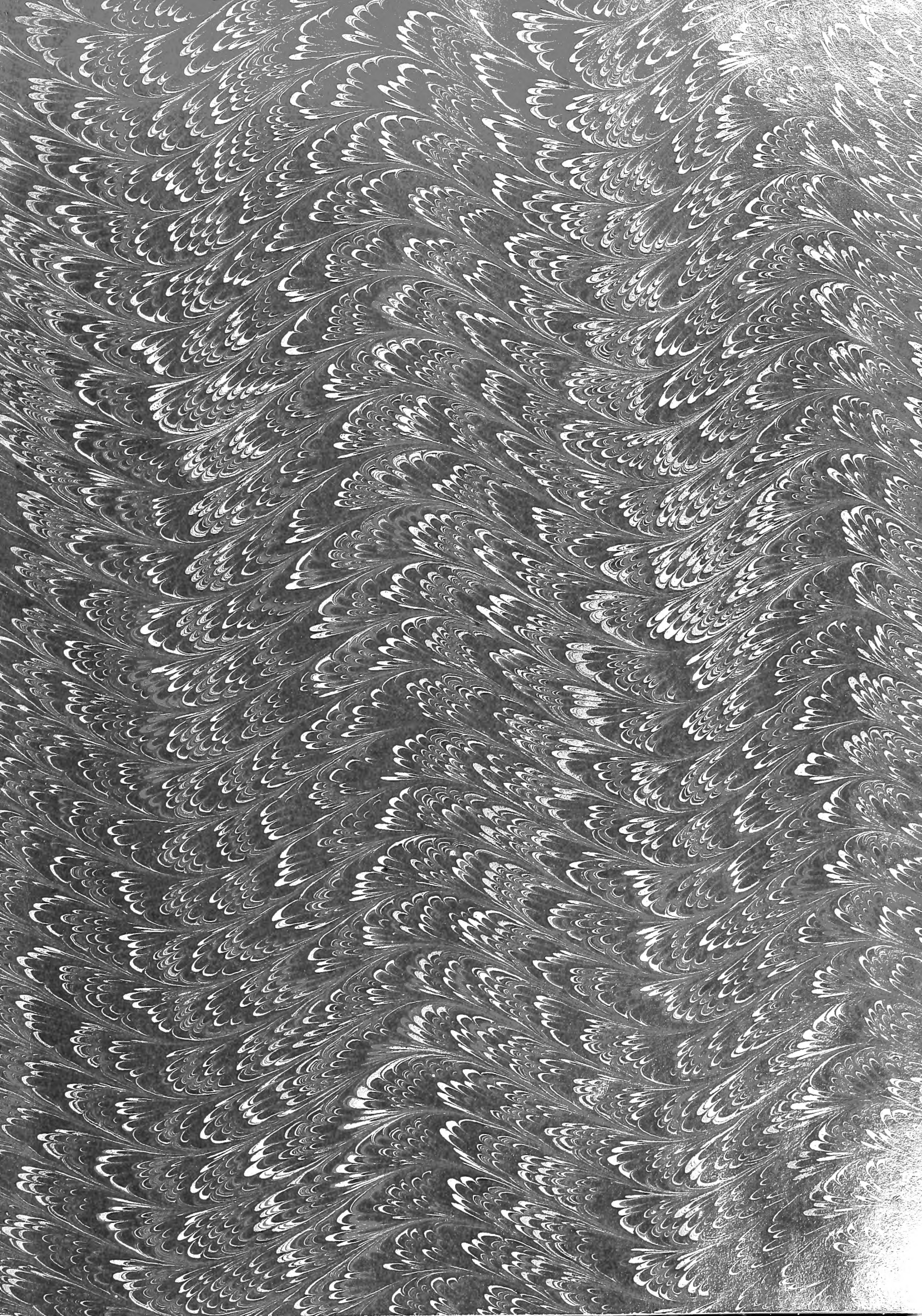


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VOLUME I.

ORNITHOLOGICAL MISCELLANY.

BY

GEORGE DAWSON ROWLEY, M.A., F.Z.S.,

MEMBER OF THE BRITISH ORNITHOLOGISTS' UNION.

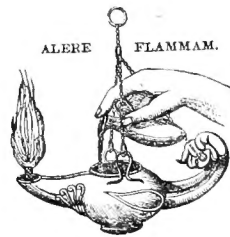
“ We'll
A birding together.”
Merry Wives of Windsor,
Act iii. Sc. 3.

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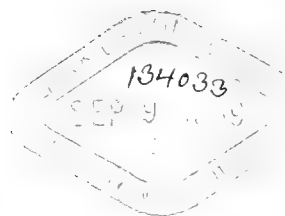


ORNITHOLOGICAL MISCELLANY.

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GEORGE DAWSON ROWLEY, M.A., F.Z.S.,
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VOLUME I.



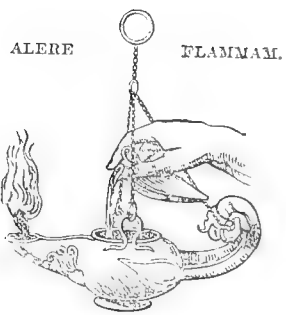
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DEDICATED

TO

THE MEMBERS

OF

THE BRITISH ORNITHOLOGISTS' UNION.

P R E F A C E.

IN launching forth the 'Ornithological Miscellany' it is a source of much regret that I am unable to say how many Numbers will be published, or when they are likely to appear; nor can I even tell to which departments of ornithology, fossil or recent, they may be devoted. My single idea, as a working ornithologist, is to try and advance that science in any way possible. I love it much, and am unable to confine my view exclusively to any one of the zoogeographical regions now adopted by zoologists, and first established by Dr. Sclater.

Number I. relates exclusively to the ornis of New Zealand, on account of the recent discovery there of a new species of *Apteryx*. All the Illustrations have been executed by Mr. Keulemans—the birds from specimens set up by Mr. Swaysland, in my own collection, received by me direct from New Zealand.

PREFACE.

I have in no instance used the writings of others without acknowledgment. In conclusion, my best reward will be the approval, if I fortunately obtain it, of those to whom the work is dedicated, and any others who may kindly do me the favour to read it.

GEORGE DAWSON ROWLEY.

Chichester House, East Cliff, Brighton,
January 1875.

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NAMES OF THE CONTRIBUTORS,

WITH THE TITLES OF, AND REFERENCES TO, THE SEVERAL ARTICLES OF EACH.

VOLUME I.

DRESSER, H. E.	Page
On <i>Falco labradorus</i>	185
FINSCH, Dr. O.	
On <i>Trichoglossus arfaki</i> (A. B. Meyer)	147
On <i>Trichoglossus pulchellus</i> (G. R. Gray)	149
On <i>Nasiterna geelvinkiana</i> and its Allies	157
ROWLEY, GEORGE DAWSON.	
On <i>Apteryx haastii</i> , Potts	3
On <i>Apteryx australis</i> , Shaw	18
On <i>Apteryx owenii</i> juv.	20
On <i>Apteryx maxima</i> , Verr.	23
On Feathers of <i>Struthionidæ</i>	24
On <i>Nestor meridionalis</i> , Verr.	28
On <i>Sceloglaux albifacies</i>	35
On <i>Porphyrio stanleyi</i>	37
On British Birds	51
On <i>Falco tinnunculus</i>	135

ROWLEY, GEORGE DAWSON (<i>continued</i>).	Page
On <i>Trichoglossus arfaki</i> (A. B. Meyer)	145
On the Subfamily <i>Nasiterinae</i>	152
On <i>Psittacus erithacus</i> , Linn.	164
On <i>Tanyptera riedeli</i> , Verr.	176
On Falconry	213
On the Birds of the Fiji Islands	259
On <i>Ammomanes deserti</i> (Licht.), <i>A. isabellina</i> (Temm.), and Isabelline Birds	263
SALVIN, OSBERT.	
On <i>Dendræca chrysoparia</i>	181
Critical Notes on <i>Procellariidæ</i> . Part I.	223
" " Part II.	249
SEEBOHM, HENRY.	
On the Migration of Birds in North-east Russia	239
SHARPE, R. BOWDLER.	
A Revision of the Family <i>Indicatoridæ</i>	192
On the Geographical Distribution of Barn-Owls	269

LIST OF ILLUSTRATIONS.

VOLUME I.

	Page
<i>Apteryx australis</i> , Shaw: young	18
— <i>haastii</i> , Potts: adult female	3
— —: adult male and young female	8
— <i>owenii</i> , Gould: adult male	3
— —: young	20
Austria, Archduchess of	264
Barn-Owl (<i>Aluco flammeus</i>)	62
<i>Dendroica chrysoparia</i> , Sclater & Salvin	182
Desert scene: <i>Ammomanes deserti</i>	263
<i>Falco labradorus</i>	185
Falconry	218, 220, 221
Glass for shooting Larks	89
Gular abnormal variation, examples of	90, 118
<i>Indicator barianus</i>	203
Maps (three) of Distribution of Barn-Owls	298
<i>Myiagra azureocapilla</i>	260
<i>Nasiterna geelvinkiana</i> , Schlegel	157
— <i>pusio</i> , Sclat.	163
— <i>pygmæa</i> , Quoy & Gaim.	161
<i>Nestor meridionalis</i> , var.	28

	Page
<i>Estrelata arminjoniana</i>	252
— <i>defilippiana</i>	255
— <i>magenta</i>	251
— <i>trinitatis</i>	253
Porphyrio, the White (<i>Porphyrio stanleyi</i>)	37
<i>Puffinus elegans</i>	256
Richmond, Duchess of, and her Parrot	164
<i>Sceloglaux albifacies</i> (Laughing Owl)	35
Sore Sparrow-Hawk	58
<i>Struthionidæ</i> , Feathers of	24
<i>Trichoglossus arfaki</i> (A. B. Meyer)	145
— <i>aureocinctus</i> , Layard	261
— <i>pulchellus</i> (G. R. Gray)	149
Whittlesea Mere, Regatta on	121
— —, Stalking-horse on	124

ERRATA IN VOL. I.

Page 30 :—

For “Duchess of Devonshire,” read “Duchess of Richmond.”

Page 221 :—

For “Tuberville,” read “Turbervile.”

ERRATA IN VOL. I.

PART II.—Page 118, lines 9 and 10 from bottom, *for* “of the Bramble-Finch” *read* “of the Goldfinch.”

PART III.—Page 167, line 13, *for* “only one nest in each tree ; but” *read* “more than one nest in each tree ; and.”



Attack on Tasman in Murderers' Bay, New Zealand, from his own journal in Dutch, which Sir Joseph Banks purchased and caused to be translated into English. Taken by permission from the 'Library of Entertaining Knowledge'—"The New-Zealanders."

BIRDS

OF

NEW ZEALAND.

PART I.

APTERYX HAASTII, *Potts.*

(Dr. Haast's Apteryx.)

σοί τε γὰρ παίδων τί δέει;—Eurip. Med. 565.

Ad. *A. oweni* similis, sed multò major, plumis dorsi nigro tinctis.

THE restlessness of man, spurning telluric bounds, for whose aspiring genius his little planet is almost too small (witness the frantic attempts to leave it by balloons and artificial wings, fortunately without success), urges him to improve (?) off the face of the earth many a race of his fellows and numbers of species of subordinate animals. The group of islands called New Zealand*, that metropolis of Apteryginitis, presents such a scene in our time: English bees and flies, English birds, plants, and, no less, English men, drive into extinction their representatives in New Zealand. "Of the valuable Kauri gum-tree in Auckland very soon there will not be one left" (Trollope's 'Australia and New Zealand'). Many a moan has been raised by the humane and scientific observer over the fact †; and a cry for help, ere help is vain, frequently ascends. As well might one try to stop the ocean's tide. THIS is

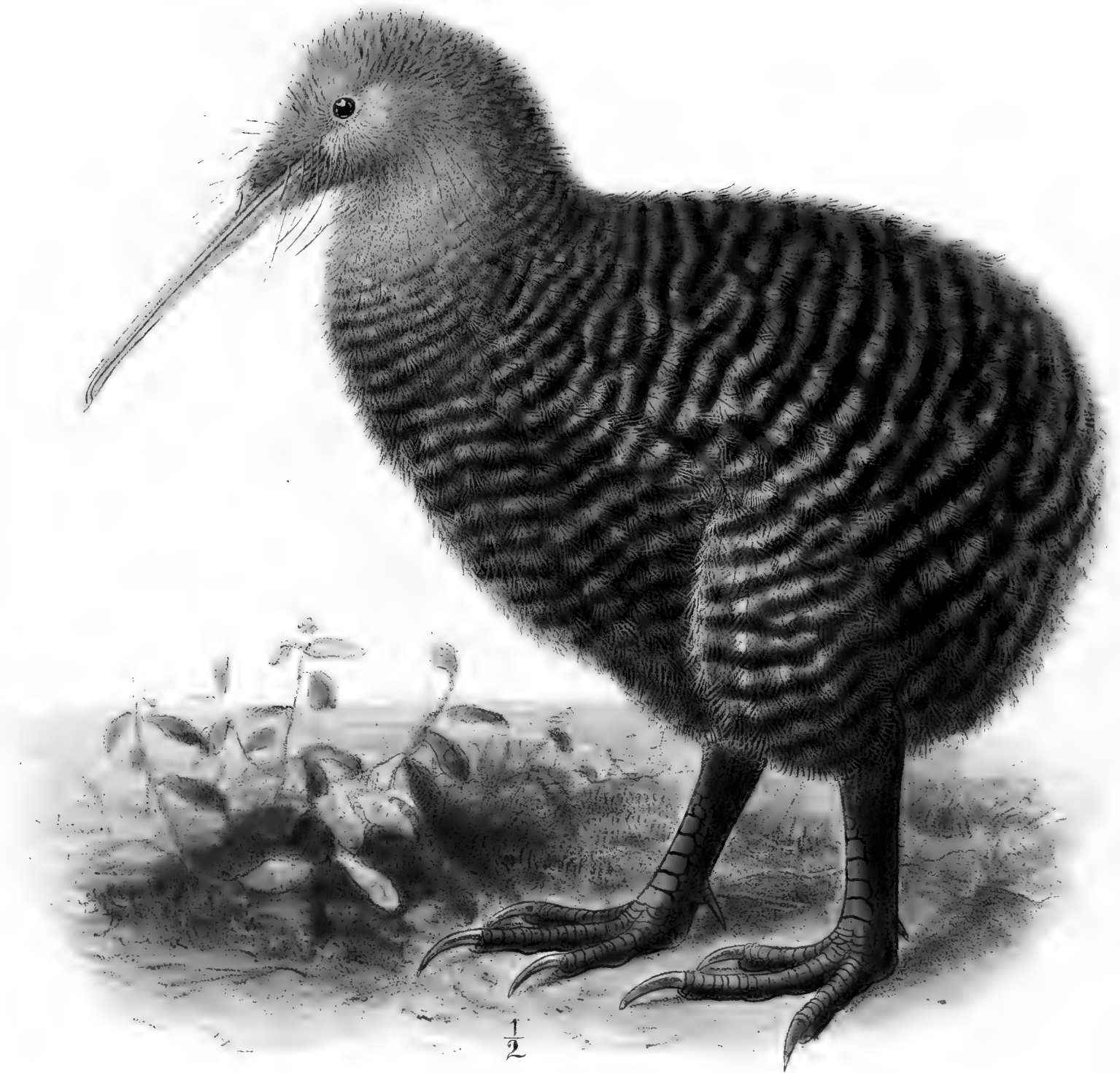
* Dr. Haast, in his article in 'The Ibis' on its extinct birds (3rd series, vol. iv. July 1874, p. 217), says of New Zealand, "Although it may have been formerly of larger extent, it has never been more than an oceanic continental island from a zoological point of view—a theory first propounded by Darwin and Wallace, and with which I fully agree."

† In his paper, read before the Philosophical Institute of Canterbury, at a Special Meeting, Sept. 15, 1874, Dr. Julius Haast, F.R.S., the President, gives the result of his labours in the Moa-bone-Point Cave, Sumner, Banks Peninsula, where he secured a multitude of fine remains of all

a decree and a fiat, coming from a quarter which none can resist. A hand is writing upon the wall; surely he that runs may read. On that day in 1642 when Abel Jansen Tasman cast his anchor into the sea off their shores, down went the Maoris; soon will they join the woolly-haired Tasmanians, whose last man only died in 1869. This they know. Shortly will the family of the Apterygidæ follow *Nestor productus* of Philips Island, *Alca impennis* (the Gare Fowl of the north), and a host of others. Little did Bullock, when he chased the latter in the sounds of Papa Westra, dream of what he was doing. Less did he suspect that he was then only a blind instrument for a purposive object in working out a law—in the case of the Gare Fowl, since, alas! too well fulfilled. These departing species flutter round civilization like moths at a candle, or hawks over the flames at the battle of Amoafu.

The Apteryx conveys to one's mind something peculiarly mysterious; and though not yet extinct, it seems as if it ought to be. It has lingered on in a world where its place is gone. It has no business here; it lags behind. *Dinornis* went before; and had Apteryx been a trifle larger, it would long since have been a thing of the past. In confirmation, if any such is required, of how a smaller species can survive while a larger succumbs, I can quote a fact, coming under my own observation in May 1869, on which I sent a note to the 'Field,' which appeared on June 5. Many Swifts (*Cypselus murarius*) flew about Brighton in a very weak state, and were taken in numbers. Among them I saw a few Martins (*Hirundo urbica*), which appeared lively enough. How was this? There had been severe and unusual cold, with heavy rains for some days—a kind of glacial period. The insects in the lofty regions where Swifts delight to dwell could not exist; those nearer the earth's surface, finding more warmth, were out and about. Consequently

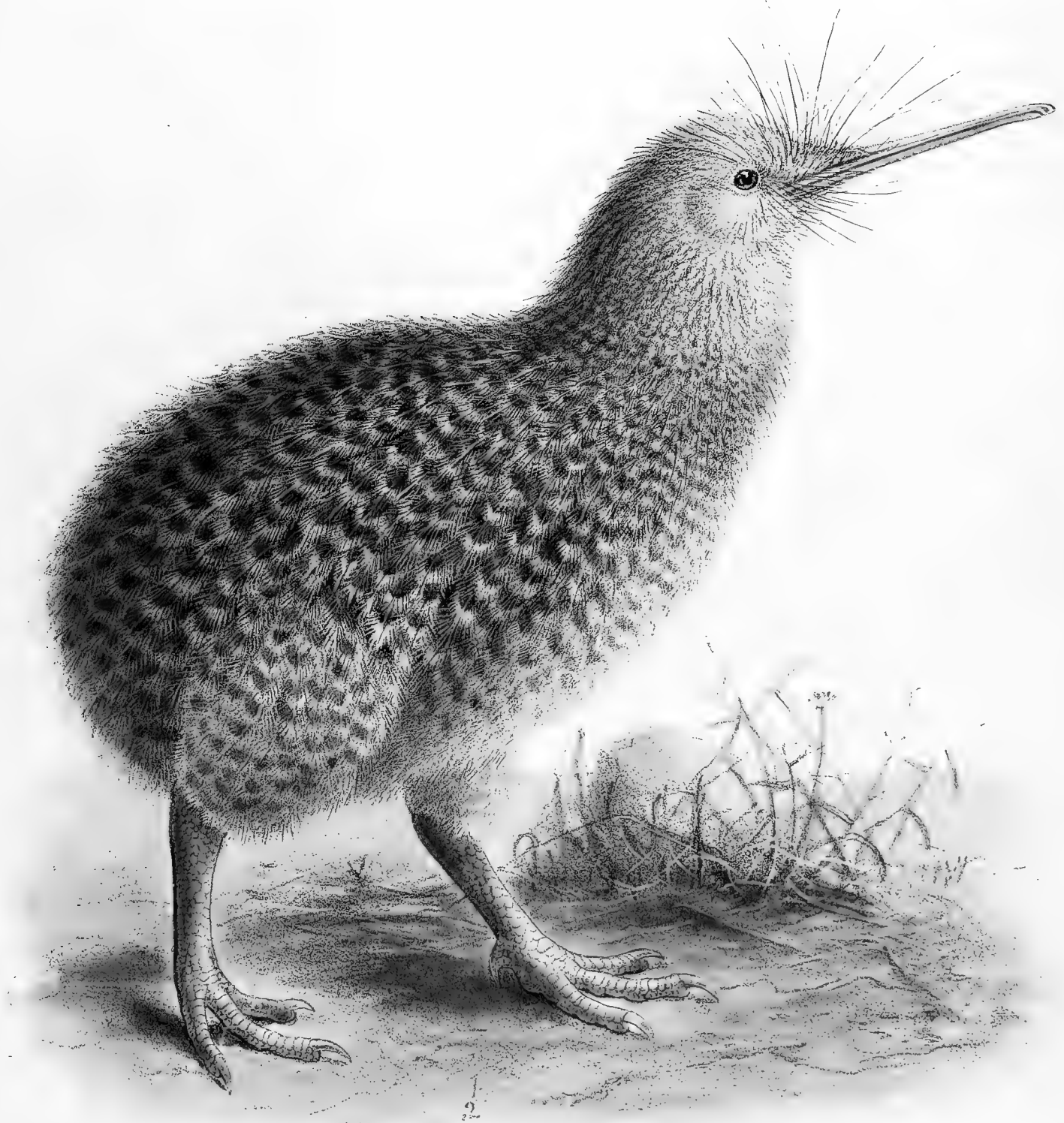
kinds, many of them ornithic, extinct and recent. This paper (which, by his kindness, I have now before me) contains subjects of much interest. I can only here mention that 2797 objects were discovered; among them, many fine Moa-bones and those of "the large Kiwi or Roa (*Apteryx australis*)" prove that "these birds inhabited the peninsula and its neighbourhood, from which they have now disappeared a long time."



J.C. Keulemans del

T. Walter lith

APTERYX HAASTII, POTTS. ♀



J.G. Keulemans del.

APTERYX OWENII ADULT.

Muntern Bros imp.

the Swifts got no food, while the Martins found abundance, or, at least, enough. This little incident is a key to much greater events.

The dates of the several species of *Apteryx* are as follows:—An *A. australis*, Shaw, then the only one, or part of one, in Europe, was in the Earl of Derby's Museum at Knowsley, 1833, and described in an elaborate memoir, *ad hoc*, by Professor Owen (Trans. Zool. Soc. vol. ii. p. 257). Mr. Gould says, in his 'Handbook to the Birds of Australia,' a work which is a great saving of time to an author (vol. ii. p. 567):—"For our first knowledge of the existence of an *Apteryx* we are indebted to the late Dr. Shaw, to whom the specimen figured by him in the 'Naturalist's Miscellany' was presented by Captain Barclay of the ship 'Providence,' who brought it from New Zealand about 1812. Dr. Shaw's figure was accompanied by a detailed drawing of the bill, foot, and rudimentary wing, of the natural size. After Dr. Shaw's death, his at that time unique specimen passed into the possession of the late Earl of Derby, then Lord Stanley. His Lordship's being a private collection, and no other specimen having been seen either on the continent or in England, the existence of the species was doubted by naturalists generally for upwards of twenty years In June 1833 Mr. Yarrell published a paper on it, in the Transactions of the Zoological Society."

Mr. Gould, on the 8th June, 1847, in the Transactions of the Zoological Society, vol. iii. p. 379, figured and described *Apteryx owenii*, adult; and in the 'Proceedings' of the same Society, January 12, 1864, Mr. Leadbeater is stated to have exhibited the young of that bird.

Apteryx mantelli was specifically differentiated from *A. australis* by Mr. A. D. Bartlett (Proc. Zool. Soc. 1850, p. 274).

Lastly, *A. haastii*, Potts, was described by Mr. T. H. Potts in a paper read before the Philosophical Institute of Canterbury, 2nd August, 1871; and a series of adult and young of both sexes was exhibited in London at the Zoological Society's first Meeting of the present Session (3rd November, 1874), by myself.

The discovery of a fresh and very distinct species in 1870 (thirty-seven years after the first *Apteryx australis*, Shaw, stood in Lord Derby's Museum) was a thing I, in common with others, did not believe. "Dies diem docet," says Cuvier. I instructed the person who undertook, on my behalf, to make a search for *A. maxima*, to hunt diligently for *A. haastii* as well. After more than two years a tin case arrived, containing, among other things, four fine skins, the adult male and female, and the young male and female. These I took to the Meeting of the Zoological Society in Hanover Square, together with the male and female *Sceloglaux albifacies*, the rarest of the two endemic forms of New-Zealand Owls, being the only examples of the latter ever brought alive to England. *Apteryx haastii* (named by Mr. T. H. Potts after Dr. Julius Haast) is due to the zeal of the former gentleman, whose account, extracted from the 'Transactions of the New-Zealand Institute,' vol. iv. 1871, art. xxxiii. p. 204, is as follows:—

"In the collection of the Canterbury Museum the Apterygidæ are well represented, more especially in the species which are peculiar to the Middle Island. Some time last summer, amongst a consignment of skins received from Westland was a specimen of a large *Apteryx*, which presented such peculiarities that it was considered to be a new species by the writer, and named *Apteryx haastii*, in compliment to Dr. Haast. From a note by the collector it appears to have been obtained on the high ranges. Subsequently a second specimen was procured, the precise locality not given, but probably from the ranges above Okarita. The first specimen (no. 1), which we take to be that of an adult female, may be described thus:—Face, head, and neck dull brown, darkest in a line from the gape to, and immediately behind, the ear, and on the nape; upper surface indistinctly barred with blackish brown and rich fulvous, each feather crossed with marks of dark brown and fulvous, approaching to chestnut on the apical bars; chin greyish brown; throat dull brown, indistinctly marked with fulvous; breast and abdomen dull brown, barred with pale fulvous; straggling hairs about the base of the bill black, some produced to the extent of 3·5 inches; bill yellowish ivory, measuring

from the gape to the end of the upper mandible 5·6 inches; upper mandible overreaching lower mandible by 0·3 of an inch; tarsus 2·5 inches; middle toe, with claw, 2·6 inches. Specimen no. 2.—Face, head, and neck dark brown, blackish brown on the nape; entire plumage richer in colour than specimen no. 1; on the back of the thighs a chestnut bar, a bar of chestnut crossing the plumage above the tarsal joint; upper mandible measuring, from the gape to point, 5·4 inches; tarsus 2·5 inches; middle toe, with claw, 2·75 inches.

“*Note.*—In the ‘Catalogue of the Birds of New Zealand’ (Hutton, Colonial Museum, Wellington, 1871), the compiler appears anxious to refer the new species to *Apteryx maxima*, Verr., on the strength of a foot and tarsus of a *very large* species of *Apteryx*, the plumage and other characteristics of which are unknown. It is there stated that the bird to which the said tarsus and foot pertained was as large as a Turkey, and weighed nearly 14 lbs. Now, for *A. haastii* we cannot claim the possession of such grand proportions; both the specimens of the new species described in this paper are equalled, sometimes excelled, by fine examples of *A. australis*, Shaw, which, in the flesh, would not exceed 7 lbs.; this, an *outside* weight, is given on the authority of the collector, who has literally slain his thousands of Apterygidæ, and through whose exertions colonial and foreign museums have been supplied with examples of the Middle-Island Apterygidæ.—Nov. 23.”

Mr. Potts, in the ‘Zoologist,’ S. S. No. 105, June 1874, p. 4014, says as follows:—“HAAST’S KIWI.—During a visit to the west coast last summer the localities were pointed out to the writer whence the specimens now in the Canterbury Museum were procured. One was found in the bush far up the Okarita river, the other in the dense bush between the eastern shore of Lake Mapourika and the snowy range of which Mount Cook is monarch. Mr. Docherty stated that both of these birds appeared wilder than *Apteryx australis*, and made somewhat more resistance during their capture.” He adds, in the ‘Zoologist,’ S. S. No. 108, September 1874, p. 4158, “I have much pleasure in communicating the fact of the occurrence of this

rare bird after a very long interval. Five very fine specimens, old and young, have been lately obtained from the west coast: efforts were made to secure these much-prized specimens for the Canterbury Museum; but although a considerable sum was offered it was declined by the owner of the skins. Till the present time the only known examples were the two in the Canterbury Museum."

Four of the above mentioned are now in my possession; the fifth was much torn by dogs, and was to be made a skeleton of. I have therefore male and female adults and male and female young, all taken on the South Island, at an altitude of 7000 feet above the level of the sea, thirty miles up the Okarita river, in the mountains on the west coast. Received by me in 1874.

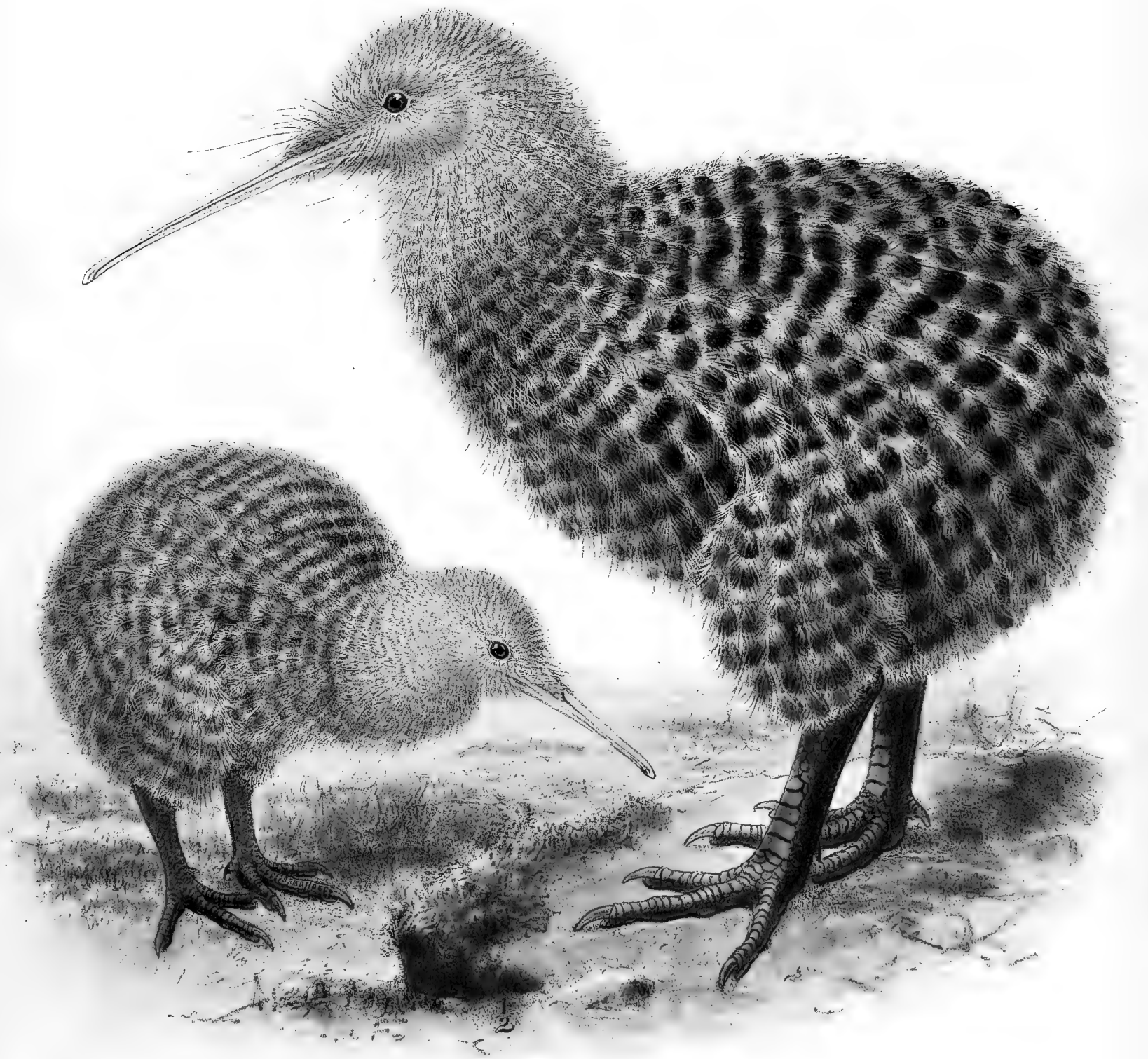
In this species I find the colour to be quite different from that of *Apteryx owenii*. The trivial name of Large Grey Kiwi has been given to it; but though that is applicable to *A. owenii*, it is not to this; there is no grey about it. Large Brown Apteryx would have been more suitable, if colour is mentioned.

Dr. Haast's Apteryx evinces a much greater thickness in the metatarsal segment of the leg than *Apteryx australis*, which it rivals in size, and perhaps surpasses.

Apteryx australis may be described as streaked in perpendicular lines, while the marks in *A. haastii* are horizontal, and its spots or, more properly, blotches are much bigger than those in *A. owenii*. The three species of New Zealand (those, in fact, which will stand as species) differ much in colour. I do not accept *A. mantelli* as a species, nor *A. fuscus*,—one of which, or what I suppose to be *A. fuscus*, is now before me; and I take it for a partial melanism of *A. owenii*, than which it is much darker.

In the adult female figured here the bill along the ridge is 5 inches long, under the under mandible 5·25; tarsus 3; middle toe and claw 3·5.

In a very large *Apteryx australis*, picked out of a series, I find the bill along the ridge 5·5 inches long, the tarsus 3, middle toe and claw 2·5.



J.G. Keulemans del

T. Walter lith

APTERYX HAASTII, POTTS. ADULT ♂. JUV. ♀

This bird, whose sex I unfortunately cannot give with certainty, is evidently much less robust than *A. haastii*; and the phalanges of the foot are much smaller, the scutella also, and consequently more numerous.

In *Apteryx haastii* the bill is a dirty ivory in colour, the feet and legs dark brown-black, claws horn-colour.

The adult male is like the female, but smaller, the light spot in the feather is narrower than in the female; hence the whole bird looks darker than she does, and the plumage affords a decidedly sexual difference, which is constant and strongly observable in both adult and young.

There are two other specimens of this *Apteryx* in the Canterbury Museum; and these six are all at present known; the fifth one of my series was said to have been destroyed by the dogs.

It appears to me, on reading Dr. Buller's description of the two birds now in New Zealand, that the lighter one is a female and the darker a male. He says, "They are supposed to be females. If they are males it may reasonably be inferred that the female of this species is considerably larger than *Apteryx australis*." It is, however, clear that they are certainly not both of the same sex.

The dimensions given by Dr. Buller of the largest bird are as follows:—"Total length 25·5 inches; bill, along the ridge 4·75, along the edge of the lower mandible 5·4; tarsus 2·75; middle toe and claw 3·1; hallux or hind tarsal claw ·75." He remarks, "The form appears to be an intermediate one, combining in some degree the distinguishing characters of both," *i. e.* *Apteryx australis* and *A. owenii*. This is in some respects the case; but the characters are well marked and distinct: no suspicion of hybridism can attach to *Apteryx haastii*; it appears a conspicuously well-marked species.

Perhaps *Apteryx haastii* may fairly be allowed, from its size and beauty, to stand at the head of the others. Though the anatomy of *Apteryx* attests its relation to the Struthious group, yet the female is larger than the male; while in *Struthio camelus*, on the contrary, the male slightly exceeds the female. A reason for this may be found in the enormous size of the egg of

the Apteryx, which in the case of that of *A. mantelli*, as laid in the Zoological Gardens, weighed $14\frac{1}{2}$ oz., while the contents were $13\frac{1}{2}$ oz., and the living female herself 60 oz., her egg being nearly one fourth the weight of the parent.

In 'The Ibis' (3rd ser. vol. iv. July 1874, p. 215), Dr. J. Haast, in his article on the extinct birds of New Zealand, makes mention that "Of *Meionornis casuarinus* [rectius *Mionornis*] we have a series of four clearly defined sizes in our possession." The same variation is spoken of in other fossil species. He goes on to observe, "If we compare two skeletons of *Apteryx australis*, male and female, and two of *A. owenii*, male and female, with each other, a similar distinct gradation is observable."

In their memoir on the Solitaire, the Didine bird of Rodriguez, *Pezophaps solitaria* (Gmel.), Professor Newton and his brother Mr. Edward Newton express themselves "much embarrassed by the wealth of their materials." They allude to the extraordinary variation in size. This variation had previously deceived even such experienced persons as Strickland and Mr. Bartlett, and it extended to "the relative proportion of divers parts of the bones." I have observed in various living birds of the same species, for many years past, an extraordinary variation in size. But this subject is too long.

The defenceless condition of these birds, deprived of any volant power, renders it necessary that the newly hatched young, like all those called by Professor Owen "Aves præcoces," should run about and provide food for themselves as soon as they leave the shell. At p. 257, vol. ii. of his 'Anatomy of Vertebrates,' he gives the number of days of incubation in thirty-two species of different orders; they vary from the Wren (*Troglodytes vulgaris*), which sits ten days, to the Emu (*Dromaius novæ-hollandiæ*), which takes fifty-four. Dr. Buller mentions a female Apteryx in his aviary which for forty days before extrusion of her egg moved with difficulty; and though the exact time cannot be given, yet it is certain that it is unusually long, perhaps as much so as in any known species.

Mr. A. D. Bartlett has written a valuable account of the incubation in the Proc. Zool. Soc. 1868, p. 329, from which, as these volumes may not be accessible to all my readers, I give the following excerpt :—“ In 1851 Lieut.-Governor Eyre presented to the Society an Apteryx. This proved to be a female of *Apteryx mantelli*. In the year 1859 she laid her first egg, and has continued to lay one or two eggs every year since that time. In 1865 a male bird was presented by Henry Slade, Esq. During the last year these birds showed symptoms of a desire to pair. This was known by the loud calling of the male, which was answered by the female in a much lower and shorter note. They were particularly noisy during the night, but altogether silent in the daytime. On the 2nd of January the first egg was laid, and for a day or more the female remained on the egg ; but as soon as she quitted the nest, the male bird took to it, and remained constantly sitting. On the 7th of February the second egg was laid, the female leaving the nest as soon as the egg was deposited. The two birds now occupied the two opposite corners of the room in which they were kept, the male on the two eggs in the nest under the straw, the female concealed in her corner, also under a bundle of straw placed against the wall. During the time of incubation they ceased to call at night, in fact were perfectly silent, and kept apart. I found the eggs in a hollow formed on the ground in the earth and straw, and placed lengthwise side by side. The male bird lay across them, his narrow body appearing not sufficiently broad to cover them in any other way ; the ends of the eggs could be seen projecting from the side of the bird. The male continued to sit in the most persevering manner until the 25th of April, at which time he was much exhausted, and left the nest. On examining the eggs I found no traces of young birds. Notwithstanding the failure of reproducing the Apteryx, I think sufficient has been witnessed to show that this bird's mode of reproduction does not differ essentially from that of the allied Struthious birds, in all cases of which that have come under my observation the male bird only sits. I have witnessed the breeding of the Mooruk, the Cassowary, the Emu, and the Rhea ; and the mode of proceeding

of the Apteryx fully justifies me in believing the habits of this bird to be in no way materially different from those of its allies."

Mr. Potts says, in an article of much interest on New-Zealand birds ('Transactions of the New-Zealand Institute,' 1872, vol. v. p. 187), concerning *Apteryx australis*, Shaw:—"It is probable that the Rowi" (name given by the natives) "pairs for life, for there appears to exist between the sexes a lasting companionship. For a nesting-place it selects a hole in some tree or log, or amongst roots: sometimes the hole is excavated in a soft bank, where the soil is light; but in every case care is taken that the site shall be on a ridge or dry ground. The breeding-season extends over some months, from October to February. Two eggs are usually laid, on which the old birds rather lie than sit. The mode of roosting is very peculiar; they squat opposite each other with their legs bent under them, each with his head tucked under the scanty apology for a wing. If there are young in the hole they also assume a similar position, on either side a young bird between the two parents; thus the result of this singular arrangement of the family is a nearly perfect hemisphere of feathers. They often appear torpid or very drowsy when surprised in their homes, sometimes remaining quite undisturbed by noise, and are very rarely discovered except in a hole. In good condition a bird will average from 5 to 6 lb. in weight."

Owen describes the Apteryx as having "no air in its bones;" consequently it is heavier in proportion to its size than it otherwise would be if a bird of flight, though there are certain exceptions.

Respecting the sitting of the Struthionidæ, an interesting letter appears in the 'Field' as I write (December 12, 1874, p. 324), in reply to the observation of a previous correspondent, who says, "the Ostrich is as careful a mother as any domestic fowl." The writer remarks:—"The truth is, the careful father does most of the work, as he takes his turn at 4 P.M. or thereabouts, and sits till about 8 o'clock next morning, is far more jealous than the hen, and resents any intrusion in a very unpleasant manner, by letting out with his right or left such kicks (forwards) as would send the strongest

man spinning a dozen yards, following up the same if the unlucky intruder should be able to get on his pins again ; if not, the bird hammers him on the ground. Only a week ago a man near Capetown got a kick in the back which dislocated his shoulder. To show how little they care about being found out, a few days ago I was visiting a pair of birds that were sitting : there had been some heavy rain ; and, to my surprise, both birds were away from the nest. Thinking there was something wrong, I went to the nest, having previously given the cock bird a good feed of Indian corn at a distance to keep him employed. The nest was full of water, and the eggs were stuck fast in the mud. I had just taken them out when the cock perceived me, and came down the field thirty miles an hour, giving me just time to dive into the hedge, where I remained until he thought of his food again and went off ; the hen then came down, and the cock seemed satisfied that she would look after the business, and took little or no notice of my scooping out the mud and water with my hands as best I could. The hen seemed much interested in the proceedings, and when I had replaced the eggs she at once sat upon them ; and the pair have been sitting alternately ever since.—W. D. DUMBLETON, Oakhurst, George, Cape-colony.” It was thought a curious thing at first that the male Ostrich should incubate ; but I suspect it is more common for cocks to do so than is supposed. I was much amused (May 6, 1869) while observing a female *Melizophilus dartfordiensis* which had left her nest containing eggs. The cock bird did not like this neglect of duty ; and he drove her back again, after some trouble ; for she was not obedient. If he does not sit, he has the control.

Dr. Buller remarks, in his ‘Birds of New Zealand,’ speaking of *Apteryx mantelli* (p. 362) :—“While hunting for its food the bird makes a continual sniffing sound through the nostrils, which are placed at the extremity of the upper mandible. Whether it is guided as much by touch as by smell I cannot safely say ; but it appears to me that both senses are called into action. That the sense of touch is highly developed seems quite certain, because the bird, although it may not be audibly sniffing, will always first

touch an object with the point of its bill, whether in the act of feeding or of surveying the ground; and when shut up in a cage or confined in a room it may be heard, all through the night, tapping softly at the walls. The sniffing sound to which I have referred is heard only when the Kiwi is in the act of feeding or hunting for food; but I have sometimes observed the bird touching the ground close to or immediately round a worm which it had dropped without being able to find it. I have remarked, moreover, that the Kiwi will pick up a worm or piece of meat as readily from the bottom of a vessel filled with water as from the ground, never seizing it, however, till it has first touched it with its bill in the manner described. It is probable that, in addition to a highly developed olfactory power, there is a delicate nervous sensitiveness in the terminal enlargement of the upper mandible."

Professor Owen, in the 'Transactions of the Zoological Society,' vol. ii. p. 287, observes:—"The relations of the modifications of the skull of the *Apteryx*" (southern) "to its peculiar habits and kind of food are well marked and very easily traced; the anchylosed condition of all the parts concerned in the formation of the upper mandible is more complete than in the larger *Struthionidæ*, and relates to the greater force with which the beak is used in obtaining food. The nocturnal habits, combined with the necessity for a highly developed organ of smell, which chiefly compensates for the low condition of the organ of vision, produce the most singular modifications which the skull presents; and we may say that those cavities which, in other birds, are devoted to the lodgement of the eyes, are here almost exclusively occupied by the nose. The spinal column is relatively stronger, especially in the cervical region, than in the larger *Struthionidæ*."

Mr. Yarrell, in the 'Transactions of the Zoological Society,' vol. i. p. 72, in his article on *Apteryx australis*, makes the following observations:—"The beak has "the upper mandible grooved on each outer side, near the margin, throughout its whole length; at the end of this groove, on each side, the nostrils are pierced, the apertures elongated and covered by a membrane, so suspended on the outside of each of them like a valve, that the slightest

pressure against the outer surface, when flexible, as during life, would render the nostrils impervious and effectually defend and cover them. A bristle introduced into the nostril, under and behind this defending membrane, passes up the whole length of the beak. The upper mandible terminates in a blunt truncated knob, projecting a little downwards, behind which, on its under surface, the end of the lower mandible ranges when both are closed. The lower mandible is also grooved slightly near the outer edges throughout its whole length. Both mandibles are broad and flat at the base. Throughout the whole length of the upper mandible and the distal three fourths of the under one the inner or opposed surfaces of both are perfectly flat, producing, when pressed together, uniform and entire contact, and well adapted for compressing or crushing such substances as may be selected for food. The proximal fourth of the lower mandible is concave on its inner surface, affording space for the tongue, which must, in proportion to the beak, be small and short."

This matter of the nostrils may have been tedious ; but their very remarkable and unusual situation in the family now under consideration demands attention. I have seen a horsehair passed up them through the whole length of the bill in *Apteryx haastii* and *A. owenii* ; and in both the orifice is so concealed that, unless pointed out, it would hardly be discovered by an ordinary observer. The knob at the end of the bill is admirably adapted for the purpose of preventing any foreign substance entering the gape without the will of the owner.

The above remarks are, no doubt, correct ; but it is not necessary that a vertebrate should be guided either by smell or sight. The blind man reads by touch alone. In the 'Academy,' Jan. 15, 1871, under the head of "Natural History and Physiology," appears a digest of a most exhaustive and interesting paper on the structure of the Bat's wing. This paper, by Dr. Jos. Schöbl of Prague, appears in Max Schultze's 'Archiv,' Band vii. 1^{tes} Heft. "Long ago Spallanzani discovered that Bats which had had their eyes put out were able, nevertheless, when allowed to fly about the room, to

avoid threads stretched across it. This faculty he attributed to some highly developed sense of touch possessed by the wing. Dr. Schöbl has repeated these experiments; but for the putting-out of the eyes he has substituted the less painful method of covering them with sticking-plaster. He has kept Bats thus treated for a year alive in his room, and has entirely confirmed Spallanzani's results. To account for these phenomena, the wings of Bats have been examined for peculiar nerve-endings by Cuvier, Leydig, and Krause, but without any success. The author's discoveries are therefore quite new to science." I cannot give at length Dr. Schöbl's proofs that the sense of touch is obtained "through hairs, the bulbs of which widen out and enclose certain organs (the 'Tastkörperchen'), one of which is connected with each hair," but must refer the reader to the original. After the above, the numerous long hairs of the Apteryx are quite understood. Mr. Potts says ('Transactions of the New-Zealand Institute,' 1872, vol. v. p. 192), "It is probable that, as in the case of Struthious birds, the gizzard-stones are disgorged; but we have no evidence thereof; it would be most interesting to ascertain if such regurgitation takes place." That the extinct Dinornithidæ swallowed stones is well known to the New-Zealand naturalists. These pebbles are seen in little heaps by the side of the bones; such a lot found together, and therefore, we may suppose, belonging to one bird, I have in my possession, by the favour of Dr. Haast, who sent them, at my request, to me direct. They are beautifully polished, pretty, and fifty in number, and vary in magnitude—the largest being one inch and three eighths long by three quarters of an inch wide and in weight half an ounce, and the smallest the size of a pea. I have the contents of the gizzards of various birds, notably of the King Penguin (*Aptenodytes pennantii*), through the kindness of Mr. Bond; but I must reserve my observations on this subject, and will only remark that the Struthionidæ sometimes pick up, when stones are not at hand, various deleterious substances—for instance, the unfortunate Ostrich who died at the Zoological Gardens from the effects of the copper pence so cruelly given by the unthinking visitors, who, if they had witnessed the

sufferings of the poor animal before its lingering death, painful even to read of, perhaps would have had some remorse. A *post mortem* was made by Mr. A. H. Garrod, the Prosector to the Society, and an able account of it published by him and Mr. Frank Darwin (Proc. Zool. Soc. 1872, p. 356).

Mr. Potts writes, "The sitting pose assumed by various species of birds is in itself a study not devoid of interest, either to the naturalist or physiologist." The strength and thickness of leg in *Apteryx haastii*, as compared with its body, is in direct proportion to the atrophy of the aborted wing. In repose different attitudes are assumed by birds. The Apteryx rests upon the tarsi, the converse of the practice of standing on one leg common to many and opposite species, such as the Barn-Owl (*Aluco flammeus*) and the common Heron (*Ardea cinerea*), to whose habit Tennyson refers in "Gareth and Lynette:"—

"When the lone Heron forgets his melancholy,
Lays down his other leg, and, stretching, dreams
Of goodly supper in the distant pool."

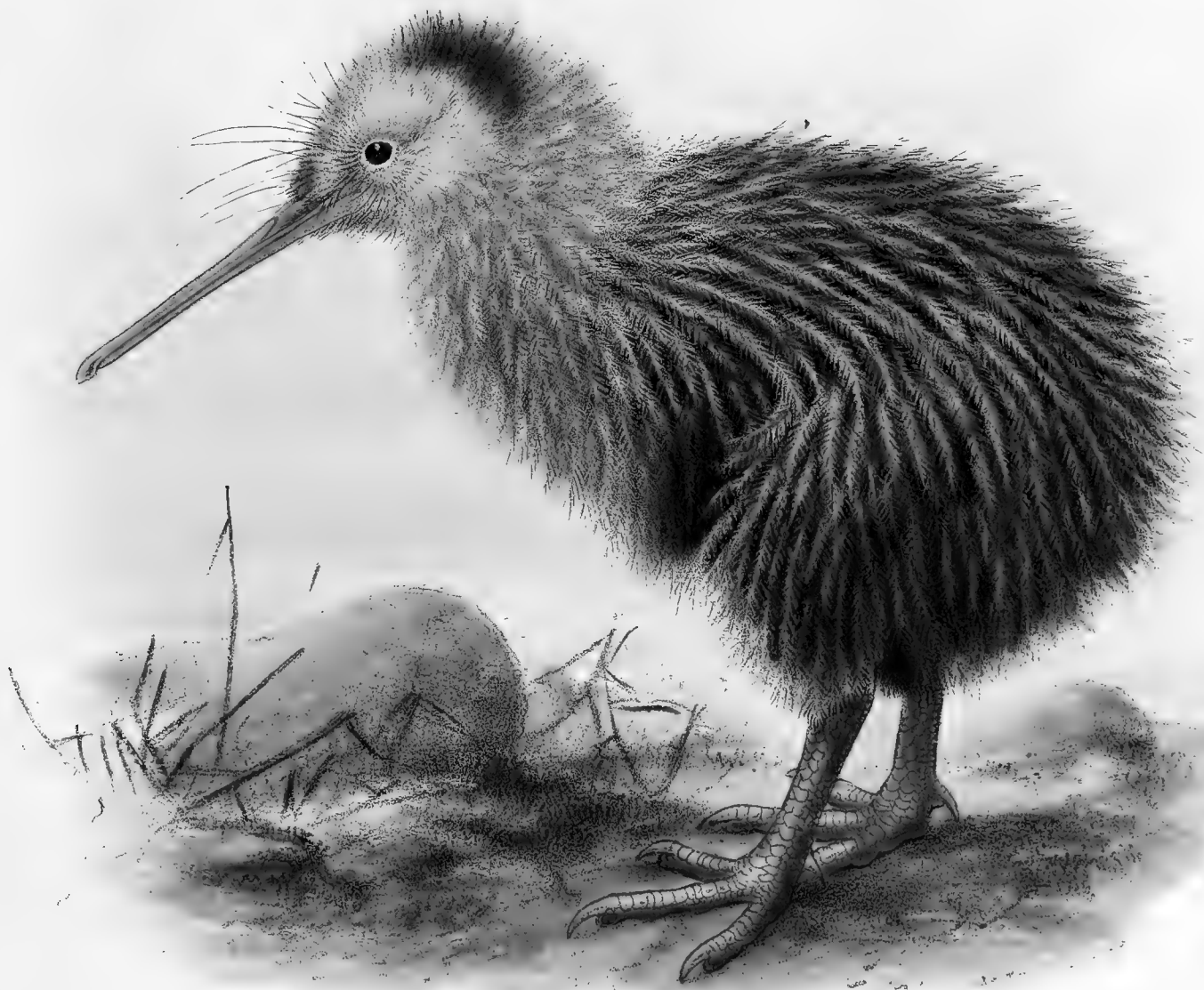
APTERYX AUSTRALIS, *Shaw*, juv.

(Native name, "Rowi.")

. διὰ νόκτα.

I RECEIVED the specimen here depicted in 1872. It was captured in May the same year, on the western slopes of Mount Cook. Mr. Potts states ('Transactions of the New-Zealand Institute,' vol. v. 1872, p. 187):—"The general colour of *Apteryx australis*, young, is greyish brown, streaked with black in the young and adult states; in some fine old birds a glint of golden chestnut edges part of the plumage. Not unfrequently specimens have the aural feathers of dull yellowish white or grey, the same hoary tone of colour being sometimes found on the occiput, chin, neck, and front of the thighs. These marks are not confined to sex."

The same writer (vol. ii. p. 66, 1869) says of *Apteryx australis*:—"An egg received at the Canterbury Museum from Okarito or its neighbourhood is believed to be an undoubted specimen of this species. It arrived in a fresh state in November. It was white, much blunted at each end, and presented a very smooth surface. This enormous egg gives the following measurements—through the axis 5 inches 1 line, with a breadth of 3 inches 4 lines." Comparing these dimensions with the egg of *Apteryx owenii* next given (namely, 4 inches 6 lines by 2 inches 7 lines, though some are a trifle larger), we find that the great size of the egg is common to both species and to



of the Kiwi...

APTERYX AUSTRALIS JUV.

Mintern...

Apteryx mantelli also, where we have 5 inches 4 lines in length by 3 inches 3 lines.

The egg of *Apteryx haastii* has yet to be found; but not much will be made out from this perhaps, as they apparently all follow the same law. I have before me the egg of a Moa of some kind, attributed to *Dinornis ingens*, Owen; its length is about 9 inches, and its transverse diameter about $6\frac{1}{2}$ inches. As the exact species of this example cannot be determined to my satisfaction, I do not propose to attempt to draw conclusions from it. The shell is thin in proportion to the size. The history of this great egg is well known. Fragments of the egg-shells of two species of *Æpyornithidæ* (which I possess through the kindness of M. Grandidier), on the contrary, are of extraordinary strength and thickness.

Captain F. W. Hutton, F.G.S., has an article on the eggs of the Moa and *Apteryx* ('Transactions of the New-Zealand Institute,' 1871, vol. iv. p. 166). He says, "the egg of the latter shows none of the prismatic structure of that of *Dinornis*; therefore the Moa belongs to the Struthious type, while the Kiwi, in the structure of its egg-shell, belongs to the Carinate type of birds.

"*Note.* August 29, 1871.—Since reading this paper I have found the following notice in the 'Zoological Record' for 1869, pt. i. p. 103:—'*Dinornis*.—The structure of its egg-shell is essentially similar to that of other *Struthiones*, and agrees most nearly with *Rhea*. W. von Nathusius, Zeitschr. wissensch. Zool. xx. p. 118.' Also on p. 104—'*Apteryx*, in the structure of its egg-shell, does not much agree with other *Struthiones*.'"

APTERYX OWENII *juv.*

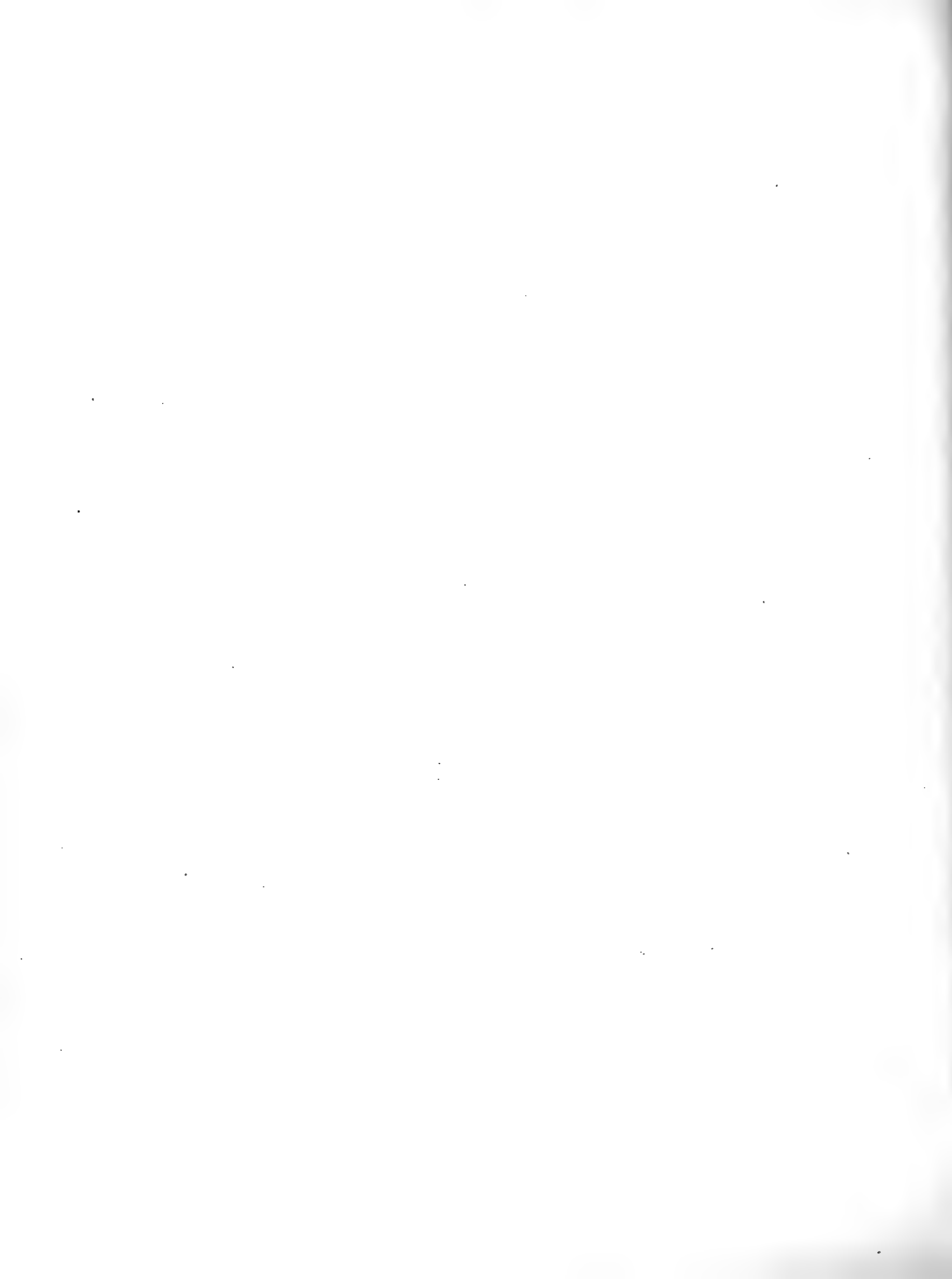
(Lesser Grey Kiwi.)

MR. LEADBEATER appears to have been the first who did any thing respecting the neossology of this Apteryx; he exhibited the young of the bird at the Zoological Society's Meeting, January 12, 1864. The chick of which the present illustration is a faithful likeness was brought over to me in 1874, and came from the Ohono peaks near Greenstone Creek, Feramakou river; a second example, a trifle larger, was from the western slopes of Mount Cook, renowned for its glaciers, "whose snowy peak rises 13,200 feet above the sea, and is visible in clear weather at a distance of more than one hundred miles to the mariner approaching New Zealand" (Sir George Bowen, in Trollope's 'Australia and New Zealand'). The first could hardly have left the shell very long; and I have a series of eight, ascending like the steps of a ladder from this to the adult, figured by Mr. Keulemans, and placed next to *Apteryx haastii* (as *A. haastii* is the nearest affine of *A. owenii*), in order that the reader may see for himself, as well as lithography can give it, the marked difference between the two forms. The two illustrations thus afford the extremes of the chain.

Mr. Potts says ('Transactions of the New-Zealand Institute,' vol. v. p. 187), "The young are well clothed when they leave the shell; with them the bill is not curved." This relates to the young of *Apteryx australis*;



APTERYX OWENII JUV



in the adult it becomes curved. I have a very fine series of the adult *A. australis*, one of very large size, picked out of many; the beaks present no particular characters, the difference in length being sexual. In the young of *A. owenii*, as may be seen, the bill is straight, and continues so always, or is very slightly curved in the adult. Looking at the little flightless creature here depicted, it cannot surprise any one if told that dogs will shortly, with the aid of man, exterminate the species. Mr. Potts states that Mr. Docherty the Kiwi-hunter informed him "that up to the close of 1871 he had killed about 2200 of these and the Rowi" (*A. owenii* and *A. australis*)!

Mr. Keulemans has drawn the adult *Apteryx owenii* from an example in my own collection, a male bird, taken in May 1872 at Martin's Bay, under the Humboldt Mountains (near the Wakatipu Lake, which is fifty-two miles in length and two or three in width), on the west coast, in the province of Otago, South Island. Here only a few settlers struggle to make a home. I have one very dark *A. owenii*, said to be a male, but unfortunately without locality. *A. fuscus* is spoken of; but I cannot say what that may be. This specimen instead of grey is nearer black.

The coloured illustration which appeared in the 'Transactions of the Zoological Society,' vol. iii. p. 380, together with Mr. Gould's first paper on the discovery of the bird, has, to the eye of an Apterygist, a somewhat paradoxical air about it, as the beak is curiously short and curved, whereas *Apteryx owenii* has received the name of "straight-billed" from the circumstance of its bill not being curved as in *A. australis*. We must, however, take into consideration at what an early period this was done, and how little was then known of the species.

In the 'Proceedings of the Zoological Society,' 1850 (plates xxx. & xxxi.), the heads, feet, &c. of *Apteryx australis* and *A. mantelli* are well done. In Gray's 'Genera of Birds,' vol. iii., there is a fine plate of *A. australis*; but the beak is not curved as it ought to be. Dr. Buller has figured *A. mantelli* and *A. owenii*; all these are adults, as are also those in the two fine and large plates of Gould's 'Birds of Australia,' vol. vi. In

these the beaks of *A. australis* are more true to nature than those of *A. owenii*, which remain too much curved.

Mr. Potts says ('Transactions of the New-Zealand Institute,' p. 190):—
"They" (the young) "are quaint-looking little animals, with not too much of the savour of youth about them, being nearly exact miniatures of the adult. The well-known ornithic characteristic change of colour troubles them not. There is no young state of plumage with them, none of that half-pronounced variation in tone or tint of coloration which calls for the nice discrimination of practised ornithologists when questions of age have to be settled. They assume not seasonal distinctions of dress; in winter and summer they adhere to their sober colours with quaker-like pertinacity. Kiwis suffer from two races of parasites."

Dr. Buller, in his 'Birds of New Zealand,' p. 369, mentions one of my chicks of *A. owenii* as of "a uniform yellowish-brown colour, with the tips of the feathers lighter." He goes on, "Dr. J. F. Knox has a younger specimen, obtained at Nelson in November 1858—a Kiwi chick, just escaped from the egg, or rather, in all probability, taken from the egg. Weighed exactly 2 ounces; bill straight, soft, and measuring 1.25 inch in length; feathers few in number; wings exceedingly small, and no claw observable."

Another specimen of mine, lately received, most probably a male, has the beak rather less than an inch and a half long. I take this bird to have been just hatched.

APTERYX MAXIMA, *Verr.*

Apteryx maxima, Verreaux, Bp. Compt. Rend. Acad. Sc. xliii. p. 841.

IN 'The Ibis,' 1862, vol. iv. p. 104, Mr. J. Haast speaks thus:—"On the summits of Papahaua the tracks in the snow showed me that the native description of a large Kiwi, like a Turkey, could not be well exaggerated."

Dr. Buller says, "There is no proof whatever that the bird here described" (*viz. Apteryx haastii*) "is the same as that for which M. Jules Verreaux proposed the name *A. maxima*; on the contrary, the evidence, so far as it goes, would seem to indicate the existence of a much larger species of Kiwi in fact, a bird equalling in size a full-grown Turkey."

The recent discovery of a really new form leads one to suppose that it is not impossible that another may yet turn up. To this end, which every faunist must approve, I have laboured for some years; but there is unluckily one significant fact—that, among the various ornithic remains, both recent and fossil, mixed with the bones dug up in 1872 at Moa-bone-Point Cave, Sumner Road, through Dr. Haast's exertions, though *Apteryx australis* appears, *A. maxima*, unless overlooked, does not. There are, however, the reports of the natives; but perhaps these do not stand for much. Then we hear of the foot in the Museum at Wellington.

If *Apteryx maxima* is to be found, it must be, I think, on the west coast, either in a fossil or recent state. It may be alive; if so, of course it will not remain very long. I trust, for the benefit of science, every part of it will be properly made use of—feathers, bones, and flesh.

FEATHERS.

MUCH stress has been laid upon the harshness and softness of plumage in the several species of *Apteryges*—so much so, that two forms are attempted to be specifically differentiated thereby; and one person goes the length of saying he can distinguish *Apteryx australis* (with soft plumage) from *A. mantelli*, the North-Island bird (with harsh), having his eyes shut. In a series of these and others, I have tried to establish this difference, and am bound to say I do find it, but only in a slight degree. Dr. Buller says, in his ‘Birds of New Zealand,’ that of the two specimens of *Sceloglaux albifacies* in the Canterbury Museum, the one from the North Island is darker than the one from the South Island. In this case appears a slight climatal and local variation, which may be constant, but hardly is of importance enough to establish a species. Mr. Potts remarks (‘Transactions of the New-Zealand Institute,’ vol. v. 1872, p. 193):—“Specimens” (*A. owenii*) “obtained south of the Waitaroa river, in Westland, present some differences of plumage by which they can readily be distinguished from skins in the Canterbury Museum, which were obtained in the neighbourhood of Hokitika. The birds from the northerly districts have a more flocculent plumage, lighter in tone than those which are found in the country lying under the shadow of Mount Cook.” Now Dr. Finsch pronounces the harshness of plumage in a series to have “different degrees observable.” He regards the difference as “only that of a race or local form” (‘Transactions of the New-Zealand Institute,’ 1872, vol. v. p. 212). I have myself observed this



J.G. Keulemans del.

Mintern Bros. imp.

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|----------------------------|-----------------------|
| 1. APTERYX HAASTII FEMALE. | 4. APTERYX AUSTRALIS |
| 2. APTERYX HAASTII MALE. | 5. APTERYX MANTELLI. |
| 3. APTERYX OWENII. | 6. DROMÆUS IRRORATUS. |
| 7. CASUARIUS WESTERMANNI | |



harshness in *Apteryx owenii*, and also different degrees of it—in *A. haastii* certainly, caused by the prolongation of the rachis. There is a sexual difference of colour in my specimens of *A. haastii*, the females being lighter than the males. I have perhaps, therefore, though open to conviction, yet to admit the specific difference of the two insular forms, northern and southern (*A. mantelli* and *A. australis*), the ups and downs of which deserve a place in Burke's 'Vicissitudes of Families.' Mr. Bartlett first made them two (Proc. Zool. Soc. 1850, p. 274). Dr. Sclater next restores unity (Proc. Zool. Soc. 1871, p. 496). Mr. Potts ('Transactions of the New-Zealand Institute,' 1872, p. 194) now again splits them. Dr. Finsch, as above, leans to Dr. Sclater's view; while Dr. Buller, in his 'Birds of New Zealand,' sides with Mr. Potts. On examination, for my own part, of my series, I doubt this variation in plumage (if it constantly exists) to be sufficient as a diagnostic distinction to ground a specific difference upon; and I found my opinion on facts bearing on climatal change observed on the south coast of England. There is something peculiar (shall I say almost mammalian) in the way in which the covering of the Apteryx is placed upon its body. Let me here remind my readers that in most birds there is not an uninterrupted covering of feathers, but they grow in tracts. It is not, however, my purpose here to go into this subject in the way it deserves. Those who wish to follow it out, replete with interest as it is, can consult Nitzsch's 'Pterylography,' edited by Philip Lutley Sclater, M.A., Ph.D., F.R.S., in English, published by the Ray Society. I may nevertheless remark that the feathers grow all over the body of the Apteryx; the skin is like leather and does not much vary in thickness, it is very difficult to relax, and water has little effect upon it. Christian Ludwig Nitzsch had not an Apteryx to study; but he says, "an uninterrupted covering of feathers occurs in the genus *Aptenodytes*, Linn., in which I have found it particularly complete; also in the Cassowaries, in which, besides the naked parts of the head and neck, only the pectoral callosity has no feathers. Most birds have an incomplete feather-covering. . . . Birds usually have spaces between the

feather-tracts. . . . Those birds which exhibit no spaces have the wings rudimentary and useless for the purpose of flight." The Apteryx corresponds to the above dictum in Nitzsch's 'Pterylography.' He further remarks (p. 17), "The causes of the interrupted plumage" are "the weight of the feathers and the bending and movements of the limbs and neck."

In the illustration, feathers of the Spotted Emu of Western Australia (*Dromæus irroratus*, Bartlett) and *Casuarius westermanni* (the unique specimen of which was named by Dr. Sclater after the distinguished Director of the Zoological Gardens at Amsterdam) are given, to show their bifid character, which does not appear in the family of the Apterygidæ; they have no accessory plume to their feathers. There is a beautiful portrait of *Dromæus irroratus* (Trans. Zool. Soc. vol. iv. pl. lxxvi.) in Dr. Sclater's article on the Struthious birds in the Gardens of the Society; and he says:—"The feathers of *D. irroratus* are barred alternately with silky white and darkish grey throughout their length, terminating in a black tip margined posteriorly with rufous. Those of *D. novæ-hollandiæ* are uniformly blackish grey from the base to the extremity, which is black with a broad sub-terminal band of rufous." This Emu was first described by Mr. Bartlett in 1859.

Casuarius westermanni, Sclater, is figured under the name of *C. kaupi* (Proc. Zool. Soc. 1872, p. 147, pl. ix.), and is again mentioned (1874, p. 247). Mr. Keulemans has well given the terminal spot in the feather of *D. irroratus*. Professor Huxley makes the genus *Apteryx* represent the fifth division of the Ratitæ (Proc. Zool. Soc. 1867, p. 423). He states that "the feathers are without any after-shaft, while in *Casuarius* and *Dromæus*" they are "as long as the principal shafts."

Mr. W. S. Dallas, in the Proc. Zool. Soc. 1865, p. 267, on the feathers of *Dinornis*, writes:—"The accessory shaft is of a pale horn-colour, and appears to be nearly cylindrical. The structure of the web is somewhat different from that which occurs in the Emu and the Cassowary." This refers to

Dinornis robustus, Owen, which, with its feathers, is in the Museum of the Yorkshire Philosophical Society. They "are all very imperfect, consisting only of the basal portions of the shaft and accessory shaft, with here and there some traces of the barbs the longest fragment existing in the skin is only about 2 inches in length." An illustration is given.

In the 'Transactions of the New-Zealand Institute,' 1871, vol. iv. pl. ix., a very fine feather of the Moa (species not known) is figured, from which I should infer that in this family the accessory plume is equal to the other, as in *Casuarinus* and *Dromæus*, thus demonstrating the affinity of these latter with the Dinornithidæ.

NESTOR MERIDIONALIS, var.

(The Kaka.)

μάλιστα δὲ Νέστορι δίω
Εἶδός τε, μέγεθός τε, φύηγτ', ἀγχιστα ἐφ'κει.—Homer.

THIS New-Zealand Parrot runs into so many varieties that the specimen here given may assist in forming an opinion as to the propriety of retaining the other various scansorial forms (*Nestor superbus*, *N. esslingii*, &c.) as specifically distinct. The example so well figured by Mr. Keulemans appears to come nearest to variety ϵ of Dr. Buller, who has well enumerated and described the several plumages. At first I had some doubt as to the species; but it clearly is of the Nestor family: if not Nestor himself without his aged head, he must be Thrasymedes. I received it in 1874 direct from New Zealand, where it had been kept in captivity at Wellington, North Island. It was represented to me as being very tame and with considerable powers of speech, restless, and as active at night as in the daytime. The call was said to be shrill. I consider this to be an illustration of albinism. The feet and legs, which are usually black, are here white.

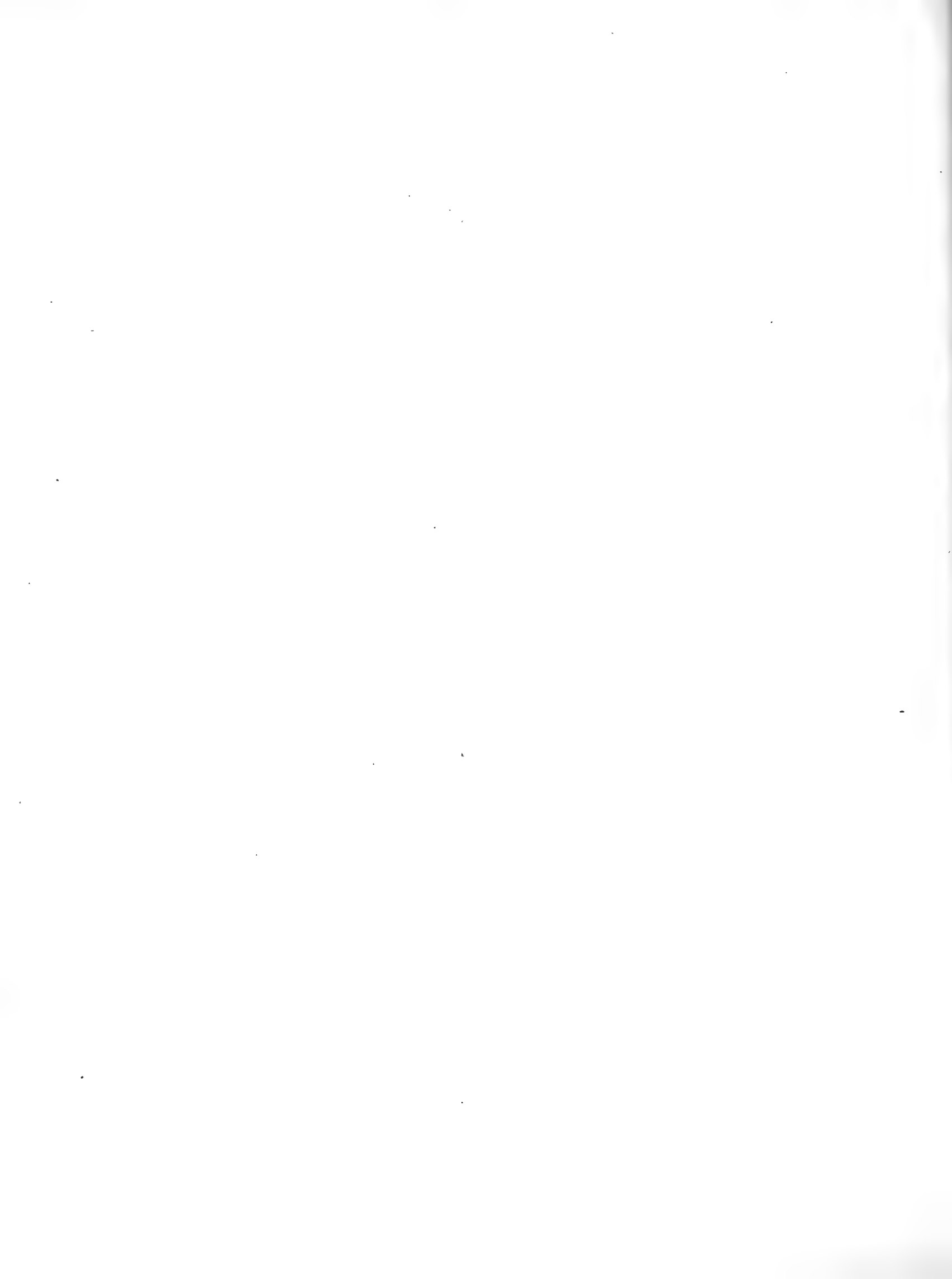
Albinism and melanism are things requiring investigation. The 'Times' of January 19, 1874, quoting the 'Graphic,' gives some interesting observations from M. Milne-Edwards. This "well-known Parisian naturalist has been studying melanism, or the influence of climate in producing black hue in the plumage of birds. He observes that the quantity of black in their



J. G. Keulemans del.

M. G. E. 1881.

NESTOR MERIDIONALIS VARIETY.



feathers is regulated by the regions in which they live, the tendency to melanism being chiefly noticeable in the southern hemisphere, and particularly in New Zealand, Madagascar, and New Guinea. The Swan furnishes a marked example of this, as its white plumage of the northern hemisphere becomes of a pure raven hue in Australia; while in Terra del Fuego and the adjacent portions of South America some of the wing-feathers only are black; and in Chili the head and neck are alike jet, the remainder of the body remaining snow-white. This is again visible in the Perroquets in New Zealand, their plumage showing only small portions of bright red and yellow, and the rest being of a dingy green, deepening into black; while the same species in those islands of the Pacific near Africa display similar signs. In Madagascar and the Mauritius, the Seychelles and the Comoro Islands, black Parrots are frequently met with. Other examples, such as Ducks, Kingfishers, &c., can be easily quoted; and it has been found that, in the Southern Indo-Pacific region, those birds which elsewhere present the most brilliant colours are either there darkened to black or fade away to white."

