ART. III.—*Further Notes and Observations on Certain Species of New Zealand Birds (with Exhibits).*

By Sir WALTER L. BULLER, K.C.M.G., F.R.S.

[*Read before the Wellington Philosophical Society, 21st October, 1891.*]

IN continuation of the paper which I read at a recent meeting of this Society, and following the same mode of illustration, I have now to lay before you another budget of notes, and to exhibit for your inspection some very interesting specimens.

It is one of the charms of natural history that the more the field is worked the more it yields. It matters not how exhaustively the history of any living species has been treated, its further study is bound to yield some result to reward the untiring naturalist. I remember on one occasion hearing Professor Owen discourse for more than an hour before the Royal Society on the habits of a Crab, with which every visitor to the sea-shore thought himself perfectly familiar; and yet at every turn the learned professor brought out some new fact in the life-history and social economy of this apparently dull and common-place creature. And we all know the charm, equalling that of any work of fiction, with which Charles Darwin invested a very unpromising subject by his masterly treatment of Earthworms.

We have fresh evidence every day that the native fauna is passing away; and this is particularly true of the birds, several of the species being already extinct, whilst many others are on the border-land, so to speak, from which they must soon disappear. It seems to me that it is one of the most important functions of such a society as this to collect and preserve for all time the fullest possible record of these expiring species.

Turnagra hectori, Buller. (The North Island Thrush.)

The South Island Thrush (*T. crassirostris*) is still comparatively plentiful in some parts of the West Coast, but its numbers have been grievously diminished by the diggers' dogs, by wild cats, stoats, and weasels. The North Island bird has all but disappeared, and the specimen exhibited is the only one I have been able to obtain since my return to the colony. Mr. C. Field, the surveyor, writing to me from Moawhango, Inland Patea, says: "I know of four places where the Piopio was to be found *seven years ago*. In the Turakina Valley, about five miles south of the Te Ruanui, we used to see them every week; also in the Mangamahu Valley, and about four miles from the last-mentioned place. At two different places

in the Mangawhero Valley they were to be found, and one of these localities was not more than two miles from Mason's house, but the other was far inland. In the Porewa, north of Hunterville, they were to be found at that time, and I believe some still remain. They were formerly so plentiful in the Turakina and Mangamahu Valleys that I think it is likely a few might still be found there."

Myiomoira toitoi, Garnot. (The North Island Tomtit.)

An albino specimen of this bird from Otaki, for which I am indebted to Mr. Capper, has the plumage of the body almost entirely white, with a few clouded specks on the breast and sides. The wing-feathers, both primaries and secondaries, are irregularly pied; the lateral tail-feathers are marked as in the ordinary bird; the middle feathers are perfectly white. Bill, legs, and feet normal.

Clitonyx albicapilla, Lesson. (The Whitehead.)

Last week, accompanied by my son, I made an expedition into the wooded ranges at the back of Waikanae in quest of Huias. We were disappointed in the object of our search, but after tramping on foot over some ten miles of bush-paths we were rewarded by finding a pair of Popokatea, or Whitehead, positively the only ones I have even heard of on the mainland for the last ten years or more. I brought down both with a small charge of dust-shot, and have much pleasure in exhibiting them. I can remember when this bird was absolutely the commonest and most numerous in the North Island. It is now one of the rarest, being met with only on the Little Barrier Island, in the north, and on Kapiti, in Cook Strait. Another bird equally common was the Wood-robin (*Miro albifrons*), and this has disappeared just as completely, my last specimen having been shot at Kaitoke in the spring of 1880.

Anthus aucklandicus, G. R. Gray. (The Auckland Island Pipit.)

Although hitherto rejected by me, I feel constrained at last to admit the Auckland Island Ground Pipit to the rank of a separate species. I have now the opportunity of exhibiting a series of specimens representing the adult male and female and the young. On comparing these birds with specimens of *Anthus novæ-zealandiæ* the difference is at once apparent. In the Auckland Island bird the white superciliary streak is wanting; the feathers of the upper surface are not margined as in *Anthus novæ-zealandiæ*, and the under-parts, instead of being white, are of a fulvous cream-colour, slightly mottled on the sides of the breast with brown.

Young.—A young bird, just from the nest, has the plumage of the upper surface strongly suffused with fulvous, the quills and their coverts, as well as the tail-feathers, broadly margined with fulvous, and the face, throat, and under-parts entirely of that colour. The outer tail-feathers, which are white in the adult, are of a uniform pale-fulvous. This colour is brightest on the foreneck and breast, where the feathers are obscurely centred with brown.

