

the genus *Lycosa*, and it is so well known that the bite of the great majority of spiders is innocuous, that one feels inclined to doubt whether all these accounts of poisonous spiders are not greatly exaggerated; still, considering the independent sources of our knowledge, we cannot but conclude that many members of the genus *Latrodectus* are highly venomous.

In conclusion I may say, that it is very desirable that all cases of bites of supposed poisonous spiders should be carefully recorded, but only by eye witnesses. I shall be very glad to receive specimens to experiment with.

ART. XI. — *On the Birds of New Zealand.* By T. H. POTTS.

(PART II.)*

(With Illustrations.)

[Read before the Wellington Philosophical Society, June 25, September 17, and October 22; and before the Philosophical Institute of Canterbury, September 7, 1870.]

THE following additional Notes on some of our Birds are offered with a full sense of their want of completeness, which will be felt by those whose habits lead them to gaze on the face of nature. As a record of facts, they have been written at different times and places, for the most part amongst the birds themselves when the leisure hour permitted, in the cultivated garden, beneath the deep shadows of the leafy gully, on the wide expanse of the brown tussock-clad plain, by the rocky coast, or in the gloomy alpine valley.

It is yet possible to reach some secluded spots where the hanging branches of the virgin forests exhibit lovely forms and hues of glorious foliage in all their pristine beauty, still unscathed by fire or bushman's axe; where birds still flutter and carol through revolving seasons of a golden age; where the murderous guns, the stealthy cat, are alike unknown; where the bold confident curiosity of the birds surprises the human trespasser, and teaches him, in the plainest language, the story of the changes effected by the savage barbarity of man.

It is felt that some of the papers may be thought long and tedious; but in explanation, it may be stated that I have since last year met with Gray's *List of the Birds of New Zealand and the Adjacent Islands*, and Mr. Gould's *Handbook to the Birds of Australia*, and thought it desirable to comply as far as possible with a wish expressed in the latter work, and make the notes on the genera *Athene*, *Nestor*, etc., rather full. In the illustrations it will be observed that the majority of the nests figured are those of indigenous species; such a selection, it was thought, would be interesting.

* For Part I., see *Trans. N. Z. Inst.*, Vol. II., Art. VIII., p. 40.

LIST OF BIRDS DESCRIBED IN THIS PAPER.

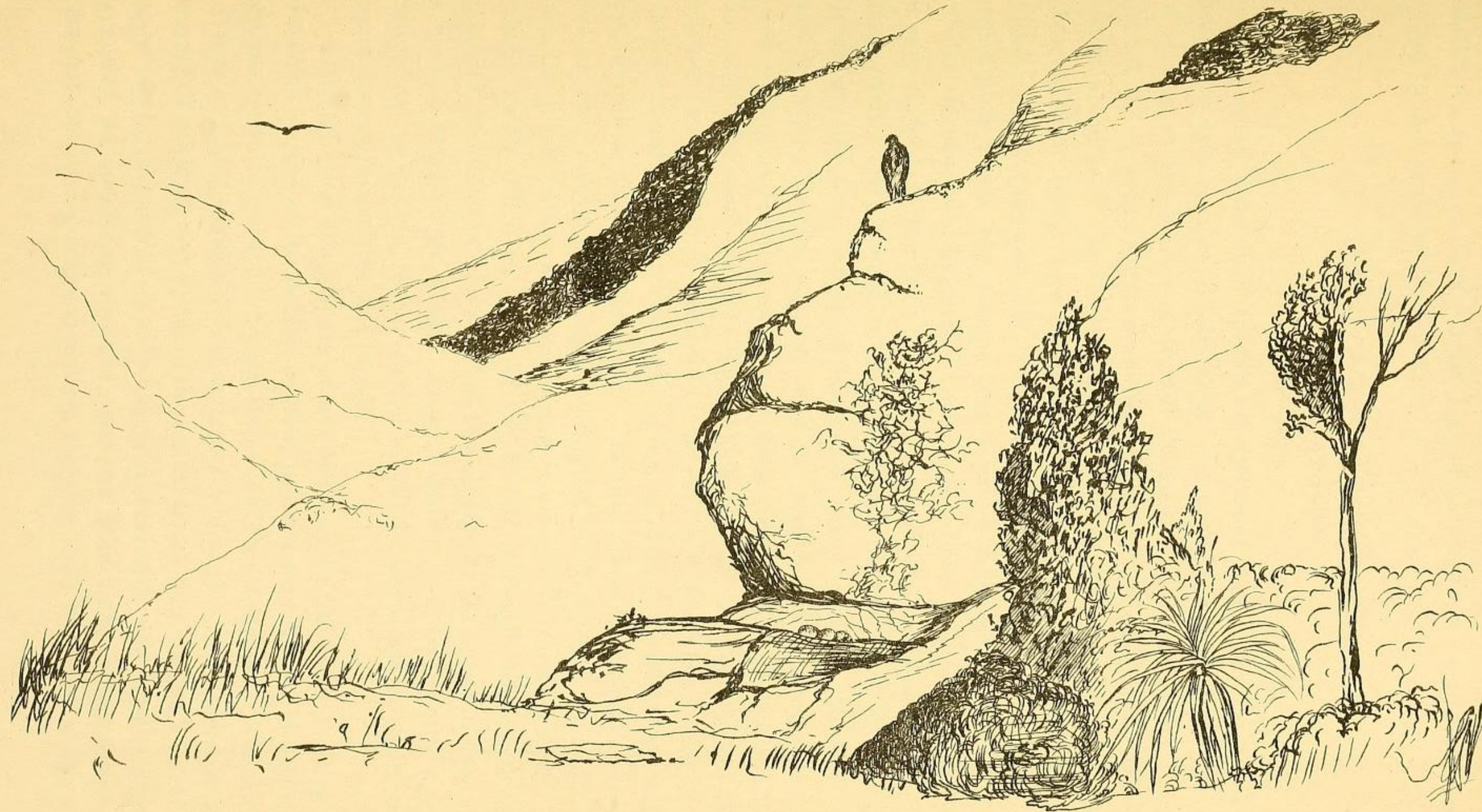
[The species are numbered in conformity with the list given with the author's former paper,—*Trans. N. Z. Institute*, Vol. ii., p. 49.]

- No.
1. Hiericidea (*Falco*) Novæ Zelandiæ, *Gml.*
 3. Athene Novæ Zelandiæ, *Gml.*
 4. „ albifacies, *Gray*, (*ejulans*, *Potts.*) (*Strix* *Haastii*, *Buller.*)
 6. *Strix*? (*parvissima*, *Potts.*) (*delicatula*, *Gould.*)
 7. *Halcyon* *vagans*, *Gray.*
 - B. 7. „ *cinnamominus*, *Swain.*
 11. *Anthornis* *melanura*, *Sparrm.*
 15. *Pogonornis* *cincta*, *Dubus.*
 - B. 19. *Orthonyx* (*Mohoua*) *albicillus*, *Gml.*
[No. 27 of former list.]
 24. *Gerygone* *flaviventris*, *Gray.*
 29. *Petroica* *macrocephala*, *Gml.*
 33. „ *albifrons*, *Gml.*
 34. *Anthus* *Novæ Zelandiæ*, *Gml.*
 35. *Zosterops* *lateralis*, *Lath.*
 37. *Rhipidura* *flabellifera*, *Gml.*
 51. *Nestor* *meridionalis*, *Gml.*
 53. „ *notabilis*, *Gould.*
 56. *Stringops* (*Strigops*) *habroptilus*, *Gray.*
 57. *Eudynamis* *Tahitiensis*, *Gml.*
 60. *Coturnix* *Novæ Zelandiæ*, *Quoy.*
 - B. 65. *Anarhynchus* *frontalis*, *Quoy.*
 74. *Ardea* *sacra*, *Gml.*
 - B. 75. *Ardetta* *pusilla*, *Gould*, (*Botaurus* *minutus*, *Haast.*)
 87. *Ocydromus* *australis*, *Sparrm.*
 91. *Porphyrio* *melanotus*, *Temm.*
 95. *Spatula* *variegata*, *Gould.*
 98. *Hymenolaimus* *malacorhynchus*, *Gml.*
 99. *Podiceps* *rufipectus*, *Gray.*
 - B. 131. *Sterna* (*alba*, sp. nov. ? *Potts.*)
 134. *Phalacrocorax* (*Graculus*) *carbo*, *Linn.*

NO. 1.—FALCO NOVÆ ZELANDIÆ, Gml.

(See also Vol. ii., p. 51.)

As it is probable that further information concerning the genus *Falco* may form the subject of a future paper, it has been thought preferable to reserve



EYRIE or nesting place of FALCO NOVÆ ZELANDIÆ.

See Vol. II Page 51.

W.H. Potts del. J.B. lith.

Printed at the Gen. Gov. Lith. Press.

notes which have been prepared on the question as to whether we possess more than one species of *Falco*; and I will for the present only refer to Plate IX., which represents a nesting place on the edge of a wooded gully, intersecting one of the spurs of Rocky Hill, Malvern Hills, from whence three eggs were taken in the month of November.

NO. 3.—*ATHENE NOVÆ ZELANDIÆ.*

Ruru, rurupeho.

More-pork.

The small number of species of nocturnal *Accipitres* that are at present known to exist in this country is in correspondence with the marked absence of variety in the species of diurnal *Raptors* in our bird system; yet, that it should do so appears unaccountable. In the first place must be noted the entire absence of the *Caprimulgidae*, a family which, in many lands, in the chase of their insect prey compete with several of those species of *Strigidae*, which are crepuscular, or nocturnal, in their habits. The ceaseless persecution which the falcons and harriers have sustained at the hands of the unreflective European settler must have ensured a very abundant supply of food to the owls; some of the smaller mammalia have increased enormously; mice, young rabbits, rats, and insects, form no inconsiderable items in the food supply of hawks in many places. It was therefore not unreasonable to suppose that a considerable increase would have been perceptible in the number of these vermin killers, but the reverse is the case. In most districts with which we are acquainted, the More-pork has become very much scarcer during the last few years; the increase in the number of prowling wild cats, taking up their abode in gullies and bushes, has, doubtless, tended to this result; in such places they could steal upon the owl at its "secure hour," when dozing off the fatigue of midnight rambles; but the prime cause of its increasing scarceness is traceable to the alarming rapidity with which so many of the forests in Southern districts have been damaged or destroyed; the effect of this change in the aspect of the country on a bird so arboreal as *Athene Novæ Zelandiæ* can be readily appreciated, delighting, as it does, in the shelter of the densest shade, wherein to pass its many hours of inactivity and repose.

Although the living figure of our owl may be unknown to most persons, from the nature of its habits, yet few, perhaps very few, of the older settlers are unacquainted with the human-like cry of the More-pork. The distinctness of this call has conferred the name by which this useful bird is generally known throughout every part of the country, and for a similar reason the same name has been bestowed on a *Podargus* in Australia. As soon as night begins to spread its darkening shadows over our brief twilight, this active creature sets out on its hunting excursions, roaming over field and gully with soft,

noiseless flight, one of the advantages it owes to its flocculent plumage; its cry of "morepork, morepork," is repeated at frequent intervals, sometimes with the utmost rapidity of utterance; its course may thus be traced as it emerges from the wooded gullies in the hills, the sound re-echoed in the stilly night by the opposing heights.

The power of voice which has been conferred on the *Strigide* is one of the most remarkable features in their economy, this power is the more striking from being used when nature is hushed into repose; when the owl utters its startling sounds, whilst borne along on noiseless wing, the effect produced on its terrified prey would disclose its presence as surely as though discovered by a gleam of light, as it dashes frantically hither and thither in its wild efforts to escape, unnerved by the war-whoop of its enemy, whose soft, loose plumage enables it to follow the course of the quarry, not only silently but swiftly; far differently indeed from the impetuous rush of the falcon, swooping on its victim in mid-air, yet, perhaps, not the less sure. The course of its terrified prey would probably be tortuous, as it fled bewildered in the darkness, followed in its windings by the glowing orbs of its untiring, relentless pursuer, which could by raising or ruffling its downy feathers offer a resistance to the air that would instantly act as a break in checking such undue speed as might render the bird liable to overshoot its game.

The owl is far from being a timid bird, notwithstanding its love for gloomy shades; often in the summer moonlight have we watched it on a rail or fence close to the sea-beach, probably on the alert to seize various insects that frequented the thickets of *Myoporum*, *Olearia*, *Leptospermum*, etc.; oftener still have we observed it busy on a mousing expedition, at the barn and farm buildings. Allowing a very close approach, within a couple of yards, it was to be seen perched on a post or gate, motionless, all but a slight movement of the head, suddenly disappearing for a few moments, probably long enough to catch and entomb a mouse; its movements occasioned no sound that could be detected by an attentive ear. Now and then a short note was emitted, probably to scare its game into motion, which sounded like a grating scream of "tchoo, tchoo."

Of its breeding habits we know but little. About three years since, two young birds were found in an old decayed tree in the bush by Cooper's Knobs, at the head of Lyttelton Harbour. An old breeding-place in a hollow rock in the bush at Ohinitahi, furnished a quantity of castings; from an examination of these, which contained remains of mice, *Cicadee*, *Coleoptere*, etc., it appeared probable that spiders, taken in their webs, formed some portion of their food.

Superstitious fancies, and even dread of the owl, has at times prevailed almost everywhere. "The oule eke, that of deth the bode ybringeth," sang the father of English poetry, and we learn from Colenso that some of the Maori tribes disliked the owl, which they persecuted and killed. Should a

remnant survive the hard times of the first rough settlement of the country, there is little doubt its usefulness will be properly recognised and appreciated as a farmers' friend.

We have known a More-pork remain for several weeks in a deep shady gully close to the house ; if disturbed during the daytime it appeared dazed, its flight irregular and awkward, the bird seemingly anxious only for concealment in the grateful shelter of the nearest dusky patch of shade it could reach. It is not unfrequently found in barns or sheds, sleeping on the roof ; if molested, using its beak freely on the hands of its captor. A friend of ours captured one by hand whilst it was sitting on a fence in the twilight hour.

NO. 4.—ATHENE ALBIFACIES, Gray, (EJULANS, Potts.)

Sceloglaux albifacies, Gould.

Wekau.

Laughing Jackass.

However much changes in nomenclature are to be deprecated, the specific name which has been hitherto assigned to the large owl, the Wekau of the Maoris, appears so inappropriate, failing, as it does, to convey anything like a correct impression of the bird's appearance, that we are tempted to offer the above as an amendment, one that is intended to express the leading characteristic by which it is best known in the localities which it frequents.

We have enjoyed opportunities of observing living examples, of examining freshly killed as well as finely-preserved specimens, but have not yet met with a white-faced bird ; on the other hand, its loud cry, made up of a series of dismal shrieks frequently repeated, waking the tired sleeper with almost a shudder, at once distinguishes the "Laughing Jackass" as one of the peculiarities of the mountain districts. Will these reasons be held to be of sufficient weight to justify the proposed alteration of its specific title ? Why it should share with one of our petrels and the great *Dacelo* of Australia the trivial name of "laughing jackass" we know not ; if its cry resembles laughter at all, it is the uncontrollable outburst, the convulsive shout of insanity ; we have never been able to trace the faintest approach to mirthful sound in the unearthly yells of this once mysterious night bird—mysterious, because for years unsuccessful attempts had been made to secure a specimen of this dismal visitor, whose fitful presence at eventide was scarcely observed before its form was lost to view in the deepening gloom of approaching night. A sea-bird, one of the *Procellariidæ*, *P. Cookii*, gives utterance to a very mild version of the Wekau's call, especially before rain it is averred, but the petrel's note is wanting in the intensity of the dreadfully doleful shrieks to which the owl gives utterance. (See Captain Hutton's "Notes on the Birds of the Little Barrier Island," *Trans.*, Vol. i., p. 162.) Mr. W. Newton lately, at the Levels Station, near Timaru, secured a specimen of the Laughing Jackass whilst engaged

in the very act of making night hideous, so that all doubt has been removed as to the bird from which this startling cry proceeds ; this night-call was referred to in "Notes on the Birds of New Zealand," *Trans.*, Vol. ii., pp. 45, 46.

In 1854, at Rockwood, in the Malvern Hills, we first became acquainted with the Wekau ; it had been captured in a drain or ditch, and lived in a half-tamed state for some time, beneath the house, till unfortunately destroyed by a visitor's dog. At the present time a very fine owl may be seen at the Christchurch Acclimatization Gardens, where it has lived in confinement about two years ; we believe it was obtained from the Cass River.

