing some remarks on the *Porzana exquisita* lately described and figured in 'The Ibis' as a novelty from Chefoo (North China); and you asked me to make what remarks I thought necessary in reply. The better to make these intelligible, I will quote what Dr. Severtzoff says in his letter about my bird.

"My name of *Porzana undulata*, Prjev. et Severtz., has priority over *P. exquisita*, Swinh., Ibis, 1875, p. 135. The bird and eggs are described in the Journ. f. Orn. 1873, p. 107, by Taczanowski under the erroneous name of *P. erythrothorax*; this I corrected, after examination, to *Porzana undulata* (Journ. f. Orn. 1874, p. 333) * * * * I altered the name after having seen Taczanowski's type. Prjevalski's bird was distinguished by myself in 1870 as new; but my manuscript description, intended for his work, was delayed

printing till his return from China. The name only was printed in a catalogue of the birds of his Ussuri voyage as early as 1870.

"Accordingly, my name, *printed* 1870, Taczanowski's description, published in 1873, my application of my name to his description, 1874, and Mr. Swinhoe's description and figure, 1875, all apply to the same bird. This shows also the range of the bird in the breeding-season:—Darasun, in Dauria, female and eggs, summer, 1868 (*Dybowsky*); Ussuri (*Prjevalski*), a male, summer, 1868; Chefoo, North China (*Swinhoe*), May 1873."

This would certainly appear to show that Dr. Severtzoff's name for this Crake has priority over mine; but you have drawn my attention to the fact that the bird had been previously described by me in the Ann. & Mag. Nat. Hist. ser. 4, xii. p. 376 (Nov. 1873); and I now recollect that before leaving Chefoo I sent a note of my novelties to the 'Annals,' and on my return to England, forgetting all about having done so, I wrote an article on the birds met with at Chefoo for 'The Ibis,' redescribing some of the novelties, without ever referring to what had already been published in the 'Annals.' I can only attribute my forgetfulness to trouble I had to go through at the time, if that be sufficient excuse. I certainly deserve to lose the priority of naming this bird; but the laws of nomenclature are on my side. A Thrush I described at the same time in the 'Annals' as *Turdus campbelli*, I described again in 'The Ibis' as *T. chrysopleurus*. Severtzoff now shows me this is *T. pelios*, Bp. *Hemipodius chrysostomus*, also described in the same 'Annals,' p. 375, I have since made out to be only the summer plumage of *Turnix maculosa*, Vieill. Thus the only novelty left to me is *Porzana exquisita*; and I presume I may claim a right to that.

Yours &c.,

Robert Swinhoe.

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