I have received a specimen from the Antipodes Island, which does not differ from the Auckland Island bird, except that it is somewhat darker and yellower, being evidently a younger bird.

Anthus novæ-zealandiæ, Gmelin. (The New Zealand Pipit.)

The next specimen I have to exhibit is an albino of the common species. The general plumage is creamy white, more or less stained on the upper surface, especially on the back, with pale yellowish-brown.

Sphenœacus fulvus, Gray. (The Fulvous Fern-bird.)

I have received two more specimens (in the flesh) from the Snares. This species is evidently a ground feeder, for on skinning them I was struck with the great development of the tibial and femoral muscles.

Rhipidura fuliginosa, Sparrm. (The Black Fantail.)

I have received a specimen (in spirits) from the Snares.

It is interesting to note that this Southern species is becoming an inhabitant of the North Island. I have previously recorded the known instances of its occurrence in the Wellington District. This year one has almost constantly frequented my garden on the Terrace.

In a large collection of birds from the Chatham Islands lately received in England there were many specimens of *R. flabellifera*, but none of this species.

Pogonornis cincta, Dubus. (The Stitch-bird.)

A female of this very rare species which recently came into my hands has a yellow tinge on the angle of the wings and on the tips of the white secondary coverts. The specimen, which had been in a private collection at Auckland for some ten years, came originally from the Little Barrier Island. This is undoubtedly the last refuge of the species, and, if a remnant is to be preserved, the island ought to be strictly protected. The indefatigable collector, Mr. A. Reischek, spent a considerable time on the Little Barrier, and shot a number of

specimens for local and foreign museums, but I was assured by him that he did not destroy them all; and I do not think any collector has visited the island since his time. There is therefore just a chance of saving the species by timely intervention.

Acanthidositta chloris, Sparrm. (The Rifleman.)

It seems pretty clear that the male of this species assists in the work of incubation, for a specimen which I shot in the Ngarara Ranges on the 13th October had the under-parts completely denuded of feathers. It was evidently the end of the breeding-season, because, on dissection, I found the testes extremely minute. As I have already explained ("Birds of New Zealand," vol. i., p. 115), this singular little bird is in reality a dwarf *Pitta* of a degenerate type. It would be interesting to know whether other members of this family (to which I have given the name *Xenicidæ*) have the same habit, or whether the males of any of the true *Pittas* are known to incubate.

Eudynamis taitensis, Sparrm. (The Long-tailed Cuckoo.)

The next bird I have to exhibit is a specimen of our large migratory Cuckoo, from the Kermadec Islands, presented to me by Captain Fairchild. It differs from ordinary New Zealand examples in its richer colouring, the throat and sides of the neck having a strong wash of chestnut-brown, and the wing-coverts being largely tipped with white instead of yellowish-brown, presenting a spotted appearance, this character extending also, but in a less degree, to the scapulars, uropygium, and upper tail-coverts.

Platycercus unicolor, Vigors. (The Antipodes Island Parrakeet.)

I am now able to give the full measurements of the two sexes, taken from specimens in the flesh.

Male.—Length, 14in.; extent of wings, 19in.; wing from flexure, 6in.; tail, 6·50in.; bill, along the ridge 1·1in., along the edge of lower mandible 0·65in.; tarsus, 1in.; longer fore-toe and claw, 1·5in.; longer hind-toe and claw, 1·3in.

Female.—Length, 12·75in.; extent of wings, 17·5in.; wing from flexure, 5·75in.; tail, 6in.; bill, along the ridge 0·9in., along the edge of lower mandible 0·55in.; tarsus, 0·8in.; longer fore-toe and claw, 1·25in.; longer hind-toe and claw, 1·2in.

Platycercus novæ-zealandiæ, Sparrm. (The Red-topped Parrakeet.)

A specimen which I have lately received from Auckland has the back, rump, and upper surface of wings irregularly

marked with yellow, and the sides of the face, foreneck, and breast washed with yellow; tail entirely yellow, slightly clouded with grey. In other respects the plumage is normal, but the bird is somewhat smaller than ordinary specimens.

A specimen received from Dunedin has the whole of the abdomen washed with lemon-yellow; also the vertex along the edges of the crimson cap. A specimen which I lately shot at Eketahuna, in the Forty-mile Bush, has the frontal and uropygial spots delicately edged with yellow, and the tail-feathers tipped with blue.

Coturnix novæ-zealandiæ, Quoy et Gaim. (The New Zealand Quail.)