In its customary position, when at rest, the great length of the tarsi are concealed by the plumage of the breast, the head feathers are so raised as to increase the apparent size of the head, this lessens very much the hawk-like appearance which the prominent beak usually gives to preserved skins of this bird ; the large brown eyes are very striking, but so sensitive that the owl apparently suffers great discomfort when forced into daylight ; the irides then become scarcely discernable ; the tarsi densely feathered, on examination appear remarkable for their depth no less than their length, the skin feeling loose or free to the touch ; in dried skins this of course could not be observed ; much of the peculiar character of the nostrils also is lost in preserved skins ; the toes dull flesh colour, sparsely covered with hairs ; the claws white, much curved, and sharp. The entire plumage is of warmer shades of brown than most of the specimens which we have seen, but has no claim to a white face ; the outer edge of the facial disk, where it covers the auditory conch, is whitish grizzle ; the nostrils appear raised or swollen. The Curator of the Gardens states that he has heard the cry uttered but rarely, it was of a most dismal character ; it is fed on mice, rats, and birds ; it refuses to eat any kind of meat that may be thrown to it ; its sight is thought to be affected.

Some years since, we saw a fine bird which had been caught on the preceding night by a bushman, on the Upper Rangitata Flat ; the intelligent captor signalized his good fortune by chopping off the head of his victim with the ever-ready axe. The look of satisfied triumph, as the bird was pointed at, we never saw equalled, except perhaps on one occasion, when a friend, fresh from town, entered the house with the mangled remains of a tame kaka, which he had blown almost to pieces in a kowhai tree, from whence poor Bess had unfortunately studied the stranger's face too closely. A Wekau entered a shepherd's whare at the foot of Mount Hutt, and remained for several days, perching in the roof ; on one occasion it seized a mouse which a cat had just brought in. Another visitor of this species remained in a station on the Rangitata for some weeks. Last year, a fine light-coloured specimen was obtained at the Point Station, Malvern Hills ; when killed it was perched on the rail fence, not many yards distant from the house. Of the examples in the Canterbury Museum, one was procured from the Kakahu Bush, near

Arowhenua ; another, killed at the Levels Station, as before stated, was presented to the Museum by Mr. Donald Maclean.

Mr. E. Dobson states that the Waimatamate Maoris describe this owl as living in holes in the rocks ; they call it Kakaha ; they say it is as large as a pigeon (*Carpophaga Novæ Zelandiæ*), with a white breast, that it has a "wide mouth bill," comes out at night only, and flies without noise.

Dr. Haast says that the owl provisionally named by Mr. Buller, *Strix Haastii*, is according to his opinion, *Athene egulans* ; it was captured by his dog amongst the rocky precipices in a creek near the Lindis Pass, in the Province of Otago ; he also states that one night, in 1861, when camping on the Upper Rangitata, under Mt. Potts, that judging from the noise there must have been many of these birds flying about, that he and his party were kept awake several hours by their shrieking clamour.

In May, 1857, while living in a tent on the Upper Ashburton, we were constantly disturbed at night by their doleful yells amongst the rocky mountain gullies.

Some of the finest specimens known are preserved in the Museum at Dunedin. (See "No. 4, *Athene (Sceloglaux) albifacies*.—'Wekau' or 'Whekau' of the Natives (specimen belonging to Mr. Clapcott)," in Dr. Hector's "Birds of Otago." *Jurors' Reports*, 1865.)*

When disturbed on the ground, it has burst forth into its weird-like cry immediately after taking wing. Its robust form, thickly clothed with soft feathers, is admirably adapted for encountering the severities of climate to which it must be frequently exposed whilst scouring its wild hunting grounds. Far less arboreal than its smaller congener, it roams over the bleakest tracts of country, in many districts where bush of any extent is rarely to be met with, finding shelter amongst the numerous crevices in the rocks of rugged mountain gullies ; strictly nocturnal in its habits, in pursuit of its prey, it must brave the icy blast of the alpine snow storm at the lowest temperature. The severity of the climate in these elevated regions would scarcely be credited by those who have only known the mildness of the coast line. As may be inferred, the real home of this hardy raptorial is amongst the fastnesses of the Southern Alps, from whence it makes casual excursions, by the numerous river beds, to the lower lying grounds, these occasional visits extending as far as the plains. Although well known from its cry, not many specimens have been obtained, as fortunately for its preservation it is seen only at eventide or night. From the enormous increase in the numbers of the introduced rodents, the day is probably not far distant when the farmer will be as anxious for the preservation of the few groups of vermin killers as for the protection of game birds.

* Mr. Clapcott's specimen was obtained at Poptunoa, and others have been seen near Waikouaiti, Shag Valley, and other localities near the coast.—Ed.

The introduction of *Strix flammea* to our widely spread agricultural districts would, it is believed, prove a boon of great value; many other species of perhaps equal worth might be imported through the aid of the flourishing acclimatization societies; much corn might, by this means, be saved from the damage occasioned by the depredations of mice, etc. The risks which the newly-imported bird has to encounter should not be forgotten; it has truly to pass through the *ordeal of fire*; perhaps the intense sporting, not to say destructive, instinct which is occasionally exhibited by certain of our fellow-settlers, may be the shadowy tradition of that once exclusive recreation of the great ones of the earth, that "gift of the gods," that has been styled in earlier days, "Stadium nobilium, communiter venanter, quòd sibi solis licere contendunt."

It is gratifying to reflect on our march of progress and freedom even in such a small matter as this fowling; not that the result has been invariably a subject for congratulation. One of the earliest imported Tasmanian magpies was killed in Lyttelton; of the pair of "silver swans" that graced the Avon, one was bravely encountered and slain near Riccarton; and it was announced within the last few days, that the first partridge which had visited the Rakaia paid with its life for the privilege of gazing on the mighty "Sun stealer."*

The large owl has rarely reached Europe, as, according to Gould's *Handbook to the Birds of Australia*, Vol. ii., Appendix, only two specimens appear to be known there, one of which is in the British Museum. As standard works of reference here are as rare as "pearls of great price," possibly it may be considered convenient to give the two descriptions of this bird from the pen of Mr. G. R. Gray, *Voy. of Ereb. and Terr.*, Birds, and also that by Mr. Gould in his *Handbook*.

Mr. Gray's description of the specimen in the British Museum is as follows:—Dark brown, each feather margined on the sides at the tip with fulvous; quills and tertials brown, spotted with obsolete bands; tail dark brown, with five bands, and the tip of each feather rufous white; forehead and cheeks white, with the shaft of each feather black; tarsi covered with white feathers slightly tinged with rufous; toes covered with scattered white hairs. Length 1 foot $3\frac{1}{2}$ inches; bill from gape 1 inch 4 lines; wings 11 inches; tarsi 2 inches 5 lines. This specimen was obtained at Waikouaiti.

Mr. Gould does not say distinctly whether the following description he

* Said to be so called by the Maoris of Tamatu, because the sun sets behind the mountains that shut in the Gorge of the Rakaia. Our knowledge of the native tongue is so limited that we are unable to declare "Sun stealer" as the correct interpretation of "Rakaia." The idea is not without poetical feeling; the sun, which meant everything to the Maoris of earlier days, and kept away the spirits of darkness, being lost behind the mountains of the Rakaia Gorge, it was not without reason the great river was stigmatized as the Sun stealer.

gives is from the same specimen :—Plumage of the upper surface, chocolate brown, each feather margined with fulvous ; some of the scapularies with a lengthened mark of dull white within the margin, and others on the edge ; primaries spotted along the outer margin with buffy-white ; secondaries and tertiaries crossed by indistinct or interrupted bars of buffy-white, assuming on those near the body the form of spots ; spurious wing very dark brown ; tail brown, crossed by five narrow irregular bars of buffy-white and tipped with fulvous ; facial disk pale sandy-brown, except on the forehead, throat, and ear coverts, which are whitish, each feather with a streak of brownish black down the centre ; feathers of the under surface deep fulvous, with a broad mark of deep brown down the centre of each, the former tint increasing on the lower part of the abdomen and thighs, when it again gradually fades into dull white on the lower part of the tarsi ; toes sickly green, thinly beset with hair-like feathers ; cere much developed and of a lead colour ; bill bluish horn colour at the base, passing into yellowish horn colour at the tip, the under mandible yellow.

After examining the specimens (four), which are now accessible for the purpose of this paper, the description of the bird killed at the Point Station is given ; it is the lightest-coloured example, and, as will be seen, it bears a close resemblance to those descriptions already presented. Upper surface brown, feathers margined with fulvous, some with a lengthened mark of dull white within the margin ; primaries brown, spotted along the outer web with buffy-white, inner web indistinctly barred with lighter brown, these marks becoming dull white towards the basal part of the quill ; secondaries and tertiaries brown, crossed by interrupted bars of buffy-white, occasionally marked with spots of the same colour almost oval in shape ; tail brown, crossed by five irregular bars of buffy-white tipped with fulvous, mottled or clouded with pale brown ; facial disk palish brown ; forehead and throat grizzle-grey ; ear coverts almost white, with long lanceolate streak down the centre of each feather ; under surface rich fulvous, with a broad mark of dark brown down the centre of each feather ; the apical portions of the light flocculent feathers of the lower part of the abdomen show fulvous ; on examination, two-thirds of the basal portion of each feather is slaty-black ; thighs fulvous ; tarsi pale fulvous ; toes yellowish flesh, with scattered hair-like feathers ; cere much developed, reaching below the nostrils, which are raised ; bill curved from the base, white clouded with horn colour. Measuring from gape to extremity of upper mandible 1 inch 4 lines ; upper mandible extends beyond the lower 2 lines ; wings slightly concave, nearly 13 inches, fourth quill feather longest ; legs long ; tarsi 2 inches 8 lines ; total length 17 inches 3 lines.

A description of a specimen in the Dunedin Museum is as follows :—Length from top of head to end of tail $16\frac{3}{8}$ inches ; wing from tip to flexure point $10\frac{1}{4}$ inches ; tarsus $3\frac{3}{8}$ inches ; hind toe and claw $\frac{7}{8}$ inch ; middle toe and

claw $1\frac{1}{2}$ inch; foot covered with thin bristly hairs, feathered to foot. The feathers in disc which encircles the eyes, are of a dark grey colour, of a thin bristly appearance before the ears, but behind the ears there is a collar of soft white feathers from the top of ears under the chin, forming the outer edge of disc round the eyes; feathers from beak, over top of head to back, dark brown centre with bright buff margins; coverlets of wings dull brown with buff flakes; primaries of wings and tail dull brown with buff or dirty white bar across; breast brown centre with broad buff margins, the margins getting lighter and broader as they go down the body to abdomen, which is yellowish; legs light mealy colour, buff and brown. For the above we are indebted to Mr. Purdie, Curator of the Dunedin Museum.

However tedious these descriptions may appear, they are presented in order that we may arrive at the true history of the bird; there can be no doubt as to the specific identity of the owls described, there may be slight variances in shades of colour, but certainly not more than would be observed in a very small party of human beings that might be assembled from any English village or petty town. Here, doubts are entertained by some, not only whether the large owl is the bird which has been named *A. albifacies*, but also, whether it is other than a large specimen of the more-pork, *Athene Novae Zelandiae*; the former of these doubts may possibly be removed by a perusal of the foregoing descriptions and a careful comparison with the specimens that are accessible, whilst it appears curious that the latter opinion should be seriously entertained, when it is considered that in order to sustain it a bird must exhibit a total change in habits, voice, to a certain extent locality, and an increase in size to at least one-half.

No. 6.—*STRIX PARVISSIMA*, Ellman. (*Zool.*, 1861.)

Little Owl.

Amongst the desiderata of our public collections the Little Owl has for some time held a place; many doubt its existence, few have seen it, still fewer have preserved any note or observation concerning it. From the information that has been gleaned about this rare bird, it would appear that its habitat must be the bushes about the Rangitata River.

One correspondent saw it on the bank of a creek at no great distance from Mount Peel Forest, it was between the roots of a large tree; observation was drawn to it by the proceedings of several tuis, who were persecuting it to the best of their ability; it was whilst its attention was engaged by these noisy assailants that the bird was secured. It was about the size of a kingfisher, and its captor felt quite certain of its being an adult specimen; it was carried home to be shown as a curiosity, and was afterwards liberated. Unlike the more-pork, when captured it was exceedingly gentle.

Another specimen was procured by a gentleman in one of the bushes far

above the Rangitata Gorge; on being observed on a branch of a tree, it was knocked down and caught during its fall; there was fur on its beak, as though it had not long before devoured a mouse; this bird was also set at liberty.

Two other instances of its occurrence have been communicated, but without further information. It may be mentioned that one of these was again on the Rangitata.

At Shepherd Bush Station, on the Rangitata, opposite Peel Forest, a specimen was observed in the house, greatly resembling *A. Novæ Zelandiæ*, except in size, which was about that of a kingfisher; it was most gentle in its habits, remaining quiet during the daytime and sallied forth in the evening, regaining its perch by entering through a broken window. This pretty little visitor thus frequented the house for about a fortnight; it should be added that the house stands close to a small bush composed chiefly of *Leptospermum*, *Griselinia*, etc., of which there are many aged specimens.

From these notices it may be safely inferred that the Little Owl is arboreal in its habits, and possibly not so strictly nocturnal as its better known congeners; whether it is to be considered identical with either of the species referred to by Dr. Finsch is, of course, at present unknown; it is certain it is not a tufted species, or such a remarkable form would have been noticed.

No. 7.—HALCYON VAGANS, Gray.

(See also Vol. ii., p. 52.)

Towards autumn, these, our intimate friends, who have been absent during the summer on urgent family affairs, make their welcome re-appearance in the gardens; they may now be seen in numbers; early in the month of March it would not be difficult to count a dozen of them at one time on the posts and espalier rails. When not engaged in making those well-known rapid darts, their habit is to remain perfectly still, and, for the most part, silent; they indulge in no joyous fluttering amongst trees and shrubs, they pour forth no melodious song, for their various cries are most unmusical and harsh. Our species shares that sedate gravity of the family which has long been remarked, even by such writers as one of the butterfly poets of the "Merrie Monarch's" Court, who wrote,—

"That with such *Halcyon calmness* fix our soules
In steadfast peace, as no affright controules."

To us this gravity seems to verge on melancholy, and Dryden's expression, when he calls them "the mournful race," appears apt enough. Burton's wonderful book bears on its quaint frontispiece the figure of the kingfisher occupying a place amongst the several emblems of jealous melancholy, which he thus describes,—

"To th' left, a landskip of jealousy
Presents itself unto thine eye—
A Kingfisher ——"

When perched on its commanding stand-point, from the tarsi being entirely concealed by the over-lapping breast feathers, its figure is greatly puffed out; its contour assumes a rotundity quite aldermanic. Its omnivorous propensities and monstrous appetite duly considered, perhaps the resemblance might be carried still further than a fancied likeness, when apparently suffering the pangs of repletion. This ravenous appetite, useful as it proves in many respects, we fear often leads its possessor into trouble. The Kingfisher is not afraid of man, does not shun the cultivated homestead; it finds the unplumed biped profitable, as in the sweat of his brow and by the toil of his strong hands, fields are ploughed and gardens dug where the root-matted earth has never been exposed before, and a rich feast is provided for the robust-beaked bird, into whose craving maw the larvæ of many destructive insects descend, to the great advantage of the cultivator. Its labours even then are not always gratefully appreciated; its gaudy plumage often ensures tribulation, perhaps death, and then in a glass case, surrounded by brilliant butterflies, seaweed, moss, shells, and such like *appropriate* accessories, it undergoes a species of apotheosis, from its place on high, glaring fixedly at the world beneath.

On looking at its favourite perches about the beach (it is a creature of habit, and makes use of the same resting place again and again), remains of *Crustaceæ* may be found, on posts, trees, rocks, thwarts or gunwales of boats; amongst the *disjecta membra* we have seen, yet rarely, the remains of fish. It does not wholly despise bees, thereby proving a distant cousinship with the *Alcyonic Merops*; that it devours "mice and such small deer" we know. Sometimes grave charges are preferred against our omnivorous friend, as may be gathered from the report of the Auckland Acclimatization Society for 1868-69:—"The Curator states that the *Kingfisher* has proved very troublesome in destroying birds, having killed a Californian quail and attacked another bird, which, however, made its escape." In Otago they have been accused of purloining the speckled trout; in Christchurch Gardens, the shallow artificial streams, where the newly-hatched trout are nursed, receive the protection of wire netting, thus the young fish are kept safe, both from the fishing spear of this bird and the enterprising beak of the large shag. The Curator found by examination that out of about a dozen Kingfishers that had been destroyed, not one contained remains of small birds.