New Zealand presents many examples of the latter; and Dr. Buller mentions its occurrence in eleven species. Difference of colour, produced by climatic change, is a long subject. We can always tell a bird which has just landed at Brighton from one of the same kind which has passed the winter here, from the superior freshness and brightness of its colours. I have examples in my own collection to show this distinction. It is an interesting topic, on which I could be tempted to run off, but must not. I may, however, mention that there are several ways by which changes in the appearance of the plumage of birds may be produced. Owen gives them as follows:—"By the feather itself becoming altered in colour; by the birds obtaining a certain number of new feathers without shedding any of the old ones; by the wearing off of the lengthened lighter-coloured tips of the barbs of the feathers on the body, by which the brighter tints of the plumage underneath are exposed; by an entire or partial moulting, at which old feathers are thrown off and new ones produced in their places. The first

three of these changes are observed in adult birds at the approach of the breeding-season; the fourth change is partial in spring and entire in autumn."—*Anatomy of Vertebrates*, vol. ii. p. 241.

In captivity the Kaka is a most amusing and interesting bird, whose merits as a companion, if better known, would cause a demand for it to arise in this country among those who like pets. Dr. Buller mentions that a native refused £10 for an old one in bad plumage. He says also, "I have never seen a pure albino; but I am assured by the natives that they are occasionally found. One very nearly approaching that condition was shot at the Whauwhau (in the county of Marsden) in the summer of 1863. The value set on these rare varieties by the natives may be inferred from the following circumstance:—A 'Kaka-korako' was seen by a party of Rangitane in the Upper Manawatu, and followed through the woods as far as the Oroua river, every effort being made to take it alive. The Oroua people (of another tribe) then took up the chase, and followed the bird to the foot of the Ruahine range; and although carrying guns, to their infinite credit they allowed it to escape rather than shoot it, in the remote hope that it might hereafter reappear in their district."

The most famous Parrot, perhaps, was the one Humboldt saw in South America, being the sole living creature which could speak the language of a lost tribe (Darwin, 'Descent of Man,' vol. i. p. 236). It, however, has fallen, as far as I know, to but one Parrot to arrive at that distinction which animated England's illustrious Admiral, a place in Westminster Abbey. This belonged to the Duchess of Devonshire of Charles II.'s time, widow of the last of the race. This bird's effigy was placed close by its beautiful mistress, in wax, "as well done as could be." The loving creature had "lived with her Grace for forty years, and survived her only a few days" (Dean Stanley's 'Memorials of Westminster Abbey,' p. 213). It would be easy to multiply Psittacine anecdotes; but I am anxious to avoid the smallest *souçon* of gossip, and shall therefore add very little more.

A Kaka which came over to me direct from New Zealand in ordinary

plumage was extremely gentle, quite free from vice, never attempting to use its formidable bill. When requested to dance it would begin to bob its head up and down and jerk its body to and fro in the most ludicrous manner; and this performance never failed to please every observer. Restless at night, he would traverse his cage all over and give utterance to some curious sound every now and then. I fear the cause of this bird's death was eating paint; and his extreme amiability of temper caused his loss to be a subject of great regret, almost as much so as that of the famous Parrot mentioned by Miss Strickland, in her 'Princesses of the House of Stuart,' p. 63, belonging to the daughter of King Charles I., then consort of William II., Stadtholder of Holland (this bird bore some faint resemblance to the White Kaka, but had a red neck and tail, though otherwise a white Parrot), to which its owner was much attached. "One day she left it under the care of her maids of honour. On her return all her damsels fell at her feet in silence. 'Where is my Parrot?' 'Alas, madam! the cage was opened and he flew away.' The Princess said kindly, 'You are very foolish, my children, to weep for this bird; beautiful though he was, he was not worthy of the tears of christians. Comfort yourselves and me, and let it not be mentioned again.'" After all it was a light loss to that which her father and great grandmother sustained.

It is said that Onesicrites, the Admiral of the fleet of Alexander the Great, first brought from the island of Ceylon a green Parrot with a red neck. Probably the Alexandrine Parrakeet (*Palæornis alexandri*) is meant, as Jerdon (in his 'Birds of India') says "this bird is abundant in Ceylon." Aristotle evidently knew nothing of Parrots, and is doubtful about their talking.

Mr. Potts ('Transactions of the New-Zealand Institute,' vol. iii. pl. vii.) gives an interesting illustration of the nest of the Kaka in the hole of a tree, where, he says, "it lays four white eggs on the decayed wood." He also states the following condensed particulars:—"It finds its living on and amongst trees, which it is often accused of injuring by stripping down

the bark." Evidently it is much more dendritic than the Kea (*Nestor notabilis*); nor has it the ferocious quality and sheep-killing habits which the mountain-species at times exhibits. It stands in the place of "the Woodpeckers, which are absent from the avifauna of the country." Here, however, I may observe that it may be called rather a bark-stripper than a wood-hewer, which is particularly the function of the Woodpeckers.

In captivity it is described as very mischievous, injuring the furniture &c., in which, no doubt, its powerful beak would assist; and as all the houses are built of wood, it might make sad havoc in a short time.

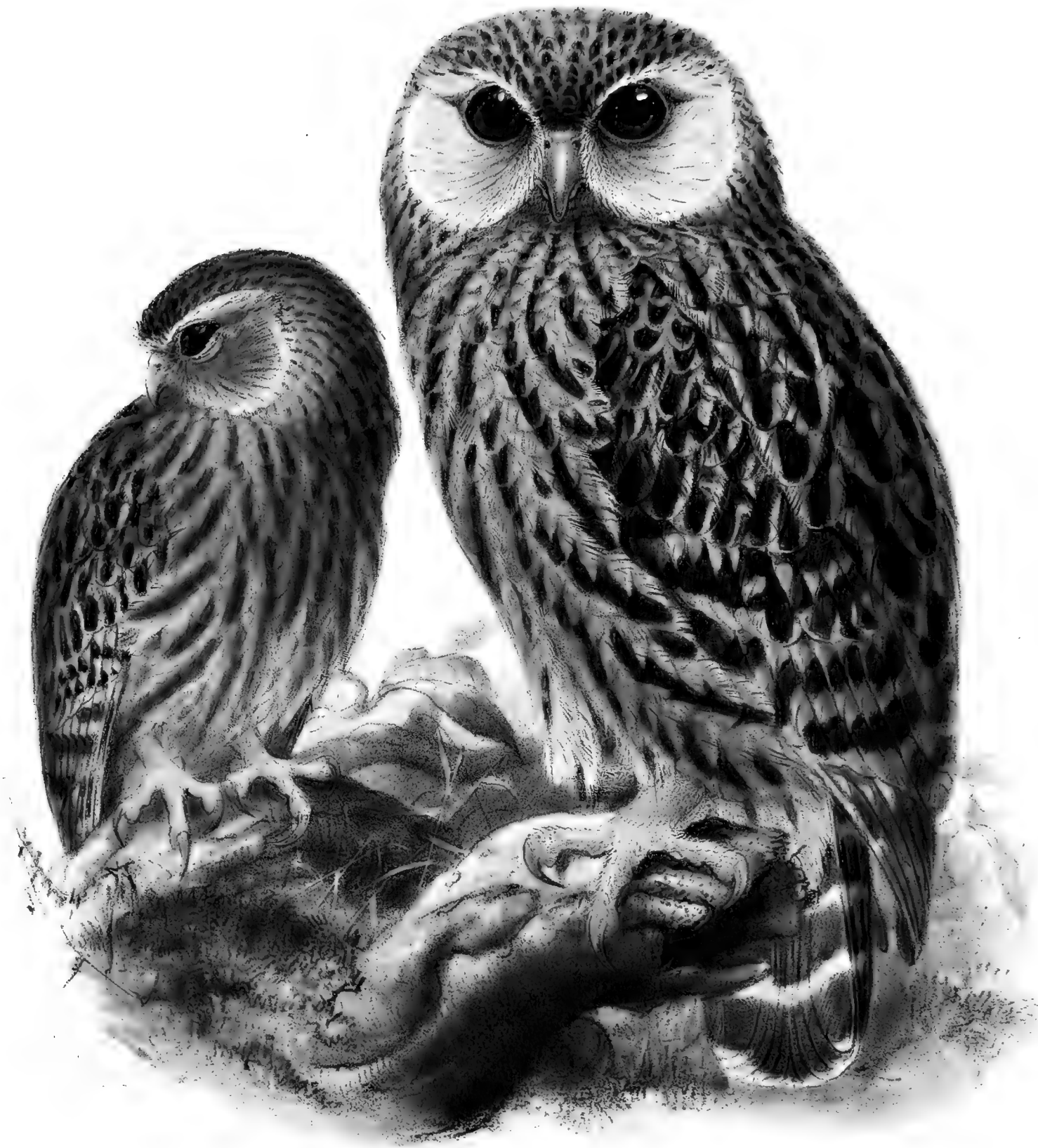
Mr. A. R. Wallace remarks, in his instructive article on the Parrots (Proc. Zool. Soc. 1864, p. 272):—"The Psittaci or Parrots are an extensive and very isolated group of birds ranging over the tropics of the whole world, but, with the exception of those lands of anomalies, Australia and New Zealand, rarely found in the temperate and cooler regions."

Dr. Buller says MM. Blanchard and Pelzeln first determined "the true affinities of the genus *Nestor*, assigning it a station in the subfamily Trichoglossinæ. It bears a close relation to the Australian Lories; and the New-Guinea form, known as Pecquet's Parrot (*Dasyptilus pecqueti*), appears to exhibit the transitional or connecting link between these two well-marked groups." By some means an error arose respecting the name of this bird, belonging to the mysterious region of Papua (or, as a correspondent of the 'Times,' Dec. 16, 1874, says it should be, "Daudai"). Mr. Wallace (Proc. Zool. Soc. 1864, p. 287) calls it *D. pequetii*, Less. Bull. Univers. 1831, p. 241, remarking that the natives of Salwatty said it was "very rare." Again, it has been written *D. pesqueti*. In the 'Bulletin des Sciences Naturelles &c.,' vol. xxv. p. 341 (misprinted 241), it is given "*Psittacus pecquistii*, Less.," and the account of the bird begins by saying that Lesson had it from M. Pecquet. Placing my own specimen of *D. pecqueti* by the side of a series of Nestors, I observe the remarkable difference in the feathers on the head and neck of the former from those of the latter. In *D. pecqueti* they are very lanceolate, quite sharp at the points, and stiff—in fact, much resembling those of

Apteryx; in *Nestor* the feathers on the same region are round and soft. But I have long been of opinion that to attempt, as systematists do, to place a bird correctly by either internal or external characters alone, is rash. Ornithic taxonomy requires us carefully to examine both, and, as regards the internal, not the osteological only, but the myological as well. In short, an aggregate of characters is the true ground—bearing also in mind what St. George Mivart says (Proc. Zool. Soc. 1873, pt. ii. p. 506), “That similarity of structure necessarily implies genetic affinity can no longer be ranked as a biological axiom.”

Respecting the place of *Nestor*, and therefore of the present individual, the Prosector to the Zoological Society, Mr. A. H. Garrod, F.Z.S., says (Proc. Zool. Soc. 1872, p. 787):—“As the tongue of *Nestor* does not in reality resemble that of the *Trichoglossi* at all, it may be of interest to describe it more fully.” He then gives drawings of the tongues of *Stringops*, *Nestor*, and *Lorius*, and states that “it is evident that the structure of this organ” (the tongue) “would lead to the placing of *Nestor* among the typical Parrots, though an aberrant one, and not with the *Trichoglossinæ*; and other points in its anatomy favour this conclusion.” This instructive article of the Prosector’s, however, should be read; I cannot do justice to it here. Nevertheless I must always feel regret at the banishment of our bird from a family composed of what Mr. A. R. Wallace calls “undoubtedly the most highly organized form of Parrot.”

I forgot to mention that Rutherford, the Englishman who was captured by the New-Zealanders in March 1816, and who lived among them till January 1826, is said to have become very expert “in taking birds with a noosed string, after the manner of the natives, and that he thus caught thousands of Ground-Parrots with a line about fifty feet long” (‘Library of Entertaining Knowledge’—“The New-Zealanders,” p. 187). What a chance came to this man if he had only been an ornithologist!



J.G. Keulemans del.

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STELIOGLAUX ALBIFACIES

SCELOGLAUX ALBIFACIES.

(White-faced Owl.)

THIS Owl, first described by Dr. Gray in his 'Voyage of the Erebus and Terror,' and named *Athene albifacies*, was afterwards placed by Dr. J. J. Kaup (Trans. Zool. Soc. iv. p. 219) in his fifth genus (*Ieraglaux*) and subgenus *Sceloglaux*, of which latter it was (and, as Dr. Buller states, is) the sole representative. He proceeds to call it "one of our rarest, and a fast-expiring species." The two birds in the illustration were brought over from New Zealand to me, with others, and exhibited alive at the meeting of the Zoological Society, November 3rd, 1874. They vary somewhat in appearance. One is dark, having the facial disk more rufous, and the other light. In making the drawing, Mr. Keulemans has had the advantage of giving portraits of living individuals, by which means all the soft parts can be correctly ascertained; and it is for this purpose alone that I figure the bird, which in previous instances could only be drawn from skins (an obvious disadvantage). The eyes differ greatly in colour from those of *Spiloglaux novæ zealandiæ*: the pupils are prussian blue with a strong light upon them, at night looking quite black; and while in the above species the yellow iris is conspicuous and bright, in *Sceloglaux albifacies*, though it still exists, it is so faint and dirty as to be hardly worthy of the name, and it is only on a close inspection that you see it; it might be described as brown-yellow. As regards other Owls, the eyes

in *Nyctea scandiaca*, Linn. (Snowy Owl), have a black pupil and straw-coloured iris. In *Bubo ignavus*, T. Forster (Eagle Owl), the iris is orange-yellow; and I observe in a bird of this species known to be eight years old, the colour of the iris is much darker. The eyes of these individual birds vary in colour. The Wood-Owl (*Syrnium stridula*) has eyes like *Sceloglaux albifacies*, with a reddish eyelash. In the Mottled Owl (*Strix asio*) the pupil is black, the iris straw-colour. The Little Owl (*Carine noctua*) has eyes like *Strix asio*. Dr. Buller says (Birds of New Zealand, p. 18) of *Spiloglaux novæ zealandiæ*: —“On the approach of night its whole nature is changed: the half-closed orbits open to their full extent, the pupils expand till the yellow irides are reduced to a narrow external margin, and the lustrous orbs glow with animation, while all the movements of the bird are full of life and activity.” All this is quite the case with the White-faced Owl, except that its irides are not yellow. The bird is strictly nocturnal; and the two here depicted sit all day in a corner on the ground, close up together. More gentle animals could not be; they allow themselves to be handled without any resentment. On March 1st last I tied their legs together, and put each bird into the scales; the dark one weighed 1 lb. 4½ oz., the light one 1 lb. 5¾ oz. I fancy the facial disk of the lighter bird has become whiter since I received it. New Zealand possesses many fine forms, which to me, who confess to some enthusiasm in these things, are intensely interesting; but few are more so than *Stringops habroptilus* and *Sceloglaux albifacies*—both being strictly nocturnal, the one an Owl-like Parrot, the other an Accipitrine Owl. I do not make out the latter to be such a bad flyer, judging from these specimens; but it is not always easy to speak on this point. Nocturnal species seldom show much in captivity—the Laughing Owl, for instance, being provokingly mute.



J.G. Keulemans del.

T. Walter lith

PORPHYRIO STANLEYI.

PORPHYRIO STANLEYI.

(The White Porphyrio.)

WING 8 inches 7 lines ; tarsus 3 inches 4 lines ; naked part of tibia 1 inch 3 lines ; middle toe, without the claw, 3 inches, outer toe 2 inches $4\frac{1}{2}$ lines, inner toe 2 inches 2 lines, hind toe 1 inch ; bill from gape 1 inch $2\frac{1}{2}$ lines, under mandible 1 inch 4 lines ; upper mandible, from point to end of plate 2 inches $4\frac{1}{2}$ lines, to the beginning of the plate 1 inch 6 lines. No total length can be given ; the tail is in bad condition, and the skin so old and thin that it will not bear much handling.

This unique, perhaps extinct, and most interesting bird is now in the Liverpool Museum ; and I have to express my obligations to Mr. T. J. Moore and the Committee for permission to draw it for this work. I have also to thank Mr. Keulemans for the trouble he had in going to Liverpool expressly for that purpose and for taking the measurements. To Professor Newton's kindness I owe the use of his Catalogue of William Bullock's sale. The specimen now has this label on it :—" White Gallinule, Lath. Syn. (2 edit. pp. 428-40) ; *Gallinula alba*, Ind. Orn. 2.768. Bullock's Museum, 1645. 27 May, 1819." Another small label, tied round the leg, has " D " and the reverse " 3213." The " D," of course, means Derby, and the figures on the reverse the number of the specimen in the Derby Museum, as the " 1645 " was its designation in the Bullock one. In Bullock's priced sale-catalogue, on the seventeenth day, p. 103, Thursday, May 27, 1819, I observe :—" Lot 60. White Gallinule (*F. alba*). New Zealand, rare; brought

by Sir J. Banks. Lord Stanley, £3 3s." This was the son of the 12th Earl of Derby, Edward Smith, who in 1834 became 13th Earl and was President of the Linnean and Zoological Societies. The bird is not a Gallinule; and as *Porphyrio alba*, Temm., applies to the Vienna specimen (*Notornis alba*), also unique and perhaps extinct (of which presently), I have given it the above name.

There are three birds concerning which I propose to say a word or two. These are

Notornis mantelli, Owen. 2 known, in the British Museum.

Notornis alba, Pelzeln and Salvin. 1 known, in the Vienna Museum, formerly in the Leverian Museum.

Porphyrio stanleyi. 1 known, in the Liverpool Museum, formerly in Bullock's and Lord Derby's Museums.

It may be well to take *Notornis mantelli* first. Dr. Buller has given of this bird so good a portrait, made from the better specimen of the two in the National Collection, that, in conjunction with Mr. Gould's fine illustration (Birds of Australia, Suppl.), every one who has these works can judge for himself. There is, however, one important particular which I may mention, viz. that *Notornis mantelli* possesses a spur or nail on the shoulder of the wing, which escapes observation, being covered with feathers. The example figured by Dr. Buller in his 'Birds of New Zealand' has this nail broken off on the left wing; it is very distinct on the right one. The other specimen has smaller spurs or nails (query, the female?). Dr. Buller has written a full account of *Notornis*, to which I refer my readers; also to Gould's 'Handbook to the Birds of Australia,' vol. ii. p. 576. The following excerpts from various authors apply to one or both of the last two birds.

In 'The Ibis' (3rd ser. vol. i. Oct. 1871, p. 443), Messrs. Sclater and Salvin speak of a pamphlet by Edward S. Hill (Sydney, 1870) on Lord Howe's Island. In this pamphlet "mention is made of a white bird like a Guinea-fowl, which, if not actually extinct, seems on a fair way to become

so;” and the Editor adds this note:—“This bird is very probably the same as the species from Norfolk Island, described by Latham as *Gallinula alba* (Ind. Orn. p. 768, and Gen. Hist. ix. p. 428), the type of which is now in the Imperial Cabinet at Vienna (*cf.* v. Pelz. Sitz. Ak. Wien, xli. p. 328). Von Pelzeln has no doubts as to its specific distinctness, and considers that it should be referred to the genus *Notornis* rather than to *Porphyrio*, in which view he is probably correct.”

‘Ibis,’ vol. ii. 1860, p. 422, we find:—“*Notornis alba* is established on a specimen acquired at the sale of the Leverian collection, which was, without doubt, the type of *Fulica alba* of White’s Voyage (White’s ‘Journal of a Voyage to New South Wales, p. 238, cum tab.), and the *Gallinula alba* of Latham. This bird has been considered by Temminck and G. R. Gray to be an albino variety of the well-known *Porphyrio melanotus*; but Herr von Pelzeln regards it as certainly distinct, and probably referable to a second species of the highly interesting quasi-extinct genus *Notornis*.”

Again (Ibis, vol. iv. 1862, p. 240), in Mr. G. R. Gray’s “List of the Birds of New Zealand and the adjacent Islands,” we have:—

“**PORPHYRIO ALBA, Temm.**

Fulica alba, White’s Journ. App. pl. p. 238; Phill. Bot. Bay, pl. p. 273; Callam, Bot. Bay, 1783.

Gallinula alba, Lath. Ind. Orn. ii. p. 768.

Porphyrio melanotus (albino var.), G. R. Gr. Voy. Ereb. & Terr. Birds, p. 14.

Porphyrio melanotus, var., Pr. B.

Notornis? *alba*, v. Pelz. Sitz. Akad. d. Wiss. Wien, xli. p. 331.

“*Hab.* Norfolk Island and other places.

“Entirely white; but some differ in having bright blue between the shoulders, and spotted on the back with the same.

“In Vienna Museum, from the Leverian Museum.

“It is stated that a similar bird was found on Lord Howe’s Island, which was incapable of flight. The wings of the male were beautifully mottled with blue.

“The young are said to be black; then they become bluish grey, and afterwards pure white (Lath. Gen. Hist. ix. p. 428).” (Note) “What is the ‘Coot’ of Lord Howe’s Island, Phill. Voy. Bot. Bay, p. 226?”

Also (Ibis, 3rd ser. vol. iii. Jan. 1873, p. 44)

A. von Pelzeln, on birds in the Imperial collection at Vienna, after references, says:—“Our collection is in possession of White’s type (*Fulica alba*, Norfolk Isl.); the identity of the bird is proved by White’s remark in the preface to his book, that the birds from which the drawings were taken are deposited in the Leverian Museum. In a letter on Lord Howe’s Island (P. Z. S. 1869, p. 471), Dr. G. Bennet says that the White Gallinule figured in Phillip’s ‘Voyage to Botany Bay,’ and found only in Norfolk and Lord Howe’s Islands, is now extinct, as it has not been seen recently on either of these islands To Mr. A. Newton (Ibis, 1866) we owe the notice that, besides the specimen in the Imperial Museum at Vienna, there is a second in the Derby Museum at Liverpool, from Bullock’s collection.” (Note) “Herr von Pelzeln has just forwarded us a drawing of this species, from which it is our intention to have a plate prepared for our next Number.”

Accordingly, in ‘The Ibis,’ 3rd ser. vol. iii. July 1873, Mr. Salvin publishes the plate (x.), and says, in a “Note on the *Fulica alba* of White:”—

“On comparing the coloured drawing with the specimens of *Notornis mantelli* in the British Museum, it appeared evident that the bird in the Imperial Cabinet at Vienna must belong to *Notornis*. The short wings and the short toes, as well as the outline of the back, indicated clearly a far greater generic affinity with *Notornis* than with *Porphyrio*.

“I therefore (depending, of course, upon the accuracy of the drawing sent me, which has been placed on stone by Mr. Keulemans on a slightly larger scale than the original sketch) have little hesitation in adding this species to the genus *Notornis*, thereby confirming the position pointed out for it by Herr von Pelzeln (*antea*, p. 44).”

At the risk of being tedious I make the following extracts from White, Phillip, and Latham, Gray’s ‘Voyage of the Erebus & Terror,’ and state my own view.

Journal of a Voyage to New South Wales, by John White, MDCCLX. Appendix, p. 238, with coloured plate of "the White Fulica;" in the corner, "S. Stone Delin." In the preface Mr. White says, "The public may rely, with *the most perfect confidence*, on the care and accuracy with which the drawings have been copied from nature, by *Miss Stone*, &c. The engravings with equal correctness. The birds &c. from which the drawings were taken are deposited in the Leverian Museum."

"THE WHITE FULICA.

Fulica alba.

"*Fulica alba*, rostro fronteque rubris, humeris spinosis, pedibus flavis?

"Corpus magnitudine fere gallinæ domesticæ. Humeri spina parva incurvata. In specimine exsiccato pedes flavi; sed fortasse in viva ave rostro concolores.

"White Fulica, with the bill and front red, shoulders spined, legs and feet yellow?"

"The body is about the size of a domestic fowl. The shoulders are furnished with a small crooked spine. In the dried specimen the legs and feet are yellow, but perhaps in the living bird might have been of the same colour with the beak. This bird is the only species of its genus yet known of a white colour. The birds of this genus rank in the order called by Linnæus Grallæ; and most of the species frequent watery places. To this genus belongs the well-known bird called the Moor-hen, or *Fulica chloropus*; as also a very beautiful exotic species called the Purple Water-hen, which is the *F. porphyrio* of Linnæus, and which in shape most resembles the White Fulica now described."

The Voyage of Governor Phillip to Botany Bay, Lond. 1789:—

P. 181–82. "There is no danger in approaching Lord Howe Island. No vegetables were to be seen. On the shore there are plenty of Ganets, and a land-fowl of a dusky brown colour, with a bill four inches long, and feet like those of a chicken; these proved remarkably fat, and were very good food; but we have no further account of them. There are also many very large Pigeons, and the white bird resembling the Guinea-fowl, which were

found at Norfolk Island, were seen here also in great numbers. The bill of this bird is red, and very strong, thick and sharp-pointed."

P. 225. "The inhabitants of this island were all of the feathered tribe . . . a new species, apparently of the Coote, and also of the Rail, and Magpie."

P. 273, with plate of "White Gallinule. A. L. pinxit," which I take to be A. Latham. "White Gallinule. This beautiful bird greatly resembles the Purple Gallinule in shape and make, but is much superior in size, being as large as a dunghill fowl. The length from the end of the bill to that of the claws is 2 feet 3 inches; the bill is very stout, and the colour of it, the whole top of the head, and the irides red; the sides of the head round the eyes are reddish, very thinly sprinkled with white feathers; the whole of the plumage without exception is white. The legs the colour of the bill. This species is pretty common on Lord Howe's Island, Norfolk Island, and other places, and is a very tame one. The other sex, supposed to be the male, is said to have some blue on the wings."

Latham's plate in the above work is that of a completely different bird from that represented in Miss Stone's plate in White's work and the 'Ibis'-plate of Mr. Salvin; while, again, the last two vary.

We come now to Latham's 'General History of Birds,' vol. ix. p. 428, Lond. 1824 :—

"WHITE GALLINULE.

Gallinula alba, Ind. Orn. ii. 768.

Fulica alba (White Fulica), White's Journal, p. 135, pl. p. 238.

White Gallinule, Phil. Bot. Bay, pl. p. 273; Gen. Syn. Suppl. ii. 327.

"Size of a hen; length two feet. Shape and colour of the bill as in the purple species, with also the crown red and bare; irides red; round the eye scarcely covered with feathers, so that the skin is visible, appearing somewhat rough; the whole of the plumage pure white; the legs red, claws brown; on the bend of the wing a sharp spur. Some of these birds, supposed to differ in sex, are of a bright blue between the shoulders, and spotted on the back with the same.

“These inhabit Norfolk Island, are very common, and so extremely tame as to be easily knocked down with a stick; they feed on various things, and have more than once been observed to eat the ejected food of the Booby Pelican. It is to be suspected that this is no other than a casual variety of the Purple Gallinule, particularly as that bird is in sufficient plenty in Tonga taboo, Tanna, and other islands of the Pacific Ocean It is probably the same met with in Lord Howe’s Island, said to resemble a Guinea-hen in make, and to weigh four pounds, and that the cock’s wings were beautifully mottled with blue. *None of them could fly*, but were run down by the seamen.

“The Purple Gallinule of New South Wales is probably different from the Indian one, and is said to undergo extraordinary changes during its progress to maturity; that of Howe’s Island, when young, is entirely black; from that becomes bluish grey, and afterwards pure white.”

Zoology of the Voyage of H.M.S. ‘Erebus’ and ‘Terror,’ by John Edward Gray, 1844. Birds, p. 14. Subfamily Gallinulinæ. Birds of New Zealand:—

“PORPHYRIO MELANOTUS.

Porphyrio melanotus, Temm. Man. d’Orn. ii. 701.

Fulica alba, Lath. White’s Journ. t. 138 (albino variety).

“Head, back, and wings deep shining black; neck, breast, and outer margins of wings indigo blue; abdomen sooty black; under tail-coverts pure white. Length 1 foot 5 inches; bill from gape 1 inch 7 lines; wings 10 inches; tarsi 3 inches 8 lines. The head of the female or young is blackish grey.”

Diagnoses.

NOTORNIS MANTELLI; Owen.

Hab. New Zealand.

Differs from *Porphyrio*. Middle toe shorter than tarsus, hind toe short. Tibia feathered close to junction with the tarsus. Claws short and curved. Frontal plate reaching the eye. On the bend of the wing a sharp spur in one sex; and if the only two specimens known, and now

in the British Museum, are different sexes, then both sexes have the spur. Body heavy. Wing-feathers soft. Supposed to be flightless. Secondaries longer than the primaries.

Colour: one dress blue-green; beak red, with yellow tip; legs red.

For further description *vide*:—Buller's Birds of New Zealand; Gould's Birds of Australia; Owen, Trans. Zool. Soc. vol. iii. p. 377.

Compare with *Porphyrio*.

Porphyrio.—Middle toe longer than tarsus; body slender; tibia feathered about three parts down to tarsus. Frontal extending beyond the eye. Wing pointed, sharp, and feathers hard; toes longer, claws less curved than in the Notornithidæ.

On the bend of the wing a sharp spur in some species, in one sex (query, in both?).

NOTORNIS ALBA, Pelzeln.

Hab. Norfolk Island, Lord Howe's Island?

Differs from *N. mantelli*. Middle toe shorter than tarsus, hind toe short. Frontal plate going beyond the eye; tibia feathered as in *Porphyrio*, not as in *Notornis*. Feathers of wing soft. Said to be flightless. Secondaries longer than primaries. Colour in one dress white. Legs (in 'Ibis'-plate) yellow, beak red; but probably in the flesh both red, with yellow tip to beak. Not so heavy in body as *Notornis*. On bend of wing a sharp spur (*vide* Miss Stone's plate in White's 'Voyage,' also his description as above). Miss Stone's plate differs from the 'Ibis'-plate in certain particulars. A tender regard for ornithic taxonomy causes me to leave this bird alone; but the circumstance of a *Notornis* out of New Zealand appears to me suspicious, and I consider this a very aberrant species in that genus!

PORPHYRIO STANLEYI.

Hab. Lord Howe's Island? or New Zealand.

Differs from Notornithidæ. Middle toe equal in length to tarsus. Tibia

feathered three parts down. Frontal plate going to back of the eye, as usual in this genus; hind toe relatively longer than in *Notornis*. Claws short and curved. Body lighter than in *Notornis*; figure quite different. Wings longer than in *Notornis*, sharp, and feathers pointed. Primaries nearly 2 inches longer than secondaries, hard. Apparently a bird of good flight. On bend of wing, concealed by feathers, a sharp spur. Differs from *Gallinula*, in which the wing-spur is sometimes found as a knob only.

Colour: indications of first dress being brown or black, perhaps second dress blue, third dress white; but all these uncertain.

Now in Liverpool Museum, formerly in Lord Derby's Museum, first in Bullock's Museum.

The present example is probably a young bird.

Description of the Plate.

As it is commonly impossible to tell the colour of the soft parts, legs, beak, &c. from a faded skin (from which this Plate was taken), these are not to be regarded as of any authority in the present illustration*. The bill is so badly broken in both mandibles that it would have looked an absurdity to copy it; therefore this has been drawn as it is *supposed* it should be. There are some brown feathers on the occiput; and it appears quite a young bird. The legs were in a very soft condition and swollen when the bird was killed and skinned, there being several folds in, and air-spaces under, the skin of the tarsus. It seems to have lost its original colour by moulting. When placed in a good clear light, the entire plumage appears to be yellowish white; but the parts most turned away from the light present a beautiful bluish gloss: a reflection is much enhanced by placing a sheet of white paper under it as a reflector; then the so coloured parts assume a brilliancy almost equal to phosphoric light, like mother-of-pearl. On the right side of the head are

* Dr. Buller says, in the *Birds of New Zealand*, of *Porphyrio melanotus*, p. 186:—"The colours of the bill and legs are regulated by conditions of age and sex; but they likewise differ somewhat in richness in individual examples of the male."

several brown feathers, which are wanting on the left side. The three or four brownish and bluish feathers on the scapularies and wing-coverts are very symmetrical in their distribution. The middle tail-feathers are bluish, the outer white, though many of the tail-feathers, particularly the under ones, are lost. There is a very sharp nail on the inside of the wing, quite concealed by feathers, about $1\frac{3}{4}$ inch from the bend of the wing.

I have been particular in these details because this unique skin is very old, was never in very good condition, and cannot be expected to last. Therefore this attempt to lay before the readers of the 'Ornithological Miscellany' an account of it and rescue it from the obliterating grasp of time will, I hope, be looked upon with a lenient eye.

There is no notice of the Leverian bird (the *Notornis alba* of Pelzeln and Salvin) in the 'Museum Leverianum' by George Shaw, published by James Parkinson, 1792.

Several Gallinules are mentioned in Bullock's 'Catalogue;' but there is no doubt as to the identity of the bird under consideration. On the twenty-first day's sale (Thursday, June 3), p. 128, lot 54, appears "Common Gallinule, from Tristan D'Ancunha; and the Red-necked Grebe. Ryall, 7s. 0d." This, most likely, is the same species as the Island-Hen of Tristan d'Acunha, *Gallinula nesiotis*, Sclater (P. Z. S. 1861, p. 260, pl. xxx.), which example is now in the British Museum and is stated to have been "the first of its kind that reached Europe alive or dead." Bullock's bird, if my conjecture is correct, is a previous one.

As this Gallinule is probably extinct, it would be desirable to know what became of Bullock's specimen. In G. R. Gray's 'Catalogue of Grallæ &c. of the British Museum' (1844) there is no mention of a Water-hen from Tristan d'Acunha being in the Museum; so that Leach probably did not buy it.

It is stated, in the above account of *Gallinula nesiotis*, "As far as can be judged from the specimen in the Gardens, the bird can flutter a little, but obviously uses its legs and not its wings as a mode of escape." The power

of flight is not always easily determined. We had a domestic fowl at my father's which brought up a sitting of Pheasants, went off with them into the plantations, and became quite wild, rose up and *flew well*, exactly as a Pheasant. This hen, next season, had a lot of eggs, of which I now retain one, clearly a cross between a cock Pheasant and herself; she unfortunately deserted the nest, from being looked at. The eggs were of the colour of a Pheasant's egg, but larger. Mr. Robert O. Cunningham, in his 'Straits of Magellan,' 1871, p. 94, says of the Steamer Duck (*Anas brachyptera*, Lath.; *Micropterus brachypterus*, Quoy & Gaimard):—"Undoubtedly some Steamer Ducks fly, and others appear to be either wholly incapable of flight or do not make use of their faculties in this respect; it is nevertheless my belief there is only one species of the genus *Micropterus*, and that the variations in size, capability of flight, and colouring of plumage are chiefly dependent on the age of the birds; secondly, it is my opinion that it is the young birds that can fly, and that the power of flight or the disposition to fly diminishes with age." Captain King had made a volant and a non-volant species; now Latham distinctly says of the birds of Lord Howe's Island, "none of them could fly." This description never could have reference to *Porphyrio stanleyi*, which appears to me to have escaped notice, and to be a distinct bird, unique.

Though I have upon consideration called the Liverpool bird *Porphyrio stanleyi*, yet it must be under grave suspicion of having come from New Zealand and being only an albino variety of the *Porphyrio melanotus* of that island, in which case Bullock's 'Catalogue' as to the habitat and Mr. Gray's dictum as to the genus and species are correct. It appears, however, that he alluded to the Vienna bird, or confounded the two. It is true that the claws are short and curved, while in *P. melanotus* they are long and less so; but claws are very fallible, of which I have had some experience; and if my readers will refer to the changes in the young in *P. melanotus* recorded in Dr. Buller's 'Birds of New Zealand' and the albino varieties of that bird which he speaks of, I think they will agree with me.

Porphyrio stanleyi, volant, is quite distinct from *Notornis mantelli*, non-

volant ; and if the plates of Miss Stone in White, Latham in Phillip, and the ' Ibis ' one can be in the least depended upon, it is a different species from the Vienna bird, now called *Notornis (?) alba*. It is difficult, however, to judge from a plate. *Porphyrio melanotus* is a bird of flight. It is strange that so many authors, acute observers, should never mention the spur on the wing, which I find present in *P. melanotus*, *P. stanleyi*, and *Notornis mantelli*, as well as in the Vienna bird. Messrs. Hartlaub and Finsch, on birds from the Pacific Islands (P. Z. S. 1871, p. 27), speaking of *Porphyrio vitiensis*, say "its size, as usually in *Porphyrio*, varies a good deal."

Just as this was going to press I received the following, for which I have to thank the Rev. George Weare Braikenridge, of Claremont, Clevedon :—

CATALOGUE OF THE LEVERIAN MUSEUM.

PART III.

Page 118.—Twenty-fourth day. Saturday, 31st May, 1806. 2782. White Fulica (*Fulica alba*). New Holland.

PRICE-CATALOGUE OF THE LEVERIAN MUSEUM.

Page 26.—Twenty-fourth day. 2782. 14s. 0d.

PART II. No. 2.

BRITISH BIRDS.

“ The feathered songster, Chanticleer,
Has wound his bugle-horn,
And told the early villager
The coming of the morn.”

CHATTERTON'S *Poems of Rowley.*

GYPS FULVUS.

(Griffon Vulture.)

Vultur fulvus, J. F. Gmelin, Syst. Nat. i. p. 249 (1788).

THE old controversy about the smelling-power of this bird is well known. Canon Tristram has made some remarks (quoted in the 4th edition of Yarrell) which appear to me convincing. Mr. Darwin ('Origin of Species,' p. 197) says :—"The naked skin on the head of the Vulture is looked upon as an adaptation for wallowing in putridity; why is the skin naked on the clean-feeding Turkey?" I don't know if he has ever answered his own question; nor do I profess that the present reason is certain; but when we look at *Talegallus Lathamii* (the Wattled Talegallus of Australia), we may see a cause for its bare head and neck.

So necessary is it to preserve its plumage when heaping up rubbish, that Mr. Gould, the first to make known these singular habits, states ('Handbook to the Birds of Australia,' vol. ii. p. 152) as follows :—"The materials composing these mounds are accumulated by the bird grasping a quantity in its foot and throwing it backwards to one common centre." Nevertheless the head must be frequently pushed in among the dirt and stuff of the mound; and then the feathers would be injured. Doubtless the wild Turkey is not an Australian Brush-Turkey, neither does it make a mound for its eggs; but it is by nature a forest-bird, and may require to thrust its head among fallen leaves &c. However that may be, it appears to me that in the Brush-Turkey we have an apparent cause, other than putridity, but yet reasonably probable, for the naked head and neck.

HALIÆTUS ALBICILLA.

(Sea-Eagle.)

“I chose an Eagle, and did avoid a Puttock.”

Cymbeline, Act i. Sc. 2.

JOHN WOLLEY, the naturalist, in the ‘*Ootheca Wolleyana*,’ recommends any man who wishes to enjoy the beauties of a wild coast in perfection to seat himself in the nest of the Sea-Eagle. After having served his time and risen to fame in the Alpine Club he could not do better.

Mem.—“27 Aug. 1869. To-day saw a Sea-Eagle on the wing at Talisker Head, Skye. Here was its nest last spring, which the shepherds destroyed by means of throwing burning peats into it from above. On the other side of the same cliff is a raven’s nest, which I remarked as being in a situation quite impossible to get at even with a rope. The Eagle soon left us; and we entered a famous cave, the abode of otters; but though we had two good otter-dogs, both named Doran (father and son), we did nothing: the cairn was closed, and otters gone. There was so much swell that we had great difficulty in getting into the boat; a sea-fog came on, and a very large old Gull (*Larus marinus*), a bird we had winged, seized young Doran, when a general scramble took place. Sept. 2. Observed the same Eagle round Wia Island, rather near, and watched it a long time: saw it skim along without motion of the wing, and then flap slowly away. We found plenty of Grouse notwithstanding. The rabbits, which are abundant, must fatten this bird.”

“A large Eagle, which has been flying about in the vicinity of Arundel, to the terror of many, was shot on Friday last by Mr. W. Ottley, the head gamekeeper of His Grace the Duke of Norfolk. Since the singular visitor has been in the neighbourhood he has been aimed at by

many sportsmen, who have been unsuccessful in bringing him down. We believe His Grace has, on more than one occasion, had an unsuccessful shot. Being a strong bird, and usually flying very high, it required some considerable force to kill him. On Friday last, however, Mr. Ottley, who was in a plantation near Arundel Park, between Bevis's grave and the walnut-trees, had a good shot, and succeeded in wounding him. The bird struggled considerably, and at length perched upon a tree, from which he was soon levelled and taken to the Castle, where, by direction of His Grace the Duke of Norfolk, he was laid out, to be shown to any one who chose to go and see him. After this the Eagle was sent to Mr. Leadbeater, the ornithologist, of London, to be stuffed. He turns out to be a young male of the White-tailed Sea-Eagle, and not a Golden Eagle as was supposed. Mr. Leadbeater is also of opinion that it is a bird of the first year. Although the bird is of such a large size (measuring, with its wings expanded, 7 feet 5 inches), it weighs barely 10 lbs. The length from the beak to the tail is 3 feet, and the breadth across the shoulders 1 foot. The beak is $3\frac{1}{2}$ inches long, and the centre talon 2 inches; the quill-feather, from the pinion-joint, measures $23\frac{1}{4}$ inches. Its principal haunt was near the South Wood and Houghton chalk-pit; and many mutilated rabbits have been picked up which have been killed by the distinguished visitor since he has been in the neighbourhood.—*West Sussex Gazette.* ('Times,' February 24, 1868.)

February 23, 1860, the Rev. R. N. Dennis writes to me that "a Sea-Eagle, an adult, with the white crest, was shot near the lighthouse, Seaford, Sussex, some time since; curiously enough, it was drawn within shot, at least, by the carcass of a large turtle which had drifted on the beach."

The last two birds both appeared on the south coast, in the month of February.

"*Chase after an Eagle.*—A few days ago, while several dogs and a lot of ravens were enjoying a feast on the carcass of a horse at Braehour, they were suddenly disturbed by the presence of a fine large Eagle, at whose appearance the dogs ran off and the ravens flew away, one of the latter carrying off a

portion of the entrails, part being swallowed. The raven being unable either to separate or disgorge her booty, she had to fly away with about half a yard dangling out of her mouth. The Eagle, observing this, instantly gave chase, and soon after succeeded in seizing hold of the end of the piece and in dragging both it and the raven to the ground, on reaching which he struck and killed the raven, and soon after made a meal of it and the carrion, returning towards the carcass. In the mean time, however, two of the dogs had returned; and possession being nine points of the law, they growled defiance at the invader and prepared to defend their rights. The Eagle, bent on obtaining possession, for a short time hovered near the spot, and suddenly descending gave the dogs two blows with its wings and expelled them. It fed for a short time, and then flew off with a large piece of carrion, which it deposited on a distant eminence, thereafter descending into the neighbouring loch and enjoying a bathe with evident relish. This, however, did not finish the Eagle's adventures of the day. After slowly rising out of the loch it descended upon a flock of sheep and lambs and carried off in its talons a young lamb from the stock of Mr. Gunn, Braehour, and disappeared on the top of Dorrery. Mr. Gunn, having observed the theft, gave chase, accompanied (strange to say) by the ewe whose lamb had been taken away. Whether the mother had observed the direction the Eagle took, or merely followed Mr. Gunn after being deprived of its lamb, it is impossible to say; but it is certainly singular that she should have at once, without invitation, accompanied him in the chase after her young one. On arriving at the top of Dorrery the Eagle was observed resting, while the lamb was skipping about uninjured. The Eagle maintained its position till Mr. Gunn was within fifty yards of it, when it took to flight, and Mr. Gunn, with ewe and lamb, returned to Braehour, the lamb being none the worse for its aerial voyage in the talons of the Eagle.—*Northern Ensign*." ('Times,' Monday, March 21, 1864.)

PANDION HALIÆTUS, *Linn.*

(Osprey.)

“ Mr. SWAYSLAND says he saw an Osprey off Brighton, Sept. 23, 1862. It was pursued by many Starlings and a Rook, and went along slowly.” The Rev. R. N. Dennis, rector of South Blatchington, writes the same day, “The Osprey was shot by a coast-guardsmen as it was flying over the Castle hill, Newhaven; he brought it over here directly. It seemed very gentle and inoffensive, and not inclined to use its formidable claws. It had been seen about the Newhaven and Cuckmere rivers for three days; and a coast-guardsmen watched it while it captured a fish in the mill-pond. The stomach contained a few pieces of shingle, two or three bones of a small fish, and a seed-capsule of a common seaweed, doubtless swallowed accidentally. It was in very good condition, and measured 5 feet 4½ inches from tip to tip of the wings.”

FALCO CANDICANS, *J. F. Gmelin.*

(Greenland Falcon.)

Falco candicans, J. F. Gm. Syst. Nat. i. p. 275 (1780).

PROFESSOR NEWTON has given three forms of *Gyrfalco* (*vide* Yarrell's Brit. Birds, 4th ed., revised by Alfred Newton, M.A., F.R.S.). Mr. R. B. Sharpe, in the P. Z. S. 1873, p. 414, attempts to establish a fourth. To which of them the following birds, mentioned by Lord Lindsay, belong, cannot, I think, be safely determined. In former days two of these noble Falcons were deemed a fitting present for a king. It is stated, in the 'Lives of the Lindsays,' by Lord Lindsay, vol. i. p. 181, edition 1858, that Earl John, son of the Lindsay, Duke of Montrose, was fond of horses, dogs, and falcons, &c. Payments occur in the treasurer's accounts “To the Earl of Crawford's falconer”—“to the Earl of Crawford's man that brought twa gere-falcons to the king”—“bridle-silver of two horses, giffin” by the Earl “to the king.”

Payments to “the Countess of Crawford’s harper” also.—*Haigh Muniment Room*. This was James IV. of fatal Flodden, where Crawford so vainly expended his life in defence of that master whose impetuous folly caused the streams of sorrow to trickle alike down the cheeks of childhood and of age, “as with the maiden so with her mistress,” through the length and breadth of the land.

Mr. Henry Stevenson, in his ‘Birds of Norfolk,’ vol. i. p. 12, mentions that the Bishop of Ely, in the reign of Edward III., excommunicated certain persons for stealing his Hawk, “sitting on her perch in the cloisters of Bermondsey in Southwark.” But this bird yields in honour to the Parrot mentioned in Part I., which, even in post-Reformation times, was buried in effigy with a duchess in Westminster Abbey.

ASTUR PALUMBARIUS, *Linn.*

(The Goshawk, or Goose-Hawk.)

SIR JOHN OGLANDER says, in his MS. now preserved at Nunwell, Isle of Wight, written “with his own blude” when languishing in prison for King Charles I.’s sake, bearing date 1624, “If thou delightest in hawkinge, kepe raythor a Lanard or Gosehawlke; for by them thou shalt reape as mutch profite as pleasure; and a grey hound for a hare.”

In the History of Sign-boards, by Jacob Larwood and John Camden Hotten, p. 398, is an extract from ‘Mercurius Publicus,’ Aug. 30 to Sep. 6, 1660:—

“Richard Fenny Esquire of Alaxton” (now called Alexton) “in Leicestershire, about a fortnight since, lost a lanner (?) from that place; she has neither Bells nor Varvels; she is a white hawk, and her long feathers and sarcel are both in the blood. If any one give tidings thereof to Mr. Lambert at the Golden Key in Fleet Street, they shall have 40 shillings for their pains.” It is probable that by “lanner” was meant a young female Goshawk.

FALCO PEREGRINUS, *J. F. Gmelin.*

(Peregrine Falcon.)

AUG. 17, 1869, I saw a Peregrine rise from the cliff of Wia Island, near Skye, and attack a Crow, probably a Grey Crow, making the most splendid stoops at it; but the Crow always turned on its back and with its beak open repulsed the Falcon, which, after a long battle, attacked another, and then, weary, lighted upon the ground. The beauty of this treat in natural falconry cannot here be described; it charmed even the sailors of the gig in which we were being rowed.

The Peregrine sometimes condescends to prey on small birds. One, opened Jan. 5, 1864, a male, contained a Greenfinch, the legs of a common Bunting, and portions of four other small birds.

Two nests were taken in the Isle of Wight in the spring of 1859—one at Culver Cliffs, one at Freshwater. In the latter were four eggs. The two old birds were caught both in one day; and the eggs sold for fourteen shillings each. At Culver were two young birds, and two addled eggs, and, strange to say (though quite true, as I heard it from two witnesses who agreed in the story), a Partridge's egg. The two addled eggs were purchased for five shillings each.

The Rev. W. S. Symonds, F.G.S., says, in the 'Records of the Rocks,' p. 61:—"When King John invaded Wales, A.D. 1210, he made the Bishop Robert of Shrewsbury pay a fine of 200 Hawks; which Hawks, or Peregrine Falcons, the Bishop is supposed to have obtained from Stackpole rocks, near Pembroke." Again, p. 343, "Giraldus Cambrensis gives an account of the death of a Norwegian Hawk which was let fly at a Peregrine Falcon by Henry II., and was struck dead by the Peregrine 'at the feet of the king.' From that time the king sent every year, about the breeding-season, for the Falcons of this country, which are produced on the sea-cliffs." Richard III. endeavoured to obtain popularity by "liberal grants and allowances to the masters of his hounds and hawks" (Biographical and Critical Essays, by A. Hayward, Esq., Q.C., vol. ii. p. 121).

FALCO VESPERTINUS, *Linn.*

(Red-legged Falcon.)

THE Red-legged Falcon paid the Brighton downs a visit on May 20, 1873, when an adult male arrived, of which I sent an account to the 'Field,' May 24. I received two sorts of beetles on which it had been feeding. This bird two days after death became very high, as is usually the case with those which live on beetles and some other insects. This pretty little Falcon breeds in flocks.

ACCIPITER NISUS, *Linn.*

(Sparrow-Hawk.)

THIS bird is named *Nisus* after a king of Megara, who was slain through the treachery of his own daughter. Ovid states he was changed into an Eagle (?) while his daughter became some other, a small species not known. The author of the 'Synopsis of the Newcastle Museum,' Mr. Geo. Townshend Fox (1827, Newcastle), says Linnæus did not give the name, "as the Sparrow-Hawk had been called *Nisus* by earlier writers (see Ray, Willughby, Frisch, &c.)."

In ancient times it was common to pay "a sore hawk," as a fine, at the termination of a fictitious suit. In 'Shakespeare's England,' by G. W. Thornbury, p. 379, we find "From August to November hawks were called sore hawks, and were in their prime for beauty and use; their first feathers were moulted at the end of the first year. From January to April the Italians said that hawks were peculiarly subject to disease." Of a sore Sparrow-Hawk thus used, an instance is recorded by the Rev. R. W. Eyton in his 'Antiquities of Shropshire,' vol. i. p. 376:—



A SORE SPARROW HAWK.
ACCIPITER NISUS, ♂.



“On 6 March, 1258, Giles de Erdington is deputed to try a suit of novel disseizen, which Philip de Roule (Rowley) and his wife had against John de Chastell, about a tenement in Bruges. Pat. 42 Hen. III. This suit seems to have led to a final concord at Westminster, whereby on July 8, 1259, Philip de Roweley and Isabella his wife, conceded, as of their own gift, to John de Chastel de Brugg and Alice his wife, 19 acres in Nortleg (Nordley), Dunfowe, Brugg, and Aldebyre (Oldbury), whereof had been a plea of warranty. To hold to John and Alice and their heirs, of Philip and Isabella and the heirs of Isabella at $\frac{1}{2}^d$ rent, and services due to the chief Lords. John gave for this a sore Sparrow hawk. Pedes finium, 43 Hen. III. Salop.”

Again, p. 82. “A sore hawk was one in its first plumage (from the French *sor* or *saur*, English *sorrel*, *i. e.* reddish brown). A stag in its fourth year was also called *sore*—a similar allusion to its colour.”

In the letter of John Paston to Sir John Paston, Sept. 21, 1472, we have :—
“I pray God send you all your desires and me my mewed goss hawk in haste, or, rather than fail, a soar hawk; there is a grocer dwelling right over against the Well with two Buckets, a little from St. Helens Church, hath ever hawks to sell.” (Larwood & Hotten’s ‘Sign-boards,’ p. 374.)

Mr. R. B. Sharpe remarks, P. Z. S. 1873, p. 418:—“The general character of the species of *Accipiter* is to have a striped plumage when young and a barred dress when old. But it is not generally known that this is effected by a gradual change in the markings of the feather, and not by an actual moult. . . . We can tell the age of a young Sparrow-Hawk by the extent of the rufous edgings to the feathers of the upper surface: if these are very broad and distinct, the bird is quite young; for they gradually wear off as it progresses in age. On the first appearance of the feathers from the downy covering of the nestling, the markings on the chest are longitudinal drops of a pale rufous-brown colour: . . . Hence, when the bars are perfectly developed, a shade of darker brown overspreads the upper margin, gradually eclipsing the rufous-brown shade, which remains the evidence of the previous plumage.” Mr. John Hancock, in his ‘Catalogue of the Birds of Northumberland and

Durham,' p. 10, states, "Not only do all the true Falcons acquire their adult plumage in the first moult, but many of the ignoble species do so likewise, as the Honey-Buzzard, the Goshawk, the Sparrow-Hawk, and the Harriers. The fact cannot be too strongly pressed on the attention of ornithologists; for it leads to a correct understanding of the variations of the plumage of the Falconidæ."

The musket is said to have derived its name from this hawk. Baring Gould, in his book on Iceland, gives, p. 205, "Latin *muscatius* (speckled); and from its spotted plumage the Sparrow-Hawk was called *mousquet* in French, *moschetto* in Italian, and *musket* in English.

'How now my eyas musket.'

Merry Wives of Windsor.

When firearms took the place of these birds in the chase, the name was transferred to them." Mr. Harting, in his 'Ornithology of Shakespeare,' p. 74, mentions the same "*eyas*," signifying nestling. He calls attention, however, to the fact that it is asserted also that the musket was invented by the Muscovites in the fifteenth century. Thomas Pennant, in the 'British Zoology,' vol. i. p. 240, "Falconry," gives the following:—"In those days" (*i. e.* Henry VI.) "it was thought sufficient for noblemen's sons to wind their horn and to carry their hawk fair, and leave study and learning to the children of mean people. (Biog. Brit., article Caxton.)" Now Accipitrine birds have lost their interest; guns and hedgerows have done away with hawking. At Brighton the following Hawks have all been brought to me captured in clap-nets, drawn in by the decoy-bird:—Hobby, Merlin, Sparrow-Hawk, Kestrel, Montagu's Harrier. Curiosity sometimes takes birds into the net, which ends to them as fatally as did the expedition of that Kingfisher who attempted to explore the courts of the British Museum, Dec. 23, 1874, and there met a glorious and historic death.

MILVUS ICTINUS (*Savigny*).

(The Kite or Glead.)

PERHAPS in few other places was the Kite more abundant than in Huntingdonshire. The 4th edition of Yarrell states that the famous breeding-places, the woods of Alconbury Hill, were cleared about 1844 or soon after. I have an egg, perhaps nearly the last ever laid, which was found in that locality. A good observer writes to me concerning Whittlesea Mere, the great Huntingdonshire lake, now vanished:—"I once saw there a flock of Starlings, which extended for miles and completely darkened the air; in the midst of them were three Kites." Puttock, the name of this bird in Shakespeare, is still applied to a manor in Eynesbury, near S. Neots, Huntingdonshire, to this day known as Puttock's Hardwick.

PERNIS APIVORUS, *Linn.*

(Honey-Buzzard.)

OCTOBER 20, 1863, William Pearson, my father's keeper at Priory Hill, S. Neots, shot a male. The female was also seen, but escaped. May 22, 1871, I saw a male bird, which had been caught in a trap the day before, baited with a Moorhen's egg, and set for a Magpie.

CIRCUS CINERACEUS, *Montagu.*

(Montagu's Harrier.)

I REMEMBER boxes full of the eggs of the three species of Harriers, taken round Ramsey and Whittlesea, used to be brought to me, and sold at 1s. 6d. and 2s. each, perhaps less. I did not think much of them at that time.

This species appears to have struggled on, after the others were all destroyed in the fen-district.

On November 8, 1867, was brought me a female alive, which had been caught the day before in a clap-net outside Brighton: a pair flew in; but the male bird escaped. I presented her to the Zoological Society.

August 22, 1870. To-day the same bird-catcher captured another female, at the same place where he took the first, also in a net. With rare birds this kind of coincidence frequently occurs.

ALUCO FLAMMEUS, *Linn.*

(Barn-Owl.)

Strix flammea, Bewick.

THE editor of the 4th edition of Yarrell's 'British Birds' has adopted *Aluco* for this genus instead of *Strix*. The editor of the 3rd series of 'The Ibis' (vol. v. Jan. 1875, p. 66, note) demurs. Each gives his reasons, which, between such good authorities, leaves me in doubt. The beautiful variety in my collection, which has been well drawn by Mr. Keulemans, was captured



J.G. Keulemans del

T. Walter hdt.

ALUCO FLAMMEUS, LINN.

alive in a pigeon-house near Brighton. There were two; but the other escaped, reminding one of the ale-house sign and inscription—

“A bird in hand is better far
Than two that in the bushes are.”

Mr. Henry Stevenson, in his ‘Birds of Norfolk’ (vol. i. p. 53), gives an instance of a similar specimen killed near Norwich, December 13, 1864, and calls attention to the figure in Kjærbølling’s ‘Danmarks Fugler,’ pl. vii. He adds, “It is rather rare in all parts of Denmark.” As, however, the above illustration is small and, perhaps, not in the hands of all my readers, and this is (as far as I know) the first occasion of this Owl’s appearance on the south coast of England, a representation of such a remarkable deviation from the usual type is not out of place. These Danish birds, as they are called, have, I suspect, come across from the Continent; Professor Reinhardt appears first to have noticed them. At present no authority makes a new species; neither shall I. Mr. Hancock states, in his ‘Birds of Northumberland,’ p. 21, that an example was shot in his district a few years ago. The Barn-Owl has a tendency to stand upon one leg; and I have seen seven in a row asleep, each with one leg up, looking very funny.

Speaking of the attitudes of Owls, in every illustration of the Long-eared species (*Asio otus*) the ears are sticking up; but they are frequently down, and sometimes one is up and the other down. The difference of the bird drawn up to its full height and puffed out is very great. Mr. Gould has not missed this in the beautiful plate in his ‘Birds of Great Britain.’

We have seen instances, mentioned as above, of this Danish variety on the east and south coasts, from Northumberland to Brighton. It will be a matter of interest to trace it inland and record it; and I hope to give more information respecting it in a future Part of this work.

STRIX ALUCO, *Linn.*

(The Tawny Owl.)

MAY 22, 1867, observed that a couple of Tawny Owls have cleared the Starlings off pretty well all round as food for the young owls; but the Nuthatches maintain their safety in the vicinity (which is a line of elm trees in Huntingdonshire).

TURDUS MERULA, *Linn.*

(Blackbird.)

IN 'A Book about Clergy,' by John Cordy Jeaffreson, B.A., vol. ii. p. 296, note, appears:—"In his 'Life of Cranmer,' Strype says, 'In the year 1541 the Archbishop and most of the Bishops and divers other Deans and Archdeacons made a constitution for moderating the fare of their tables; viz., of birds &c. of lesser sorts (as capons, pheasants, conies, woodcocks) but two in a dish; of lesser sorts still (as of partridges) an Archbishop three, a Bishop and other degrees under him two. The number of blackbirds was also stinted to six at an Archbishop's table, and to four for a Bishop; but of little birds (as larks, snipes, &c.) the number was not to exceed twelve." Here it is worthy of remark that Snipes, being so common, took rank with Blackbirds—somewhat contrary to the changed state of things now. Also we cannot fail to observe (for which we have the authority of the song) that four and twenty Blackbirds baked in a pie, made a dainty dish for a king. It is pretty certain that the enclosures and hedgerows have greatly increased

the number of Blackbirds, which formerly were highly esteemed. In 'The Ibis,' new series, vol. v. 1869, p. 358, Mr. W. Boyd Dawkins says, regarding Pheasants:—"The bill of fare drawn up by Harold for the Canons' households of from six to seven persons, A.D. 1059, and preserved in a manuscript of the date of *circa* 1177*, was as follows (p. 16):—"Erant autem tales pitantiæ unicuique canonico: a festo Sancti Michaelis usque ad caput jejunii [Ash-Wednesday] aut xii merulæ, aut ii agauseæ [*Agace*, a magpie (?) *Ducange*] aut ii perdices, aut unus phasianus, reliquis temporibus aut anca [Geese; *Ducange*] aut gallinæ." Harold only allows xii Blackbirds (!) among seven people. It would appear from this that the Blackbird was not plentiful.

Mem. Saw to-day (May 22, 1871) a Blackbird's egg in spirit, having two well-formed and distinct young ones in it. Severe frost is very destructive to Blackbirds; if not too hard, they shelter themselves in ditches. In 1407 dreadful frosts took place, and all the small birds perished.

The 'History of Sign-boards,' by Hotten and Larwood, p. 202, quotes the following stanza, "which Allan Ramsay gives as a favourite old Scotch song." "The black boy," it appears, was a nickname for Charles II.

"Once in fair England my black bird did flourish;
He was the chief black bird that in it did spring:
Prime ladies of honour his person did nourish,
Because he was the true son of a king.
But since that false fortune,
Which still is uncertain,
Has caused this parting between him and me,
His name I'll advance
In Spain and in France,
And I'll seek out my black bird wherever he be."

The Blackbird will pair with the Thrush. A mule of this kind is mentioned at the Crystal Palace bird-show (*vide* 'Times,' Feb. 10, 1872). This species very much follows the rule of the Sky-Lark; at certain times foreigners cross

* See 'De inventione Sanctæ Crucis nostræ in Monte Acuto et de ductione ejusdem apud Waltham.' By William Stubbs, M.A. Oxford and London, 1861. 8vo.

over to the British shores ; but the foreign Larks rarely remain with us or pair with the Britishers. The *Merulidæ* do not require any sanitary act of Parliament to preserve their dwellings clean. Blackbirds swallow the droppings of their young and keep their abode free. On May 24, 1862, I found a nest of *Turdus musicus* (Thrush) with one addled egg. The birds had flown ; and the nest was half full of the stones of the ivy-berry, which had been the food of the young. It is probable that these stones had all passed through the young ; but, being in their nature clean, they were not taken away by the old birds. Mr. Henry Stevenson, in his 'Birds of Norfolk,' vol. ii. p. 275, records "the large flights of Blackbirds that make their appearance on our coast in October, so regularly that the gunners are accustomed to search for Woodcocks when the Blackbirds are over." Mr. John Cordeaux, in his 'Birds of the Humber District,' p. 24, says, "in October I have sometimes found our marsh hedgerows near the coast literally swarming with Blackbirds, where the day previously scarcely one could have been found."

ORIOLUS GALBULA, *Linn.*

(Golden Oriole.)

APRIL 20, 1872, saw a cock bird in fine plumage which had been shot at Shoreham the day before. Mr. J. G. Keulemans writes to the 'Field' of Oct. 31, 1874, thus :—"The Baltimore and other Hang-nests, probably on account of their black and yellow plumage, are usually named Orioles ;" these, however, "may be easily recognized by the invariably dark red eye, which in all the *Icteri* is yellow. Orioles have short legs, long wings, and a broad Thrush-like bill ; Hang-nests have the tarsus as long as a Song-Thrush, and stand high upon their legs ; their wings are comparatively short ; and their bill is Starling-like and sharp-pointed. Orioles are lazy,

ravenous, and far from clean ; they never learn, and in confinement rarely utter a note. The *Icterus* group is the reverse ; it is exceedingly clever."

I can confirm these facts as regards *Icterus vulgaris*, of which I have two. They are excellent guards and give notice of the approach of each stranger, whistle several tunes ; and one, before I had him, saved by his vigilance a house in the West Indies from being plundered. Three negroes got in ; but the master heard the bird's note of alarm and caught them.

DAULIAS LUSCINIA, *Linn.*

(The Nightingale.)

THIS, with proper care and knowledge, is a very easy bird to keep in a cage ; and I have known some instances of aged pets of the species, and heard the Nightingales sing in a wild state in the darkest nights. As to the dates of going and returning, the first bird at Brighton and Eastbourne in 1859 was seen Saturday, April 16. Aug. 2, 1860, young ones were passing on a voyage they had never been before, *i. e.* across the sea. The following letter (to the Editor of the 'Times,' June 14, 1872) from a practical man is so interesting that I give it nearly in full :—

"*Nightingale-Trapping.*"

"SIR,—Respecting bird-trappers, I hope you will give an old trapper an opportunity to give the public the benefit of his experience. With the exception of Epping Forest, I think I have explored nearly every spot of brushwood large enough for a Nightingale to live in within a radius of about twelve miles from London. For nearly a quarter of a century I have spent my Sundays, weather permitting, in the accessible woods, to catch or watch birds, according to the season ; and I should be glad if birdcatchers could be

stopped during the breeding-season. However, my present object is to state my experience about the Nightingale.

“Now my quarter-of-a-century’s experience is this. In springs of ordinary mildness the *avant-garde* of the cock Nightingales arrives in Kent and on the Surrey hills from the 10th to the 14th of April, at Highgate and Hampstead a few days later. These outposts are generally found in a few favoured spots, known to every trapper of experience. During the next few days the arrivals increase, and between the 18th and 24th comes a kind of ‘ugly rush,’ because they are all making for the favoured spots. For a few days it appears on these spots as if the world were to be eaten up by Nightingales; and all the time a very obstinate fight is going on for the possession of the favoured spot. Whether birds have any notion of mine and thine I will not undertake to say; but most birds keep during the breeding-season a certain space free from any other bird of their own kind. The Nightingale that maintains itself in the favoured spot must at least for a fortnight defend it against all comers and rout them. I saw one morning four cocks in deadly combat on Shooter’s Hill. They were entangled in each other’s legs and wings, biting away all the time, and rolling for some distance like a feathered ball along the high road. Well, those that get the worst in the fight have to retire to less-favoured spots. The fight for place is pretty well decided by the 26th of April, which is about the time when the ladies put in an appearance; and then another fight begins. The cock has secured an abode to receive his lady; but sometimes several neighbouring cocks are after the same lady, and she invariably goes with the conqueror. There are always a few fast hens among the last batches of cocks, and there are always a few slow cocks among the first batches of hens; and if there be any thing like abundance the slow cocks have to put up with what abodes they can get. Being worsted in the fight or coming too late, they are induced to sit down in out-of-the-way places; but Nightingales will not stop in every place. I never heard one on the Eltham side of Shooter’s Hill nor on the Dulwich side of Sydenham Hill, while on Penge Common they hung on as long as there was

bush left ; but when brick and mortar finally crowded them out, they rather left the neighbourhood altogether than go to the other side of the hill. Round Shooter's Hill and Combe's Wood they make themselves as happy in the gardens as in the woods ; but not so at Highgate and Hampstead ; all I ever heard in the gardens there was one close to the Seven Ponds.

“And now for the young ones. The first batch leaves the nest at the beginning of June, and the second about the middle of July. After that the Nightingales seem to have vanished. Now and then, if you come too close to be pleasant, you may hear an old hen raising a cry of alarm. She gets very dilapidated during the hatching ; her wing- and tail-feathers fall out so fast that she is almost disabled from flying for a few weeks. The young ones disperse themselves and are exceedingly quiet. About the end of August they become noisy and roam about in flocks, and in September they depart for their winter quarters. On their road through Italy a great many are caught for the spit of the Neapolitan epicures. The catching-season is in spring before the hens arrive ; and in the autumn a few (but very few) young ones, called branchers, are caught. Neither young nor old begin to sing audibly before the end of the year ; and then the ‘poor things’ are far beyond the reach of the London trappers ; they are beyond the Mediterranean.

“A word about birds in gardens. Professor Huxley, in a lecture to working men on the struggle for existence, stated once that humble bees were more numerous in the neighbourhood of human dwellings than in distant fields, because the cats kept the field-mice down. The field-mice are very fond of eating the larvæ of the humble bees. Now the cats are as fond of birds as of field-mice. The small Insectivora stand a very bad chance with the cats. They not only build their nests close to the ground, but their young ones leave the nest before they are able to fly. But there is something else that may make birds scarce in certain gardens. Not long since the advisability of destroying birds to save the raspberries was publicly discussed. All insectivorous birds are fond of berries, and some gardeners may

have more love for their fruit-beds than for their destroyers. The trappers who go about Highgate on Sunday mornings are chaffinch-peggers, and their decoy birds without eyes are stuffed Chaffinches, fastened on a short stick, which is provided with a steel prick, so that it can be stuck on to a tree or a wooden rail. For nearly 50 years I have heard the tale of blinding birds ; but I never saw one blinded, and never knew any one that practised it. I maintain that where bricks and mortar have not crowded them out, as on Penge Common, birds are as plentiful this spring as ever. The only thing that really makes a sensible diminution is long-continued hard frost in winter.

“ I am, Sir, yours respectfully,

“ London, S.W.”

“ J. GEORGE ECCARIUS.”

Respecting the thorn theory connected with this bird, mentioned by Shakespeare (*vide* Mr. Harting's book, p. 126), I can only say that when finished I never found any thorn in a Nightingale's nest ; and I have looked into a great many. In the case of a Kestrel's eggs laid in the old habitation of a Magpie in an oak tree, May 7, 1864, one out of four had a curious hole in the shell, and it appeared to me that while soft a thorn went through the shell. The claw of the parent, however, might have caused the perforation.

MELIZOPHILUS UNDATUS (*Boddaert*)*.

(Dartford Warbler.)

MAY 1, 1869. Went to a hill outside Brighton. Took a nest and four eggs, the last laid this morning ; the hen was on. It was placed about one and a half foot from the ground in the furze near a cut or ride. A

* “ *Motacilla undata*, Boddaert, Table des Planches Enluminées, p. 40. no. 655, fig. 1 (1783).”
Newton's Yarrell, vol. i. p. 398.

stranger might easily wander about and say there were no birds; they alight on a small bit of gorse, immediately disappear inside, and are no more seen. One cannot help admiring the industry and patience of the oologist who in 1838, as recorded in Yarrell, found a nest of this species after watching several hours every day for a fortnight—though how such exertions were necessary is not understood. It is a mistake to suppose that very thick gorse is selected; a thin place is chosen. Dartford Warblers fly a long distance to get materials (horse-hair &c.), and are very hard to see; they dive under so quickly, after darting suddenly down from the air. To-day there was no sun; they did not sing or spread their tails.

Mem.—“ May 6, 1869. At the hill again; saw three nests containing four fresh eggs each; though four is the proper number, if the first be taken, it very frequently lays five. These were about the same distance from the ground as the one above mentioned. They were in the dead part of the bush and of materials to imitate it, not in very thick parts. This nest is earlier than that of the Whitethroat, which, passing, looks on the wing almost like a white bird, while the Dartford Warbler looks black. The materials of the three nests are roots, a little moss, some wool, and a few hairs, perhaps. The owners fly a long way to gather food. The cock sits on the top of a bit of furze (*Ulex europæus*). Now he flirts his long tail, putting it up like the Common Wren. Look! he is blown almost round by a gust; he is obliged to sit head to wind. Observe how he swells his throat and puts up his crest, looking red in front and black behind. The yellow flower of the furze appears quite hot in the sun, and flaring. We have driven the hen off the eggs, which the cock soon finds out and is after her, to inquire what she means by it and send her back. This kind of thing must be seen to be understood.”

With the breeze of the English south downs in his face and the tinkle of the distant sheep-bell in his ear, the ornithologist basks in the sun of a May morning and shares the joy of the little birds. Care, if any such he had, seems so no longer; Nature has banished it from his heart. Such an

effect knew also Sir James Emerson Tennent while listening to the "soft melodious notes of the Pigeon of Ceylon" (*Chalcophaps indicus*, Linn.); for when "irritated by the perverseness of his native followers, the feeling almost instantly subsided by hearing suddenly the loving tones of these beautiful birds" (book on Ceylon, p. 174).

To understand the delight in ornithology which animates many persons, I quote the account of Wilson's end from 'Men who have risen,' p. 219:— "Wilson, the ornithologist, met his early death thus. Sitting one day conversing with a friend, a rare bird which he had long desired to have flew past the window. Wilson seized his gun, and after an arduous pursuit, during which he swam across a river, killed it. A severe cold, followed by an attack of dysentery, came on and after ten days ended his mortal career, August 23, 1813." John Wolley had a like enthusiasm.