After closing my account of this species in "The Birds of New Zealand" (vol. i., pp. 225–228)—in which I had said, "It is probably now extinct, for no specimen has been heard of for at least twelve years"—I added a footnote to the effect that, after the article had been sent to press, I had received from the colony the welcome intelligence that the last refuge of this expiring species had just been discovered at the Three Kings, a group of small islands situated about thirty-two miles west-north-west of Cape Maria van Diemen. The "Hinemoa" had called in there on her return from annexing the Kermadec Islands, and those who landed reported having seen several bevies of New Zealand Quail, which were described as being comparatively tame and fearless. Mr. Cheeseman (who was one of the party on that occasion) visited the islands again; and, writing to me on the 10th June, 1890, he said: "I obtained a nest with five eggs of the Quail when at the Three Kings last summer. I almost trod upon the bird: in fact, she rose between my feet; and glancing downwards I saw the eggs. I had no gun with me at the time, and consequently the bird escaped. I spent one morning hunting over the island with a gun, but never got the chance of a shot, although I started three or four couples. They are by no means plentiful. I do not think I saw over a dozen the three days I spent on the island."

The belief that this species yet survived, resting on apparently good evidence, has, I am sorry to say, been rudely shaken. Mr. Cheeseman kindly gave me, on my last visit to Auckland, one of these eggs, and I saw at a glance that it was not that of our New Zealand Quail, but of *Synoïcus australis*, the Brown Quail of Australia, which has been introduced into New Zealand, and is now extremely plentiful in all parts of the country. Its voluntary spread to the Three Kings is very curious.

Carpophaga chathamiensis, Rothschild. (The Chatham Island Pigeon.)

The recent exhibition at a meeting of the Zoological Society of London of a series of specimens of the Wood-pigeon from the Chatham Islands, characterized as a new species, under the above name, shows how important it is to collect and examine even the apparently most common species. We have always known that the Wood-pigeon existed at the Chathams, but till these specimens were received in England no one ever suspected that it was a different species from that inhabiting New Zealand. Mr. Henry Travers made a large collection of birds there, but he appears to have avoided this bird as being too common, and so the new species was missed by him altogether. The Maoris, who are only practical ornithologists, do not seem to have detected any difference between this bird and the Kereru of their old home. As far back as 1855, when visiting those islands on Government business, I saw some wild Wood-pigeons consorting with tame Blue Rock Pigeons introduced by the settlers; but on the wing they were quite undistinguishable from our New Zealand bird, and I did not attempt to shoot any.

The new species is said to be one-fifth larger than *Carpophaga novæ-zealandiæ*, and is "purple and pearl-grey where the latter is green and bronze-red." I am expecting to receive a specimen shortly from England, and shall then take an opportunity of exhibiting it to the Society.

Thinornis novæ-zealandiæ, Gmelin. (The Stone Plover.)

I learn by letter that in a collection of birds made by Mr. Palmer at the Chatham Islands, and taken to England this year, there was a perfect albino specimen of this very handsome Plover.

Charadrius bicinctus, Jard. and Selby. (The Banded Dottrel.)

I have described in "The Birds of New Zealand" (vol. ii., p. 2) the young state of this beautiful Dottrel. I have now to exhibit a series of seven specimens, showing the different states of plumage in the progress of the bird towards maturity: No. 1 is in the first plumage, with an indistinct zone of mottled grey encircling the foreneck; No. 2 has a broader and darker zone; Nos. 3 and 4 have it still darker, the centre of each feather being blackish-brown or black, one of them presenting a faint indication of the second band; No. 5 exhibits this pectoral band, the chestnut being mixed with white, and consequently indistinct; Nos. 6 and 7 (adult ♂ and ♀) present the double bands of black and chestnut respectively in full perfection.

I have in my collection a specimen, obtained at Kaikoura, in which the chestnut band is considerably broader.

Recurvirostra novæ-hollandiæ, Vieill. (The Red-necked Avocet.)

Among the rarer forms of our Waders, this beautiful Red-necked Avocet (presumably a visitant from Australia) holds a conspicuous place.

I have recorded in "The Birds of New Zealand" (vol. ii., p. 20) the only instances, within my knowledge, of the occurence of this graceful Plover in this colony. The only specimen since obtained is that which I have the pleasure of exhibiting this evening—a male in full plumage, which was shot at Invercargill.

Although the western and southern portions of Australia appear to be the home of this species, it is apparently a rare bird even there, for Mr. Gould states he never met with it himself during his rambles in New South Wales, and had "only seen it now and then in collections from those parts." It is called Yä-jin-goo-rong by the aborigines of Western Australia.

Himantopus novæ-zealandiæ, Gould. (The Black Stilt.)

A specimen lately came into my hands in which there were scattered white feathers on the foreneck and on all the under-parts.