On the whole, there is no doubt that it is far better policy for the settler to protect this useful bird, as an insect destroyer, than to persecute it for an occasional attack on small birds or young fish; with anything like good management, loss to any extent from this cause might be avoided.

When its prey is captured, it is very rarely eaten on the ground; the shortness of the tarsi (only about 6 lines in length), and the comparatively feeble feet are not adapted for locomotion, either by walking or climbing. Its keen eyesight is remarkable; amongst grass it can detect an insect,

although yards distant from its stand-point ; often it may be noticed perched on a small fragment of rock by the mud-flats of the harbour, certainly at a less elevation than one foot from the surrounding level surface, at several yards distance it has seen some small *Crustaceæ* moving, in an instant the dash is made, the prey captured, and, very often, the *same stone* occupied. This sudden feat is performed repeatedly within half an hour ; it shows how admirably the structure of the bird must be adapted for bearing the very severe strain to which certain parts of its frame must be exposed during this trying evolution ; in commencing its swift dart it may derive some assistance from its perch by using it as a fulcrum, with its long spear-like bill carried straight, it shoots to its mark, cleaving the air like a winged wedge ; nor is there any perceptible motion of the wings till the prey is secured ; with a sudden twist, a few rapid strokes of the wing, and the return is accomplished. Although it appears so difficult to effect, yet in the great majority of cases its return is made by a very sharp curve, rather than by a gentle sweep, extending its flight to some more convenient perch.

Its power of vision may be judged of by the following note, entered at the time:—May 10.—Noticed a Kingfisher flying higher than usual, almost in a straight line, apparently making for a dead tree across our little bay ; when out over a hundred yards, it suddenly and rapidly turned in its course, retracing its line to the starting point (a large *Eucalyptus*) ; when perched, observed it busy with a large insect which it had secured. This feat appeared rather that of a *Merops* than that of the bird we call a Kingfisher.

Far inland, the bird is comparatively rare ; we have not observed its breeding-place at any considerable distance from the coast line. Its song of courtship is a harsh, scraping, clashing sound, most unmusical.

It has been mentioned before that it is a creature of habit ; this is borne out by observing its favourite roosting places ; the same trees are occupied, although the birds have been repeatedly disturbed at night by the glare of a lanthorn ; the soil below is whitened with the liquid fœces ; castings also abound there. The hillside bush is not unfrequently sought for a breeding place.

No. B. 7.—HALCYON CINNAMOMINUS, Swain.

We have never enjoyed the opportunity of observing a specimen of this member of the *Alcedinidæ*, but in the interests of ornithology feel bound to mention communications received from two friends of the writer, living far apart, who are in the constant habit of observing, noting and collecting specimens of natural history.

Mr. E.,—noticed a brown or dun-coloured bird at Akaroa, in 1861, in which locality Kingfishers are more or less abundant ; at a later period he

observed, near Peel Forest, another specimen, which he is confident was not the well known *H. vagans*.

Mr. P.,—observed, February 15, 1870, at his station, in the Malvern Hills, a very dark Kingfisher sitting on the fence, but, as he was busy with his sheep, no attempt was made to secure the specimen.

It may be mentioned, that at localities so far inland as the Malvern Hills and Peel Forest, Kingfishers are far more scarce than near the coast, their appearance at any time would there be likely to attract notice. Under the circumstances, it would seem premature to expunge this second species of *Halcyon* from the list of native birds. Swainson named it; Hector is of opinion that he once shot a specimen; Buller makes a stand for it, and contests that the question of its existence here is undetermined.

The two friends whose observations have been communicated are both men who, as Hamlet says, “know a hawk from a handsaw” (*heronshaw*). May we keep it a little longer on our list?

No. 11.—*ANTHORNIS MELANURA*, Sparrm.

(See also Vol. ii., p. 56.)

To the practised ear and eye, the sexes are readily distinguishable. This bird seems destined to play an important part in the distribution and propagation by seed of many introduced plants; within the last few years we have observed within the outskirts of the bush many flourishing specimens of *Ribes*, *Leycesteria*, *Hypericum*, etc., the seeds of which have been carried thither from our gardens and shrubberies.

The Koromako in the *Fagus* forests may be frequently observed ascending the bole of the black birch after the honey drops; its mode of climbing differs from that of the kaka, kakariki, tui, or piwauwau, its progress is assisted by a slight flutter of the wings. We have noticed some birds with the irides cherry or bright blood-red.

The following notes may throw some light on the question mooted by Dr. Finsch and Mr. Buller as to the value of the species, *A. ruficeps*, Pelzeln. August 7.—A Bell-bird (hen) on the camellias, head feathers of bright lavender-blue, quite a contrast to the dark purplish tint of well-plumaged males; it was some time before this gay marking could be satisfactorily accounted for, every likely plant in the garden then in flower was examined, but without success; in a few days many individuals were noticed adorned with the head feathers similarly coloured; it was at length (September 10) traced to the freshly opened blossoms of the native fuchsia (*Fuchsia excorticata*). March 10.—Saw a nest with young birds, about two or three days old; this is the latest brood we have met with. September 29.—Nest of *Anthornis melanura* just finished in the fork of an old *Cordyline australis*, hen carrying up lining feathers. October 2.—Nest contained three eggs; 3rd—hen sitting close; 13th—young

hatched, showing a period of about ten days for incubation. November 23.—Nest in a *Myoporum*, about four feet from the ground ; the tree is at the edge of a path constantly used. The hen sits very close ; we have gently removed her sometimes to look at the eggs, when this has occurred the cock bird has been hastily summoned ; both birds have appeared very anxious, bustling about the nesting place, till the hen has thought fit to resume her duties, the cock bird still lingering about the nest till seeing his partner and her charge quite secure, he has darted off to resume his interrupted feast of honied blossoms.

In these advanced days, when female rights find redoubtable champions on every side, justice to our country induces us to criticise statements long since advanced by a worthy ornithologist ; whatever may be the custom of birds in the old country as to the distribution of labour and accomplishments between the sexes, perhaps, from mysterious antipodean influences, a different regime prevails in our land of tree ferns and *Phormium*.

Pennant wrote,—“It may be worthy of observation, that the *female of no species* of birds ever sings ; with birds it is the reverse of what occurs in human kind ; among the feathered tribe all the cares of life fall to the lot of the tender sex ; theirs is the fatigue of incubation, and the principal share in nursing the helpless brood ; to alleviate these fatigues, and to support her under them, nature hath given to the male the song, with all the little blandishments and soothing arts ; these he fondly exerts (even after courtship) on some spray contiguous to the nest, during the time his mate is performing her parental duties.”

Some of the assertions contained in this quotation from the celebrated naturalist are not borne out by the habits of our native birds ; briefly, the song of the female *Anthornis* is very often heard ; unfortunately attempts to convey an idea of the sound of bird notes are always more or less incomprehensible, or rather *unutterable* failures, so no endeavour will be made here to write down her melody. Through the general harmony of song in the bushy gullies, one frequently hears the clashing of the female kingfisher's harsh notes. Thus much for the *accomplishments* of our females ; it must be added, in all fairness to the sterner sex, that they *do* share in the labours of the family ; the cock flycatcher assists in the fatigues of nest building, takes his turn in the duties of incubation and feeding the young—abundant evidence that *here* females are not mere drudges after all. With regard to the reason suggested for the male being endowed with the gift of song, it is admirable for its sentiment only it happens that we have listened with delight to the melody of birds long after the breeding season has passed away, when the cold winds in the shortening days of May have given warning that winter was at hand. In the higher alpine districts what changes occur in the voices of birds ; with *A. melanura* this fact is very noticeable, to our ears its vocal efforts there are more pleasing than those of the dwellers in more favoured spots.

No. 15.—*POGONORNIS CINCTA*, Dubus.

(See also Vol. ii., p. 57.)

The nest figured on Plate XII. was obtained from the bush near Kaiwarawara, in the neighbourhood of the city of Wellington, and is described in my previous Notes cited above.

No. B. 19.—*ORTHONYX (MOHOVA) ALBICILLUS*, Gml.

Hihipopokera.

Certhiparus albicilla, the nest figured on Plate XI. was drawn from a specimen obtained near Wellington, where the bird may be seen in considerable numbers; its habits so closely resemble those of *Mohoua ochrocephala*, that one sees with regret that ornithologists have lately seen fit to class it with another group. Description of the nest is given in Vol. ii., p. 59.

[It will be observed (*ante*, page 40) that both Buller and Finsch have agreed that this bird shall be placed along with *Mohoua ochrocephala*, under the genus *Orthonyx*.—ED.]

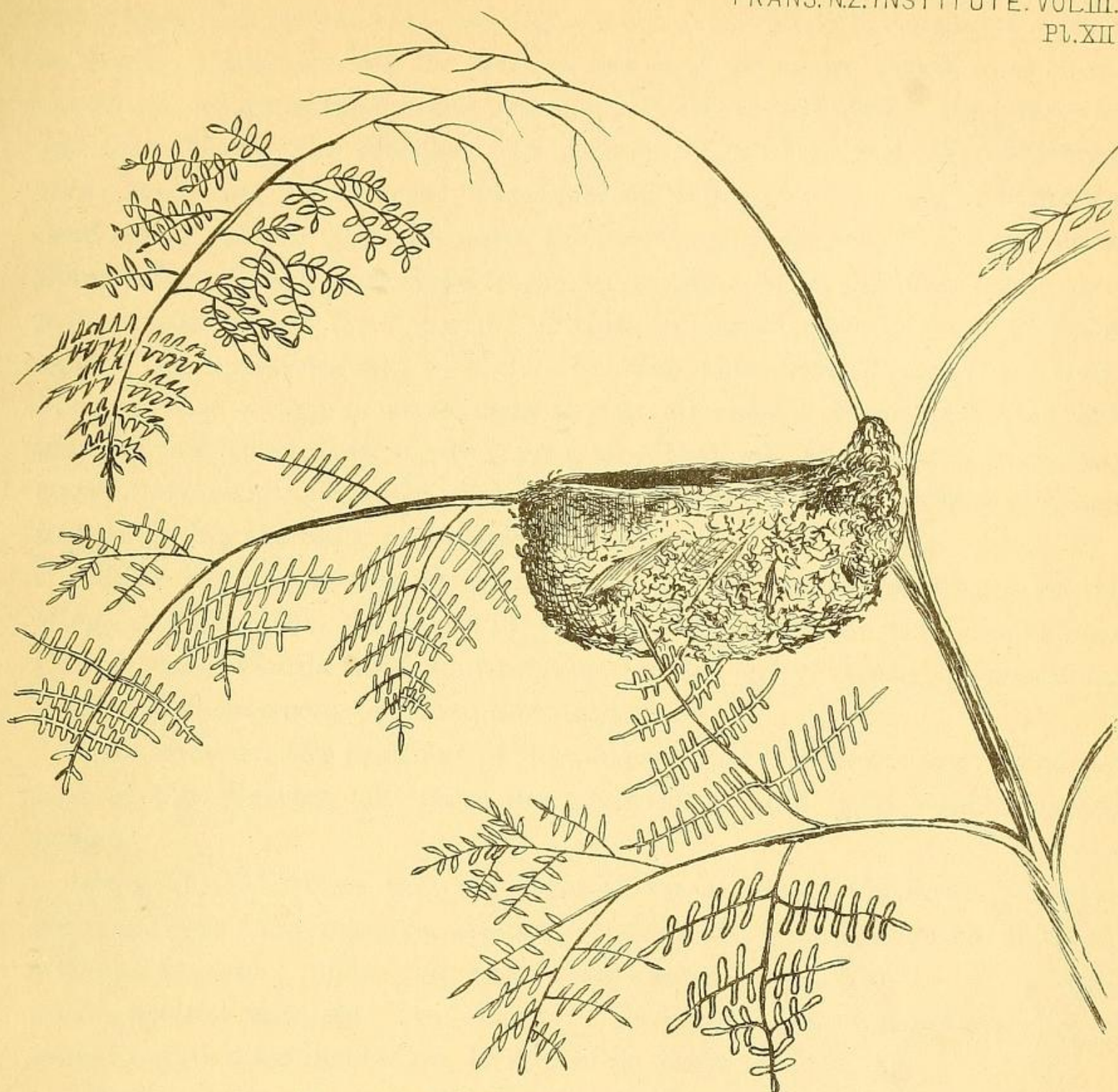
No. 24.—*GERYGONE FLAVIVENTRIS*, Gray.

Piripiri.

Warbler.

In the Notes on the breeding habits of New Zealand birds (*Trans. N. Z. Inst.*, Vol. ii., p. 59) the reason was given why *G. assimilis* was adopted as the specific name for the Warbler, instead of *G. flaviventris*. Considerable importance appears to be attached to the mode of nidification as a reason for making two species, as may be gathered from a foot note in Mr. Buller's *Essay*, p. 9, describing the nests and eggs of the Warbler; the eggs of *G. assimilis* are there said to be "marked at the larger end with reddish spots on a white ground, while the eggs of the other species usually number four, are about one-third less in size, and of pure white." In *Trans. N. Z. Inst.*, Vol. ii., p. 387, Mr. Buller writes,—“I am not aware that I ever met with *G. assimilis* in the South Island.” To these notes it may be replied, that we have lately deposited in the Canterbury Museum an interesting series of the eggs of this cheerful little warbler, all collected in the *South* Island, and taken from nests which, from their construction, would answer either of the descriptions given in Mr. Buller's essay; an inspection of these eggs will show their variation in colour from pure white specimens to others richly sprinkled with reddish marks; the white are *by far* the rarest eggs.

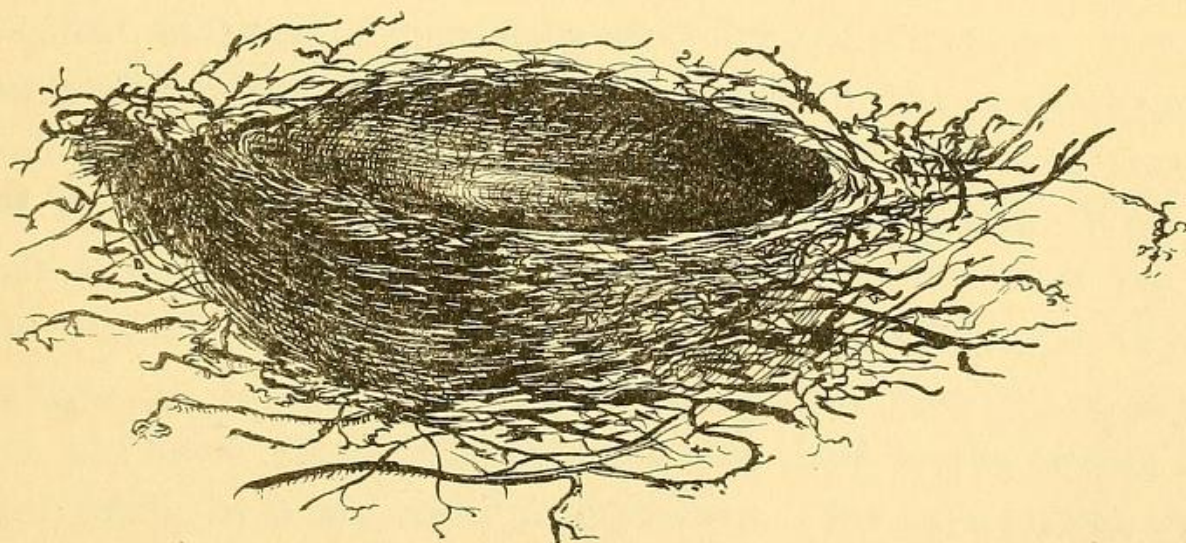
In the winter months, the Warblers may be observed busily exploring the outer sprays of manuka, or flitting over the fern-clad spurs, in diligent search for larvæ, or the eggs of insects securely packed away in their fine-spun silky



Nest of ZOSTEROPS LATERALIS.

On Pteris aquilina.

See Vol. II. Page 61.



Nest of POGONORNIS CINCTA.

See Vol. II. Page 57.

wrappings, that protect them securely enough from the cold breath of winter as they lie hidden beneath the bending fronds of the brown *Pteris*, or amongst the slender twigs of the scented manuka, but defenceless against the quick eye and sharp beak of the Warbler. In early spring, whilst insects are yet scarce, these birds may be observed sometimes on the ground picking amongst the dead leaves that lie strewn beneath the overhanging shrubs; in the pursuit of flying insects they do not chase their prey in the air like the *Rhipidura*; but rather flutter about the tops and outsides of shrubs; whilst so engaged the snap of the mandibles may be plainly heard as they clear off their tiny prey. Perhaps it is a sign of attachment that at all seasons of the year, Warblers may be noticed in pairs, rarely is a solitary bird met with; in the breeding season, anyone straying near its home is met and watched by both birds, each in turn giving utterance to an anxious twitter.