To return to the Dartford Warbler. This species catches gnats in summer; in winter it remains at the same place, and, I think, sometimes digs in the ground under the bushes. On April 6, 1859, I examined one with the feathers worn off the mandibles. The spring plumage is much darker than the autumn one. The hen is smaller and rather lighter in colour (*vide* 'The Ibis,' vol. i. 1859, p. 329, where I have described this bird).

The winter of 1874-75 was very destructive to the Dartford Warbler; and, in consequence, the bird is scarce on the Brighton downs. I fancy this came about thus: the snow fell heavily from the south-east and at night suddenly changed to the north; thus the little birds were shut in a trap at their roosting-places under the furze. A sudden chop of this sort kills the ditch-seeking birds also, by filling both sides. As the Dartford Warbler is local, it will take several years to recover. There are not above half the usual number of Stonechats this season.

PARUS CÆRULEUS, *Linn.*

(Blue Titmouse.)

THE Tom-Tit of country people. "In former times, in compliment to the great Saint Thomas-à-Becket, Tom was a more common name than now. We have Tom Tit, Tom cat, Tom foolery, Tom boy, Tommy shop, Tommy (slang for bread), double Tom (a sort of plough), Tom the piper (in the morris dance), Tom Tiddler, Tom of Bedlam, Tom of Westminster (a bell), Tom and Jerry, Tom Tell-truth, Tom Hick-a-thrift, Tom (the knave of trumps), Whipping Tom (an itinerant flogger of wandering maids), Tom Tapster, &c." ('History of Sign-boards,' by Jacob Larwood and John Camden Hotten, p. 397).

June 4, 1858. To-day saw a nest of a Blue Tit, containing six eggs much incubated, on the bough of a fir tree. It was a plain open nest, like that of any other bird. Holes are scarce, which I take to be the cause of this divergence from the usual habit. The number of green caterpillars I have seen a pair of these Tits bring to their young in a quarter of an hour is incredible. A very interesting example in caliology is a nest in my own collection of the Blue Titmouse, with eight eggs, formed in the bottom of a Blackbird's.

ALAUDA ARVENSIS, *Linn.*

(Sky-Lark.)

UNDER this species it might be convenient to say something on migration and movement of birds.

This subject is surrounded by difficult questions—difficult to every biologist who is true to scientific method ; and I cannot hope, even with twenty-five years' experience of my own and the aid of that of other persons, to afford even an approximative solution which will secure a general consensus of opinion on this recondite subject—one not unknown to Jeremiah (viii. 7), and by the Romans held in superstitious awe. Still something may be said, some light thrown upon it. Would that we had the books of the College of Augurs to search, from the time of Romulus downwards—a college chiefly devoted to the observance of birds and migration ; or even if we could cross-examine the “magister,” he could tell curious facts. It was Berryer who stated that the Roman augurs could not look each other in the face without laughing (Hayward's ‘Critical Essays,’ n. s. p. 394). Allowing this to be the fact, it was because they were acute individuals and above the superstition of the vulgus, having had their intellects sharpened by the study of ornithology, and because they were so frequently obliged to defend their false and fallacious *raison d'être* !

I imagine the following are some of the heads of inquiry :—

1. Why do birds migrate ? From what cause ?
2. What makes the first bird move ?
3. How do they find their way ?
4. Where do they migrate to ?
5. Why do they return, in defiance of the principle in Nature of least action ?

When considering these questions, I hope, instead of receiving only a supercilious negation, to obtain a fair hearing of the facts.

1. *Why do birds migrate ?*

To this question we might add, why do fish migrate—herrings, for instance, &c. ? and how do they find their way in the pathless ocean ? It may be divided into others, thus :—Is it hunger and thirst ? is it cold or heat ? is it *ἀντιστοργή* in an ordinary season, or excessive multiplication in an

extraordinary one? is it migratory impulse, not the want of any thing? and what may migratory impulse be? Is it safety? is it want of light? is it to breed? is it wind which causes it? Spawning has a great deal to do with piscine migration; and I agree with Dr. Jerdon, in his Introduction to the 'Birds of India,' p. xxii, vol. i., "Cuvier's explanation, the variations of the atmosphere," is not an efficient reason alone for migration. It may arise from all these causes: various men do the same thing from many motives. Each species of bird may migrate from its own motive. Sometimes it is hunger, for example; strictly, Larks, Snipes, Woodcocks are moved by frost and nival impulse. Insect-eating birds, as a rule, perhaps come under the head of food rather than cold, though cold destroys their food. Yet the Nightingale goes when it would appear that its food is abundant.

'Αντιστοργή (that wonderful change from intense affection to coercive violence, so necessary for Nature's balance) is the cause of the appearance of most of what are called rare birds, which are those of the year seeking new habitations. Huntsmen know a travelling fox; and we, not only a travelling bird, but more—a *lost bird*. Mice and rats sometimes lose their way, as do birds. I recall to my mind now instances which have come under my notice of each. Of excessive multiplication, from a combination of circumstances, in a peculiar season favourable to production, we have a notable example in the irruption of *Syrrhaptes paradoxus* from beyond the Great Chinese Wall, 1863, and, of insects, in the swarms of *S. pyrastris* (a fly) which appeared in Brighton some years ago.

Regarding migratory impulse one speaks tentatively and cautiously. I apprehend it to be a restless, uneasy sensation, driving the bird into action—the converse of the sitting impulse, a warmth in the breast which causes a wish to incubate and creates an aversion to movement:—at one time forced to sit, by the ease obtained by sitting; at another urged to travel, by a feeling similar to that which causes lambs and foals to disport themselves. The evidence of one very competent dealer and respectable man to me is this:—"I

had a Nightingale, which I reared by hand ; it would eat meat out of my fingers, and was quite tame. When the time of departure arrived it became restless, beat about the cage, and knocked its tail to pieces." Now first the bird, which had known no parents and looked to the old bird-catcher for both, discovered that it was a captive, and, feeling the migratory impulse, endeavoured to respond to Nature's lead, which wires and prison bars prevented. A human being might have thought, though the poor bird could not, of the beautiful lines of Lovelace—

" Stone walls do not a prison make,
Nor iron bars a cage ;
Hearts innocent and quiet take
These for a hermitage."

This bird was not moved by instinct ; it suffered from positive corporeal pain, *i. e.* migratory impulse.

A vague sense of danger sometimes causes movement. Want of light has been said (by a Swedish author, I think) to send birds south. Many come to this country to breed ; others leave it for that purpose : Woodcocks do so, yet not all. The reason why some go and some stay I take to be partly persecution and partly want of food. Also northern visitors stop for a time, while British-born birds move south. When Nature wishes to cause any action, she uses pain and pleasure as agents, which always, as a rule, produce the required result.

The migratory impulse must be very strong. It is blindly followed by the Quail, which will, if possible, fly through a house or over a mountain rather than turn from its course. " In this respect it resembles the Norwegian Lemming, whose onward journey is stopped neither by lakes nor hills, and some species of ants, whose movements are equally undeviating " (Mr. Gould's ' Introduction to the Birds of Great Britain,' 8vo edit. p. 8).

All animals have an instinct of self-preservation ; but in the above instance the migratory impulse overcomes it, and is the stronger of the two. Nevertheless the single individual would not run into danger of its own accord ;

it is pushed on by the crowd behind, and is unable to get out of the way. Mr. R. Gray ('Birds of the West of Scotland,' p. 122) saw "near Girvan, about eight or nine years ago [*i. e.* from 1871], numbers of Larks, which were incalculable, crossing one of the roads; the mass of birds was so compact that none of those in a line with the telegraph-wires escaped. As soon as the flock passed, dozens were picked up dead or mutilated, portions of wings, torn from the living bird, being even found adhering to the wires."

Mr. W. H. Hudson says (P. Z. S. 1872, p. 845) of the Swallows of Buenos Ayres:—"When the season of migration approaches, they begin to congregate, . . . but seem preoccupied or preyed upon by some anxiety which has no visible cause. . . . The birds seem to forget their songs and aerial recreations; the attachment of the sexes, the remembrance of the spring is obliterated; they already begin to feel the premonitions of that marvellous instinct that urges them hence: not yet an irresistible impulse, it is a vague sense of disquiet; but its influence is manifest in their language and gestures, their wild manner of flight, and listless intervals. The little *Atticora cyanoleuca* disappears immediately after the other, larger species. Many stragglers continue to be seen after the departure of the main body; but before the middle of March not one remains, the migration of this species being very regular." The writer in the above speaks of *instinct*; but I attribute the cause of "the irresistible impulse" to a corporeal sensation, a fever which I name "migratory impulse"—irresistible, no doubt. Mr. Hudson says, in addition, of *H. leucorrhoea*, "Late in April, after almost all the other passage birds had ceased, these continued to appear: the weather was already cold; and all these late comers flew with great celerity and as directly north as if their flight had been guided by the magnetic needle."

Mr. George Henry Lewes, in 'Problems of Life and Mind,' in the chapter on "Psychological Principles," vol. i. p. 168, says:—"An animal suffers from a physical calamity, seeks to escape from it, but never to understand and modify its causes. He has only the logic of feeling to guide his

actions ; he observes, concludes, and never explains. Man has, besides this, the logic of signs ; he observes and explains the visible series by an invisible series. The one has knowledge of particular facts ; the other a knowledge of general facts. The knowledge of the one is fixed ; that of the other, facultative."

2. *What makes the first bird move ?*

In reply to this, I observe there *is* no first bird. When a flock of Starlings of many thousands hear a gun, fear causes them to start : query, which is the first bird ? The action is simultaneous. I might as well be asked, when (as often is to be seen on the south downs) a flock of sheep are driven to feed, what makes the first sheep move into the clover ? There is none : hunger moves the flock. But if the question is, what makes a number of birds travel at once ? then I say, one of the various causes enumerated in the reply to question 1.

3. *How do they find their way ?*

This is much more difficult ; and a satisfactory answer cannot be given. I can only hope to throw a little light upon the subject. But, in the first place, though they *do* find their way as a rule, they sometimes *do not*. Many instances of lost birds have come under my observation ; and exceedingly frightened they are, weak and starved usually, very much like other animals under similar circumstances. If any one supposes that birds have a supernatural and extraordinary method of finding their way, of such a mysterious kind as has often been ascribed to dogs and cats, it certainly shows a very lively imagination, a soaring into the realms of fancy too much for my comprehension ; in short, it is directly in violation of Comte's first law of Primary Philosophy and Rule XV. of Lewes, viz. "Always to prefer the simplest hypothesis compatible with the observed facts" ('Problems of Life and Mind,' vol. i. p. 106).

It is a mistake to suppose that in ordinary cases there is great fatigue

or difficulty in a bird migrating. Sometimes there may be; but this is exceptional—perhaps when caught by a storm, exactly as a vessel may be; but in general they come pleasantly along. The Cuckoo has been seen at Brighton singing over the sea as she reaches the land.

“ She is a fine bird,
She sings as she flies ;
She brings us good tidings,
She tells us no lies.”

In crossing over from the Continent to this country, Swallows when reaching the land do not stop to rest; though Mr. W. H. Hudson (P. Z. S. 1871, p. 327), on the birds of Buenos Ayres, says:—“ In April 1869, several days after all the Swallows of our five species had totally disappeared, flights of *Hirundo leucorrhoa* began again to arrive, passing north. Many of them appeared quite tired with their journey, rising reluctantly. Probably the migration of this species extends very far south.”

Mr. R. O. Cunningham (in the ‘ Straits of Magellan,’ p. 26), on the voyage to Rio, fell in with Swallows “ which revived temporarily on being fed with flies, but died in a few hours.”

Wagtails go straight across the land from the sea. The Willow-Wren may be observed in April, just arrived, sitting on a bit of seaweed *singing with joy*. I find this note:—“ 23rd April, 1859, 20 minutes past five o’clock in the morning, opposite Brunswick Square, Brighton. Observed a Willow-Wren just come; he went straight from the sea. Nearer to Shoreham harbour I found another.”

Again, a veteran lark-catcher says:—“ One morning in April I went shrimping by Shoreham harbour. I was standing in the sea; and on turning up the net, I could hardly find the shrimps, because the light was just coming on. A Willow-Wren (query, that or a Chiff-chaff?) perched upon the handle. I tried to catch it with my hand, but it flew away. The sun had not risen; it was very cold.” Titlarks come, perhaps, in a fog; they “ keep the touch ” by their voices. This is still more observable in flocks of birds arriving at night over

the streets of Brighton; their cries are incessant, evidently for the purpose of keeping together. Without ascribing a supernatural power to birds, which we cannot understand, amounting to superstition in the believer, it is a fact that they can see in a way which man does not, unless aided by science. In the first place, from a lofty elevation even man can discern to a much greater distance than when on the earth—for instance, when in a balloon. In the ‘Nile Tributaries,’ by Sir Samuel Baker, ch. xix. p. 493, he says:—“The atmosphere contains regular strata of birds of prey; each species keeps to its own particular elevation; No. 1, the Black-and-White Crow, is never far from the ground; No. 2, the common Buzzard; No. 3, the Red-faced Vulture; No. 4, the large Bare-throated Vulture; No. 5, the Marabou Stork, sometimes accompanied by the Adjutant.” The larger birds require to look further and ascend higher. Certain species see at night; otherwise, being nocturnal feeders, how could they find any thing to eat. But it is not at night, or high in the air only, that their vision is of a marvellous character. On the 14th Oct. 1859, I lent a cock Siskin as a call-bird, and watched the effect. Assisted by some remarkably sharp eyes in addition to my own, not a bird could be seen in the air; of a sudden the Siskin called; and like a shot descended, from an immense height, quite out of sight, a wild Siskin straight into the net and was caught. Next day six Siskins came down at once. Of course I have been present frequently at this kind of thing; but I always like to give chapter and verse. Now the first wild Siskin mentioned was the second one caught that season; for they do not come here every year; but the little bird from his place on the ground was able to discover high up in the air what we could not, though intently on the look-out. He called his friends. This was not chance on his part; it was design: he called at the right time; he saw the wild bird.

Hence I say that birds in migration have the benefit of superior vision; they see their way. In the ‘Arabian Nights Entertainments’ mention is made of the speaking bird in a cage, which no sooner began to warble than he was surrounded by Nightingales, Chaffinches, Larks, Linnets, Goldfinches, and

every species of birds of the country. It is clear that these stories, divested of the incrustations of time, had a residuum of truth; Sinbad's voyages clearly so, like our nursery songs, as I have shown in the "four and twenty Blackbirds baked in a pie." The speaking bird was simply a *call-bird*, which is nothing very curious to us, to them strange enough.

Migrants follow each other in a stream—that is to say, those which flock for safety and guidance, which Warblers do not, as a rule. If a person stand a few hours early in the morning in the autumn watching their departure, perhaps a Swallow will pass, in two or more minutes another after him, and so on; but they all go the same road, as clearly as we should do with hedges and guide-posts. I mean, if you have a group of trees on one side, and a house on the other, if the line of migration travels between these two, all the birds will keep to it in a way which is perfectly astonishing. This I have often seen. Let us now suppose a young Nightingale, whose food is abundant, to be urged by migratory impulse to go where he has never been before, about July 7, by himself; for the old birds have not yet moulted, and are not ready to start till the middle of August. He feels restless; he cannot go north; why? because the same reason prevents him which regulated his father and mother. *The conditions of life* are not suitable. Nightingales cannot go north beyond a certain point, because the *conditions of life* are not suitable. It is vain to ask what are these? what is meant by the expression? Every thing in which is the breath of life, nay more, every plant, I may almost say every living thing acts in the same way as this Nightingale under discussion. It knows by many indications if the conditions of life are to be found in the place where it happens to be. If they are not, the plant, as it cannot move, dies; the bird goes away. If he starts north, finding matters worse, he turns. We have now shut him out of the north, and we will suppose that our young bird sets off to the east. He is brought up by the sea; following the coast-line he travels south, till the wind being suitable permits him to cross. But imagine a bird to turn west and to proceed towards Wales, what then? It is not brought up by the sea, because it never reaches it; but it is

hindered and turned by unsuitable ground, which acts as does the sea. We know that the Great Sahara desert is such a barrier to the *Sylviidæ*; and the mountains and rough ground of Wales in the same manner form boundaries.

Mr. Blyth appears to attribute a northern and southern knowledge to the Nightingale (*vide* Thompson's 'Birds of Ireland,' vol. i. p. 426, note; Yarrell, ed. 4, p. 318). If this knowledge exist, it may arise from the double system of respiration in birds, more developed in some than others. Dr. Jerdon says:— "In the Hornbills the very phalanges of the toes are hollow and communicate with the lungs. A high and rapid aeration of the blood is thus maintained; and the great energy and irritability of the muscular system of birds is a direct consequence of this amount of respiration." Query, true of the phalanges?

Atmospheric influence has certainly considerable effect: one constantly sees that. In my flock of Gulls their motions correspond exactly to the weather-cock over their heads; they point more truly to the wind. On some days every bird is sitting down, as sheep and horned stock may be observed to repose, each individual being on the ground. Shepherds will tell that sometimes a sort of jumping fit runs through the whole flock, and their antics are very pretty. This is atmospheric.

The above remarks do not apply to old Nightingales; they know their way. I have taken the most difficult case, that of the young bird without a guide, who does not moult his primaries.

Thus we see how he finds his way; *his right* path in England is south, and to it he must come. The difference between him and the old birds of experience and strong flight may be observed by the eye of one accustomed to watch migration, in Larks particularly: the veterans travel with such a determined shoot forward.

Why do some go and some stay, as among Larks and Goldfinches in England, and (as stated by Darwin) the Mocking Thrushes (*Mimus polyglottus*) in Louisiana, of which some are harbour birds and the rest migrate to the Eastern States? To understand this we must look a little into their respective

habits. Let me here do justice to a previous writer. In the 4th ed. of Yarrell, part vii. p. 546, the editor, in a note, says :—" Mr. Knox " is " the first English ornithologist who pointed out the essential difference of the mode of emigration and immigration." I had not read Mr. Knox's remarks when I made a note of what I am about to say ; but I am pleased to find that he had already stated many facts in which I agree. I also observe that immigration goes on along the N.W. coast of England almost at the same time as emigration on the S. coast. Our British-born Larks are largely recruited in early winter by arrivals from the north of Europe, while those bred in the north of England are obliged to travel south. The Gold-crest comes in and goes out in the same way. This is not migratory impulse : hunger, frost, and snow force them down. Mr. John Cordeaux, in his " Notes from North Lincolnshire," ' Zoologist,' 2nd series, March 1875, p. 4362, says :—" On the 29th, 30th, and 31st December, 1874, the cold was extreme. I heard of one instance in which as many as fifty Larks were found all in a heap in a turnip-field, frozen to death ; they had apparently collected together for warmth, but had not been able to withstand the intense severity of the night." Two reasons would cause a return : those who came would go back to their old haunts when the pressure was removed ; the Britishers, however, having hatched and brought up young in England, always return to their English homes, as Pigeons once having bred in a dovecote rarely desert it. I have the evidence of Lark-catchers, who state that they know the foreigners, which go by the name of "*Dutch Larks*," and that they are larger ; they can tell the English birds directly, and pick them out. Mr. R. Gray, in his ' Birds of the West of Scotland,' p. 122, has noticed the extraordinary variation in size of some of the Larks. " Out of two dozen examined, six or seven specimens were not much over half the bulk of the others. It is strange that the difference in size is so very decided." This was in severe weather. The larger birds were, according to our experience on the south coast, the foreigners. Again, Mr. R. B. Sharpe (P. Z. S. 1874, p. 637), " On Larks of Southern Africa," says of *Calendula*

crassirostris, "As in other South-African Larks, great variation in size of bill exists in the present species." Great variation in size exists in so many birds when you have a *large* series of each, that I suspect it would be discovered in the great majority of species could the opportunity of comparison be obtained. An enormous stream of Dutch Larks landed somewhere about Beachy Head during the snow of 1874-75; and these birds, joined by ours, passed Brighton, December 16 and 17, 1874.

The "Dutch Larks" never stay here; they return when the pressure is over. Of Goldfinches some go, some stop: many more go than remain; about three fourths of the whole depart. There is a plant called button-weed found in moist situations in meadows, the seeds of which no Goldfinch can resist. Darwin says the Goldfinch eats "the seeds of teasle (*Dipsacus*) and betony or *Scrophularia*." During the summer and autumn this bird feeds upon these plants; but in winter, as all the seeds are shaken out, the Goldfinch is a ground-bird as far as food is concerned. I have, indeed, seen it in flocks in oak trees at that period; but commonly it must get its living below. Food must then be scarce; and only those remain which the land can support. Therefore hunger perhaps is the chief incentive; but migratory impulse may act also. Before leaving this species, I may say that it is a rapidly decreasing one in the south of England: formerly the Goldfinches passed Brighton in flocks; now they come a few together. It is not, however, here only that the slaughter goes on; in every part it is the same.

A man who had been fifty years a birdcatcher told me that before eight o'clock one morning he caught 25 dozen, all hens, long ago. At that time there was no railway. He sold them all at Shoreham, and they went to the north in ships. They fetched 2*d.* each. He caught 10 dozen at one pull once, being the whole flight as it came along. I do not indorse these statements; but great numbers used to be captured.

It does not appear that our people eat the Goldfinches; but Lieut.-Col. L. Howard L. Irby, in the 'Ornithology of the Straits of Gibraltar,' p. 122, says that in West Andalucia they appear in countless flocks and

are caught (as here) in clap-nets. "It is not unusual to see a man with bunches of several hundreds, which are sold at a ridiculously low price."

4. *Where do they migrate to?*

Of course some return to the north, as Redwings and other winter visitants; some go south. Livingstone says, in his last Journals, vol. i. p. 336:—"Swifts, Senegal Swallows, and the common Dark-bellied Swallows appeared at Kizinga in the beginning of October 1868." This place is situated on Lake Moero, 3000 feet above the sea, just to the west of Lake Tanganyika, and far below the equator; but *Hirundo rustica*, our common Swallow, is stated to reach the Cape.

5. *Why do they return?*

Their return is perhaps hardly less marvellous than their departure, being contrary to the principle in Nature of least action. The love of home (a feeling common to birds, beasts, and fishes—may I not say, to all creatures?) probably operates in a great degree. Cosmos is constituted on a nice balance of forces. If migratory impulse and other causes draw a bird away, one of the greatest attractions takes him back: this is the *law of natural location*—one which causes every creature to wish to remain round a certain spot. Without it the earth would be nothing but confusion, like the meeting in a road of several flocks of sheep belonging to various owners. The most deadly fights would ensue; for every animal, man included, would do battle for the best situation. By means of this law each thinks his own the pleasantest; and it has had more influence on species than "natural selection," because it keeps the breeds and races from mixture. In short, it preserves order; without it all would be chaos.

Buckland says ('Curiosities of Natural History,' vol. ii. p. 285):—"Strange things are heard at midnight by fishermen from Dover drifting along far out at sea. All of a sudden a curious rushing and rustling sound comes over the boat, accompanied by low musical twittings; it passes

away, and in a few minutes is again repeated. This is called the 'Herring Piece;' the Folkstone people call it the herring 'Spear.' These are the Redwings, who choose a dark still night to cross the channel, which is always about the herring-fishing time. No harm follows. Not so with the 'Seven Whistlers;' they come all of a sudden, singing 'Ewe, Ewe.' It is the noise of the Long-billed Curlews; there is always an accident when they come."

General Remarks.

There is one thing which has often been noticed, viz. that a suitable spot will almost always contain a species. There is a place near Brighton where a pair of Wood-Wrens have been shot and their eggs taken every season till lately for thirty years or thereabouts. Nevertheless each year finds a fresh pair in that situation.

From a different cause (the advance of houses on Brighton beach) the Ring-Dotterel has been driven back to Shoreham; yet I have myself taken a nest on a spot where scores and scores of persons passed daily. Probably the species had bred there hundreds and hundreds of years, and it clung with tenacity to its traditions.

Capt. F. W. Hutton, in his article "On the Geographical Relations of the New-Zealand Fauna" ('Transactions of the New-Zealand Institute,' 1872, vol. v. p. 235), says:—"That we should have two Cuckoos which migrate regularly to other countries, each more than a thousand miles distant, is a fact that deserves special attention; for I know of no parallel case in any other part of the world, the distance across the Mediterranean being less than half that travelled over by our summer visitants. The phenomenon of a bird at a certain season of the year flying out to sea to an island more than a thousand miles distant is remarkable enough, but is rendered still more so in the case of the little Shining Cuckoo (*Chrysococcyx lucidus*, which is supposed to come from Australia), by there being no apparent necessity for it; for this bird migrates east and west, and not from a warmer to a colder climate, and

two other closely allied species which inhabit Australia never leave the country at all. The Long-tailed Cuckoo (*Eudynamis taitiensis*), which comes to us from the equable climate of the South-Sea Islands, cannot be supposed to have its migrations caused either by alteration of temperature or by want of food.

“Another remarkable fact that has been quite lately brought to light is that the shining Cuckoo of the Chatham Islands is not the same variety as that visiting New Zealand, but is almost, if not quite, identical with an Australian species (*C. plagosus*). This curious fact proves how strong must be the force of habit; for these birds, in their migration to and from the Chatham Islands, must pass over, or at least in sight of, New Zealand; but instead of stopping, after a journey of 1400 miles, they continue on for 450 more, until they reach the little island that they have selected as their home.”

Mr. Harting, in his ‘Handbook of British Birds,’ p. 124, gives five instances of the occurrence of the Yellow-billed Cuckoo (*Cuculus americanus*, Linn.); of these, two are in Ireland, and three on the western coast of England. Query, did these birds fly straight across from America, as their several localities would appear to intimate? or how did they get to the British Isles?

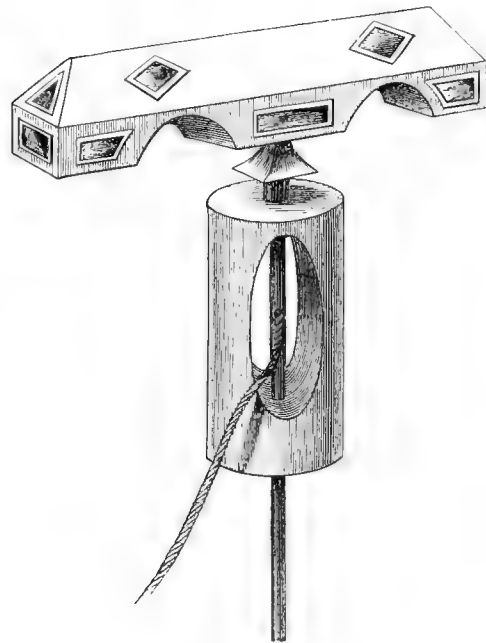
In the P. Z. S. 1872, p. 496, “Mr. Sclater exhibited a skin of the Yellow-billed Cuckoo of the U. S. of America (*Coccyzus americanus*), which had been shot by Mr. W. H. Hudson at Quilines, Buenos Ayres, April 21, 1870,” the only example of this bird he had ever obtained. “Mr. Sclater exhibited specimens of this widely wandering species from Jamaica, Mexico, and the U. S. of Columbia.”

One thing appears clearly, that migratory impulse is not climatal: it affects birds alike in the Arctic regions, perhaps even to the pole, and on the equator; and how far to the south, our knowledge of the Antarctic regions is too small for us to determine. The limits of its action are unknown; if it has any other than those of this planet. Mr. Robert O. Cunningham states, ‘Strait of Magellan,’ p. 319:—“We often saw specimens of a tiny Humming-bird (*Trochilus forficatus*) in the channels, in strange contrast with the gloomy

nature of the climate. I believe it extends to the southern extremity of Fuegia, while northwards, if I am not mistaken, it ranges as far as Peru—thus passing through every variety of climate, from an intensely humid cold region to a tropical one where rain hardly ever falls.” It is remarkable that, for certain purposes, Nature has instituted migration; for another purpose, as the converse, she has taken away flight. The loss of volant power is as if a man tethered his cow in a clover-field; he wishes it to stay there to keep down the abundance in that spot; the cow must not go away, but act on that particular place with regularity. To prevent migration in a locality where the bird is always wanted, volant power is absent. It was so with *Alca impennis*, which has been, as all flightless species will be, quite destroyed. Of *Apteryx* and *Dinornis* &c. it is said that when they were segregated from others, they lost the power of flight from disuse of their wings; but if we contemplate the Ostrich and different members of the family, there does not appear to be much governing value in the argument.

Mr. A. R. Wallace states, in the ‘Malay Archipelago,’ vol. ii. p. 66:—“From a small island a hundred miles north of New Guinea, a Nicobar Pigeon, which must have come from New Guinea, fell into the water exhausted before it could reach the shore.” He proceeds to argue that it was safer for a ground-feeding bird in New Zealand not to fly at all than to fly badly, because of the distance of New Zealand from other land; “while in a vast archipelago strewn with islands, it was advantageous to be able occasionally to migrate; then the long and strong-winged varieties maintained their existence longest, and ultimately supplanted all others.” His argument gives safety to the birds as a cause of volant and non-volant power. My idea is, *natural location* was the cause, viz. the necessity for creatures to remain in allotted spots to carry out the work required of them in the chain of life in those places. Safety to the animal is always made, as I view things, subordinate to its use and duty, though without doubt its safety has been guarded. I can understand the theory that a bird in an oceanic island, far from other land, might, with no enemies, cease to use its wings, being a ground-feeder, and thus at last lose

To face page 89.]



A LARK-GLASS.

the power of flight ; but as there are flightless birds which inhabit continents, the same argument does not apply to them. How the loss of flight came about I do not say ; “ the how,” that is ; but “ the why,” according to my theory, is as I state. Birds should be looked upon in connexion with all other life, animal and vegetable, and their work with reference to the earth, most parts of which require their presence to preserve a proper balance in nature.

In my view, this globe requires birds, beasts, fishes, insects, poisonous serpents, &c. If we ask the reason, we may not always be ready to answer ; and man constantly in his effort to improve, by destruction of what he thinks useless, blunders. By an invisible law those creatures which are required are found in suitable situations.

But to return to the Larks. The mode of shooting them on these downs has been so well described by Mr. A. E. Knox in the ‘ Ornithological Rambles,’ under the head of “ Chasse au miroir,” that I cannot well add any thing, but will only give a woodcut of “ a Lark-glass,” and state that during “ the flight,” when the sun shines on the revolving implement, the poor birds come and are shot as fast as a gun can be loaded and fired—which I imagine to arise partly from curiosity, and partly from the well-known attraction which fire or flame has for birds, beasts, insects, and fishes : the sparkle of the sun in the glass looks like flame. But, of course, this is only a theory of my own. I have seen other birds attracted (Rooks, for instance), but not so much as Larks ; and I do not assign the above cause as other than a possible one. In confirmation, I may call attention to the mode of taking Larks in Andalusia at night with a bell and lantern by a boy. Lt.-Col. L. Howard L. Irby, in the ‘ Ornithology of the Straits of Gibraltar,’ p. 112, says he has “ known a boy bring in six or seven dozen Sky-Larks at a time ” in this way. He adds, “ Calandras, Buntings, Larks, in fact any birds that sleep on the ground, can be thus taken.” Finally, a watch has one regulator, animal life has two, pleasure and pain. Of these, pain is the root and basis of migration. With certain exceptions, migration is occasioned by uneasiness.

EMBERIZA PUSILLA, *Pall.*

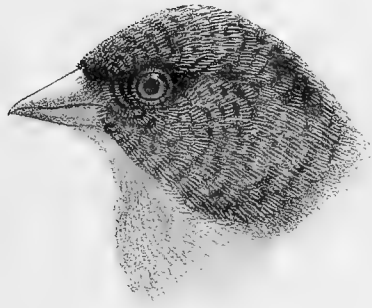
(Small Bunting.)

MR. GOULD calls this "one of the most ubiquitous Buntings in existence." An example of this species was found alive at Brighton, Nov. 2, 1864, and placed before me. Mr. Gould took it to the Zoological Society's Meeting, Nov. 8, and figured it in his fine work the 'Birds of Great Britain.' A notice of it appeared in a letter of mine to the 'Ibis,' 1865, new ser. vol. i. p. 113. No second British specimen has been seen, as far as I know. The editor of 'Stray Feathers,' vol. ii. no. 6, p. 497, says, "Lieut. Wardlaw Ramsay shot a female of this species on the 28th March below M. de Roepstorff's house on Mount Harriet. Davidson saw and noted it. Lord Walden confirms the identification. It must now be included in the avifauna of the Bay of Bengal."

FRINGILLA MONTIFRINGILLA.

(Bramble-Finch.)

A CURIOUS instance of gular melanism occurred in two cock Bramble-Finches during the grand flight of Larks and other birds after the heavy snow, Dec. 17, 1874, to which I drew attention in the 'Times,' Dec. 24, 1874. The throat was quite black, with the exception that the brown tips of the feathers, which would have come off in the spring, had not yet done so. A cock with the ordinary throat is shown in the illustration. A similar case in a Quail (*Coturnix dactylisonans*) is also figured. It has not yet been determined if this arises from age or abnormal variation. It is only when masses of a species arrive that this kind of difference is observable.



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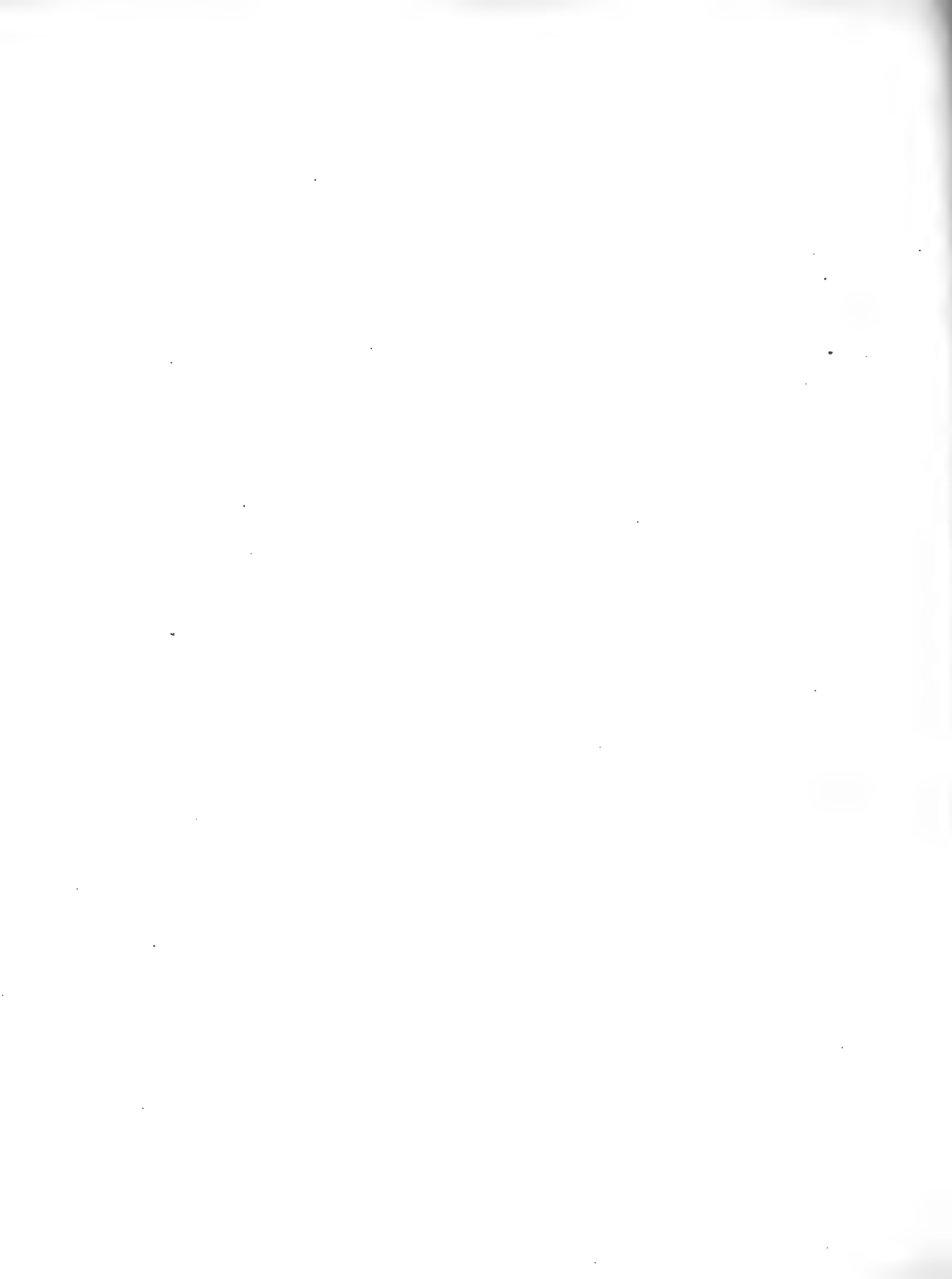
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1. FRINGILLA MONTIFRINGILLA, ♂.

2. FRINGILLA MONTIFRINGILLA, ♂, VARIETY.

3. COTURNIX DACTYLISONANS.

4. COTURNIX DACTYLISONANS, VARIETY.





1.



2.



3.



4.

J.G. Keulemans del.

Mantern Bros. imp

1. EMBERIZA HORTULANA. ♂.
2. EMBERIZA CÆSIA.

3. ORTYX TEXANUS. ♂.
4. ORTYX TEXANUS. ♀. VARIETY.

Messrs. Sharpe and Dresser, in their 'Birds of Europe,' pt. vii. Oct. 1871, p. 9, mention a specimen with the black throat in the collection of Mr. John Henry Gurney, jun., also of Mr. Bond. Latham, in his 'Synopsis,' likewise says, in some the throat is black.

Another example in my own cabinet, obtained about Dec. 1, 1874, is a cock supposed to be assuming the plumage of the hen. The chin is as usual; but the grey cheeks, like those of the female, are conspicuous.

As a contrast to the melanism in the throat of the Brambling and Quail, I have given two illustrations of abnormal gular albinism in the Goldfinch (*Fringilla carduelis*), and one also in the Lark (*Alauda arvensis*). The latter bird has been kept in my aviary for some five or six years; it has never changed in any way; the white throat was exactly the same when it was caught; and a famous singer it is.

On the 12th Oct., 1858, I was present when one of these Goldfinches with a white throat was taken in a clap-net. The birdcatchers will tell you that this sort always breeds well with a Canary; but it is rare. This is probably only fancy, though there is a general and widely spread belief in the idea among the class. The gular albinism which occurs in this species is not confined to England only; for though Thompson does not notice it in his 'Birds of Ireland,' Mr. Robert Gray, in the 'Birds of the West of Scotland,' says, p. 185:—"The Goldfinch seems to vary greatly in size. A specimen from Ireland now before me is $4\frac{3}{8}$ inches in length; another from Dumfries is 5 inches. The first-named has a white throat; both were killed in April: the Irish bird looks as if it must have been, when in the flesh, only half the size and weight of the other." Of the two Goldfinches with the white throats in the illustration, the best, the more marked case, was a specimen killed the last week in October 1874, an old bird; the claws are quite white, and the skin of the throat also: both are in my collection. These white specimens are said to be more delicate in constitution than others, which is what one would expect to find. The white appears to commence close up to the base of the under mandible usually, but not always; and there is great difference

in the size of it. Mr. John Cordeaux, in the 'Birds of the Humber district,' p. 64, says of the Rook, "A not uncommon variation shows a few white feathers on the throat." I have a similar example in the Pied Wagtail.

We all know well the seasonal changes affecting the throat in many birds—black to white, and *vice versâ*,—not to multiply instances, as in the Razor-bill (*Alca torda*); but there appears to be, over and above this, a tendency in a weakened constitution (from which I apprehend abnormal variation in colour frequently springs) to attack this part more than some others, as in man.

Mr. Dresser has kindly lent me several specimens from his collection, which I have figured side by side, viz. :—

Ortyx texanus, variety (male), collected by himself: locality, San Antonio, Texas, December 1863. Normal bird of the same species (male), December 1863. Also

Emberiza hortulana, normal male: Sweden. *Emberiza cæsia*, variety.

Mr. Dresser has also been so good as to provide me with the following translation from Severtzoff's 'Fauna of Turkestan' (Turkestanskije Jevotnie):—

"Severtzoff, speaking of *Emberiza hortulana* and *E. cæsia*, writes (Turkestanskije Jevotnie, p. 118) as follows :—'The latter is certainly not a mere climatic race of the former, which in Turkestan is precisely similar to what it is in Europe, having a greenish-grey head and a yellow throat. But we have here two forms or races of *E. cæsia*, and in several instances I have seen intermediate specimens showing a gradual passage between the two forms. These forms are *E. cæsia*; which has a whitish throat, and *E. rufibarba*, which has a light-brownish throat; but this difference in the throat is not of specific value. *E. hortulana* inhabits the bushes, whereas *E. cæsia* inhabits the rocks and stony hills. Both forms are common during the breeding-season, and are not found far apart; therefore the differences are not to be attributed to climate.'"

PYRRHOCORAX GRACULUS.

(The Chough.)

OF all British birds the "Cornish Chough" is *the* one of my affections. It becomes now more and more scarce.

Shakespeare speaks of

"Russet-pated Choughs, many in sort,
Rising and cawing at the gun's report."

Midsummer Night's Dream, Act iii. Sc. 2.

'Nature' says (December 28, 1871):—"Russet-pated Choughs,' *i. e.* having red *pattes* or feet (*cf.* the heraldic *croix pattée*), not a red pate or head."

I have kept several of this species in captivity; but they are very expensive to buy, and do not live long. In July 1859 I saw two in the Regent's Park, at the Zoological Gardens. The man who obtained them lost his life shortly after, in a fresh attempt for more. No one who has only known stuffed specimens can imagine the brilliancy of the colours and the agile and graceful movements of these most charming birds.

In the 'History of Sign-boards,' by Larwood and Hotten, 7th edition, p. 203:—"The three black birds (Choughs, Crows, and Ravens) are a common sign; then there is the Chough at Chard, in Somerset, and the Three Choughs at Yeovil." "On Friday, August 27, 1770, at the Three Crows in Brook Street, Holborn, the coroner sat on the body of Thomas Chatterton, and ten jurymen returned a verdict of *felo de se*." Such was the sad termination of the career of the "marvellous boy," the gifted Chatterton.

CUCULUS CANORUS.

(Common Cuckoo.)

“If the Cuckoo came when the tree was bare, pasture would be bad and corn good; if the tree was in leaf, the reverse.—*Old Saying.*”

Shakespeare's England, by G. W. THORNBURY, p. 276.

THIS species has a wide range. Mr. Allen O. Hume found *Cuculus canorus*, Linn., at an elevation of 11,000 feet, close to the snow, in June 1870, in Ladak. Mr. R. Swinhoe heard it in May on “the hills round Chefoo,” province of Shantung, North China (‘Ibis,’ 3rd series, vol. v. January 1875, p. 125). I do not say any thing here on the Baldamine theory of Cuckoos’ eggs, but refer my readers to ‘The Ibis’ and ‘Zoologist,’ in which I have stated nearly all I can. Some Cuckoos’ eggs are hatched very late; I have one egg taken July 19. Now it is manifest that an egg on July 19 could not turn out a bird which would be ready to cross the sea before the middle of September. Accordingly we find, when out shooting, young Cuckoos hanging about; and I have done so. The Swift, which comes late and goes early, does not moult in England. A bird has plenty to do after its nesting-duties are over to get through the moult and prepare for migration, particularly one which has two sets of eggs and young.

Our Cuckoo is often spoken of as an example of the “mimicry” of Bates and Wallace; and the fact cannot be denied that it resembles some Hawks. This even has attracted the attention of keepers &c. Usually the creature that mimics is supposed to derive an advantage by its resemblance

to the one mimicked. Now, June 17, 1874, I saw a cock Blackbird in full pursuit of a Cuckoo. They passed close to my face, the Cuckoo being much alarmed. The resemblance here *did not* avail the Cuckoo as any defence, on the contrary. If a person goes out hunting he puts on a red coat; but another about to commit a burglary would hardly clothe himself in so conspicuous a garment. The Cuckoo breaks into, so to speak, the nests of other birds, who, if they saw a Hawk, would invariably direct their attention to it at once; whereas concealment is necessary to the operations of the Cuckoo, and the less its plumage creates observation the better. Theory on these subjects is always dangerous; nevertheless to both Hawk and Cuckoo the plumage may tend to safety in a resemblance to the bark of trees.

Mr. Proctor, quoting Voltaire, in 'The Orbs around us,' observes that "theory is like a mouse which passes through nineteen holes and is stopped at the twentieth." I should not wonder if, instead of the Cuckoo being a mimic of a Hawk, both should be found to mimic something else.

In the Common Heron, which perches on the top of a wood, its form standing out against the light, the plumage of course matches the blue of the skyscape; and I have observed how difficult it is to discern the bird in such a situation. I would not, however, say any thing against mimicry, which appears to be an established fact and can be read about in Mr. Wallace's 'Natural Selection,' in which moths resembling birds, dung, and mortar, and Mr. Salvin's case of mimicry among Hawks, are salient examples and afford room for very interesting speculation.

Colonel Irby ('Straits of Gibraltar,' p. 36) gives the Moorish name of the Sparrow-Hawk, "Bou-umeira takouk" (Cuckoo-Hawk).

MEROPS APIASTER.

(The Bee-eater.)

MR. TRISTRAM (in his 'Catalogue,' 1857,) says, "*Merops apiaster* breeds socially in the banks of the desert 'wadys,' where the soil is not too hard. It pierces a very narrow hole horizontally for a yard or more, frequently with most sudden turnings, and then forms a most spacious chamber, and often a second, each about a foot in diameter, where it deposits from four to seven eggs. It is looked upon by the Algerians as the favourite harbinger of summer."

The 'Times' correspondent states, Aug. 28, 1854 :—"Near Varna, on the Black Sea, a thin flickering cloud was observed advancing from the sea; presently over our heads, at the distance of a few yards, passed millions of locusts; as far as the eye could reach they spread over the country. After going by in sheets for a quarter of an hour, they became less dense; at last the rear-guard of tired stragglers came, many of whom settled upon the grass. A whole flight of Bee-eaters, Locust-eaters, &c. followed. They in their turn were pursued by Hawks, Kites, Falcons, &c."

HIRUNDO RUSTICA.

(The Swallow.)

WHAT is there about the Swallow which has caused it to be connected with two such events as the Deluge and the Crucifixion by the Assyrians and the Scandinavians respectively? Mr. Smith translates from the 'Izdubar

Legends' (dating at least two thousand years before the Christian era), "I sent forth a Swallow and it left. The Swallow went and turned, and a resting-place it did not find, and it returned." "This was from the ark, and *I* refers to Hasisadra, the Noah of this terra-cotta tablet."—*Nature*, April 8, 1875, p. 441. Again, in Lloyd's 'Scandinavian Adventures,' we find, "The Swallow is looked upon with a sort of love and reverence, and it is considered sinful to destroy the bird or its nest. This feeling thus originated:—When our Saviour was crucified a little bird came and perched upon the cross, peered sorrowfully down upon the sufferer and twitted, 'Hugsvåla, svala, svala Honom'—that is, Console, console, console Him. Hence it obtained its name Svala. In consequence, Heaven ordained that blessings and prosperity should ever afterwards attend those who protected it and its nest. For a long time after, it would sit upon the cross; but when this was taken down by the enemies of Christendom and buried in the earth, it flew sorrowing from the spot."

A doubt has been entertained about the specific difference, if any, between *H. rustica* and *H. cahirica*. Mr. Sharpe and Mr. Dresser have an article on *Hirundo rustica* (P. Z. S. 1870, p. 244); and at p. 305 the former gentleman says:—"There cannot be the slightest doubt that the bird supposed to be *Hirundo cahirica* by ornithologists, from Western Africa, is only *H. rustica* shot in full spring plumage on its way northwards." Mr. Dresser, in his 'Birds of Europe,' part xxxvii., figures *H. rustica* and *H. Savignii*=*H. cahirica*, Licht., side by side; and I cannot do better than refer my readers to that work, one of our standard repertories of ornithology and indispensable to all ornithologists. Mr. Dresser gives us the benefit of his opinion thus:—"I can only trace the occurrence of the present species" (*H. Savignii*) "in Palestine and North-east Africa. Messrs. Finsch and Hartlaub go so far even as to unite this species with *Hirundo rustica*—a view which I cannot for a moment indorse; but I think it more than probable that examples of the common Swallow in full spring plumage, having the underparts tinged with rufous, have been mistaken for the present species; and

hence it has been recorded as occurring in various parts of Europe, and even, by Mr. Gurney, in Great Britain; but I have as yet failed in finding any example of *Hirundo Savignii* from a locality north of the Mediterranean."

Amid the diversity of opinion among those whose dicta are of the best, I shall not pretend to decide, and will only say that the variation in colour between the two species, as seen in the Plate, exactly corresponds to that between the two Owls now hanging against my wall, viz. the Barn-Owl and the Danish Barn-Owl, the latter figured in this work. These two Owls are declared to be the same species, and the two Swallows to be different—which appears somewhat paradoxical. The Swallow which arrives at Brighton in April certainly has its underparts strongly tinged with rufous.

CYPSELUS MURARIUS.

(Swift.)

I HAVE always heard Swifts called Devellings by the country people. In August, on the Downs and beach near Shoreham harbour, many are observed on their departure.

Every now and then there comes a season most fatal to Swifts and Swallows. Mr. Henry Stevenson, in his 'Birds of Norfolk,' vol. i. p. 345, mentions that "on the mornings of the 5th and 6th June, 1816, the gardeners could have picked up hundreds of these birds (Swallows) in their hands. They were collected in knots, and sat on the grass in parcels of thirty and forty. This, there is reason to believe, was owing both to cold and hunger." "May 20, 1859, a pair of Swifts were taken in a semitorpid state from under the eaves of a church." "May 29, 1869, I observed a great mortality in Swifts; there was snow in Yorkshire May 28, and several clipped sheep were starved to death." In June 1855 hundreds of *Hirundo rustica* were found dead

from the unusual cold ; some scores were picked out of the river Ouse, Huntingdonshire, near S. Neots ; others settled on the heads of men ; and their eggs were deserted.

Bishop Pontoppidan says, "Everybody knows that, towards winter, Swallows plunge into freshwater lakes." If he had seen the Swallows in the Ouse, how triumphant would he have been ! Nevertheless he was a very fine old fellow, and, for his time, did good service. Even in the present day his works are read with pleasure.

As regards the ornithology of Great Britain, the Swift resembles the Gull (*Alca impennis*, Linn.) in the abnormality of its members of locomotion. One is a fowl of the air, rarely coming to the ground ; the other is a fowl of the sea, which seldom resorts to the shore : one, therefore, has abnormal wings ; the other, abnormal feet. Concerning *Alca impennis* I say nothing ; but of the Swift, a word or two. Owen states that "birds tread on their toes only : not more than three toes are directed forward ; the fourth, when it exists, is backward and is shorter, usually rises higher from the metatarsal, and takes less share of the superincumbent weight. No two toes in the same foot of any bird have the same number of joints ; also, there is a constant numerical progression in the number of the phalanges or toe-joints from the innermost to the outermost toe. When the back toe exists, it is the innermost of the four toes, and has two phalanges ; the next has three ; the third (or middle of the front toes) has four ; and the outermost, five phalanges. When the back toe is wanting the toes have three, four, and five phalanges respectively. When the toes are two, as in the Ostrich, their phalanges are respectively four and five in number, thus showing those toes to answer to the two outermost in tridactyle and tetradactyle birds."—*North British Review*, no. lxxiii. p. 247, art. 10, Feb. 1860.

In an article by P. L. Sclater, M.A., Ph.D., F.R.S. (P. Z. S. 1865, p. 593), he says, "I consider that the Swifts have no relationship whatever with the Swallows (*Hirundinidæ*)." He proceeds to describe the form of the sternum of the former, and then comes to the phalanges of the toes :—"The

medial and external digits have only three phalanges, like the inner digit, as was first pointed out by Nitzsch in 1811. This is the case, I believe, with all the species of *Cypselus* and *Panyptila*. . . . In all the other genera of Cypselidæ, as far as I have been able to ascertain, the normal rule is followed, the medial digit having four phalanges, and the outer digit five."

"One of the most remarkable points in the structure of the Cypselidæ is the great development of the salivary glands. In all the species of which the nidification is known, the secretion thus produced is used more or less in the construction of the nest. In most cases it forms a glue by which the other materials are joined together, and the whole nest affixed to the rock, wall, or other object against which it is placed. In some species of *Collocalia*, however, the whole nest is made up of inspissated saliva, and becomes the edible bird's-nest so well known in the East."

The same author (P. Z. S. 1866, p. 123) mentions a deviation in the Caprimulgidæ from the normal rule as regards the phalanges of the toes.

COLUMBA PALUMBUS.

(Wood-Pigeon.)

MEM.—Nov. 9, 1859. We had a flight this morning for two hours from seven o'clock A.M. . . . Thousands of this bird passed Brighton, slowly going west.

May 23, 1861. My father's holts at S. Neots, Huntingdonshire, have just been cut, which enables the Wood-Pigeons to feed upon the potato-like portion of the round-leafed ranunculus (*Ranunculus rotundifolius*), of which they are very fond. The local name of this small fruit is king-cob; it comes at the joints of the stem, not the root, and is of the size of a small pea; it looks like a new potato. The flower of the plant is exactly the same as that of the buttercup. The Pigeons come in numbers to feed. Waterton,

though friendly to the Ring-Dove, says that it injures the rising crop of clover considerably.

“The ‘Pigeon’ was a tavern at Charing Cross in 1675 (‘City Mercury,’ Nov. 4, 1675). The ‘Three Pigeons’ were very common: there still exists an inn of this name at Brentford. It is a house of interest—in all likelihood one of the few haunts of Shakespeare now remaining—as being, indeed, the sole Elizabethan tavern existing in England, which, in the absence of direct evidence, may fairly be presumed to have been occasionally visited by him (Halliwell’s ‘Local Illustration of the Merry Wives of Windsor’). It was kept at one time by Lowin, one of the original actors in Shakespeare’s plays, and is often named by the old dramatists. Bat Pidgeon, the famous hair-dresser, immortalized by the ‘Spectator,’ lived at the sign of the ‘Three Pigeons’ in the corner house of St. Clement’s Churchyard, next to the Strand. There he remained as late as 1740, when he cut the boyish locks of Pennant.”—*History of Sign-boards, by Larwood and Hotten*, p. 218.

Mr. W. B. Tegetmeier, in the ‘Field’ (Sept. 7, 1872, p. 248), in an article on Gallinaceous and Columbine Birds, corrects Mr. Yarrell, and says:—“If the reader will turn to Yarrell’s ‘British Birds’ (vol. ii. p. 280) he will find it stated that the parent birds feed their offspring by ‘inserting their own beak between the mandibles of the young bird, and thus furnish them with a soft pulpy mass which is already half-digested.’ The old bird does not insert its beak between the mandibles of the young one, but *vice versa*; and the food is never half-digested, for the crop is not a digestive organ; it is either the curdy secretion or pulse or grain, that is disgorged as soon as possible after the old bird has fed.” Mr. Tegetmeier says also in this instructive article:—“Pigeons lay never more than two*, and in many cases only one egg. This paucity of eggs is connected with the mode of nourishing the young.”

* “The Passenger Pigeon, and the fruit-eating Pigeons of the genus *Carpophaga*, as far as has hitherto been observed, lay one egg, forming an exception to the general rule which obtains in this group, called Bipositores.”—*Guide to the Zoological Gardens*, 1875, p. 6.

Mr. Yarrell, in his first edition, gives a quotation from Booth's 'Analytical Dictionary,' which states that Pigeons "have no gall-bladder; and therefore the secretions of the liver are, as it is supposed, never converted into black bile, a fluid which has been in all ages associated with the irritable passions of mankind." We know with what the Dove has been associated. With reference to the gall-bladder, Mr. A. H. Garrod (P. Z. S. 1874, p. 249) states that "Nitzsch mentions the want of cæca to the intestine and gall-bladder in *Goura*. Hunter notes the same facts. Professor Owen ('Anatomy of Vertebrates,' vol. ii. p. 177) says that the gall-bladder is constantly deficient. This is so in most of the Columbæ; but, besides being developed in the Pteroclidæ, it is found in all the species of *Ptilonopus*, *Lopholæmus*, and *Carpophaga*."

Dr. Otto Finsch (P. Z. S. 1874, p. 94), "On a new Fruit-Pigeon, *Ptilonopus huttoni*, from the Pacific Island of Rapa or Opara," among other things, says:—"The geographical distribution of the Fruit-Pigeons in the numerous islands of the Pacific is very interesting, and confirms the rule that insular regions produce a great quantity of species, peculiar in many cases to very small islands." He then gives numerous instances, and adds:—"In those island groups where two species occur, these are totally different and confined in their distribution to certain localities. . . . So small an island as Rapa produces one of the most remarkable of the group. We find it extremely difficult to explain what has caused such extraordinary phenomena." The article should be read in full.

OTIS TARDA, *Linn.*

(The Great Bustard.)

THE account of this bird, now unfortunately lost to England, has been so well and exhaustively written by Mr. Henry Stevenson, in the 'Birds of

Norfolk,' vol. ii. p. 1, with the advantage of reference to Professor Newton's notes, that I shall only mention one anecdote in addition.

About 1811 (though this date is uncertain) a shooting-party was held at Kingston Lacy, eight miles from Blandford, Dorsetshire, belonging to Mr. Henry Bankes, of Corfe Castle. Among the gentlemen was the late Sir William Oglander, Bart., who pursued a different beat to the rest. At the end of the day each recounted his experience; and the question being put, "Well, Sir William, what have you shot?" he answered, "ONLY seven Bustards." Clearly at that time the seven Bustards, though becoming, we must suppose, rare, were not thought much of by a Dorsetshire shooter, or as very wonderful!

Mr. Stevenson puts the extermination of the bird in Norfolk as taking place in 1838. According to Dietrichsen and Hannay's Nautical and Astronomical Almanacs, Bustard-shooting commences September 1; and ends S. Chad's day, March 2nd,—a circumstance no longer necessary, alas! for insertion in any thing of the kind. The bird appears to have been thought something of in 1512; for in the 'Percy Household Book' of that date, though no price is fixed, it is named, "but for my Lord's own mess at principal feastes, and none other tyme, except my Lord's commandment be otherwise" ('Antiquarian Repertory,' vol. iv.: Thompson's 'Hist. of Boston,' p. 676).

In 'Musæum Tradescantianum,' published 1656, p. 4, we have:—"The Bustard, as big as a Turkey, usually taken by greyhounds on Newmarket Heath."

GRUS CINEREA.

(Common Crane.)

THE Hon. Robert Curzon, in his 'Armenia,' p. 145, says:—"Of the great cinereous Crane, which runs faster than a horse, I shot one at full gallop with a rifle. My game was about 5 feet high. A man brought a Crane which he had winged into the poultry-yard, where he stalked up and down with a proud indignant air. He soon eat his corn with the rest, while he had a deep bucket of water for his own use, into which he used to poke his head continually. One day a servant, not knowing the bucket was placed for the Stork, took it up, when the bird flew at him, and seized him tightly by the nose, and there he held him a good while. He tried to hit his enemy with the bucket, but, owing to its long neck, the Crane could not be reached. The man's nose was sore and swelled for a long time." One of the Gulls kept in my garden also took hold of a man by the nose.

"'The Three Cranes' was formerly a favourite London sign. With the usual jocularly of our forefathers, an opportunity for punning could not be passed; so, instead of the three Cranes, which in the Vintry used to lift the barrels of wine, three birds were represented."—*History of Sign-boards.*

The beautiful illustration of the nest of the Cranes in West Bohemia, 'Ootheca Wolleyana,' pl. E, is well known, and the account of it, 'Ibis,' 1859 (vol. i. pp. 191-198).

CICONIA ALBA.

(The White Stork.)

“ ACCORDING to Arab tradition, Storks are Mirabuts turned into birds for a great sin ; and therefore they, even now, like to dwell on the cupolas of the mosques, and to sit upon the crescent. All over the East they are hurt by nobody.” (‘The Tricolor on the Atlas in Algeria,’ by Francis Pulszky, p. 109.)

“ In Holland, Denmark, and Northern Germany it is everywhere a welcome guest, and is known as a fire-fowl and baby-bringer. It is a bird of passage, coming with the storms, departing with them. He is the attendant and messenger of the goddess, with whom he arrives in spring ; and his red legs mark him also as a servant of the fire-god. In Hesse a waggon-wheel (emblem of the sun) is laid upon the roof for the Stork to make his nest on. The house on which he builds is safe from fire, even though the neighbourhood be burned down. He must not be killed, for he is a sacred bird ; nor should his nest be disturbed, lest the house be struck with lightning.” (‘Indo-European Tradition and Folk-lore,’ by Walter K. Kelly, p. 89.)

During the late war between France and Germany, the following appeared in the ‘Times,’ Oct. 25, 1870 :—“ We heard a story of communication between Old and New Breisach having been, up to within the last few days, entirely dependent on a Stork, who had a home in both towns, and who was in the habit of flying from one place of abode to another, burdened with letters and newspapers ; but the Prussian commandant discovered the existence of this novel postman, and clipped his wings.”

In the ‘Nile Tributaries of Abyssinia,’ by Sir S. Baker, ch. xxii. p. 547, is the following remarkable statement :—“ We made a direct cut across the flat country, to cross the Rahad and arrive at Abou Harraz on the Blue Nile.

During the march over a portion of the country which had been cleared by burning, we met a curious hunting-party. A number of the common black-and-white Storks were hunting for grasshoppers and other insects; but mounted on the back of each Stork was a large copper-coloured Flycatcher, which, perched like a rider on its horse, kept a bright look-out for insects, which, from its elevated position, it could easily discover upon the ground. I watched them for some time. Whenever the Storks perceived a grasshopper or other winged insect they chased them on foot; but if they missed their game, the Flycatchers darted from their backs, and flew after the insects like Falcons, catching them in their beaks, and then returning to their steeds to look out for another opportunity."

In the 'Heart of Africa,' by Dr. George Schweinfurth, translated by Ellen E. Frewer, vol. i. p. 119, we have, on the White Nile:—"It does not admit of a doubt that men and beasts exhibit singular coincidences and certain agreement in their tendencies. The Shilooks, the Nueis, and the Dinka tribes, stationed on the low marshy flats which adjoin the river, 'give the impression,' says Heuglin, 'that amongst men they hold the same place as Flamingoes do with reference to the rest of the feathered race.' The dwellers in these marsh-lands would probably have a web between their toes, were it not compensated for by the flatness of their feet and the unusual prolongation of the heel. Another remarkable similarity is the way in which, like the birds of the marshes, they are accustomed, for an hour at a time, to stand motionless on one leg, supporting the other above the knee. Their leisurely long stride over the rushes is only to be compared to that of a Stork. Lean and lanky limbs, a long thin neck, on which rests a small and narrow head, give a finishing touch to the resemblance."

Mr. Canon Tristram, whose works are always pleasing, from the healthy tone which pervades them, and the sound spirit in which they are written, gives a pelargic anecdote ('Nat. Hist. of the Bible,' p. 245), viz.:—"On the highest point of a large mass of ruin at Rabboth Ammon were the remains of a deserted pile of sticks, an old Stork's nest. One of these birds

had got its leg entangled and broken in a chink of the ruin, where it had perished miserably." Again (p. 247), "There is a well-authenticated account of the devotion of a Stork, which at the burning of the town of Delft, after repeated and unsuccessful attempts to carry off her young, chose rather to remain and perish with them. Well might the Romans call it *pia avis!*"

This latter bird was an unfortunate instance of the fallacy of the popular notion of immunity from fire ascribed to the species; neither had it made as felicitous a choice as Juvenal's Stork, which built its nest on the Temple of Concord at Rome (Sat. i. 116).

In the 'History of Sign-boards,' by Jacob Larwood and John Camden Hotten, p. 203 (Chatto and Windus), concerning the curious sign of the Storks, of which the vignette below is a copy, by permission, Coryatt thus speaks:—"There (at Fontainebleau) I saw two or three birds that I never did before; even Storckes. It is written of them that when the old one is become so old that it is not able to helpe itselfe, the young purveyeth foode for it, and some time carryeth it about on his backe; and if it is so destitute of meate, that it knoweth not where to get any sustenance, it casteth out that which it hath eaten the day before, to the end to feede his damme. This bird is called in Greeke *πέλαργος*, whence cometh the Greeke word *ἀντιπελαργεῖν*, which signifieth to imitate the Stork in cherishing our parents."

This fabled virtue of the Stork suggested the sign to many continental booksellers and printers. The Two Storks was the sign of Martin Nutius of Antwerp, 1550, and his son, Philip Nutius. Their colophons all represent a young Stork feeding an old one, sometimes carrying him on his back, with the motto, "*Pietas homini tutissima.*"



'Two Storks.' (Antwerp, 1639.)

ARDEA STELLARIS.

(The Common Bittern.)

COMMON formerly, but not now. Pishey Thompson, in his 'Hist. of Boston,' p. 676, says :—" We well remember hearing that singular and solitary bird, the Bittern, which the country people used to call the *butter-bump*, uttering its melancholy 'booming' from the low reedy parts of the then unenclosed *ings*, or open meadows, of this neighbourhood." Now "we might almost as soon expect to find a Bustard on Lincoln Heath as a Bittern in the Fen district of Holland." About 1812, a gentleman staying at Priory Hill, St. Neots, shot Bitterns right and left in my father's holts. Since that day, though a stray one was captured alive on St. Neots Common in the winter of 1849-50, the Bittern, like the otter, has ceased to inhabit that part. Though not belonging to the subject, I may say that otters abounded in the Huntingdonshire Ouse, particularly in the holts and islands round St. Neots Mills. About 1809 a keeper, and my informant, found a female otter and cubs on one of them. She bravely ran at them with her mouth open, but was shot. The cubs were taken home and kept. Young ones were often found in bow-nets; it was common at night to hear their cries: they bred in the old pollards, which grew then over these holts. Persons used to come for a fortnight in boats to shoot Wild Geese; the barge-horses often stuck in the mud, and the boys were washed off their backs and drowned. The islands were much lower in the water formerly, and boats went all over them. The above were probably the last otters bred in the St. Neots holts. When the holts are cut, with sharp points sticking up about a foot high, and the little drains are quite blind, it requires some practice not to lame yourself, on the one hand, or tumble into a ditch on the other. Yet a man who is accustomed to the locality will run across easily enough. He might here set at defiance a whole regiment of foreign invaders by swimming from island to island; and their chance of catching the native would be small.

Round Whittlesea Mere, before the draining of that fine lake, Bitterns appeared to be numerous, seven having fallen to the gun of J. M. Heathcote, Esq., of Connington Castle, in one morning, on the land adjoining his fen-farm.

SCOLOPAX RUSTICOLA.

(The Woodcock.)

ON April 7, 1873, I saw a nest of four eggs (quite fresh) of this bird, taken in Sussex two days before, and not blown. In Brighton we find one now and then, in some little garden, perhaps, when the Woodcocks come over.

The final vignette in Yarrell's 'Birds,' vol. ii. edition 1, of Chantrey's two Woodcocks killed at one shot, and the verses, are well known. In 'Notes and Queries' (5th ser. iii., Feb. 6, 1875) appear other lines on the same event, in a communication signed "C. A. Ward."

"He hit the birds, and with an aim as true,
And hand as skilful, hit their likeness too."

F. P. Muirhead.

"With gun or chisel thou art doubly clever;
Chantrey! thy twins in death are twins for ever."

Boulton.

"Shall Chantrey be called a destroyer, or not?
He slaughters, indeed, his two birds at one shot;
But, pitying his victims, with gen'rous endeavour
To make more amends by his chisel so clever,
He revives them to live on in marble for ever."

Mr. Sergt. Wrangham.

In the same publication (5th ser. iii., March 13, 1875) the last epigram is stated by "H. P. D." to belong to Francis Wrangham, Archdeacon of

the East Riding; and reference is made to an "elegant book published by Prof. Muirhead, 1857, entitled 'Winged Words on Chantrey's Woodcocks,' which contains, including translations, nearly 200 epigrams on the sculptured birds." "Gen. Oglethorpe, who died 1785, frequently killed Woodcocks where Conduit Street, London, now stands. He was the best shot at birds on the wing in his day" ('Round about Piccadilly,' by H. B. Wheatley, p. 189).

ANSER FERUS.

(The Grey-legged Goose, or Grey Lag Goose.)

COMMONLY supposed to be the ancestor of our domestic Goose.

Sir J. Emmerson Tennent, in his 'Ceylon,' p. 487, says:—"The same word appears to designate Goose in the most remote quarters of the globe. The Pali term, 'hansa,' by which it is known to the Buddhists of Ceylon, is still the 'henza' of the Burmese and the 'gangsā' of the Malays, and is to be traced in the 'χῆν' of the Greeks, the 'anser' of the Romans, the 'ganso,' of the Portuguese, the 'ansar' of the Spaniards, the 'Gans' of the Germans (who, Pliny says, called the White Geese 'ganza'), the 'gas' of the Swedes, and the 'gander' of the English."

The following excerpt from S. Hill's 'Siberia' (vol. ii. p. 211), though it does not refer to *Anser ferus*, is valuable, as derived from original observation:—"I had chanced to have many opportunities of observing the habits of Geese in North America whilst feeding, on their passage towards the south before the setting-in of winter. Resting and sleeping on the edge of the ice when it is breaking up as they are proceeding north in the spring, we had occasion to witness their high order of instinct in Siberia. I happened to reside where the windows looked upon an open bay, frozen during the winter. In the spring, as the weather broke, the rapid current always first opened a long

channel, on both sides of which the ice remained intact some weeks. I have passed hours together watching with a telescope a number of Geese sitting at the edge of the ice, sometimes sleeping with their heads under their wings, save two, which always remained on the watch. Their universal practice was to form a line, at each extremity of which, at about one dozen yards from the rest, stood one of the watchers with his head erect. The flock would thus sit, sometimes basking in the sun, or sleeping, for hours together, during which, while there was no cause for alarm, there would hardly be a motion perceptible among them, save at intervals of half an hour, but sometimes more frequently, when the watchers were now relieved, almost as methodically as the sentinels of the outposts of an army. When this took place, a single Goose at each extremity of the line (whether called to his duty by the watcher before him or not, it was impossible to ascertain) roused himself and marched to take his turn, and was met always halfway by the sentry he was about to replace. It was not possible to find out whether there were any particular watchers, or whether all the birds took their turn. When a log or a branch of a tree floated down, the birds nearest the sentry first rose up, and were the first which slept again. If the whole line rose, the first to get up was near the centre. The habits of the Asiatic bird appeared exactly the same as those of the American. There were from 300 to 500 in a flock in Siberia, whilst in North America they were only about one fifth or one sixth of that number."

Before proceeding to speak of the tame Goose, however, it may be well to account for his destitution of volant power—though in the Isle of Skye a flock of domestic birds of this kind, which came under our observation, were a living refutation of the following legend. The Hon. Robert Curzon, in his 'Armenia,' 1854, p. 149, says :—"In former days [query, those of our ape-like ancestors?] the Geese agreed to take a long journey together. One said to the other, 'Mind you are ready, my friend; for inshallah I shall set out to-morrow morning.' 'And so will I,' replied he, 'whether it please God or not.' The sun rose next day; and the pious Goose, having breakfasted and

quenched his thirst in the waters of the stream, rose lightly on the wing, and soared away to a distant land. The impious bird also prepared to follow, but found himself unable to rise from the ground; and his evolutions having been observed by a fowler, he was presently caught and reduced to servitude, in which his race have continued, while the descendants of the religious goose still enjoy that freedom in which they were created."

Having thus established the Goose as a domesticated bird, let us look a little into his history in his servitude. The famous Nottingham Goose-Fair is held on the first Wednesday in October, and is said to be an institution six hundred years old (*vide* 'Daily News,' Oct. 3, 1870).

Sir Walter Scott has rendered immortal the office of the gosherd, or goose-boy, in the person of Goose Gibbie; and his warlike behaviour at the wappenschaw of the Upper Ward of Clydesdale has become historic. He is not the only soldier, however, who has followed that useful occupation, if what is stated of Gneisenau, Blucher's friend, whom he called "his head," in the 'Life and Times of Louisa, Queen of Prussia,' by Elizabeth Harriet Hudson, vol. i. p. 170, is true. That authoress states that "his first occupation in life was driving geese," till "the goose-boy was claimed by his relations and educated for the army." She also adds (chap. i. p. 142):—"Mecklenburg-Strelitz is watered by several rivers and chains of small bright lakes. Large straggling flocks of geese, each of them tended by a young woman of the lowest class, called Gänsmädchen, or goose-maiden, form a characteristic and also picturesque feature in the rural scenery. It has been said, with some exaggeration, that half the quill pens used in Europe come from Mecklenburg: certainly in no other part of the continent are geese so well fed and so numerous. The country people cure and smoke the breasts of these birds like bacon. All over Germany, a goose stuffed with chestnuts takes almost as important a place in the *cuisine* as roast beef holds in that of Old England."

Again, Thompson, in his 'History of Boston, Lincolnshire,' p. 675, says:—"Previous to the inclosure of the fens several persons kept each a

flock of more than 1000 Geese; and an instance is recorded of a cottager, whose rental did not exceed £5, who kept 1500 breeding Geese. The attention during incubation required much judgment; houses were erected containing tiers of wicker nests, each bird having a separate nest. From these parties were called down to feed and go to water. On their return the gosherd replaced each Goose on her nest. To do this required a surprising exercise of memory and observation."

The scarcity of the Wild Goose now prevents the cheat mentioned by Pennant and repeated by Bewick:—"The old Geese which are shot are plucked and sold in the market as fine tame ones, and readily bought, the purchasers being deceived by the size; but their flesh is coarse."

Latham, in his 'General History of Birds,' vol. x. p. 253, note, says (Sept. 2, 1783), "A drove of about 9000 Geese passed through Chelmsford, on their way to London from Suffolk. They travel about eight or ten miles per day." Also, "Henry V. attributes his victory at Agincourt to the archers, and directs the sherives of many counties to pluck from every Goose six wing-feathers, for the purpose of improving the arrows."

The cruel plan of nailing the Geese to the floor by the webs of the toes, in order to fatten them, no longer exists; it would not be allowed in the present day.

In 'A Hundred Years Ago,' by James Hutton, 1755 to 1756, p. 307, the following anecdote occurs:—"My Lords Rockingham and Orford made a match against each other for 500 guineas, as to whether five Turkeys or five Geese would in the shortest time perform the journey from Norwich to London." Rome was not saved by the Turkey, but by the Goose; and the author proceeds:—"The result vindicated Lord Orford's sagacity!... for at the first the Turkeys had it all their own way; the Geese, however, waddled past them at night, while they were lazily roosting in the trees beside the hedgerow."

Mr. Harting, in his 'Ornithology of Shakespeare,' gives :—

“The spring is near, when green geese are a-breeding.”