Stercorarius antarcticus, Gray. (The Southern Skua.)

In "The Birds of New Zealand" (vol. ii., pp. 63, 64) I gave the history of one of these birds that had been in my possession for some five years. In March last I received, through the courtesy of Mr. Lewis Wilson, Under-Secretary of Marine, a healthy young bird of the year which he had caught during a visit to the Snares. It is still an inhabitant of my garden, where it seems quite at home, manifesting the same characteristics of appetite and inquisitiveness as its predecessor, fraternising with a Gordon setter, but lording it over the Seagull and other birds within reach at feeding-time. It has a piercing black eye, which is ever on the alert.

I have been much struck with the readiness with which this bird adapts itself to a strictly terrestrial existence. Writing of the species, however, on Kerguelen's Land, Dr. Kidder says: "As a general rule its habits are terrestrial; and on the few occasions when, probably after poor success in hunting, I have seen it alight in the water, it has held its wings up perpendicularly, like a butterfly, as if afraid of wetting them. . . . There being no land-birds on Kerguelen Island besides *Chionis*, the office and most of the habits of a Buzzard-hawk have been

assumed by this great Skua. It was at first taken for a Hawk by all of us, its manner of flight, watchfulness of the ground over which it flew, and habit of perching on spots commanding a wide view, all suggesting this impression. It was, indeed, difficult to believe the evidence of my own senses when I found a web-footed bird avoiding the water, and preying solely, so far as my observation extended, upon other birds."

Ocydromus earli, Gray. (The Brown Woodhen.)

Captain Fairchild assures me that the same species of Woodhen inhabits Solander Island, in Foveaux Strait, as that found by him on Macquarie Island and identified by me as *Ocydromus earli*. He saw a good many during his brief visit to the island, and caught two, the skins of which were sent to the Auckland Museum.

Phalacrocorax carunculatus, Gmelin. (The Rough-faced Shag.)

Captain Fairchild brought me a fine specimen of this Shag from Queen Charlotte Sound on the 11th instant; and, as this is the first adult bird of that species I have had an opportunity of examining in the flesh, I give the actual measurements: Extreme length, 32in.; extent of wings, 49in.; wing from flexure, 12·75in.; tail, 6in.; bill, along the ridge 2·9in., along the edge of lower mandible 3·75in.; tarsus, 2·5in.; longest toe and claw, 5in. Irides clear hazel-grey; orbits of the eyes naked, slightly raised, and of a beautiful blue colour. The bare space surrounding the orbits and filling the lores has a roughened surface as if covered with minute papillæ, and is of a greyish-brown colour; on each side of the forehead these papillæ develope into small caruncles of a bright orange-yellow colour. Bill whitish horn-colour, changing to dull-brown on the ridge and towards the angles of the mouth, and shading into bluish-grey towards the base of the lower mandible. The naked gular sac or pouch, divided by a feathered stripe running to a point near the junction of the rami, has a streaky appearance, being of a dark greyish-green colour. The legs are flesh-white, the hind part of the tarsi and the under-surface of the toes being dull blackish-brown; claws dark-grey.

This bird proved on dissection to be a male; and, although this is the height of the breeding-season, it exhibits nothing in the form of a crest, not even a lengthening of the coronal and occipital feathers. This confirms the view put forward by me in "The Birds of New Zealand" (vol. ii., pp. 153–160), in opposition to Dr. Sclater and other leading authorities, that this species is the true *P. carunculatus* of Latham, and must not be confounded either with *P. imperialis*, King (the crested

Chatham Island form), or with *P. cirrhatus*, Gmelin, from Magellan Straits. *

I received at the same time two immature birds—in the first year's plumage, which is very different from that of the adult. The alar bar of white is absent, and there are no dorsal spots. The blue orbits are wanting, and there is no appearance of caruncles on the side of the forehead; added to which, the loral space, which is bare in the adult, has its surface covered with extremely minute feathers. The irides are dull greenish-grey; the sides of the lower mandible and the naked gular pouch, as well as the legs, are flesh-white. The plumage of this young state is fully described in my "Birds of New Zealand" (vol. ii., p. 174), where, with much hesitation, I treated the bird as a new species under the distinctive name of *Phalacrocorax huttoni*.

The breeding-season of this species appears to extend over several months. In July last Captain Fairchild visited the White Rocks, and found both eggs and young in the nests. Of the latter he brought over about half a dozen, which were forwarded by His Excellency the Governor to the Zoological Society of London. On his recent visit (some three months later) he again found both eggs and young. Of the former he has given me specimens; of the latter he brought away all that remained (five nestlings of different ages and sizes), which will be forwarded by Lord Onslow to London by the "Tainui" this month.