Males have been noticed fighting with great resolution, sometimes on the wing, sometimes on the ground; after the skirmish, the rival combatants retired, each towards his favourite range in the gully, raising his tremulous jingling note as a song of triumph or defiance.

Last summer, two instances of the *Chrysococcyx lucidus* making use of the nest of the Warbler, fell under our observation, both nests were in garden hedges.

Sept. 19.—Warblers carrying material for a nest at Fernbrook; 23rd—the nest, built in a manuka, about 9 feet from the ground, appeared finished, without a porch; 26th—one egg; 30th—three eggs. Oct. 1.—Four eggs, white, spotted with red; 9th—hardset; all further observations stopped as to period required for incubation, bird or birds destroyed by a cat.

Having lately perused Gould's *Handbook*, and noted the range of the *Gerygone* on the Australian continent, the rarity of such a mode of construction in cool countries strengthens our views on the pensile nest builders—that form of nidification being the result of instinctive precaution against the egg robbers of tropical or semi-tropical countries.

Last Christmastide, in the garden of a friend at Christchurch, a pair of the *Gerygone* had built one of their elaborately-finished structures, suspended from the branch of a currant bush; the result was one of the prettiest specimens of bird architecture, framed with green leaves, and decked with clusters of the deep red fruit, which hung about the nest untouched by the Warbler's beak. This fact is mentioned, because, since the numerous flocks of the mercurial *Zosterops* have made themselves rather dreaded than admired as visitors to the fruit gardens, in some instances we have noticed *nest taking* as the result, with not too much discrimination being exercised by the captors as to what species of small birds are really fruit-stealers. We have known the nests of those valuable insect-eaters, *Gerygone* and *Rhipidura*, esteemed as trophies taken from the enemy.

No. 29.—*PETROICA MACROCEPHALA*, Gml.

(See also Vol. ii., p. 59.)

This confident little insect-eater is so tame that it not unfrequently may be seen on one of the croquet pegs whilst the game is being played; it is exceedingly quarrelsome; we have had almost to separate two combatants by hand before the victor could be induced to leave his panting adversary. At Rockwood, two were taken by the hand whilst fighting on the lawn, carried into the house, and on being released out of doors, at once recommenced hostilities.

NOTES.—Aug. 21.—Cock bird feeding the hen; an act of delicate attention we suppose, as both birds were picking up grubs amongst the grass on the edge of the gully. Aug. 24.—Late in the evening a cock bird took up his station on the lawn mower, and commenced pursuing insects like a *flycatcher*, after each chase returning to the same perch.

The Tit often reminds us of the old fable of the Fox and the Crow; had the latter been as accomplished as the Tit, she need not have lost her piece of cheese, for we have seen the Tit repeatedly carrying a large grub in its bill whilst uttering its call-note.

The nest sometimes occupies weeks in its construction. August 18—saw birds building, the nest was not quite finished on Sept. 10th, when the foundation slipping through the long leaves of the *Cordyline australis*, it fell to the ground; Sept. 19—the birds were building a new nest. It was a very cold and late spring, which probably would be the reason for the tardiness of their proceedings.

Few of the native birds can be considered as very cheerful songsters, but there seems to us quite a mournful cadence in the note of this bird.

No. 33.—*PETROICA ALBIFRONS*, Gml.

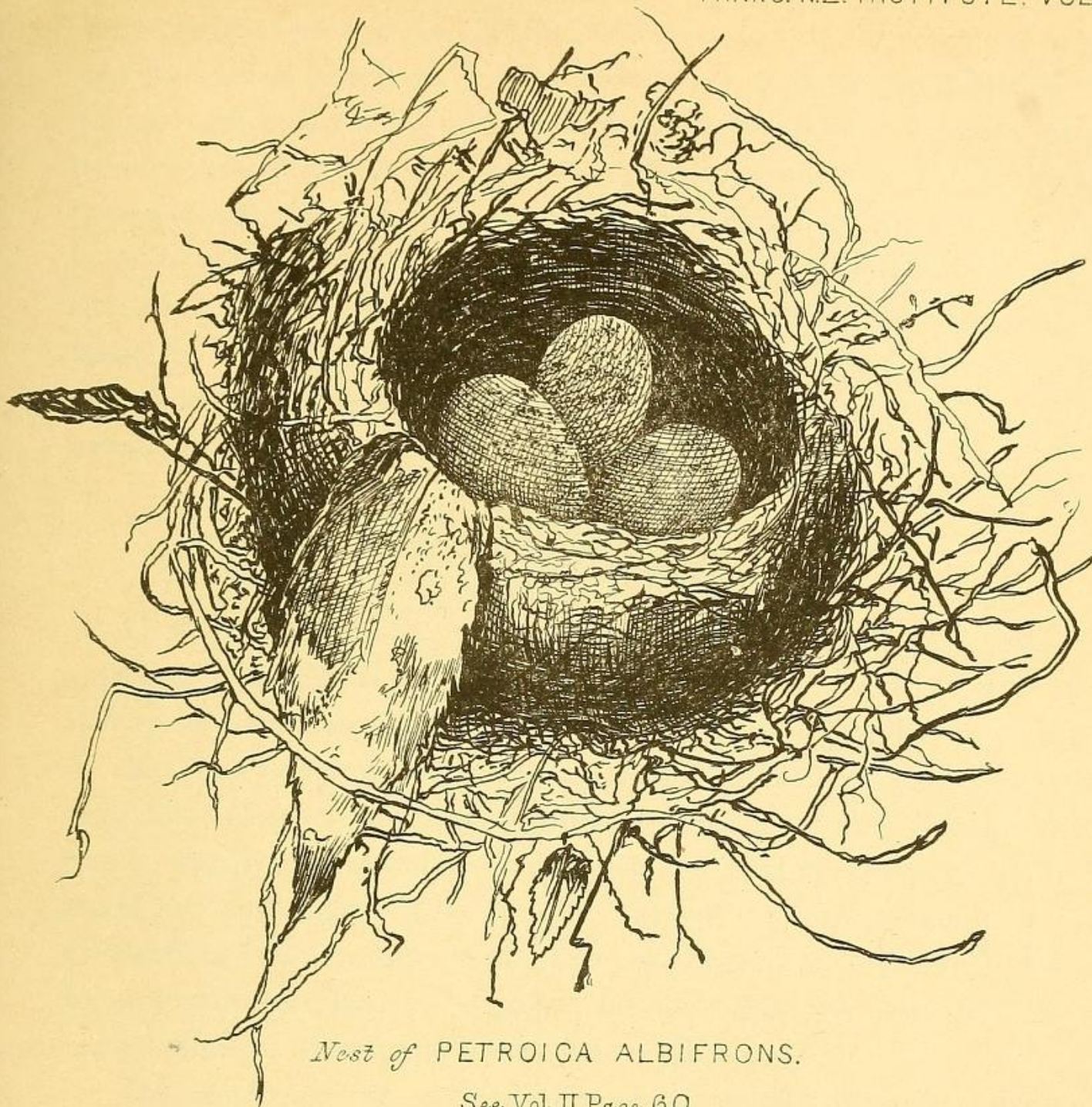
(See also Vol. ii., p. 60.)

The nest and eggs represented on Plate XI. are now deposited in the Canterbury Museum. This bird, as a songster, is perhaps unequalled by any native warbler, and we think scarcely surpassed by any of the woodland melodists of the old country; in its habits it is exceedingly tame; at a station on the Upper Rangitata, where it abounds, it is bold enough to enter the house, but there, it must be remembered, it is in the "back country," where the Englishman's "familiar evil spirit," *the cat*, as yet is comparatively scarce.

No. 34.—*ANTHUS NOVÆ ZELANDIÆ*, Gml.

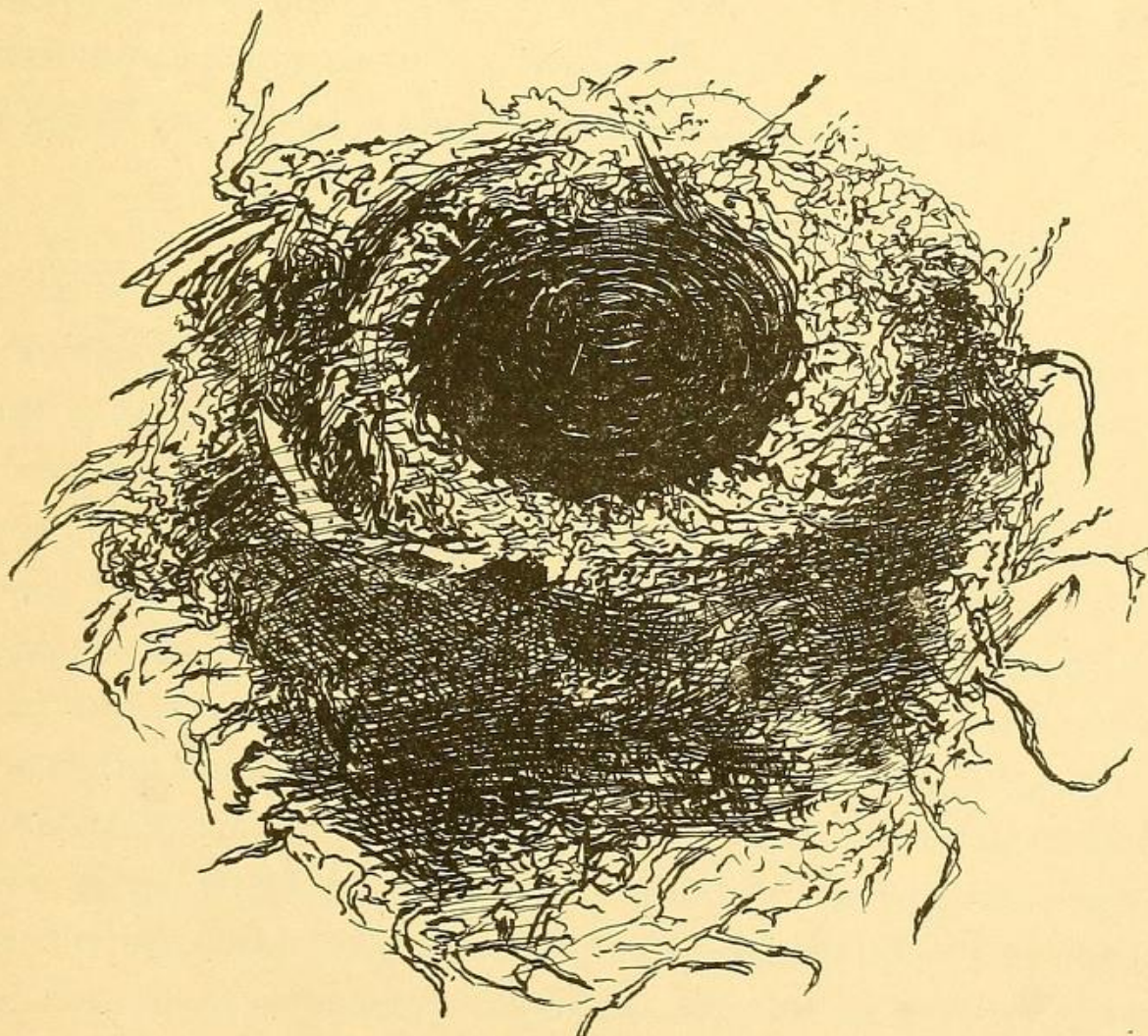
(See also Vol. ii., p. 61.)

In the last volume of *Transactions*, mention was made of the occurrence of White Larks near the Waikerukini, in this province; they are not



Nest of PETROICA ALBIFRONS.

See Vol. II Page 60.



Nest of MOHOVA ALBICILLA.

unfrequently met with in that neighbourhood. On Oct. 5, we saw a specimen that permitted a tolerably close inspection, this was on the track across the plains, within two miles of the place where those were observed last year; we have examined a beautiful specimen that was procured in that district. Is it probable that a marked variety will be established? Birds of this species that have been rescued from hawks have been so completely prostrated by terror that for some time they have been wholly incapable of flight, on being gently tossed in the air falling helpless to the ground. It is very sociable in some of its habits; we have counted seven or eight bathing together in a creek; it is usually observed in scattered companies.

No. 35.—*ZOSTEROPS LATERALIS*, Lath.

(See also Vol. ii., p. 61.)

It was suggested in my previous notes on this species, that possibly the sweet song of this bird was peculiar to pairing time; closer observation proves it may be heard through ten months of the year; we have noted the singing of the *Zosterops* from the 17th of August till quite in the autumn (May 4th). Sep. 20.—Crowds of Blight Birds in bushes of the *Pittosporum Colensoi*, busily employed about the woody capsules, picking off the gluten in which the seeds are embedded. The fruit of one of the native mistletoes, *Loranthus micranthus*, is a favourite food. The nest figured on Plate XII. was suspended to a *Pteris aquilina*, on a slope not far from the sea; it bore a striking resemblance to a swinging cot or hammock.

The *Zosterops* can be tamed without much difficulty; we know of an instance in which one of these cheerful little birds had been tamed so thoroughly that it keeps about the room, hopping about the table, and taking honey from the lips of one of the younger members of the household.

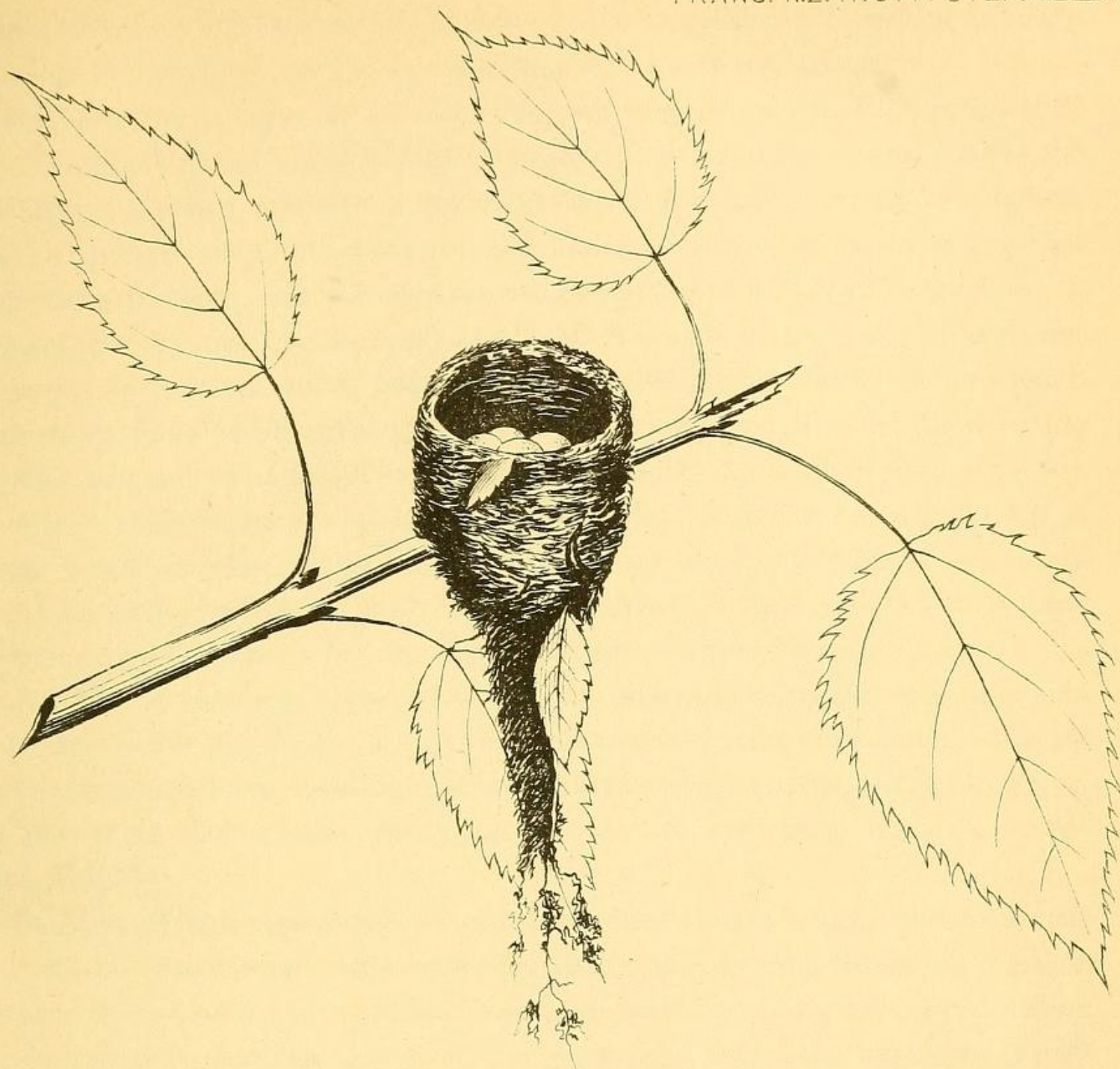
No. 37.—*RHIPIDURA FLABELLIFERA*, Gml.