Love's Labour Lost, Act I. Sc. 1.

King, in his 'Art of Cookery,' has :—

“So stubble-geese at Michaelmas are seen

Upon the spit; next May produces green.”

The Goose would be an endless theme; so we had better leave him on the spit. Before I bid good-bye to the Grey Lag Goose, however, I would say, as respects Mr. Skeat's solution of the word lag ('Ibis,' n. s. vol. vi. 1870, p. 301), this appears to me to be the real notion. Truly it “lagged behind” to “breed in our fens;” but *lag*, as I fancy, had reference to leg. “Lagged: imprisoned, apprehended, or transported for a crime. From the old Norse, *lagda*, laid by the leg” ('Slang Dictionary,' p. 169, note). The slang and provincial expressions of the lower orders are far older than printed books; and this is one.

In the manor of Leake, Lincolnshire, this was the custom relating to waifs and strays, and among them to Geese :—They were first taken to the fold or pen, where they must stay during “six suns,” *i. e.* three risings and three settings. Thence they passed to “the *rout-piece*,” a grass-field. Here they remained one month; but sheep had to stop twelve months and one day, and could not be shorn. After the termination of the above periods they were sold. My informant mentioned to me that one of the best mares his father ever had was a “*rout* mare,” *i. e.* obtained from the “*rout-piece*.” In those times men were known by their success in taking fowl; one, in particular, was called “Billy Ducks” (pronounced “dooks”). An old man, between eighty and ninety, a fine specimen of a hearty fen-man at that age, mentioned to me that he had assisted in catching Ruffs and Reeves and Plovers in nets with stuffed decoys. The captured birds were made fat, as he said, with boiled wheat, and then sent to market.

CYGNUS OLOR.

(Mute Swan.)

IN the 'Field' newspaper, Nov. 10, 1860, "E. W." remarks:—"The male and female Swan are called the cob and pen; but Vigorina says, in the 'Curiosities of London,' edited by John Timbs, under Dyers Hall, there is an account of Swan upping; the male is called a cob and the female a plu."

In the 'Memoirs of the Court of Austria,' by Dr. E. Vehse, we find (p. 5):—"Maximilian, son of the Emperor Maximilian III., was shut up in prison at Bruges by the citizens. Conrad von der Rosen made an attempt to rescue him (he held the office of jester to Maximilian), and plunged into the ditch of the Castle of Bruges with two swimming-belts, one for himself and one for his master; but the Swans attacked the faithful jester, and drove him back with their wings." This must have been before 1493, the date of the death of Frederic III. In consequence of this durance, when Maximilian *did* get out, he put forty burghers of Bruges to death. As nothing is said of the Swans, we may suppose they escaped punishment.

May 18, 1863. I saw four Cygnets in the Ouse, S. Neots, Huntingdonshire, apparently not long hatched—funny little brown birds with black beaks, which crept *under* the old one's wings.

"So doth the Swan her downy cygnets save,
Keeping them prisoner underneath her wings."

Henry VI. Part I, Act V. Sc. 3.*

The very ancient idea, that the Swan sings before its death, has

* Harting's 'Ornithology of Shakespeare.'

not, as far as I can find out, any foundation in fact. In Earl Stanhope's 'Miscellanies,' second series, we have :—

“ Swans sing before they die ; 'twere no bad thing
Should certain persons die before they sing.”

In the 'Morning Advertiser,' August 26, 1872, occurs :—“ *Repeal of Magna Charta.*—Two acts for the revision of the statute law were passed during this session of Parliament. A great number of ancient and obsolete enactments are repealed, including a portion of the Great Charter of the Liberties of England, signed by King John at Runnymede, and confirmed by King Edward V. Among the other acts abolished are these : house boot and key boot within the forest, purveyance for the King's dogs and horses &c. (Richard II.) ; Labourers to be sworn or put in the stocks (Henry V.) ; No one but a lord's son shall possess Swans (Edward IV.).”

Henry VII. granted the office of Keeper of the Swannery of Whittlesea Mere, for seven years, to David Cecill in 1507. Charles II. made Edward, Earl of Sandwich, Master of the Swans within the whole kingdom of England (1662).

On January 29, 1859, the 'Times' announced :—“ The ancient tavern, so well known all over England as the 'Swan with Two Necks,' Lad Lane, is being razed to the ground. Since the improvements (so-called) in that serpentine line of buildings designated Gresham Street have been carried out, from time to time the 'Swan with Two Necks' has been spared. For some years past both the old booking-office and the remnant of the tavern adjoining the ancient gateway have been shored up ; in a few days not one stone will be left upon another.”

If “Two Necks” is a corruption of “two nicks,” as I am still inclined to think, from a perusal of the evidence, the corruption took place before 1556 ; for in that year Machyn, in his diary, mentions the sign of “the Swane with the ij nekes, at Mylke Street end” (Hotten's 'History of Sign-boards,' p. 217). Pishey Thompson, in his 'History of

Boston' (p. 678), says, on the roll of the swannery formerly on the Witham, "the King's Swans were doubly marked, and had what is called two nicks or notches." The Rev. Stephen Weston, in a note respecting this roll, supposes that from this has arisen the well-known sign of the 'Swan with Two Necks,' originally the 'Swan with Two Nicks,' the King's Swan. The Swan with two nicks clearly was the Royal Swan, which every one would know.

Also the ordinances which refer to the Swannery on the Witham, made 24th May, 1524 (Henry VIII.), give the penalty for "destroying a Swan's nest, breaking their eggs, or killing a Swan, £5," a large sum for those days; while the statute 11 Henry VII. ordained that "stealing or taking of Swans' eggs shall have a year's imprisonment, and make fine at the King's will." "The King's swannerd, with two others, to row anywhere to look for Swans without interruption."

Also power was given to the King's swannerd, or his deputy, to "seize and distrain for forfeitures; and persons giving information of finable offences to have one moiety of the fine" (Henry VIII.).

"At the wedding-dinner of Gervas Clifton and Mary Neville, 1530, there were 12 Swans at 6 shillings each."

CYGNUS MUSICUS.

(Whooper.)

THE fine plate of John Wolley looking at the nest of these birds in Russian Lapland ('*Ootheca Wolleyana*') gives the *real* thing. The "Old Bushman" says, "I never saw the Wild Swan in the vicinity of Quickiock; but I obtained two full nests from Iockmock, the one containing seven, the other five eggs. They appear never to go right up on the snow-fells, but to breed in the inland lakes that lie in the meadows at their feet" ('Spring and Summer in Lapland,' p. 360).

ANAS BOSCHAS.

(The Wild Duck.)

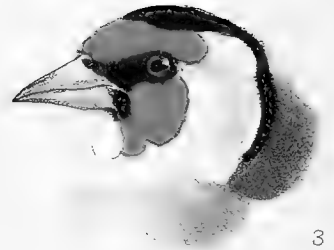
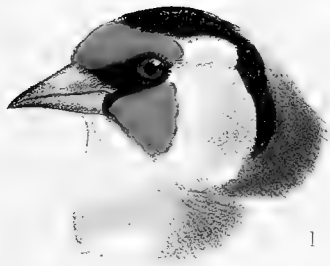
“Then after one long slope was mounted, saw,
Bowl-shaped, thro’ tops of many thousand pines,
A gloomy-gladed hollow slowly sink
To westward—in the dceps whereof a mere,
Round as the red eye of an Eagle-Owl,
Under the half-dead sunset glared.”

Gareth and Lynette.

IN the ‘Field,’ October 24, 1874, appeared the following :—“*Duck assuming Drake’s Plumage.*—I have now what I think an extraordinary freak of nature in my yard—namely, a four-year-old tame Wild Duck, the plumage of the neck, breast, and back being almost that of the Mallard, with a curled feather over its tail. These peculiarities have only developed themselves upon its moulting this year.—*Rev. J. Chaloner, Newton Kyme, near Tadcaster.*” This bird was kindly presented to me by the owner; and her portrait, “taken from the life” by Mr. Keulemans, is given with the throats of the Bramble-Finch.

The male assuming the plumage of the female appears to be more rare than the converse; yet it is done every year by the drake in this species, for which Yarrell assigns a reason in his 1st edition, vol. iii. p. 179.

Mr. Harting, in his ‘Birds of Middlesex,’ says (p. 8):—“Mr. Bond informs me that he has more than once shot a Sparrow-Hawk in the male plumage, which proved on dissection to be a female.” Mr. Gould, on the authority of Mr. Blyth, mentions the Brown Linnet as a species in which this occurs.



5

J.G. Keulemans del.

T. Walter lith.

- 1. *CARDUELIS ELEGANS*, VARIETY.
- 2. *CARDUELIS ELEGANS*, TYPE
- 3. *CARDUELIS ELEGANS*, VARIETY.
- 4. *ALAUDA ARVENSIS*, VARIETY.
- 5. *ANAS BOSCHAS* ♀

Darwin says ('Descent of Man,' vol. ii. p. 180) these are "cases in which diseased or old females assume masculine characters, or those in which perfectly fertile females, whilst young, acquire, through variation or some unknown cause, the characters of the male. [Note] Mr. Blyth has recorded (translation of Cuvier's 'Règne Animal,' p. 158) various instances with *Lanius*, *Ruticilla*, *Linaria*, and *Anas*. Audubon has also recorded a similar case ('Ornith. Biog.' vol. v. p. 159) with *Tyranga æstiva*." These and the normal course, in ultimately becoming like the male, "have so much in common, that they depend, according to the hypothesis of pangenesis, on gemmules derived from each part of the male being present, though latent, in the female, their development following on some slight change in the elective affinities of her constituent tissues" (vol. i. p. 291). "The beautiful green speculum on the wings is common to both sexes, though duller and somewhat smaller in the female; and it is developed early in life, while the curled tail-feathers and other ornaments peculiar to the male are developed later."

An experienced keeper has assured the author that he has observed, among Pheasants, young females assuming the plumage of the male shortly after leaving the hen-coops, *i. e.* in a very early stage.

It is strange that captivity should make the difference of turning a species from a monogamous one into a polygamous; yet such is the case with Ducks.

Pishey Thompson, in his 'History of Boston' (p. 676), says:—"A good account of these decoys in the East Fen is given in Oldfield's 'History of Wainfleet.' In one season, a few years previous to the inclosure of the Fens, ten decoys, five of which were in the parish of Friskney, furnished 31,200 Ducks, Widgeon, and Teal for the London market. Oldfield's 'Wainfleet' (p. 180, and Appendix p. 2) mentions that 'in these times a flock of Wild Ducks has been observed passing along from the north and north-east into the East Fen, in a continuous stream, for eight hours together.'"

Fuller says:—"Lincolnshire may be called the aviary of England for the

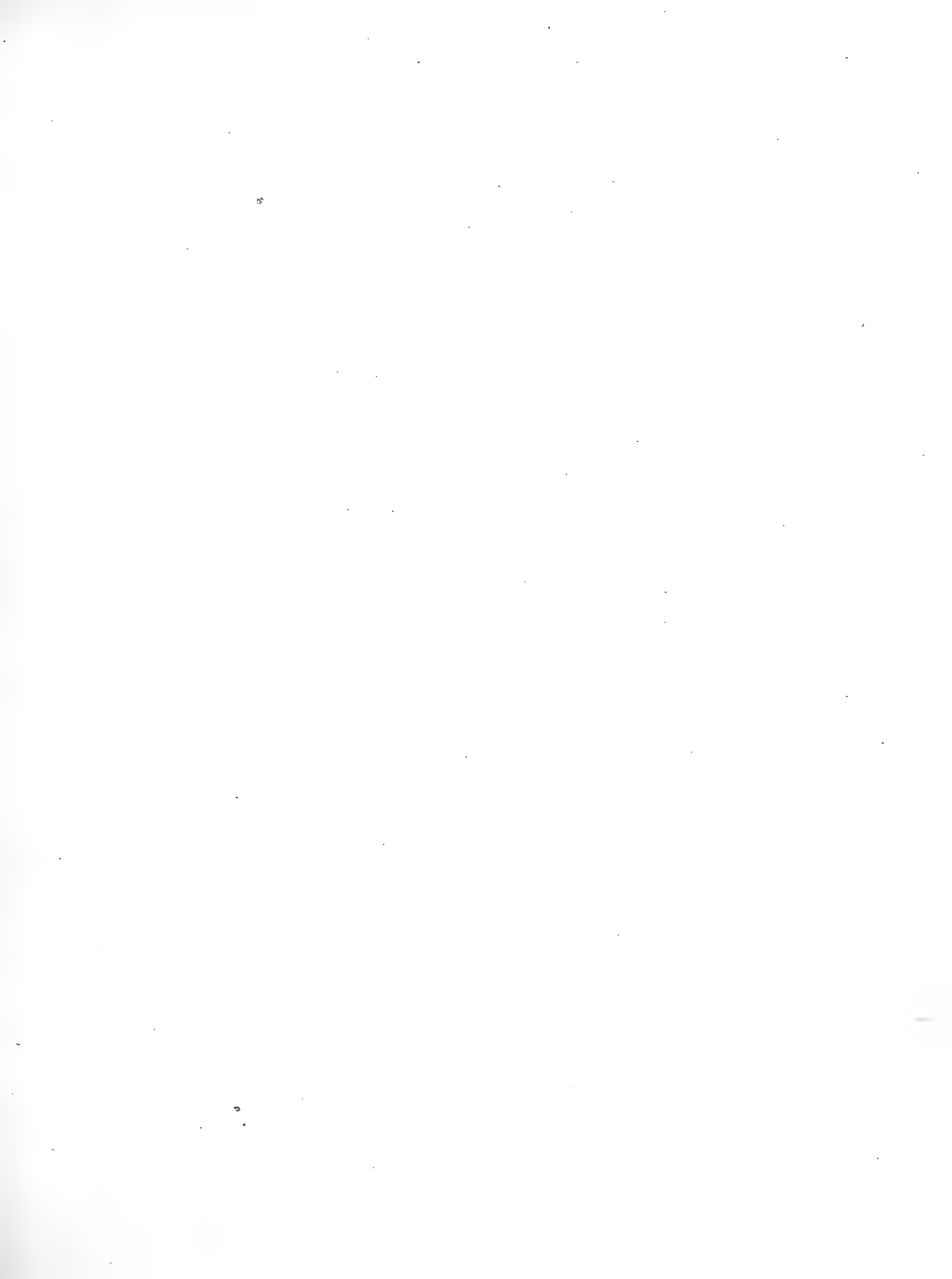
wild fowl therein : 3000 Mallards have been taken at a draught." Mr. John Cordeaux says, in his 'Birds of the Humber District' (p. 163), "The most captured at Ashby in any one year was in the winter of 1834-35, 4287 ducks and drakes."

In the 'Morning Herald' appeared a letter containing the following:—
"Black Sea, H.M.S. ——. Expedition to the Crimea, Sept. 9, 1854. Just before 4 o'clock a water-spout, or what seemed to be one, was reported ahead at about nine miles distant, and all hands remained admiring the immense height, size, and dark appearance of the phenomenon, which moved rapidly to the south. But our wonder and astonishment were increased tenfold when a nearer approach showed us that it was not a water-spout, but a flight of Wild Ducks in countless myriads. The great mass, like a dark cloud, was situated at an immense altitude, from which it gradually lessened away towards the sea in a point of 20 or 30 feet diameter. After this, many flights of Geese, Storks, and Starlings passed over the ships, going south like black clouds."

Lewes, in his 'Studies in Animal Life' (p. 29), states that "under the eyelids of Geese and Ducks may be constantly found a parasitic worm (of the Trematode order), which naturalists have christened *Monostomum mutabile*. Single mouth changeable. This worm brings forth living young in the likeness of active Infusoria."

The Wild Duck appears to decrease in England. As an article of food it varies greatly; some birds are hardly eatable. It was Madame Victoire who, to quiet a conscientious scruple, requested a bishop to decide whether a particular description of waterfowl could be properly eaten during Lent. He gravely informed her that in such cases "the bird should be carved upon a cold dish, and that, unless the gravy congealed within a quarter of an hour, it might be eaten at all seasons without sin." This was in the reign of Louis XV. ('Biographical Essays,' by A. Hayward, Q.C., vol. ii. p. 149.)

In old times Whittlesea Mere was famous for its Wildfowl- and Snipe-shooting. As it has now become a thing of the past, the engraving of the





SCENES ON WHITTAKER'S MERE, J. C. H. & CO. 1845.

regatta upon it (June 14, 1842), from the original oil-painting by Barwick, now in my possession, is of interest. This was done from sketches taken on the spot, and is an exact representation of the scene, on the site of which nothing but corn-fields at present exists, as the mere was drained in 1851. A violent thunder-storm came on while the regatta was in progress; and the provisions were floated away; the man in the canoe was upset, and covered himself with his boat for shelter.

On another occasion thousands of persons were skating upon the mere: the ice was perfectly transparent and smooth, and the fish could be seen. The pike were hunted down, and, holes being cut, were caught by hand.

I have a very old painting, on oak panel, of a great pike, with an inscription saying that his weight was 52 lbs., and that he was caught in Whittlesea Mere. It was much dilapidated when I first had it. This water is mentioned in 'Domesday,' and had a reed-shore a quarter of a mile deep. Within the memory of living persons, 19½ brace of Snipe have been killed in one day, from 16 to 20 Coots at one shot, from 7 to 10 Wild Ducks, and three bushels of Starlings—these latter to protect the reeds. It would almost seem as if the ghost of the departed mere again flits before the eye of the Fenlander, as in the days of his fathers, the fen-slodgers; and the Huntingdonshire peasants may see in the mirage the restoration of a long-vanished time; while a deception of vision induces them to reconstruct the history of the forgotten past.

In 'Nature,' July 3, 1873, appeared an account of a mirage in the Fens, which took place on Thursday, May 29, previously. A person standing "on the parapet of the bridge of the March and Spalding Railway, to view the Fens, observed a beautiful lake spread out a few miles distant. The illusory waters were of a bluish grey colour, and being apparently raised from the level, presented the perspective of a mere of considerable breadth. Islands were dotted here and there." . . . "The mirage was stretched out from Eastern Fen over Prior's Fen, to the west of Thorney, *i. e.* three or four miles. It was 11 o'clock." . . . "A similar phenomenon was witnessed from another

point of view (see 'Nature,' vol. ii. p. 337) in 1870.—Wisbech, June 5. Saml. H. Miller.”

My old comrade, John Wolley, the naturalist, assured me that in his rambles in the Huntingdonshire Fens he has seen the grass growing under the table. Now there is a scarcity of water.

Many fine bones might have been discovered, one would think, in the cuttings made in 1851 : perhaps British Beaver, which, according to W. Boyd Dawkins's 'Cave-hunting' (p. 78), was only lost *circa* A.D. 1100–1200.

There does not appear to have been a floating island to this mere, though it has claims to a ghost. But the beautiful legend of one in Cheshire is prettily told in a Cambridge Prize Poem, called 'The Island on the Mere : a Cheshire Tale.' The hero of it is thus described :—

“ It was the gallant Davenport
Who, when the might of France
Swept o'er the plain of Agincourt,
With hauberk and with lance,
By Henry's side, received the tide
Of men upon his shield,
And won the spurs of knighthood on
That glorious battle-field.”

The heroine follows, of course.

“ On the pleasant plain of Siddington,
Beside the lonely Mere,
There dwelt a maid of noble birth,
The fairest daughter of the earth,
Sweet Isabel de Vere.”

When valour and beauty meet, but one result ensues—

“ So through the pleasant summer days
They wander'd by the Mere,
Sir Reginald de Davenport
And Isabel de Vere,”—

the course of true love, as usual, not running smooth :—

“ Yes, here I swear by all I hate,
 And all that I revere,
 Until that island moves along
 The waters of the mere,
 I will not look upon the face
 Of Isabel de Vere.”

Long repentance follows rash resolve, till a tempest comes to their relief.

“ For, lo ! the wildly swelling waves
 The little isle upbore ;
 And, lo ! the fierce, tempestuous breeze,
 Carcering o'er the bending trees,
 Propell'd it to the shore.
 So, ere the sturdy husbandmen
 Had reap'd the early corn,
 The maid of Calveley was led,
 With the bride's veil upon her head,
 In Marton's holy aisle to wed
 The Lord of Capesthorne.
 Then o'er the county palatine
 Was feasting far and wide ;
 And this the toast men loved the most,
 ‘ The bridegroom and the bride !’
 But not by hospitality
 At the bridal-feast alone
 The kindly and the gen'rous heart
 Of Davenport was shown.
 No ! with a lib'ral open hand,
 And sympathizing voice,
 He strove to heal the stricken heart
 And bid the sad rejoice.
 And thus within his father's hall,
 And o'er his wide domains,
 At Capesthorne and Calveley,
 And Marton's fertile plains,
 He won a noble victory—
 A more enduring fame

.

And so throughout broad England
 He won the poor man's love,
 While on his path look'd kindly down
 The God who dwells above !
 Nor, when forgotten was the might
 That fought at Azincour,
 Did men forget the gentle knight
 Who stood up boldly for the right
 Of the friendless and the poor.
 Now still, although the times are changed,
 And many a year has fled,
 And Reginald de Davenport
 And Isabel are dead,
 Yet on the winter evenings,
 When round the blazing fires
 The peasantry of Cheshire hear
 The legends of their sires,
 While tears are in their eyes, they love,
 With grateful words, to tell
 Of the good knight Sir Reginald
 And Lady Isabel !
 And still, whene'er the floating isle
 Moves o'er the lonely Mere,
 Remember how one angry word
 Caused many a bitter tear
 To Reginald de Davenport
 And Isabel de Vere !”

The illustration of the “ Stalking-horse on Whittlesea Mere ” is a reduced copy which I made, from a beautiful water-coloured drawing by J. M. Heathcote, Esq., of Connington Castle, Huntingdonshire, done by him in 1835, and kindly lent for the use of this work. Though mine does not do justice to the original, it is interesting as representing a real thing and not an effort of imagination.

Mr. Harting, in his ‘ Ornithology of Shakespeare ’ (p. 238), gives several references to this most ancient device (*e. g.*

“ Stalk on, stalk on, the fowl sits.”

Much Ado about Nothing, Act ii. Sc. 3),

[To face page 124.]



THE STALKING-HORSE ON WHITTLESEA MERE.

and states that in the "Privy-purse expenses of Henry VIII. are various entries relating to stalking-horses, all of which appear to refer to the live animal." It seems that one was sometimes made of a piece of old canvas, in form of a horse; and the name is thus applied to any screen from observation used to shoot fowl.

COLYMBUS GLACIALIS.

(Great Northern Diver.)

THE Great Northern Diver is sometimes killed off Brighton. I saw one shot, January 10, 1859: it was a young bird; and the chase after it lasted an hour. It contained several sprats and bits of fish; these probably had been picked up at sea, as it swallows its prey whole.

The following curious story appeared in the 'Times,' Tuesday, Nov. 13, 1860:—

“Extraordinary Capture.—On the forenoon of Saturday last some of the fishermen resident at Ackergill, while pursuing their avocation in the bay, had their attention directed to a large fish struggling and plunging on the surface of the water, at no great distance from their boat. Presuming that the fish had got attached to some of their lines, and that in consequence it could easily be secured, they at once directed their course towards it; but a closer approach revealed to their surprise the true source of its annoyance. The fish, while swimming near the surface in search of prey, had seized hold of some large bird, which it had partly swallowed, but which it was unable, from the size and energetic resistance of its victim, to drag beneath. The singular appearance of the widely extended wings of the bird, which frantically thrashed the water, at one extremity, and the occasional glimpse which

was obtained of the tail of the fish at the other, induced the fishermen to believe that they had fallen in with some rare nondescript ; and the 'sea-staff' was immediately put in requisition to secure the interesting prize. By a dexterous use of this effective weapon the fish was hooked and secured, and the whole affair incontinently hauled in triumph over the gunwale. The principal actor in this scene was then at once recognized as an old acquaintance by the boat's crew : his jaws were unceremoniously wrenched open, and the bird, still alive, released from its uncomfortable position. The victim of this novel strait proved to be a fine specimen of that large and powerful species the Great Northern Diver (*Colymbus glacialis*), a bird unsurpassed for its speed and power in the water, which it only leaves occasionally in the breeding-season. It is generally known on the north-east coast of Scotland, where it occurs at intervals, as the 'Loon' or 'Ember Goose.' The fish, which measured between three and four feet in length, is the *Lophius piscatorius* of the scientific naturalist, but known on the Caithness coast as the 'Mersgam' or 'Oof,' the latter probably a corruption of 'wolf.' It is also known as the Fishing-frog or Angler, the latter name derived from the singular manner in which it entices its prey within reach. The mouth of this fish is of extraordinary width ; and from the top of its head rises a series of delicate, stalk-like appendages, terminated by glistening filaments, bearing a pretty close resemblance to certain marine worms. The animal remains stationary in some favourable position, and the vibration of these appendages attracts small fishes, which are at once seized upon and deposited in the capacious maw of the *Lophius*. It is probable that the bird in this instance had been deceived by this tempting lure into thrusting its head into such dangerous proximity, and that the fish had suddenly closed its jaws upon it, and refused or was unable to relax its hold until it was secured in the manner related above. The flesh of the *Lophius* is held in no repute.—*John O'Groat Journal.*"

MERGULUS MELANOLEUCOS.

(The Little Auk.)

CAPT. M'CLINTOCK, R.N., says, in the 'Voyage of the Fox' (1859), p. 139 : —“The Little Auk lays its single egg upon the bare rock, far within the crevice, beyond the reach of Fox, Owl, or Burgomaster Gull. We shot a couple of hundred during our stay on shore, and, by removing the stones, gathered several dozen of the eggs.” This was July 2, 1858. Again, “steep slopes of rocky débris, which screen the bases of the most precipitous cliffs, form secure nurseries for the Little Auk : they popped in and out of every crevice, and sat in dozens on every large rock. I saw countless myriads.” This was in Melville Bay, Baffin's Bay. On the west side of Baffin's Bay they are very rare visitors.

Harting, in the 'Polar World' (p. 126), states that Beechey saw a flock of Little Auks three miles in length. Thirty fell at a shot. He estimated their numbers at 4,000,000. When they took flight they darkened the air ; at the distance of four miles their chorus could be distinctly heard.

James Lamont mentions, in 'Seasons with the Sea-Horses' (p. 93), “I saw, on an island near Spitzbergen, the singular appearance called 'red snow.' This is caused by the colouring-matter of millions of Little Auks. These birds feed upon shrimps entirely.” What they void is red. “It may be that minute reddish fungi afterwards grow on the droppings ; but I totally disbelieve in fungi growing on the snow *per se*, as some distinguished observers have remarked.” The “Old Bushman,” in his 'Lapland' (p. 373), names a species of alga (*Protococcus nivalis*, Grev.) as its origin.

Mem.—December 11, 1861. I saw a white specimen of the Little Auk in the British Museum.

PHALACROCORAX CARBO.

(The Cormorant.)

“Thence up he flew, and on the tree of life,
The middle tree and highest there that grew,
Sat like a Cormorant.”

Paradise Lost, B. IV.

WHY Milton should have selected the poor Cormorant as the emblem of the evil spirit is not clear. The Dove, from its gentle nature, having been taken for the third person of the Trinity, has been adopted by all persons. Jack, on the other hand, calls the Cormorant an “Isle-of-Wight parson” (Doran’s ‘Saints and Sinners,’ vol. ii. p. 139). This latter designation doubtless arises from the plumage. One of these birds was captured in a curious manner at Parnham, Dorsetshire. When the housemaid opened the shutters a Cormorant was seated on the window-ledge, and she put her apron over it and secured it. The sea is about eight miles off, Bridport being the nearest point.

The best account of Cormorant-fishing that I have met with is from ‘Life in China,’ by the Rev. William C. Milne, M.A. (p. 306):—

“At the foot of the Tung-tsze-shan rapid, on the left hand, there rises a high precipitous rock called the Tsiang-keun, or Commander-in-chief Cliff. Here for a while I had an opportunity of watching a couple of fishermen engaged in fishing by Cormorants. It has been reported by some foreigners that these are not used in summer; but here, on the 14th of July, they were at work with them in the river. The boat was small, with two men in it and some twenty of these aquatics. There is nothing remarkable in their

appearance; the marvellous thing about them is their docility, in which they quite equal the hounds, spaniels, and hawks of Europe, each being at the bid and beck of the boatman.

“Several were perched on the edge of the boat, looking as if satisfied they had done a day’s work, yet watching the eye of their master to dash into the river at his signal. The others were dispersed across the breadth of the river, diving about in search of prey, and working indefatigably, either till they succeeded, or till they were called in by the well-known voice of the keeper. Many had not to dive long before they caught large or small fish, which they immediately brought in their bills to their master. One or two, although as obedient to the orders as the rest, were observed not to be so trusty as their messmates. The fisherman, who kept a sharp look-out on his charge, perceiving that these had, on the sly, swallowed the fish they seized, by a stroke of his guiding-rod on the water and a shout of his voice, brought them up to the side of the skiff. He at once caught them by the neck, and made them disgorge the fishy contents of their stomachs, whole and undigested fishes of no mean dimensions. He then dismissed them to double work. They had neither ring nor cord round their necks. Wherever the boat moved they followed, as quick at interpreting the pointing of the fisherman’s rod as they did the variations of his voice. They were well fed on eels, fish-refuse, bean-curd, &c., but are sent a-fishing before feed-time, or only when very hungry.”

LARUS EBURNEUS.

(The Ivory Gull.)

JAMES LAMONT, in his 'Seasons with the Sea-Horses' (p. 162), says:—
“Whenever a life is taken there is an immediate assemblage of the vultures of the North, the Ivory Gull (*Larus eburneus*), this most beautiful of the tribe being of a snowy whiteness, except his feet and eyes, which are black. They are perfectly tame and fearless, and flutter impatiently about, or sit on the ice, and even on the boat, making a harsh, disagreeable scream, until the flensing is concluded, when they make an immediate onslaught on the carcass; but so greedy and rapacious are they, that they always commence by fighting and squabbling among themselves, as if the huge body of a seal or a walrus was not sufficient for them.”

A captain R.N., who had been to the arctic regions, mentioned to me (Jan. 1860) that this species is always on the ice, and is a great runner, while most Gulls only run, as he observed, when about to fly.

I have kept four or five or more species of Gulls, some for many years; and, as my window looks out upon them, they are ever before my eyes. The result of my long observation is, that their intelligence may be increased by association with man, within certain limits. I will not, however, in proof of this, introduce anecdotes connected with them, but only remark of birds in general that, having at times reared them from the nest, I have seen at a very early period differences of disposition in each individual, which differences have continued through life, and were, as I believe, hatched with them.

Mr. Darwin, in his 'Descent of Man' (vol. ii. p. 108), says:—“Their reason is generally, and perhaps justly, ranked as low; yet some facts could be given leading to an opposite conclusion. For instance, Mr. Yarrell states

(‘Hist. British Birds,’ vol. iii. 1845, p. 585) that a Gull was not able to swallow a small bird which had been given to it. The Gull paused for a moment, and then, as if suddenly recollecting himself, ran off at full speed to a pan of water, shook the bird about in it until well soaked, and immediately gulped it down. Since that time he invariably has had recourse to the same expedient in similar cases.”

This anecdote appears in the 1st edition of Yarrell; and it had been better left out. It is stated of the Lesser Black-backed Gull. To me, who have seen Gulls constantly duck their food, ever since I began to keep such birds, this very common incident is by no means sufficient to warrant the inference attempted. I have watched one of the larger sort catching a sparrow, and seen him, having killed it, wash his prize as described; but the same Gull always did so, in the blindest and most useless manner, with any little scrap of food, as do his comrades. Therefore the “*since that time he invariably has had recourse to the same expedient*” is most true, because BEFORE that time, unless he was different from all the rest, he did the same, as did his ancestors, time out of mind. This little transaction, quoted to prove the intelligence and reasoning of Gulls, *quantum valeat*, shows the reverse to a person knowing their habits. Errors will inevitably creep into a great work, such as Mr. Darwin’s ‘Descent of Man;’ but he is always a most honest observer.

Bewick says in his preface, “When these books shall become obsolete, may some more able naturalist arise equally inclined to produce better to supply their place.” William Yarrell was the very man. I was much struck, however, with the truth of the following passage:—“Of all kinds of dogmatism the materialistic is the most dangerous, because it denies its own dogmatism, and appears in the garb of science (but it professes to rest on fact, when it is but speculation), and because it attempts to annex territories to the domain of natural science before they have been fairly conquered.”—P. H. PYE-SMITH (from Virchow’s ‘Gesammelte Abhandlungen,’ p. 18), *Nature*, Nov. 12, 1874.

STERCORARIUS LONGICAUDUS, *Briss.*

(Buffon's Skua.)

I SHOT one of these birds in a large arable field at Wintringham, near S. Neots, Huntingdonshire, October 20, 1848. It appeared to be nearly starved. No wonder; for it would hardly find any of the common crow-berry (*Empetrum nigrum*), of which it is so fond—certainly not a single lemming, though beetles might be got. I believe I discovered the skeleton of its mate on a dung-heap where the living one had been feeding. This was a fine adult, with a beautiful yellow ring round its neck, and was by no means wild, affording an easy shot. The feathers in the ring had thin hair-like ends to them.

The first egg of this Skua obtained by Mr. Wolley sold for £6. "It breeds inland on mountain moors," as stated in his Catalogue.

There was a flight of all four Skuas over the Eastern Counties in the end of October and beginning of November, 1857, as Mr. Newton informed me.

Mr. Gould gives, in his 'Birds of Great Britain,' the good account of Buffon's Skua published by Mr. Wheelwright in the 'Field,' July 4, 1863, where it can be read.

THALASSIDROMA PELAGICA.

(Storm-Petrel.)

IN the first week in May 1859 twenty-eight of these poor little birds were killed three miles off Brighton, eighteen in one day. The yelk of the egg, as I am informed by the Rev. R. N. Dennis, is peculiarly thick and oily, unlike that of any other species. They hold their egg under their wings, whence it falls out if the bird is drawn from its hole.

Robert Mudie, in his 'Feathered Tribes of the British Islands' (vol. ii. p. 391), gives a vignette of the *Alata flamma*—the Stormy Petrel with a wick drawn through it and lighted, instead of a lamp, as used by the Faroese.

The inhabitants of British Columbia use a fish for this purpose, instead of a bird. They draw a piece of rush-pith, or strip from the inner bark of the cypress tree, through it by means of a needle of hard wood. It is then lighted, and burns steadily; any one can read comfortably by its light. This is the Candlefish, *Osmerus pacificus* (*Salmo (Mallotus) pacificus*), Richardson, 'Fauna Borealis-Americana;' *Thaleichthys pacificus* of modern authors. The Indian name is Oulachan, or Eulachon.

I am indebted to the kindness of Dr. Günther, of the British Museum, for a sight of a paper by Robert Brown, F.R.G.S., reprinted from the 'Pharmaceutical Journal' for June, 1868, containing a full account of this fish, "which is small and delicate-looking, about the size of a smelt, and is found in most of the rivers on the coast of British Columbia. . . . It cannot be cooked in a pan; for it will blaze up like a mass of oil. The Indians assemble from far and near and make a holiday of the fishing. Three shoals

arrive, of which the last is poorest, but so fat that if lighted in the dry state they burn. The oil is even of greater value than the fish itself: its taste is not unpleasant, and the odour by no means disagreeable. It is found very beneficial for pulmonary disease, and has all the property of cod-liver and other fish-oils. Curiously enough, superstition is connected with the fish by the Indians, as well as with the Petrel by the sailors."

Dr. Henry Saxby says, in the 'Birds of Shetland' (p. 368):—"Many an ill-fated Petrel now meets its death by concussion against the lantern of the Flugga lighthouse, sometimes not less than a score and upwards being picked up in one night by the light-keepers, who complain loudly of the trouble the birds give them by vomiting oil upon the glass as they strike. It is scarcely ever at any other season than spring and autumn that the Petrels thus come into collision with the light."

FALCO TINNUNCULUS, *Linn.*

(The Kestrel or Windhover.)

BY MR. G. D. ROWLEY.

THE social habits of this Hawk are mentioned by most writers, which habits I imagine arise from the nature of its food; for it is manifest that a raptor, requiring flesh, must usually traverse a large extent of country. The Kestrel, living on beetles and mice, is able to keep in flocks.

“In Egypt,” Mr. E. C. Taylor says, “it regales itself on a lizard” (Ibis, 1859, vol. i. p. 45); and in the ‘Handbook of the Birds of Egypt,’ by G. E. Shelley (p. 194), we have locusts mentioned as its food:—“I saw at least one hundred in a single clump of palm trees, doubtless attracted there by the locusts, which were passing in dense continuous clouds beneath them.”

As a result of the Wild-Birds Protection Bill, the nature of which the rustic population does not understand, the Kestrel has increased in numbers. The bill has frightened the birds-nesters; and the tax on guns has also probably added to the general safety. Lincoln Cathedral has for many years been a breeding-place of Kestrels, which enter the ventilating-holes in the triforium, between the stone and wooden roof. Here they live, in company with Pigeons and Jackdaws. The Hawks sit on the small towers—one of which is called the Lady-Tower, and the other Hughe’s Tower (the latter contains the bells); the Pigeons fly round. Between the stone and wooden roof are cartloads of sticks, carried up by the Jackdaws.

On Saturday, May 14, 1859, I went to a Kestrel’s nest in Huntingdonshire, in the middle of a rookery on a very high elm; the young Rooks were in close proximity. There were four young Hawks in the nest, and an egg

much incubated. The old Rooks did not appear to trouble the young Hawks; nor did the old Hawks molest the young Rooks.

Thursday, May 12, 1859, I found another Kestrel's nest, in a deep hole of a pollard elm, with five eggs; there was a nest of young Starlings just below.

Though on Lincoln Cathedral the above happy family exists, yet the fact that there are very few Bats would seem to indicate that they do not like the vicinity. This year (1875) three Sparrow-Hawks were observed departing from the large tower; they would not be so amicable if they established themselves on the cathedral.

Mr. Thompson ('Birds of Ireland,' p. 55) speaks of the tower of Ballylesson church, Belfast, as a residence of the Kestrel. In Stevenson's 'Birds of Norfolk' (vol. i. p. 10) the spire of Norwich Cathedral is mentioned, on the authority of Hunt's 'British Ornithology,' vol. ii. p. 9) now becoming a scarce book), as an abode of the Peregrine Falcon. Mr. Stevenson states, quoting the same author (vol. i. p. 63), "A Mr. Kittle, of this city, particularly noticed a bird of this species, which arrived at the Cathedral by the middle of September and left it about the first week in March, and continued to do so for eight successive years. He also remarked that it was generally to be seen near the top of the spire, and invariably on that side which by sailors is called the leeward, from whence it used to fly at Pigeons and other birds." Mr. Lubbock says, "a pair of these birds used to breed in the steeple of Corton Church, the clerk having a regular fee for their preservation." Dean Stanley, in 'Memorials of Westminster Abbey,' p. 688, quotes Sir John Sebright on Hawking (1826), thus:—"Peregrine Falcons take up their abode from October or November until the spring upon Westminster Abbey: this is well known to the London Pigeon-fanciers, from the great havoc they make in their flights." Again:—"In the south-western tower, piles of skeletons of Pigeons killed by Hawks were found." Mr. Harting ('Birds of Middlesex,' p. 3) says, "A pair of these birds [Peregrines] for many years frequented the top of St. Paul's, where it was supposed they had a nest." At

Madrid, Lord Lilford tells us (*Ibis*, 1866, n. s. vol. ii. p. 180) that a Peregrine generally took up its abode on the palace-roof in winter, and committed great havoc amongst the Pigeons. As respects the Kestrel, *Falco tinnunculus* (*Ibis*, 1865, n. s. vol. i. p. 175), the same writer observes:—"Every church-steeple, belfry, and tower, every town and village, every ruin swarms with them."

The number to be seen round the Giralda or tower of the Moorish Cathedral of Seville—so called from the vane, *que gira* ("which turns round") (Murray's 'Handbook of Spain')—is also great; and I very much wish that the authorities of our English Cathedrals would, by protecting these pretty and harmless birds, afford us the pleasure of watching them. There would be little difficulty. In 'Land and Water,' October 23, 1875, p. 322, we find:—"Our Pigeons are just as safe in the heart of the city as the Storks in Holland or the Geese of ancient Rome. There are colonies of them at the Guildhall, the Royal Exchange, and at the Great Eastern Station. Whence they come no one knows; but their ancestors evidently had taken up their freedom centuries ago. The most audacious city Arab dare not touch them; and in perfect safety they partake of their favourite food, viz. 'nose-bag' provender. Those of them which have a taste for art, build in the crevices behind the statues in the British Museum,"—but not so numerous as in the Piazza San Marco, Venice, and other cities abroad. If Pigeons are untouched in London, surely poor little Kestrels might dwell in peace on our churches! Thus every edifice of the kind would be greatly enhanced in interest. That ornithologist who has not seen the numerous Swifts (*Cypselus murarius*) chasing each other in circles round the lovely west front of Peterborough Cathedral has a pleasure to come; so have also those of my readers who may not be familiar with the lofty gyrations of the dozens of the larger species (*Cypselus alpinus*) round the rich and massive tower of the Cathedral of Berne. The Swifts are as harmless as their flight is beautiful, while the Kestrels are a positive benefit. England has its Society to prevent cruelty to animals; would that the pen of this writer could prevail on his countrymen to reflect

before they use the power of inflicting death! Then, instead of "What shall we kill?" rather let us think, "What can we keep alive?"

It is not, however, a fresh Act to which he who loves birds would appeal, but to what is far better—the inner feelings, the hearts of Englishmen. What has saved the lives of millions of Robins? No Act of Parliament, but the fact that the people believe that

"The Robin Redbreast and the Wren
Are God Almighty's cock and hen."

So did they regard that historic bird which, when Mary II. (Stuart Mary), Queen of England, came to her last resting-place in Westminster Abbey, kept guard over her coffin; for we are told, in Stanley's 'Memorials of Westminster Abbey,' p. 197 (edit. 1869), that "a Robin Redbreast which had taken refuge in the Abbey was constantly seen on her hearse, and was looked upon with tender affection for its seeming love to the lamented Queen." Mr. C. T. S. Birch Reynardson says, in 'Down the Road,' p. 74 (a book written in a hearty and genuine spirit), "On one occasion I remember counting twenty-seven Kites [*Milvus ictinus*] in the air at the same time." This was over "Monk's Wood, famed in the Fitz-William country." These are gone. Is our country to lose all such scenes as this?

Few species, perhaps, present more variations in plumage than the present one. These have all been worked out in Dresser's 'Birds of Europe,' part 2. Every lady knows that rough weather, sea-air, hot sun, rain, &c. spoil her choicest clothing. It is very nearly the same with the plumage of birds, which life alone keeps, by continual restitution, in their pristine beauty. Dead feathers never can be like living feathers: their gloss is gone.

Mr. Dresser says, in "some southern latitudes, where the Kestrel is a resident species, the bird assumes a dark phase of coloration, and thus is represented by several local races." Again, "in a series of specimens which Lord Walden was kind enough to submit to us from India, Ceylon, and Burmah, we noticed many very pale-coloured specimens along with other individuals which it

would have been impossible to distinguish from British-killed Kestrels." The account should be read; it is too long to quote. The author mentions the very deep rufous tints of the Kestrels of Madeira and Abyssinia.

In the 'Birds of Shetland,' by Henry L. Saxby, M.D. (p. 28), we find the following:—"I was at first not a little surprised on observing the exceedingly pale and faded appearance of the plumage of Kestrels killed in Shetland, especially in autumn; but this may easily be accounted for by their constant exposure to the damp sea-mists, both during the time of incubation and while hovering about the country in search of prey, the red colours in the plumage of birds being most liable to fade." Something is to be ascribed to the extra beauty of the breeding-dress, the plumage being commonly brighter at the breeding-season; but a mere climatal variation, as I suspect, does duty and takes rank as a specific difference in certain cases.

In the 'Proceedings of the Zoological Society,' 1874, part iv. p. 580, plate lxviii., Mr. R. Bowdler Sharpe has an article upon the common Kestrel, and in particular a female, which he figures.

On March 29, 1873, a male was killed at Polegate, Sussex, which I purchased. It had evidently only just arrived, and was then a beautiful and bright specimen, which attracted my attention from being shot with blue all over the back and breast, faintly washed, as it seemed, over the other markings—the same sort of blush which I have observed in various colours pervading birds at the breeding-season. The specimen is now before me; and I remark how much even this short lapse of time has caused it to fade.

PART III.

BIRDS OF NEW GUINEA,
&c.

“O Birds, that warble in the morning sky,
O Birds, that warble as the day goes by,
Sing sweetly; twice my love hath smiled on me.”

TENNYSON'S *Gareth and Lynette*, p. 67.

PREFACE TO PART III.

WISHING to give the Readers of the 'Ornithological Miscellany' more variety than my own efforts can afford, I have sought and obtained help from some other writers, whose well known names are a sufficient guarantee of the benefit this Work derives from their kind and able assistance.

GEORGE DAWSON ROWLEY.

Chichester House, East Cliff, Brighton,
January 1st, 1876.

TRICHOGLOSSUS ARFAKI (*A. B. Meyer*).

BY MR. G. D. ROWLEY.

THE Arfak mountains, in New Guinea, from which this species takes its name, cannot be classed with *Æsop*'s range, which brought forth nothing but "*ridiculus mus*;" for, in addition to the bird under examination, we have *Ægotheles dubius*, *Chrysococcyx splendidus*, *Orthonyx novæ-guinææ*, *Artamus maximus*, *Strix tenebricosa*, *Chætorhynchus papuensis*, &c. (*Ibis*, October 1874, 3rd ser. vol. iv. pp. 416 *et seq.*). Schlegel, in 'Muséum des Pays-Bas,' livraison ii. p. 70 (1874), adds *Nestor pecquetii*, "tué le 15 Avril, 1870, Hattam, monts Arfak."

This place, which I cannot find marked in any map, is called on all my specimens "Hattam;" in the 'Proceedings of the Zoological Society,' 1873, pp. 691 *et seq.*, it is mentioned frequently as "Atam, apud montes Papuanos Arfak." Schlegel, as above mentioned, speaks of "Hattam." This is trying to an author not wishing to be false to his aspirates; probably Hattam is correct. The best map I can procure of this part of New Guinea is in 'Reistochten naar de Geelvinkbaai op Nieuw-Guinea in de jaren 1869 en 1870,' door C. B. H. von Rosenberg (1875). The chart at the end of this beautifully illustrated work shows the Arfak range, and in addition gives a good plate of the Baron himself, gun in hand, with various birds which he encountered and scenes in the country. The book has portraits of the inhabitants of "*Hattam*."

The Arfak mountains run along the north-western coast of New Guinea; and their green tops are to be seen when approaching Havre Dorey. The Dutch visited them in 1858. Their elevation is put at 9000 feet above the sea-level. Dr. Meyer went up to about 3500 feet. They, however, cannot vie with the magnificent Owen-Stanley range, 12,000 or 13,000 feet high, situated on the southern coast.

In a letter in the 'Spectator' (October 16th, 1875, p. 1293), by Robert H. Armit, Lieut. R.N., the Owen-Stanley mountains are thus described:—
“Commencing at Sud-est Island, we find a chain of mountains which, gradually rising from the sea, enter New Guinea, and in lat. $8^{\circ} 55'$ S. and in long. $147^{\circ} 33'$ E. attains in Mount Owen Stanley a height of 13,205 feet, at a distance of about forty miles from Redscar Bay on the west. This range appears to traverse the whole island in a north-westerly direction, and to terminate in the Charles-Louis mountains, on its north-western extremity, which, rising perpendicularly out of the sea to an altitude of 5000 feet, soon attains that of 17,000 feet. As yet the altitude of the range has not been ascertained further inland, owing to the fact that where visible from the coast its summits are obscured by clouds, and in other parts it is hidden from view, both on the southern and northern sides of the island, by the great height to which its spurs, forming the other ranges, attain. These, in some portion of the northern and southern shores, have been computed by trigonometrical observations at from 5000 to 14,000 feet within fifty miles of the coast.”

Mr. A. R. Wallace speaks ('Malay Archipelago,' vol. ii. p. 312) of “the great mass of the Arfak mountains, said by French navigators to be about 10,000 feet high, and inhabited by savage tribes.” At page 310 he gives a description of the natives.

Perhaps no country now existing has a better claim to the title of romantic than the *terra incognita* called New Guinea, the true shape of the eastern extremity having been only lately determined by Capt. Moresby, R.N., of H.M.S. 'Basilisk,' in the cruise of that vessel in 1872 and 1873, when he corrected the mistakes of D'Entrecasteaux and the old navigators. It is more strange that so little is known of New Guinea, since it is described by Mr. Wallace as “perhaps the largest island on the globe, being a little larger than Borneo and nearly 1400 miles long by 400 miles broad in the widest part;” while Capt. Moresby says, in an interesting illustrated paper read before the New-Zealand Institute on the 20th of September, 1873 (in its



J.G. Keulemans del

T. Walter, lith

TRICHOGLOSSUS ARFAKI ♀.

‘Transactions,’ vol. vi. p. lxxxi), that the island was discovered prior to any other in the Australasian seas, no less than 347 years ago.

The Plate is taken from a female in my collection, marked “VII. ’73. Arfak, Hattam, N. Guinea, 3500 feet. Dr. Adolf Bernhard Meyer.”

In the following article, sent me by Dr. Otto Finsch, of Bremen, a description of the male bird is given. By contrasting the Plate of the female, by Mr. Keulemans, with the description of the male, the difference of the sexes can be seen.

I may here add that the illustration of the following bird, *Trichoglossus pulchellus* (G. R. Gray), also by Mr. Keulemans, represents a male in my own collection, with this label :—“Type ♂. VII. ’73. *Trichoglossus pulchellus*, Hattam, Arfak, N. G., 3500 feet. B. Meyer.”

TRICHOGLOSSUS ARFAKI (*A. B. Meyer*).

BY DR. O. FINSCH, HON. MEMB. B.O.U.

Trichoglossus (Charmosyna) arfaki, A. B. Meyer, Verhandl. k. k. zool.-botan. Gesellsch. in Wien, 1874, February.

FRONT and forehead to the middle of the crown deep cinnabar-red, remaining parts of the head and the upper surface dark grass-green; lores, cheeks, and ear-region dark blue, with longitudinal silvery white shaft-stripes, the base of the feathers purplish brown; underparts grass-green, somewhat lighter than above; sides of breast, axillar feathers, and under wing-coverts cinnabar-red; greater under wing-coverts dull black; under tail-coverts with partially visible yellow base; quills dull black, the first primary unicolor, the second, third, and fourth on the outer web margined with dark blue, the fifth and sixth lighter blue, the remainder dark green on the outer web; the inner web

of the remiges is marked with a yellow median patch, which becomes larger, broader, and darker on the secondaries; two middle tail-feathers dark green, on the apical portion black-blue, shining, with the extreme tip yellow: the remainder of the tail-feathers scarlet on the apical half, black on the basal half, and dark green at the base of the outer web; the four external tail-feathers with narrow blackish green apical margins; bill black; feet and legs blackish.

Long. tot.	al.	caud.		rect. ext.	culm.	alt. rostr.	tars.	dig. ext.	
—	in.	in.	lin.	lin.	lin.	lin.	lin.	lin.	
	3	3	3	11	5½	3¾	4¼	5	(English).
millim.	millim.	millim.	millim.	millim.	millim.	millim.	millim.	millim.	
180	76	82		24	12	8	9	11	(French).

The above description was taken from a typical specimen collected by Dr. Meyer, which (although the sex is not noticed) we consider to be that of an old male. This specimen agrees in every respect with the description given by Dr. Meyer, who does not mention the sexual differences.

Dr. A. B. Meyer discovered this extraordinary and fine species in July 1873, during his visit to the Arfak mountains in North-western New Guinea, at an elevation of about 3500 feet above the level of the sea. He gives no account of its habits.

Trichoglossus arfaki is not only one of the rarest but also the most peculiar species among the members of the Trichoglossinæ or brush-tongued Parrakeets. The markings of the tail, the uniform black and unusually slender and hooked bill, but especially the singular colouring of the lores and cheeks, render this species distinct from any other. With respect to its systematical position, *Tr. arfaki* ranges among the small cuneate-tailed group to which *Tr. placens*, Temm., *Tr. rubronotatus*, Wall., and *Tr. kordoanus*, Meyer, belong; but we must remark that in *Tr. arfaki* the tail is more cuneate, having the external feather very short.



TRICHOGLOSSUS PULCHELLUS, G.R.GRAY. ♂

TRICHOGLOSSUS PULCHELLUS (*G. R. Gray*).

BY DR. OTTO FINSCH, HON. MEMB. B.O.U.

- Charmosyna pulchella*, G. R. Gray, List of Birds Brit. Mus., part 3, sect 2. Psittacidæ, 1859, p. 102 (female).
- Charmosyna pectoralis*, Rosenberg, Cab. Journ. f. Orn. 1862, p. 64 (descript.); id. Natuurk. Tijdschr. voor Nederl. Ind. 1863, p. 144 (descr. inacc.); id. Cab. Journ. f. Orn. 1864, p. 112 (descr. inacc.).
- Charmosyna pulchella*, Wall. P. Z. S. Lond. 1864, p. 292 (sine descr.).
- Eos pulchella*, Schleg. Dierentuin (1864), p. 69 (sine descr.).
- Trichoglossus pulchellus*, Finsch, Papageien, ii. (1868) p. 877 (descr. female and young male).
- Charmosyna pulchella*, Sclat. P. Z. S. Lond. 1874, p. 697 (Atam).
- Trichoglossus pulchellus*, A. B. Meyer, Sitzb. der k. Akad. der Wissensch. Band lxi. (1874) p. 76 (male).
- Nanodes pulchellus*, Schleg. (nec Vig. & Horsf.), Mus. d'Hist. Nat. Pays-Bas, livr. xi. (1874) p. 52.

MALE.—Head and the whole under surface, including the under tail-coverts, beautiful dark carmine-red; the feathers on the breast with narrow shaft-stripes of bright yellow; occiput and nape covered by a longitudinal patch of a dark violet-black; upper parts and wings dark grass-green, the quills black on the inner web; middle part of rump and upper tail-coverts also green, but lighter; sides of rump and thighs vivid carmine-red, each feather of these parts with a concealed narrow yellow cross line on the basal portion; flanks also vivid red, some of the longest feathers with narrow dark yellow shaft-stripes; inner part of tibia violet-black; under wing-coverts red, the larger ones dull blackish; the two middle tail-feathers dark olive-green at the basal portion, otherwise dark red, with yellow tips; the remaining tail-feathers are yellow on the apical half, green on the outer web, and red on the basal half of the inner web, having the red bordered by a blackish marginal

spot; bill light red, with blackish tip; legs flesh-coloured; nails black; iris whitish yellow. (After Von Rosenberg.)

The female differs a good deal. The violet-black occipital patch reaches only the beginning of the nape; the nape itself is red; the feathers of the rump are green, with dark margins; but the sides are vivid yellow and the flanks and thighs green, with single yellow-shafted stripes; the secondaries show a yellow mark on the middle of the inner web; the outer tail-feathers are narrowly margined with red on the outer web, along the shaft.

Long. tot.	al.		caud.		rect. ext.		culm.	alt. rostr.		tars.	dig. ext.	
—	in.	lin.	in.	lin.	in.	lin.	lin.	lin.	lin.	lin.	lin.	lin.
—	3	8 $\frac{1}{4}$	3	8 $\frac{1}{4}$	1	6	5 $\frac{1}{2}$	4 $\frac{1}{2}$	4 $\frac{1}{2}$	5 $\frac{1}{2}$	(English).	
—	millim.		millim.		millim.		millim.	millim.	millim.	millim.	millim.	
—	94		94		38		12	10	10	12	(French).	

The above measurements are taken from the male. The female is a little smaller; but the differences are so trifling that we need not notice them.

For the discovery of this fine and elegant species, science is indebted to Mr. Alfred Russel Wallace, who got a pair during his stay at Havre Dorey, on the north-west coast of New Guinea. The Baron H. von Rosenberg found it at the same place, and says that it was more plentiful than *Tr. papuensis*. Nevertheless he seems not to have collected many specimens, as even the Royal Museum at Leyden did not get one from him. It is still one of the rarest in our collections. Dr. Adolf Bernhard Meyer, so fortunate in his researches in New Guinea, collected specimens at Passim, on the west coast of Geelvinks Bay, at Amberbaki on the north coast, and at Hattam, or Atam, a native village in the Arfak mountains, about 3500 feet above the level of the sea, the same place where Signor Luigi Maria d'Albertis also found this rare bird. The species seems therefore confined, in its geographical distribution, to the north coast of New Guinea.

Nothing is known of its habits; but we owe thanks to Dr. Meyer for having first made us acquainted with the difference of the two sexes. The type specimen in the British Museum, described by G. R. Gray and in the

monograph of Dr. Finsch, is a female, with the sides of the rump yellow ; but in the same monograph a young bird in the British Museum, with the sides of the rump red, is described, the author being at that time unaware that this difference is a constant character belonging to the male. Through Dr. Meyer we learn that even young males, which have the breast still green, show these red rump-stripes very distinctly. We must mention, besides, that young birds of *Tr. pulchellus* have the violet-black occipital patch mixed with green.

The late George Robert Gray placed this species in Wagler's genus *Charmosyna*, apparently on account of the resemblance in the marking and colours, in which red prevails. This arrangement, based only on the colouring, would be apparently more correct since we know through Dr. Meyer that *Tr. pulchellus* shows the same sexual differences as *Tr. (Charmosyna) papuensis*, Gmel., and the newly discovered *Tr. (Charmosyna) josefinæ*, Finsch ; the sides of the rump, which are in the female bright yellow, are dark red in the male : but a careful comparison of the generic characters convinces us that *Tr. pulchellus* does not belong to the true *Charmosynæ*. Its smaller size, and principally the form and length of the quills and tail-feathers differ considerably from those in *Charmosyna* : in the latter the two middle tail-feathers are extremely long, with the apical portion narrowed and the next middle pair projecting very much ; but the shape of the wings is still more singular—the first four primaries being abruptly attenuated at the terminal portion of the inner web, forming a narrow point, nearly like the first primary in the genus *Ptilopus*. This significant character is peculiar to both species of the section *Charmosyna*.

SUBFAMILY NASITERNINÆ.

Genus NASITERNA.

BY MR. G. D. ROWLEY.

THIS genus was “ established by Wagler in 1830 (Abhandl. Akad. München, 1832). *Micropsitta* of M. Lesson (1831) is synonymous ” (Gray’s ‘ Genera,’ vol. ii.). It now consists of three species. Doubt has been expressed as to the position of these remarkable forms, which can never be properly cleared away till we have an examination in the flesh. Mr. Wallace says (Ibis, 1874, 3rd ser. vol. iv. p. 407), in a valuable article on the Passeres :—“ There are great objections to the use of characters drawn from the fleshy parts of birds. It is only in comparatively few instances that they have been accurately observed ; and they are for this reason of little use to the naturalist who possesses even the most extensive collection of skins and skeletons.” This is most true ; but when they *have* been accurately observed, as by the Prosector of the Zoological Society, for instance, they are of considerable benefit. The author proceeds to say :—“ There is reason to believe that the larynx, the intestines, and the other internal soft parts are liable to much modification, even in closely allied forms. In order to be practically useful, the characters on which genera, families, and groups of families are founded must, whenever possible, be drawn from those parts which can be examined in every well-preserved skin, supplemented in critical cases by a reference to the sternum, the cranium, or other parts of the skeleton.” There is much weight in these observations ; but the point is not what is “ practically useful,” but what is the *real fact* respecting the subject under examination. We cannot change the fact, if it exists. If we shut our eyes to the light afforded by myology and the fleshy parts, we travel in an unsafe road, and may fall into error.

Mr. Wallace does not advise this ; he only says that in ordinary practice the observation of the fleshy parts is not useful. The remedy is for students of ornithology to understand them better. Even habits, though perhaps ranking much lower in the scale, are valuable when known. Mr. R. Swinhoe says of the Creeper-coloured Grasshopper Lark, *Locustella certhiola* (Pall.) (Ibis, 3rd ser. vol. iv. no. 16, Oct. 1874, p. 440), it "had its tibial tendons fleshy, and not osseous as in all our other Chinese species of Grasshopper Lark. So constant did I find this character that I began to think it generic. In plumage, it is true, this species has a tendency towards *Cisticola* ; but in *habits* it is nevertheless a true *Locustella*." Here we have a superficial resemblance corrected by a knowledge of habits. Oology does something : two species of Ostrich have been differentiated by their eggs ; and in 1867, when only one species of *Æpyornis* had been discovered, I pointed out the former existence of certainly another from a fragment of the shell, which, by subsequent discovery, was found to be the case (P. Z. S. 1867, p. 892). In so difficult a subject as ornithology, let us not reject any assistance to be obtained from a legitimate source.

The examination of the carotid artery in *Nasiterna* would be of the greatest interest, as helping to establish the genus in its true position—at this time, even with the best authorities, somewhat a matter of doubt. For though at present the cause of these differences of the carotids has not been assigned, yet their aid should be regarded. What we want, then, is a few examples in the flesh for examination.

DESCRIPTION OF THE PLATES OF NASITERNÆ.

The male and female of *Nasiterna geelvinkiana* are from two specimens of mine, exhibited at the meeting of the Zoological Society, June 15, 1875 (P. Z. S. 1875, pt. 3, p. 470), and are thus marked :—the female, "Rosenberg. No. 231. 13 Feb. 1869. Nufoor. *Nasiterna geelvinkiana* ♀ ;" and the male, "Rosenberg. No. 229," with the same date &c.

Of my specimens of *N. geelvinkiana* the male is much larger than the female. Both appear to me to be old birds, and, as compared with a pair of *N. pygmæa* of my own (the ones figured), are a trifle smaller. But I will not say that *N. geelvinkiana* is a smaller species than *N. pygmæa*, because it is never safe to judge without a series of examples. I take "Nufoor" as above written to be intended for Mefoor, the great island on the north-eastern coast of New Guinea, opposite the Arfak mountains—between that shore and the three greater islands called Schouten-Eilanden (or Misory), in English maps lumped into two. Mefoor appears to be nearly all mountains; for in the beautiful map belonging to C. B. H. von Rosenberg's work, 'Reistochten naar de Geelvinkbaai op Nieuw-Guinea,' 1875, there is a range from one end to the other. I suspect that *Nasiterna* in each species is a bird of the mountains; but of *N. pusio*, the largest, one knows nothing.

Dr. Finsch says (in his subsequent article), of the male *N. geelvinkiana*, the two middle feathers of the tail are deep sea-blue, with a "small patch of black near the apical portion." The male bird in the Plate has no black on the two middle tail-feathers; moreover the blue is apparent on four tail-feathers instead of two. The two central feathers are quite blue; the next two blue, with a patch of black along the inner side of the rhachis. In *N. pusio*, according to the Plate, the two central tail-feathers are exactly as described by Dr. Finsch. I think perhaps mine is an older specimen than the one he took his description from.

The total length of my male is $3\frac{1}{4}$ inches, female $3\frac{1}{8}$ inches.

Nasiterna pygmæa.—The male and female are from specimens of my own. The male is thus marked:—"VII. '73. Andai, New Guinea. Dr. A. B. Meyer. 1000." Andai stands close to the sea-shore, on the banks of, or very near a small nameless river at the foot of the Arfak mountains, at the entrance of Great Geelvink Bay (for there is Little Geelvink Bay also). There is a beautiful plate of this river in Baron Rosenberg's work; and the country looks a perfect paradise for rare birds! *Geelvink* means "Yellow Finch."

Nasiterna pusio.—The Plate, by Mr. Keulemans, was taken by permission from the specimen (drawn a second time) in the British Museum, first figured by Mr. J. Wolf (P. Z. S. 1865, p. 620, pl. 35). This is the only one known, except that preserved in spirits and now in the Royal Zoological Museum in Berlin.

All the Plates of these *Nasiternæ* are of life-size. It appears almost a pity to produce a second Plate of the same bird; but I in vain tried to hunt up another example to complete the genus. This specimen is not sexed; and as the Solomon Islands appear to be a rather extensive group, its habitat is defined by Dr. Finsch's statement of the exact island—New Georgia.

Dr. Sclater remarks, in the above-named article :—“Hitherto this very peculiar genus of Psittacidæ was supposed to be restricted to New Guinea and the Papuan Islands, affording an additional proof, if any such were needed, that the Salomon Islands belong strictly to the Austro-Malayan as distinguishable from the Pacific subdivision of the Australian region.

“*Obs.* Major quam *N. pygmæa*, et colore pilei et faciei, necnon forma et colore caudæ, facile distinguenda.”

As regards the tail common to all the three species, Mr. Wallace says (P. Z. S. 1864, p. 281), “Its spined tail would indicate some peculiar habits of which we have no account.” Putting on one side the Picidæ, one naturally thinks of the American genus *Chætura* and the Australian species *Acanthylis caudacuta*. This genus, consisting, according to Dr. Sclater (P. Z. S. 1863, pp. 98-102), of eight species, presents salient examples of the same thing.

Speaking of *Chætura pelasgia*, Temm., the American Chimney-Swallow or Swift, Audubon says (‘Birds of America,’ vol. i. p. 164, edit. 1840) :—“It has abandoned its former abodes in hollow trees, and taken possession of the chimneys. In Lower Kentucky &c. many resorted to excavated branches and trunks for the purpose of breeding—sycamores of gigantic growth, and having a mere shell of bark and wood to support them. They never alight on trees or on the ground. In the cities these birds make choice

of a particular chimney; entering the aperture they cling to the wall with their claws, supporting themselves by their sharp tail."

Mr. Wallace (as above quoted) continues, respecting *Nasiterna pygmæa*, "According to the observation of my collector, Mr. Allen, it makes a hole in arboreal white-ants' nests." Query, therefore, does it use its tail to keep itself up against the side of the hole, as described in *Chætura pelasgia*?

At all events it is suggestive that two birds, structurally so diverse, should resemble each other in these spinous tail-feathers, which, in *Nasiterna*, are so remarkably different from any other Psittacine form. In the Chimney-Swifts (*Chætura*) the mucronate rhachis is strongly displayed; but in *Nasiterna* the rhachis projects so far from the barb, and is proportionally so strong, as to become quite exceptional. There is nothing to equal it in the Rice-Troopial (*Dolichonyx oryzivorus*), though called the Sharp-tailed Finch. In fact the genus *Nasiterna*, both as regards its beak and tail, is a very remarkable one.

The example of *N. pusio* in the British Museum was stuffed by "the artistic hands of Mr. Bartlett;" and Dr. Murie gave the following notes, inserted by Dr. Sclater in his article:—

"*Muscles: Pectoralis major.*—Very strong and well developed. Origin, whole front of sternum, overlapping the outer edge and clavicular interspace. Insertion, by tendon into forearm.

"*Pectoralis minor.*—Smaller and narrower. Origin, anterior edge of sternum, tapering to a point at the clavicle.

"*Subclavius.*—Narrow below the bone; anterior muscles of neck long and strong.

"*Contents of Stomach.*—Only a number of minute dark-coloured stony particles, but no other food" [or, rather, no food].

It might be well to mention that "Geelvink" was the name of a Dutch exploring vessel which, in 1705, first entered the bay. Willem Schouten and Jacob le Maire, however, in 1616 apparently touched it, as they landed on Soek and Biak, the Schouten Islands in the north of the bay.



NASITERNA GEELVINKIANA, SCHLEG. ♂ & ♀.

NASITERNA GEELVINKIANA AND ITS ALLIES.

BY DR. OTTO FINSCH, HON. MEMB. B.O.U., CURATOR OF THE
BREMEN MUSEUM.

AMONG the numerous members of the extensive family (or, as some ornithologists prefer, order) Psittacidæ which have been elected types of genera, none has more right to stand separated than the small genus *Nasiterna*, established by Wagler on the *Psittacus pygmaeus* of Quoy and Gaimard. The characters which distinguish this dwarf form are the following :—

Bill very strong in proportion to the general size, much higher than broad; maxilla at the basal portion enlarged and fornicated, at the apical portion compressed, with the culmen carinated; the culmen curved strongly downwards, a deep acute angulated excision just before the tip, which is very faint and prominent; mandible much higher than the maxilla, laterally aplanated, gonys broad; margins of mandible deeply emarginated. Nostrils large, free, placed in a cere, with swollen prominent margins surrounding the circular aperture. A narrow, but distinct, naked ring round the eye. Wings long, acute, reaching nearly to the end of the tail; second remex the longest; ten primaries and nine secondaries. Tail short, rounded, and most singularly distinguished in having the feathers with rigid and, at the apex, somewhat projecting spinous shafts; the three outer are but slightly rigid, and only the third from the outside has the spinous apex of the rhachis slightly projecting; the six middle feathers are more rigid, and have the rhachis sharply pointed and projecting 0·5 inch beyond the barb. Feet with extraordinarily long digits, of which the anterior and posterior external ones are equal in length and just as long as the tarsus; nails feeble. Tongue

thick and fleshy, nearly cylindrical in shape, somewhat truncated at the apex; the upper surface with a rather deep median sulcus running from the apex to the base. Oil-gland very distinct, although small, feathered at the apex. Furcula wanting. Sternum with a strong prominent crista; the two posterior foramina are well marked.

In regard to systematic position, in my 'Monograph of Psittacidæ' (vol. i. 1867, p. 321) I have placed *Nasiterna* amongst the Plectolophinæ, or Cockatoos, following in this respect Professor Schlegel (*vide* 'Journal für Ornithologie,' 1861, p. 377) and Prince Buonaparte (Compt. Rend. de l'Acad. 1857), who based on it the subfamily Nasiterninæ.

There can be no doubt that although *Nasiterna* has no crest (which distinguishes so much the Cockatoos), it bears, by its external characters, a close relation to this group. The shape of the bill corresponds so very exactly with that of the great black Cockatoos of the genus *Calyptorrhynchus* (especially *C. solandri*, Temm., and *C. banksi*, Lath.) that, in respect of this organ, *Nasiterna* may be considered as a very diminutive form of *Calyptorrhynchus*. The long pointed wings and the unusual long digits are also characters peculiar to the members of the subfamily Plectolophinæ.

Opposed to these views just named are those of Dr. Sclater, who, describing the second discovered species of *Nasiterna* (*Nasiterna pusio*), gives valuable remarks in regard to its systematic position. Although the osteology of *Nasiterna* is not yet thoroughly known, Dr. Sclater, chiefly in respect to the sternum, which has the usual characteristic form of that of the Psittacidæ, rather inclines to place *Nasiterna* as an aberrant form of the true Parrots (Psittacinæ), and does not agree with those who have placed it with the Cockatoos. The latter have mostly, as Dr. Sclater points out, the top of the head bare of feathers and covered by a crest of elongated plumes, which rise from the front of the head. The Cockatoos have also a well developed furcula, and no foramina in the posterior end of the sternum. In *Nasiterna* the foramina are present, and the furcula is absent, which is

usually also the case in the Broad-tails (Platycercinæ), to which *Nasiterna* in other respects presents but little resemblance either in form or in habits, as the Platycercinæ are mostly ground-loving birds, whereas *Nasiterna* is stated to be exclusively arboreal. Although we know nearly nothing of the habits of *Nasiterna*, there can be no doubt that they are chiefly attached to trees, which is indicated by the peculiar form of the tail-feathers. Whether these are used in the same manner as by the Woodpecker, as a means to sustain the bird in climbing, we do not at present know; but we may suspect that their peculiar structure will subserve a corresponding manner of life. In every case there can be no doubt that *Nasiterna* forms a most singular generic group, which perhaps it would be more correct to constitute (as Prince Buonaparte already did, and as Dr. Sclater recommends) the type of a distinct subfamily.

The genus *Nasiterna* is a characteristic form of the avifauna of New Guinea or the Papuan region, and may be considered the most characteristic among the members of the family Psittacidæ peculiar to these countries, as the singular genus *Microglossus* occurs also on the north point of the Australian continent, where *Nasiterna* has not yet been found. Since the year 1827 (when Quoy and Gaimard discovered, by a very singular chance, near Havre Doreh, the oldest known species—*Nasiterna pygmæa*), a second species (*N. pusio*), from the Solomon Islands, was described in 1865 by Dr. Sclater; and a few years since the indefatigable Dutch traveller, Baron von Rosenberg, was fortunate enough to discover a third species on Mysore (or Méfoor) and Soek (islands in the north of the extensive Geelvink Bay), which Professor Schlegel, in his peculiar manner, introduced into science as *Nasiterna pygmæa geelvinkiana*, although he has since admitted the bird as a distinct species.

The above description is taken from a pair (male and female) collected in April 1873 by Dr. A. B. Meyer at Kordo, a place on the island of Mysore, Geelvink Bay.

[Kordo is also the name of the island better known as Soek, the more northern of the three marked in Rosenberg's map as "Schouten-Eilanden, Grootte Geelvink Baai."—G. D. R.]

NASITERNA GEELVINKIANA, Schleg.

Nasiterna pygmæa geelvinkiana, Schleg. Nederl. Tijdschr. voor de Dierkunde, vol. iv. (1871) p. 7.

Nasiterna geelvinkiana, Schleg. Mus. Pays-Bas, 11^e livraison; Revue de la Collection des Perroquets etc. (Mai 1874), p. 71.

Male.—Feathers on the front, forehead, and fore parts of cheeks brown, with narrow apical margins of light brown; crown of the head indigo blue; hinder part of cheeks and below the ear-coverts obscure brown, the apical margins washed narrowly with blue; occiput, temporal region, and upper surface dark grass-green; upper wing-coverts black along the shafts; quills dull black, primaries with a narrow margin of green along the outer web; secondaries green on the whole outer web, base of the inner web changing into pale olive-yellow; small under wing-coverts yellow, the greater ones blackish grey; underparts of body olive-yellow; under tail-coverts distinct dark yellow; flanks and thighs grass-green; two middle tail-feathers deep sea-blue, with a small patch of black near the apical portion, the remaining tail-feathers black, on the outer web with a green, on the inner web with a yellow end, which becomes broader on the outer feathers; bill greyish black, culmen and ridge of mandible lighter; feet grey-brown.

The female differs in having the vertex dark olive-brown, the sides of head and chin being dirty olive-brown, the under surface, instead of yellow, being olive-green, the two middle tail-feathers uniform dark sea-blue; bill pale hornish brown, with dark tip.

	Long. tot.		al.		caud.	culm.	alt. rostr.	tars.	dig. ext. ant.	
	in.	lin.	in.	lin.	lin.	lin.	lin.	lin.	lin.	
circa	3	2	2	1½	12¾	3	4¼	3½	5½	(English).
	millim.		millim.		millim.	millim.	millim.	millim.	millim.	
circa	80		54		27	7	10	7·5	12	(French).