The egg of this species is of a delicate pale-blue colour, and a perfect ellipsis in shape, measuring 2·5in. in length by 1·5in. in breadth.

The only colony of these Shags of which we have any positive knowledge is that inhabiting the White Rocks in Queen Charlotte Sound, and numbering, according to Captain Fairchild's estimate, about fifty birds. All the specimens collected by Mr. Henry Travers, notices of which have from time to time been communicated to the Society, came from this locality. And it is worth remembering that Latham, who originally described the species, states that it inhabits New Zealand as well as South America, being "found in Queen Charlotte Sound, but not in plenty."

In my account of *Phalacrocorax carunculatus* in "The Birds of New Zealand" (vol. ii., pp. 160, 161), I have quoted Mr. Percy Seymour's remarks respecting a colony

* Dr. Kidder refers a Shag he brought from Kerguelen Island to *P. carunculatus*, Gmelin, of which he makes *P. cirrhatus*, Gmelin, a synonym. But he states that "during the breeding-season the bird carries an erectile crest of about a dozen small plumes upon the top of the head; tarsus and foot yellow." Is not Kidder's bird the true *P. cirrhatus* or "Tufted Shag" of Gmelin?

of Shags, breeding at the foot of a small cliff on Otago Peninsula, as referring to this species. But this can hardly be the case, because he states that "their feet appeared from a distance of a few yards to be reddish or brownish," whereas *P. carunculatus* has flesh-white feet at all ages.

Phalacrocorax punctatus, Sparrm. (The Spotted Shag.)

To the already long list of New Zealand albinisms I have now to add the above species, of which I exhibit a pure albino obtained, as I am informed, at Kaikoura. Being without crests, it is evidently a bird of the first year; but it is in excellent plumage, except that the tips of the tail-feathers are abraded by wear.

Phalacrocorax brevirostris, Gould. (The White-throated Shag.)

I have received from Otago a very curious variety of this species. The plumage of the upper surface is normal; patch on throat much restricted in extent and creamy-white; middle of foreneck, breast, and under-parts to the vent greyish-white and brown intermixed, this effect being produced by each feather having a brown centre and greyish-white filaments.

Diomedea fuliginosa, Gmelin. (The Sooty Albatros.)

This species is more wary in its breeding habits than any other species of Albatros. It breeds both in the Auckland and Campbell Islands. But it usually selects as a nesting-place a ledge of rock high up on the face of the cliff, and quite inaccessible, either from above or below. The nestling in down which I exhibited at a former meeting of the Society was brought by the "Hinemoa" from the Auckland Islands; but the eggs of this species have not yet been obtained, although strenuous efforts have been made from time to time by the officers of the "Hinemoa" to reach the nests. Apart, therefore, from its modifications of structure, the entire difference in its habits of nidification would seem quite to justify the placing of this Albatros in a genus by itself.

Æstrelata affinis, Buller. (The Mottled Petrel.)

Mr. Cheeseman showed me, at the Auckland Museum, a fine specimen of this Petrel which he had obtained from Taupo. And Mr. Percy Seymour, writing from Preservation Inlet, after giving the description of a Petrel which fits in exactly with that of my *Æstrelata affinis*, says: "I have found a hill where these birds breed. I found two specimens dead and mutilated; and my dogs caught a third, but pulled most

of the tail out. I took measurements of this one, but did not preserve it, as I intended to make a camp in a cave near the breeding-ground and collect a number. I visited the place at intervals, and the birds were just cleaning out their burrows (February), when some mining business called me away to another part of the district. However, I hope to get specimens next season. The burrows were very deep, and it would scarcely be practicable to collect a single specimen and return to the hut under eight or nine hours, unless a track were first cut through the dense bog-pine—a week's work, I suppose."

Æstrelata mollis, Gould. (The Soft-plumaged Petrel.)

Of this species Mr. Cheeseman lately showed me at the Auckland Museum an interesting series of skins from Sunday Island (Kermadec group). Two of them had the plumage entirely dark, showing that this species, like many other sea-birds, exhibits a peculiar phase of dimorphism. This is a subject about which we at present know very little, and it would be interesting to ascertain whether the dark character of plumage becomes hereditary under favourable conditions—that is to say, when dark birds pair together—or whether in such cases there is a latent tendency to revert to the normal colouring. It would be instructive also to note the character of the offspring when birds of the two phases mate together, as is often the case.

In Mr. Cheeseman's series there are two albinoes, both handsome birds, but one having the plumage of a purer white than the other.