(See also Vol. ii., p. 63.)

To the quiet observer of the habits of our bird-friends, but few sights can afford more gratification than watching the patient industry which is displayed, by the very energetic and useful Flycatcher, in the construction of its compactly-formed nest. The admirable instinct disclosed in the selection of the site has been already referred to, in the last volume. The nest is to be found near its food supply (for the young will make incessant demands on the exertions of the parent birds), and it seeks a sheltered position where insects "most do congregate;" it must at the same time afford "ample room and verge enough" for the numberless evolutions to be performed by the rapid fluttering of two pairs of most active wings, which are soon to be constantly fanning the lazy air. To meet these indispensable requirements, the security offered by the densely tangled thicket is most commonly neglected for the retirement that is to be found

beneath the high bank of some shady creek ; the bough usually selected stands out well from the main stem, not too close to other branches. The foundation of the nest is laid by adroitly securing the slender chips of decayed wood with lines of cobweb to the spray selected ; this delicate operation must of necessity be a work of great difficulty, "c'est le premier pas qui coute ;" in places where splinters of decayed wood were not to be obtained, we have noticed that the glumes of a coarse grass have been used instead. Who could fail to admire the persevering efforts of these little architects ; what dexterity and cleverness have been employed in raising the frail platform on which is to be built the thick felted wall of the snug home. At the next stage, additional exertions are called forth ; from the variety of materials required, longer flights become necessary for their collection, mossy stones and roots are scrutinised, and places frequented by live stock visited ; fine grasses, thread-like roots, dead leaves or skeletons of leaves, hair, green tufts of moss with tiny imbricated leaves, and the down of tree ferns, are now wanted, crevices are searched, and the numerous holes before which "the murderous spider," lurking in the dark, has spread the treacherous net.

It is whilst collecting cobwebs that the plumage of the Flycatcher is exhibited to the greatest advantage ; hovering on the wing, the fan-like tail outspread to the utmost width, with rapid gyrations they move round the spot till enough has been secured for a load ; the quantity made use of would surprise those who have not witnessed these labours ; it is the most important element in felting ; in fact, it is the mortar of the future structure. Whilst building, the exterior of the wall is always kept higher than the centre of the nest, so that at an early stage of its progress it looks saucer-like in shape ; the birds (for both join in the labour, although the female appears to undertake the greatest share) try the strength of their work in every way ; it is well trampled, the webs are carried from the interior to the outside in festoons from left to right, and right to left, as far down as the beak can reach ; this working in of the web is persevered with throughout the entire building of the fabric, thus the materials are repeatedly braced together. As the wall rises, the bird, with tail elevated, is itself the mould by which the rounded cavity is beautifully shaped ; seated in the centre of the rising structure, it turns round repeatedly, fluttering the wings, which action keeps the wall pressed out to its proper shape, the head and chin is pressed on the top, the materials pulled in towards the centre ; this manœuvre is performed at frequent intervals. So earnest are these little workers that they scarcely rest for hours ; sometimes, by a sudden flutter, they obtain a few insects, or the creek is visited for water ; the cock now and then finds time for a brief twitter, moving its head from side to side, as if criticising or admiring the result of their united exertions, but quickly both are at work again. Whilst watching one of these birds drinking at the creek, with an air of such evident refreshment, it occurred to



Nest of RHIPIDURA FLABELLIFERA.
On a spray of Aristotelia racemosa.
See Vol. II Page 63.



Nest of PODICEPS RUFPECTUS.
Clearwater, Ashburton.
See Vol. II Page 75.

us that the time of incubation is an interval of *necessary* rest between building the home and rearing the young, those times of incessant labour.

Towards the completion of the home, as it assumes a cup-like form, a still more abundant use of cobweb may be noticed, the festoons are multiplied, the wall being finished off with numberless ties and braces; the interior is now lined with fern-down, the slender fruit stalks of moss, or other soft material other than feathers, and the structure is complete, and admirably finished; it is warm, strong, and elastic, and so well felted that it is not easily pressed out of shape; it is a marvel of construction, effected by the beaks of two small birds which have had numberless other offices to perform; all their food during the time has had to be found and caught, assisted by no store of fruit or grain to supply their wants, requiring *only discovery*. A few notes are appended, which touch on the peculiar form of the nest of *R. flabellifera* in certain situations only; as far as our observations reach, several theories have been aired in order to account for this singular form of structure.

Jan. 2.—A nest was observed in a small plant of *Aristolelia racemosa*, just above the creek, by the farm buildings; the construction somewhat resembles the homes which have been figured, of *R. albiscapa*, a portion descending in a tail-like form below the spray on which the structure is built. (See Plate VIII.)

The use of this appendage is not very clear, but we have observed that part of the creek where this nest was found has several bends in it; it is probable that at such a turn, sudden drafts or gusts of wind might, by agitating the spray, endanger the safety of the eggs in a nest, the cavity of which scarcely reaches 1 inch 6 lines in depth; would not the resistance offered by this peculiar addition lessen any such danger by diminishing the extent of the vibration? It may be asked how it is the instinct of the bird does not lead to the selection of a spot where such a precaution would be unnecessary; the answer to this is, that this particular place, from its immediate contiguity to the stockyard, bullock sheds, etc., offers special inducements to a purely insect-eating bird, as it affords an extraordinary food supply from the numbers of small insects which there assemble. This is the third example from the same locality.

Jan. 8.—The nest contains four young birds and two addled eggs, and is being enlarged by the addition of a slight rim all round the wall; the interior is kept clean by the old birds removing the white pasty excrement as soon as extruded by the young, dropping it a few yards off; 10th—the two strongest birds left the nest; a bell-bird which made some menacing darts at them was driven off by the old birds acting in concert; the young were fed on an average of about once a minute. April 26.—The fantails now frequent the house, clearing the rooms of flies, which they effect whilst on the wing, picking them off the curtains, ceilings, etc.; the most difficult feat appears to be in taking them off the side walls. August 6.—Saw *R. fuliginosa* with a

large insect, beating it several times against its perch (kingfisher fashion) before swallowing it ; have also observed the foot used as a claw when feeding on a large fly. Oct. 1.—Found on a sapling *Fagus*, a union nest, on which was the cock (*R. flabellifera*) ; 2nd—the hen (*R. fuliginosa*) was on the nest ; it contained three eggs ; these, together with the nest, were taken, with very great reluctance, but it was thought they might help to convince anyone who was sceptical as to the two species breeding together ; a fact that could not be established by the most assiduous study of preserved skins. So tame was the hen bird that it permitted the nest to be cut out of the young tree, carried from the bush over a gorse fence and ditch, without moving from her position till gently pushed off her eggs with the finger, her pied mate fluttering near, twittering what was doubtless a reproachful protest against such barbarous cruelty ; 22nd—saw another nest similar in build to that noticed under date Jan. 2, depth of cavity only 1 inch 3 lines ; from its situation at a *bend* in the creek, it would appear rather to confirm the idea that has been suggested as the reason which guided the little architects in making this curious addition to their neatly-built home. As far as we have observed, this mode of nidification is restricted to *R. flabellifera*, the species that approaches most nearly to *R. albiscapa*. Should not this lead to a closer examination of the specific differences which separate our pied Flycatcher from its Tasmanian congener. Perhaps the form of nest which ornithologists give to *R. albiscapa* may be exceptional, as in the case of *R. flabellifera*.

Oct. 23. — Found this afternoon a nest with only the foundation laid, about an inch in diameter, which was being built by birds that had a brood of three young ones to feed ; 25th—scattered, in the vicinity of the nest, short lengths of different coloured wools, worsted, cotton wool, cow hair, white horse-hair, etc. ; 26th—saw some of the material supplied yesterday made use of ; 27th—nest completed, contained one egg, rim of the wall finished off with white horse-hair, pink wool, etc. ; 28th—hen on the nest, cock singing close by ; the hen left the nest, when the cock immediately took her place whilst she fed ; 29th—three eggs. Nov. 14.—Four young hatched ; 27th—young left the nest.

Jan. 7.—A union nest, in which were young birds in this instance ; the cock was *R. fuliginosa* ; 10th—the young birds had left the nest and were flying about the tree in which it had been built, with great vivacity ; they exactly resembled the offspring of *R. flabellifera*, but showed even a greater share of activity ; it was the most vigorous brood of Flycatchers we had noticed during the season. Was this superior display of energy owing to the cross between the parent birds ? Is the alliance between individuals of distinct species at all common with any other genus of birds ? We noticed that the cock bird *R. fuliginosa* was as assiduous in his attentions to his young family as the hen, notwithstanding the birds were of a different feather to himself.

Both of our species of Flycatcher remain with us during the whole year, merely shifting their quarters from near the sea level to the higher parts of the bushy gullies.

What is the habitat of *R. tristis*, Homb.? Where could one learn anything of its habits?

No. 51.—NESTOR MERIDIONALIS, Gml.

Kaka.

(See also Vol. ii., p. 64.)

Our representatives of the gorgeously painted *Psittacidae* possess little of the brilliancy of plumage or gracefulness of form which distinguishes so many of the family in other lands; our Kaka, in his suit of sober brown slightly flushed with red, might be passed over in a collection almost without notice by many to whom his quaint habits are unknown, and even to those who are most familiar with the bird, it conveys little if any impression in association with the parrot tribe; it is never called by that name except, perhaps, there is a desire on the part of some old settler to impress a new comer with a proper sense of having arrived in a foreign country, when our noisy Kakas are spoken of or pointed out as "our parrots."

Arboreal in its habits, with truth it may be said that our Kaka lives but amongst trees, not merely seeking the forest for the sake of the shelter in which to rest or to rear its young, but it finds its living on and amongst trees, and in the forest it may be found throughout the whole year; nor is the economy of the bush uninfluenced by the habits of this bird, as we shall presently endeavour to show. Although noisy and restless, the Kaka at times may be, and often is, observed as quiet as any bird in the bush. Let anyone ramble into one of our timber forests, far beyond the outside shrubby zone resounding with the cries of many birds, where all is so still and silent, and he will find that there are times, about the noontide hour, when the wanderer might almost dream that he had strayed beyond the reach of sound, with all its soothing tones and harsh discordances; that he might—

—— "In this desert inaccessible,
Under the shade of melancholy boughs,
Lose and neglect the creeping hours of time;"

all too soon the spell is broken, frequently by the wail of the ubiquitous weka, the clear ringing note of the koromako from the damp moss-clad gully, and quite as often by the hard-working Kaka dropping a chip of the rough hard bark that had been silently stripped from some lofty tree. It may be thought not out of place to make brief allusion to the influence which some of the habits of the Kaka exercise on the condition of the bush; admitted amongst the *Trichoglossine* as a honey-eating bird, in its search after this portion of its food, it may cause the fertilization of the blossoms of trees, and thus assist in

their propagation. Its love of insect food, and the toil which it undertakes for the sake of gratifying this appetite, which Nature has implanted in this bird, materially affect the economy of the timber forests it inhabits. Although so often accused of injuring trees by stripping down the bark, from careful observation we do not believe a flourishing tree is ever damaged by its beak ; it is the apparently vigorous, but really unsound tree that is attacked, already doomed by the presence of countless multitudes of insects, of many varieties of which it is at once the food and refuge, either in their perfect or larvæ state.

In the persevering and laborious pursuit of this favourite food, the Kaka doubtless lends his assistance in hastening the fall of decaying trees, the loosened strips of bark, dissevered, admit to the exposed wood, rain, moisture collected from dews and mists to be dried by evaporation, by the heat of the sun, by the desiccating winds, only to become saturated again ; under this alternation the insidious fungi take root, decay rapidly sets in, the close-grained timber gives place to a soft spongy texture, branches drop off, and gradually the once noble-looking tree succumbs to its fate ; but its gradual decay and fall, the work of years, has proved beneficial to the surrounding plants, the dropping of the branches admits light and air to the aspiring saplings, assists in checking the undue spread of lichens and epiphytes, and when the old stem falls, tottering down from its rottenness, its place is supplied by vigorous successors. In estimating the value of its labours as an insect-eater, it should not be forgotten that the *Picidae* family is entirely absent from our bird system, and that upon this indefatigable climber devolves some share of the duty of representing that peculiar group of forest birds.

Living in trees, when disturbed it hops amongst the branches with much dexterity, beak and wings assisting its awkward-looking but rapid progress as it threads its way amongst leaves and sprays with unruffled plumage ; the peculiar formation of its grasping feet enable it to execute wonderful feats of agile climbing. A sharp short note or two marks its uneasiness when a vigilant eye watches what takes place below ; when really alarmed, after a few hurried movements, it flies some short distance, at first start usually gliding downwards rather than flying straight, threading the leafy maze of the close-growing trees with perfect ease and grace, at this time it warns its fellows of impending danger by uttering loud oft-repeated cries of "kaka, kaka." In all probability it derived its native name from its alarm note. It can readily be imagined that in those times when only the rudest and least effective weapons were in use, long prior to the period at which the Maori became acquainted with the death-dealing gun, how frequently frightened or wounded birds escaped the uncertain missiles, uttering loud cries of terror ; vexation or hunger would soon impress this call on the mind of the disappointed hunter. We have ever thought it a miserable sight to watch the Kaka, when severely wounded,

uttering its low smothered cries of distress and pain ; how the wretched bird endeavours to save its fall from the leafy shelter by clinging to bough and spray with desperate tenacity, often seizing its wounded limb with its powerful beak, as if to tear away the burning agony from which it suffers. Truly gregarious, it is social even in distress ; numbers gather round their wounded companion to fall easy victims to the gunner. Often in the bright sunshine, scores may be observed, with loud screams and chatter, flying and circling about, and, high above the outskirts of the bush, apparently bent on enjoying some short excursion ; now and then an individual more hilarious than his fellows, after a somewhat slow and laboured ascent, will suddenly dart downwards, perpendicularly, with almost closed wings ; this feat is doubtless performed to an appreciative and admiring circle, if one may judge from the clamour of the company.

The Kaka we think to be less gregarious when travelling than at almost any other time ; when migrating from one part of the country to another, it proceeds on its journey at a considerable height, uttering at intervals a brief note that sounds something like “ t-chrüt, t-chrüt,” then, perhaps, a whistling call of “ tweetie, tweetie.” Kakas do not travel in large flocks, most frequently but two or three are to be seen in company, sometimes six or eight are seen together, solitary wanderers are not unfrequently observed ; when their cry is imitated it is often replied to. Their steady, slow, and somewhat laboured flight when journeying is not to be mistaken for that of any other native bird that we have observed on the wing ; there is a methodical painstaking style that affords quite a contrast to their gay, rattling, off-hand soaring and gliding about the bush ; it exhibits the proper difference of behaviour to be assumed under business-like and pleasure-taking aspects. Man is not the only biped enjoying the privilege of duality. In dull, moist weather, when the strange-voiced tui is silent, the Kaka is perhaps more noisy than usual ; its call is heard at the earliest dawn, even in the night it is not always silent.

When matched, the pair may be observed constantly together ; if one moves from a tree its attentive partner quickly follows. The nesting place has to be prepared ; for this purpose a tree is usually selected the heart of which is completely decayed ; it must have a convenient hole leading from the outside to the bottom of the hollow ; the interior requires some preparation perhaps, or the entrance has to be smoothed or enlarged ; the pair may be frequently observed busy for the comfort and safety of their prospective offspring, sometimes a certain degree of fastidiousness is disclosed in making these preparations. After a home is made ready, it often happens that in place of being occupied it is deserted for some more eligible locality. It lays its four white eggs on the decayed wood, without any further supply of softer material by way of nest. As an instance of devoted attachment to its young, it may be mentioned that we have found the old bird dead at the entrance of its nesting

hole after a bush fire, in which it had perished rather than desert its helpless offspring, yet, from the nature of the locality, escape would have been easy.