NASITERNA PYGMÆA, J. G. LEWIS

This excellent species is nearly allied to *N. pusio*, from the Solomon Islands, having also a blue crown; but this blue is more vivid and distinct. Besides, in *N. pusio* the front, tempora, and cheeks are ochreous brownish, and the feathers of the lower ear-region lack the blue tips. *N. pygmæa* has the crown yellow and a red longitudinal stripe along the breast. We must remark, however, that Professor Schlegel notices one specimen which has the vertex adorned with a yellow patch. The specimen with the blue on the vertex replaced by brown, mentioned by Professor Schlegel and said to be a male, is most likely a female.

As already mentioned, Baron H. von Rosenberg discovered *N. geelvinkiana* in February 1869 on the island of Mysore, or Méfoor, the Willem-Schouten Island of the older Dutch maps. This island is situated north of the large island of Jobi, and separates the large Geelvink Bay to the north from the Pacific. Dr. A. B. Meyer collected the species on the same island—more precisely at Kordo, which is the chief *kampong* or village of it. H. von Rosenberg besides got specimens at Soek, a small group of islands in the neighbourhood of Kordo. The geographical distribution is, as far as our knowledge reaches now, confined to these two islands.

With respect to the habits of *N. geelvinkiana* nothing is known; but we may trust that Dr. Meyer, who collected so much valuable biological information, will add to our knowledge also in regard to this species.

I append the characters of the other known species of *Nasiterna*.

NASITERNA PYGMÆA, QUOY & GAIM.

Psittacus (Psittacula) pygmæus, Quoy & Gaim. Voy. de l'Astrol. Zool. i. (1830), p. 232, pl. 21.
f. 1 (♂), f. 2 (♀).

Nasiterna pygmæa, Wagl. Mon. Psitt. (in Abhandl. der Kön. Baier. Akad. d. Wissensch. zu München (Band i. Jahrgang 1829–30), 1832*, p. 631.

* Although the first volume of the Munich-Academy Transactions bears the years 1829–30 on its titlepage, it did not appear until 1832. It is therefore difficult to settle which year must be quoted; if 1832, Lesson's generic appellation "*Micropsitta*" will have priority.

Micropsitta pygmæa, Less. Tr. d'Orn. (1831), p. 646.

Micropsites pygmæus, Bourj. Perr. t. 100.

Psittacula pygmæa, Schleg. Mus. P.-B. Psitt. (1864), p. 74.

Nasiterna pygmæa, Finsch, Papag. i. (1867) p. 325; Schleg. Mus. P.-B. 11^e livraison (1874), p. 71.

Male.—Grass-green, underparts lighter; under tail-coverts bright yellow; along the middle of the breast a longitudinal stripe of light red; loreal and eye-region ochreous brownish; forehead and crown oil-yellow; quills black, primaries narrowly, secondaries more broadly margined externally with green; tectrices black, margined with green; tail-feathers black, the inner web tipped with yellow, the two middle ones marine blue, with black shafts, the next pair to the middle ones at the base of outer web, the outermost at the apex of outer web, margined broadly with green; bill dark, blackish; feet horny brown.

Female corresponds with the male in every respect; but the bill is light hornish yellow.

	Long. tot.	al.		caud.		culm.	alt. rostr.	tars.	dig. ext.
	in.	in.	lin.	in.	lin.	lin.	lin.	lin.	lin.
circa	3 $\frac{1}{4}$	2	5	1	0 $\frac{1}{2}$	3	5	2 $\frac{1}{2}$	5 $\frac{1}{2}$

The manner in which this species was discovered is very singular. During the stay of the French frigate 'L'Astrolabe' at Havre Doreh, one of Quoy's hunters fired at a bird in a tree, and, instead of the one aimed at, the shot brought down a male and female of this novelty.

This species has a wide range:—New Guinea, Doreh on the north-east coast (*Quoy & Gaimard, Wallace*); Sorong, opposite to the island of Salawatti (*Von Rosenberg*); Utanate river on the west coast (*Salomon Müller*); islands of Mysol (*Wallace, Von Rosenberg, Hoedt*) and Salawatti (*Hoedt*); Aru islands (*Von Rosenberg*), Waigeu and Guëbe (*Bernstein*).

In regard to the habits, all observers agree that *N. pygmæa* is very shy, and extremely difficult to observe among the foliage of tropical trees. Mr. Wallace notices that *Nasiterna* breeds in holes of trees.



J.C. Keulemans del.

J. Walter. imp.

NASITERNA PYGMÆA, QUOY & GAIM. p.



NASITERNA PUSIO. SLATER

NASITERNA PUSIO, Sclat.

Nasiterna pusio, Sclat. P. Z. S. Lond. 1865, p. 620, pl. 35 (opt.); Finsch, Papag. i. (1867) p. 327.

Nasiterna pygmæa salomonensis, Schleg. Nederl. Tijdschr. voor de Dierk. vol. iv. (1871) p. 7.

Grass-green, underparts lighter; middle of breast and vent light greenish yellow; under tail-coverts yellow; front lores and cheeks ochreous yellow, eye-region and tempora more brownish; crown of head dull dark blue, the same as the two middle tail-feathers, which have a large black patch at the tip; remaining tail-feathers black, with a yellow apical patch on the inner web, and externally margined very narrowly with green; quills black, margined externally with green; tectrices black, margined with green; bill horny orange, with dark tip; feet horny brown.

	Long. tot.	al.		caud.		culm.	alt. rostr.	tars.	dig. ext.
	in.	in.	lin.	in.	lin.	lin.	lin.	lin.	lin.
circa	3 $\frac{1}{4}$	2	5 $\frac{1}{4}$	1	0 $\frac{1}{2}$	2 $\frac{3}{4}$	5	3 $\frac{1}{4}$	5 $\frac{1}{2}$

This species is confined to the Solomon Islands. Dr. Sclater obtained the types through Mr. Gerard Krefft, of Sydney, who received them in spirits from the island of New Georgia.

PSITTACUS ERITHACUS, *Linn.*

(The Common Grey Parrot.)

BY MR. G. D. ROWLEY.

THE genus *Psittacus* was established by Linnæus in 1725 ('Systema Naturæ'). Gray, in his 'Genera,' vol. ii., thus describes it:—"Bill large and rather compressed, with the culmen biangular and much arched to the tip, near which the lateral margin is strongly emarginated, that of the under mandible much sinuated, and the anterior part sharply edged; the gonys advancing upwards and angular; the nostrils basal and lateral, with the opening small and rounded. Wings mostly reaching to the end of the tail, with the first quill nearly as long as the second and third, which are the longest. Tail short and even. Tarsi very short and covered with small scales. Toes long, the lateral ones equal, and all covered with small scales; the claws short and slightly curved."

Dr. Otto Finsch gives ('Die Papageien,' vol. ii.):—"Pterylosis (after Nitzsch) quite different from the American *Chrysotis*, which agrees more with *Conurus* and *Domicella*; the uropygial gland is present, which is wanting in *Chrysotis*; the sterna are alike in both; the lateral aperture is present, but small, and in one specimen absent. The orbital ring is not closed the same as is the case in *Eclectus grandis*, *E. polychlorus*, &c. The skeleton of Parrots comes nearest to that of Rapaces, except in the arrangement of the toes, which is two in front and two behind."

Of the African species *Psittacus erithacus* (which I may perhaps call the type of the Parrots, though this word is not defined) little appears to be



The Duchess of Richmond and her Parrot, Westminster Abbey, 1795.



known. I borrow freely from Dr. Finsch's exhaustive work for such things as have been ascertained. It is strange, however, that so little can be said respecting a bird extremely familiar to us in captivity. Anecdotes of its talking-powers, temper, &c. are abundant, and it would be useless to introduce fresh ones here. An attempt is sometimes made to assign to the bird a reflecting knowledge of the meaning of the sounds uttered; but in all such cases it is to be supposed that the partiality of the owner has run away with his or her judgment—the wish being father to the thought.

Varieties do not appear to be common, in which *P. erithacus* is unlike *Nestor*, of New Zealand. Dr. Finsch gives three:—

Variety 1. Red; head, neck, and quills grey.

„ 2. Grey; quills, tail, and rump red.

„ 3. Grey, spotted and sprinkled with red.

Diagnosis.—Dark ashy-grey; head, neck, throat, and crop with narrow light-grey edgings to the feathers; rump, lower wing-coverts, thighs, vent, and lower tail-feathers whitish grey; quills black; tail and tail-coverts scarlet; bill black, naked eye-space white; iris from pale yellow to white, in the young brown, perhaps the only character which distinguishes them from the adult. Both the sexes are alike. In confinement some variation appears at times (*vide* Levaillant, pl. 101).

The white powder which comes upon the fingers on touching certain Parrots is strongly developed in this species; but the cause of it is not yet determined.

Buffon says that a pair in confinement bred and hatched their young for a series of five or six years. Later observation has not confirmed this remarkable circumstance, though it is not unusual for eggs to be laid. These are white, and slightly shining. I do not know in any collection an authenticated specimen of an egg taken in a state of nature.

Habitat.—The geographical distribution of *P. erithacus* is very extended. I cannot do better than remind my readers of the admirable coloured map in Dr. Finsch's work ('Die Papageien,' vol. i. p. 114), which gives a clear

view, at one glance, of the range of all the Parrots known at the time of publication (1867). This map afforded me when I first opened it, and still affords me, much information and the greatest pleasure.

Mr. Alfred R. Wallace's map of the Malay archipelago, with the red line enclosing the area of the Crimson Lories, and his article on the Parrots of the Malayan region (P. Z. S. 1864, p. 272) afford the greatest assistance to the student.

On the west coast of Africa *P. erithacus* is found from Senegambia to Benguela (Ladislaus Magyar observed it in the Bihe country). Du Chaillu, apparently, did not bring the species from the Gaboon; but Reichenow found it there. It appears to be very numerous on Prince's Island, but not on the larger one of St. Thomas. This has been accounted for by the reason that there are no rapacious birds on Prince's island, as mentioned in the following excerpt (P. Z. S. 1866, p. 324).

Dr. H. Dohrn, C.M.Z.S., in his Synopsis of the Birds of Ilha do Principe, says:—"During six months' stay in Ilha do Principe I have collected birds, and notes upon their habits. It seems to me the most remarkable feature that not a single bird of prey exists on the island, whilst they are abundant on the other two islands and on the nearest part of the continent. I saw hundreds of *Milvus parasiticus* in San Thomé; *Gypohierax angolensis* and some other species are not uncommon in Fernando Po; but the whole tribe avoids Principe. The inhabitants of the latter place and of San Thomé assert that there is a deadly hatred between the Grey Parrots (*Psittacus erythacus*) of Principe and the Kites of San Thomé, and that, if ever a *Milvus* visits the neighbouring island, hundreds of Parrots fall upon him and kill him, and that the Kites take revenge if perchance a Parrot should venture a trip to their kingdom. There must be some family reason for this strange degree of enmity; for they seem to live in tolerable peace together on the coast."

In a north-eastern direction *Psittacus erithacus* reaches Lake Tchad, as Denham and Clapperton tell. To the eastern centre Heuglin found it in the Wau and Bongo or Mbango country, between the rivers Djur and

Kosanga. The bird is still more numerous in the Niam-niam district, where Schweinfurth discovered it. Dr. Schweinfurth gives many interesting particulars in his work on Africa, too long to mention.

Psittacus erithacus has, by mistake, been placed in the Cape-Verd islands by Schmidt. According to Brehm it was formerly introduced into the islands of Mauritius and Bourbon, but again exterminated, because it was so dangerous to plantations.

Mr. Keulemans gives the best account of the habits of the bird in question, and says it is very numerous on Prince's Island, that it eats seeds and fruits (chiefly palm-nuts), and breeds in December, after the rainy season. Its nest is situated in a deep hollow tree, where it lays five eggs; and this being in the thickest wood renders discovery difficult. There is only one nest in each tree; but in the same area are often many hundred pairs breeding. The parents defend their nests; therefore the natives catch the young ones just after leaving it, thinking their fingers might be in danger before. In the evening the Parrots go to their roosting-places, and associate in hundreds. This species is not friendly with other birds.

Mr. Keulemans's zeal in watching this species entailed a severe fever. I cannot do better than quote a few observations of his, from his 'Natural History of Cage-birds' (part i. p. 7):—

The food of *P. erithacus* "consists of the palm-nut, the avocat (*Laurus persea*), the banana (*Musa paradisea*), goyave, mango, and many other fruits of a smaller size; but it always gives the preference to palm-nuts. These birds drink little. Both sit by turns; and while one is sitting the other often comes and feeds it out of its crop. The young ones are fed in the same way.

"The Grey Parrot delights to dwell in companies. Many nests are found within a few feet of each other; and often in one tree two or more holes may be seen occupied by hatching pairs.

"The young birds are covered with a long and fluffy down, which afterwards (when moulting) falls off. Their first plumage is darker, and the

iris dark grey instead of pale yellow. They leave the nest when about four weeks old, but may be seen looking outside the hole some time before they are able to fly. They grow quickly; and the feathers get gradually paler. When two months old, the first moulting begins, which lasts about five weeks, after which the plumage is similar to that of the old birds, although the edges of the feathers are not so pale and the cheeks and forehead not so white as in old individuals. The iris changes gradually and slowly; the eyes are dark for more than seven months. The feathers, when wet, appear of a dark bluish grey with a purple gloss.

“The value of a Grey Parrot on Prince’s Island is one dollar (4s. 2d.) for an old bird, and half that sum for a young one. There are not many sold on the island, owing to the heavy freight charged, being about 5s. for each individual as soon as it is shipped.”

Again, “On Prince’s Island is a very lofty mountain, reaching some 1200 feet above the level of the sea, and called by the natives ‘Pico de Papagaio,’ or Peak of the Parrots. On the slope of this mountain, and extending far up its side, is a magnificent forest. The trees are of great size and height; and their trunks and branches give support to the Lianos and other climbing plants, which hang about them in luxuriant folds. The density of the forest is so great that it is only with the greatest difficulty and toil the explorer can force a passage through it; while to the Parrots, who come up there every night, it presents no obstacle, but gives them, under the shelter of its thick foliage, a secure and pleasant resting-place.”

In ‘The Ibis,’ Jan. 1874, 3rd ser. vol. iv. p. 56, Mr. Herbert Taylor Ussher (who did not observe the bird nesting), in his Notes on the Gold Coast, speaks as follows:—

“PSITTACUS ERYTHACUS, L.: Sharpe, p. 19.

“The finest specimens of the Grey Parrot are brought down from the distant forests of Akim, in Fantee, to the towns of the Cape Coast and Accra, where they meet with a ready sale and are purchased in considerable numbers at prices varying from half a dollar to one dollar a piece by the

sailors in merchant vessels and mail-steamers. This price only applies to wild birds (generally young ones), mature and accomplished Parrots fetching large sums. I have seen them whilst up the river Addo, near Lagos, crossing at sunset from their feeding-grounds to their roosting-places. They present the appearance of one continuous flock passing at a great distance overhead, their screams and chattering being heard long after darkness has set in. They do terrible mischief to the maize-crops, as they waste much more than they consume. They are occasionally eaten when young, and are considered not unpalatable food."

Reichenow ('Journal fur Ornithologie,' 1875, p. 10, "Vögelfauna Westafrika's") makes some valuable remarks, which are thus condensed. He states it to be very numerous on the Gold Coast, on the Niger, at Cameroon and Gaboon, and that it breeds in the low lands along the streams, and groves of mangrove. As these localities are swampy and muddy, they are difficult to traverse, if not impossible; consequently the birds are not molested by man ("and this is the chief reason why no one has observed them while breeding"). He adds:—"I had never an opportunity of observing nestling birds; but I feel sure they have dark grey tails at first; for a Nigger told me this, assuring me that he had himself taken the birds from the nest. I have myself seen young specimens which had the base of the tail-feathers dark grey just colouring into red, as also the tail-coverts. The young has not so clear a grey as the old, but a more faded and brownish one, and shows a grey iris instead of a yellow one. After the breeding-season, these Parrots unite in troops and roost upon a certain tree during night, where they often congregate in hundreds. They arrive here in small bands; and their noise is terrible. In the morning they divide, and visit the fields of Indian corn of the Niggers, where they make great havoc. In going to and fro they always take the same direction; so we could watch them and shoot them when flying overhead. But this could only be done a few times, as the clever birds changed their direction. The flesh is only good for soup" (Dohrn says the contrary). "The flight of this Parrot is bad, and it goes

with a short quick motion of its wings. Varieties with the primaries red are common. *Gypohierax angolensis* appears to be its chief enemy."

Psittacus erithacus was observed by the German expedition in Western Africa, Loango ('Correspondenzblatt der Afrikanischen Gesellschaft,' 1875, no. 10, p. 185).

In 'The Ibis,' April 1874, 3rd ser. vol. iv. no 14, p. 185, we read :—

"Dr. Kirk has brought with him, on his return from Zanzibar, a Grey Parrot (*Psittacus erithacus*). He informs us that this Parrot was brought from the Manyema country, on the west of Lake Tanganyika, opposite Ujiji, where, according to Dr. Livingstone's information, the chief is called 'Mana-kos,' or 'King of the Koskos' or Parrots.

"The existence of *Psittacus erithacus* in the Niam-niam country, on the western watershed of the White Nile, was already known (*cf.* Heuglin, 'Ornith. Nordost-Afrika's,' p. 745); but the fact of its occurrence on Lake Tanganyika is, we believe, new. Dr. Kirk says it is often brought down to Zanzibar by the dealers in ivory.—P. L. S."

Livingstone, in his 'Last Journals,' vol. ii. p. 95 (1871), mentions an unpleasant custom in reference to this bird. "The Manyema are the most bloody, callous savages I know. One puts a scarlet feather from a Parrot's tail on the ground, and challenges those near to stick it in their hair; he who does so must kill a man or woman." Again, vol. ii. p. 98, "Some kill people in order to be allowed to wear the red tail-feathers of a Parrot in their hair."

Livingstone is in error when he says (chap. iv., vol. ii. p. 85) "the Parrots all seize their food and hold it with the left hand. The lion, too, is left-handed; he strikes with his left; so are all animals left-handed, save man." This idea postulated by Livingstone is not the fact as regards Parrots in captivity. I consulted Mr. Bartlett on this subject; and he thinks they become right- or left-handed in some cases on board ship from being chained up, and continue so. In a pair of the King Parrakeet (*Aprosmictus scapulatus*), New South Wales, the male commonly used the

right foot, the female the left. There is no rule. Of course, if a bird is fastened by the foot it usually employs, it is greatly inconvenienced.

In *Psittacus erithacus* we find a difference in the colour of the iris, arising from age. Mr. Bartlett is much of opinion that in some of the Cockatoos (*Cacatuinæ*) a sexual variation exists; and in this he is confirmed by John Goss, the keeper at the Zoological Gardens, who after forty years' observation must have had good opportunity of knowing. They express their belief that this is the case in a pair of Citron-crested Cockatoos, Timor (*Cacatua citrino-cristata*), thinking them to be male and female because they agree well together. In the Lesser Sulphur-crested Cockatoo (*Cacatua sulphurea*) an instance was pointed out to me where the male had a blue-black eye, while in the female the iris was red.

In the three British Harriers (*Circus*), Mr. J. H. Gurney states ("Notes on Mr. R. B. Sharpe's 'Catalogue of Accipitres,'" 'Ibis,' April 1875, 3rd ser. vol. v. p. 222), "the colour of the iris in the adult is always a clear yellow in the males, and *usually* a yellowish brown in the females; but it would seem that in the latter, as they become aged, the colour of the iris approaches nearer to that of the male bird; and this is especially the case in Montagu's Harrier."

Dr. Otto Finsch has given a fine Plate of the skeleton of this Parrot ('Die Papageien,' vol. i. p. 240), with skulls of *Plectolophus sulfureus* and *Euphema pulchella*.

Mr. A. H. Garrod, in the 'Proceedings of the Zoological Society' (1873, p. 557), on the carotid arteries of birds, says:—"The Parrots are peculiar for the variation which occurs in their carotids, which show four different arrangements: first, there may be two in the normal position; secondly, the right may (as it usually does) traverse the hypapophysial canal, whilst the left, in a manner quite exceptional, runs superficially along the side of the neck in company with the left pneumogastric nerve and the left jugular vein; thirdly, the right may be very small and blend with the much larger normally situated left (in *Cacatua sulphurea*, according to Meckel); and,

fourthly, the left may alone be developed, as in the Passeres. The first of the four conditions is only found in the Old-World Parrots; and the last two are restricted to the Cacatuinæ. *Psittacus erithacus* belongs to the second division, the right carotid running normally, whilst the left runs up the side of the neck, together with the left pneumogastric nerve and jugular vein."

In another elaborate article (P. Z. S. 1874, p. 586), Mr. Garrod gives a list of Parrots with two carotids (the left being superficial), an ambiens muscle (the tendon of which crosses the front of the knee-capsule from above downwards and outwards, and ultimately forms part of the flexor perforans digitorum), a furcula, and an oil-gland. In this the *Psittaci* are included.

Mr. J. G. Keulemans has given a beautiful Plate of this Parrot in his 'Natural History of Cage-birds,' vol. i. p. 1. As, therefore, it was not desirable to repeat that, I have instead had a faithful portrait taken of the individual of this species (*Psittacus erithacus*) which has attained the honour (unique as respects the feathered tribe) of a resting-place, in post-Reformation times, in Westminster Abbey, where it may now be seen by the side of its mistress, the Duchess of Richmond, and where I recommend my readers to go and look at it. In Part I. p. 30, I spoke of "this bird's effigy;" but I should have said the bird itself. Cassell mentions a case of a grey Parrot which died of grief at parting with its master; and the one here represented survived her Grace only a few days, after living with her for forty years.

This Duchess of Richmond is buried in the Richmond vault, in the southern side of the central aisle of Henry VII.'s chapel in the Abbey. Her effigy, at her own request, was placed close by her after death, as well done in "wax as could be," "under crown glass and none other," in the robes she wore at the Coronation of Queen Anne (Stanley's 'Memorials of Westminster Abbey,' pp. 213 & 343, edit. 1868). According to Burke's 'Peerage,' her Christian names were Frances Sophia, though, as will presently appear, she is sometimes mentioned as Frances Theresa. Her

younger sister, the only other child of Walter Stuart, M.D., is by Burke named Sophia.

The dress, as will be observed, is most elaborate and was difficult to draw. In the lacework alone, 12,000 points and curls have been marked; this has been done twice, with tracing-paper, black stone, and tint stone (one of the two), being 24,000 touches for lace alone. Then come the embroidery and the diamonds, each of which had to be drawn by itself.

Her picture appeared, in the 'Catalogue of National Portraits in the South-Kensington Museum,' thus:—

“875. FRANCIS THERESA, Duchess of Richmond and Lennox. Duke of Richmond.—*Sir Peter Lely.*

“‘La belle Stuart;’ dau. of Dr. Walter Stuart, son of L^d Blantyre; Roettier, the King’s engraver, admired her beauty, and placed her portrait, as Britannia, on the coins he designed; mar^d 1667, Charles Stuart, 6th and last Duke of Richmond and Lennox; 3rd wife of the Duke; d. 15 Oct. 1702. Bust; low dress, red and dark blue drapery, veil. Canvas 29 × 24 in.”

It would appear that Charles Stuart was not sixth Duke of Richmond and Lennox, as above stated, but sixth Duke of Lennox in Scotland, fourth Earl of March, and third Duke of Richmond. Also, as Burke says, the marriage took place privately, and was publicly declared April 1667.

Miss Agnes Strickland, in her 'Lives of the Queens of England' (vol. v. p. 406, *note*), says:—“Many scandals touching this lady are afloat in the Court-history of Charles II.; yet it is certain that she might have played Anne Boleyn if she had not possessed a better heart than that Queen. She was very poor; for her father, Walter Stuart, Lord Blantyre (a younger branch of the legitimate line of Lennox, and of course a near kinsman to the Crown), was a gallant cavalier who lost his all in the defence of his royal relative Charles I. La Belle Stuart was born just before the death of Charles I. She was educated in France, and very early became one of the train of Henrietta Maria. Her charms drew the attention of Louis XIV.; and when she was about to return to England, after the Restoration, with Queen Henrietta

Maria, Louis endeavoured by flattering promises to induce the young beauty to stay at his court. The Queen, however, insisted on carrying her off with her. Louis presented her with a rich jewel at her departure. She was appointed Maid of Honour to Queen Catherine."

Pepys mentions "Mrs. Stuart's" dancing as "mighty fine." This was not in the "brantle," but the "corant."

Clarendon is supposed to have promoted her marriage with the Duke of Richmond; and (at page 427) Miss Strickland's note runs thus:—"Frances Stuart had never accepted any thing from the king beyond a few jewels; and these she returned to him after her marriage. The Duke of York presented her with a jewel worth £800 when he drew her for a valentine. Her husband, unfortunately, had a bad habit of drinking, which perhaps shortened his life; he died in 1672, at the Court of Denmark, where he was sent as Ambassador. The small-pox, that disease so fatal to the life or beauty of the Royal house of Stuart, had destroyed the matchless charms of the Duchess of Richmond and Lennox two years after her wedlock; she bore the infliction with philosophy. Although the Duke of Richmond and Lennox had impaired his property, his widow was enabled by economy to save a fortune from her dower. She purchased with it the estate of Lethrington, and bequeathed it to her impoverished nephew Alexander, Earl of Blantyre, with a request that it might be called 'Lennox's Love to Blantyre.' It is called Lennox-love to this day. She seems to have valued the title of her Scottish duchy more than that of Richmond."

The likeness between the wax effigy and the portrait above mentioned, of which a photograph is now before me, is apparent, though the nose in the former is made more aquiline. In the latter a profusion of curls hang from the head, but the countenance, though certainly pleasing, does not convey the idea of such extraordinary beauty. Miss Strickland says, one of the eyes of the Duchess was injured after the small-pox, and she looked ill for a long time (p. 421).

I have said so much of this lady, both because she was an instance of one who with nothing but evil around, under circumstances of very great difficulty, in the courts of Louis XIV. and Charles II., escaped, while many did not, and also on account of her historic bird. Moreover the kindness of her disposition is evinced by the name of the estate, "Lennox-love," continued to the present time.

Returning to the Grey Parrot, and Parrots in general, at page 170 I have mentioned Livingstone's opinion as to their being left-sided. Mr. R. A. Proctor, in 'Science Byways,' p. 328, has the following note:—"Birds, and especially Parrots, show right-sidedness. Dr. W. Ogle has found that few Parrots perch on the left leg. Now Parrots have that part at least of the faculty of speech which depends on the memory of successive sounds, and of the method of reproducing such imitation of them as a Parrot's powers permit; and it is remarkable that their left brain receives more blood and is better developed than the right brain. So far, Dr. Brown Sequard on this point." The author goes into the discussion of the duality of the brain; but the subject is too long to follow here.

Parrots appear to have been held in general estimation in the time of Charles II.; for his Queen, Catherine of Braganza, had a Parrot-keeper at a salary of £36 per annum, while the Maids of Honour received only £10 a year each, and "the Mother of the Maids" £20 per annum. Therefore the custodian of the Parrots was better paid, by £16, than the lady who held the very responsible post of care-taker of the Maids of Honour—as I gather from Miss Strickland (p. 439).

TANYSIPTERA RIEDELI, *Verr.*

(Riedel's Kingfisher.)

BY MR. G. D. ROWLEY.

WITH certain other skins from the same region I received this, and proposed to give a Plate, the birds of this genus being all very beautiful. But Mr. Keulemans's figure in Mr. Sharpe's 'Monograph of the Alcedinidæ' is so good that I refrain, though the sex is not stated. The sexes, however, appear much alike in this species; for if mine is correctly marked it is a *female*:—
“ III. '73. Kordo, Mysore: Dr. Adolf Bernhard Meyer.”

A Plate, half size of life, of *Tanysiptera riedeli* (male) is given ('Reis-tochten de Geelvinkbaai op Nieuw-Guinea') by C. B. H. von Rosenberg. Comparing my bird with this Plate, I observe no difference; nor do I see any variation between the portraits afforded by Mr. Sharpe and the Baron. The former says the exact locality of *T. riedeli* is unknown; and the habitat Celebes is mentioned with a caution.

Persons need not be ornithologists to be struck with the morphology of the genus *Tanysiptera*: the wonderful tail, with its ten feathers (pertaining, we are told by the Alcedinidist above named, to this genus alone), the two centre ones elongated and “ornamented with a more or less distinct spatula or racket,” strikes every one.

I quite agree with Mr. Sharpe that *Tanysiptera* “embraces the most elegant and beautiful of all the Kingfishers.” The trivial name “fisher” is certainly most unhappy in this instance, as in many others in which the birds

have nothing to do with fishes; and Mr. Wallace, quoted by Mr. Sharpe, speaks of the Kinghunters (*Dacelo*) of Australia.

But concerning the tail and its peculiar termination I recommend a perusal of Mr. Osbert Salvin's article (P. Z. S. 1873, p. 429) on the tail-feathers of *Momotus*. This article is illustrated by examples of tails in process of becoming spatulate, and gives a letter from Mr. A. D. Bartlett, in which he says, "I have seen this bird [a Motmot] in the act of picking off the webs of the central feathers of its tail. . . . The Motmot frequently threw up castings, after the manner of the Kingfishers and other birds that swallow indigestible substances."

Mr. Salvin says, after an elaborate argument:—"This character . . . may not be traceable directly to 'sexual selection;' still it may be that an attractive peculiarity in one sex has subsequently been adopted as equally attractive by the other, and hence the habit of nibbling their tail-feathers universally practised by both sexes alike. . . . In other birds, such as *Steganura*, *Loddigesia*, and *Discura* amongst Humming-birds, similar features prevail, and also in such cases as *Prioniturus* amongst Parrots and *Tanysiptera* amongst Kingfishers; but in these last, as in the Motmots, the character is common to both sexes. . . . In *Steganura cissura* the lateral feathers are simply narrowed. . . ." Lastly, "Whether the same cause has produced the racket-shaped tails in *Prioniturus* and *Tanysiptera* is more difficult to trace, as it would appear that in these birds the rhachis becomes more and more denuded in each successive moult, showing other causes at work."

These short extracts do no justice to this very interesting article, which should be read.

I shall not plunge into Darwinism, of which Huxley has given the clearest description. He says, "The Darwinian hypothesis is this: all species have been produced by the development of varieties from common stocks, by the conversion of these, first into permanent races, and then into

new species by the process of *natural selection*—the *struggle for existence* exerting in the case of natural selection a selective action.”

Now Agassiz says, “whenever a new, startling fact is brought to light in science, people first declare it is not true, then it is contrary to religion, lastly that everybody knew it before.”

Leaving out the two first, and making application of the last to the Darwinian theory, something of it would appear to have been known to the Greek chorus in ‘Hecuba,’ which Euripides causes to express itself thus:—

“δεινὸς χαρακτήρ, κἀπίσημος ἐν βροτοῖς
ἐσθλῶν γενέσθαι.”

But regarding the tails of our birds, remembering Comte’s Law of Philosophy, can a more simple hypothesis than sexual selection account for the continual nibbles in question? The class Aves, in the Animal Kingdom, now almost in danger of being abolished* as a separate one at all, has no doubt affinities with others. Take horses; a crib-biter is one of the commonest instances of the fidget,—which prevails amongst men also; our American cousins have invented the word “whittle” for a like process.

Now, in order to be sure that sexual selection is the cause of these birds picking out and destroying their tails, we must first satisfy ourselves that the tail is improved thereby, and next that the birds themselves think so—two rather difficult propositions; for if *we* say the tail is more beautiful in its spatulate form, this arbitrary declaration reminds one of the dogs’ and horses’ tails mutilated by our ancestors (without natural or sexual selection certainly) to improve the animals’ appearance! Nervous irritability appears to me a more likely cause of this tail-picking; but I by no means wish to be

* Professor H. G. Seeley, F.G.S., in a lecture on “Fossil Forms of Flying Animals,” thus informs us:—“That birds were descended from Pterodactyles in a direct line, he held to be highly improbable. He thought they were one of those parallel lines of which we have so many in nature. He did not think they became extinct because they were unfitted to live, nor that existing birds were a higher group of animals or better adapted to the world in which they exist. This he attributes to the changes in the world’s geology.”—*Morning Post*, October 13, 1875.

dogmatical. If, however, irritability has any thing to do with it, sexual selection in this case vanishes, *tenues vanescit in auras!* Instead, then, of a case of *sexual selection*, we should have a case of *sexual rejection*; we well know that a mutilated bird is scouted by all the rest.

That birds are nervous, so to speak, I have constantly found. A *Palæornis* of my own trembles all over at times when I talk to her; she is not afraid of me, but excited. I have a Snowy Owl (*Nyctea scandiaca*, Linn.) which shakes frequently in the same way; this is a nervous individual; and a comrade of the same bird (another Snowy Owl, now living in Brighton) is free from this peculiarity. Persons have said to me, "That bird is ill; look how it shakes," not knowing the cause, but observing the effect.

Mr. Sharpe divides the Kingfishers into Piscivorous, Omnivorous, and Reptilivorous ones, and quotes Mr. Wallace on *Tanysiptera* thus:—"These birds are all inhabitants of thickets or forests where there is soil free from dense vegetation, from which they can pick up insects, small mollusks, or crustacea. They rest on branches three or five feet from the ground, and dart down on their prey, often with such force as to stick their bill into the ground, as shown by its being covered with mud. They are said to nest in deserted white-ants' nests, in caves, or holes in banks."

In the 'Proceedings of the Zoological Society,' 1872, p. 1, we have the following:—"An extract was read from a letter addressed to the Viscount Walden, President of the Society, by Mr. T. G. Riedel, Assistant Resident, Gorontalo, Celebes, with reference to the true locality of *Tanysiptera riedeli*:—"Having been informed of your intention of publishing a complete description of the birds of Celebes, and seeing that Mr. G. R. Gray, in his "Hand-list of Birds," has placed *Tanysiptera riedeli* as an inhabitant of this island, I think it right to mention to you that this bird, described by M. Jules Verreaux in the "Nouvelles Archives du Muséum d'Histoire Naturelle" for 1866, is really from Kordo, an island in the Bay of Geelvink, and not from Celebes.'"

Mr. Sharpe informs me that the original specimen was sent to the Paris Museum, and named after M. Riedel, an attaché of the French Government. Coming from Celebes, it was supposed to belong to that island.

Mr. Sharpe remarks in his monograph, "It will most likely be found to be an inhabitant of one of the Moluccas, and had been brought to Celebes by some native trader."

In 1870 Rosenberg, the Dutch traveller, went to Soek (the other name for Kordo), and brought away a considerable number of specimens of his *Tanysiptera*, which he called *Tanysiptera schlegeli* in his letters home to Prof. Schlegel; the latter has, very properly, in his recent revision of the Kingfishers, united the latter species with the older one, *T. riedeli*.

Mr. Sharpe has furnished me with the synonymy:—

- "*Tanysiptera riedeli*, Verr. Nouv. Arch. Mus. ii. Bull. p. 23, pl. 3. fig. 1 (1866); Gray, Hand-l. B. i. p. 90 (1869); Sharpe, P. Z. S. 1869, p. 631; id. Monogr. Alced. pl. 111 (1871); Riedel, P. Z. S. 1872, p. 1; Walden, Tr. Z. S. viii. p. 45 (1872); Schl. Mus. P.-B. Revue Alced. p. 40 (1874); Rosenb. Rcist. Nieuw-Guinea, pl. xiv. fig. 2 (1875).
 "*Tanysiptera schlegeli*, Rosenb. in Schl. Obs. Zool. N. T. D. iv. p. 12 (1871).

"*Hab.* Soek Island, Geelvink Bay."

The total length of my Queenhuntress is, from tip of the beak to the end of the tail, exactly 14 inches. It is observable that the tail has short webs along the rhachis, all the way between the spatulæ and the rump; while in the feathers of *Parotia seppennis*, springing from the head of the bird (out of its reach, therefore), there is nothing but the bare rhachis and the spatula at the end.



J.G. Keulemans del et lith

Mintern Bros. imp

DENDRÆCA CHRYSOPARIA, *Sc. & Salv.*

DENDRÆCA CHRYSOPARIA.

(The Yellow-cheeked Warbler.)

By OSBERT SALVIN, M.A., F.R.S.

THE only time that I met with this bird was during my first visit to Vera Paz, in Guatemala, in 1859. I was riding to Coban, the chief town of Alta Vera Paz, on the 4th of November, and had just surmounted one of the ridges of the mountainous road that leads to the village of Tactic, where I intended passing the night, when two birds attracted my attention, and I secured both. They, on examination at home, proved to belong to an undescribed species; and the name of *Dendræca chrysoparia* was bestowed upon it by Mr. Sclater and myself.

The altitude above the sea where I shot these birds is about 4500 feet, or a little more; and the district belongs to that termed Alta Vera Paz, in contradistinction to the rest of the Province, most of which lies at a lower elevation. This portion of the country is a very wet one, the rainy season being of much longer duration than in the district lying further to the southward. The line of demarkation between this region of excessive wet and the ordinary climate of Guatemala is very well defined—so much so, that the line is passed in an hour's ride. It was just about this boundary that I met with *Dendræca chrysoparia*. The birds were, after the manner of their congeners, hopping about the lower branches of the forest trees, which are there not very high. But I was too intent upon securing the specimens to observe much of their movements and habits.

A few years after this (in 1863-64) Mr. H. E. Dresser, during his stay in Texas, obtained a single specimen of *Dendræca chrysoparia*. He did not

shoot it himself, but received it with other Mniotiltidæ from a man of the name of Ogden, who shot it at Howard's rancho, on the river Medina.

These three specimens are all that have hitherto been obtained, so far as I know, by any naturalist. The two shot by myself are neither of them quite in fully adult plumage, though the female is perhaps so. The male has not assumed the wholly black back seen in Mr. Dresser's Texan specimen, which doubtless represents the full breeding-plumage of this handsome species.

Some misstatements have been made respecting the number of specimens of this species. Mr. Sclater at one time attributed a second specimen in Mr. Dresser's collection to *D. chrysoparia*; but on further examination this proved to be a young male of the common *D. virens*.

Again, in Messrs. Baird, Brewer, and Ridgway's recently published work on North-American birds (vol. i. p. 261), I find it stated that the species was originally described from a single specimen obtained in Guatemala by myself, and that I subsequently obtained another pair on the highest point of the road between Salamá and Tactic. From what I have already said it will be observed that the "single specimen" here referred to never existed. They also state that *specimens* of this species were captured at San Antonio, Texas, by Dr. Heermann, and on the Medina river by Mr. Dresser. Only one, however, was really taken at the latter place, viz. that already mentioned. At one time a closely allied species, *D. occidentalis*, was mistaken for this bird; but the synonymy, both of these and their allies *D. virens* and *D. townsendi*, have been correctly given by recent writers who have had occasion to refer to them.

The latest and most ample, as well as correct, account of the four allied species just enumerated will be found in Messrs. Baird, Brewer, and Ridgway's work above named.

The Plate accompanying these notes includes representations of the

three known specimens of this rare species. The upper figure is taken from the female shot near Tactic. The central figure is from the adult male in Mr. Dresser's collection, and represents, no doubt, the full breeding-plumage of this bird. The lower figure is from the second Tactic specimen, which is probably a male in autumnal plumage—in which the black of the back is not quite so pure as in the spring bird, each feather having a dark greyish edging.

References :—

Dendræca chrysoparia, Scl. & Salv. P. Z. S. 1860, p. 298 ; Ibis, 1860, p. 273 ; Scl. Ibis, 1865, p. 89 ; Dresser, Ibis, 1865, p. 477 ; Baird, Rev. Amer. B. i. p. 183 ; Baird, Brewer, & Ridgway, N.-Am. B. i. p. 260.

The following carefully drawn characters, by Prof. Baird (Rev. Am. B. i. p. 184), serve to distinguish this and its closely allied species :—

- “COMMON CHARACTERS.—Upper parts more or less olivaceous green, with the feathers streaked centrally with black (sometimes concealed). Sides of head yellow. Chin and throat black ; rest of the underparts (including inside of wings) white, with or without yellow on breast. Wings with two white bands. Inner web of lateral tail-feather almost entirely white from the base.
- “ Above bright olive-green, with concealed black streaks ; tail-coverts ashy. Sides conspicuously streaked with black ; crissum unspotted. Jugulum sometimes faintly tinged with yellowish. An obscure dusky olive stripe through the eye and a crescentic patch of the same some distance beneath it . . . *virens*.
- “ Above olivaceous ashy (rump pure ash), with more distinct black spots. Top and sides of head clear yellow, the feathers of the crown tipped with black or clouded with dusky plumbeous. No dark markings or stripes on side of head. No distinct black streaks beneath ; black of throat restricted to front of neck *occidentalis*.
- “ Prevailing colour of upper part black, with olivaceous edgings to back ; rump and upper tail-coverts pure black. Sides and crissum streaked with black. A simple black stripe through the eye, no patch beneath it *chrysoparia*.

“ Above olive-green. Upper tail-coverts ashy, with central black streaks. Feathers of head above black, with olive-green edges. A broad olivaceous black stripe through the eye from lores, involving the ears, in which is a yellowish crescentic patch below the eye. Black feathers of throat and chin edged with yellow. Jugulum and sides of breast also yellow. Sides streaked with black. No distinct black streaks on crissum *townsendi*.”

In conclusion I must ask American ornithologists to join me in thanking Mr. Rowley for enabling me to lay before them an illustration of a very beautiful and interesting member of their fauna, and at the same time so rare that up to now a single individual alone has been detected within the limits of the United States, and only two others elsewhere.





J.G.Keulemans del

T.Walter imp.

FALCO LABRADORUS. AD



J.G. Keulemans del.

T. Walter imp.

FALCO LABRADORUS. JUN.

FALCO LABRADORUS.

(Labrador Falcon.)

By H. E. DRESSER, F.Z.S. &c.

Falco labradora; Aud. B. Amer. pl. cxvii. (1831).

Falco islandicus, Aud. Orn. Biogr. ii. p. 552 (1834, nec Lath.).

Falco (*Hierofalco*) *gyrfalco*, var. *labradora*, Ridgway, N.-Am. Birds, iii. p. 117 (1874).

Hierofalco gyrfalco, Sharpe, Cat. of Accipitres, i. p. 416 (1874, partim nec Linn.).

Falco labradorus, Aud., Dresser, P. Z. S. 1875, p. 115.

Figura unica.

Audubon *ut supra*.

Ad. corpore suprâ saturatè fumoso-nigrofuscus, uropygio vix schistaceo tincto, pileo fere nigro: remigibus nigro-fuscis immaculatis, nec in pogonio interno ut in *F. islando* conspicuè pallidiore notatis: caudâ saturatè fusco-fumosâ vix cervino apicatâ, sed aliter immaculatâ: corpore subtùs nigro-fusco, abdomine et corpore imo vix ochrascente cervino notatis: subcaudalibus cervino guttatis: subalaribus et margine alæ vix cervino notatis: rostro plumbeo, versus apicem nigricante: iride fuscâ: pedibus plumbeis.

Juv. corpore suprâ saturatè brunneo, plumis pallidiore marginatis: pileo conspicuè albicante cervino striato: remigibus fuscis, in pogonio interno vix cervino marmoratis: rectricibus centralibus fuscis immaculatis, reliquis in pogonio interno ochrascente albido guttatis fascias formantibus: caudâ albido apicatâ: gulâ albâ fusco striatâ: corpore reliquo subtùs brunneo, conspicuè albido et cervino striato et notato: subalaribus fuscis, cervino guttatis.

SPECIMEN A (*adult*, Labrador).—Upper parts uniform dark sooty-brown, unspotted; head blackish; lower back and rump slightly washed with a slaty tinge; upper surface of the wings like the back, but rather darker, and with scarcely perceptible lighter edges to the wing-coverts; tail uniform dark brown, slightly tipped with buff; under surface of the body dark brown, but rather lighter in shade than the upper parts; chin and upper throat rather lighter, these and the breast uniform in colour; abdomen, flanks, edge of the wing, and under wing-coverts sparingly marked with pale buff spots or dashes; inner webs of the primaries very slightly (scarcely perceptibly) marbled with pale buff; under tail-coverts rather boldly marked with

roundish warm buff spots ; bill bluish, becoming black on the ridge and towards the tip ; legs lead-blue, soles yellowish ; iris dark brown. Total length about 24 inches, culmen 1·5, wing 15·7, tail 10, tarsus 2·8, middle toe (with claw) 3·25, middle claw 1.

SPECIMEN B (Labrador).—Upper parts deep clear brown, with a slight slate-tinge when held in certain lights ; nuchal feathers edged with buffy white, but all the rest of the upper parts uniform in colour, except that the feathers on the crown and some on the wing-coverts have a scarcely perceptible lighter margin ; quills of a darker brown than the rest of the upper parts, and with narrow light tips, inner webs dark like the outer ones, and not marked with a lighter colour as in the other Jerfalcons ; under wing-coverts marked with circular light buff spots, and washed with slaty plumbeous ; tail deep brown, with a few obsolete markings on the central rectrices and the outer webs of the remaining feathers ; but the inner webs of these latter are marked with yellowish buff or buffy white spots, forming thirteen transverse bars ; tail narrowly tipped with buffy white ; underparts blackish clove-brown, the tibiæ slightly washed with plumbeous ; feathers on the underparts laterally edged with buffy white, which on the flanks, tibiæ, and under tail-coverts takes the form of roundish spots ; throat most conspicuously marked with white, the markings on the rest of the underparts being far less in amount as compared with the dark colour. Culmen 1·45 inch, wing 15·1, tail 10, tarsus 2·9, middle toe with claw 3·25, middle claw 1.

SPECIMEN C (*young*, Labrador).—Resembles the bird last described, but has the upper parts lighter and browner, and the feathers on the back and wing-coverts have lighter margins ; the head is also much marked with buffy white ; wings as in specimen B, but lighter and the inner webs slightly marbled with buff ; tail paler than in specimen B, but more uniform in colour, the central rectrices being uniform unspotted ; underparts as in specimen B, but paler, more marked with buffy white, the throat being white streaked with dark brown. Culmen 1·45 inch, wing 16·2, tail 10·3, tarsus 2·9, middle toe with claw 3·2, middle claw 1.

Obs.—At the first glance the young bird is not unlike a very dark young Iceland Falcon ; but, irrespective of other differences, the best character, perhaps, by which it may be distinguished is the absence of light bars on the inner webs of the primaries, these being only slightly marbled with buff. Unfortunately the above-described specimens were not sexed ; but the measurements would tend to show that specimen C and probably also A are females, and specimen B a male.

It is somewhat remarkable, although the Raptores have been so frequently and carefully worked out, and the Jerfalcon group more especially have been treated of by various ornithological authors, that so distinct a bird as the Labrador Jerfalcon should only lately have been acknowledged as being a good species. Though figured by Audubon in 1831, and by him considered distinct, yet he discarded the specific name he had proposed, and in his

‘Ornithological Biography,’ and the octavo edition of his ‘Birds of America,’ he refers to it under the name of *Falco islandicus*, believing that the specimens obtained by him in Labrador, and figured (*l. c.*), were merely dark specimens of the Iceland Falcon in immature dress; and as such the species has been referred to by almost all American authors; for the Labrador Falcon is referred to neither in Baird, Cassin, and Lawrence’s ‘Birds of North America’ nor in Dr. Elliott Coues’s ‘Key,’ though Mr. Ridgway carefully discriminates it in the recently issued work on the birds of North America (‘North-American Birds,’ vol. iii. p. 115), and gives most accurate descriptions of the specimens in the Smithsonian Institution; but he treats of it as merely a variety of the Jerfalcon. Mr. Sharpe also (*l. c.*) lacked the necessary materials to enable him to discriminate the present species, and treated of it as a variety or the immature of the Norwegian Jerfalcon. I must confess that when I first saw a specimen I believed that it was only a young melanistic variety of the Iceland Falcon (*Falco islandus*); but when in Brunswick in 1873 I had an opportunity of seeing and examining the rich series in the museum of that town, and then convinced myself, without the shadow of a doubt, that it is a perfectly distinct species, and, I should judge, is more closely allied to the true Jerfalcon (*F. gyrfalco*) than to any other of the Jerfalcons, as the immature bird is lighter in colour and markings than the adult or very old bird. Directly I saw the series of specimens at Brunswick I used every endeavour to obtain one for my own collection, and have been fortunate enough to procure three, one of which is extremely dark and has the upper parts almost uniform in colour. This bird is the specimen figured on one Plate, that on the second Plate being what I take to be the youngest of the three examples.

Nothing appears to be known respecting the range and habits of the present species, beyond what was published by Audubon and has been more recently given by Mr. Ridgway in the work on North-American birds on which he has, with Professor Baird and Dr. Brewer, been lately engaged.

Mr. Ridgway gives its range as "Labrador, south and westward in winter, and shores of Hudson's Bay."

As so little is known respecting the present Falcon, I need make no apology for transcribing all that Audubon writes ('Ornithological Biography,' vol. ii. pp. 552-556) respecting its habits, as follows:—

"On the 6th August, 1833, while my young friends Thomas Lincoln and Joseph Cooledge, accompanied by my son John, were rambling by the rushing waters of a brook banked by stupendous rocks, eight or ten miles from the port of Bras d'Or, on the coast of Labrador, they were startled by a loud and piercing shriek which issued from the precipices above them. On looking up, my son observed a large Hawk plunging over and about him. It was instantly brought to the ground. A second Hawk dashed towards the dead one, as if determined to rescue it; but it quickly met the same fate, the contents of my son's second barrel bringing it to his feet.

"The nest of these Hawks was placed on the rocks, about fifty feet from their summit, and more than a hundred from the base. Two other birds of the same species, and apparently in the same plumage, now left their eyry in the cliff, and flew off. The party, having ascended by a circuitous and dangerous route, contrived to obtain a view of the nest, which, however, was empty. It was composed of seaweeds, sticks, and mosses, about two feet in diameter, and almost flat. About its edges were strewn the remains of their food; and beneath, on the margin of the stream, lay a quantity of wings of the *Uria troile*, *Mormon arcticus*, and *Tetrao saliceti*, together with large pellets composed of fur, bones, and various substances.

"My son and his companions returned to the Ripley towards evening. The two Hawks, which they had brought with them, I knew at once to be of a species I had not before seen, at least in America. Think not that I laid them down at once. No, reader! I attentively examined every part of them. Their eyes, which had been carefully closed by the young hunters, I opened, to observe their size and colour. I drew out their powerful wings,

distended their clenched talons, looked into their mouths, and admired the sharp tooth-like process of their upper mandible. I then weighed them in my hand, and at length concluded that no Hawk that I had ever before handled looked more like a Peregrine Falcon.

“At day-dawn, the same party, highly elated with their success of the former day, were despatched in quest of the other two; but although a third specimen was shot, it flew off to a great distance, fell among the deep moss, and was never found. Several visits to the nest proved fruitless. The parents I had; and the last young had probably for ever abandoned the place of its birth.

“While we remained in Labrador I was ever on the watch for Hawks; and I frequently inspected the country around with a telescope, to try if I could discover some object worthy of my attention. I several times observed the individuals which I have portrayed, ranging high in the air over an island where multitudes of Puffins were breeding. Many were the instances in which I saw these warriors descend like a streak of lightning, pounce on a Puffin, and carry it off in their talons. Their aerial course I also marked, and was thus enabled to trace them to their habitation.

“Their flight resembled that of the Peregrine Falcon, but was more elevated, majestic, and rapid. They rarely sailed when travelling to and fro between their nest and the island mentioned, but used a constant beat of their wings. When over the Puffins, and high in the air, they would hover motionless, as if watching the proper moment to close their pinions; and when that arrived, they would descend almost perpendicularly on their unsuspecting victims.

“Their cries also resembled those of the Peregrine Falcon, being loud, shrill, and piercing. Now and then they would alight on some of the high stakes placed on the shore as beacons to the fishermen who visit the coast, and stand for a few minutes, not erect like most other Hawks, but in the position of a Lestris or Tern; after which they would resume their avocations, and pounce upon a Puffin, which they generally did while the poor bird was

standing on the ground at the very entrance of its burrow, apparently quite unaware of the approach of its powerful enemy. The Puffin appeared to form no impediment to the flight of the Hawk, which merely shook itself after rising in the air, as if to arrange its plumage, as the Fish-Hawk does when it has emerged from the water with a fish in its talons.

“The four Falcons mentioned were all that were seen of this species during our expedition ; and I am inclined to think that these birds must be rare in that part of Labrador. On dissecting them, I found them to be a male and a female, and saw that the latter had laid eggs that season.

“It is probable, therefore, that the two which left the nest at the approach of the party were the young birds. . . .

“From the account which I received from my son and his companions, I would willingly suppose that no one had ever before disturbed their solitude. They flew about and close to them, as if altogether unacquainted with the effects of a gun. The young appeared full-grown, and, as if aware of the fate of their parents, alighted only on the highest and most inaccessible parts of the rocks around. . . .

“On inquiring of a Mr. Jones, who had been a resident in Labrador for twenty years, I was informed that these Hawks feed on and destroy an immense number of Hares, Rock-Partridges, and Willow-Grouse ; but he could not give me any information as to the change of plumage, never having seen them in any other state than that of the individuals represented in my Plate, which I showed to him. The fishermen called them Duck-Hawks ; and some of them reported many exploits performed by them, which I think it unnecessary to repeat, as I consider them exaggerated.”

I may here remark that the present species is not the only Jerfalcon found in Labrador ; for with the three examples forwarded from that country a fine adult Iceland Falcon (*Falco islandus*) was also sent, and is now in my collection ; and in a collection forwarded to Mr. H. F. Möschler, also from Labrador, was a tolerably old Greenland Falcon (*Falco candicans*), which I

also purchased and still possess. But, so far as I can judge, the Labrador Jerfalcon is resident, whereas the other two species only occasionally straggle to that country.

Excepting the series in the Brunswick Museum, I have only had an opportunity of examining four examples of this rare Falcon, viz.:—the three in my own collection, above described; and one from Fort Nescopec, Labrador, belonging to the Smithsonian Institution, and lent to me by Professor Spencer F. Baird. It appears, moreover, to be even much rarer in American than in European collections; for Mr. Ridgway was only able to examine three examples when writing his article on the Jerfalcons—two of which were in the Smithsonian Institution, and one in the Boston Museum.

A REVISION OF THE
FAMILY INDICATORIDÆ.

BY R. BOWDLER SHARPE, F.L.S., F.Z.S., &c., SENIOR ASSISTANT,
ZOOLOGICAL DEPARTMENT, BRITISH MUSEUM.

IN 'The Ibis' for 1870 (p. 176) Dr. Sclater has given an instructive paper on the position of the Honey-guides in the Natural System; and, even from the scanty material at his command, he shows pretty clearly that these birds constitute a separate family, rather more nearly allied to the Barbets than to the Cuckoos; and he establishes the family name "Indicatoridæ" for them. This proposal appears to have been acquiesced in by subsequent writers. About the same time Mr. Blanford (Geol. & Zool. Abyss. p. 309) advocated the placing of the Honey-guides with the Barbets or with the Colies rather than with the Cuckoos, arriving at this conclusion quite independently and from the study of specimens shot by himself. In regard to the affinities of the family with the Coliidæ, as suggested by Mr. Blanford, Dr. Murie is silent in his paper on the latter birds (Ibis, 1872, p. 262); and at present their position may be said to be established in the neighbourhood of the Capitonidæ. But they must also have a certain affinity with the Cuculidæ; for there are decidedly Cuculine characters, such as are found in the tongue (*cf.* Sclater, *l. c.*), the nostril (*cf.* Blanford, *l. c.*), and also in the presumed parasitic habits of the bird (*cf.* Finsch & Hartl. Vög. Ostafri. p. 515).

I need not dilate on the "honey-guiding" propensities of the Indicatoridæ—a fact so well known to us from the writings of African naturalists, but one which has never been credited to the Indian species (*cf.* Jerdon, B. Ind. i. p. 306). Information on this subject can be found on reference to the

following books and papers :—(1) Verreaux, in Lefebvre, Voyage Abyss. Oiseaux, p. 177* ; (2) Livingstone's 'Missionary Travels in South Africa,' p. 547 ; (3) Heuglin, in the 'Journal für Ornithologie' for 1862, p. 32 ; and (4) in the 'Ornithologie Nordost-Afrika's' (pp. 766–772) of the same author. An interesting letter is also contributed by Mrs. Barber (Ibis, 1869, p. 373). In the present paper I have attempted a revision of the family, and only regret that there are still some species which have not fallen under my notice.

Family INDICATORIDÆ.

Key to the Genera.

- a.* Bill stout, rather deeper than broad ; culmen not nearly so long as the middle toe without its claw ; feet stout INDICATOR.
- b.* Bill slender, about equal in depth and breadth ; culmen about equal to middle toe without claw ; feet very slight PRODOTISCUS.

GENUS 1. INDICATOR.

	Type.
<i>Indicator</i> , Vieill. Analyse, p. 28 (1816)	<i>I. minor</i> .
<i>Prodotes</i> , Nitzsch, Pterylogr. p. 131 (1840)	<i>I. sparrmanni</i> .
<i>Melignotheres</i> , Cassin, Pr. Philad. Acad. 1856, p. 146	<i>I. conirostris</i> .
<i>Melignostes</i> , Heine, J. f. O. 1860, p. 192 (nom. emend. pro <i>Melignotheres</i>).	

Range.—The whole of Africa below the desert ; Himalayan Mountains ; Borneo.

Key to the Species.

- a.* Rump and upper tail-coverts uniform with the back.
- a'*. Size small ; throat uniform greyish.
- a''*. Wing 3·5–3·7 inches ; breast grey.
- a'''*. Bill stout ; no yellow shoulder-spot { *minor*.
conirostris.
- b''*. Bill slender ; a distinct yellow shoulder-spot *archipelagicus*.
- b''*. Wing 2·5 inches ; breast washed with olive *exilis*.

- b'*. Size larger; throat mottled with white, with which the feathers are edged.
c''. Flanks streaked with dusky brown, the whitish mottled feathers not continued below the breast, the abdomen being nearly uniform whitish *variegatus*.
d''. Flanks nearly uniform dusky brown, the entire under surface mottled with whitish like the throat *maculatus*.
- b*. Rump and upper tail-coverts more or less white, not uniform with the back.
c'. Least wing-coverts bright yellow, forming a shoulder-patch; throat in male black; rump streaked with brown and white; flanks streaked with brown *sparrmanni*.
d'. No shoulder-patch; rump entirely white, not streaked with brown; flanks uniform, without brown streaks; head washed with yellow.
e''. Ear-coverts pale brown; bill pale brown *major*.
f''. Ear-coverts blackish; bill black *barianus*.
- c*. Hinder back and rump yellow *xanthonotus*.

1. INDICATOR MINOR.

Le Petit Indicateur, Levaill. Ois. d'Afr. v. pl. 242 (1806); Sundev. Krit. om Levaill. p. 50 (1858).

Indicator minor, Steph. Gen. Zool. ix. part 1, p. 140 (1815); Bonn. et Vieill. Enc. Méth. iii. p. 1351 (1823); Less. Man. d'Orn. ii. p. 125 (1828); Swains. B. W. Afr. ii. p. 196 (1837); Rüpp. Syst. Uebers. p. 96 (1845); Gray, Gen. B. ii. p. 451 (1847); Bp. Consp. i. p. 100 (1850); Heugl. Syst. Uebers. p. 48 (1856); Hartl. Orn. W. Afr. p. 196 (1857); Grill, Zool. Anteckn. p. 43 (1857); Gurney, Ibis, 1859, p. 247, and 1860, p. 205; Cab. & Heine, Mus. Hein. Theil iv. p. 3 (1862); Schl. Mus. P.-B. *Cuculi*, p. 2 (1864); Kirk, Ibis, 1864, p. 327; Layard, B. S. Afr. p. 243 (1867); Finsch, Tr. Z. S. vii. p. 287 (1870); Blanf. Geol. & Zool. Abyss. p. 307 (1870); Gray, Hand-l. B. ii. p. 205 (1870); Sharpe, Cat. Afr. B. p. 14 (1871); Gurney in Anderss. B. Dam. Ld. p. 223 (1872); Heugl. Orn. N.O.-Afr. p. 771 (1872).

Indicator minimus, Temm. Pl. Col. 542. fig. 2 (1832).

Indicator buphagoides, Leadb. Tr. Linn. Soc. xvi. p. 85 (1833).

Indicator diadematus, Rupp. Neue Wirb. p. 61 (c. 1840).

Indicator apivorus, Licht. Nomencl. Av. p. 78 (1854).

Adult male.—Head and neck greyish, slightly washed with olive, the crown indistinctly streaked with the dark brown bases to some of the feathers; the rest of the upper surface golden or olive-yellow, the inter-

scapulary region slightly streaked by reason of the dusky bases to the feathers; wing-coverts and quills dusky brown, broadly margined with golden yellow, the inner webs white for nearly their entire length; four centre tail-feathers dark brown, slightly washed on the margin with olive-yellow, all the rest of the feathers white, tipped with dark brown, the tip being larger on the outer feathers, where the brown also extends a little way up the outer web; sides of face grey, the lores with an inclination to white, the cheeks darker brown, forming an indistinct moustache; rest of under surface of body ashy grey, the chin, centre of the abdomen, and under wing- and tail-coverts white; lower flanks and sides of vent dull white, broadly streaked with ashy brown; "iris very dark brown; upper mandible and the extremity of the lower one dark horn-colour, the rest of the lower mandible livid; legs and toes lead-colour, tinged with green in front" (*Andersson*); "bare space round the eye lead-colour" (*Heuglin*). Total length 5·4 inches, culmen 0·5, wing 3·7, tail 2·6, tarsus 0·6.

The specimen described is from Otjimbingue, in Damara Land. In another specimen from the same locality, and again in another, from Natal, there is an inclination to a few dusky feathers across the throat.

Habitat.—SOUTH AFRICA. Extending all along the east coast (*Layard*), from the Knysna (*Victorin*) to Natal (*Ayres*), and occurring in the interior of the colony also—Eland's Post (*Atmore*); Damara Land and Great Namaqua Land (*Andersson*); Zambesi (*Kirk*). N.E. AFRICA. Bogos Land (*Blanford*); Sambar, Abyssinia, East Senaar, Galabat, Upper White Nile, and Gazelle River (*Heuglin*). W. AFRICA. Senegambia (*Swainson*).

Specimens examined.

E mus. Brit.—*a, b*. Natal. *c, ♀*. Natal. *d*. Natal.

E mus. R. B. S.—*a, ♂*. Otjimbingue, Damara Land, June 27, 1866 (*C. J. Andersson*). *b, ♀*. Otjimbingue, Oct. 2, 1866 (*C. J. A.*).

E mus. G. E. Shelley.—*a*. Durban. *b*. Eland's Post (*T. C. Atmore*).

2. INDICATOR CONIROSTRIS.

Melignothes conirostris, Cass. Pr. Philad. Acad. 1856, p. 156, et 1859, pl. 2; Hartl. J. f. O. 1861, p. 264.

Indicator conirostris, Hartl. Orn. Westafr. p. 184; Cab. & Heine, Mus. Hein. iv. p. 4, note.

Indicator occidentalis, Verr. in Hartl. Orn. Westafr. p. 185.

Head above dark cinereous, every feather nearly black in the middle; back, rump, upper tail-coverts, and wing-coverts with every feather brownish black in the middle and edged on both sides with golden yellow; quills brownish black, edged externally with the yellow of the back—narrow on the primaries, wider on the secondaries; feathers of the throat white at base, dark at their tips; small space of the abdomen and flanks white, with longitudinal stripes of dark ashy brown; other underparts and sides of the head and neck clear dark cinereous; under tail-coverts slightly edged with white; under wing-coverts ashy; tail with the four central feathers brownish black, narrowly edged with yellow, others yellowish white tipped with dark brown; bill and feet bluish black. Total length (of skin) $5\frac{3}{4}$ inches, wing $3\frac{1}{2}$, tail $2\frac{1}{4}$, bill $\frac{1}{2}$ (*Cassin*).

Habitat. — Gaboon; Cape Lopez (*Verreaux*); Moonda river (*Du Chaillu*).

The above is Cassin's original description, which I am obliged to transcribe, not having seen the bird myself. He says:—"This species is about the size of *I. minor*, and somewhat resembles it. In addition to the differences already pointed out, this bird has the bill entirely bluish black, not white at the base of the under mandible as in *I. minor* and as carefully represented in Temminck's 'Planches Coloriées,' pl. 542. The colours are much clearer, and different from that species. The bill in the present bird is remarkably short and thick. Dr. Hartlaub describes the Gaboon specimen sent to him by Verreaux (Ornith. Westafr. p. 185), and considers it distinct from *I. minor*. Dr. Otto Finsch is inclined to unite with *I. con-*

rostris (cf. Tr. Z. S. vii. p. 287) Heuglin's *I. pachyrhynchus**, and believes that they are both referable to the ordinary species. Judging from Cassin's figure and Hartlaub's description, I should say that the Gaboon bird is brighter in colour than birds from either South or N.E. Africa, and is more striped in appearance by reason of the dark centres to the feathers of its upper surface. Dr. von Heuglin (*l. c.*) objects to his *Melignostes pachyrhynchus* being extinguished as a species. He says that it is allied to *Indicator exilis*, and has no brown terminal spot to the outer tail-feather. The type is no longer to be found in the Stuttgart Museum; so he contents himself with giving a description in a footnote; but the species is very probably distinct. He found it in the wood-region of the headwaters of the Gazelle River during the rainy season.

3. INDICATOR ARCHIPELAGICUS.

Indicator archipelagicus, Temm. Pl. Col. 542, fig. 2 (1832); S. Müll. Natuurl. Gesch. Land-
en Volkenk. p. 234 (c. 1840); Bp. Consp. i. p. 100 (1850); Cab. & Heine, Mus. Hein.
iv. p. 4, note (1862); Schl. Mus. P.-B. *Cuculi*, p. 2 (1864); Gray, Hand-l. B. ii. p. 205
(1870); Heugl. Orn. N.O.-Afr. p. 773 (1872); Salvad. Ucc. Born. p. 61 (1874).

Adult.—Entire upper surface, wings, and middle tail-feathers brown, each feather having a small green border; bend of wing and a part of the bastard wing beautiful yellow; throat whitish; chest and flanks grey; stomach and abdomen whitish, marked on the flank-feathers with long brown stripes; the external tail-feathers white, with brown tips. The skin in this species is thick and hard, like that of the others. Total length 6 inches 3 lines.

Habitat.—Borneo, Pontianak (*Diard*); Karou river (*Schwaner*).

* INDICATOR PACHYRHYNCHUS.

Melignostes pachyrhynchus, Heugl. J. f. O. 1864, p. 265; Finsch & Hartl. Vög. Ostaf.
p. 517, note (1870); Heugl. Orn. N.O.-Afr. p. 773 (1872).

Professor Schlegel gives the following diagnosis of the species, which I reproduce. (The description is translated from Temminck.)

“Underneath white, more or less inclining to greyish; above brown, passing to greyish on the neck and head, the feathers bordered with yellow; shoulders yellow; upper mandible brown; the lower one white, brown at the tip. Wing 3 inches 6–7 lines, tail 2 inches 4 lines.”

4. INDICATOR EXILIS.

Melignothes exilis, Cass. Pr. Phil. Acad. 1856, p. 157, et 1859, p. 142, pl. 1. fig. 1; Hartl. J. f. O. 1861, p. 264.

Indicator exilis, Hartl. Orn. Westafr. p. 185; Gray, Hand-l. B. ii. p. 205.

Melignostes exilis, Heine, J. f. O. 1860, p. 192.

Adult.—Head greenish grey, with distinct streaks of black on the forehead; rest of the upper surface olive golden, the centres of the feathers blackish brown, giving a distinctly streaked appearance to the back and wing-coverts; quills brown, the feathers margined with olive golden, broader on the secondaries; four centre tail-feathers blackish, margined with olive, the rest of the feathers white, the two outer ones tipped with brown, the bases of all but the outermost brown on the outer web; sides of face, neck, and underparts ashy grey, the breast strongly washed with olive-green; feathers below the ear-coverts and cheeks greyish black; sides of vent distinctly streaked with brown, the edges to these plumes being white; under wing-coverts whitish, slightly shaded with brown near the tips, the feathers near the edge of the wing greyish. Total length 4 inches, culmen 0·35, wing 2·5, tail 1·75, tarsus 0·5.

Habitat.—Gaboon, Moonda and Camma rivers (*Du Chaillu*).

Specimen examined.

E mus. Brit.—*a*, ad. Camma river (*Du Chaillu*).

5. INDICATOR VARIEGATUS.

Le Grand Indicateur femelle, Levaill. Ois. d'Afr. v. pl. 241 (1806); Sundev. Krit. om Levaill. p. 50 (1858).

Indicator major ♀, Steph. Gen. Zool. ix. part 1, p. 140, pl. 27. fig. 2 (1815); Guér. Iconogr. Règne Anim. Ois. pl. 32.

Indicator sparrmanni, Leadb. Tr. Linn. Soc. xvi. p. 91 (1833, nec Steph.).

Indicator variegatus, Less. Traité, p. 155 (1831); Pucher. Rev. Zool. 1853, p. 71; Cab. & Heine, Mus. Hein. Th. iv. p. 6 (1862); Grill, Zool. Anteckn. p. 43 (1857); Schl. Mus. P.-B. *Cuculi*, p. 2 (1864); Layard, B. S. Afr. p. 242 (1867); Gray, Hand-l. B. ii. p. 204 (1870); Heugl. Orn. N.O.-Afr. p. 773, note (1872).

Indicator maculicollis, Sundev. Öfv. k. Vet. Akad. Förh. Stockh. 1850, p. 109.

Indicator levaillantii, Bp. Consp. i. p. 100 (nec Temm.).

Adult.—Above yellowish olive, the rump and upper tail-coverts uniform; the head rather greyer, the forehead and crown, as well as the sides of the face, throat, and fore neck, black, the feathers all tipped with yellowish white, producing a mottled appearance; the rest of the under surface yellowish white, the bases to the feathers of the flanks being grey and appearing mottled, the lower flanks and under tail-coverts white, narrowly streaked with brown, much more obsolete on the latter; under wing-coverts whitish, mottled with greyish black near the outer edge of the wing; quills blackish, edged with olive-golden, rather brighter than the colour of the back; four centre tail-feathers blackish, edged with yellowish olive and inclining to greyish white along the inner webs of the two centre ones, the next two with a greyish white spot near the tip, the rest of the feathers white, the two outermost tipped with dark brown, the next one pure white, and the next inclining to brown along the inner web and towards the base. Total length 6·7 inches, culmen 0·5, wing 4·05, tail 2·9, tarsus 0·65.

Habitat.—SOUTH AFRICA. Knysna (*Victorin*), George (*H. Atmore*), Beaufort (*T. C. Atmore*). E. AFRICA. Mombas (*Wakefield*).

The late Professor Sundevall (*l. c.*) has amply shown that the idea of this bird being the female or young of *I. major* or *I. sparrmanni* is quite

erroneous, as he received examples of both sexes, determined by dissection, from Wahlberg in South Africa. On the western coast it is replaced by the succeeding species.

Professor Schlegel considers Temminck's *Indicator levaillantii* to be referable to this bird; and he indicates two specimens in the Leyden Museum as being the types of Temminck's species. This can hardly be the case, as the latter expressly states that his name of *levaillantii* was intended for a bird *seen* but not procured by Levaillant in South Africa, and of which he gave a description as follows:—" Il est de taille moyenne entre le grand et le petit Indicateur; dessus de la tête brun ainsi que le dos, les ailes et le croupion; gorge roux-clair, et tout le dessous du corps blanc-roussâtre; pieds et bec brun. Habite vers les bords de la rivière Orange."

Specimens examined.

E mus. Brit.—*a.* Mombas (*Wakefield*).

E mus. R. B. S.—*a.* George (*H. Atmore*). *b.* South Africa.

E mus. G. E. Shelley.—*a.* Beaufort (*T. C. Atmore*).

6. INDICATOR MACULATUS.

Indicator maculatus, Gray, Gen. B. ii. p. 451, pl. cxiii; Bp. Consp. i. p. 100 (1850); Cassin, Pr. Philad. Acad. 1859, p. 142; Heine, J. f. O. 1860, p. 192.

Indicator major (juv.), Hartl. Orn. Westafr. p. 183 (1857).

Adult.—General colour greenish, brighter and more golden on the wings; the rump and upper tail-coverts uniform with the back; head ashy brown, slightly mottled with tiny whitish spots; entire under surface dusky grey, everywhere thickly mottled with greenish white spots, a little less distinct on the lower flanks, the feathers of which are dusky brown with a few whitish edgings to the feathers; under tail-coverts white, with dusky olive-brown spots near the tips; four centre tail-feathers brown, edged with olive, and rather lighter on the inner web; the next two pairs white, with a small brown tip, and inclining to brown towards the base of the inner web, the two outer-

most quite white, with an oblique spot of brown near the tip of the outer web; bill brown, reddish on the under mandible. Total length 6·5 inches, culmen 0·55, wing 4·05, tail 2·8, tarsus 0·7.

Habitat.—W. AFRICA. Senegambia (*Mus. Brit.*); Gold Coast (*Pel*); Gaboon, Ogowè river (*Du Chailu*).

This species is here described for the first time, though well figured by Gray and Mitchell in the ‘Genera of Birds.’ As with *I. variegatus*, it has been considered to be the young of *I. major*, and was so described by Dr. Hartlaub (*l. c.*). To this view Mr. Cassin objected, as he received specimens of either sex from the Gaboon; and it is beyond much doubt that the mottled birds are adult, and constitute a perfectly distinct species from *I. major*. By this identification the range of the latter is much curtailed, as its supposed occurrence in Sierra Leone, Dabocrom, and Gaboon rests entirely upon “young” birds; and these, of course, are *I. maculatus*, and not *I. major* at all.

Specimen examined.

E mus. Brit.—*a.* River Gambia. Presented by F. Campbell, Esq. Type of species.

7. INDICATOR SPARRMANNI.

Honey-Guide, Sparmm. Phil. Trans. lxxvii. p. 38, pl. 1 (1777).

Le Coucou Indicateur, Montb. N. H. Ois. vi. p. 392 (1779).

Honey Cuckoo, Lath. Gen. Syn. i. part 2, p. 533 (1782).

Cuculus indicator, Gm. S. N. i. p. 418 (1788); Lath. Ind. Orn. i. p. 218 (1790); Wald. Ibis, 1869, p. 337.

Indicator sparrmanni, Steph. Gen. Zool. ix. p. 138 (1815); Bp. Consp. i. p. 100 (1850); Horsf. & Moore, Cat. B. Mus. E.-I. Co. ii. p. 680 (1854); Cab. & Heine, Mus. Hein. Theil iv. p. 6 (1862); Schl. Mus. P.-B. *Cuculi*, p. 2 (1864); Gray, Hand-l. B. ii. p. 204 (1870); Blanf. Geol. & Zool. Abyss. p. 307 (1870); Finsch, Tr. Z. S. vii. p. 286 (1870); Sharpe, Cat. Afr. B. p. 14 (1871); Heugl. Orn. N.O.-Afr. p. 766 (1872); Antin. & Salvad. Ucc. Bogos, p. 46 (1873); Buckley, Ibis, 1874, p. 368.