Ossifraga gigantea, Gmelin. (The Giant Petrel.)

Of this fine Petrel, several remarkable examples have lately come under my notice. The specimen exhibited, which is an almost pure albino, was captured a few weeks ago off the coast near Kaikoura. The general plumage is white, but there are widely scattered feathers of the normal colour. There is a similar specimen in Mr. S. W. Silver's fine collection of New Zealand birds at Wantage. There is on board the "Hinemoa" the skin of another which was shot by the chief steward off the Snares about a year ago. In this the dark feathers are fewer, or more widely scattered, and the bill is of a yellowish horn-colour. Captain Fairchild tells me that for a long time past he has observed a perfectly white one at the Bounty Islands; but it is a very shy bird, and hitherto has kept well out of gun-range.

Since the above was written I have received another beautiful albino which was shot at sea about ten miles north of Milford Sound.

Puffinus gavia, Forst. (Forster's Shearwater.)

At the meeting of the Society held on the 29th October, 1890, I exhibited a specimen of this rare species (adult male) received by me from Otago. I have now the pleasure of exhibiting another specimen (adult female) recently received from Cape Farewell.

There are two examples in the Canterbury Museum; but, so far as I am aware, the species is not represented in any other local collection.

Garrodia nereis, Gould. (The Grey-backed Storm-petrel.)

Captain Fairchild brought me a specimen from Cape Farewell Lighthouse, where it had killed itself by striking against the lantern at night.

Puffinus griseus, Gmelin. (The Sombre Shearwater.)

Of this species there is a partial albino (received from the Snares) in the Auckland Museum. The back is almost entirely white, and the grey plumage of the under-surface is largely mixed with white.

Nesonetta aucklandica, Gray. (The Auckland Island Duck.)

I have now to exhibit another rare form, being the nestling of the Flightless Duck of the Auckland Islands. The body is covered with thick down, with long central filaments, especially on the upper parts. The general colour is dark olivaceous-brown, fading to pale fulvous-brown on the throat and foreneck, and to dull fawn-colour on the breast and abdomen. There is a purer shade of dark-brown passing through the eyes and melting away behind. The rudimentary wings have an outer fringe of yellowish-brown; the produced filaments on the shoulders and mantle are of the same pale colour. The bill is dark-brown, with the terminal shield and the whole of the under mandible yellowish-brown. Legs and feet olivaceous-brown, the webs being darker; claws yellowish-brown.

Hymenolæmus malacorhynchus, Gmelin. (The Blue Duck.)

I have now to exhibit a very interesting specimen of the Blue Mountain Duck in the condition of a fledgling—the first that has come into my possession. In "The Birds of New Zealand" I have described the young bird and the nestling of this species; but this is the intermediate state. The colours are those of the adult, but paler. The long, soft, white down is still present on the throat and lower side of the cheeks, whilst broken or irregular lines of the same proceed from the frontal base and from the sides of the upper mandible, and become scattered beyond the eyes. The dull olive-green down, with

long disunited filaments, still adheres to the crown and other portions of the upper surface, being most pronounced immediately above the tail. The bill is slaty-brown (in the dried specimen), the terminal points of both mandibles and the serrated edges being dull-yellow.

I have already, in writing of the Penguins, stated that I consider the King Penguin (*Aptenodytes longirostris*) the most gentle of the group. Among the Ducks, this distinction undoubtedly belongs to the Blue Duck. The following incident is sufficient evidence of the fact: On the 13th October I was shown by the men at the survey camp a nest of this species in a hollow log lying about twenty yards from the stream at Rikiorangi, some seven or eight miles up the Waikanae River. The duck was on the nest, which was composed of soft down torn from her own body, and there were four eggs, one having been previously broken by the finder. On being captured, the duck, although apparently much frightened, uttered no sound, and made no attempt to escape. We brought her to Wellington shut up in a canvas bag, and, on being taken therefrom some hours later, she sipped water from a drinking-cup in the most unconcerned way. On being placed in a cage with her nest and eggs, she immediately claimed possession, and continued to sit, with few interruptions, for several days. But the eggs, which had been long incubated when taken, must have got chilled in transmission, for the duck, having apparently discovered that they were lifeless, first turned one out and then abandoned the nest. I do not know of any species of wild duck that, under similar circumstances, would have resumed, even for a time, the work of incubation. Had the duck been left undisturbed she would have hatched out her young in about a week or ten days. Some clutches, however, are earlier, for in the stream near which this nest was discovered a pair of Blue Duck had been disporting with five young ones for more than a week before our arrival.