The summer time is occupied by the cares of providing for and protecting the young; after they are old enough to shift for themselves, as autumn advances, the Kaka usually becomes very fat; as it is considered savoury food, great numbers are annually destroyed. It is in winter time that it appears to the greatest disadvantage, especially during a severe winter in our Southern climate, when the bush is metamorphosed with fantastic snow-wreaths, it seems out of character with the scene; food may be scarce, for with ruffled feathers it sits moping and nearly silent, a picture of dull melancholy. Towards the close of winter (August) we have known it devour with avidity the hard seed of the kowhai (*Sophora tetraptera*); at this period gardens and shrubberies are visited, and blossoms of almond trees and flowering shrubs eagerly ransacked; as winter passes away with its coarse fare, returning spring restores the Kaka's sprightliness, and he begins to fare daintily. In September we have observed it poised on the slender bough of some tall *Panax*, luxuriating on the viscid nectar of its blossoms; happy enough it looks when thus seen through some opening in the bush, its deep red breast-feathers lit up by the slanting rays of the declining sun; sated at last, it cleanses its huge beak against a neighbouring bough, then, with grateful chatter, glides off to join its fellows.

Insects form no inconsiderable portion of its food, how diligently they are sought for may be judged from the heaps of bark chips that lie beneath decaying trees; often it may be noticed on the ground tearing away the mossy clothing of the huge gnarled roots that spread around, even the soft rotten boughs are gnawed to obtain the larvæ of some of the larger bush insects. Not only does it regale on flowers and insect food; in the *Fagus* forests, in the bark of the black birch trees may be found a dull red fleshy-looking grub, tightly embedded in the hard bark, quite beneath the black velvety moss that wraps the *Fagus* like a pall; the wound made by this unsightly insect causes in spring time a sweet honey-like exudation, most frequently taking the form of a fine white filament, terminating in a small bright globule, glistening like a dewdrop; glancing upwards, the tall straight-grown stem appears spangled with multitudes of these bright threaded beads. This is a favourite feeding ground of several arboreals. The varied modes of locomotion employed form an interesting study, leading to enquiry and reflection upon their structure, their muscular and osseous systems, thus opening out a wide field for physiological observation. Of these hungry climbers the robust-framed Kaka occupies the foremost rank for size, its hold on the bole of the tree is secure, its movements deliberate, whilst its thick tongue is actively employed in gathering the honey-sweet meal.

The Kaka is easily snared, and very soon becomes tame if allowed liberty

about the premises, its ready confidence quickly transforms a pet into a plague. Let those who doubt its omnivorous propensities allow it access to a dairy, and watch the deft manner in which it manages to clear the cream from the pans.

Having entered so minutely into the habits of a bird so well known as the Kaka, it appears unnecessary to append a description, further than a few words about the tongue, etc., as some doubt has existed as to its position as one of the *Trichoglossinæ*, and whether its tongue is furnished with a brush-like termination or not. The tongue is thick, fining down towards the point, not unlike a finger; the superior side is flattish, the under side is rounded and furnished with a row of short stiff papillæ, black in colour; this brush-like apparatus can scarcely be said to form the termination of the tongue, it really occupies a similar position on the tongue which the margin of the nail occupies on the human finger; on the inside of the lower mandible may be observed, just within the deeply channeled lip, a row of minute yellowish dots, very slightly raised above the surface of the mandible; at the sides these specks give way to very faintly marked furrows, probably to clear the papillæ by the pressure of the tongue against the lower mandible. Those who have only seen dried skins, may not be aware that the upper and lower mandibles are connected by a thin tough skin, which allows the beak to open widely, and gives great freedom to the movements of the lower mandible; about the middle of this skin, in a line with the gape, a shallow sac or pouch exists, containing a wax-like substance.

Having only recently enjoyed the pleasure of reading Gould's *Handbook to the Birds of Australia*, we were not aware how little was known of the Kaka; a desire to carry out a wish therein expressed for further information about this bird must form the apology for entering so minutely into its habits. A difficult task it would be, even for an accomplished ornithologist, to give anything like a strictly accurate description of the Kaka's plumage, which should at the same time be supposed to represent satisfactorily and correctly the appearance of that of the species; so great is the variation in numerous minor points, that it offers great temptations to subdivision. As children, we used to be told that no two leaves were precisely alike of the gold and green mass that made up the foliage of the variegated sycamore; we have been reminded more than once of this piece of folklore when looking at a number of our parrots. Mr. Buller, in *Essay* (p. 11), alludes to several varieties in the feathers of the Kaka. Most noticeable must this variation of plumage appear to those who have enjoyed opportunities of inspecting specimens which have presented a change and difference of feather so remarkable as in those birds which, under the names of *N. superbus* or *N. occidentalis*, have been classed as separate species. Here is a change indeed; instead of the accustomed dress of sober brown, relieved from positive dullness by an olive shade, our usually demure-looking friend appears decked out in bright trappings of canary yellow with

scarlet facings. Is it to be wondered at that the assumption of a livery so gay and parrot-like metamorphosed our Kaka past recognition, even by old friends? In spite of his beak he was christened *Superbus*, and cut off by this distinction from the rest of the noisy fraternity. It is not known whether this gaudy clothing is enjoyed by a select body of individuals doomed to a life of celibacy, but it is certain that their numbers do not increase.

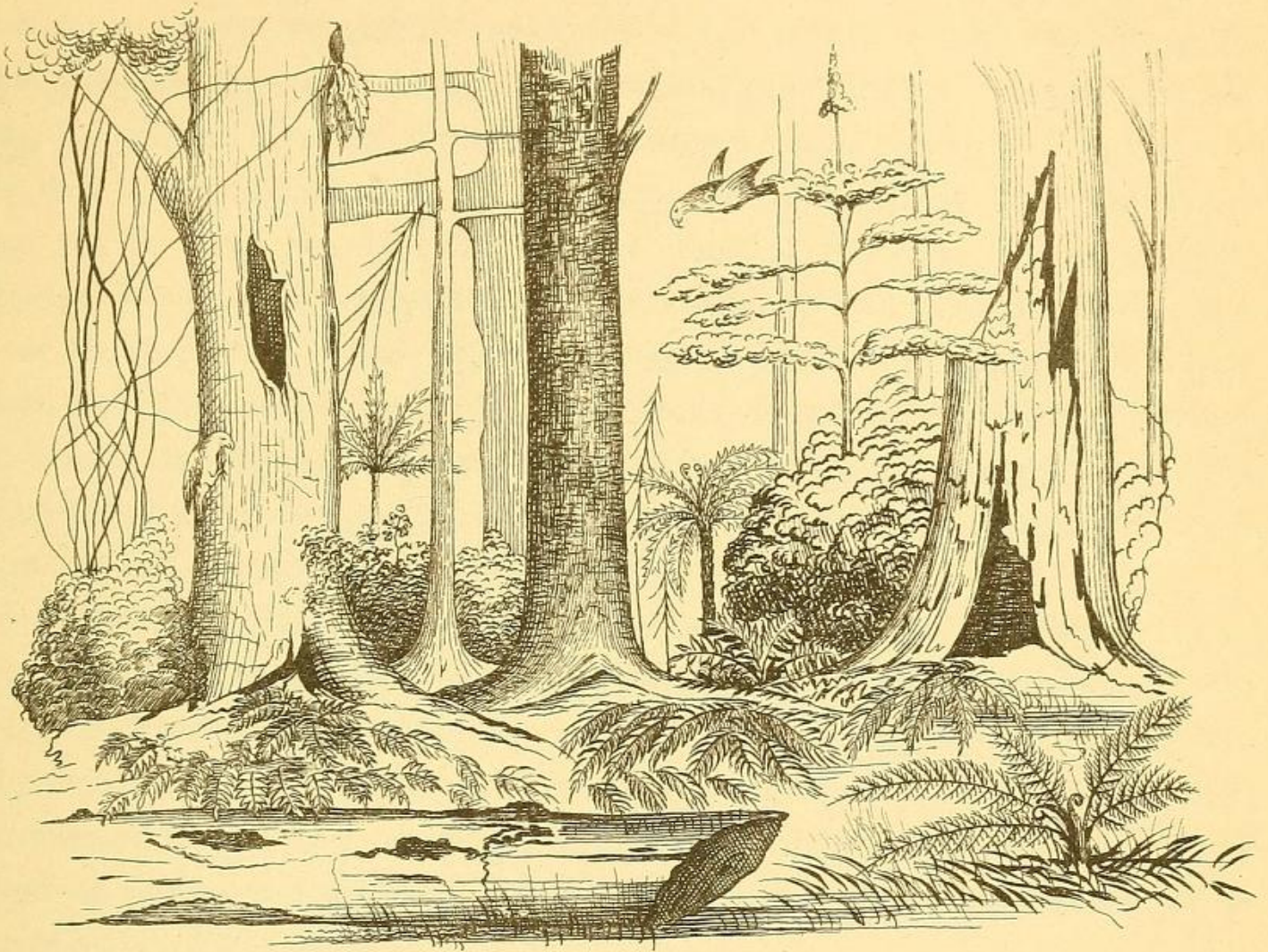
The following description is taken from a very fine old male, but a careful inspection of many birds of this species would convince anyone how very unsatisfactory must be the description of any one specimen as a correct representation of the species:—Upper surface olivaceous brown, often with a sombre greenish glint, each feather margined with dusky brown, feathers projecting over lower mandible, with produced hair-like tips, dark red with a stripe of grey; ear coverts rich orange; crown of the head, forehead, grey; back of the head grey, washed with pale yellowish green, margined with brown; nape rufous brown, margined with greenish yellow and black, forming an irregular collar, somewhat interrupted on the front of the neck; scapularies dark olivaceous brown, inclining to greyish green on the back; primaries brown, toothed with pale red on the inner web; tail dull brown, barred with pale red on the inner web, except the two centre feathers, the greater part of the basal portion of which are flushed across with a reddish shade on the under side, tipped with the same colour; throat, neck, and breast greyish brown, margined with dark greenish brown; abdomen and tail coverts rich blood red, barred with black; bill curved from the base.

No. 53.—NESTOR NOTABILIS, Gould.

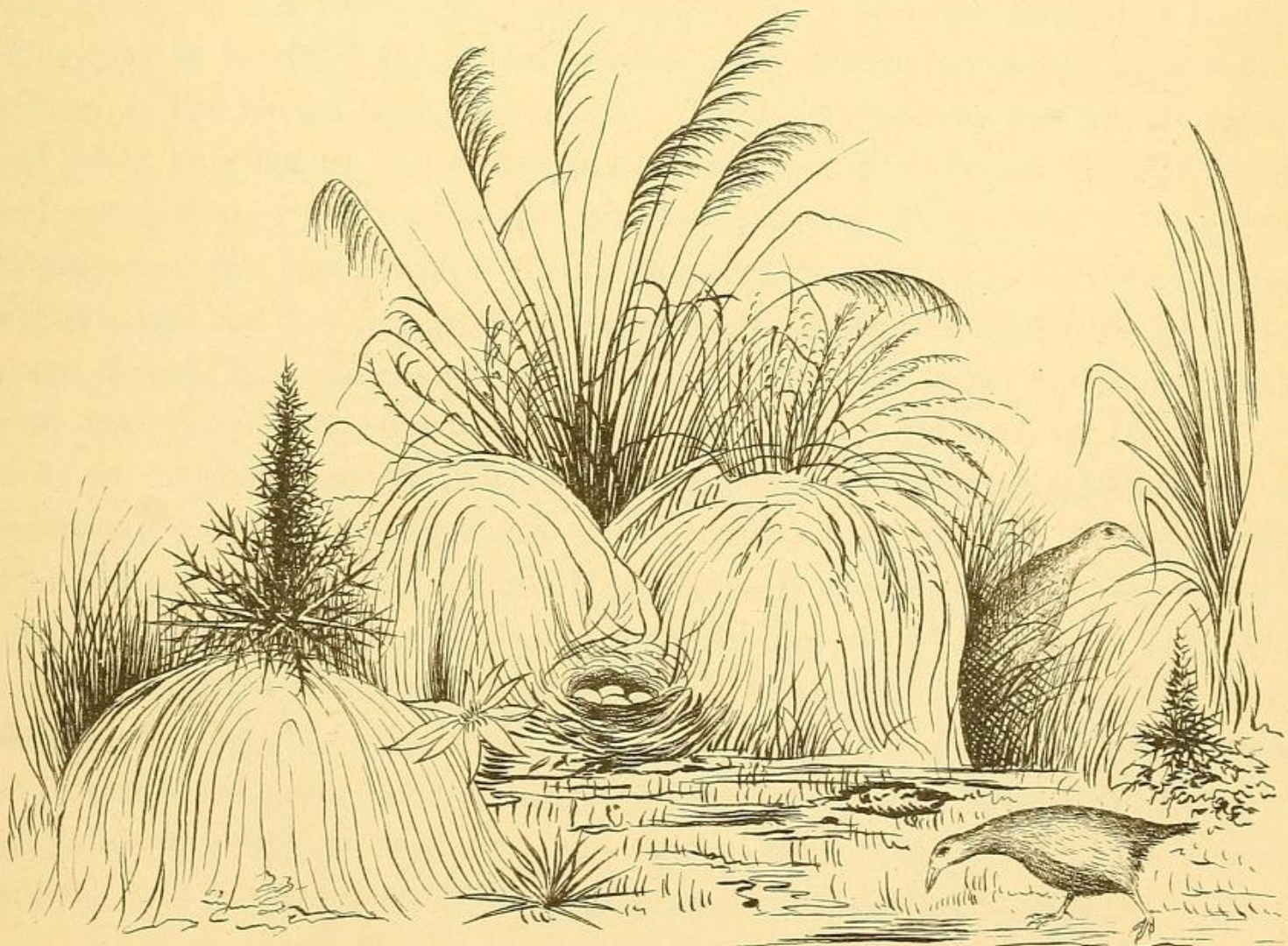
Kea.

Green Mountain Parrot.

In order to convey a correct impression of the Kea and its habits, it is necessary to give a brief outline of the features of the country in which it is to be found. Where we have most frequently observed it has been far above the Gorge of the Rangitata, one of the great *snow rivers*, as they are termed. This stream, which derives its source from the glaciers which are embedded in the gloomy and secluded fastnesses of the Southern Alps, is periodically swollen by the melting of the snow and by the heavy rain from the north-west, which falls during the spring and autumn months; fed by numerous creeks and tributaries from every converging gully, its volume increases, it rushes noisily and impetuously over its rough boulder bed, till the junction of the Havelock and the Clyde swells its waters into a large river. The leafy, rugged mountains which imprison it present almost every conceivable variety of outline; jagged peaks crowned with snow; countless moraines point out where the avalanche and snow slip have thundered down into the valley below. The river is bordered here and there by grassy flats or hanging woods of timber



Nesting place of NESTOR MERIDIONALIS.



Nest of OCYDROMUS AUSTRALIS.

See Vol. II, Page 70.

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trees, in which the brown tinted totara, the silvery *Phyllocladus* with its purplish points, the small leaved kohai, and the soft bright foliaged ribbonwood contrast well with the dusky hue of the dark leaved *Fagus* ; far above, dwarf vegetation, in all the wonderful variety of alpine shrubs and flowers, struggles up the steepest slopes, adorning the frowning precipice and foaming cascade, lending its aid in forming scenes of picturesque and romantic grandeur, in which rich and varying tints of perennial verdure gratify the eyes of the spectator with their beauty. This is the home of the Kea. Amongst holes and fissures in almost inaccessible rocks, in a region often shrouded with dense mists or driving sleet, where the north-west wind rages at times with terrific violence, here the Green Parrot may be observed, entering or leaving crevices in the rocks, or soaring with motionless wings from peak to peak, far above the screaming kaka or the chattering parroquet ; the swift-winged falcon is perhaps the sole intruder in its wild domain.

At early dawn its peculiar note is heard, very like the mewing of a cat, though in some of the more secluded gullies it may be noticed throughout the day ; it really appears to wake up into activity at dusk, being, to a certain extent, nocturnal in its habits. It is scarcely less gregarious than its congener, *N. meridionalis*. In the moonlight nights of winter, numbers have been observed on the ground feeding. It can hardly be deemed an arboreal bird in the strict sense of the term.

The rigour of a hard winter, when the whole face of the alpine country is changed so as to be scarcely recognizable under a deep canopy of snow, is not without its influence on the habits of this hardy bird ; it is driven from its stronghold in the rocky gully and compelled to seek its food at a far less elevation, as its food supply has passed away gradually at the approach of winter, or lies buried beyond its reach. The honey-bearing flowers have faded and fallen long before, the season that succeeded with its lavish yield of berries and drupes that gaily decked the close-growing *Coprosmas*, the trailing *Pimelias*, or the sharp-leaved *Leucopogon*, has succumbed to the stern rule of winter ; nor has this change of season affected the Flora of the Alps alone, the insect world, in a thousand forms, which enlivened every mountain gully with the chirp and busy hum of life now lies entranced in its mummy state, as inanimate as the torpid lizard that takes its winter's sleep sheltered beneath some well-pressed stone. Under the effects of such a change, that cuts off such a supply of food, the Kea gradually descends the gullies, where a certain amount of shelter has encouraged the growth of the kohai that yields its supply of hard bitter seeds, the beautiful *Pittosporums* with their small hard seeds packed in gluten, and the black-berried *Aristotelia* ; these and numerous other shrubs, or trees, such as the pitch pine and totara, furnish the means of life to the Parrot. It is during the continuance of this season that we have had the best opportunities of becoming somewhat familiar with it.