Indicator major ♂, Bonn. & Vieill. Enc. Méth. iii. p. 1350 (1823).

Indicator albirostris, Temm. Pl. Col. 367 (1825); Less. Man. d’Orn. ii. p. 125 (1828); id.

Traité, p. 155 (1831); Des Murs, in Lefebvr. Voy. Abyss. Ois. p. 139 (1849); Bp. Consp. p. 100 (1850); Heugl. Syst. Uebers. p. 47 (1856); Hartl. Orn. Westaf. p. 186 (1857); Layard, B. S. Afr. p. 242 (1867).

Indicator leucotis, Swains. B. W. Afr. ii. p. 139 (1837).

Indicator flaviscapulatus, Rüpp. N. W. Vög. p. 60 (c. 1840).

Indicator archipelagicus, Rüpp. Syst. Uebers. p. 96 (1845, nec Temm.).

Indicator albirostris (?), Heugl. J. f. O. 1862, p. 272, *undè*

Indicator pallidirostris, Heugl. J. f. O. 1864, p. 265; Gray, Hand-l. B. ii. p. 204 (1870).

Adult male.—Above dark cindery brown, the feathers of the lower rump brown in the centre with broad white edgings, the middle feathers of the upper tail-coverts white, streaked with brown down the centre, the outer upper tail-coverts uniform brown like the back; wings dark brown, with a large cubital spot of golden yellow; all the wing-coverts edged with white, more or less inclining to whity brown, the quills externally edged with dull olive-yellow; two centre tail-feathers dark brown, the next two brown, inclining to white along the inner web, the rest of the tail white tipped with ashy brown, somewhat increasing in extent on the two outer rectrices; sides of neck ashy grey like the back, the ear-coverts inclining to greyish white and contrasting with the cheeks and throat, which are black; lower throat, fore neck, breast, and sides of the body pale ashy, the abdomen and under tail-coverts pure white, the lower flanks with a few narrow streaks of brown; under wing-coverts white, slightly marked with brown near the edge of the wing; bill sometimes red, sometimes yellowish white; bare space round the eye and feet dusky lead-colour; iris umber-brown. Total length 8·3 inches, culmen 0·55, wing 4·25, tail 2·9, tarsus 0·65.

According to Dr. von Heuglin, the female wants the black throat, but has the cheeks slightly spotted with dusky; ear-coverts dull ashy brown; the margins of the wing-coverts less distinct; bill pale fuscous; the mandible livid, tinged with blood-red. Such a specimen, marked a female by Mr. Atmore, is in my collection, from Eland's Post.

Habitat.—S. AFRICA. Swellendam (*Cairncross*), Eland's Post (*Atmore*),



J. G. Keulemans del.

T. Walter lith.

INDICATOR BARIANUS.
PRODOTISCUS REGULUS.

from the north of the Transvaal to the Matabili country (*Buckley*); Gambos, Mossamedes (*Anchieta*). N.E. AFRICA. Country near the sources of the Gazelle River and to the southward, Abyssinia, Bogos, Galabat, Wau; and Bongo (*Heuglin*); Bari-Negro Land (*Mus. Wien*). W. AFRICA. Gambia (*Rendall*); Casamanze (*Verreaux*).

Specimens examined.

E mus. Brit.—*a*. Gambia. *b, c, d, e*. River Gambia (*Rendall*). *f*. South Africa (*Sir A. Smith*).

E mus. R. B. S.—*a*. Casamanze (*Verreaux*). *b*. Bogos Land (*Esler*). *c, ♀*. Eland's Post, May 20, 1870, "iris hazel" (*T. Atmore*).

E mus. T. E. Buckley.—*a, ♂* ad. Limpopo, Nov. 16, 1873.

8. INDICATOR BARIANUS. (*Vide Plate.*)

Indicator barianus, Heugl. Syst. Uebers. p. 48 (1856); Hartl. Orn. Westafr. p. 274, note (1857); Heugl. J. f. O. 1862, p. 33 (descr. princ.); Cab. & Heine, Mus. Hein. Theil iv. p. 5, note (1862); Finsch, Tr. Z. S. vii. p. 287 (1870); Gray, Hand-l. B. ii. p. 205 (1870); Finsch & Hartl. Vög. Ostaf. p. 518, note (1870); Heugl. Orn. N.O.-Afr. p. 771 (1872).

Indicator major, Sharpe, P. Z. S. 1873, p. 711.

Adult.—Above dusky brown, with an olive shade, much yellower and brighter on the head and neck; the lower back, sides of rump, and outer upper tail-coverts dull ashy brown; the rump and central upper tail-coverts yellowish white, some of the lateral coverts brown on the outer and white on the inner webs; wings entirely brown, narrowly margined with olive-yellow, inclining to whitish on the greater series; tail brown, the two centre feathers lighter on the inner web and inclining to white near its base, the next pair brown, white along the inner web, the next pair brown with scarcely any inner margin of white, the next pair white inclining to brown along the basal half of the inner web, the two outer feathers white tipped with brown, the penultimate one brown at base of inner web; ear-coverts blackish brown; cheeks and throat bright yellow, becoming paler on the breast and

shading off into white on the belly and under tail-coverts; outer aspect of thighs blackish, streaked with yellow; bill black. Total length 7 inches, culmen 0·55, wing 4·3, tail 3, tarsus 0·7.

The above description is taken from a Mombas skin, collected by the Rev. J. M. Wakefield, and now in the British Museum. I was at first inclined to consider it undescribed, as Dr. Finsch has not admitted Von Heuglin's *Indicator barianus* as a species. The latter author, however, in his latest work on the birds of North-eastern Africa, has insisted once more on the recognition of *I. barianus*; and I find that the Mombas skin agrees so well with Von Heuglin's description that I cannot doubt their identity. *I. barianus* must therefore be considered a good species; and for the sake of comparison I reproduce the diagnosis given by the original describer:—

“Like *I. major*; bill stronger, more elongate, dusky black; lores and ear-coverts smoky brown; shoulder-spot bright yellow. Upper surface smoky brown, washed with olivaceous; lores and ear-coverts darker; underneath white, the throat and breast shaded with a wash of buffy yellow: middle upper tail-coverts pure white. Total length 6 inches 10 lines, wing 4 inches 2½ lines, tail 2 inches 8 lines.

Habitat.—Bari-Negro Land (*Heuglin*); Mombas (*Wakefield*).

Specimen examined.

E mus. Brit.—*a*, ad. Mombas (*Wakefield*).

9. INDICATOR MAJOR.

Le Grand Indicateur, Levaill. Ois. d'Afr. v. pl. 241. fig. 1 (1806); Sundev. Krit. om Levaill. p. 50 (1858).

Indicator major, Steph. Gen. Zool. ix. pt. 1, p. 140, pl. 27. fig. 1 (1815, ex Levaill.); Vieill. et Oud. Gal. Ois. i. p. 39, pl. 45; Lefebvr. Voy. Abyss. Ois. p. 138; Verr. *t. c.* p. 177*a*; Gray, Gen. B. ii. p. 451 (1847); Bp. Consp. i. p. 100 (1850); Hartl. Orn. Westafr. p. 183 (1857); Cab. & Heine, Mus. Hein. iv. p. 5, *note* (1862); Gurney, Ibis, 1862, p. 33; Heugl. J. f. O. 1862, p. 35; Schl. Mus. P.-B. *Cuculi*, p. 2 (1864); Layard, B.

S. Afr. p. 241 (1867), id. Ibis, 1869, p. 373; Gray, Hand-l. B. ii. p. 205 (1870); Sharpe, Cat. B. p. 14 (1871); Heugl. Orn. N.O.-Afr. p. 770 (1872); Gurney, in Anderss. B. Dam. Ld. p. 224 (1872).

Indicator levaillantii, Leadb. Tr. Linn. Soc. xvi. p. 85 (1833, nec Temm.).

Indicator flavicollis, Swains. B. W. Afr. ii. p. 198 (1837).

Indicator proditor, Licht. Nomencl. Av. p. 78 (1854).

Indicator archipelagicus, Heugl. Syst. Uebers. p. 47 (1856, nec Temm.).

Adult.—Above pale brown, the lores, ear-coverts, and sides of neck uniform with the back, the head strongly washed with olive-yellow; wings brown, all the feathers edged with olive-brown, the least coverts slightly washed with olive-yellow, but not sufficient to form a shoulder-patch; rump and upper tail-coverts pure white, the outermost of the latter brown, some of the centre ones brown on the outer web and white on the inner; central tail-feathers brown, paler on the inner web and white at the extreme base, the next pair brown, whitish along the base of the inner web, the next pair entirely white, excepting a brown tip and a little brown at the base of the inner web, the two outer feathers on each white with pale brown tips; cheeks, throat, and breast yellow, with a few scattered brown feathers on the former; the rest of the lower parts white, the outer face of the thighs brown; under wing-coverts white; bill dusky horn-brown; iris pale crimson; feet dusky (*Heuglin*). Total length 7·8 inches, culmen 0·6, wing 4·55, tail 3·2, tarsus 0·65.

Habitat.—SOUTH AFRICA. Along the south-eastern coast as far as Caffraria (*Levaillant*); Swellendam (*Cairncross*); George (*H. Atmore*); Natal (*Ayres*). N.E. AFRICA. Abyssinia, and probably on the Upper White Nile (*Heuglin*). W. AFRICA. River Gambia (*Rendall*); Casamanze (*Verreaux*).

Specimens examined.

E mus. Brit.—*a, b*. River Gambia (*Rendall*).

E mus. R. B. S.—*a*. South Africa. *b*. Bejook, Bogos (*Esler*).

10. INDICATOR XANTHONOTUS.

Indicator xanthonotus, Blyth, J. A. S. B. xi. p. 166 (1842), xiv. p. 198 (1845); Jerd. Ill. Ind. Orn. pl. L. (1847); Blyth, Cat. B. Mus. A. S. B. p. 65 (1849); Bp. Consp. i. p. 100;

Jerd. B. Ind. i. p. 306 (1862) : Cab. & Heine, Mus. Hein. Theil iv. p. 5, note (1862) ; Blyth, Ibis, 1866, p. 357 ; Gray, Hand-l. B. ii. p. 205 (1870) ; Jerd. Ibis, 1872, p. 10 ; Stoliczka, Str. F. 1873, p. 425.

Indicator radclyffi, Hume, Ibis, 1870, p. 529.

Pseudofringilla xanthonotus, Hume, Str. F. 1873, p. 314.

Adult male.—Forehead, chin, and cheeks silky golden-yellow ; back and sides of the head and neck, and interscapular region, blackish brown, every feather margined with olive-yellow. If the feathers of the head and neck (but not of the interscapular region) are lifted, their basal halves will be found to be yellowish white. The wings and scapulars are black, or at any rate so deep and black a brown that most people would call them black ; and all the coverts and quills, except the first few primaries, are conspicuously margined with bright olive-yellow ; the tertiaries and longer scapularies with a conspicuous marginal white stripe on the inner webs ; the tail black, the outermost tail-feathers (which are narrow, pointed, and 0·8 inch shorter than the next pair) broadly tipped with white or greyish white, and with a streak of the same running up the shaft, the next pair (which are about 0·3 inch shorter than the rest of the tail) similar, except that the white tipping is confined to the inner web. Central portion of middle and lower back and rump bright orange-yellow, the basal portions of the feathers paler, and many of them with a dusky streak or spot ; sides, rump, and upper tail-coverts black, some of the longest of the latter margined with yellowish white. Breast dusky, with an olivaceous tinge, and the feathers obscurely margined with olive-yellow ; edge of wing, wing-lining, and axillaries silky yellow to yellowish white. Abdomen dull brown, the feathers broadly margined with brownish white ; flanks, vent, and lower tail-coverts blackish brown, the feathers conspicuously margined with dull somewhat yellowish white ; the third quill is the longest, the second a hair's breadth at most, and the first and fourth less than 0·1 inch shorter than the third ; the tarsus is between 0·5 and 0·6 inch in length, and is *feathered in front* for its upper three fifths (*Hume*) ; eye small, the iris dark brown, the naked space round the eye a

very pale green; bill yellow, somewhat dusky towards the tip; at the base of both the upper and lower mandible as well as on the chin there are black bristles; but none exist above the nostrils, which are large, triangular, and swollen; feet pale greenish horny. Total length a little above 6 inches, wing 4, bill at front 0·31, from gape half an inch (*Stoliczka*).

Habitat.—Himalayan Mountains, from the borders of Afghanistan to those of Bhotan (*Hume*).

Never having examined a specimen of the Indian Honey-guide, I have compiled the above description from the excellent accounts of the bird given by Hume and *Stoliczka*.

The latter gentleman gives notes (*l. c.*) on the anatomy of a specimen shot by him near Murree; and he comes to the conclusion that *Indicator* is properly placed near *Megalæma*.

The bristles near the mouth of the Indian species, and its more feathered tarsus (as described by the above-mentioned naturalists), make me think that very probably the Asiatic Honey-guides may turn out to be distinct from the African, in which case Mr. Hume's name of *Pseudofringilla* (potius *Pseudospiza*) must be retained.

GENUS 2. PRODOTISCUS.

	Type.
<i>Prodotiscus</i> , Sundev. Öfv. K. Vet. Akad. Förh. Stockh. 1850, p. 109 . . .	<i>P. regulus</i> .
<i>Heterodes</i> , Cassin, Pr. Philad. Acad. 1856, p. 157	<i>P. insignis</i> .

Range.—Africa: Natal, and the Gaboon district on the west coast.

Key to the Species.

- a.* Brown, with a large patch of white feathers on each side of lower back; wings brown, the secondaries edged with whitish *regulus*.
- b.* Dark olive, tinged with yellow; quills dark brown, externally edged with yellow, broader on the secondaries *insignis*.

1. *PRODOTISCUS REGULUS.* (*Vide Plate.*)

Prodotiscus regulus, Sundev. K. Vet. Akad. Förh. Stockh. 1850, p. 109; Hartl. Orn. Westafr. p. 186, note; Cab. & Heine, Mus. Hein. Theil iv. p. 5, note.
Indicator regulus, Licht. Nomencl. Av. p. 78 (1854); Gray, Hand-l. B. ii. p. 205 (1870).

Adult female.—General colour earthy brown, including the sides of the face and neck; a tuft of white feathers on each side of the lower back; underneath rather more ashy brown, the centre of the body and under tail-coverts yellowish white, the latter with a few hair-like shaft-streaks; under wing-coverts white, the feathers near the edge of the wing brown; wings brown, the quills darker, the secondaries edged with whity brown; tail dark brown, the three outer feathers white on the outer web, extending for more than half of the two outermost, but less extended on the third; bill and feet blackish. Total length 5 inches, culmen 0·5, wing 3, tail 2·15, tarsus 0·45.

Habitat.—“Upper and Lower Caffraria” (*Wahlberg*); Natal (*Wahlberg, Mus. Brit.*).

This plain-coloured Honey-guide is certainly rare in collections, and does not seem to be abundant even in Natal, as neither Mr. Ayres nor Capt. Shelley have met with it. Owing to the indefinite character of *Wahlberg's* locality for the species, it was entirely omitted from Mr. Layard's ‘Birds of South Africa.’ The description is taken from a specimen received by me in exchange from the Stockholm Museum.

Specimens examined.

E mus. Brit.—*a, b, c.* Natal.

E mus. R. B. S.—*a, ♀.* Port Natal, Aug. 25, 1840 (*Wahlberg*).

2. *PRODOTISCUS INSIGNIS.*

Heterodes insignis, Cass. Pr. Philad. Acad. 1856, p. 157, & 1859, p. 142, pl. 1. fig. 2; Heine, J. f. O. 1860, p. 192; Hartl. J. f. O. 1861, p. 192.

Indicator insignis, Hartl. Orn. Westafr. p. 185; Gray, Hand-l. B. ii. p. 205.

Prodotiscus insignis, Cab. & Heine, Mus. Hein. Theil iv. p. 5, note; Heugl. Orn. N.O.-Afr. p. 774, note.

Entire upper parts dark olive, tinged with yellow, the latter prevailing on the lower back and rump; quills dark brown, edged externally with greenish yellow—narrow on the primaries, wider on the secondaries—and internally with yellowish white. Underparts ashy olive, darker on the breast, paler and nearly white on the abdomen and under tail-coverts. Under wing-coverts yellowish white. Tail with the four middle feathers dark olive-brown, outer feathers yellowish white edged with pure yellow. Bill and feet bluish black. Total length (of skin) $4\frac{1}{2}$ inches, wing $2\frac{1}{2}$, tail $1\frac{3}{4}$ (*Cassin*).

Habitat.—Camma and Moonda rivers (*Du Chaillu*).

I am not aware that any specimen of this interesting species is to be found in any European museum. I myself have never seen the bird, and only know it from Cassin's figure; this, however, is so good that there is no difficulty in referring the bird to *Prodotiscus*, or in separating it specifically from *P. regulus*.

[The Plate will appear in Part IV.—G. D. R.]

PART IV.

FALCONRY, ETC.

“ ‘O brother birds,’ S. Francis said,
‘Ye come to me to ask for bread ;
But not with bread alone to-day
Shall ye be fed and sent away.

“ ‘Ye shall be fed, ye happy birds,
With manna of celestial words ;
Not mine, though mine they seem to be,
Not mine, though they be spoken through me.’ ”

LONGFELLOW : *Masque of Pandora and other Poems*, p. 122.

FALCONRY.

BY MR. G. D. ROWLEY.

“Why slight your king,
And lose the quest he sent you on, and prove
No surer than our falcon yesterday,
Who lost the hern we slipt him at, and went
To all the winds?”

TENNYSON'S *Elaine*, p. 181.

NOTHING in the present time affords a parallel to Falconry in the days of our ancestors. It formed a common bond between the inhabitants of all countries, and pervaded the law, custom, domestic and religious life, prayer and commerce, war and peace, tenure of land; and every thing in which men and women alike were mixed was full of it. Second only to the Roman religion, its influence penetrated the palace and the cottage. It has now ceased—is gone! Instead, we have cricket, boating, hunting, shooting, &c.; but not with one of these can I truthfully compare Falconry; none has produced, or ever will produce, such an effect on the life of us islanders. The above bear no more resemblance to Falconry than the modern frequenter of a St. James's or Pall-Mall Club, or the Stock Exchange, does to the baron, knight, esquire, or gentleman of coat armour of ancient times. Each exhibits merits, though of a different kind; and the English men of this day are not degenerate from those who won Cressy, Poitiers, Agincourt, and many another well-fought field. But though our men preserve their vigour, I much question if the few remaining Falcons have done so.

Mr. Robert Gray, in the 'Birds of the West of Scotland,' remarks, p. 28, "Some of the Skye Peregrines are very powerful birds—the males, in many cases, being larger than females from other districts;" yet in Part II. p. 57, I record how a *Corvus cornix* (the Grey Crow) beat off the Peregrine Falcon.

The Rev. Richard Lubbock, in his 'Fauna of Norfolk,' p. 31, says, "the L'Estrange Household-book shows how superior the training of the old falconers was; six rabbits are noted as killed by the Sper-Hawke. Now in these days a Sparrow-Hawk, at the best, can barely take Partridges; when in full flight these birds are too strong for the Hawk."

I think the Partridge appears to have increased in strength and numbers, like the Blackbird; in Skye the former is poor and small at the present time.

The constant importation of the best blood of other countries must have had a tendency to improve the strain of British Falcons. This went on continually. Mr. Tregonwell Frampton wrote between 1670 and 1680:—"Send me down by my man the largest and handsomest Hawkes that are brought over in the Russian shippis." Again, the same person, May 1682, speaks of "a beautiful Moscow Hawke to be parted with. She is every bodis munney, from the marchant she is worth £10."

In Burton's 'Falconry of the Indus,' p. 8 *et seq.*, after a fine battle the Laghar (a large kind of Hobby?) is beaten and nearly killed by the companions of the Crow attacked. "'I never heard of any good coming from these káng' (Scindee for Crow), said the Ameer, as we slowly retraced our way towards the encampment; 'one of them, I am sure, killed my poor brother at Meeanee. All the night a huge black crow sat upon the apple of his tent-pole, predicting the direst disasters to him. We drove away the beast of ill omen half a dozen times; still he would return.'"

Fear regarding Crows and Ravens is noticed by Shakespeare. But superstition is now fast waning from the minds of men, and the time is different from that when Bruce's spider decided the fate of a kingdom, or

that Saturday (August 28, 1346) when the Crows of Cressy gave victory to England, to France defeat*. Let not the grim spectre of scepticism, taking intellect on the rebound, step into the vacant space.

In Part II. p. 58 the legal payment of a sore sparrow-hawk at the close of fictitious suits is noticed. A similar fine, the result of a suit of warranty, January 27, 1276, is mentioned in Eyton's 'Antiquities of Shropshire,' vol. vi. p. 144: Robert Burnell, Bishop of Bath and Wells, grants the Manor of Langley and the Chapel of Rokleye &c., the consideration being a sore sparrow-hawk.

Again (p. 167), "In September 1199, William de Bikedon was impleaded, under writ of mort d'ancestre, by William fitz Geoffrey, when he conceded to the Plaintiff a virgate and messuage to hold in fee, rendering therefore one sore falcon yearly, in lieu of all, except forinsec services" (*forinsec* meaning foreign, or out of the manor).

Messrs. Salvin and Brodrick, p. 55, mention an advertisement in 1665:— "A Sore Ger Falcon of His Majesty, lost the 13th of August, who had one varvel of his keeper, Roger Higs, of Westminster, Gent. Whosoever hath taken her up and give notice to Sir Allan Apsley, Master of His Majesties Hawks at St. James's, shall be rewarded for his paines.

"Back stairs in Whitehall."

Hawks and Falcons appear to have been associated with the transfer of land in very early times more than any other birds. Yet, at p. 275 in the above vol. of Eyton, we read that "Roger de Mortimer grants to William de Spyneto, for his homage, the land of Rockehull; the grantee to pay six Woodcocks at the feast of S. Andrew [November 30]." In a note, "Withecocos is the word" which Mr. Eyton, at a guess, translates "Woodcocks."

* "The sky was darkened, and the horror was increased by the hoarse cries of crows and ravens, which fluttered before the storm, and struck terror into the hearts of the Italians (the Genoese cross-bowmen), who were unaccustomed to the northern tempests."—STANLEY'S *Memorials of Canterbury*, p. 136, edit. 1865.

In Ray's 'Willughby' (1678), p. 52, it is stated, by the 34 Ed. III. 22, "A hawk taken up shall be delivered to the sheriff, who, after proclamation made in several towns, (if challenged) shall deliver her to the right owner. If the hawk were taken up by a mean man, and be not challenged in four months, the sheriff to have her, satisfying the party for taking her; but if by a man of estate, who may conveniently keep a hawk, the sheriff shall restore her to him again, he paying for the charge of keeping."

I am not aware that a sheriff adds much to his collection in these days by such means, however fond he may be of *feathered* Raptores, or effective as regards others; no lovely Greenland Falcon arrives, but a simple "bill of cravings."

"In 1265, Swinfield, Bishop of Hereford, as appears from his household roll, paid his falconer 3s. 4d. half yearly; while his butler had 2s. 6d."—MARK LEMON'S *London Streets*, p. 48.

In the privy-purse expenses of King Henry VIII., from November 1529 to December 1532, by Nicholas Harris Nicolas, Esq., I read that "the wages of a falconer were generally a groat a day; and he was allowed one penny a day for the food of each hawk intrusted to his care. But those of Nicolas Clampe, one of the principal falconers, were £10 per annum."

The board wages of the said Nicolas I find to be 4d. per day.

It appears from the following entry that all the falconers were paid alike for their dress, 25s.:—"On April viij 1530 paid to Hewe Elys, Richard Elys, Phillip Clampe, Nicholas Clampe, Old Hew, Young Hew, Thomas London, John Evans, Walter fawcōn, and Humfrey Raynzford, for their liverays eȳ of them. xxv. 5." From this it appears that this king employed ten falconers at least. How many suits of livery he gave to each during the year is not apparent. His mother, Elizabeth of York, paid rather less, as we find in her privy-purse expenses, by the same author, p. 94:—"Itm to Oliver Aulferton, keeper of the Quenes goshauke, for his diettes out of the Courte, and for mete for his hauke and spanyelles for the yere last passed.

xxvj s. viij d.” This truly Royal lady, the daughter, sister, niece, wife, mother, and progenitrix of kings of England, the legitimate heiress to the throne, by whose marriage with Henry VII. the Wars of the Roses were ended, does not seem to have indulged greatly in falconry. Among the presents made to her we find a Crane, Woodcocks, Quails, and other birds. Of the low value of money at this period, many striking instances occur in these accounts. Henry VIII., her son, paid £23 6s. 8d. to the bearer of a cast of Falcons presented by the Duke of Ferrard. Francis I. sent the King several Falcons while he was at Calais.

The difference of taste produced by falconry may be estimated by the fact that in the Earl of Northumberland’s household book, Snipes were ordered to be bought, “so they be good,” at three a penny; whereas Hearonsewys were valued at twelve pence a bird. Now Herons are not eaten; but full Snipes fetch in Brighton this 22nd day of November, 1875, two shillings each.

It is not necessary to repeat here all the terms used in falconry; Mr. Francis Henry Salvin and Mr. William Brodrick have rendered that useless; their work on the Falconry of the British Isles, profusely illustrated, contains all these matters. There is a passage in ‘Shakespere’s England,’ by G. W. Thornbury, p. 376, which conveys a good idea of what went on:—

“The jargon of the hunting and hawking field was much of this fashion:—‘Well cast off aloft, ah! well flown,’ says one, leaping into his saddle, ‘now she has taken her at the souse, and strikes her down like a thunderbolt.’ ‘Now she hath seized the fowl,’ says another, ‘and ’gins to plume her; rebeck her not, rather stand still and check her.’ ‘Aye, but our merlin first plumed the fowl, and twice remewed her from the river; though her bells had not one weight, one was a semitone above the other; it sounded too full, and spoiled her mounting.’ ‘Mine too,’ says a third, ‘seized a fowl within her talons: you saw her claws full of feathers, both

her petty singles and her long singles ; the terrial of her legs was stained with blood.' ' You lie, Doddy peck, your hawk's but a kestrel.' ' Scurvy patch, you have not a good hawk on your perch, or a good hound in your kennel.' ' All that love Singleton draw ;' ' all that stand for Trevilian lug out.' Petty singles were the toes. Such a conversation we might suppose to arise in the scene depicted in the illustration, taken from 'La Venerie de Jacques du Fouilloux, seigneur dudit lieu, gentil-homme du Pays de Gastine, en Poictou. Dedié au Roy. À Paris, chez Pierre David, sur le Pont Nœuf deuant la Samaritaine. 1640.' "

It is not every Falcon which turns out a success as a means of sport. In the first edition of Yarrell (1843), Captain Green, of Buckden, in Huntingdonshire, is stated to have taught a Golden Eagle to capture hares and rabbits. I remember this bird well. His master used to carry him on a pole, and found the weight to be an obstacle. Captain Green tried the same thing with a White-tailed Eagle (*Haliaeetus albicilla*), but could make no hand of the latter,—the nature of the species being different ; and the particular individual was too fierce and wild to be trusted, as he mentioned to me. The Golden Eagle, in Yarrell's first edition (p. 10), is said to inhabit Iceland ; this is corrected in the fourth edition.

Mr. W. Thompson says (in the 'Birds of Ireland,' vol. i. p. 30), speaking of the Moor-Buzzard (*Circus æruginosus*), " A brood of these birds, taken some years ago from a nest on the mountains of the county of Monaghan, was reared by Captain Bonham, of the 10th Hussars, for the purpose of being tried in falconry ; but they proved very intractable."

One would not imagine the Raven to be a very suitable subject for the falconer's skill ; yet Hollinshed mentions (vol. i. 'England,' p. 382), " buzzards, kites, and such as annoie our countrie dames by spoiling their young breeds of chickens, duckes, and goslings, whereunto our verie rauens and crows haue learned also the waie ; and so much are our rauens giuen to this kind of spoil, that some idle and curious heads, of set purpose, have



mauned reclaimed and used them in steed of hawkes when other could not be had."

Historic anecdotes on falconry might be given in great numbers, and notices of Falcons. Perhaps the most famous is the oft-told one mentioned by Scott—the dialogue between Mary of Lorraine (mother of the Queen of Scots) and the Earl of Angus. When she urged him to give up his strong castle of Tantallon to her, he answered indirectly, as if to the Hawk which he held upon his wrist and was feeding at the time: "The devil," said he, "is in the greedy Gled [Kite]! will she never be full?" As the Queen still declined the hint, he replied, "The castle, madam, is yours at command; but by St. Bride of Douglas I must be the Captain; and I will keep it for you as well as any one you will put into it."

Miss Agnes Strickland, in the 'Queens of Scotland,' vol. ii. p. 188, 2nd edit., gives the authority for this tale (Hume of Godscroft's 'History of the Douglasses'), and recites it in much the same terms, adding that the bird was a Goshawk.

The Duke of Gloucester, at an early period of his life, used to enjoy flying his Hawks on his manor of Notting Hill. This fact does not stamp his character as evil; and the light of modern research has changed Richard III. from a hump-backed sinner almost into an historic saint ('Athenæum,' Sept. 4, 1875, p. 302: critique on "Tewkesbury Abbey. By John Henry Blunt").

Every one knows the origin of our London mews. "The Royal mews stood between St. Martin's Lane and Hedge Lane, where the Falcons of the Sovereigns were kept as early as 1319; and Chaucer was one of the Clerks thereof" (Mark Lemon's 'Streets of London,' p. 260). Messrs. Salvin and Brodrick, in their book on Falconry, p. 27, speak of the Mews at Charing Cross as established in 1377 by Richard II.

Though "the Blessed bird," as Sir David Lindsay calls her, belonging to James V. of Scotland was not a Falcon, but a Parrot or Papingo, yet, since the King "wherever he went carried her on his wrist, as other gentlemen did

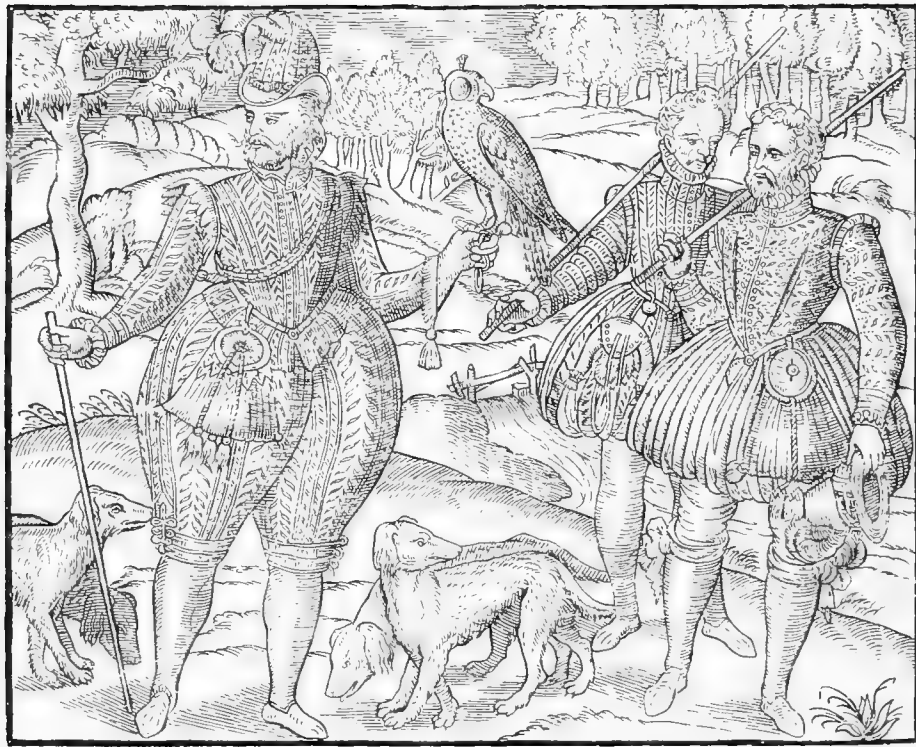
their falcons," I trust I may not (to use an expression of the editor of 'The Ibis,' n. s.) be considered too much of a psittacophilite if I give Miss Strickland's account of what was then a rare bird ('Queens of Scotland,' vol. i. p. 175, edit. 1840):—"Sir David Lindsay took charge of it, with other animal dependents of his young monarch; and the creature was an especial favourite. Indeed she did not rely on the mere possession of what Sir David calls 'her angel-feathers, green and gold, and of all the colours of the rainbow.' The papingo could whistle the tunes to which the gymnastics of that period were performed, changing her measure from 'plat' or flat 'foot' to 'foot before,' or from the first to the fourth dancing position. She could sing like the blackbird, crow like a cock, pew like the gled or kite, and chant as the lark, bark like the dog, and cackle as a hen, bleat as the lamb, and bellow as the bull; she could wail like the gowk or cuckoo, and cry and sob if she was vexed; besides,

"She could climb on ane cord, and laugh, and play the fool;
She might have been a minstrel against Yule."

"The poor papingo escaped into the Park, and was killed by the wild birds. Sir David Lindsay's 'Complaint of the Papingo' was written in 1529. He took this poetical opportunity of satirizing the abuses of the Regular Canons, the monks, and friars. From the child's play of James V., his parrot and his poet, was the impetus given to the religious revolution of Scotland."

The two illustrations are taken from 'The Booke of Falconrie of Hauking; for the onely delight of all Noblemen and Gentlemen: collected out of the best Authors, as well Italians as Frenchmen, and some English practises withall concerning Falconrie; Heretofore published by George Tuberville, Gentleman. And now newly revised, corrected, and augmented, with many new Additions proper to these present times. Nocet empta dolore voluptas. At London, printed by Thomas Purfoot, An. Dom. 1611.'







This date might be 1641. It is torn away in my copy ; but I think 1611 is intended.

One cannot help remarking on the way the human body was changed for the worse by the dress. In the reign of a female Sovereign this formed the subject of regulation ; for “under Mary, to make the English more like human beings,” as James Anthony Froude states (‘History of England,’ vol. v. p. 120, note), a regulation appears thus “(MS. Domestic, Mary, State Paper Office) :—

“Provided also for these monstrous breeches commonly used, none under the degree of a Lord or a Baron shall wear any under pain of three pounds a day ; none, to have any stuffing of haire, wool flocks, towe, or other ways ; and no man of little stature to have a bowe more than a yard and a half in the outer side, and the bigger men and the guards two yards, upon pain of twenty shillings a day the wearer, and forty shillings the maker of the hose.”

Quaint old Tuberville mentions “the names of those authors, from whome this collection of Falconrie is borrowed and made, both Italians and French.

“*Italians.*—M. FRANCESCO SFORZINO DA CARCANO, Vicentino.

M. FREDERIGO GIORGJ.

French.—TARDISSE.

MYCHELYN.

MARTIN.

AMÉ CASSYAN.

MALOPIN.

ARTELOWCHE.”

It appears to be rather a scarce, and is a costly work.

Falconers were very clever in former times in the practice of “imping” or, in other words, mending the feathers of their birds. This was done by means of the imping-needle (an instrument figured in Francis Henry Salvin and William Brodrick’s work on this sport, plate xxvi.), which was secured

with cobbler's wax in the quill ; and no doubt a very neat job could be made thus in the plumage of the living bird. In a skin the process is more difficult ; for in this, which Professor Owen calls " the most exquisite and complex of all tegumentary coverings, common to the Kiwi and the Ostrich with the Eagle and the Swift " (' Monograph on British Fossil Reptilia,' part ii. p. 89, Palæont. Soc.), after a life-long manipulation of skins, the most experienced birdstuffer cannot replace a feather when once it has been pulled out ; nor if he cuts out a bit of skin, say with twenty feathers on it, can he put that back again so as to make them fit into their places. What he is obliged to do is to pare the skin down and replace perhaps ten or fifteen. No doubt many a taxidermist will say " I have done this,"—but not so that an experienced eye failed to detect the factitious portion. In this, man cannot imitate nature.

The decay of Falconry, produced by the perfection of firearms, brought with it the loss of various members of our ornithology. When men killed Bustards, for instance, six or seven at a shot, and knocked over flying birds with very little failure at every discharge, there was an end to many fine forms. England became a rapid spender of species ; and little but regret remains.

That this was the case respecting Bustards is a fact ; we have only to read Mr. Stevenson's ' Birds of Norfolk,' vol. ii. p. 24 :—" Mr. Lubbock, referring to the wholesale slaughter committed by that notorious otidicide, George Turner, of Wretham, states . . . that he succeeded in killing seven at one discharge." It appears, however, by the subsequent account, that Mr. E. Abbott really shot these Bustards.

Again, in the ' History of Lynn,' by William Richards (vol. i. p. 196, note), we have :—" The late Mr. Carr, a merchant of Lynn, used to say that his father once killed six Bustards at one shot. They were probably then much more numerous than now (1818). A respectable gentleman of Lynn, however, assures the writer that not many years ago he saw no less than eight or ten of them together in the neighbourhood of Stanhoe." All this was the result of powder's rise and falconry's fall.

CRITICAL NOTES ON PROCELLARIIDÆ.

BY OSBERT SALVIN, M.A., F.R.S.

HAVING Mr. Dawson Rowley's kind permission to contribute to the 'Ornithological Miscellany' some articles on Procellariidæ, I may state that I propose that at first these notes should relate to obscure points in our knowledge of this difficult family of birds, and that I hope finally to gather my scattered fragments into something like a revision of the whole group. But as Mr. Rowley, in issuing his first Number, declared his freedom from all ties as regards his publication, so my proposition and hope must not be construed into promises, but each article taken as it stands—an instalment towards the end in view.

PART I. *Banks's unpublished Drawings.*

In dealing with the subject now before me, I must state at the outset that "Banks's Drawings" have little direct bearing upon the nomenclature of this family of birds. Still, when their history is considered, and their association with the first voyage of the illustrious circumnavigator Cook, the interest they arouse cannot fail to be considerable. Fortunately perhaps for future workers, the names associated with these drawings are unaccompanied by any published descriptions, and therefore carry no authority. But as these names, extracted from the MS. of Dr. Solander, have been introduced into our literature by Kuhl, Bonaparte, and Gray, an attempt to apply them to the species to which they properly belong may not be unprofitable as a step towards clearing up the uncertainty which hangs round some of the descriptions of Procellariidæ in the works of certain authors of the last century.

When the 'Endeavour,' under Captain Cook's command, was dispatched to observe the transit of Venus in 1769 at some point in the South Pacific Ocean, Sir Joseph Banks volunteered to sail in her, with the object of collecting such objects of natural history as fell in his way. He was accompanied by Dr. Solander; and his Natural-history Staff comprised two artists, Mr. Buchan and Mr. Sydney Parkinson. Buchan, who was especially engaged to draw the scenery of the places visited, died at Otaheite; and Parkinson, by whom a number of drawings were made, both of fish, birds, and other zoological subjects, also died after the 'Endeavour' sailed from Batavia on her way home. His numerous drawings became the property of his employer, Sir Joseph Banks, and they are now extant in the British Museum.

Those relating to the Petrels are sixteen in number. They all bear the signature of Sydney Parkinson; the date when, and frequently the latitude and longitude where they were made, are also written upon them. This much is entered in ink; but besides these marks they have notes in pencil inscribed upon them in another handwriting, and evidently by some one who was present at the time the sketches were executed. These pencil-notes always include a generic and specific name, which correspond with those employed in Solander's MS., to which I have had access.

The particulars of Cook's first voyage are fully given in the second and third volumes of Dr. Hawksworth's 'Collection of Voyages',* and, being compiled from materials supplied by Captain Cook himself, and also by Sir Joseph Banks, must be considered authentic.

* An Account of the Voyages undertaken by order of His present Majesty for making Discoveries in the Southern Hemisphere, and successively performed by Commodore Byron, Captain Wallis, Captain Carteret, and Captain Cook, in the 'Dolphin,' the 'Swallow,' and the 'Endeavour.' Drawn up from the Journals which were kept by the several Commanders, and from the Papers of Joseph Banks, Esq. By John Hawksworth, LL.D. In Three Volumes. Illustrated by a great variety of Charts and Maps relative to the Countries now first discovered or hitherto imperfectly known. London: 1773. 4to.

Parkinson kept a journal* himself, which was published by his brother, Stansfield Parkinson, who obtained, after no little difficulty at the hands of Sir Joseph Banks, a copy of his brother's MS. The details of the controversy are given at length in the Preface to Parkinson's 'Journal;' but they have no bearing upon my present subject.

All the drawings of Petrels were made during the voyage out,—the first on the 22nd of December, 1768, in lat. $39^{\circ} 37'$ S., when the 'Endeavour' was off the coast of South America, on her way from Rio Janeiro, which she left on the 9th of December, to Cape Horn, which she reached early in January; the last were taken on the 15th of February, 1769, in lat. $48^{\circ} 27'$ S., long. 93° W., some way out in the South Pacific Ocean, off the extreme south of South America, opposite a point between the Chonos archipelago and Tierra del Fuego.

In rounding Cape Horn the 'Endeavour' proceeded as far south as beyond the 60th degree of S. latitude; and here several drawings were taken.

It will be seen, then, that all the birds depicted in this voyage frequent the seas surrounding the southern extremity of the South-American continent. No drawings were taken during the subsequent part of the voyage, when the expedition visited the Society Islands, New Zealand, and the coast of Australia.

The notes on Petrels in Parkinson's 'Journal' are very meagre; and no mention is made of drawings having been executed on any particular dates. The drawings of the Petrels themselves are little more than outlines, most of them only in pencil, a few being coloured in one tint, evidently to show the distribution rather than the actual tint of the plumage.

* A Journal of a Voyage to the South Seas in His Majesty's Ship 'The Endeavour.' Faithfully transcribed from the Papers of the late Sydney Parkinson, Draughtsman to Joseph Banks, Esq., on his late Expedition with Dr. Solander round the World. Embellished with views and designs delineated by the Author and engraved by capital Artists. London: 1773. 4to.

On the other hand, the drawings of fish are carefully executed; so also are some of other birds, a sketch of a Tropic-bird being highly finished.

With the exception of one or two allusions to these drawings by Latham, no ornithologist seems to have examined them until Kuhl endeavoured to identify some of them when elaborating his celebrated article on Procellariidæ, published in his 'Beiträge zur Zoologie und vergleichenden Anatomie' in 1820. Prince Bonaparte, in his 'Conspectus Avium,' assigns a place to most of the names on these drawings and in Solander's MS.; and Gray, in his 'Hand-list,' includes many of Solander's names, but omits (as he often did) to state that they were only names, unaccompanied by any published description by which they could be identified.

Solander's MS. notes, which I have been enabled to examine in the British Museum through Dr. Günther's kindness, extend over a variety of subjects, but include comparatively few on birds. The original notes on the Albatrosses we succeeded in finding; but with those on the Petrels we were not so fortunate. This loss is in a great measure remedied by notes in an interleaved copy of the twelfth edition of Linnæus's 'Systema Naturæ' formerly in Solander's possession, and evidently compiled by him from his own manuscripts. These notes consist of concise Latin diagnoses, to which generic and specific names are attached, of no less than thirty-two species of Petrels and Albatrosses. When a drawing of Parkinson's exists, the fact is mentioned; so that by the help of these notes the task of interpreting the crude unfinished sketches is rendered easier and more certain.

I now take the drawings as they are numbered, and add such notes as I think will either place the names attached to them in their proper position, or else assign them to the limbo of unrecognizable titles with which this family of birds is so heavily encumbered.

No. 12.—“ Dec. 22, 1768. Parkinson ” (ink MS.).

“ The head, neck, and back soot-colour, which gradually grows paler on the coverts of the wings to their edges, which are bordered with white. The large wing-coverts and the tail of the same sooty colour, but shaded with black; the upper coverts of the tail and the sides pure white. The beak black, as are the feet, a spot of yellow on each web. *P. oceanica* ” (pencil MS.).

Solander's MS. note reads as follows :—

“ *Proc. oceanica* nigra uropygii albi pennis totis albis palma nigra disco luteo. Mscr.*

“ Fig. pict.

“ *Hab.* in Oceano Atlantico intra Tropicos et non procul ab America australi.”

This is *Procellaria oceanica*, Kuhl (Beitr. p. 136, f. 1), who described a bird in Temminck's collection, now at Leyden (Schlegel, Mus. des P.-B. *Procell.* p. 6), and to it referred Parkinson's drawing No. 12. It is also the species commonly known as *Procellaria wilsoni*, and is now placed in a genus (*Oceanites*) distinct from that including the common Stormy Petrel (*Procellaria pelagica*). This generic name was proposed by Keyserling and Blasius, and is adopted by Dr. Coues in his monograph of this family (*Proc. Acad. Philad.*). The species thus stands as OCEANITES OCEANICUS (Kuhl).

The bird referred to in the drawing was obtained off the east coast of South America, in the South Atlantic Ocean, opposite the mouth of the Rio de la Plata.

Parkinson, in his ‘ Journal,’ p. 5, remarks, under the date December 22, “ We saw a great many birds of the *Procellaria* genus in lat. 39° 37' S. and long. 49° 16' W.; and we also met with shoals of Porpoises of a very singular species.”

The drawing is only an outline in pencil.

No. 13.—“ Dec. 23, 1768. Lat. 37° South. S. Parkinson ” (ink MS.).

“ The throat, breast, and belly white; the remiges, rectrices, and beak black; on the webs marks of yellow, as marked out in the figure No. 6. *Procellaria æquorea* ” (pencil MS.).

“ *Proc. æquorea* fusco cinerea subtus alba area supraoculari albida pedibus nigris, palma disco lutea. Mscr.*

“ Fig. pict.

“ *Hab.* in Oceano Americæ australis ” (*Solander's MS.*).

Upon this drawing Latham, in his ‘Synopsis,’ founded his “Frigate Petrel,” called afterwards by him *Procellaria marina*. Kuhl, though he correctly describes and figures a bird under Latham’s title, ascribes this drawing to “*P. fregata*, Banks,” considering it to represent the young of the next species. The so-called *P. fregata*, Banks, however, is the bird Solander supposed to be *P. fregata* of Linnæus, as is clearly seen in his MS. notes. The correctness of this identification is discussed under Drawing No. 14.

These two sketches, Nos. 13 and 14, really represent two very different birds; and their fusion by Kuhl probably led Bonaparte to place *P. marina*, Lath., as a synonym of *P. fregata*, Linn. In this identification he was followed by Gray and, for a time, by Coues.

The synonymy of the species will stand thus :—

PELAGODROMA MARINA.

Procellaria æquorea, Solander, MS.; Parkinson, Icon. ined. No. 14.

Frigate Petrel, Lath. Syn. iii. p. 410.

Procellaria marina, Lath. Ind. Orn. p. 826; Kuhl, Beitr. p. 137, t. 2.

Pelagodroma fregata (Linn.), Bp. Consp. ii. p. 198 (nec *Proc. fregata*, L.).

Pelagodroma marina, Coues, Pr. Acad. Phil. 1866, p. 192.

As regards the distribution of this species, its occurrence in the Atlantic Ocean has not so frequently been recorded as its abundance in the seas of Australia and New Zealand. But, as *Procellaria hypoleuca* of Webb and

Berthelot (Orn. Canarienne, p. 45) is really the same as this species, its range in the Atlantic Ocean extends north of the Equator to the neighbourhood of the Canary Islands.

The specimen obtained during Cook's voyage, the subject of Parkinson's drawing and Solander's note, was secured off the east coast of South America, about opposite the mouth of the Rio de la Plata.

No. 14.—“Dec. 23, 1768. Lat. 37° South. S. Parkinson” (ink MS.).

“The large feathers of the wing, the tail, beak, and feet are black; the belly and coverts of the tail white. No. 7. *Procellaria fregata*” (pencil MS.).

“*Proc. fregata* nigra abdomine medio uropygioque albis pedibus totis nigris. Mscr.*” (*Solander's MS.*).

The sketch is partly in pencil outline, partly coloured.

Whether this bird really represents Linnæus's *Procellaria fregata* may be open to question, though I think it answers better to the description than any other known species. That it is *P. leucogaster* of Gould, and *P. grallaria* of Vieillot, I have little doubt. Its synonymy will therefore stand as follows:—

FREGETTA* GRALLARIA.

Procellaria fregata, Linn. Syst. Nat. i. p. 212? Solander, MS.; Parkinson, Icon. ined. No. 14; Kuhl, Beitr. p. 138.

Procellaria grallaria, Vieill. N. Dict. d'Hist. Nat. xxv. p. 418.

Procellaria leucogaster, Gould.

The subject of Drawing No. 14 was procured in South America, off the mouth of the Rio de la Plata.

* *Scribe* FREGATA.

No. 15.—“Feb. 1, 1769. Lat. 59° S. S. Parkinson” (ink MS.).

“The beak a pale bluish lead-colour; the legs and toes pale blue, with a cast of purple, the webs dirty white. 14. *Procellaria turtur*” (pencil MS.).

“*Proc. turtur* supra cærulescenti-cana subtus alba pedibus cæruleis palma albida. Mscr.* rostro toto angusto plumbeo.

“Fig. pict.” (*Solander’s MS.*).

Concerning this drawing there is no difficulty. Kuhl recognized it as representing a species of which he found specimens in the Paris Museum and that of M. Temminck, and upon which he bestowed Solander’s MS. title. The synonymy of the species, which belongs to the genus *Prion*, therefore stands thus :—

PRION TURTUR.

Procellaria turtur, Solander, MS. ; Parkinson, Icon. ined. No. 15 ; Kuhl, Beitr. p. 143.

Prion turtur auctt. recentt.

No. 16.—“Feb. 15, 1769. Lat. 48° 27', long. 93°. S. Parkinson” (ink MS.).

“The beak black; the legs and toes pale violet grey on the outermost toe, the webs dirty white, partly grey, veined, and dirty purple. 22. *Procellaria velox*” (pencil MS.).

“*Proc. velox* supra a cinereo nigricans subtus nivea pedibus cæruleis digito externo nigricante. Mscr.*

“*Hab. in Oceano australi*” (*Solander’s MS.*).

Kuhl refers this drawing, which is only a pencil sketch, to *Prion turtur*. I think, however, that it more properly belongs to *Halobæna cærulea*, though Solander’s character “supra cinereo-nigricans” hardly applies.

The specimen from which the drawing was taken was obtained in the Pacific, after the ‘Endeavour’ had borne up from rounding Cape Horn and

was steering for the Society Islands. I have a skin of *H. cœrulea*, from Mr. Gould's voyage, labelled "In the Pacific, near Cape Horn," which would therefore be from a point near that indicated on the drawing.

The proper application of the name *P. velox* must continue doubtful.

No. 17.—"Feb. 2, 1769. Lat. 59° S. S. Parkinson" (ink MS.).

"*Procellaria gigantea*" (pencil MS.).

No. 18.—"Dec. 23, 1768. S. Parkinson" (ink MS.).

"*Procellaria gigantea*. Mem. The feet are grey" (pencil MS.).

The first of these drawings is an outline, in pencil; the second a sketch, coloured all but the feet. Both are referable to the well-known *Ossifraga gigantea*.

Solander's MS. concerning this species is as follows:—

"*Proc. gigantea*

"(a) tota fuliginosa rostro sordide a flavicante virescente tubo narium extra medium producto. Mscr.*

"Fig. pict.

"*Hab.* in Oceano antarctico.

"(β) corpore toto cinereo subtus pallidioro rostro sordide a flavicante virescente tubo narium extra medium producto. Mscr.*

"Fig. pict.

"*Hab.* in pelago Atlantico."

The first of these descriptions evidently refers to Drawing No. 17; the latter to No. 18. Both doubtless represent *OSSIFRAGA GIGANTEA*.

No. 19.—"Feb. 2, 1769. Lat. 58°. S. Parkinson" (ink MS.).

"*Procellaria fuliginosa*" (pencil MS.).

"*Proc. fuliginosa* toto fuliginosa mento albo rostro cereo suturis nigris. Mscr.*

"Fig. pict.

"*Hab.* in Oceano Antartico et Oceano Pacifico" (*Solander's MS.*).

An outline in pencil, with the bill carefully coloured.

This drawing is referred by Gray to a New-Zealand species, called by him *Procellaria parkinsoni* (Ibis, 1862, p. 245) (*Fulmarus parkinsoni*, Hand-l. iii. p. 108). But as Gray's description expressly states (and correctly so) that the New-Zealand bird he described was whole-coloured, Solander's bird (having the chin white) belongs more probably to *Procellaria æquinoctialis* (*Majaqueus æquinoctialis*).

Kuhl fits Solander's name to a specimen in the British Museum (no longer to be traced); but his description says of the bill, "rostro compresso, nigro," which is at variance with Solander's character. Kuhl's bird is doubtless an *Æstrelata*, and is the bird usually known as *Æ. fuliginosa* (Kuhl). This much-abused specific name, the various applications of which in this family of birds are hard indeed to trace, and harder still to remember, seems, then, in this case to become a synonym of the long-known *Majaqueus æquinoctialis*, and to stand thus:—

MAJAJUEUS ÆQUINOCTIALIS.

Procellaria æquinoctialis, Linn. Syst. Nat. i. p. 213.

Procellaria fuliginosa (nec Lath., nec Kuhl, nec Forst., nec A. Strickland!), Solander, MS.; Parkinson, Icon. ined. No. 19.

No. 20.—"Dec. 23, 1768. S. Parkinson" (ink MS.).

"*Procellaria sandaliata*, No. 4. Mem. The head is black; the legs and upper part of the feet pallid white, where marked off pallid brown; the claws black; the under part of the whole bird is white" (pencil MS.).

"*Proc. sandaliata*, corpore supra fusco-nigricante subtus albo collo cinereo cauda rotundata utrinque nigricante pedibus albidis palma antice nigra. Mscr.*

"Fig. pict.

"Hab. in Oceano Americæ australis" (*Solander's MS.*).

This drawing, which is roughly executed and tinted in dark brown, appears never to have been certainly recognized. Kuhl says (Beitr. p. 145) that he could not decipher the name inscribed on it. This I cannot understand; for it is plainly written.

Bonaparte hesitatingly refers it to *Æstrelata mollis* (Gould). Gray, with doubt, places it near *Æ. mollis* as a distinct species, but gives as its habitat the Pacific Ocean—clearly a blunder, so far as the evidence on the drawing goes.

With the types of Signor Giglioli and Count Salvadori's *Æstrelata armingoniana* before me, I have little difficulty in recognizing the long-lost *Procellaria sandaliata*, Solander. The drawing, however, may lay claim to represent the White-breasted Petrel of Latham, who, in his 'Synopsis,' states that such a species existed in the collection of Sir Joseph Banks. This might be considered to refer to a specimen; but in the 'General History' Latham uses the words "From the drawings of Sir Joseph Banks." Now, as no other drawing at all answers to Latham's description, the inference is that it must be considered to represent the White-breasted Petrel, and hence *Procellaria alba* of Gmelin, who, in this as in so many cases, affixed a Latin name to Latham's description.

There are some points connected with Latham's description which do not quite agree with the drawing and Solander's brief diagnosis, but which are to a considerable extent lessened by comparing the specimens of *Æstrelata arminjoniana* with the text of the 'Synopsis.' The chief discrepancy lies in the colour of the legs, which Latham describes as "black-brown, the fore part of the toes halfway black;" whereas the note on the sketch says, "the legs and upper part of the feet pallid white, where marked off pallid brown," rendered in Solander's MS. "pedibus albidis palma antice nigra." Both descriptions clearly point to a species of *Æstrelata*; and the difference, being one of the perishable colour of soft parts, is not of much consequence.

Latham gives, as the localities of his White-breasted Petrel, Turtle and Christmas Islands—the former of which lies to the westward of Tonga-tabu, and the latter is situated in the centre of the Polynesian archipelago, nearly under the line. Whence he derived this information he does not say; but Captain Cook touched at neither place during his first voyage, when Sir Joseph Banks accompanied him.

Procellaria sandaliata was taken off the South-American coast, between Rio Janeiro and Cape Horn.

Procellaria alba has, up to the present time, remained a name of doubtful application, if we except Gray's assignment of it to a species of *Æstrelata* from the Kermadec Islands, identical with *Procellaria neglecta* of Schlegel. Gray's view appears to me to be inadmissible, the bird answering but very imperfectly to Latham's description.

A certain amount of doubt hangs round the application of very many of the names of the old authors which are now generally accepted. In the present case, by applying Latham's name to this Petrel of the South Atlantic, we should probably be not wider of the mark than in a host of other cases. Still the golden rule in questions of nomenclature, never to relinquish certainty for uncertainty, should, I think, not be departed from in the present case. I therefore consider it best to write the synonymy of this species as follows :

ÆSTRELATA ARMINJONIANA*.

Procellaria sandaliata, Solander, MS. ; Parkinson, Icon. ined. No. 20.

? *White-breasted Petrel*, Lath. Syn. iii. p. 400, et Gen. Hist. x. p. 186?

? *Procellaria alba*, Gm. Syst. Nat. i. p. 565?

Procellaria —?, Kuhl, Beitr. p. 145.

Æstrelata arminjoniana, Gigl. & Salvad. Ibis, 1869, p. 62.

* Sed quære potius TRINITATIS. Ad hoc confer postea.

No. 21.—“Feb. 1, 1769. Lat. 59°. S. Parkinson” (ink MS.).

“*Procellaria lugens*. The bill entirely black; the iris of the eye brown, pupil black” (pencil MS.).

No. 22.—“Feb. 3, 1769. Lat. 57° 30'. S. Parkinson” (ink MS.).

“*Procellaria lugens* (sketch made by mistake). The beak black; the legs and that part of the foot next them dirty white, the remainder black” (pencil MS.).

“*Proc. lugens fusco-cinerea gula crisso alisque subtus albis pedibus glaucis palma nigra basi pallida.* Mscr.*

“Fig. pict.

“*Hab.* in Oceano Antartico et Oceano Australi” (*Solander's MS.*).

Outlines in pencil, drawn in different attitudes.

I am at present unable to attach this name with certainty to any known species of Petrel. The colour of the bill and feet shows that it refers to an *Æstrelata*.

Kuhl, followed by Gray, thinks that it is the same as the bird called by him *P. grisea* (not *P. grisea*, Gmel., which is a *Puffinus*—but *Æstrelata kidderi*, Coues, or, rather, *Æ. brevirostris* (Less.), which is the proper name this species should bear, as a recent examination of Lesson's type in the Paris Museum has proved to me beyond a doubt), and the same as *P. tristis*, Forst., and *P. amaurosoma*, Coues. The white throat, crissum, and under wing, however, indicate another species.

Bonaparte places the name doubtfully with *P. atlantica*, Gould; but this cannot be right.

This name of *P. lugens*, then, had best be left in abeyance until such time as a species answering Solander's description, given above, be procured.

No. 23.—“Feb. 15, 1769. Lat. 48° 27', long. 93°. S. Parkinson” (ink MS.)

“*Nectris fuliginosa*. The beak is fuscous, the lower mandible paler and bluish; the feet of the same colour” (pencil MS.).

"*Nectris fuliginosa* supra nigricans subtus fusco cinerea. Mscr.*

"Fig. pict.

"Hab. in Oceano australi" (*Solander's MS.*).

The drawing is a pencil outline, the bill and tarsus being drawn separately in detail.

I feel convinced that this drawing and description refer to the true *Procellaria grisea* of Gmelin and Latham, the synonymy of which is as follows:—

PUFFINUS GRISEUS.

Nectris fuliginosa, Solander, MS. ; Parkinson, Icon. ined. No. 23.

Grey Petrel, Lath. Syn. iii. p. 399.

Procellaria grisea, Gm. Syst. Nat. i. p. 564 (nec Kuhl).

Procellaria fuliginosa, G. Forst. Icon. ined. No. 94 (nec A. Strickl.).

Procellaria tristis, J. R. Forst. Descr. Anim. p. 23.

Nectris amaurosoma, Coues, Proc. Ac. Phil. 1864, p. 124.

Puffinus griseus, Finsch, J. für Orn. 1874, p. 209.

No. 24.—"Feb. 15, 1769. Lat. 48° 27', long. 93°. S. Parkinson" (ink MS.).

"*Nectris munda*. The beak blue-grey towards the back, and the point black; the legs and feet the same colour as in the *Procellaria cyanopeda*" (pencil MS.).

"*Nectris munda* supra cinereo-nigricans subtus nivea. Mscr.*

"Fig. pict.

"Hab. in Oceano australi" (*Solander's MS.*).

A pencil-drawing made from a bird taken in the Pacific westward of the southern extremity of Chili. I cannot fit the description and drawing to any known species with certainty. It may apply to *P. gavia*, Forst. (= *P. opisthomelas*, Coues); but this is doubtful. The bill, as drawn, is too stout for *P. assimilis* or its near allies.

Giglioli and Salvadori suppose that a bird obtained in the South Atlantic

during the voyage of the 'Magenta' should perhaps bear the name of *P. munda*. They give their bird, however, the title of *P. elegans*. In so doing they were, I think, fully justified; for even if it could be proved to be the same as *P. munda*, the description given of the drawing by Kuhl (Beitr. p. 148) is by no means sufficient for the recognition of the species.

The application of the name *Procellaria munda* must still remain in doubt. Solander's brief diagnosis, given above, may help to its ultimate recognition.

No. 25.—"Dec. 23, 1768. Lat. 37° S. S. Parkinson" (ink MS.).

"*Diomedea exulans*. The face and throat white as marked on the figure; the whole body above fusco pallido; the belly and feet whitish, with a cast of blue; the nails white" (pencil MS.).

"*Diomedea exulans* alis pennatis pedibus æquilibribus tridactylis rostro albido lateribus mandibulæ inferioris integris alis subtus albis. Mscr.*

"Fig. pict.

"*Hab.* in Oceano antarctico et Oceano australi" (*Solander, MS.*).

A half-coloured drawing representing a young *D. EXULANS*.

No. 26.—"Feb. 1, 1769. Lat. 59°. S. Parkinson."

"*Diomedea antarctica*. The bill entirely black; the iris of the eyes yellow-brown, the pupil black; the skin that goes along the beak from the head pale violet coloured, clouded with pale brown" (pencil MS.).

"*Diomedea antarctica* alis pennatis pedibus æquilibribus tridactylis rostro nigro lateribus mandibulæ inferioris fassis alis utrinque fuscis. Mscr.*

"Fig. pict.

"*Hab.* in Oceano antarctico" (*Solander's MS.*).

A pencil drawing, not recognizable with certainty. Bonaparte (Consp. ii. p. 186) considers that it refers to *Diomedea fuliginosa*, Gmelin; and in this he may be right.

No. 27.—“ Feb. 3, 1769. Lat. 57° 30'. S. Parkinson ” (ink MS.).

“*Diomedea profuga*. The beak black, except the back of the upper mandible and part of the under one, which is dirty greenish white ” (pencil MS.).

“*Diomedea profuga* alis pennatis pedibus æquilibribus rostro nigro supra et infra (interdum) pallido mandibulæ inferioris lateribus integris. Mscr.*

“*Hab.* in Oceano australi et Oceano antarctico ” (*Solander's MS.*).

Considered by Gray (Hand-l. iii. p. 109) to represent *Diomedea chlororhyncha*, Gmelin, in which view he is probably correct.

My determination, as far as it goes, therefore, of the sixteen species of Procellariidæ sketched by Parkinson in Banks's drawings, is as follows:—

No. 12.	<i>Procellaria oceanica</i>	=	<i>Oceanites oceanicus</i> (Kuhl).
No. 13.	„ <i>æquorea</i>	=	<i>Pelagodroma marina</i> (Lath.).
No. 14.	„ <i>fregata</i>	=	<i>Fregata grallaria</i> (Vieill.).
No. 15.	„ <i>turtur</i>	=	<i>Prion turtur</i> (Kuhl).
No. 16.	„ <i>velox</i>	=	<i>Halobæna cærulea</i> (Gm.)??
No. 17.	„ <i>gigantea</i>	}	= <i>Ossifraga gigantea</i> (Gm.).
No. 18.	„ „		
No. 19.	„ <i>fuliginosa</i>	=	<i>Majaqueus æquinotialis</i> (L.).
No. 20.	„ <i>sandaliata</i>	=	<i>Æstrelata arminjoniana</i> , Gigl. & Salvad.
No. 21.	„ <i>lugens</i>	}	= „ sp. inc.
No. 22.	„ „		
No. 23.	<i>Nectris fuliginosa</i>	=	<i>Puffinus griseus</i> (Gm.).
No. 24.	„ <i>munda</i>	=	„ sp. inc.
No. 25.	<i>Diomedea exulans</i>	=	<i>Diomedea exulans</i> (L.).
No. 26.	„ <i>antarctica</i>	=	„ <i>fuliginosa</i> , Gm.?
No. 27.	„ <i>profuga</i>	=	„ <i>chlororhyncha</i> , Gm.

In conclusion, I must record my thanks to Dr. Günther for his kindness in allowing me freely to consult both Banks's drawings and Solander's manuscripts, which are now in the Department of the British Museum under his charge. Concerning the manuscripts, I hope to have more to say on another occasion.

ON THE MIGRATION OF BIRDS IN NORTH-EAST RUSSIA.

BY HENRY SEEBOHM, F.Z.S.

WHEN my friend J. A. Harvie-Brown and myself planned our excursion to the valley of the Lower Petchora, in the spring of the year 1875, we were under the impression that this remote corner of Europe was virgin ground for the ornithologist. We discovered, however, whilst preparing for our journey in Archangel, that this district had been visited many years ago by Hencke and Hoffmannsegg; but so far as we have been able to ascertain, it does not appear that these naturalists published any thing respecting the ornithology of the Petchora. The information which we obtained may therefore be practically regarded as new.

Upon a subject so difficult as the migration of birds it is impossible to speak very definitely from the observations of a single season; but the facts which we obtained may serve as a valuable basis for the researches of future ornithologists.

The journey to the Petchora is beset with peculiar difficulties. There are two ways of travelling from Archangel to Ust Zylma—the winter road, and the summer route. The winter road is by sledge, sometimes on the ice of the frozen rivers, sometimes across swamps covered over with snow, but generally through the forests. As soon as the sun becomes powerful enough to melt the frozen crust of snow upon these roads the winter post ceases, and the horses at the stations upon the last two hundred and fifty versts, where there are no villages, are withdrawn, and the valley of the Lower Petchora is as effectually cut off from all communication with civilized

Europe as if it were in the moon. This lasts for about two months, until the floods in the rivers Peza and Zylma, caused by the melting of the snow, have sufficiently subsided to make it possible to row against stream. The summer post between Mezen and Ust Zylma is by boat up the former river, across the watershed (a distance of fifteen versts), and down the latter river. The summer route is a very difficult one with much luggage, and would bring the traveller to the Petchora too late for the breeding-time of many of the most interesting birds.

We left Archangel on the 6th of April, and reached Ust Zylma in eight days. The ground was covered with from two to three feet of snow; and no continuous thaw set in until the 16th of May, when we suddenly plunged into midsummer; the snow thawed rapidly night and day; the great river rose thirty feet in height; and on the 21st of May the ice 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. The eight weeks which we were obliged to spend in waiting for the short arctic summer were somewhat tedious; but they enabled us to make some interesting observations on the arrival of migratory birds.

The Snow-Bunting is probably the first bird of passage which visits the Petchora. We found small flocks of these birds at Ust Zylma on our arrival, and were told that they had preceded us by a fortnight. They were feeding upon the droppings of the horses on the roads, in company with the Lesser and Mealy Redpoles. We may therefore assume that these three species of birds arrive about the 1st of April; and for some weeks the streets of Ust Zylma were quite lively with their presence. As soon as the peasants began to cart their manure onto the land, they left the village for the hillsides, where it had been deposited by the sledges; but fresh falls of snow drove them back again into the streets.

In spite of the abundance of the Snow-Bunting, we could not help looking upon it with all the interest attaching to a rare bird. The brilliant

contrast of the black and white on the birds, now rapidly assuming their summer plumage, was especially beautiful as they fluttered from place to place, and no doubt assisted to give to the flight its wild butterfly-character, as if the bird altered its mind every few seconds as to which direction it should take. They looked very pretty as they ran, like Wagtails, from one manure-heap to another over the snow. Occasionally, but not often, we saw them hop. They were particularly fond of perching upon the roofs of the houses and on the rails which the peasants use for drying their corn, hay, or flax ; and we were somewhat surprised to find them frequently perching in trees. As soon as summer came they all disappeared. The last flock we saw was on the 18th of May. The Redpoles, on the contrary, distributed themselves over the forests, and probably remained to breed.

We also found two other species of birds on our arrival at Ust Zylma—the Bullfinch and the Yellowhammer, which were in small flocks and comparatively rare, but may possibly be early migratory birds in this district.

Although we rarely missed a day without making long excursions on our snow-shoes in the forests or along the banks of the great river, we did not succeed in identifying another migratory bird until the 4th of May, when we saw a Hen-Harrier, and on the following day a Merlin. These birds had evidently come to feed upon the Snow-Buntings. We generally saw one or two birds of both these species, as long as the Snow-Buntings remained, whenever we made a long excursion ; and all three species disappeared about the same time.

The next migratory birds that we saw appeared on the 10th of May. By this time the sun had thawed the snow off a few of the steeper slopes, and here and there, especially on an island in the river, a thin stream of water flowed over the frozen mud. This seemed to be the signal for the appearance of the Bean-Goose and the Shore-Lark. Neither of these birds probably breeds south of the arctic circle ; and two or three weeks later, when the snow had melted on the tundra, they had all disappeared from Ust Zylma. On this day we saw our first Snowy Owl ; and on the following day our list

was further increased by the Wild Swan and the Herring-Gull. There are two species of Swan which pass through Ust Zylma on their way to the delta to breed—the Hooper or Wild Swan and Bewick's Swan; but we found it impossible to identify them upon the wing. The Herring-Gull might fairly be called the Arctic Herring-Gull: the mystery of its Latin name I must leave my friend Mr. Howard Saunders to unravel. The colour of the mantle is intermediate between that of *leucophæus* and *fuscus*. The colour of the soft parts is the same as that of the Mediterranean bird.

The 12th of May was distinguished by the first shower of rain and by the arrival of the first strictly insectivorous birds—the White Wagtail, the Redstart, and the Meadow-Pipit.

On the 13th we saw the first flock of Ducks (probably the Pintail), and a Peregrine Falcon; on the following day we saw the first Reed-Bunting; and on the 15th the small flock of Gulls on the Petchora was reinforced by a large flock of common Gulls (*Larus canus*), and we saw fourteen large ones flying up the great river, which were, no doubt, Glaucous Gulls, as we afterwards found this species common at the Golievski Islands.

The arrival of summer was the signal for birds of passage to appear *en masse*. On the 17th of May flocks of Golden Plover, as well as of Fieldfares and Redwings were seen. Small flocks of geese and swans, and large flocks of ducks, were continually observed flying down the great river. Flocks of Meadow-Pipits continually passed; and for the first time we noticed flocks of the Red-throated Pipit. Snow-Buntings and Redpoles were no longer seen in the streets; but their place was taken by flocks of White Wagtails, and for the first time we saw the Grey-headed Yellow Wagtail (*Motacilla viridis*).

On the 18th the Lapland Bunting, the Whimbrel, and the Teal appeared. The last flock of Snow-Buntings was seen; but the Shore-Larks were as common as ever.

On the 19th we identified the Shoveller, the Golden-eye, and the Widgeon; but these birds may have arrived on the 13th, as flocks of ducks were common after that date. We also identified a Greenshank.

On the 20th the Willow-Warbler was first heard, nearly two months later than it usually appears in the south of England.

On the 21st we added the Wheatear and the Crane to our list. If the Wheatear had been a rare bird in this district we might have concluded that we had hitherto overlooked it; but after this date it became comparatively common; so that we were obliged to conclude that this season, at least, it arrived after the Redstart and Willow-Warbler: the Wheatear generally appears upon the moors in the neighbourhood of Sheffield at least a fortnight earlier than either the Willow-Warbler or the Redstart is heard in our woods. We saw another pair of Cranes on the 25th, but did not meet with them again.

The 22nd was one of our red-letter days; for at that date we shot our first Siberian Chiffchaff (*Phylloscopus tristis*), hitherto known principally as a winter visitor to India. This bird afterwards became a great favourite with us; and many are the times that we have turned out of our hammocks at four in the morning to listen to its merry *chi-vit'*, *chi-vet'*, from the top of a larch or spruce. We afterwards found it still commoner on the willow-swamps of the islands of the delta. On this day we also added three other species to our list—the Sky-Lark, the Tree-Pipit, and the Stonechat. The two former birds were very rare; but the Stonechat soon became common. All the specimens of the latter which we obtained were the Asiatic form, with pure white upper tail-coverts. On the other hand, birds which I shot two years ago in the Parnassus were of the usual European type, with black spots on the rump.

On the 23rd we shot our first Short-eared Owl and the first Blue-throated Warblers.

On the 24th the Brambling and the Pine-Grosbeak arrived.

On the 25th the Lapland Buntings and the Shore-Larks had considerably lessened in numbers, whilst *Motacilla viridis* had become much more plentiful than *Motacilla alba*.

On the 26th, although the ice was still marching down the river,

numerous waders arrived, and were busily feeding upon the banks. We saw a pair of Oystercatchers, and shot some Ringed Plovers, Wood-Sandpipers, and Temminck's Stints. On this day we also saw the first Barn-Swallow.

On the 29th we shot the only Sparrow-Hawk we saw during our journey, and consequently cannot attach much importance to the date.

On the 31st we made the acquaintance of the first Little Bunting (*Emberiza pusilla*).

On the 1st of June we identified a Black Scoter, a duck which we afterwards found very common.

The 3rd, 4th, and 5th of June we spent at Habariki, twenty-five miles down the river, and added a dozen fresh birds to our list. Some of these, as the Hobby and the Waxwing, were so rare that they might have arrived some time before we saw them. Others, as the common Snipe, the Ruff, the Goosander, the Smew, and the Golden-eye, had probably been some days comparatively common in this locality, but, from their extreme rareness at Ust Zylma, had escaped our notice. On the other hand, the Cuckoo, Double Snipe, Terek Sandpiper, and Black-throated Diver may fairly be supposed to have arrived about the 3rd of June.

On the 7th of June we saw a pair of Scarlet Bullfinches, on the 8th a Little Ringed Plover, and on the 10th a Sand-Martin; but as these were the only examples we saw in the district, we cannot speak with any certainty as to the earliest date of arrival. This completes the list of birds which we had good reason to believe to be migratory in the Ust-Zylma district. Leaving out those to which, from their rarity or localness considerable doubt attaches as to the date of arrival, we obtain the following list:—

April	1.	Snow-Bunting.	May	10.	Shore-Lark.
	„	1.	„	10.	Snowy Owl.
	„	1.	„	11.	Wild Swan.
May	4.	Hen-Harrier.	„	11.	Bewick's Swan.
	„	5.	„	11.	Arctic Herring-Gull.
	„	10.	„	12.	White Wagtail.