The young of the first year has much less chestnut on the breast than the adult bird, all the true pectoral and surrounding feathers having only a minute spot of rufous with a point of black beyond, giving a speckled appearance to that part of the body; the head is washed with brown, and so is the mantle; the irides are dark-brown instead of being golden-yellow; and the bill is bluish-grey instead of white.

The eggs vary slightly in size, but 2·3in. in length by 1·5in. in breadth may be taken as a fair measurement. They are of a beautiful ovoido-elliptical shape; and, on being washed, the surface presents a delicate pale cream-colour, the green tinge referred to in "The Birds of New Zealand" (vol. ii., p. 278) being apparently due to soiling by contact with the

bird's feet. One of these specimens also exhibited a decidedly green tinge before being washed.

Mergus australis, Hombr. et Jacq. (The Auckland Islands Merganser.)

I have much pleasure in now exhibiting the young of one of the rarest of our endemic species, the Merganser of the Auckland Islands. The bird exhibited is apparently about a week or ten days old. It is covered with thick, long, and somewhat glossy down. The upper part and sides of the head, the hindneck, and the entire upper surface and sides of the body, dark olive-brown; throat and foreneck and spot under each eye, bright rufous, fading away towards the breast; under-surface yellowish-white; wings dark olive-brown, marked along the outer edge and longitudinally on the under-surface with yellowish-white. Bill very dark olive, shaded with brown on the ridge, the terminal shield on both mandibles reddish-brown with a polished surface; legs and feet dull olive-brown, paler on the toes, the interdigital webs darker, and the claws yellowish-brown.

It is very desirable that specimens of this interesting form in the adult state should be obtained for our museums before it is too late. Although the "Hinemoa" makes periodical visits to the Auckland Islands, its only known habitat, and eager search is made, the bird is scarcely ever seen; but in the absence of the natural enemies, which abound elsewhere, there is no reason why the species should become extinct. There is a good specimen in the Colonial Museum, and, I think, another in the Otago Museum. The British Museum collection contains a pair; there is another pair in the Imperial Museum at Vienna, and a single specimen in the University Museum at Cambridge. Besides those in my own collection this completes, as far as I am aware, the known record of this interesting species.

It will be noticed that the toothed character of the mandibles is well developed even in the nestling.

Eudyptes pachyrhynchus, Gray. (The Crested Penguin.)

At the end of February I saw a nestling of this species partly fledged. The down of the upper surface sooty-black, with a brownish tinge; that of the under-parts white, excepting a band of the dark colour, which crosses the foreneck under the chin.

Eudyptes chrysolophus, Brandt. (The Royal Penguin.)

I am able now to give the measurements of this species, taken from specimens in the flesh, from Macquarie Island.

Adult Male.—Length, 29in.; extent, 23·5in.; length of

flipper, 9in.; bill, along the ridge 3·25in., along the edge of lower mandible 3·5in.; tarsus, 1·5in.; middle toe and claw, 3·7in.

Adult Female.—Length, 26·5in.; extent, 21in.; length of flipper, 8in.; bill, along the ridge 2·5in., along the edge of lower mandible 2·8in.

The birds having just completed their seasonal moult, their tails have not grown, and therefore no measurements are given.

In both sexes the feet are of a delicate yellow colour. Irides bright chestnut-red; the eye flat, as in the other species, having the appearance of a button, the pupil being extremely small. At the angle of the mouth there is a fleshy membrane of a dull pink colour, forming, when the bill is closed, a conspicuous, slightly tumid, triangular patch. The sexes are alike, but the male has a more robust bill and a larger amount of golden yellow in the vertex and crest.

It is very certain that this is not the same species as that referred to *E. chrysolophus*, with a query, by Dr. Kidder in his notes on the Birds of Kerguelen Island (Bull. U.S. Nat. Mus., 1875, pp. 45, 46). The measurements he gives point to a much smaller bird, the largest of his specimens being only 23·85in. in length, with an extent of 15·5in., and a flipper measuring 6·5in. in length. Besides, the information which he gives of the habits of his Penguin does not fit in with what we know of *Eudyptes chrysolophus*. He writes: "The nests are rather more distinct than those of *Pygoscelis*, and most of them were lined with dried grass. Each contained two white eggs, of which one was usually larger than the other; and both birds were, as a rule, by each nest. Whether one hunts to feed the other or not, I cannot say. A small flock came in from sea while I was present, announcing their arrival by a single shrill whistle, frequently repeated, and answered from the shore. They were wonderfully courageous, erecting their sulphur-coloured plumes and trembling all over with excitement on my approach, while they kept up a strident cackling that was almost deafening. Although knocked off their nests and driven over the steep rocks for often 12ft. or 15ft., they would pick themselves up and scramble back again with unabated courage, threatening, and even biting sharply, to the very last. . . . . The apparent widening of the cheeks, caused by the erectile plumes and the position of the feathers below them, looking not unlike 'whiskers' on a front view, have given rise to the name of 'sea-cats,' occasionally applied to these birds."