Within the last few years it has discovered the out-stations of some of the "back country" settlers. Of course, every station has that indispensable requisite, a meat gallows ; it has found out and fully appreciates the value of this institution, as occasionally affording an excellent supply of food ; the gallows is generally visited by night, beef or mutton equally suffer from the voracity of the Kea, nor are the drying sheepskins despised. These visits may be looked upon quite as social gatherings, as it is by no means a rare occurrence for a score of noisy Parrots to be perched on the roof of a hut at one time. A son of the writer obtained some fine specimens by means of a very simple snare—the noose made of a slender strip of flax leaf attached to the end of ricker or rod ; he describes them as exhibiting great boldness and confidence, clambering about the roof of the hut, allowing a very close approach ; when caught they remained quite still, without any of the noisy fluttering which usually accompanies the capture of birds, even when managed with adroitness ; they preserved this quiet demeanour till the noose had been removed. One of these birds was placed on the floor under an inverted American bucket, the places for the handle not permitting the rim of the bucket to touch the ground ; the Kea taking advantage of this, wedged its long beak into the space, using its head as a lever, it moved the bucket, raising it sufficiently to effect an escape from its prison.

On the other side of the river, just opposite to where this is being written, one station is greatly favoured by these visitors ; during the winter season they become a perfect nuisance. On one occasion the hut was shut up, as the shepherd was elsewhere required for a day or two, on his return he was surprised to hear something moving within the hut ; on entering, he found it proceeded from a Kea, which had gained access by the chimney ; this socially-disposed bird had evidently endeavoured to dispel the ennui attendant on solitude by exercising its powerful mandibles most industriously ; blankets, bedding, and clothes, were grievously rent and torn, pannikins and plates scattered about, everything that could be broken was apparently broken very carefully, even the window frame had been attacked with great diligence ; in fact the bird gave a new reading to that moral line of warning,—“For Satan finds some *mischief* still for *idle* hands to do.”

Notwithstanding the high character various individuals of the species have earned for occasional indulgence in mischief, several have been kept as pets,—not in wooden cages by-the-bye, for a Kea has been seen by his gratified captor to eat its way out of such a place of confinement almost as quickly as it had been coaxed to enter into it. Two which had been tamed by a neighbouring friend were permitted to wander at large, they regularly returned to the house for their meals, and then rambled away again, scrambling and clamouring amongst the trees and outbuildings ; any kind of food appeared to suit their accommodating appetite, but a piece of raw meat was evidently the *bonne bouche*.

On the level ground its mode of locomotion is very peculiar, it is not so much a walk as a kind of hopping jump, which imparts a very odd appearance to its gait; but when its strong climbing foot is observed, this is not to be wondered at; at a glance it will be seen how inferior is the strength and power of the two inside, in proportion to that of the outer toes; the short tarsi are also unfitted for walking.

In addition to the superior size of the bird and the colour of its plumage, the beak presents a marked contrast to that of the kaka; it is smoother, less curved, and much slighter, with a length of 2 inches from the gape to the point; the upper mandible, at the widest part,—that is in a line with the nostrils,—measures $5\frac{1}{2}$ lines in width, with a height of 7 lines. In flight and voice the two species greatly differ. There is no doubt the Kea breeds in the crevices of its rocky haunts; the kaka occasionally rears its young amongst rocks also. The eggs of the Green Parrot are as yet, we believe, amongst the desiderata of the New Zealand ornithologists.

Although comparatively few people are acquainted with the bird, it is not on that account to be considered rare; the reason it is so little known is, the remoteness of its habitat from the centres of population; it certainly appears to be very local in its distribution; a straggler now and then has been observed far from its usual haunts, for in one instance we have a note of its occurrence at the Hororata, in the Malvern Hills, close to the edge of the Canterbury Plains. Its beak can inflict a severe wound; a friend of ours, incautiously handling a pet, had his thumb bitten through by its powerful mandibles.

The following descriptions are taken from two specimens obtained on the banks of the Havelock; their crops were well filled with seeds of a *Pittosporum*:—

Male.—Bill smooth, curved; upper mandible dark horn colour, lightest at the culmen, approaching to black near the base, the inside marked with slight longitudinal furrows; lower mandible yellowish on the sides, furrowed on the inside; sere, covering the base of the upper mandible at its widest part, measuring 5 lines; nostrils raised or swollen; upper part of the plumage dull green with a silvery shade; shafts of feathers dark brown; feathers tipped sometimes margined with dark brown; forehead brownish green; feathers which rest against the gape produced into hair-like points; under parts dull silvery green with brownish wash; nape silvery green with almost a collar of dark brown; quill feathers, the third and fourth are the longest in the wing, dark brown, the basal part of the four first feathers blue on the outer web; inner web dark brown toothed with pale yellow; the rest of the primaries of a brighter blue on the outer web; secondaries bluish green on the outer web, inner web brown, toothed irregularly with pale yellow; under wing coverts yellow and bright scarlet slightly tipped with brown; tail, shaft of feathers produced beyond the web, dull green shot

with blue, with a broad mark or band of dark brown near the end, tip pale brown, inner webs toothed with yellow, under side of tail feathers washed with yellow; lower part of back and upper tail coverts green, shaded with dark orange-red margined with brown; vent and under tail coverts yellowish green. Bill, following the curve from gape to point, 2 inches; wings from flexure 12 inches 9 lines; tail 7 inches 7 lines; tarsus 1 inch 7 lines; largest toe with nail 2 inches 3 lines; total length, from point of bill to extremity of tail, 21 inches.

Female.—The plumage is rather duller than that of the male, the under nape of neck closely marked with dusky brown. Bill 2 inches; wings from flexure 12 inches 4 lines; tail 7 inches; tarsus 1 inch 5 lines; largest toe and nail 2 inches 3 lines; total length 20 inches 9 lines.

Another male, procured in the same locality, presents no marked difference in plumage, but is rather smaller in dimensions.

No. 56.—STRINGOPS (STRIGOPS) HABROPTILUS, Gray.

Kakapo:

Ground Parrot.

Numbers of skins of this beautiful and remarkable Parrot have been received at the Canterbury Museum, from Westland, during the last two years. The size of the specimens varies; one of the finest gives the following dimensions:—Bill from gape 1 inch 7 lines; upper mandible at the greatest width 9 lines; wings from flexure 10 inches 7 lines; tail 7 inches 3 lines; tarsi 2 inches 3 lines; longest toe with claw 3 inches 3 lines; total length 29½ inches.

An addled egg of the Kakapo was also received in the course of the last summer, the whiteness of the shell much discoloured; its shape is not unlike that of the kaka, the larger end being broad. Its length is 1 inch 11 lines, with a breadth of 1 inch 5 lines.

No. 57.—EUDYNAMIS TAHITIENSIS, Gml.

Kohoperoa, Koekoea.

Long-tailed Cuckoo.

About midsummer is usually the time when we first hear the call of the Long-tailed Cuckoo, who annually pays us a very brief visit, departing, as we believe, before signs of autumn indicate that the waning power of summertide is nearly expended.

It is not a rare occurrence for two or more of these handsome birds to be observed in company, or even disporting themselves in the same tree; this apparent sociability is perhaps really the effect of that remarkable instinct which guides migrants to so close an observance in the date of their annual arrival, and may thus account for several being seen together.

We are not in a position to afford much information of its breeding habits, although we have had several opportunities of seeing, and also of examining,

young birds which have been obtained in both islands ; the young birds that have come under observation in this district have made their appearance in the month of March, which gives an indication as to the breeding season. Although its flight is peculiar, with a very rapid motion of the wings, we have known it on several occasions to have been mistaken for a hawk. Last March, we noticed a young bird near Mt. Somers, at no great distance from the *Fagus* bush of Alford Forest ; it maintained its rather awkward flight but a short distance at a time, alighting heavily on the ground, and turning each time it settled, so that it faced the direction from whence it flew.

A specimen obtained in Ohinetahi, at Christmas time, measures as under :—Beak from gape 1 inch 8 lines ; upper mandible horn colour, curved, hooked at the point and reaching below the lower mandible, which is yellowish ; nostrils pierced close to the base, head feathers reaching to the nostrils ; wings measure 8 inches, first feather short with outer web exceedingly narrow, third and fourth feathers longest ; tarsi defended with imbricated scales, measures 1 inch 3 lines ; toes, three in front and one behind, covered with scales, armed with curved claws of dark horn colour ; entire length from tip of beak to the extremity of the tail 1 foot 6 inches, of which the tail measures 9 inches ; upper surface is of a rich bright brown, barred across with rufous brown ; the top of the head brown, marked with streaks of rufous, a streak of buffy brown extending from nostril over and behind the eye ; neck barred with rufous, the end of each feather bearing a spot of lighter brown near the tip ; wing coverts brown, barred with rufous and very slightly tipped with white ; tail dark brown, banded with rufous, tipped with white, inner webs palest ; under surface white, with brown streaks down the centre of each feather ; thighs buffy, feathers pointed with brown ; under tail coverts white, with bars of dark brown.

There are several specimens of young birds in the Museums of Wellington and Canterbury ; the plumage differs much from that of adult specimens, being warmer in tone, especially on the under surface, and the upper surface presents a spotted appearance.

The young have been supposed a new species, which is not surprising when the general contrast of the plumage in the two states is considered. One of the youngest specimens we have seen, measuring from tip of beak to extremity of tail 12 inches 3 lines, has the upper surface dark brown ; feathers barred with pale brown, spotted with buff ; wings with a spot of buff at the extremity of the outer web ; under surface warm rufous, with streaks of brown.

The Long-tailed Cuckoo visits the alpine districts, where, during summer time, its remarkably shrill note is not unfrequently heard. It should be mentioned that, unlike the bronze-winged cuckoo, its occurrence in the more cultivated neighbourhoods is rather rare. In the bush its movements are restless, but its habits are not those of a shy or wary bird.

No. 60.—COTURNIX NOVÆ ZELANDIÆ, Quoy.

Koreke.

Quail.

(See also Vol. ii., p. 66.)

The most useful and important order, *Gallinae*, has here but one indigenous representative, in the once well known, but now rare Quail; the rapid declension in its numbers, and indeed, threatened extermination, may fairly be dated from the settlement of the European population in these Islands.

Bush fires in our southern districts have been the chief cause of its disappearance; many settlers profess to believe that stocking runs with sheep occasioned its destruction. To this we demur, for the effect of extensive bush fires on the habitat of this excellent game bird, has come under our own personal observation. In the early part of the year 1857, a large part of the country on the southern side of the Ashburton, high above the gorge, had been burnt in the previous year; on the opposite, or northern side, known now as Clint Hills, the grass presented no signs of ever having been fired, and abounded with Quail—they were flushed every few yards; whilst we never saw a Quail on the opposite bank of the river, *their food* and shelter having been alike destroyed. Not a sheep had been on either side of the river.

But though very rarely met with, yet it is occasionally observed in several remote and secluded localities. We have had the good fortune to be presented with some fine specimens which had been procured from the neighbourhood of "The Paddock," on the West Coast road from Christchurch to Hokitika, a locality where they appeared in considerable numbers for some time.

The male has the upper surface ferruginous brown, with varied black and dark brown markings, a narrow whitish streak following each side of the shaft of each feather; top of the head rich brown, streaked with very dark brown, buffy-marked feathers intermixed; beak horn black, except at the extreme point; nostril covered with membrane; a line over the eye, cheeks, and throat, rufous, with a faint blackish curved mark just above the line of the gape; primaries dull smoky brown; secondaries edged with pale brown, marbled on the outer web with buff and dark brown; under surface ferruginous; breast marked with black and white; abdomen white; thighs buff; irides bright hazel-brown; tarsi dull flesh colour. Bill from gape 8 lines; wing 4 inches 9 lines; tarsus 9 lines; length 8 inches 3 lines; weight $7\frac{3}{4}$ ounces.

The female is not so rufous about the cheeks and throat, has a darker tinge of colour generally; abdomen almost buff. Weight barely 7 ounces. The feathers on the thighs are light and flocculent, those on the abdomen are slaty black, tipped with white, or buffy white, so closely arranged as to give that part of the bird a whitish or buff colour.

Although the sexes differ but little in point of size, yet they are easily

distinguishable by their general tone of colour as well as by the rufous cheeks of the male. On the ground their movements are active; sometimes they may be seen indulging in a dust bath as they lie basking in the sun; unless suddenly startled they almost always maintain that plump rounded appearance which characterizes several genera of the *Tetraonidae*.

From tolerably close observation, we are inclined to suppose that their organs of hearing are far less acute than those of sight; they often give utterance to a low purring sound, that one might suppose to proceed from an insect rather than from a bird. The call is indulged in most frequently during moist or wet weather; it sounds something like "twit, twit, twit, twee-twit," repeated several times in quick succession. In very stormy, gusty weather, these birds appear dull and silent, secreting themselves amongst thick tussocks. When flushed, they do not rise perpendicularly, but still very straight for a few feet from the ground.

In confinement, they are fond of picking about amongst sand, and thrive well on soaked bread, grain of various kinds, and the larvæ of insects; the male is not an attentive mate at feeding time, and where several are kept in the same enclosure, constant little bickerings take place without actual hostilities being indulged in.

The eggs require twenty-one days incubation, and the chicks are most active directly they emerge from the shell. They grow very rapidly; at about four months old the young cannot very readily be distinguished from adult birds, either by contrast of size or plumage.

The Hon. J. C. Richmond saw Quail in the Taranaki District, in the months of November or December, 1869.

A fair correspondent forwarded two beautiful specimens of the egg (one of which was unfortunately broken in the course of transit), which were obtained in the Waitaki District.

Examples of the egg have been found buffy white with brown splashes.

In the early days, on the plains near the Selwyn, a bag of twenty brace of Quail was not looked upon as extraordinary sport for a day's shooting.

No. B. 65.—*ANARHYNCHUS FRONTALIS*, Quoy and Gaim.

(See also Vol. ii., p. 68.)

Thinornis frontalis, G. R. Gray.—*Gen. B.*

Charadrius frontalis, G. R. Gray.—*Ibis*, July, 1862.

Hæmatopus frontalis.—*Trans. N. Z. Inst.*, Vol. i.

This wader was first made known to science under its present name, by MM. Quoy and Gaimard, having been observed during the expedition of the "Astrolabe," undertaken in the years 1826–29, by order of the King of France. It is also thus recorded in the "List of the Birds of New Zealand and the adjacent Islands," in Dieffenbach's work. Again, by G. R. Gray (*Ibis*,

July, 1862), we find this bird mentioned under the name of *Charadrius frontalis*, with this very remarkable note: "The bird is represented in the *Voyage of the 'Astrolabe,' with a deformed bill; the bill is perfectly straight in most specimens.*" Where could the author have met with those specimens with perfectly straight bills? or rather, which of the waders or plovers passed for the *Anarhynchus*?—perhaps *C. bicinctus*.