May 12. Redstart.	May 22. Siberian Chiffchaff.
„ 12. Meadow-Pipit.	„ 22. Stonechat.
„ 13. Pintail and other Ducks.	„ 23. Short-eared Owl.
„ 13. Peregrine Falcon.	„ 23. Blue-throated Warbler.
„ 14. Reed-Bunting.	„ 24. Brambling.
„ 15. Common Gull.	„ 24. Pine-Grosbeak.
„ 17. Golden Plover.	„ 26. Oystercatcher.
„ 17. Fieldfare.	„ 26. Ringed Plover.
„ 17. Redwing.	„ 26. Wood-Sandpiper.
„ 17. Red-throated Pipit.	„ 26. Temminck's Stint.
„ 17. Grey-headed Yellow Wagtail.	„ 26. Barn-Swallow.
„ 18. Lapland Bunting.	„ 31. Little Bunting.
„ 18. Whimbrel.	June 3. Cuckoo.
„ 18. Teal.	„ 3. Double Snipe.
„ 20. Willow-Warbler.	„ 3. Terek Sandpiper.
„ 21. Wheatear.	„ 3. Black-throated Diver.
„ 21. Crane.	

This list is necessarily very imperfect. In addition to the difficulty of ascertaining the date of arrival of rare or local birds, we had a still greater difficulty to contend with. There can be no doubt that Ust Zylma lies somewhat out of the line of migration, which is probably determined largely by the direction of the great valleys. Birds from the Mediterranean might fairly be supposed to reach the Volga *via* the Bosphorus, the Black Sea, the Sea of Azov, and the river Don to Sarepta. The natural course of birds from India and Persia would be to the Volga by way of the Caspian Sea. The line of migration would probably follow the Volga to Kasan, and thence along the Kama to Perm and Tcherdin, close to the source of the Petchora. The course would then continue down the Petchora as far as its junction with the Ussa. It would then be reasonable to conclude that the hardy species, which migrate early, might have plenty of time to go round by Ust Zylma; whilst the later arrivals would leave the Petchora at Ust Ussa, and cross direct to the tundra. For example, the Snow-Bunting, Hen-Harrier, Merlin, Bean-Goose, Shore-Lark, Snowy Owl, Wild Swan, Bewick's Swan, and Herring-Gull are probably amongst the earliest breeders on the tundra,

and pass through Ust Zylma, whilst the later breeders on the tundra are not seen there at all. The following birds are all summer migrants to the tundra, but were not seen passing through Ust Zylma during migration :—

Yellow-headed Wagtail (<i>M. citreola</i>).	Dunlin.
Arctic Tern.	Richardson's Skua.
Petchora Pipit (<i>Anthus seebohmi</i> , Dress.).	Dotterel.
Red-necked Phalarope.	Sanderling.
Long-tailed Duck.	Curlew Sandpiper.
Buffon's Skua.	Little Stint.
Grey Plover.	

Most of these are very late-breeding birds. We found eggs of the Little Stint 27th of July, Long-tailed Duck 23rd of July, Richardson's Skua and Grey Plover 12th of July. That many of these birds do migrate along the valley of the Volga the following remarks will prove. They are translated from a work published in Russian, at Kasan in 1871, entitled 'Descriptive Catalogue of the High School of the Imperial University at Kasan, edited by MESSRS. KOVALEVSKI, LEVAKOVSKI, GOLOVINSKI, and BOGDANOFF.' The information is extracted from vol. i., part 1, Chapters 2, 3, and 4, which are headed "Materials for making a biography of the birds of the Volga."

"Little and Temminck's Stints are seen in flocks during the first fortnight in May on the Volga from Ssimbirsk to Kasan, and on the Kama as far as Ufa. In summer they are not seen, but are found in the middle of August again at Ssimbirsk.

"Curlew Sandpipers are seen at Kasan in spring and autumn only, both on the Volga and the Kama.

"Sanderlings are found in autumn at Kasan, and have been seen in spring on the Sarpa.

"Grey Plovers are observed in small flocks in May and September near Kasan; but not every year.

"Yellow-headed Wagtails arrive at Kasan, whilst the common species

have young in the middle of April, and a few pairs remain till the beginning of June.”

The extent of country through which the Petchora flows is so great that the meagreness of my information almost requires an apology. To write upon the subject is equivalent to attempting a history of the migration of birds in Great Britain from the observations of a single tour. I offer these remarks merely as a skeleton, hoping that the details may be filled up and the errors corrected by future ornithologists, who will find in the Petchora a rich field for work for a long time to come.

CRITICAL NOTES ON PROCELLARIIDÆ.

BY OSBERT SALVIN, M.A., F.R.S., &c.

PART II. *The new Species of Petrels obtained during the Voyage of the Italian Corvette 'Magenta' round the World.*

IN the year 1869 Dr. H. H. Giglioli and Count Salvadori described in 'The Ibis' five species of Petrels, skins of which formed part of the collections made during the voyage of the 'Magenta' by the first-named gentleman, who occupied the post of naturalist to the expedition. These descriptions were afterwards published in the 'Atti della Società Italiana Sc. Nat.' xi. pp. 450-458. Though described with great care by the authors of these papers, such is the difficulty surrounding the species of this family that ornithologists have been scarcely able to do more than grant them a nominal place in the system. Thinking that an important step might be established in the knowledge of these birds if figures of them were published, I wrote to Count Salvadori asking for the loan of the type specimens for this purpose—a request he most obligingly acceded to. From these type specimens the five plates accompanying this paper have been drawn by Mr. Keulemans.

Before proceeding to give a detailed account of the five species described by the above-named Italian naturalists, I must say that though I have searched the British Museum and the galleries of the Museum of the Jardin des Plantes in Paris, Mr. Gould's collection, as well as Mr. Godman's and my own, I have not succeeded in finding representatives of any one of these species. Moreover my present knowledge of the literature of the Procellariidæ leads me to believe, with Dr. Giglioli and Count Salvadori, that the species are really as novel as they supposed them to be when they described them

The exceedingly extensive range of many species of this family of birds adds to the difficulties of their study when the evidently close specific relationship between many of them is considered. But could we compare specimens taken from *breeding-stations*, much of our perplexity would, I believe, vanish, and the slight differences observable in specimens captured at various points on the high seas would at once assume a greater value, and definite laws of geographical distribution would be found to prevail in these as in other birds. It is on certain islands that the Procellariidæ assemble in the breeding-season, sometimes in countless numbers; and after the duties of incubation and rearing their young are accomplished these colonies disperse at large over a vast tract of ocean, to assemble again the following year. Thus, then, for a considerable portion of the year birds of closely allied species may be found flying together; but they separate to their respective breeding-quarters at the proper season.

From this it may be gathered that the fact of two or more closely allied Petrels being found together on the open ocean is not by any means so strong a proof of their specific identity as would be the case in most other birds. It is to the uniformity or otherwise of birds when assembled at their breeding-stations that characters of real specific value are to be traced.

At present our knowledge is defective in this important respect; but, with some exceptions, I am disposed, at least in the genus *Æstrelata*, to consider even slight differences of colour and dimensions as of specific value. To some of these exceptions I shall refer under the species described below as *Æ. arminjoniana* and *Æ. trinitatis*.

I have gone carefully over the descriptions of each bird given in 'The Ibis' by Dr. Giglioli and Count Salvadori, and compared them with the types themselves. In the descriptions given below I have adhered closely to the original text, making the fewest possible changes. The measurements have been retaken in English inches and decimals.



J. G. Audubon del.

M. G. V. Leitch sculp.

FREGATA MAGENTA

ÆSTRELATA MAGENTÆ. Pl. XXX.

Æstrelata magentæ, Gigl. & Salvad. Ibis, 1869, p. 61; iid. Atti Soc. Ital. Sc. Nat. xi. p. 451; Gigl. Distr. Faun. Vertebr. nell' Oceano, p. 41 (1870).

Æ. supra intense fusco-nigra, plumis sub quadam luce pallide marginatis; alis, cauda, lateribus, subalaribus ac torque jugulari fusco-nigris; regione anteoculari intensiore; fronte albido-sericea fere argenteo colore perfusa, lateraliter magis conspicue; gula, pectore abdomineque albis; subcaudalibus lateraliter cinereo tinctis, scapis parte apicali fuscis; rostro nigro, pedibus carneis, digitis palmisque nigris excepta parte basali interna tarso concolori; iride brunnea: long. tot. 14·0, alæ 12·0, caudæ 5·0, rostr. a fronte 1·25, a rictu 1·85, tarsi 1·6, dig. med. cum ung. 2·2 poll. Angl.

Hab. in Oceano Pacifico australi (*Giglioli*).

The single example of this species brought home by the Expedition was shot on the 22nd of July, 1867, in the Pacific, in lat. 39° 38' S., long. 125° 58' W. (of Greenwich). Another specimen was seen on the 3rd of August, in lat. 32° 23' S., long. 92° 39' W.; and on the 31st of August a third, in lat. 26° 7' S., long. 88° 50' W.

The authors of the paper in 'The Ibis' compare the species with *Æ. rostrata* of Peale; but its relationship seems to me to be rather with *Æ. mollis* and its allies. It is, however, a considerably larger species than *Æ. mollis*, approaching in dimensions *Æ. lessoni*.

The chief characteristics of this bird, besides the dimensions given above, are the dark undersurface of the wings, and the uniform dark colour of the primaries below. The light lateral margin to the frontal feathers, too, forms almost a superciliary mark. The wings project fully an inch and a half beyond the end of the tail.

The colouring of *Æ. rostrata* of Peale is much browner than in this species, judging from the specimens so called by Bonaparte in the Paris Museum, which I have recently had an opportunity of examining. Indeed,

if the members of this genus are capable of being grouped in different sections, as would seem to be the case, I should certainly place *Æ. magentæ* in a different section from *Æ. rostrata*.

ÆSTRELATA ARMINJONIANA. Pl. XXXI.

Æstrelata arminjoniana, Gigl. & Salvad. Ibis, 1869, p. 62; iid. Atti Soc. Ital. Sc. Nat. xi. p. 452; Gigl. Distr. Faun. Vertebr. nell' Oceano, p. 42.

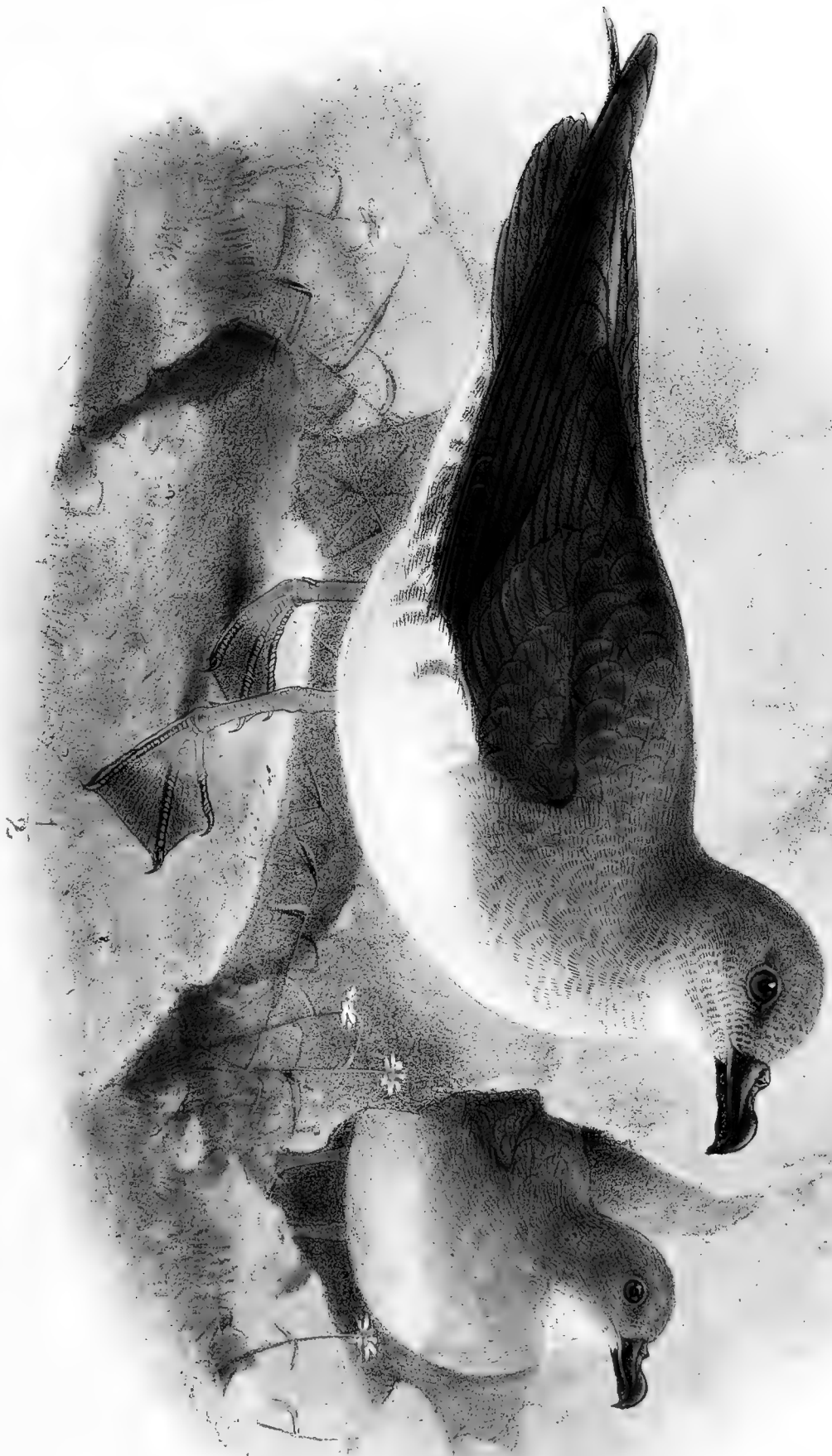
Æ. supra fusco-nigra, plumis totis pallide fere griseo colore marginatis, in fronte magis conspicue; gula alba, plumis anguste griseo-fusco marginatis; pectore abdomineque pure albis; torque jugulari, lateribus, axillaribus tectricibusque alarum inferioribus nigro-fuscis; subcaudalibus mediis albis, lateralibus cinereo-nigris apicibus albicantibus ac minutissime albido variegatis, scapis nigris; remigibus nigro-fuscis, intus basi albicantibus; rectricibus nigro-fuscis; rostro nigro; tarsis carneis, digitis ac membrana interdigitali nigris, excepta parte basali interna tarso concolori; iride brunnea: long. tot. 13·0, alæ 11·2, caudæ 4·75, rostr. a fronte 1·12, a rictu 1·63, tarsi 1·3, dig. med. cum ung. 1·83.

Hab. in Insula Trinitatis, Oceano Atlantico meridionali (*Giglioli*).

Dr. Giglioli found this species pretty common near Trinidad Island, in the South Atlantic, in about lat. 20° S., on the 23rd of January, 1868, when two specimens were prepared.

The specimen described as adult is that depicted on the left hand in the Plate; the second, supposed to be a younger example, is that figured on the right hand. This latter bird is described as having the sides of the head whitish, the white of the basal portion of the feathers showing itself; the gular collar is not so well developed; and the lower series of the under wing-coverts, together with the basal portion of the remiges, are decided white.

The age of these specimens, as shown by their plumage, is, I think, a point upon which we are at present not able to speak with certainty. For my own part I am disposed to think that the plumage furnishes no evidence whatever of age, as will be seen from what I have said concerning the next supposed species (*Æ. trinitatis*).



J. G. Keulemans del.

CESTRELATA ARMINJONIANA.

M. C. N. Hanhart inc.



PLATE 10

1871

CESTICHELATA TRINITATIS

Æ. arminjoniana is compared to *Æ. neglecta* (Schl.); but it has in reality little relationship with that bird. To *Æ. magentæ* it bears a general resemblance, differing in being smaller in all its dimensions, in the absence of the silky white of the forehead, and the dark anteocular spot; besides, its lateral under tail-coverts are greyish-black, and their tips bordered with white.

I have already stated (*anteà*, p. 233) my reasons for believing the bird called in Solander's MS. *P. sandaliata* to be the same as that here described, and that of all the claimants to Gmelin's title *Procellaria alba* this has perhaps the strongest right to it. I have also shown that *P. sandaliata* cannot be used as the name of this species, being a MS. title, and therefore inadmissible, and that the uncertainty hanging about the application of the name *P. alba* renders it inexpedient that it should be made to supersede that given with so full a description by the Italian naturalists.

ÆSTRELATA TRINITATIS. Plate XXXII.

Æstrelata trinitatis, Gigl. & Salvad. Ibis, 1869, p. 65; iid. Atti Soc. Ital. Sc. Nat. xi. p. 454; Gigl. Faun. Vertebr. nell' Oceano, p. 40.

Æ. ex toto fuliginoso-nigra, subtus vix pallidior, remigibus nigricantioribus, basi intus pallidioribus; fronte ac capite supra plumis distincte griseo marginatis; rostro pedibusque nigris; iridibus brunneis: long. tot. 13·0, alæ 11·2, caudæ 4·55, rostri a fronte 1·1, a rictu 1·62, tarsi 1·25, dig. med. cum ung. 1·80.

Hab. in Insula Trinitatis, Oceano Atlantico meridionali (*Giglioli*).

This species was found pretty abundant around Trinidad Island, in the South Atlantic; and several specimens were procured on the 23rd January. The bill and feet were noted as deep black, and the irides as brown.

The bird on the left hand of the Plate, which is described as perhaps not adult, has the underparts (especially the throat) lighter, the pure white of the basal portion of the feathers showing amidst the fuliginous brown of the rest.

In every respect except colour this bird resembles *Æ. arminjoniana*, the dimensions agreeing very closely. This, coupled with the fact that the specimens of both these species were secured on the same day in the vicinity of the same island, prompts the supposition that, notwithstanding the great difference in colour, they really belong to one and the same species.

If this be so, the question arises, What is the meaning of the great disparity in the colouring of the plumage observable in different individuals of this species?

In answer to this question it may be urged that there is reason to believe that in some species of Petrels, just as in some Skuas (*Stercorarius*), there prevails a dimorphism as regards the colour of the plumage, which is not dependent on age or sex, and that the colouring of each individual is assumed with the first plumage and retained through life. The evidence that such is the case in some species of Petrels is at present, perhaps, hardly sufficiently precise to justify the union of *Æ. trinitatis* with *Æ. arminjoniana*; and the question can only be decided by actual observation; still it is a point to be borne in mind by future explorers. The truth of the suggestion has some support from analogy with what appears to prevail in other species of this group. Macgillivray (*Zoologist*, 1860, p. 7133) speaks of some such diversity of plumage being observable in a colony of *Æ. torquata* observed by him in Aneiteum Island, one of the New Hebrides. Moreover the difference exhibited in the birds figured by Mr. Gould, in his 'Birds of Australia,' as "young" and old of *Æ. mollis* is another case in point. I recently stated (*Ibis*, 1875, p. 376) that the young of *Æ. externa* assumed the full livery of the adult bird with its first feathers and exhibited no intermediate or "young" stage; so that, if analogy may be trusted, the "young" of *Æ. mollis* according to Gould is not really or necessarily the young, but simply one of the two forms in which *Æ. mollis* presents itself when adult. Then, again, with the bird called *Æ. philipi* by Gray. The bird figured as the Norfolk-Island Petrel in Phillip's 'Voyage,' upon which Gray founded the species, is in ashy-fuliginous plumage; whereas the specimens so called



J.G. Audemans del.

M.A.N. Hancock sculp.

CESTRELATA DEFILIPPIANA.

by Gray, in the British Museum, are quite differently coloured, and, if Gray's view be correct, represent the white-breasted form of this bird. Other possible instances will suggest themselves of members of this family of birds presenting this double form of colour. But, as I have already said, the whole question is eminently one that must be solved by observation rather than by speculation; and so, with the hint here thrown out, I leave it for the present.

The describers of *Æ. trinitatis* state that it belongs to that section of the genus distinguished by Bonaparte as *Pterodroma*; but if there be any truth in what I have just said, this determination must be reconsidered

ÆSTRELATA DEFILIPPIANA: Plate XXXIII.

Æstrelata defilippiana, Gigl. & Salvad. Ibis, 1869, p. 63; iid. Atti Soc. Ital. Sc. Nat. xi. p. 453; Gigl. Faun. Vertebr. nell' Oceano, p. 43.

Æ. pileo, collo supra, dorso ac supracaudalibus pulchre cinereis, uropygio ac regione periophthalmica, presertim infra oculos, nigricantibus, plumis dorsalibus obsolete albescente marginatis; sincipitis plumis albo marginatis, fronte fere ex toto alba; subtus omnino pure alba, lateribus pectoris cinereo tinctis; alis cinereo-nigricantibus, remigibus secundariis magis cinereis, fasciam obliquam fere constituentibus; tectricibus alæ inferioribus candidis; margine carpali ac linea sub margine radiali candido cinereo-nigricantibus; remigibus nigricantibus, duabus tertiis partibus pogonii interni abrupte albis, intus apicem versus fusco-nigricante marginatis; rectricibus sex mediis fere ex toto pure cinereis, quarta et quinta utrinque albo variegatis, extima alba pogonio externo minutissime cinereo-punctata, interdum pure alba; rostro nigro, tarsis pallide cæruleis, digitis nigris, palamis flavidis apicem versus fuscis; iride brunnea: long. tot. 11·0, alæ 9·0, caudæ 3·8, rostri a fronte 1·04, a rictu 1·4, tarsi 1·07, dig. med. cum ung. 1·4.

Hab. in Oceano Pacifico meridionali orientali (*Giglioli*).

Dr. Giglioli first saw this species on the 5th of August. It followed the wake of the 'Magenta' up to the 10th of the same month, in lat. 18° 4' S., long. 79° 35' W., not far from the Peruvian coast. It reappeared more numerous, following the ship's wake, during the cruise from Callao to

Valparaiso, in September. Its flight is described as resembling that of a *Prion*.

In the four specimens collected, the describers noticed, besides slight differences in size, some discrepancies in colour, especially in the external rectrices, which were more or less spotted with greyish, the outermost being sometimes quite white.

Æ. defilippiana is rightly referred to the group containing *Æ. cooki* of Gray, to which must be added *Æ. leucoptera* of Gould, its affinity, as regards the stoutness of its bill, being perhaps nearer to the last-mentioned species.

It may easily be recognized from both these species, as a comparison of the accompanying Plate with that of *Æ. cooki* in the 'Voyage of the Erebus and Terror' on the one hand, and with that of *Æ. leucoptera* in the seventh volume of Gould's 'Birds of Australia' on the other, will show.

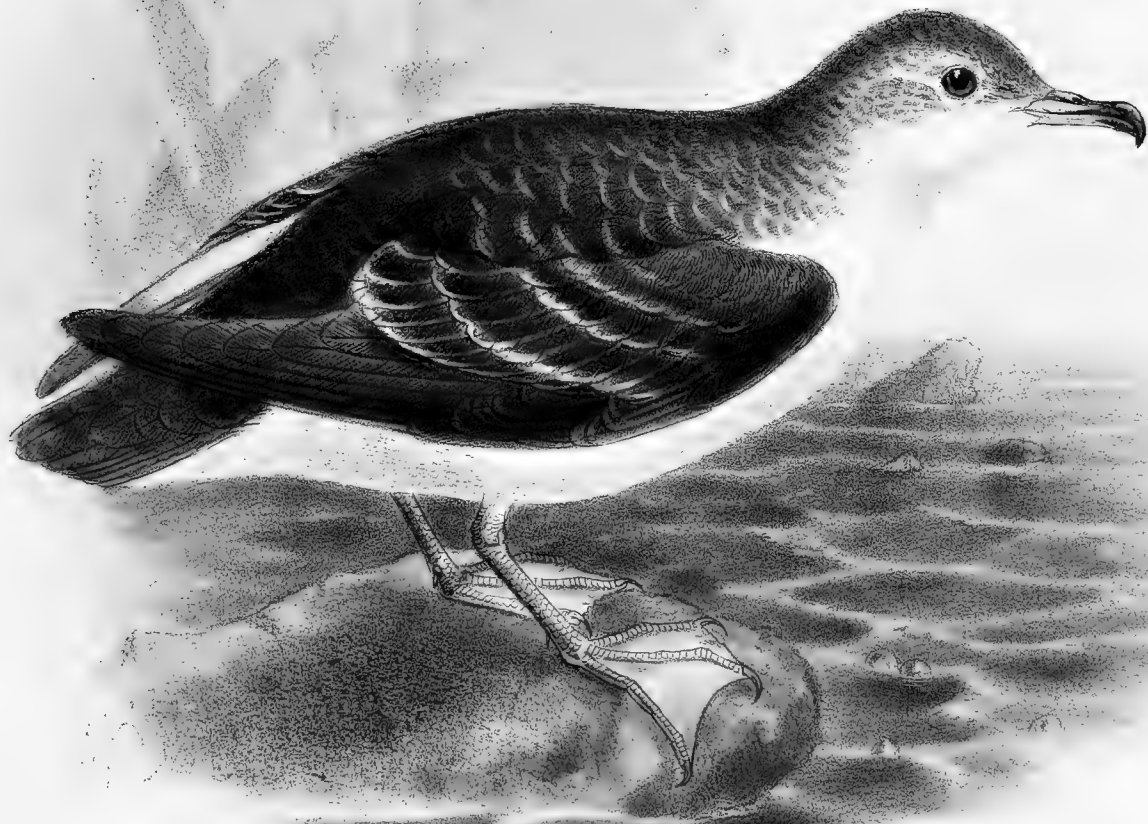
When describing the species I called *Æ. externa* (Ibis, 1875, p. 373), I at one time supposed that it might be allied to the bird now under consideration; but since seeing the types of *Æ. defilippii*, it is clear to me that the two are widely distinct species.

PUFFINUS ELEGANS. Plate XXXIV.

Puffinus — ? et *P. elegans*, Gigl. & Salvad. Ibis, 1869, pp. 67, 68; iid. Atti Soc. Ital. Sc. Nat. xi. p. 457; Gigl. Faun. Vertebr. nell' Oceano, p. 32.

P. supra ex toto cinereo-plumbeus, plumis totis angustissime albo limbatis; tectricibus alarum mediis, majoribus ac remigibus secundariis albo limbatis, fascias tres trans alam formantibus; subtus, tectricibus alæ inferioribus remigibusque intus candidis; capitis ac colli lateribus albo-cinereo-mixtis; cauda brevi ex toto cinereo-plumbea; tarsis postice nigris, antice cærulescentibus; digitis subtus nigris, supra cærulescentibus, palamis albidis, unguibus nigris; rostro tenui, cærulescente, culmine et apice nigris; iride brunnea: long. tot. 11·5, alæ 7·3, caudæ 2·7, rostri a fronte 1·07, a rictu 1·4, tarsi 1·7, dig. med. cum ung. 1·95.

Hab. in Oceano Atlantico meridionali (*Giglioli*).



J. C. Keulemans lith

M & N Hanhart imp

PUFFINUS ELEGANS.

The only specimen of this species seen was shot on the 2nd of March, 1866, in the South Atlantic, lat. 43° 54' S., long. 9° 20' E.

In describing this species the authors suggest that it may be the bird indicated in Banks's Drawings as *Nectris munda* (*cf. antea*, p. 236); and there appears to be some reason for this suggestion, though, after looking carefully at the drawing and Solander's MS. note attached to this name, I see little chance, from such incomplete materials, of coming to any decision respecting it. Under these circumstances I think that the name *P. elegans* had best be adhered to for this bird—*i. e.* supposing it to be a species distinct from all others.

That this may ultimately prove not to be the case is suggested by the fact that the single specimen yet known is a young bird that has just thrown off its down, the remains of which are still visible; moreover the white edgings to the feathers of the upper plumage in this specimen are so unusual in this genus that I am disposed to doubt their being characteristic of the adult bird. Still, apart from this point of doubtful value, there remains the clear cinereous colouring of the upper plumage, which corresponds with that of no other species of *Puffinus* that I am acquainted with. It is thus quite likely that *Puffinus elegans* will stand as a distinct species.

THE BIRDS OF THE FIJI ISLANDS.

BY MR. G. D. ROWLEY.

THE Viti archipelago is situated to the east of Wallace's line; and the Fijian, Tongan, and Samoan groups form, to speak in zoogeographical language, the third or Central-Polynesian province of the third (Polynesian) subregion of the Australian Region, which latter is one of Mr. Sclater's six (*cf.* Encyclop. Brit. 9th edit. p. 741, "Birds").

The Fiji Islands (discovered by Tasman in 1643) are said to be the finest group in the South Seas, comprising about two hundred reef-bound islets and rocks, of which sixty-five are inhabited by a population of about 200,000, and are of volcanic origin, generally hilly and well wooded. Viti Levu is the largest and most populous. This is eighty-seven by fifty-seven miles in area.

The ornithology of these islands, now belonging to the dominions of Her Majesty, does not appear to be numerically great. Mr. Edgar L. Layard says:—"On Ovalau we have nothing but hills, among which dwell the only birds really worth seeking; the whole country, however, is singularly destitute of them. Pigeons may be heard all round; but they are very difficult to see. They are the commonest of all our birds. I suppose seventy species may be set down as the number inhabiting an area of 7400 square miles, but scattered over a space five times as large as Wales."

The species, however, if not numerous, are of considerable interest; and I propose to select a few for illustration in this work.

MYIAGRA AZUREOCAPILLA, Layard, sp. n.

(The Blue-headed Flycatcher.)

This new addition to the genus *Myiagra** was made by Mr. E. L. Layard, Administrator of the Government of the Colony of Fiji, who says (Ibis, 3rd ser. vol. v. Oct. 1875, p. 434):—

“ MYIAGRA AZUREOCAPILLA, sp. n.

“ ♂. General colour above dark sombre blue; tail and wing-primaries black, the latter externally edged with the blue of the back; top of the head and cheeks from below the eye rich azure-blue; a black band extends from over the nostrils and passes round the nape of the neck, including the eye in its breadth; chin, throat, and chest dark rich chocolate-brown, reddest on the chin; remainder of the underparts bluish white. Length 6'' 3''', wing 3'' 3''', tail 3'', tarsus 10''', bill 9'''. Beak orange; legs slate-colour; iris dark horn.

“ ♀. General colour above chocolate-brown; top of head bluish; cheeks chocolate and white; tail and wing-primaries brownish black, the latter edged externally with the chocolate of the back, the former more or less tipped with white, most visible on the underside; chin, throat, and chest as in the male, but not so dark, being almost red. This colour extends down the flanks and tinges the remainder of the underparts, which are white. In the bill the upper mandible is dark horn, the under orange.

“ I propose to call this pretty Flycatcher *Myiagra azureocapilla*, from the lengthened azure-coloured feathers on the top of the head. It was first obtained by Mr. Liardet, in the north of the island Taviuni in this group, and near the same locality by my son, Mr. Leopold Layard. The latter informs

* From *μύια*, a fly, and *ἄρρα*, a capture.



Keulemans lith.

M. N. S. P. 1880

MYIAGRA AZUREOCAPILLA, Z. 1880



J. Gould del. sculp.

W. Woodcut sculp.

TRICHOPUS AUREOPECTUS

me that they frequent the forest, perching on the lower trees. He never found them in the low country, but at an elevation of 600 or 800 feet. This is all covered with forest. They feed on insects, in search of which they are very restless and active. They were sometimes in pairs, at others solitary."

TRICHOGLOSSUS AUREOCINCTUS, Layard.

This species appeared in the 'Annals and Magazine of Natural History,' November 1875, p. 344 :—

" XLVI.—*Description of a new Species of Trichoglossus from Fiji.*

By E. L. LAYARD, Esq., F.Z.S., Consul for Fiji and Tonga.

" *Trichoglossus aureocinctus*, Layard.

" Upper parts all green, except the tip of the tail-feathers, brightest on the rump, cheeks, and forehead ; body below green ; a deep crimson patch extends from the base of the bill as far as, but below, the eye, down the chin and throat to the chest, where it is bordered by a golden band, the feathers between this and the green of the body being more or less scale-like in their markings : tail-feathers—three outer ones red at the base, yellow on the point, half black markings on outer webs ; fourth black at base, with red spot, and yellow at point ; rest black at base, yellow at point : bill and feet red ; eyes dark buff ; wing-feathers, inner web black, outer broadly bordered with green.

" Length $6\frac{1}{2}$ inches, wing $3\frac{1}{2}$, tail $3\frac{1}{4}$, tarse 4 lines, bill 6 lines.

" This species was first indicated by my son, Mr. Leopold Layard, who

saw flocks of them at Taviuni in company with *Lorius solitarius*, but could not obtain one. A few were subsequently shot (I believe, on Ovalau) by some one; and one passed into my possession."

The illustration is taken from a fine male and female collected by Mr. E. L. Layard at Ngila, Taviuni, Fiji, 1st August, 1875, the food of which is stated to have been flowers. Both are in my collection.

Length of the male $6\frac{3}{4}$ inches; female $6\frac{1}{2}$ inches. There appears to be no difference between the sexes except that of size.

[TO BE CONTINUED.]



M. & N. Harhart imp.

AMMOMANES DESERTI.
DESERT LARKS.

J. G. Keulemans del.

AMMOMANES DESERTI (*Licht.*), AMMOMANES
ISABELLINA (*Temm.*),
AND ISABELLINE BIRDS.

BY MR. G. D. ROWLEY.

CABANIS, the founder of this genus, gives the derivation (*Mus. Hein.* i. p. 125, 1850):—“*Ammomanes*: th. ἄμμος, ον, ἡ, sand; and μαίνω” or μαίνομαι, I madly wish for, dote upon. Thus *hippomanes*.

Amomanes (1853) et *Annomanes* (1855), Bp., were probably, both of them, printer's errors. They are mentioned in Gray's 'Hand-list of Genera and Species,' part ii. p. 121. no. 1941 (1870).

Type *A. pallida*.

Mr. R. B. Sharpe (*P. Z. S.* 1874, part iv. p. 626) says:—“The characters given in the synopsis define the relations of this genus, in which a system of uniform dorsal coloration appears to be a point of no small generic significance.” Plate LXXVI. fig. 2, *Ammomanes grayi*, is a very pretty example of a light-sandy, isabelline bird.

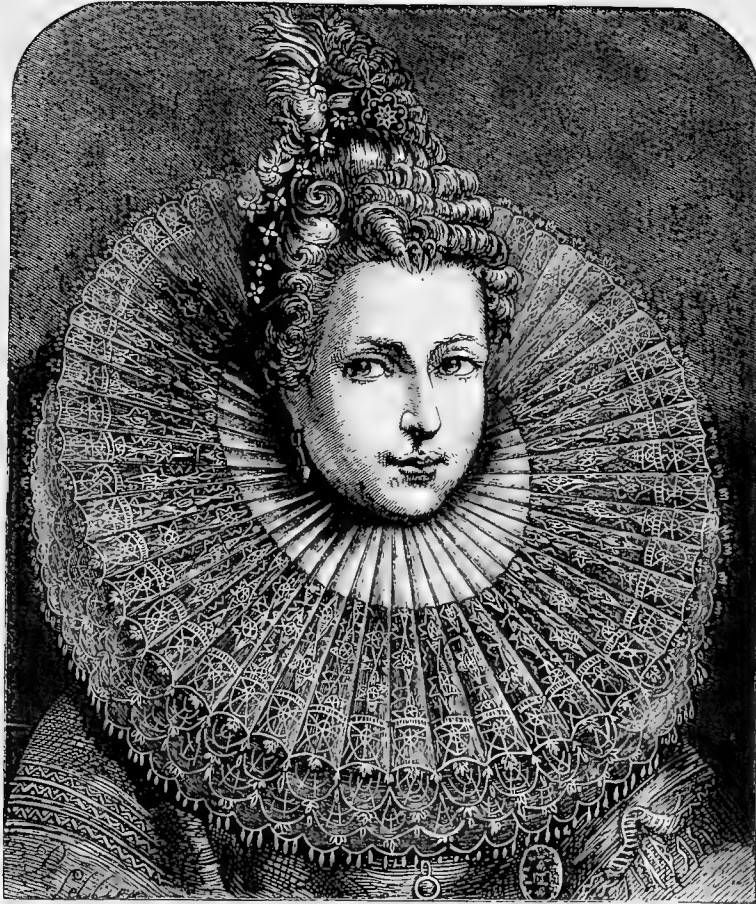
Mr. Alfred Russel Wallace, in his 'Natural Selection,' quotes the Rev. H. B. Tristram (*Ibis*, vol. i. 1859, p. 430) thus:—“In the Desert, where neither trees, brushwood, nor even undulation of surface afford the slightest protection from its foes, a modification of colour, which shall be assimilated to that of the surrounding country, is absolutely necessary. Hence, without exception, the upper plumage of every bird, whether Lark, Chat, Sylvian, or Sand-grouse, and also the fur of all the small mammals, and the skin of all the Snakes and Lizards, is of one uniform isabelline or sand colour.”

Of course the term "isabelline," and its origin, is well known to ornithologists ; but for the sake of those who are not, it might be of use to mention that the lady who gave rise to the epithet was Clara Eugenia Isabella, daughter of Philip II., King of Spain, and Isabella of France. She was Infanta of Spain and wife of the unfrocked Cardinal Albert, Archbishop of Toledo, youngest of the three surviving brothers of the Emperor Rudolph, and married by the Pope himself (officiating in his triple crown) at Ferrara, 1598, by proxy.

This colour (in French, "isabelle") is a brownish yellow—the hue of unwashed linen, the Infanta having made a vow, in 1601, not to change her under-garment until her husband captured Ostend. Though the siege began at the above date, the town was not taken till 1604, when the linen of which this portion of her clothing was composed had assumed the above-named hue (*vide* Webster's Dictionary).

In the 'United Netherlands,' by John Lothrop Motley, D.C.L., vol. iv. pp. 72-84, she fires off "a forty-pounder, with her own serene fingers, to encourage the artillerymen," and appears "magnificent in ruff and farthingale and brocaded petticoat, attended by a cavalcade of Ladies of Honour in gorgeous attire." No mention is made here of the vow, or of the condition of her clothing, which, however, had not then (1601) changed to what it became in 1604 ; for not till that time was she released from her vow, notwithstanding her Pilgrimages to our Lady of Hall.

I here record my thanks to Mrs. Bury Palliser and Messrs. Sampson Low & Son, and Marston, for permission to copy the portrait of this Archduchess from the 'History of Lace,' which I have done, thinking that the features of the lady whose name appears so frequently in the pages of science throughout the world must be interesting. Great heiress as she was (for she had the Low Countries for her dower), and granddaughter also of the Emperor Charles V., these facts are less known than the isabelline colour to the name of which she gave origin.



ISABELLA CLARA EUGENIA,
DAUGHTER OF PHILIP II., ARCHDUCHESS OF AUSTRIA, GOVERNESS OF THE NETHERLANDS.
DIED 1633,
ORIGINATOR OF THE ISABELLINE COLOUR.

In 'The Ibis' (N. S. vol. ii. 1866, p. 283), "On the Ornithology of Palestine," part iv., Mr. Tristram says, "the only egg of this Cuckoo [*Cuculus canorus*, L.] we found was near Jericho, in the nest of a Desert-Lark (*Ammomanes isabellinus*)." Again (p. 286), "the next group, *Ammomanes*, is an exclusively desert form, and very closely allied to the typical *Alauda*. While in the Sahara it is represented by four species, we found but two in Palestine, both confined to the Dead-Sea region and the southern wilderness. Of these, *A. deserti* (Licht.) is the least common, being met with only in the highlands close to the Dead Sea, in very small bands."

That colour has for its object, at least in some birds, the safety of the owner, has been pointed out by Mr. Wallace. He mentions also the coat of the arctic bear and the American polar hare, which, he says, are white all the year round. In the ptarmigan of Scotland we have an example of a plumage which changes as the danger arrives, with equal step. Mr. Sharpe, in his lecture delivered in the Hulme Town Hall, Manchester, November 10, 1875, says "the Hoopoes (*Upupidæ*), by reason of their sandy colour, might be known almost certainly to be inhabitants of a desert region. It is said that this sandy colour is a great protection to the Hoopoe; for, on seeing a Hawk, he throws himself flat upon the ground, turns his wings round, and sticks his bill up in the air, so as to look as much as possible like a bit of old rag."

Here let me remark on the tendency which desert birds appear to have to run instead of fly. Of course the Ostrich occurs to one's mind; but Mr. Dresser observes of *Cursorius isabellinus*, the familiar Cream-coloured Courser of our British lists, now, alas! turned into *Cursorius gallicus* ('Birds of Europe,' Sept. 1875, C. GALLICUS, p. 5):—"By those who have had an opportunity of observing it in a wild state, it is said to be a true desert-bird, and to a certain extent local in its distribution even there. Before taking

wing it runs a short distance, and seldom far or high, preferring to trust to swiftness of foot for safety." By the way, according to the latest theory, this species should have lost the power of flight. Dr. A. L. Adams, on the birds of Egypt and Nubia (*Ibis*, vol. vi. 1864, p. 25), says of *Ammomanes pallida*, "it runs at great speed, and, like the other Sand-Larks, stops every few steps."

The superstition of the Spanish Princess reminds us of the dirty hair shirt, swarming with vermin, worn next to the skin by Thomas à Becket, under his rich robes, and found after his death on his body, December 29, 1170,—a fact which vastly added to the sanctity of the Archbishop in the opinions of that age, and raised such transports of enthusiasm that the monks "kissed the hands and feet of the corpse, and called him by the name of 'Saint Thomas,' by which, from that time forward, he was so long known to the world" (STANLEY'S *Memorials of Canterbury*, p. 97).

The like want of cleanliness produced perhaps not so potent an influence on the soldiers of the two Archdukes, as the Infanta and her husband were always called; men's feelings had changed, and this kind of piety was out of date. Yet we see both science and religion alike affected by two dirty articles of dress.

The number of species of animals named after this Spanish lady, and particularly of birds, rendered it necessary to relate a not very agreeable anecdote. Mr. George Robert Gray, in his 'Hand-list of Genera and Species of Birds,' part iii. Index, p. 251, mentions twenty-seven instances; and the isabelline colour is spoken of, and so called, by the scientific in both the Old and New Worlds. When, however, a Fellow of the Linnean Society sends out a list of plants, and among them *Phlox isabellina*, he perhaps knows not the story of the Infanta.

Through the kindness of Canon Tristram the two birds in the Plate have been presented to my collection; he shot them both himself. The male

is from Marsaba, in the Wilderness of Judæa, and the female from Ain Feshkhah, on the north-western shore of the Dead Sea. He adds in a letter to me, dated 22nd of December, 1875:—"I used to think that the *Ammomanes* of Palestine might be separated from the African one. It is not so ruddy in hue, but that is all; and I attribute it to the fact that the sand of the Sahara is of a ruddier hue than the Arabian. There is no desert-bird which is more difficult to detect on the ground than this Lark. The adaptation of colour for concealment by nature has here reached perfection. Very often the neighbourhood of a little flock is only discoverable by a slight cloud of sand as they scratch and dust themselves. Confident in the protection of their garb of quaker drab, when the traveller nears them they simply remain quiet; and it is only if he stops that they take wing. I never heard them sing, though they carry on a rapid chatter in a monotone at all times; but then I only once came across the nest, formed merely of a few bents in a camel's footprint. The eggs are as much paler than those of other Larks as is the plumage of the parents. Their food seems to consist principally of small sand-burrowing beetles; and the species is strictly confined to sandy deserts, never frequenting rocky districts or visiting the oases and patches of cultivation."

Comparing such specimens as I have at hand (three in number) with the British Sky-Lark, I find that *Ammomanes deserti* has a peculiar flocculent feather, extremely soft and beautiful. This appears to me to arise from the circumstance mentioned to me by Mr. Keulemans, that the atmosphere is filled with "sand-powder, fine as meal." He adds that he has seen "the Egyptian Vulture seemingly of a bright golden-yellow, produced by the dark brown sand-fog." The feathers of birds of our more northern clime are usually hard, not having gone through the process of pulverization, if I may use such a term to express the continual impression produced by blown sand.

Mr. Tristram says (P. Z. S. 1864, p. 434), in his report on the birds of Palestine, "*Alauda arvensis*, L., common in the maritime plains and northern uplands in winter. Not observed afterwards." It is remarkable that the

paleness of the plumage of the Desert-Lark extends to the eggs, which means to the colouring-matter belonging to them.

It is not possible to notice all the isabelline birds, such as *Saxicola isabellina*, the Isabelline Chat, Dresser's 'Birds of Europe' (part xxviii. May 1874, p. 19), and the several species of Sand-Grouse, &c. Some are completely, and others only partially affected, by the colour in question. Perhaps the most interesting is *Caprimulgus isabellinus*, Rüpp.

C. ægyptius, Licht., Shelley's 'Birds of Egypt' (p. 175, with plate). Here we have a case of double mimicry in one bird, or mimicry upon mimicry. First there is the ordinary plumage, resembling *C. europæus*, Linn., which imitates the bark of a tree—over which comes the isabelline hue of the desert to wash that into sand.

Among British species none is more valued than *Cursorius isabellinus*, Flem, now, alas! turned into *Cursorius gallicus*—a sad wrench to one's feelings, much like a visit to the dentist, but, I suppose, a stern necessity. This is a true desert-bird; and *isabellinus*, from the colour, is very appropriate. British-killed specimens fetch high prices; but perhaps none exceeded the Leverian example; for, at the sale of the Museum, "it was purchased from Fichtel, who had bought it, by that zealous naturalist Donovan, for the sum of eighty-three guineas. It is now deposited in the British Museum" (Shaw's 'General Zoology,' vol. xi. Aves, p. 501).

Doubtless this price, a strong one even in our time, secures so interesting a skin the utmost care and attention. According to Montagu, Mr. William Hammond, its first owner, presented it to Dr. Latham, who figured it. I have not seen the bird.

Mr. Keulemans has drawn a desert scene for this article, which at least has one merit, there is no camel in it, dead or alive! The reader must endeavour kindly to enter into it: the sleepy half-closed eye of the bird, the glare, the drought, &c. are placed before him. If, as I hope, he will lend himself to a state of things which I cannot describe, not having been in the Sahara (while probably he has, and knows it much better than I do), imagination will assist both the artist and myself.

ON THE GEOGRAPHICAL DISTRIBUTION OF BARN-OWLS.

BY R. BOWDLER SHARPE, F.L.S., F.Z.S., &c.,
ZOOLOGICAL DEPARTMENT, BRITISH MUSEUM.

IN the second part of this Journal Mr. Dawson Rowley has given a short note on the dark or Danish race of the Barn-Owl, accompanied by an excellent figure of the bird by Mr. Keulemans. Having drawn attention to the occurrence of this dark form in England, Mr. Rowley was so kind as to ask me to supplement the details there given by a few observations as to the distribution of Barn-Owls over the earth's surface; and this I have now the pleasure of doing. I have already stated (Cat. Birds, vol. ii. pp. 294-296) my general views on the subject of Barn-Owls; but as in a technical volume like the British-Museum Catalogue it was impossible to go very deeply into the reasons which guided my ultimate conclusion, I am glad to have a further opportunity for ventilating the subject, and for publishing a considerable mass of notes which I had accumulated during the compilation of my article on *Strix flammea* and its allies.

Most Owls have two distinct phases, a light and a dark one; and the Barn-Owls are no exception to the rule, although the fact has not been brought into any great prominence by English writers on ornithology. Mr. Stevenson, however, in his 'Birds of Norfolk,' p. 53, refers to a very dark-coloured bird killed in that county on December 13th, 1864; and on comparison with a Danish example sent over by Professor Reinhardt, it was pronounced to be identical with the deeply coloured form resident in that

country. Mr. Hancock mentions a Northumberland specimen; and, lastly, we have Mr. Rowley's Brighton bird*.

There are therefore three occurrences of the Danish Barn-Owl in England, all of them having taken place on the eastern and south-eastern coasts; and in this fact consists the great interest of their visit, when taken in connexion with the occasional appearance of other Scandinavian birds in the same part of Great Britain—such, for instance, as *Acredula caudata*, *Cinclus melanogaster*, &c.; but announcements of Danish Barn-Owls in England must be received with extreme caution, inasmuch as our own species has a natural dark phase which scarcely differs from the ordinary bird of the continent of Europe; and I believe that a thorough examination of the Barn-Owls of all countries would show that in every district, excepting in the few localities mentioned below, both phases are found in equal proportions. I must observe at least that several examples killed in England recently, and brought to me as Danish Barn-Owls, have not been so really, but have turned out to be the dark phase of our resident bird.

The materials on which this paper is founded are contained in the collection of the British Museum; and I cannot contemplate the noble series which we now possess in the National collection without acknowledging the efforts of Dr. Günther, the Keeper of the Zoological Department, who has procured on every side the specimens necessary for a complete study of these difficult birds.

I will now proceed to consider the range of Barn-Owls; and for this purpose I may divide them into two groups—true Barn-Owls and Grass-Owls; of the latter three species (two African and one Asiatic) are known, of which more presently. We commence with the Palæarctic region.

Great Britain. In its light phase the English Barn-Owl presents such

* Another, probably a male, was taken alive in the same dovecote, February 22, 1876.—G. D. R.

a strongly marked character in its white tail, that were it not for the existence of the dark phase it would almost deserve to be separated as a distinct race from the Barn-Owl of the continent; the only other *Strix* which seems to have a similar white tail is found in Jamaica and Columbia. *S. flammea* seems to be generally distributed over Great Britain.

Mr. A. G. More gives it as a general breeding-bird all over the country; but he says it is "very rare in the north of Scotland, and nests only occasionally in Ross and Caithness. Low states that it used to breed in Hoy; but the bird has not been recently seen in the Orkneys" (*Ibis*, 1865, p. 15).

Mr. Robert Gray ('Birds of the West of Scotland,' p. 58) writes as follows:—"Judging from the numbers of this beautiful Owl which are sent to the shops of the Glasgow bird-stuffers, it would appear to be one of the commonest 'feathered mousers' in the neighbourhood of that city. There is scarcely, indeed, a ruined building of any consequence within a radius of thirty miles of Glasgow, but what is frequented by one or two pairs. Yet it is by no means widely distributed as a Scottish species, some of the more northern counties being totally destitute of the associations which its presence has given rise to. In the western islands I have been able to trace it only in Mull and Islay; in the former locality it is rather rare, but in the latter it is well known in two districts at least—the woods at Islay house and Port-Askaig, as I have been informed by Mr. Elwes."

"In Iona," says Mr. Graham, "where we have a venerable ruined belfry and a moon, we have no Owl to live in the one or mope her melancholy at the other." "In the east of Scotland the white Owl is common enough from Berwickshire to Aberdeenshire, with the exception of perhaps Forfarshire: it is likewise found in many of the midland counties, especially those south of Perthshire. In Banffshire it is rare: but westward it becomes more common, and is by no means rare in Ross-shire."

It is not mentioned in Dr. Saxby's work on the birds of Shetland. According to Mr. Thompson ('Birds of Ireland,' p. 92) it is the most common

species of Owl in Ireland, and takes up its abode in towns as well as in country districts. It is very rare in the island of Rathlin (*Dr. Marshall*).

My notes on the British-Museum series are as follows :—

A. The adult male described in the 'Catalogue' is from Shropshire, where it was procured by Mr. Gould. It is pure white below, the wings being perfectly uniform underneath and the quills and the tail not banded. Total length 13 inches, wing 11·9, tail 5·0, tarsus 2·2, middle toe 1·1.

B. A female bird, also from Shropshire (October 16th, 1868), has the under surface white, but shows a few tiny spots on the flanks and under wing-coverts; chest slightly washed with buff; quills barred, though not very distinctly, except on the inner web near the shaft, showing four dark spots on the lower surface of the quills; tail orange, tipped with white, and having four distinct bands of ashy-black. The upper surface much greyer than in the preceding bird. Total length 13·5 inches, wing 11·8, tail 5·4, tarsus 2·3, middle toe 1·15.

C. Another female, from Sarsden, Oxfordshire (November 18th, 1868), is very pure white below, but has numerous small dots on the sides of the body and under wing-coverts; quills with indications of bars, but none perfectly formed; tail also barred, the centre feathers completely, but the others imperfectly; face white, with a rufous patch in front of the eye; the ruff white, very distinctly tipped with orange-buff, especially on the upper parts. Total length 14 inches, wing 12·0, tail 5·2, tarsus 2·2, middle toe 1·15.

D. A second female, killed at Sarsden on the 7th of October, 1868, is very dark-coloured both above and below, especially on the lower parts, which are deep orange-buff, covered with numerous small brown dots on the chest and flanks, as well as on the axillaries and under wing-coverts; quills with remains of bars below, represented by blackish spots on the inner web; tail rich orange-buff mottled at the tip with greyish and crossed with four dark-grey bars; ruff very rich orange, the lower plumes whitish and tipped with brown; face silvery white, the feathers round the eye rufous, deeper in front

of the eye. Total length 12 inches, wing 11·5, tail 5·0, tarsus 2·2, middle toe 1·05. This specimen is a typical example of the dark phase of the English bird.

E. A female from Esher, in Surrey, presented by Mr. Bond and supposed to be a Danish Barn-Owl, is very little darker than the foregoing Sarsden specimen, belonging, like that bird, to the dark phase of our ordinary species, and not to be mistaken for the deeply coloured Owl of Silesia; it is, however, the darkest English-killed specimen I have yet seen. The breast is thickly though minutely spotted with triangular dots of brown, a little larger on the flanks; ruff deep orange, with dark brown tips to the lower feathers; facial aspect greyish white, the feathers rufous all round the eyes, inclining to dark brown in front of the latter; wing-coverts and quills deep orange, very distinctly barred with grey; tail deep orange, with four distinct greyish bars, besides the greyish mottled tips; bands on quills four. Total length 12·5 inches, wing 12·0, tail 5·2, tarsus 2·2, middle toe 1·15.

F. A very pale bird, from Epping, presented by Mr. H. Doubleday, has the markings of the upper surface coarse and very light grey; face dusky greyish white, inclining to silvery white on the hinder margin, here resembling the ruff, which is also white, with a few tips of orange-buff; in front of the eye a patch of rufous feathers; under surface of body pure white, with a few tiny specks of brown on the side of the breast scarcely visible; primary-coverts rich orange, mottled only at the tip; quills very pale, with no distinct bars on the upper surface, but exhibiting here and there irregular freckled vermiculations; the lower surface of the wing perfectly uniform; tail very light buff, inclining to white on the outer feathers; no complete bars on it anywhere, nothing but a few faint vermiculations of brown, with a small irregularly shaped brown spot near the base of many of the rectrices. Total length 13·5 inches, wing 12·1, tail 5·4, tarsus 2·3, middle toe 1·15.

G. A bird from Combe Wood, obtained from Mr. Leadbeater, has the wings and tail narrowly barred, the latter tipped with white and crossed with

four bars, but with scarcely any mottling at the tip; under surface white, with a few tiny dots of brown on the sides of the body and on the breast; the chest washed with orange. Total length 13 inches, wing 11·4, tail 5·0, tarsus 2·3, middle toe 1·15.

H. *Cambridgeshire* (Mr. J. Clark: Specimen D of Mr. G. R. Gray's 'List of British Birds,' 1863). Richly coloured above, and pretty thickly mottled with grey; underneath white, the chest tinged with orange, with a few tiny spots on the lower breast and sides of the body; quills nearly devoid of bars on the outer web, but distinctly marked with brown on the inner; tail pale orange, inclining to white on the outer web and crossed with five rather narrow bars of brown, the tip of the tail whitish, not mottled with grey; face greyish white, rufous round the eye, deeper in front of the latter; on the quills remains of four bars. Total length 12·5 inches, wing 12·4, tail 5·2, tarsus 2·2, middle toe 1·15.

I. *Devonshire* (Colonel Montagu). Even allowing for the length of time since this specimen was preserved, it must, when freshly killed, have been a very pale-coloured bird, judging from its nearly uniform quills and facial disk, the latter blending with the ruff, which is silvery white, excepting for a slight tip of brown to some of the lower feathers; under surface pure white; tail pale orange-buff, with *four* narrow dissolving bands; the tail without mottlings at the tip, and the breaking-up of the bands showing that these become gradually dissolved when the species gains its fully adult plumage. Middle toe 1·1 inch.

K. *Cambridgeshire*. A male preserved by Mr. Baker, from whom some of our best British specimens have been received in the British Museum. Breast pure white, but plentifully spotted with greyish black; upper surface very grey on the back, but not particularly marked on the head, which is rather clearer orange; five bars on tail, rather narrow, but distinctly indicated, the tip slightly mottled with greyish brown; remains of four nearly obsolete bars on the quills. Total length 13 inches, wing 11·8, tail 5·4, tarsus 2·3, middle toe about 1·2.

L. A female, also from Cambridgeshire (*Baker*), has much fewer spots on the breast, and the general aspect of the bird is paler; the gular feathers of the ruff distinctly tipped with black, forming a gorget; bands on tail *four* in number, very distinct, the feathers more mottled with brown at the tip than in the foregoing male; remains of three bars on the quills. Total length 12·5 inches, wing 11·7, tail 5·0, tarsus 2·3, middle toe 1·2.

The following is a summary of my observations with respect to *Strix flammea* in Great Britain:—

1. Two phases of plumage in the Barn-Owl are met with in England.
2. In the light phase the old bird gets a perfectly white tail, sometimes with a few remains of bars.
3. The bird in its dark phase is always more richly coloured, and has the wing and tail distinctly barred. Every portion of the plumage is darker, and the ends of the quills and of the tail-feathers are mottled with dull grey.
4. In the light phase the tail is often white at the tip, with some bars which, from their generally imperfect condition, seem to indicate that they disappear gradually, leaving the tail white.
5. In the dark phase these bars are always retained, and the tail never gets white or uniform.
6. The amount of spotting on the breast is a worthless and variable character, for it is found in both phases, but perhaps gets less with age.
7. There is a tendency to a more distinctly rufous facial disk in the dark phase.
8. The number of bars on the quills and tail is a variable character. The general number in both phases is four, but on two occasions I have found five. This difference does not depend on sex.

The Barn-Owl is found in most parts of continental Europe, but does

not occur in the northern parts. Illustrative of its distribution I give the following remarks :—

Scandinavia. It seems to be a very rare visitant to Sweden, as only one instance of its occurrence is known, at Ystad, in the south of the country, in October 1834. The bird figured by Prof. Sundevall (Sv. Fogl. pl. lxxi. fig. 1) seems to be of the dark race, albeit somewhat white in the visage.

Denmark. As Professor Newton states, “it is rare in Denmark, and its distribution is limited to the mainland and some only of the islands that form that kingdom” (ed. Yarr. Brit. Birds, vol. i. p. 197). As might be expected, the specimen figured by Kjœrbølling is of the darkest possible coloration (Dan. Fugle, pl. vii.).

It has not been known to occur in Finland, and is not included in Von Wright’s book on the birds of that country.

Germany. Borggreve (Vogelf. Norddeutshl. p. 62) records it as a resident bird in North Germany, but nowhere very common. In Pomerania it is pretty plentiful, and breeds (Hintz, J. f. O. 1868, p. 297); very common in Mark (Vangerow, J. f. O. 1855, p. 184); Anhalt (Pässler, J. f. O. 1856, p. 35); Münster, where both varieties occur, but the white one is the commonest (Altum, J. f. O. 1863, p. 116); Bavaria (Jaeckel, J. f. O. 1854, p. 484); Saxony (Moeschler, *mus. Lugd.*).

N.B. The above are a few references to show the general distribution, taken from the local lists published in the ‘Journal für Ornithologie.’ It is to be noted that the birds figured by Meyer and Wolf in their ‘Vögel Deutschlands’ (pl. x. p. 185) and by Naumann (V. D. Taf. 47. fig. 2) are both of them of the dark form. Brehm (V. D. p. 106) recognizes the white- and tawny-breasted phases, which he separates into species, calling the former *Strix guttata*, Brehm; and the latter he refers to as the true *Strix flammea* of Linnæus. The dark-coloured bird he figures (pl. vii. fig. 3).

Afterwards he admitted two more forms, *S. adspersa*, Brehm, and *S. margaritata*, Paul v. Württemberg.

M. An adult male from Westphalia is very dark above, but still not nearly so richly coloured as the preceding bird; below, however, there is no difference in the deep tint of the orange-buff, the whole of the underparts being spotted with dark brown, most of the spots having a conterminous white spot attached to them; the ruff not so deeply coloured, nor are the brown tips to the feathers so distinct; face whiter, with a strong shade of rufous, but not so deep as in the male bird from Silesia; bands on primaries *five*, on the tail *four*. Total length 12·5 inches, wing 11·0, tail 5·1, tarsus 2·35, middle toe 1·15.

Frisian Islands. Von Droste records it as a rare visitor to Borkum (J. f. O. 1864, p. 423).

Belgium. Common and breeding in this country (De Selys-Longchamps, Faune Belge, p. 61).

Holland. It is plentiful in this country, and breeds plentifully, to judge by the large series of old and young birds contained in the Leiden Museum, from the neighbourhood of that town. Schlegel figures the dark race in his pretty series of plates in the 'Vogels van Nederland' (pl. 41); but the specimen seems to have a peculiarly light visage. In the illustration of the head given by him in the 'Dieren van Nederland' (pl. 4. fig. 3), the ordinary rufous tinge round the eye is exhibited.

France. Degland and Gerbe say that of all the Owls it is the most common resident in France (Orn. Eur. i. p. 133). The same is recorded of it by Lemetteil, in his list of the Birds of the Department of the Seine-Inférieure (i. p. 28). Messrs. Jaubert and Barthélémy-Lapommeraye (Rich. Orn. p. 87) mention that the young birds are always more rufous, but that

there is no difference between the sexes, and that every variation between white and rufous birds can be found, as is evidenced by a series in the Museum at Marseilles. They state that, either as a resident or a migrant, it is common over the whole of the south of France.

When in Paris I managed to secure three French specimens of the Barn-Owl from my friend M. A. Bouvier. One had been killed in the neighbourhood of Paris; the other two were sent to him in the flesh, but he did not remember the exact locality.

The following are my notes on these birds:—

N. Light phase, with white breast, slightly tinged with orange on the sides of the chest and having a few dots of brown on the sides of the breast; wings with indications of bars on the outer web, represented by dark spots on the inner; tail orange-buff tipped with white, and inclining to white on the outer web; no bars on the tail, but all over is an irregular greyish mottling, thicker at the ends of the feathers. Total length 13 inches, wing 11·9, tail 5·4, tarsus 2·5, middle toe 1·2.

O. Dark phase. This specimen agrees best with Mr. Bond's dark bird from Esher; but it is of a rather richer orange on the breast, though not so thickly spotted with brown; on the primaries are *five* greyish bands, on the tail *four*; facial disk white, the gular plumes of the ruff being less tipped with brown than in the English specimens. Total length 13 inches, wing 11·5, tail 5·4, tarsus 2·5, middle toe 1·2.

P. *Near Paris*. Very dark in colour, the mottlings of the upper surface being of a beautiful slaty grey, paler on the head, the ends of the quills and tail also mottled with slaty grey; bands on quills and tail *four*; under surface of body rich orange-buff, numerous spotted with brown. Total length 12·5 inches, wing 11·3, tail 4·8, tarsus 2·4, middle toe 1·2.

Switzerland. M. Léon Olph-Galliard includes it in his list of the birds of Le Valais, and says (under the heading of *Strix splendens*):—"Without discussing the specific value of the Barn-Owl, whose dominant colour of

plumage is white, it is interesting to note that this form is found in La Gruyère, where a fine example was taken some years ago at the chateau of the town of Bulle." Bailly says it is the most common of all the Owls in Savoy (Orn. Sav. p. 189).

Austria. Fritsch records it as resident and breeding in Bohemia (J. f. O. 1872, p. 379), and he figures a moderately light-coloured specimen in his 'Vögel Europa's' (tab. xi. fig. 4). Count Wodzicki notices it in the Tatra Mountains and the Galician Carpathians (J. f. O. 1853, p. 432).

Messrs. Danford and Harvie-Brown (Ibis, 1875, p. 296) relate that it "seems to have been formerly very common throughout Transylvania, but is now becoming much scarcer. We obtained one near Bogát, on the Maros. That, and all the stuffed specimens which we saw, varied from our British type considerably, and were much darker in plumage. Herr Ottó says it has established itself among the rushes at the lake of Katona. It is common about Hermannstadt."

Our two Austrian specimens in the Museum we owe to the kindness of Mr. Howard Saunders, who allowed me to have them out of his private collection in order to complete our series.

Q. A female from Silesia, bearing date July 26, 1870, is rather dark above, quite as dark as the Esher and Paris specimens; below it is very pure white, thickly marked with triangular spots of ashy brown, the chest with a slight tinge of orange; five bands on the primaries, *four* on the tail. Total length 11·5 inches, wing 11·8, tail 5·0, tarsus 2·4, middle toe 1·35.

R. A male from Silesia: a beautiful dark specimen described by me in the catalogue. Entirely grey above and deep orange below; bands on primaries *five*, on tail *five*. Total length 13·0 inches, wing 11·8, tail 5·5, tarsus 2·3, middle toe 1·15*.

Poland. Dr. Taczanowski tells us that it is common.

* These two specimens were registered, by inadvertence, as from Schleswig.

Russia. Our information respecting the bird in Eastern Europe is excessively meagre, as is generally the case with Russian ornithology. We are informed that it breeds in Curland by Goebel (J. f. O. 1873, p. 14); and Fischer records it as found at Smolensk, in the St.-Petersburg district (J. f. O. 1872, p. 386). Dr. Taczanowski says that it is not mentioned in any of the well-known Russian lists, but is known to occur in the Government of Kiew, though Prof. Kessler himself has not seen it.

Von Nordmann states that it is rare in Southern Russia. He accounts for its absence by the unsuitability of the country to the species. He mentions a specimen which was captured near Odessa in September 1837, and remarks that it was of the pale form, with the under surface white. It is not mentioned by Ménétriés in his list of the birds of the Caucasus.

Greece. Lord Lilford says that he never heard of it on the mainland, but he found it common in the island of Corfu, where it breeds in the old fortifications about the town (Ibis, 1860, p. 133). Dr. Linder Mayer (Vög. Griechenl. p. 33) has never met with it himself; nor is it included by Erhardt as occurring in the Cyclades. Count von der Mühle obtained a single specimen, which was caught in open daylight by hand in the rocks at Palamides, near Nauplia: the bird was white on the lower surface.

Italy. Salvadori (Ucc. Ital. p. 27) states that it is found in every part of the country.

Sicily. According to Doderlein (Avif. Sicil. p. 48) it is common and resident.

Sardinia. Very common, *teste* Cara (Orn. Sard. p. 20).

Malta. Mr. Wright observes (Ibis, 1864, p. 49):—"A few of these birds are to be seen at all seasons, for the most part about the battlements of Valetta and the Three Cities, where they breed in the ruined walls. Fresh arrivals appear to arrive in spring and autumn."

Balearic Islands. A. von Homeyer (J. f. O. 1862, p. 252) mentions its occurrence near Palma, Mahon, and Ciudadela.

Spain. Mr. Howard Saunders (Ibis, 1871, p. 64) says that it is resident throughout the year in Southern Spain, and common everywhere. Colonel Irby also says that on the Andalusian side of the Straits of Gibraltar it is common and resident, nesting at the latter place in the Moorish castle (B. Gibr. p. 57).

S. In the British Museum is a specimen collected by Mr. Howard Saunders in Granada. It is an orange-coloured bird, the grey mottlings being distributed over the upper surface, and the white spots tolerably distinct; on the quills remains of *five* bars; tail with *four* bars, and sometimes the trace of a *fifth*; face white, rufous in front of the eye, the feathers of the ruff adjoining the disk also white; the upper feathers of the ruff orange, the lower ones tipped with blackish brown. Total length 12 inches, wing 12, tail 5.1, tarsus 2.55, middle toe 1.2.

Portugal. Professor Barboza du Bocage records it as very abundant in Portugal; and the Rev. A. C. Smith also says that it is the commonest of all the Owls in that country (Ibis, 1868, p. 437). Schlegel mentions that a specimen from near Lisbon is very pale-coloured (Mus. P.-B. Revue Accipitr. p. 15).

NORTHERN AFRICA.

Morocco. Favier's notes, as given by Colonel Irby (B. Gibr. p. 56), are as follows:—

“This Owl, resident near Tangier, is nearly as abundant as the Little Owl, inhabiting ruins and holes in rocks, and nesting twice a year, between April and November.”

I have seen many specimens sent from the neighbourhood of Tangier by M. Olcese; and the British Museum contains four of his collecting. The first appearance of these birds is small; but I believe that this arises from the peculiar “make-up” of the skins; but they are certainly very pale.

T. This is the darkest of the four, or, at least, it is the most coarsely marked; the mottlings very large and coarse, especially on the head; facial disk white, with the usual rufous patch before the eye; feathers of the ruff whitish on the throat, subterminally washed with orange and tipped with dark brown, the upper feathers rich orange; lower breast white, the chest and sides of body washed with orange-buff and triangularly spotted with dark brown, these spots being larger on the abdomen; bars on primaries *five*, on tail *four*. Total length 13 inches, wing 11·7, tail 5·3, tarsus 2·7.

U. Is a very light grey bird above; below white, spotted with blackish, the spots larger on the sides of the body and under wing-coverts, and disappearing on the under tail-coverts and lower abdomen; bars on primaries *five*, on tail *five*, all very distinct; the tips of the tail-feathers very profusely mottled with grey. Total length 11·5 inches, wing 12·0, tail 4·9, tarsus 2·5.

V. Similar to the foregoing; bands on primaries *four*, very faintly indicated, on tail *four*, the last one indistinct. Total length 12 inches, wing 11·8, tail 5·0, tarsus 2·5.

W. This is the palest of all four specimens, and appears more orange than any of them; below pure white, with a few greyish-brown dots on the sides of the body and under wing-coverts; bands on primaries *four*, on tail *four*, the last one dissolving; ruff very pale creamy white, inclining to orange only above the eye, the gular plumes only slightly tipped with black. Total length 11·5 inches, wing 11·8, tail 5·0, tarsus 2·8.

Compared with English birds, these Tangier specimens are undoubtedly more thickly mottled above and have much longer tarsi and toes.

Algeria. Mr. J. H. Gurney (*Ibis*, 1871, p. 72) says he shot a specimen near Algiers, but saw no others. It is, however, common in the country, according to Loche (*Expl. Sci. d'Algér. Ois.* p. 91), and Dr. Taczanowski found it everywhere in Province Constantine (*J. f. O.* 1870, p. 39).

Madeira. Breeds (Vernon Harcourt, *P. Z. S.* 1851, p. 142).

Canaries. Recorded by Bolle (J. f. O. 1874, p. 450) and by Mr. Godman, who says that it is thinly scattered throughout the three Atlantic groups of islands. He writes:—"Examples that I have seen from the Azores and Canaries are rather darker-coloured than continental specimens, but in other respects they do not differ" (Ibis, 1872, p. 168).

Azores. Mr. Godman observes:—"It is occasionally met with in the eastern and central groups of the Azores. In Flores and Corvo I did not find any one who either knew the bird or the Portuguese name for it; hence I conclude it does not extend to these outer islands. Several people in St. Michael's and Terceira told me they had seen it; but I was unable to procure a specimen. The captain of a whaling-vessel told me that one flew on board his ship when about five hundred miles south-west of the Azores" (Ibis, 1866, p. 94).

Palestine. Canon Tristram remarks:—"I started this bird once in the daytime from a thicket of trees on the banks of the Jordan" (Ibis, 1859, p. 26). He adds, later on (Ibis, 1865, p. 263):—"There can be no doubt, however, of its being by no means uncommon, as it is well known to the Arabs of Jericho, and also near the Lake of Galilee, under the name of 'Boomeh abiad' (White Owl)."

Persia. It is not noticed by any one as occurring in this country, so far as I can learn. Commander Jones procured one specimen in Mesopotamia during the Euphrates expedition.

Turkestan. Dr. Severtzoff states that it has nearly the same range as the Tawny Owl, occurring in the north-western district of Turkestan, "comprising Karatau, the western Thian-Shan mountains, the upper portions of the Aris, Keless, Chirchik, and their tributaries, the lower Syr-Daria, from the sources of the Aris to Lake Aral and the delta of the Syr-Daria" (*cf.*

Dresser, *Ibis*, 1875, p. 111). "It is rare and may be sedentary in the above district, and is met with sporadically on the Chatir-kul and in the mountains near the Aris river."

ETHIOPIAN REGION.

Egypt. Mr. Stafford Allen states that it is a resident bird in Egypt (*Ibis*, 1864, p. 236), and it was found breeding in that country by Mr. E. C. Taylor (*Ibis*, 1867, p. 55). Captain Shelley (*B. Egypt*, p. 176) writes:—"This species is frequently to be met with throughout Egypt and Nubia, generally in thick-foliaged trees or in ruins." He describes an Egyptian skin as being white below, slightly tinted with buff.

X. An Egyptian skin, presented to the British Museum many years ago by Mr. Turnbull, is an ordinary bird of the light-plumaged type, the disk being white, with a rufous shade in front of the eye; the ruff pale orange, the lower feathers tipped with brown, more broadly on the gular plumes; breast white, tinged with orange on the chest, and everywhere minutely spotted with brown, these spots forming a longitudinal streak on some of the feathers; *five* bands on the quills, very indistinct on the outer web; tail with *five* bands. Total length 12·5 inches, wing 12·1, tail 5·1, tarsus 2·4.

Arabia. Von Heuglin (*J. f. O.* 1863, p. 14) mentions the Barn-Owl as an inhabitant of this country; and the British Museum possesses a specimen caught in the Red Sea, near Aden.

Y. It is a curious-looking bird, remarkable for the yellow tone of its plumage, indicating probably that the ordinary Barn-Owl of Arabia is a peculiar desert form. The mottlings and spots on the upper surface are very scanty; under surface of body white, with a few tiny spots or streaks of brown; quills with remains of *four* bars; bars on tail *four*; wings very deep orange, the markings everywhere very few and apparently dissolving. Total length 13 inches, wing 11·4, tail 5·1, tarsus 2·55.

Abyssinia and adjacent countries. Von Heuglin states that it is "found in the whole of North-eastern Africa, being more common in the mountains of Abyssinia and the virgin forests, as also in Egypt and Nubia. The form generally met with is white underneath, spotted with black. A male, shot in Bogos, was remarkable for its small size and entirely black ruff. Vierthaler found it in December on the Blue Nile." Von Heuglin also adds that he received a good many examples at the end of January 1854, collected in the Belanian mountains and in Olibó (5° N. lat.) (*cf.* Orn. N.O.-Afr. p. 124). Mr. Blanford does not appear to have fallen in with it; but Mr. Jesse shot a specimen in the mangroves on the shore of Annesley Bay (*cf.* Finsch, Tr. Z. S. vii. p. 211).