It is abundantly evident from the above extracts that Dr. Kidder was writing of a very different bird from ours and a much smaller one: indeed, he refers to it as a "brave little

Penguin." I have no doubt whatever that I am right in my identification of the true *E. chrysolophus*, because, in company with Mr. R. Bowdler Sharpe, who had been working out the Penguins, I examined a good series of specimens in the British Museum so labelled; and, as I have now explained, this is the young state of *E. schlegeli*, which, for the reason I have before given, sinks into a synonym.

Aptenodytes longirostris, Scop. (The King Penguin.)

The young of the second year differs from the adult in having the corniform occipito-lateral markings detached from the yellow of the foreneck, and these as well as the latter, instead of being bright yellow, have only a wash of pale lemon-yellow on a white ground. The green velvety sheen, so conspicuous in the adult, is absent from the head and throat, these parts being dull black. The plumage of the upper parts is darker and lacks much of the slaty-blue hue which characterizes the adult.

In a previous paper I have described the nestling and the young of the first year, these transitional states being very curious and interesting.

Apteryx oweni, Gould. (The Little Grey Kiwi.)

Mr. Percy Seymour, who has been residing some years at Preservation Inlet, collecting the birds in that locality for European museums, writes me, under date the 17th July, "I have ascertained that since this time last year *Apteryx oweni* has bred, at intervals of about seven weeks or so, no less than *five* times, if not *six*." If this be the case there ought to be no difficulty in perpetuating the species, if the surrounding conditions are favourable. Whatever its fecundity may be, however, a wingless species stands no chance whatever in the face of stoats, ferrets, and weasels, of which some thousands have lately been introduced by the Government and turned loose in all parts of the country, in the hope of suppressing the rabbits.* The only chance now of saving the various species of apterous birds is in their complete isolation. If Lord Onslow's proposal to set apart the Little Barrier Island in the North and Resolution Island in the South as inviolable

* It is too late now to discuss the wisdom or folly of this introduction. But there is reason to fear that the colonists will soon become familiar with reports of the kind recently telegraphed from Palmerston North, as follows: "A child named Just was attacked on Sunday morning, whi playing on the racecourse, by four stoats, two of which fastened on to the child's neck, maintaining their hold until driven away by the child's parents, whose attention was attracted by the screaming of the child. A number of lambs were also found dead on the course, appearances indicating that their death has been caused by stoats."

preserves, stocking them from time to time with all the desirable species and placing them under the strictest protection, be carried out, then we may hope to be able to save from extinction some, if not all, of these interesting forms. Failing that, their final extirpation is not far distant, and the student of the future will have nothing left to him but the dried specimens in European and colonial museums, and such memoirs of the indigenous species as the industry or opportunities of present observers may have furnished. I have done what I could, both by pen and pencil, to preserve a history of all these birds, but I believe we have yet much to learn respecting many, if not all, of them; and on every account it is most desirable that the birds themselves should be preserved, with, as far as may be possible, their natural environment.

ART. IV.—*On the large Kiwi from Stewart Island* (Apteryx maxima).

By Sir WALTER L. BULLER, K.C.M.G., D.Sc., F.R.S.

[*Read before the Wellington Philosophical Society, 24th February, 1892.*]

AT a meeting of this Society, held on the 2nd July, 1890, I exhibited and made remarks on a large Kiwi from Stewart Island, which I had no hesitation in referring to *Apteryx maxima*, Jules Verreaux (see Trans., vol. xxiii., pp. 602, 603). At that time, as I then stated, this was the only known example of the species in any public or private collection. Since that date, however, four more examples, two males and two females (all from Stewart Island), have been brought to Wellington, and I had favourable opportunities of examining them before they were shipped alive for Europe. All these birds presented the same distinguishing characters as the specimen I had the pleasure of exhibiting; so that the species may now be considered well established. One of the females was even larger in all its proportions. This was one of a pair sent to England by the "Arawa" in December last, consigned to a private collector, who had already received the former pair in safety.

On the day prior to their shipment I made the following descriptive notes:—

Male.—Extreme length, following curvature of the back 30·5in., to end of outstretched legs 36·5in.; bill, along the ridge 5·5in., along the edge of lower mandible 5·5in.; from