Z. This specimen, marked "Zoulla, March 12, 1868," is now in Lord Walden's collection, and was kindly lent to me by him. It is very dark grey, like the Senegambian bird collected by Marche, and mentioned below, and is profusely spotted underneath, with here and there an indication of a bar; on the quills *five* bars, and the same number on the tail. Total length 12·5 inches, wing 12·1, tail 4·8, tarsus 2·5, middle toe 1·2.

N.B.—Most African birds resemble this Abyssinian specimen in being thickly spotted below. It was doubtless this peculiarity that induced Brehm (Naum. 1855, p. 270) to name the bird from N.E. Africa *S. maculata*.

WEST AFRICA.

Senegambia. Verreaux has received it from Casamanze (Hartl. Orn. W.-Afr. p. 21); and more recently M. Marche has procured a specimen at Ruffisque (*cf.* Bouvier, Cat. p. 8).

A'. The last-named example is now in the British Museum. It is of small size, and of a very rich dark grey above, with coarse mottlings and large ovate spots of white; the orange colour, where apparent, is also very rich. The small appearance of the bird is perhaps apparent from the fact of the wing not being fully grown. Bars on primaries *four*, on tail *four*; chest orange-

buff; the rest of the under surface white, with very large triangular spots; face silvery grey, with a strong shade of vinous; gular plumes of the ruff very conspicuously tipped with black. Total length 11·5 inches, tarsus 2·45, middle toe 1·15.

B. Another Gambian skin in the Museum, bought of Mr. Whitely, appears to be an ordinary pale-coloured European bird, and is perhaps a migrant from Europe. (N.B.—Messrs. Jaubert and Barthélemy-Lapommeraye speak of a migration taking place in the south of France, as also does Mr. Wright in Malta.) It has more orange on the upper surface than either of the other two Senegambian specimens in the National collection; the mottling is rather brown than grey, and the spots are small; face white; ruff pale, almost buffy white, the gular plumes broadly tipped with brown; under surface pure white, the spots on the breast small but distinct; bars on quills *four*, the end one dissolving; bars on tail *four*. Total length 12·5 inches, wing 11·4, tail 4·8, tarsus 2·7.

C. A bird presented to the Museum by the Rev. D. F. Morgan, differs from the other two Gambian examples, and approaches the small form of the Cape-Verde Islands (*Strix insularis* of Pelzeln). It is peculiarly brown in coloration, being, in fact, as remarkable for its brown plumage as the Ruffisque bird is for its rich grey one. The spotting on the upper surface is small, and the spots on the breast are likewise minute, the colour of the under surface being a very deep rich orange-buff; quills very deep orange, the bars *four* in number (three only on first primary), very broad; bands on tail *four*, not counting the terminal brown mottling, which here forms a fifth paler band; face buffy white, rufous round the eye; ruff deep orange, the gular plumes of it tipped with brown. Total length 13 inches, wing 11·0, tail 4·4, tarsus 2·35, middle toe 1·15.

This specimen is exactly like the Cape-Verde Islands Owl, called *Strix insularis*, which we shall next consider.

Cape-Verde Islands. The Barn-Owl of these islands has been separated

as *Strix insularis* by Von Pelzeln, who received specimens from St. Vincent. We have in the Museum three specimens from the archipelago—two (D', E') collected by M. Bouvier and one (F') by Mr. Darwin, the latter at Porto Praya, Santiago. These measure as follows—total length 13 inches, wing 11·7–12·9, tail 4·9–5·4, tarsus 2·55, middle toe 1·25–1·3. Bars on quills *five*, on tail *five*; one of M. Bouvier's skins has only *four* bars on the tail, but remains of *five* on the wing. All the Cape-Verde examples are very dark both above and below; and on one of them a decided trace of vermiculated cross bars is apparent.

Fernando Po. Fraser characterized the Barn-Owl from this locality as *Strix poensis* (P. Z. S. 1842, p. 189). Dr. Hartlaub, in his 'Ornithologie West-Afrika's,' says that he does not know where the type is to be found; nor have I been able to discover it. The British Museum has not got the specimen, nor is it in Mr. Eyton's collection, where a great many of Fraser's birds went.

River Quanza, Angola. G. Mr. Monteiro obtained a single skin in this locality (Ibis, 1862, p. 336), and it is now in the National collection. The general shade of colour is brownish grey, the spots not strikingly distinct; bands on quills *five*, on tail *five*; facial disk pale, rufous, as usual, in front of the eye; all the lower plumes of the ruff broadly tipped with brown, the general colour of the ruff pale orange; under surface of body white, washed with pale orange-buff, much spotted with brown, forming arrow-shaped or longitudinal streaks on many of the feathers. Total length 12 inches, wing 11·4, tail 4·5, tarsus 2·4, middle toe 1·3.

The Lisbon Museum contains specimens from Angola—viz. Bengo (*Welwitsch*), Ambaca (*Anchieta*), and Loandã (*Toulson*).

S.W. Africa. Señor Anchieta has obtained the Barn-Owl in two localities in Mossamedes, to wit, Huilla and Gambos. It is abundant about Benguela,

according to Mr. Monteiro. Mr. Andersson says that it was widely distributed over all the countries through which he travelled, but is scarce to the north of the Orange River ; south of that river it is exceedingly common (B. Damara Land, p. 36).

South Africa. Mr. Layard records it as common all over the Cape Colony ; and it is included in Mr. Rickard's list of birds both from East London and Port Elizabeth. Specimens of Jules Verreaux's collecting, from the Knysna and Hout Bay, are in the Leiden Museum.

The following notes refer to three skins in the British Museum :—

H'. *Cape Colony.* A specimen, presented by myself, is rather dull grey above, not unlike the dull Westphalian specimen of the dark European race before mentioned, but shows a little more orange on the upper surface ; below pale orange-buff, shading off into white on the abdomen, everywhere distinctly spotted with brown, a few of these spots being in the shape of longitudinal streaks, while on the sides of the body are apparent some partially broken zigzag bars of pale brown ; bars on quills *five*, on tail-feathers *four*. Total length 13 inches, wing 12·4, tail 5·2, tarsus 2·7, middle toe 1·3.

I'. Another skin, collected by Mr. Layard, is very dark-coloured, of a deep grey shade, distinctly spotted on the upper surface ; below white, washed with pale orange-buff on the sides of the body ; all the under surface spotted, many of the feathers with zigzag bars of an arrow-shaped form on the flanks and axillaries ; bands on quills and on tail *five*. Total length 13·5 inches, wing 12·1, tail 5·0, tarsus 2·75, middle toe 1·3.

K'. A third specimen, received from the South-African Museum, is dark-coloured above and very much spotted below, with numerous irregular cross markings ; bars on wings *six*, on tail *five*. Total length 12·5 inches, wing 11·9, tail 5·0, tarsus 2·35, middle toe 1·2.

S.E. Africa. It does not seem to have been procured in Natal by Mr. Ayres or by any other collector; and Mr. T. E. Buckley only met with one specimen during his journey to the Matabili country, when a male was shot at Palatzi, Bamangwato, on the 20th of October, 1873 (*Ibis*, 1874, p. 362). The British Museum contains an example from the Transvaal, presented by Mr. Foresman. Dr. Dickinson also met with it at Quilimane, in the Zambesi country (*Ibis*, 1864, p. 307).

L. Mr. Foresman's Transvaal skin is in many respects a very remarkable one, on account of the large size of the black spots on the upper surface. These are generally of about the same size as the white ones; but in the present example they are about double the size of the latter. The general colour of the bird is dark grey above, white below, slightly washed with orange-buff; the whole under surface distinctly spotted, the spots very large and triangular, especially distinct on the under wing-coverts and axillaries, several of the feathers on the chest and flanks with wavy bars; bands on quills *four*, dissolving towards the base; bands on tail *four*, the subterminal one the narrowest. Total length 13 inches, wing 12.1, tail 5.0, tarsus 2.75, middle toe 1.25.

EAST AFRICA.

Zanzibar. Dr. Kirk procured a specimen here (*cf.* Hartl. P. Z. S. 1867, p. 823).

Madagascar. Messrs. Pollen and Van Dam found the Barn-Owl common in Madagascar. It was noticed everywhere in abundance in the forests which fringe the river Congoni, at the base of the bay of Passandara, as well as in the little island of Sacatia, situated near Nossi-bè. Messrs. Roch and E. Newton noticed it near Antananarivo (*Ibis*, 1862, p. 269), where also Dr. Meller found it "living in the rocks" (P. Z. S. 1863, p. 162).

Messrs. Finsch and Hartlaub, in their review of the geographical range

of the Barn-Owl in Africa, give Mauritius as one of its habitats ; but this requires confirmation (*cf.* Vög. Ostaf. p. 113).

The British Museum contains three specimens from Madagascar :—

M'. A male, collected in the north-eastern part of the island by Messrs. Pollen and Van Dam, resembles South-African birds in general appearance, but has very broad dark tips to the plumes of the lower ruff ; it is plentifully spotted below, and on the flanks and axillaries are indications of the same brown horseshoe bars which are seen sometimes in African specimens ; bars *five*, both on the quills and tail. Total length 13 inches, wing 11·8, tail 5·0, tarsus 2·6.

N'. A specimen procured from Mr. Whitely, is not nearly so dark as the foregoing example, but is much more orange on the upper surface ; bands on quills *five*, on tail *four* ; under surface of body washed with rich orange, plentifully spotted with brown, some of the feathers streaked and others irregularly barred with brown ; the tips of the feathers on the lower part of the ruff dark brown. Total length 13 inches, wing 12·8, tail 5·4, tarsus 2·7.

O'. A third skin, sent to the Museum by M. A. Bouvier, is dark in general appearance, the under surface being very thickly spotted and showing here and there indications of wavy bars ; bands *four* on quills and on tail. Total length 15 inches, wing 12·4, tail 5·2, tarsus 2·5.

INDIAN REGION.

India. Without denying that Indian Barn-Owls present certain differences from the European ones, a series shows them to be intermediate between *S. flammea* and *S. delicatula* of Australia, especially in the nearly uniform light grey of the upper surface ; and they form one of the many races of the Barn-Owl found in the world ; but while in the grey shade of plumage they approach the Australian form, in the frequent tendency to

vermiculated or wavy bars on the lower parts they also approach the Javan Barn-Owl (*S. javanica*), which, again, leads on to the large race of Celebes (*S. rosenbergi*). Before commenting on our series in the Museum, I give a few notes on the distribution of the bird in India.

Mr. Hume (Rough Notes, ii. p. 345) says it is found "throughout India, Ceylon, and Burmah." He gives dimensions as follows:—"Total length 13–15·2 inches, wing 11·1–12·2, tail from vent 5·8–6·12, tarsus 2·45–2·85, middle toe 1·3–1·6."

His notes on the Barn-Owl in Scindh are as follows:—"This Owl is by no means common in Scindh. The only place at which I saw it was Larkhana, and there I shot a pair. The female measured:—Length 14·25 inches, expanse 39·5, tail from vent 5·2, wing 10·8; weight 1 lb. 3 oz.; wings, when closed, reached to within one inch of end of tail; tarsus 2·75. Male:—Length 13·25, expanse 37·5, wing 10·7, tail from vent 5·2; wings, when closed, reached to within 1·25 of end of tail; tarsus 2·6; weight 1 lb. In both the bills were pearly white, the feet horny grey, claws blackish, and irides brown. The two specimens illustrated admirably the different stages of plumage of this species. Above, the female was so closely speckled and pencilled with blackish brown and grey as to leave scarcely any buff colour visible from the forehead to the tips of the upper tail-coverts, and the black and white spots were very large and numerous. In the male the buff predominated on the nape, back of the neck, and upper back, and was abundantly visible over the whole surface, and the black and white spots were small and inconspicuous. The whole lower surface of the female, from the ruff down to the points of the lower tail-coverts and the tibial plumes, was tinged pale buffy and profusely spotted with comparatively large triangular brown spots; the whole lower surface of the male, on the other hand, was pure white, with a few minute brown speckles on the breast and down the sides. The male I take to be an old bird, the female quite a young one."

Mr. Adam records it as very rare in the neighbourhood of the Sambhur lake, where he has never shot the bird. A birdcatcher, how-

ever, brought him two live birds, which he caught in the hills close to Mata Pahar (S. F. 1873, p. 369). Colonel Irby states that it is very common in Oudh (Ibis, 1861, p. 226); and Mr. Hodgson's collections contained examples from Nepal. In the Calcutta Museum is an example from the neighbourhood of that town (Blyth, Cat. p. 41); and according to Mr. Ball (S. F. 1874, p. 381) it is occasionally obtained in Chota Nagpur, but is not very common. Mr. Blanford did not observe it in the Wardha valley, but considers that it may possibly occur there (J. A. S. B. 1871, p. 269). Sykes procured it in the Deccan, whence also a specimen is preserved in the British Museum.

“The Indian representative of the European Barn-Owl,” writes Mr. Hume (Rough Notes, ii. p. 342, and Nests and Eggs Ind. B. p. 59), “lays (apparently) in Upper India from the middle of February to the middle of June. Mr. R. M. Adam obtained the eggs on the 10th of June, near Agra; Mr. Brooks procured them near Etawah on the 17th of February; and I have obtained them on three occasions in March—in Allygurh, near Jeypoor, and near Lucknow. In the Central Provinces they lay from November to January.”

Some interesting notes are then given by Mr. Blewitt on the breeding of the species near Toomgaon, in the Raepore district; and this gentleman states that they are common in the districts of Raepore and Sumbulpore.

Mr. Blyth long ago separated the Indian Barn-Owl as a distinct species from the European; and in ‘The Ibis’ for 1866, p. 250, he gives his views at full length. “It differs,” he says, confirming Jerdon’s opinion, “by being larger, with more robust feet and toes, and in being more spotted beneath. The last character, however, is by no means of constant occurrence. . . . The distinction I have ever since found to be constant; and the difference of the two races is so very conspicuously apparent, upon comparison of specimens, that I cannot understand Prof. Schlegel’s identifying a Nepalese example with his Javan race.” Subsequently, however, after a visit to Leiden, where the Museum contains a good series of Javan specimens, Mr. Blyth

was induced to change his opinion and to agree as to the identity of these two Barn-Owls ; and he restored the name of *javanica* for the Indian bird, sinking his own previously proposed name of *indica* (*cf.* Ibis, 1870, p. 160).

Mr. Hume, commenting in 1870 on the first essay of Mr. Blyth's respecting these birds, writes :—" I have a few remarks to make on this interesting note. In the first place, although the amount of spotting on the lower surface of an Indian bird varies much, yet out of the fifty odd specimens that I have seen I have never found one with the perfectly spotless, almost indescribably pure white which so often characterizes the whole under surface of the adult European bird. In *S. indica* there are always, I believe, some few spots and some faint trace of fulvous tinging" (Rough Notes, ii. p. 344).

It is probable that Mr. Hume was speaking of ordinary English specimens, and not those of the Continent, though we now know that British examples are often spotted. *A propos* of Indian Barn-Owls, however, his observations are much to the point.

The following notes refer to the series in the British Museum :—

P'. *India* (Capt. Johnstone). Very delicate grey, the white spots nearly obsolete ; face white, with very little rufous in front of the eye ; below pure white, with a few triangular dusky spots on the flanks, being remains of irregular dusky vermiculations ; remains of *four* bars on quills ; on the tail also *four* bars, disappearing towards the tip. Total length 14 inches, wing 12·2, tail 5·4, tarsus 2·75, middle toe 1·4.

Q'. *India* (Dr. Burns). Coloured above in the same way as in the preceding bird ; spots on the breast larger, but showing no traces of bars ; on the quills traces of *two* bars only remaining ; tail with *five* bars. Total length 12·5 inches, wing 12·1, tail 5·5, tarsus 2·65, middle toe 1·35.

R'. *India* (presented by Mr. Gould). Greyish above ; below pale buffy white, with a few dusky brown spots rather longitudinal in shape ; on the lower parts decided remains of freckling, imparting a certain vermiculated appearance to the lower parts, especially on the chest ; on the quills remains

of *four* bars ; on the tail also *four* bars. Total length 13 inches, wing 11·7, tail 5·2, tarsus 2·7.

S. India (presented by Mr. Gould). Of the same grey Indian type as the others ; below orange-buff, with tiny little dusky spots ; on the flanks scarcely any remains of vermiculations ; remains of *four* bars on the quills and on the tail. Total length 15 inches, wing 11·6, tail 5·3, tarsus 2·6.

T. Seetapore (presented by Mr. Gould). Dull grey above, coarsely vermiculated ; white below, with a few spots ; on the quills remains of *four* bars ; tail with *four* bars. Total length 13·5 inches, wing 11·1, tail 4·9, tarsus 2·45.

U. Deccan (obtained from Mr. Whitely). Pale grey above, with very minute frecklings and little or no orange showing ; under surface pure white, with numerous spots of ashy brown, some diamond-shaped and some triangular ; the under surface here and there mottled with greyish brown wavy bars, apparently the remains of vermiculations ; inner lining of quills whitish, the bands having nearly all disappeared ; bands on tail *four*. Total length 14·5 inches, wing 12·4, tail 5·3, tarsus 2·7.

V. Nepal (presented by Mr. Hodgson). Very pronounced grey above, the frecklings extremely small ; under surface pale orange, with a considerable number of spots, and having remains of vermiculations on the sides of the body and flanks ; bars on quills *four* ; on the tail *five* bars. Total length 14 inches, wing 11·7, tail 5·0, tarsus 2·5.

W. Nepal (Hodgson). Grey above ; below pure white, the belly much spotted, but not so numerously on the chest ; on the flanks a slight indication of vermiculations ; on quills remains of *three* bars, on tail *four*. Total length 13 inches, wing 12·4, tail 5·0, tarsus 2·3.

X. Nepal (Hodgson). Similar to the preceding, but less spotted below ; remains of *four* bars on the quills, nearly obsolete ; *four* bars on the tail. Total length 12·5 inches, wing 11·0, tail 5·0, tarsus 2·2.

N.B.—The tendency to a slightly waved under surface (the character of the Javan Barn-Owl) is noticeable in the Indian bird. Taken with Mr.

Hume's dimensions, given above, we may regard the Indian Barn-Owl as varying to the following extent in its measurements :—Total length 12·5 to 15·2 inches, wing from 11·0 to 12·5, tail from 5·0 to 6·12, tarsus from 2·2 to 2·85, middle toe from 1·3 to 1·45.

Ceylon. Mr. Holdsworth (P. Z. S. 1872, p. 415) observes :—“The Barn-Owl is very local in Ceylon, and is confined to the north of the island. Layard gave the fort of Jaffna as the only locality for it; but I have since obtained it at Aripo, where a pair of these Owls were resident.” Mr. Holdsworth kindly lent me one of the Aripo birds, killed on the 28th of May, 1866. It is rather more orange than the majority of Indian examples, with coarser mottlings; the under surface is strongly washed with orange-buff, with large dusky spots and here and there remains of vermiculatory bars; on both quills and tail *four* bars. Total length 11·5 inches, wing 11·6, tail 5·2, tarsus 2·5, middle toe 1·4.

Burmah. I am indebted to Lord Walden for the loan of a specimen from Tonghoo. It seems to be of precisely the same form as the Indian bird, with no remains of vermiculations on the under surface; remains of bars on wing *three*, on tail *four*. Total length 12 inches, wing 11·8, tail 5·0, tarsus 2·4.

Mr. Blyth (B. Burm. p. 68) says it is a common bird in Burmah and generally diffused. Mr. Oates (S. F. 1875, p. 37) states that it is very common in the Thayetmyo cantonment, occupying the space between the ceiling and roof of the wooden barracks; as far as he knows, it is not found in the thick jungles nor far away from the larger villages. Mr. Hume observes that specimens from Upper Pegu, sent by Captain Feilden and Mr. Oates, are precisely identical with Indian examples. A female measured—total length 14·75 inches, tail from vent 4·8, wing 11·3, tarsus 2·7.

Siam. It was collected in this country by Sir Robert Schomburgk (*cf.* Gould, P. Z. S. 1859, p. 151).

Y. A male bird collected by Captain Conrad near Bangkok on the 28th of March, 1872, is in the Museum. It is rather darker above than Indian

birds, the mottlings very fine and the spots small ; below pure white, with a few spots but no trace of bars ; remains of *three* bars on quills, on tail *four*. Total length 13·5 inches, wing 12·4, tail 5·0, tarsus 2·9, middle toe 1·45.

It is not yet recorded from any part of China or Formosa by Mr. Swinhoe.

Andaman Islands. Mr. Hume has just characterized a very small Barn-Owl from these islands as *Strix de-ræpstorffi*, with a wing measuring only 9·8 inches. Not having seen a specimen, it is impossible to say if it be a good species ; but it will probably turn out to be the extreme example of a resident insular race of small size, approaching *C. insularis* of the Cape-Verde Islands (*cf.* Hume, S. F. 1876, p. 390).

Java. Dr. Horsfield says the Barn-Owl is distributed over the island of Java. Dr. Bernstein found it at Gadok (*cf.* Schlegel, *Revue Accipitr.* p. 15), and the Vicomte de Bocarmé records it as very common in the island (*cf.* Schlegel, *Striges*, p. 4).

Z. The individual collected by Dr. Horsfield (*cf.* Horsf. & Moore, *Cat.* i. p. 82) is now in the British Museum. It is much darker than Indian birds, the spots on the upper surface large and coarse ; face white, with the usual rufous patch ; under surface of body pale orange-buff, with very distinct spots on the flanks, less pronounced on the chest, with remains of dusky bars on the fore neck, chest, and sides of the neck ; bars on wing and tail *four*. Total length 12 inches, wing 11·6, tail 5·3, tarsus 2·9, middle toe 1·4.

α. Lombock. Mr. Wallace obtained a single specimen, which is remarkably dark grey above ; the under surface orange-buff, with numerous small spots and vermiculated bars, the latter more plentiful than on any Old-World specimens yet examined by me ; face greyish, shaded with vinous, especially before the eye, the plumes in front of which are black ; bands on quills and tail *four*. Total length 14 inches, wing 11·6, tail 5·2, tarsus 2·55 (*cf.* Wall. P.Z.S. 1863, p. 484).

Flores. The Leiden Museum received a specimen from Larantouka, in this island, from Heer Semmelink in 1863 (*cf.* Schlegel, *Revue Accipitr.* p. 16).

AUSTRALIAN REGION.

Celebes. The Barn-Owl of this island has been separated as a distinct species (*Strix rosenbergi* of Schlegel), on account of its large size and powerful feet. Mr. Wallace obtained a specimen (β) in bamboo-thickets near Macassar in 1856, Von Rosenberg at Modelido, Bonè, and Gorontalo; while examples from Menado are in the Leiden Museum and in Lord Walden's collection (*cf.* Walden, Tr. Z. S. viii. p. 41). The large size of this bird has caused it to be compared with *S. novæ-hollandiæ*; but it is really only a large edition of the Javan Barn-Owl, possessing, like that species, a distinctly vermiculated or rather waved under surface; bars on quills *five*, on tail *five*. Total length 17 inches, wing 12·9, tail 6·3, tarsus 2·85.

Mr. Wallace's specimen is described at full length in the 'Catalogue of Birds' (vol. ii. p. 298), where a second example is also noticed by me, as follows:—

“Another specimen (γ), collected by Dr. Meyer, measures—total length 18 inches, wing 13, tail 6·5, tarsus 2·9. It is very much the same in colour as the one described, but is darker, so that the white spots show everywhere more distinctly; on the underparts there are remains of circular bars on many of the feathers, particularly those of the chest.”

We have now to consider the Australian Barn-Owl—*Strix delicatula* of Gould. The general *facies* of this bird is different from any of the forms hitherto noted by us; and it may, as a rule, be recognized by its pearl-grey plumage and distinctly spotted secondaries, the white subterminal spot on these quills being strongly pronounced. The tail, too, is generally very white; but sometimes a dark phase occurs, when the Owl is scarcely to be told from true *S. flammea*. On this account it is impossible to accord specific rank to the Australian bird, even if the intermediate nature of Indian examples did not render such a separation hazardous. The facial ruff and disk in *S. delicatula* is usually of a very delicate and silvery white; the absence of orange on the

former, as well as on the inner webs of the secondaries (which, in consequence, show very white), are additional points; while the feathers on the side of the neck bordering the interscapular region are white in the Australian, and usually orange in the European Barn-Owl.

Mr. Gould (Handb. B. Austr. i. p. 67) says that it is the most generally distributed species of *Strix* in Australia. "I have observed it," he says, "in almost every part of New South Wales that I visited; it is a common bird in South Australia, and I have also seen specimens from Port Essington. It has not yet been found in the colony of Swan River, nor can it be included in the fauna of Tasmania."

Mr. Ramsay (P. Z. S. 1875, p. 580) observes:—"I obtained one specimen, shot near the township of Cardwell. It does not appear to differ from the usual New-South-Wales form of this species." He likewise records it as occurring at Port Denison, Queensland (Ibis, 1865, p. 84).

Specimens collected in North-western Australia, on the Victoria and Albert rivers, by Mr. Elsey are in the British Museum.

Oceania. It occurs in many of the groups of islands. Forster (*cf.* Finsch & Hartl. Faun. Centr.-Polyn. p. 16) records it from the New Hebrides (Tanna), and Mr. Gurney notes its occurrence at Aneiteum. The British Museum has also just received a specimen from the island of Manikollo, New Hebrides, presented by Mr. Wykeham Perry. It is an inhabitant of New Caledonia, where it is said to live in the woods (*cf.* Verr. & Des Murs, Rev. et Mag. de Zool. 1860, p. 421). In the Friendly Islands it is known from Tongatabu (*Forster*), Vavao (*Graeffe*), Lefuka (*Graeffe*); in the Fiji group from M'bao (*Brenchley*); in the Samoa group from Upolu (*Stair, Peale, Graeffe*), Savai (*Graeffe, Kubary*); while, lastly, Mr. Dole (Pr. Bost. Soc. N. H. xii. p. 294) includes it as a bird of the Sandwich Islands.

ON THE DISTRIBUTION OF BARN-OWLS.

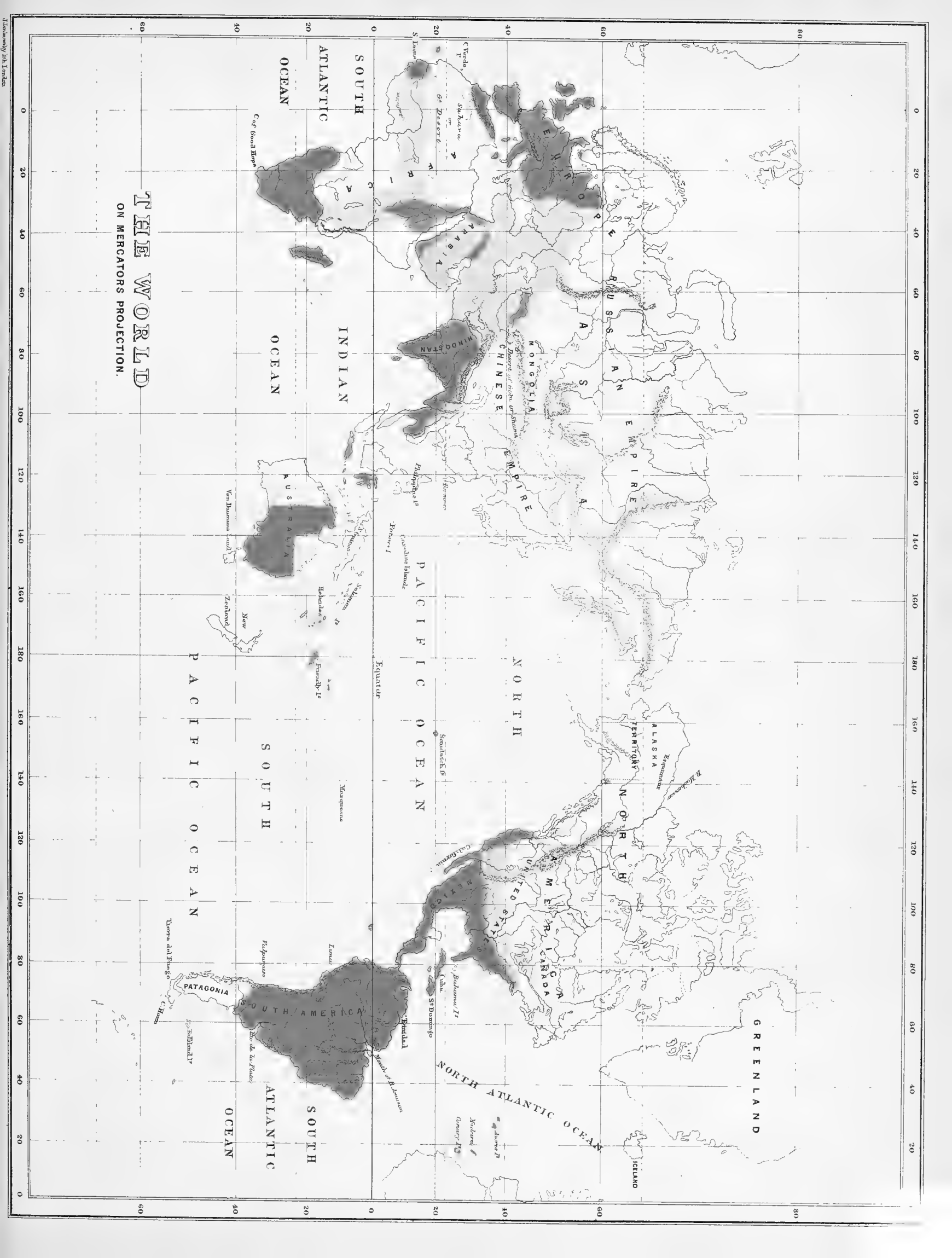
EXPLANATION OF THE MAPS.

MAP I. shows the range of the different races of *Strix flammea* (yellow).

The parts coloured lighter are intended to indicate the probable or occasional range of the species.

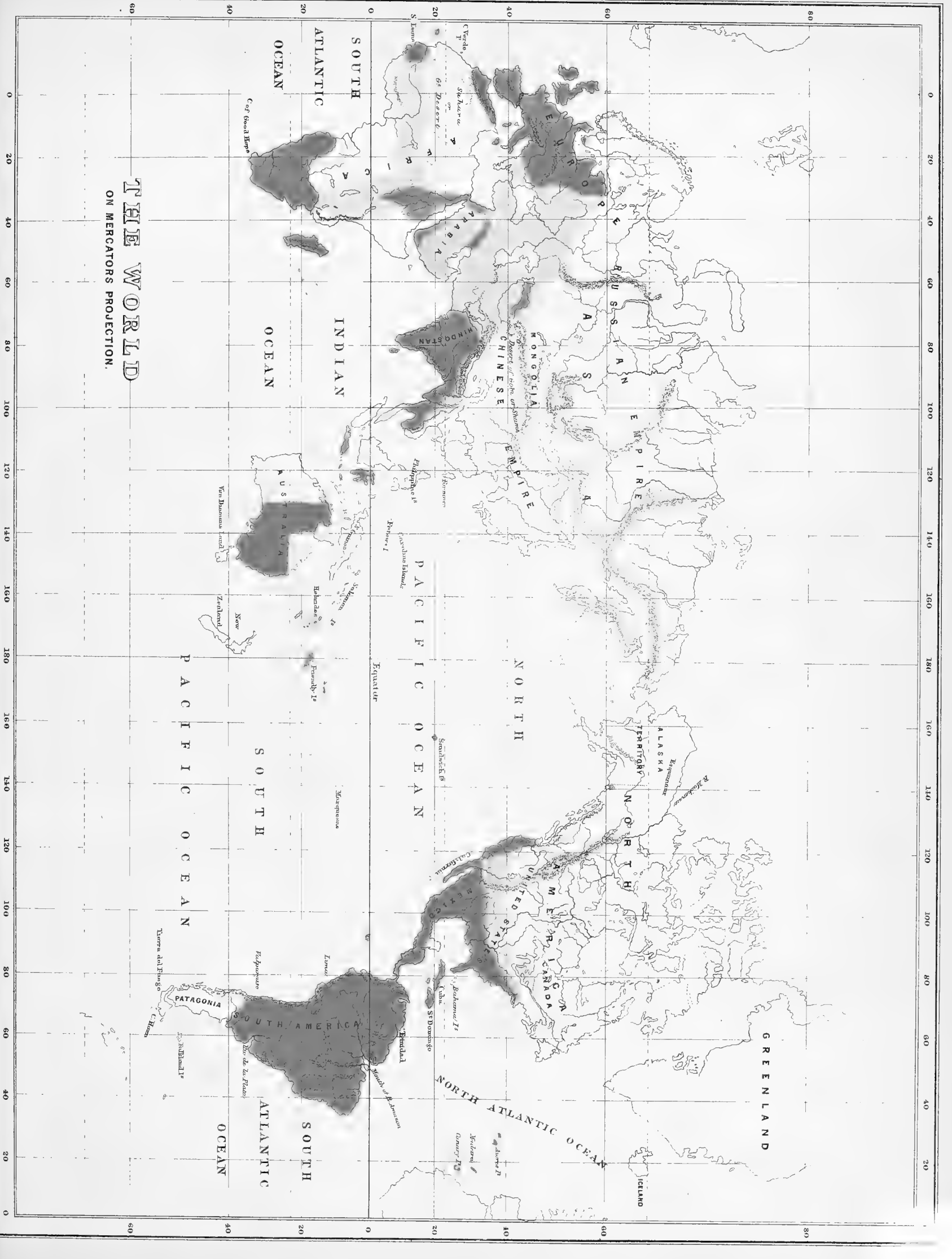
MAP II. shows the ranges of *Strix nova hollandiæ* (yellow) and *Strix tenebricosa* (blue), which coalesce in Queensland, *Strix castanops* (red) being confined to Tasmania.

MAP III. shows the range of the Grass-Owls—*Strix candida* (red), *Strix capensis* (yellow), and *Strix thomensis* (blue). The probable range of the two former is coloured lighter.

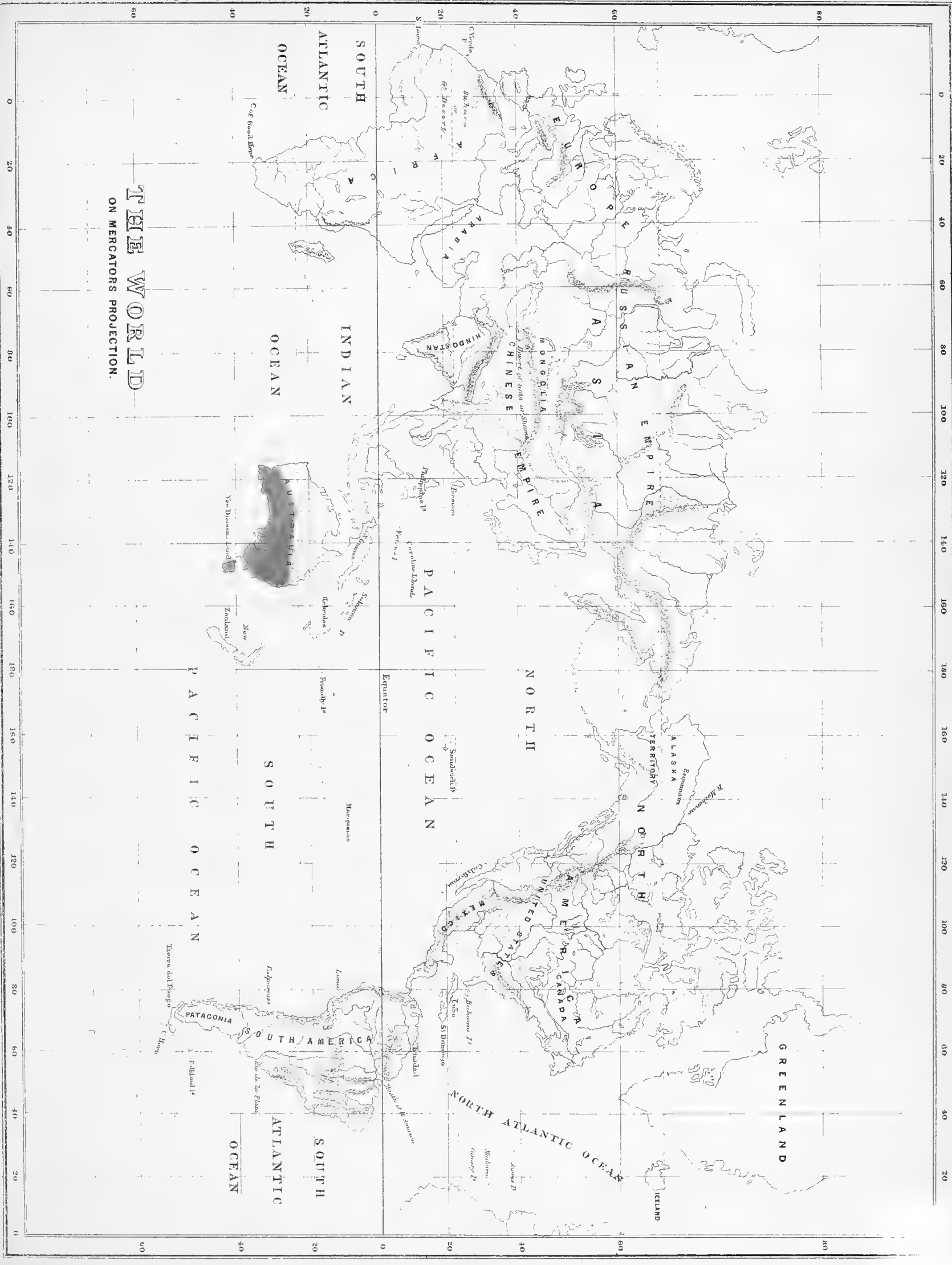


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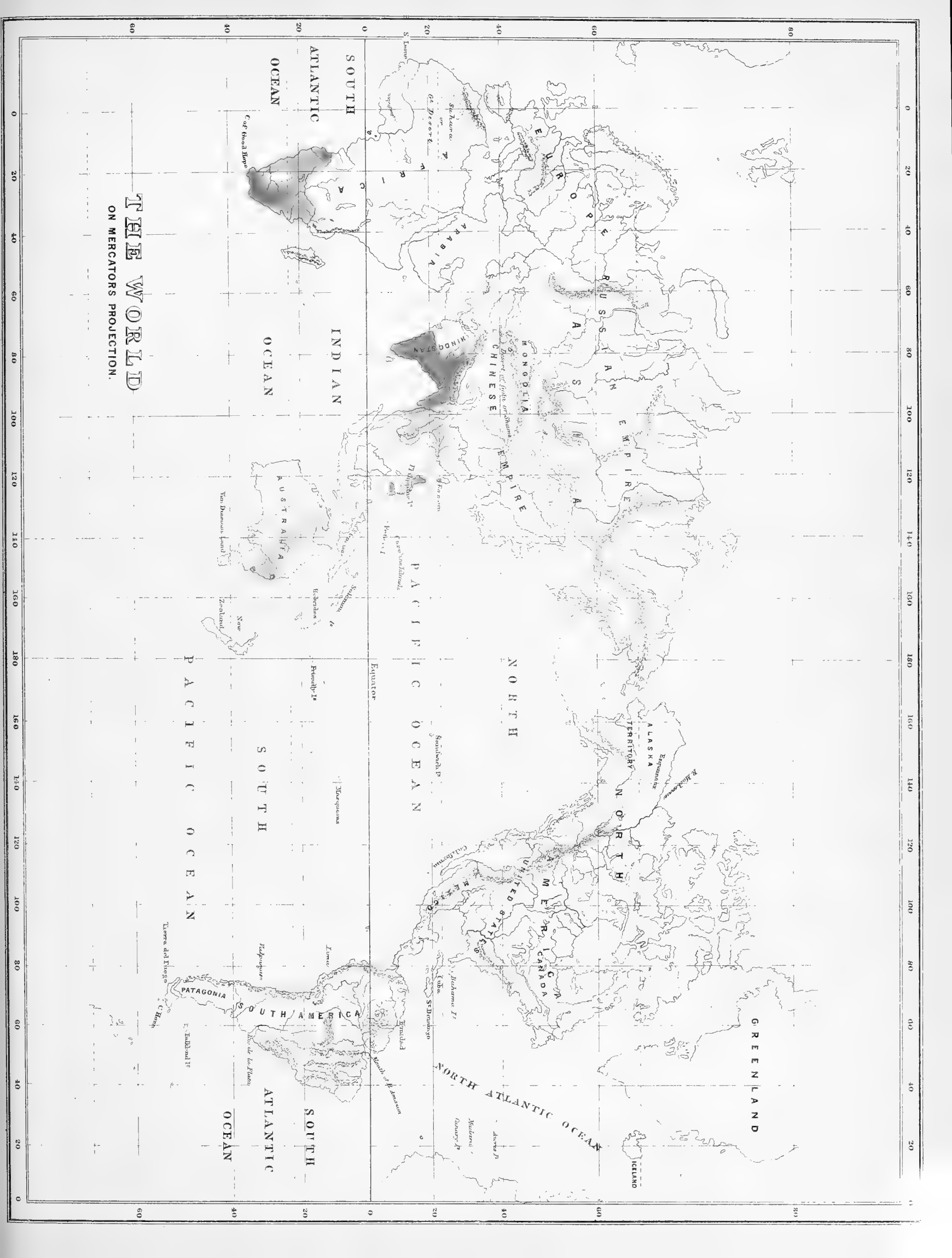


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THE WORLD

ON MERCATORS PROJECTION.



INDEX TO VOL. I.

A.	Page
<i>ACCIPITER nisus</i>	58
<i>Acredula caudata</i>	270
Adam, Mr., on Barn-Owl	291
<i>Ægotheles dubius</i>	146
<i>Æpyornithidæ</i> , egg-shells of	19
<i>Alauda arvensis</i>	73, 267
Albinism, gular	91
<i>Alca impennis</i> (Garefowl)	4, 99
Allen, Mr. Stafford	284
<i>Aluco flammeus</i> (Barn-Owl)	17, 62
<i>Ammomanes deserti (isabellina)</i>	263, 267
— <i>pallida</i>	266
<i>Anas boschas</i>	118
— <i>brachyptera</i>	47
Anchieta, Señor, on Barn-Owl	287
<i>Anser ferus</i> (Grey Lag Goose)	110
<i>Anthus seebohmi</i>	246
<i>Aprosmictus scapulatus</i>	170
<i>Aptenodytes pennanti</i>	16
Apteryx, size of egg of	10

	Page
Bunting, Small	90
Burns, Dr., on Barn-Owl	293
Burton's 'Falconry of the Indus'	214
Bustard, the Great	102
Bustards shot in Norfolk	222

C.

<i>Cacatua sulphurea</i>	171
<i>Calendula crassirostris</i>	83
<i>Calyptorhynchus</i> (<i>C. solandri</i> and <i>C. banksi</i>)	158
Cambridge prize poem	122
Canterbury Museum	8
<i>Caprimulgus ægyptius</i>	268
— <i>isabellinus</i>	268
<i>Carine noctua</i>	36
Carotid arteries of birds, on the variations of the	171
<i>Casuarus westermanni</i>	26
<i>Chætorhynchus papuensis</i>	145
<i>Chætura pelasgia</i>	156
Chasse au miroir	89
Chatterton	93
Chefoo, on the Cuckoo in	94
China, Cormorant-fishing in	128
Chough	93
<i>Chrysococcyx lucidus</i> (Shining Cuckoo)	86
— <i>plagosus</i>	87
— <i>splendidus</i>	145
<i>Ciconia alba</i>	105
<i>Cinclus melanogaster</i>	270
<i>Circus cineraceus</i>	62
<i>Coccyzus americanus</i>	87

	Page
<i>Columba palumbus</i> , food of	100
<i>Colymbus glacialis</i> , extraordinary capture of	125
Conduit Street, Woodcocks shot in	110
Cook, Mount	20
Cordeaux, John, on Blackbirds	66
Cormorant, account of, in China	128
<i>Coturnix dactylisonans</i> (Quail)	90
Crane, Common	104
Crawford, Countess of	56
Crimea, Ducks in the	120
Cuckoo and mimicry	94
Cuckoos, migration of	86
<i>Cuculus canorus</i>	94, 265
Cunningham, Robert O., on the Steamer Duck	47
—, on Swallows caught at sea	79
<i>Cursorius gallicus</i>	265
— <i>isabellinus</i>	265
Curzon, Hon. Robert, his 'Armenia'	111
<i>Cygnus musicus</i>	117
— <i>olor</i>	115
<i>Cypselus murarius</i>	98

D.

D'Albertis, Signor Luigi Maria	150
Dallas, Mr. W. S., on the feathers of <i>Dinornis</i>	26
Dartford Warbler	70
Darwin, C., on female assuming male characters	119
—, on the intelligence of Gulls	130
Darwin, Mr. Frank	17
<i>Dasyptilus pecqueti</i>	32
<i>Daulias luscinia</i> (the Nightingale)	67

	Page
Dawkins, Boyd, on Pheasants	65
Degland and Gerbe	277
<i>Dendroeca chrysoparia</i> , Mr. Salvin on	181
— <i>occidentalis</i>	182
— <i>townsendi</i>	182
— <i>virens</i>	182
Dennis, Rev. R. N., notice of Eagle	53
Derby, Edward Smith, Earl of	38
Dickinson, Dr., on Barn-Owl	289
<i>Dinornis ingens</i>	19
— <i>robustus</i> , Owen	27
<i>Dinornithidæ</i> , heaps of pebbles found with bones of	16
<i>Diomedea antarctica</i>	238
— <i>chlororhyncha</i>	238
— <i>exulans</i>	238
— <i>fuliginosa</i>	237
— <i>profuga</i>	238
Diver, Great Northern	125
Docherty, Mr., numbers of Apteryges killed by	21
—, on Haast's Apteryx	7
Doderlein	280
Dohrn, Dr. H., on <i>Psittacus erithacus</i>	166
Dole, Mr., on the Barn-Owl in the Sandwich Islands	298
<i>Dolichonyx oryzivorus</i>	156
Drawings, Sir J. Banks's unpublished	223
Dress, J. A. Froude on	221
Dresser, H. E., on <i>Falco labradorus</i>	185
<i>Dromæus irroratus</i> , Bartlett	26
<i>Dromaius novæ-hollandiæ</i>	10
Droste, Von	277
Duchess of Richmond (by error "Devonshire"), her Parrot in Westminster Abbey	30, 172
Duck, Wild	118

	Page
Duck assuming plumage of Drake	118
Ducks in the Crimea	120
Dumbleton, W. D., on the incubation of the Ostrich	12
Dutch Larks	83

E.

Eagle, Capt. Green's tame	218
—, Sea-, at Arundel	53
Eccarius, J. George, letter on Nightingale-trapping	67
Egg of <i>Apteryx</i> , size of the	10
Egg-shells of <i>Æpyornithidæ</i>	19
Ely, Bishop of, his Hawk	56
<i>Emberiza cæsia</i>	92
— <i>hortulana</i>	92
— <i>pusilla</i>	90, 244
— <i>rufibarba</i>	92
Emigration and immigration, Mr. Knox on	83
<i>Eudynamis taitiensis</i>	87
Eyes, on the colour of, in <i>Cacatuinæ</i>	171
Eyre, Governor	11

F.

<i>Falco candicans</i>	55, 190
— <i>islandicus</i>	190
— <i>labradorus</i> , Audubon on	188
— —, Mr. H. E. Dresser on	185
— <i>peregrinus</i> (Peregrine)	57
— <i>tinnunculus</i> (Kestrel) on Lincoln Cathedral	135
— <i>vespertinus</i>	58
Falconer, wages of a	216
Falconry, Mr. G. D. Rowley on	213

	Page
Feathers of Apteryx &c.	24
Fenny, Richard, Esq., his Lanner	56
Fens, mirage in the	121
Feramakou river	20
Fiji Islands, birds of the	259
Finsch, Dr. O., on harshness of plumage in <i>Apteryx</i>	24
—, on <i>Nasiterna geelvinkiana</i>	157
—, on <i>Psittacus erithacus</i>	164
—, on <i>Trichoglossus arfaki</i>	147
—, on <i>Trichoglossus pulchellus</i>	149
Flycatcher, Blue-headed	261
Flying animals, fossil forms of	178
'Folk-lore,' by Kelly	105
Foresman, Mr.	289
Frampton, Mr. Tregonwell, on "Hawkes"	214
<i>Fringilla carduelis</i>	91
— <i>montifringilla</i> (Bramble-Finch)	90
Froude, James Anthony, on dress	221
<i>Fulica alba</i> (White's 'Voyage')	39

G.

<i>Gallinula alba</i> , Latham	39
— <i>nesiotis</i> , Sclater	46
Gallinule, Dr. G. Bennet on the White	40
Garefowl (<i>Alca impennis</i>)	4, 99
Garrod, Mr. A. H.	17, 33
—, on the variation of carotid arteries of birds	171
Geelvink bay, origin of the name	156
Geese, habits of, in Siberia	110
Geographical distribution of Barn-Owls	269
Gerbe and Degland	277
Giglioli, Dr. H. H.	249

	Page
Gneisenau, anecdote of	112
Godman, Mr., on Barn-Owl	283
Goebel on Barn-Owl	280
Golden Oriole	66
Goshawk	56
Gould, Mr.	293
—, 'Birds of Australia,' vol. vi.	21
—, describes <i>A. owenii</i>	5
Gray, G. R., on <i>Porphyrio alba</i>	39
Gray, Robert, on Barn-Owl	271
—, on Skye Peregrines	214
Gray's 'Genera'	21
Great Northern Diver	125
Green, Capt., his tame Eagle	218
Greenland Falcon	55
Grey Lag Goose, observations on the	110
Griffon Vulture	51
<i>Grus cinerea</i>	104
Gular albinism	91
Gulls, intelligence of	130
Günther, Dr.	270
Gurney, Mr. J. H., on Sharpe's 'Catalogue of Accipitres'	171
<i>Gypohierax angolensis</i>	170
<i>Gyps fulvus</i>	51

H.

Haast, Dr. Julius, on the Moa-bone-Point Cave	3
<i>Haliaeetus albicilla</i>	52
Halliwell's illustration of Shakespeare	101
<i>Halobæna cærulea</i>	230
Hancock, John, 'Catalogue of the Birds of Northumberland' &c.	59
Harcourt, Vernon, on Barn-Owl	282

	Page
Harting, 'Ornithology of Shakespeare'	114
Hawksworth's 'Voyages'	224
Heathcote, J. M., shoots seven Bitterns	109
Heuglin, Von	193, 284
Hill, Edward S., pamphlet on Lord Howe's Island	38
Hill, S., account of Geese in Siberia	110
<i>Hirundo cahirica</i>	97
— <i>leucorrhœa</i>	77
— <i>rustica</i>	96
— <i>savignii</i>	97
Hodgson on Nepal Barn-Owl	294
Hokitika	24
Holdsworth, Mr., on Barn-Owl	295
Hollinshed, extract from	218
Homeyer, A. von, on Barn-Owl	281
Honey-Buzzard	61
Hotten and Larwood, 'History of Sign-boards'	65
Hudson, W. H., on migration of Swallows	77, 79
Humboldt's Parrot	30
Hume, Allen O., on <i>Cuculus canorus</i>	94
—, 'Rough Notes'	291
Hutton, Capt. F. W., on eggs of Moa	19
—, on New-Zealand Cuckoos	86
Huxley, Prof., on Apteryx	26

I.

Immigration and emigration, Mr. Knox on	83
Incubation of <i>Apteryx</i>	11
<i>Indicator archipelagicus</i>	197
— <i>conirostris</i>	196
— <i>exilis</i>	198

	Page
<i>Indicator levaillantii</i>	200
— <i>maculatus</i>	200
— <i>major</i>	199, 204
— <i>minor</i>	194
— <i>pachyrhynchus</i>	197
— <i>sparrmanni</i>	199, 201
— <i>variegatus</i>	199
— <i>xanthonotus</i>	205
<i>Indicatoridæ</i> , revision of, by Mr. Sharpe	192
Indus, Falconry of the	214
Irby, Col. L. Howard, 'Straits of Gibraltar'	84, 281
Isabella, Clara Eugenia	264
Isabelle colour, explanation of	264

J.

John, King, fine to, of 200 hawks	57
Johnstone, Capt.	293
Juvenal's Stork	107

K.

Kelly's 'Folk-lore'	105
Kessler, Prof.	280
Kestrel or Windhover	135
Keulemans on <i>Psittacus erithacus</i>	167
Kingfisher, Riedel's	176
Kirk, Dr., on <i>Psittacus erithacus</i>	170, 289
Kite or Glead	61
Kjærbölling's 'Danmarks Fugler'	63
Knox, Mr., on emigration and immigration	83
Kreffft, Mr. Gerard	163

L.		Page
“Lag,” solution of the word		114
Lamont, ‘Seasons with the Sea-Horses’		126
Lanner belonging to R. Fenny, Esq.		56
Larks (Dutch)		83
<i>Larus eburneus</i>		130
Larwood and Hotten on Storks		107
Latham on Geese		113
Layard, E. L., on a new species of <i>Trichoglossus</i>		261
Leadbeater, Mr., on <i>Apteryx owenii</i>		20
Leake, Manor of, its customs		114
Lemon, Mark (‘Streets of London’), on mews		219
Leverian Museum Catalogue		48
Lewes, ‘Studies in Animal Life’		120
Lilford, Lord, on Barn-Owl		280
Lincoln Cathedral a breeding-place of Kestrels		135
Lindermeyer, Dr., on Barn-Owl		280
Lindsay, Sir David, his Parrot		219
Little Auks, Harting in ‘Polar World’		127
Livingstone on <i>Psittacus erithacus</i>		170
<i>Locustella certhiola</i>		153
<i>Lophius piscatorius</i>		126
Lords Rockingham and Orford, match between		113
<i>Lorius solitarius</i>		262
Lubbock, Rev. R., on Sparrow-Hawk		214
Lubbock, Mr., on the wholesale slaughter of Bustards		222
Lynn, History of, by William Richards		222

M.

Machyn’s diary	116
<i>Majaqueus æquinoctialis</i>	232
‘Malay Archipelago’ map of Crimson Lories	166

	Page
Mapourika Lake and Haast's Apteryx	7
Martin's Bay, Apteryx taken at	21
Martins (<i>Hirundo urbica</i>) caught at Brighton	4
Mary of Lorraine and the Earl of Angus, the Falcon anecdote	219
Mary II. (Stuart), Robin on her hearse	138
Maximilian and the Swans	115
<i>Meionornis casuarinus</i>	10
<i>Melizophilus dartfordiensis</i>	13
— <i>undatus</i> (Dartford Warbler)	70
<i>Mergulus melanoleucos</i>	127
<i>Merops apiaster</i>	96
Mews, Mark Lemon on	219
Migration of birds	73
Milne-Edwards	28
<i>Milvus iclinus</i> (Kite)	61
Mimicry, the Cuckoo an example of	94
<i>Mimus polyglottus</i>	82
Mirage in the Fens	121
Mivart, St. George	33
Moa-bone-Point Cave	3, 23
Monk's Wood, Kites at	138
Montagu's Harrier	62
More, Mr. A. G., on the Barn-Owl	271
Moresby, Capt., on New Guinea	146
<i>Mormon arcticus</i>	188
'Morning Herald,' extract from the, on Ducks in the Crimea	120
<i>Motacilla citreola</i>	246
— <i>viridis</i>	242
Motley, John Lothrop	264
Murie, Dr.	193
'Musæum Tradescantianum'	103
Mute Swan	115
<i>Myiagra azureocapilla</i>	260

N.		Page
<i>Nasiterna geelvinkiana</i>		153, 157, 160
— <i>pusio</i>		156, 163
— <i>pygmæa</i>		156, 161
Nathusius, W. von		19
<i>Nectris fuliginosa</i>		235
— <i>munda</i>		257
<i>Nestor esslingii</i>		28
— <i>meridionalis</i>		28
— <i>pecquetii</i>		145
— <i>productus</i>		2, 4
New Zealand, birds of		1
— —, discoverers of		4
Newton, Prof., on the Barn-Owl		276
Nicholas, Harris, the wages of a falconer		216
Nightingale-trapping		67
‘ Nile Tributaries,’ by Baker		106
Nitzsch’s ‘ Pterylography ’		25
Nordmann, Von		280
<i>Notornis alba</i>		38, 44
— <i>mantelli</i>		38
Nutius of Antwerp, his sign		107
<i>Nyctea scandiaca</i>		36

O.

<i>Œstrelata arminjoniana</i>	233, 234, 252
— <i>brevirostris</i>	235
— <i>externa</i>	254
— <i>kidleri</i>	235
— <i>lessoni</i>	251
— <i>magentæ</i>	251
— <i>mollis</i>	233, 251

	Page
<i>Æstrelata neglecta</i>	253
— <i>phillipi</i>	254
— <i>rostrata</i>	251
— <i>torquata</i>	254
— <i>trinitatis</i>	253
Oglander, Sir John, on the Goshawk	56
—, Sir William, Bustards shot by	103
Ohono peaks	20
Okarita river and Haast's Apteryx	7, 8
Okarito	18
Olcese, M., on Barn-Owl	281
Olph-Galliard, M. Léon	278
Onesicrites	31
'Ootheca Wolleyana,' Crane's nest figured in	104
— —, Wild Swan's nest figured in	117
Orford and Rockingham, Lords, match between	113
<i>Oriolus galbula</i> (Golden Oriole)	66
<i>Orthonyx novæ-guinææ</i>	147
<i>Ortyx texanus</i>	92
Osprey	55
Ostrich, nidification of the	12
<i>Otis tarda</i>	102
Owen, Prof., on "Aves præcoces"	10
—, on change of feathers	29
—, on the toes of birds	99
—, on the modifications of the skull of Apteryx	14
Owen-Stanley mountains, New Guinea	146
Owl, White-faced	35

P.

Palliser, Mrs. Bury	264
<i>Pandion haliaëtus</i>	55

	Page
<i>Parotia searpennis</i>	180
Parrot of King Charles the First's daughter	31
Parrot-keeper of Queen Catharine of Braganza	175
<i>Parus cœruleus</i>	73
Pebbles found with bones of <i>Dinornithidæ</i>	16
Pecquet, M.	32
<i>Pelagodroma marina</i>	228
Pelzeln, A. von, on <i>Fulica alba</i>	40
—, on <i>Notornis</i>	39
Pennant on Geese	113
Pepys quoted	174
Peregrine Falcon	57
Peregrines, Mr. R. Gray on Skye	214
<i>Pernis apivorus</i> (Honey-Buzzard)	61
Perry, Mrs. Wykeham	298
Petchora, on the birds of	239
Peterborough Cathedral, Swifts on	137
<i>Pezophaps solitaria</i> , Messrs. Newton on	10
<i>Phalacrocorax carbo</i>	128
Pheasants, W. Boyd Dawkins on	65
Phillip, Governor, voyage to Botany Bay	41
<i>Phylloscopus tristis</i>	243
Pico de Papagaio	168
Pidgeon, Bat, the famous hair-cutter	101
Pigeons have no gall-bladders	102
Plumage, on the harshness of, in Apteryx	24
Poem, Cambridge prize	122
Pollen and Van Dam, Messrs.	289
Pontoppidan, Bishop	99
<i>Porphyrio melanotus</i>	39, 47
— <i>stanleyi</i>	37, 44
Potts, T. H., on <i>Apteryx australis</i>	12
—, observations on <i>A. haastii</i>	5, 7

	Page
Potts, T. H., on nest of the Kaka	31
—, on young of <i>A. australis</i>	20, 22
—, on the plumage of <i>Apteryx</i>	24
<i>Prion turtur</i>	230
<i>Procellaria æquorea</i>	238
— <i>alba</i>	234, 253
— <i>fregata</i>	228, 238
— <i>fuliginosa</i>	238
— <i>gigantea</i>	238
— <i>grallaria</i>	228
— <i>hypoleuca</i>	228
— <i>leucogaster</i>	229
— <i>lugens</i>	235, 238
— <i>marina</i>	228
— <i>munda</i>	237
— <i>oceanica</i>	227, 238
— <i>pelagica</i>	227
— <i>sandaliata</i>	232, 238, 253
— <i>turtur</i>	230, 238
— <i>velox</i>	230, 238
— <i>wilsoni</i>	227
<i>Procellariidæ</i> , critical notes on, by Osbert Salvin	223, 249
Proctor, Mr. R. A., on Parrots	175
—, quoting Voltaire	95
<i>Prodotiscus</i> , on the genus	207
<i>Prodotiscus regulus</i>	208
<i>Psittacus erithacus</i>	164
— <i>pygmæus</i>	157
<i>Ptilonopus huttoni</i> , Dr. Finsch on	102
<i>Puffinus assimilis</i>	236
— <i>elegans</i>	256
— <i>gavia</i>	236
— <i>griseus</i>	236

	Page
Pulzky, Francis, on Storks	105
Puttock's Hardwick	61
Pye-Smith, P. H., extract from 'Nature'	131
<i>Pyrrhocorax graculus</i> (Chough)	93

R.

Ramsay, Mr., on Barn-Owl	298
Ray's 'Willughby:' Stray Falcons go to the Sheriff	216
Reichenow on <i>Psittacus erithacus</i>	169
Reinhardt, Prof.	63
Reynardson, C. T. S., on Kites at Monk's Wood	138
Richard III. and his Hawks	219
Richmond, Duchess of, and her Parrot	30, 172
Rickard, Mr., on birds from South Africa	288
Ridgway, Mr.	188
Riedel's Kingfisher	176
Roch and E. Newton, Messrs.	289
Rockingham and Orford, Lords, match between	113
Rosenberg on <i>Tanysiptera</i>	180
Roulle or Rowley, Philip de	59
Rowley, G. D., on <i>Falco tinnunculus</i>	135
—, on Falconry	213
—, on Isabelline Birds &c.	263
—, on <i>Psittacus erithacus</i>	164
—, on <i>Tanysiptera riedeli</i>	176
—, on the Birds of the Fiji Islands	259
—, on the genus <i>Nasiterna</i>	152
—, on <i>Trichoglossus arfaki</i>	146
Russia, migration of Birds in North-east	239
Rutherford the Englishman	33

S.

	Page
Sale-catalogue, William Bullock's	37
Salvadori, Count	249
Salvin and Brodrick on a sore Ger-Falcon	215
Salvin, O., on <i>Dendroeca chrysoparia</i>	181
—, on <i>Fulica alba</i> (White)	40
—, on <i>Procellariidæ</i>	223, 249
—, on the tail of <i>Momotus</i>	177
Sandwich, Earl of, Master of the Swans	116
Sandwich Islands, on the Barn-Owl in the	298
Saunders, Howard	279
Saxby, Dr. Henry L.	271
—, on Kestrels killed in Shetland	139
—, on the Storm-Petrel	134
<i>Saxicola isabellina</i>	268
<i>Sceloglaux albifacies</i> (White-faced Owl)	6, 24, 35
Schöbl, Dr. J., on the structure of the Bat's wing	15
Schomburgk, Sir R.	295
Schweinfurth's 'Heart of Africa'	106
Sclater, P. L., on Swifts and <i>Hirundinidæ</i>	99
<i>Scolopax rusticola</i>	109
Sea-Eagle	52
Seebohm, Henry, on birds of North-east Russia	239
Seeley, Prof. H. G., on fossil forms of flying animals	178
Semmelink, Heer	296
Severtzoff, Dr., on Barn-Owl	283
—, on <i>Emberiza hortulana</i> and <i>E. cæsia</i>	92
Shakespeare, Halliwell's illustration of	101
Sharpe, R. B., on <i>Tanyseptera</i>	177
—, on the family <i>Indicatoridæ</i>	192
—, on the geographical distribution of Barn-Owls	269
—, on the genus <i>Ammomanes</i>	263

	Page
Shaw, Dr., on the Apteryx	5
—, on <i>Cursorius</i>	268
Shelley, G. E., on <i>Falco tinnunculus</i>	135
Sheriff, stray Falcons go to the	216
Siberia, habits of Geese in	110
Sign-boards, History of	65
Skeat, solution of the word "lag"	114
Skua, Buffon's	132
Sky-Lark	73
Slade, Henry	11
Small Bunting	90
Solander, Dr., his MS.	224
Sore Sparrow-Hawk	58
Spallanzani on the sense of touch in Bats	15
Sparrow-Hawk	58
—, female, in male plumage	118
<i>Spiloglaux novæ-zealandiæ</i>	35
Stalking-horse on Whittlesea Mere	124
Stanley, Dean, Peregrine Falcons on Westminster Abbey	136
Stanley's 'Memorials of Canterbury'	266
<i>Stercorarius longicaudus</i>	132
Stevenson, H., on Swallows	98
—, on Peregrine	136
Stork, Juvenal's	107
—, White	105
Storm-Petrel	133
Strickland	10
—, Miss Agnes, account of La Belle Stuart	173
<i>Stringops</i>	33
<i>Strix adspersa</i>	277
— <i>aluco</i>	64
— <i>asio</i>	36
— <i>delicatula</i>	290, 297

	Page
<i>Strix flammea</i>	271
— <i>guttata</i>	276, 277
— <i>insularis</i>	287
— <i>javanica</i>	291
— <i>margaritata</i>	277
— <i>novæ-hollandiæ</i>	297
— <i>rosenbergi</i>	291, 297
— <i>splendens</i>	278
— <i>tenebricosa</i>	145
<i>Struthionidæ</i> , feathers of	24
Strype, 'Life of Cranmer'	64
Sundevall, Prof.	276
Swallow	96
—, migration of	77, 79
Swan, Mute	115
Swan with two necks	116
Swift	98
Swifts, Alpine, on Cathedral of Berne	137
— caught at Brighton	4
— on Peterborough Cathedral	137
Swinfield, Bishop	216
Swinhoe, R., on the Cuckoo in Chefoo	94
Syr-Daria, the lower	283
<i>Syrnium stridula</i>	36

T.

Taczanowski, Dr.	279
<i>Tanysiptera riedeli</i>	176
Tasman, Abel Jansen, discovers New Zealand	4
Tawny Owl	64
Taylor, Mr. E. C., on <i>Falco tinnunculus</i>	135
Tegetmeier, W. B., on Pigeons, corrects Yarrell	101

	Page
Tennant, Sir J. E., derivation of Goose	110
<i>Tetrao saliceti</i>	188
<i>Thalassidroma pelgica</i>	133
Thompson, Pishey, on the Common Bittern	109
—, on decoys	119
—, on Geese	112
Thompson, W., on the Kestrel	136
—, on the Moor-Buzzard	218
Thornbury, G. W., 'Shakespeare's England'	217
Touch, on the sense of, in <i>Apteryx mantelli</i>	13
<i>Trichoglossi</i> , on the tongue of	33
<i>Trichoglossus arfaki</i>	145, 147
— <i>aureocinctus</i>	261
— <i>josephinæ</i>	151
— <i>kordoanus</i>	148
— <i>papuensis</i>	150
— <i>placens</i>	148
— <i>pulchellus</i>	147, 149
— <i>rubronotatus</i>	148
Tristram, Canon, on Barn-Owl	283
—, on Stork	106
<i>Trochilus forficatus</i>	87
<i>Troglodytes vulgaris</i>	10
Turberville, George (by error "Tuberville")	220
<i>Turdus merula</i>	64

U.

Ussher, Herbert Taylor, on <i>Psittacus erythacus</i>	168
Ust Zylma, on the Birds of	240

V.

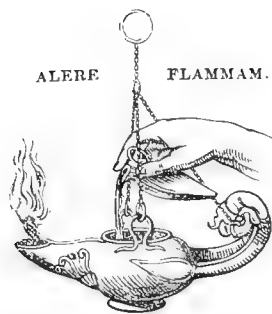
Verreaux, M. Jules	23, 285
Victoire, Madam, and the Duck	120

W.

	Page
Waitaroa river, Westland	24
Wakatipu Lake	21
Walden, Viscount, on <i>Tanysiptera riedeli</i>	179, 285
Wallace, A. R., on Parrots	32
Wallace quotes Tristram on the desert	263
Warbler, Yellow-cheeked	181
Wedding dinner of Gervas Clifton and Mary Neville	117
Westminster Abbey, effigy of a Parrot in	30, 172
— — —, Peregrine Falcons on	136
White's 'Voyage,' extract from	41
Whitely, Mr.	286
Whittlesea Mere, Regatta on	121
Whooper	117
Wild Duck	118
Wilson, his death	72
Windhover or Kestrel	135
Wolley, John	52
Woodcock	109
Woodcocks paid for lands	215
— shot in Conduit Street	110
Wood-Pigeon	100

Y.

Yarrell on <i>Apteryx australis</i>	14
— on Pigeons	101



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PART I. No. 1.]

[JANUARY 1875.

ORNITHOLOGICAL MISCELLANY.

BY

GEORGE DAWSON ROWLEY, M.A., F.Z.S.,

MEMBER OF THE BRITISH ORNITHOLOGISTS' UNION.

CONTENTS.

APTERYX HAASTII, *Potts.*

— AUSTRALIS, *Shaw*, juv.

— OWENII juv.

APTERYX MAXIMA, *Verr.*

FEATHERS OF STRUTHIONIDÆ.

NESTOR MERIDIONALIS, var.

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LIST OF PLATES.

- I. *Apteryx haastii*, Potts. Adult female.
- II. — *owenii*, Gould. Adult male.
- III. — *haastii*. Adult male ; young female.
- IV. — *australis*, Shaw. Young.
- V. — *owenii*. Young.
- VI. Feathers of Struthionidæ.
- VII. *Nestor meridionalis*, variety.

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CONTENTS.

SCELOGLAUX ALBIFACIES.
PORPHYRIO STANLEYI.

GYPH FULVUS.
HALLEETUS ALBICILLA.
PANDION HALLEETUS, *Linn.*
FALCO CANDICANS, *J. F. Gmel.*
ASTUR PALUMBARIUS, *Linn.*
FALCO PEREGRINUS, *J. F. Gmel.*
FALCO VESPERTINUS, *Linn.*
ACCIPITER NISUS, *Linn.*
MILVUS ICTINUS (*Savigny*).
PERNIS APIVORUS, *Linn.*
CIRCUS CINERACEUS, *Montagu.*
ALUCO FLAMMEUS, *Linn.*

STRIX ALUCO, *Linn.*
TURDUS MERULA, *Linn.*
ORIOIUS GALBULA, *Linn.*
DAULIAS LUSCINIA, *Linn.*
MELIZOPHILUS UNDATUS (*Bodd.*).
PARUS CÆRULEUS, *Linn.*
ALAUDA ARVENSIS, *Linn.*
EMBERIZA PUSILLA, *Pall.*
FRINGILLA MONTIFRINGILLA.
PYRRHOCORAX GRACULUS.
CUCULUS CANORUS.
MEROPS APIASTER.
HIRUNDO RUSTICA.
CYPSELUS MURARIUS.
COLUMBA PALUMBUS.

OTIS TARDA, *Linn.*
GRUS CINEREA.
CICONIA ALBA.
ARDEA STELLARIS.
SCOLOPAX RUSTICOLA.
ANSER FERUS.
CYGNUS OLOR.
CYGNUS MUSICUS.
ANAS BOSCHAS.
COLYMBUS GLACIALIS.
MERGULUS MELANOLEUCOS.
PHALACROCORAX CARBO.
LARUS EBURNEUS.
STERCORARIUS LONGICAUDUS, *Briss.*
THALASSIDROMA PELAGICA.

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LIST OF PLATES.

- VIII. Laughing Owl (*Sceloglaux albifacies*).
- IX. White Porphyrio (*Porphyrio stanleyi*).
- X. Sore Sparrow-Hawk (*Accipiter nisus*).
- XI. Barn-Owl (*Aluco flammeus*).
- XII. Glass for shooting Larks.
- XIII. Illustrations of gular abnormal variation : 1, 2, 3.
- XIV. Regatta on Whittlesea Mere.
- XV. Stalking-horse on Whittlesea Mere.

PART III.]

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CONTENTS.

FALCO TINNUNCULUS, *Linn.* By Mr. G. D. ROWLEY.

PREFACE TO PART III.

TRICHOGLOSSUS ARFAKI (*A. B. Meyer*). By Mr. G. D. ROWLEY.

TRICHOGLOSSUS ARFAKI (*A. B. Meyer*). By Dr. O. FINSCH, Hon. Memb. B.O.U.

TRICHOGLOSSUS PULCHELLUS (*G. R. Gray*). By Dr. O. FINSCH, Hon. Memb. B.O.U.

SUBFAMILY NASITERNINÆ. By Mr. G. D. ROWLEY.

NASITERNA GEELVINKIANA AND ITS ALLIES. By Dr. O. FINSCH, Hon. Memb. B.O.U., Curator of the Bremen Museum.

PSITTACUS ERITHACUS, *Linn.* By Mr. G. D. ROWLEY.

TANYSIPTERA RIEDELI, *Verr.* By Mr. G. D. ROWLEY.

DENDRCECA CHRYSOPARIA. By OSBERT SALVIN, M.A., F.R.S.

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A REVISION OF THE FAMILY INDICATORIDÆ. By R. BOWDLER SHARPE, F.L.S., F.Z.S., &c., Senior Assistant, Zoological Department, British Museum.

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LIST OF PLATES.

- XVI. *Trichoglossus arfaki* (A. B. Meyer) ♀.
XVII. *Trichoglossus pulchellus* (G. R. Gray) ♂.
XVIII. *Nasiterna geelvinkiana*, Schleg., ♂ et ♀.
XIX. *Nasiterna pygmæa*, Quoy & Gaim., ♂.
XX. *Nasiterna pygmæa*, Quoy & Gaim., ♀.
XXI. *Nasiterna pusio*, Sclat.
XXII. *Psittacus erithacus*, Linn., with Duchess of Richmond.
XXIII. *Dendræca chrysoparia*, Sclater & Salvin.
XXIV. *Falco labradorus*, Aud., ad.
XXV. *Falco labradorus*, Aud., juv.

PART IV.]

[MAY 1876.

ORNITHOLOGICAL MISCELLANY.

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CONTENTS.

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CRITICAL NOTES ON PROCELLARIIDÆ. By OSBERT SALVIN, M.A., F.R.S., &c. (Part I.)

ON THE MIGRATION OF BIRDS IN NORTH-EAST RUSSIA. By HENRY SEEBOHM, F.Z.S.

CRITICAL NOTES ON PROCELLARIIDÆ. By OSBERT SALVIN, M.A., F.R.S., &c. (Part II.)

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AMMOMANES DESERTI (Licht.), AMMOMANES ISABELLINA (Temm.), AND ISABELLINE BIRDS. By Mr. G. D. ROWLEY.

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LIST OF PLATES.

- XXVI. *Indicator barianus*.
XXVII. Falconry.
XXVIII. Falconry.
XXIX. Falconry.
XXX. *Œstrelata magenta*.
XXXI. *Œstrelata arminjoniana*.
XXXII. *Œstrelata trinitatis*.
XXXIII. *Œstrelata defilippiana*.
XXXIV. *Puffinus elegans*.
XXXV. *Myiagra azureocapilla*, Layard.
XXXVI. *Trichoglossus aureocinctus*, Layard.
XXXVII. Archduchess of Austria.
XXXVIII. Desert scene.