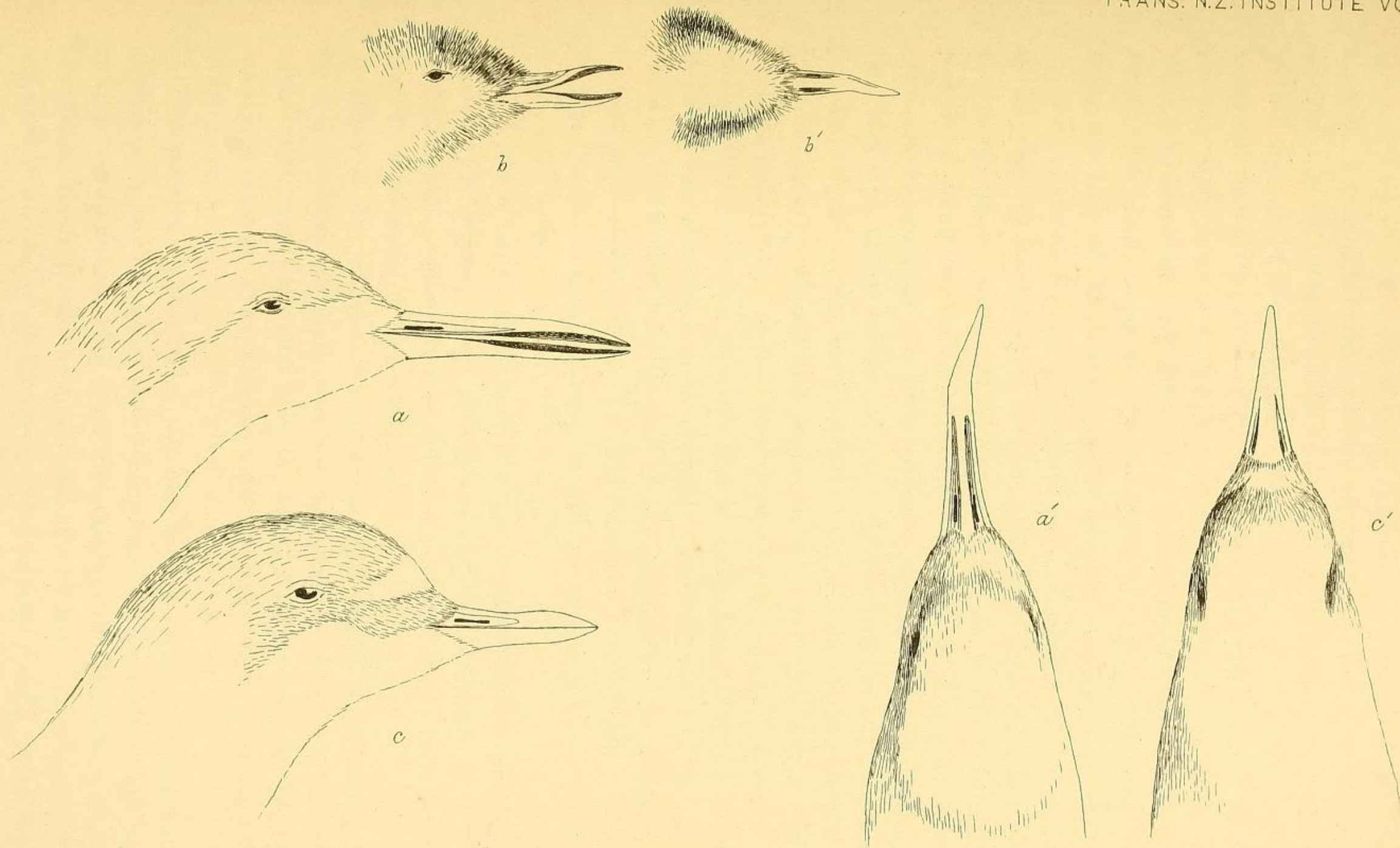
I have lately had the pleasure of perusing a very interesting pamphlet, *On Rare or Little-known Limicolæ*, by Mr. Hastings, F.L.S., etc., who appears to have taken great pains in gathering together all the information he could collect about this peculiar-looking bird, and also gives a careful description of a specimen, in which he unquestionably makes the best of the slender materials at his disposal.

Still, as something like mystification might yet be thought to surround the history of this very interesting species of the large Grallatorial family, I have had much pleasure in presenting to the Museum, specimens of the adult, and also the young bird in the state in which it may be found probably some ten days from the date on which it emerged from the shell.

These specimens were obtained on the shingly bed of the Rakaia, which is one of the largest of the *snow* rivers that intersect the Plains of Canterbury. The *Anarhynchus*, be it understood, is not confined to that locality, in fact it is of frequent occurrence, and may be observed during several months of the year at least, near the streams or back-water of almost any of the rivers, which in their course disclose sandy spits and wide areas of shingle.

With regard to its breeding habits, I am unable to add much to the information which is given in my Notes "On the Birds of New Zealand."—(*Trans. N. Z. Inst.*, Vol. ii.) The young, if undisturbed, remain for some time near the spot where they were hatched; to escape observation they lie concealed behind stones, etc.; should an attempt be made to molest them, they start off with considerable celerity, uttering, at the same time, a shrill piping cry of alarm. When hard pressed, they take to the water; we have known them to cross a stream of considerable volume. The parent birds never appear to separate far from each other during the period of incubation; on being disturbed, they exhibit a peculiar habit of partially extending the wings, the effect of which is that they assume a broad and flattened appearance across the back, the head at the time being carried very low, the bill just clearing the ground, whilst a low purring sound is emitted. So tame does the *Anarhynchus* become under the influence of parental instinct, that after eggs have been picked up, examined, and replaced on their unsheltered sandy bed, I have seen the old bird immediately resume her duty of incubation, although I may have removed but a few paces distant and remained in sight for some time.

Having thus glanced at the favourite habitat, etc., of the Crook-billed



a. a' ANARHYNCHUS FRONTALIS.

b. b' Young of same.

c. c' CHARADRIUS BICINCTUS.

J.B. del. et lith.

Printed at the Gen. Gov. Lith. Press by J. Earle.

Plover, I will now proceed to describe these specimens ; the first, that of an adult male, probably in its second year—bill black, longer than the head, pointed, curved to the right or off side, curled slightly in itself in a leaf-like manner, a long groove on each side of the upper mandible, the nostrils long, pierced not far from the base of the bill, fitted with a membranous process, which, apparently furnished with a system of nerves, extends some distance along the mandible ; interior of both upper and lower mandible concave or sulcate, which form is maintained to the point ; thus, the inside of the bill, when the mandibles are closed, becomes a curved pipe, with a very slight twist ; the sharp edges of each mandible are horny and semi-transparent ; from the base of the bill the upper mandible is flattened on the top for a distance of about 6 lines, it then assumes a raised and slightly rounded form, till it gradually sweeps down into the point ; forehead, chin, and the whole of the under parts white, with a broad irregular band of blackish feathers stretching across the breast, widest on the left or near side ; above the bill, from eye to eye, runs a narrow strip of very pale brownish colour ; crown of the head and upper surface of the body ash grey ; wings long and pointed ; primaries dark brown, outer narrow vane of each primary darkest ; shaft of feathers distinctly white ; first feather longest ; tail moderate, ash grey, middle feathers inclined to brown ; legs gartered, or naked just above the tarsal joints ; legs and feet a peculiar tint of black-green with a grey shade ; toes three to the front and none behind, united at the base by a membrane extending to the first joint, bottom of toes greenish brown, middle toe and nail longest, nails short and black. Bill measures 1 inch 2 lines ; wing 4 inches 9 lines ; tarsus 1 inch 2 lines ; middle toe with nail 11 lines ; total length 8 inches $5\frac{1}{2}$ lines.

The chick above mentioned is covered with freckled grey down ; under surface silky white ; wings pale brownish ; the deflection of the bill easily distinguishable. Bill measures 6 lines ; tarsus 10 lines ; middle toe with nail 8 lines ; total length 2 inches 8 lines.

Birds of the year do not assume the black band ; females differ little from the males in size, the band is not so conspicuous, as it is much narrower than in the male ; fine old males have the breast band broad, and that on the forehead dark brown. I have never seen this bird assemble in large flocks like *C. bicinctus*.

The peculiar formation of the bill has apparently induced naturalists to exhibit considerable doubt as to the proper position of this, perhaps, unique species. Without referring to all the notices of this bird which have appeared at different times, it may be mentioned that at least one eminent ornithologist considered the bill to be an accidental deformity ; again, it has in some way been confused with *C. bicinctus*, from which it differs materially, in habits as well as structure.

A consideration of the natural features of its favourite haunts permits us to indulge in surmises as to the convenience and adaptability of its remarkable form of beak for obtaining its food. Where we have seen it has never been far from water, and if, as we presume, this bird is peculiar to this country, we can point to our larger river beds as affording it admirable feeding grounds. These rapid shallow streams are perpetually wandering and shifting in their course, cutting new channels after every freshet, whether occasioned by heavy rainfalls or by the melting of snow from the alpine crests of the "back country." Anyone acquainted with our "plains" must have observed, here and there, how certain parts (termed by geologists, "fans"), are thickly covered with stones—as, for instance, some miles below the Gorges of the Rakaia or Rangitata;—however unpromising or useless they may appear to the inexperienced, the practical grazier is aware that those stones assist in keeping the ground cool, and in retaining beneath them a certain amount of moisture which, during the drier portion of the year (when the parching north-west winds prevail), thus invigorates the thirsty rootlets of many valuable grasses, and the result is the maintenance of a fair number of sheep on this rather barren-looking stretch of country. When any of these stones are disturbed from their bed, who can have failed to notice the commotion produced amongst the insect community thus suddenly disclosed to view; what scuttling ensues to gain fresh concealment from the garish light of day. In a somewhat similar manner, after a stream has deserted its temporary bed, in all probability numerous forms of aquatic insect life, attracted by the moisture, are to be found in the sand in which the shingle lies half imbedded. The horny point of the bill of this bird, from its peculiar form, is sufficiently strong to be used for thrusting between and under stones and pebbles.

The flexibility of the upper mandible derived from the long grooves and flattened form (extending to nearly half its length), tends materially to assist the bird in fitting its curved bill close to a stone, and thus aids it in searching or fossicking around or beneath the shingle for its food, while at the same time the closed mandibles would form a tube through which water and insects could be drawn up, as water is sucked up by a syringe. As the flexure of the bill is lateral, the bird is enabled to follow up retreating insects, by making the circuit of a waterworn stone with far greater ease than if it had been furnished with the straight beak of the plover, or the long flexible scoop of the avocet.

The inspection of these specimens must clear away any little cloud of doubt that might remain on the minds of persons unfamiliar with the bird, and convince them that this singular form of bill, so far from being an accidental deformity, is a beautiful provision of Nature, which confers on a plover-like bird the advantage of being able to secure a share of its food from sources whence it would be otherwise unattainable.

October 14.—Since the above paper was written, an opportunity has been sought of visiting a favourite habitat of the *Anarhynchus*, as an examination of the head of the bird was desirable.

The mandibles are connected by a membrane, fringed with a tough black border, forming itself, when the beak is closed, into a slightly projecting fold at the gape; the upper mandible (or roof of the mouth) is armed with a treble row of very fine spines, set like the teeth of a saw, pointing to the base of the mandible; the tongue, when at rest, lies well within the lower mandible, it is partly sulcate in form, tapers to a very fine point, is much shorter than the beak, leaving a vacant space of six lines from its extremity to the end of the lower mandible; the base is furnished on either side with a few spines (three or four), planted in the same direction as those in the roof of the upper mandible; the thick portion of the tongue is indented with four or five very slight longitudinal furrows, terminating in the channel into which the tongue now resolves itself till it ends at the very acute point; this sulcate form is attained by the edges being raised.

From this peculiar form of tongue, it may be observed that no hindrance is presented by that organ to the sucking up of water; the spines would prevent the escape of the most slippery or minute prey, which could be crushed by the closing of the beak and the pressure of the tongue against the upper mandible, the water finding ready egress.

The tongue of *C. bicinctus* is altogether different in form.

No. 74.—*ARDEA SACRA*, Gml.

Matuku.

Blue Crane.

With us in the South, this bird is of rare occurrence; occasionally it may be observed on the flats at the head of one of the bays; as yet, we only look upon it as a visitor. When we have noticed it on the wing it has been flying low, just skirting the shore, with deliberate, almost heavy, flight. Last year, an egg was received at the Canterbury Museum which had been taken from a nest in Hawke's Bay. In colour it is greenish white, ovoiconical, measuring 1 inch $10\frac{1}{2}$ lines in length, with a breadth of 1 inch 4 lines.

No. B. 75.—*ARDETTA PUSILLA*, Gould, (*BOTAURUS MINUTUS*, Haast.)

Kaoriki.

Little Bittern.

Some of the scientific institutions have lately been favoured by Mr. Purdie, the Curator of the Otago Museum, with photographs and descriptions of an exceedingly rare and interesting species of bird belonging to the Grallatorial division, and which may be taken as the Australian representative of the Little Bittern of Europe. The rare occurrence of this bird, of which only three other

specimens, as far as can be ascertained, have been obtained in this country, is remarkable, when it is considered how great an extent of country, formerly almost entirely unknown, has been opened up and explored by enterprising colonists during the last ten years. In March, 1868, Mr. Shaw, of Kanieri, one of the Wardens on the West Coast, presented two specimens to the Canterbury Museum, which were stated to have been obtained whilst feeding near a deep, slowly-flowing, swampy watercourse, by the River Kanieri, and at no great distance from the township of that name. From having been obtained at the same time and place, they were supposed to have been a pair, but it appears that no examination was made before the preparation of the skins; they bear a close resemblance to the description in Gould's *Handbook to the Birds of Australia* of the male *Ardetta pusilla*, and are probably both young males. Subsequently, another specimen of a young bird of this species was obtained in one of the swampy creeks that feed the Okarita lagoon, and was forwarded from the Canterbury Museum to Dr. Otto Finsch, of Bremen.

The following description is taken from the larger of the two specimens in the Canterbury Museum:—Beak long, higher than broad, almost straight, having but a slight curvature towards the point, measuring from gape to tip 2 inches 9 lines; upper mandible flattened on the top, near the base, slightly channeled, nostrils pierced in the groove, defended with membranous process; legs long, gartered or bare above the tarsal joint for 8 lines; tarsus 2 inches 1 line; three toes in front, each furnished with membranous fringe on the inner side, two outer toes united with narrow web extending to first joint; middle toe with claw 2 inches 3 lines; middle claw toothed on the inner side; one toe behind, directed inwards, more robust than those in front, with curved produced claw; toe measuring, with claw, 1 inch 4 lines, of which claw measures 6 lines; wings slightly concave, 6 inches 2 lines, first feather rather shorter than second and third, which are the longest in the wing; total length from tip of beak to extremity of tail 14 inches; under part of lower mandible, sides of bill palish yellow, almost white; edge of mandibles brown; culmen almost black; top of the head greenish black; outer edge shot with bluish black, with a few brown feathers receding from forehead; feathers on the throat and lower part of the neck pale buff with brown streaks; side of neck deep chestnut brown, a narrow stripe of the same colour over the eye; scapularies and back dark brown; wing coverts buffy brown, with deep chestnut on the shoulder, a few of the feathers striped down the shaft with black; edge of the wings coloured with rich brown shaded; primaries dull black; thighs pale buff with streaks of dark brown, darkest behind; tail greenish black.

It is stated that the Little Bittern is so quiet in its habits that it will remain still when approached, so that it will apparently almost suffer itself to be taken by the hand. The birds just described were taken alive, it has been

said, without any very great difficulty ; after which they were turned loose amongst the fowls in a poultry-yard. They were found dead shortly afterwards, it is alleged, from exposure to the keen frosty night air, being deprived of the accustomed protection afforded by the thickly-growing sedgy vegetation of their swampy habitat. They had been observed standing motionless on a bare stem or stalk, from which they overlooked the water.

From the description given of our bird, it will be observed how much it differs in the general coloration of its plumage from its antipodean representative (*Botaurus minutus*), which has the top of the head, shoulders, primaries, and tail bluish black, whilst the rest of its plumage is buff, except the front part of the neck and chin, which are whitish, as is also the vent ; the size must be about the same, as we have noted measurements of specimens which are less than those of our Bittern, as well as some which exceed them ; both have the middle claw toothed on the inside ; irides of *B. minutus* are said to be yellow ; the fact that the feathers on the tibiæ are said to reach the tarsal joints, points out pretty clearly that the New Zealand wader is the more aquatic of the two species.

Having been entrusted by Dr. Hector with a copy of the photograph and the description of Mr. Purdie's bird (which he proposes to name provisionally, *Ardeola Novæ Zelandiæ*) for comparison with the Little Bitterns preserved in the ornithological collection in the Canterbury Museum, after careful examination I am unable to discover any material difference between them and the specimen from Otago. In Mr. Purdie's description, the under parts and thighs are described as brown with greyish white margins, and the photograph exhibits the hind claw rather more produced, but there can be no doubt, I think, that these birds are of identically the same species. Mr. Purdie notes the legs and bill of his bird as yellowish green, eyes rufous brown.

October, 1870.—The Canterbury Museum received two fine specimens from Westland, lighter in colour, without the rich deep chestnut markings on the side of the neck, etc., which are conspicuous on the birds obtained in 1868 ; this *may* be the distinction of the sexes ; no information on that point accompanied the skins ; or it may be the difference of plumage between the seasons of spring and autumn.

Any information respecting the habits of the Little Bittern would be exceedingly interesting ; judging from the natural features of the localities whence the Westland specimens were procured, it would appear to live on the sedgy margins of deep swampy pools or creeks.

Mr. Docherty, who preserved the skins now in the Christchurch Museum, furnished the following Notes, descriptive of where they were obtained :—
 “They are to be found on the salt-water lagoons on the sea shore, always hugging the timbered side of the same ; I have seen them in two positions, viz., standing on the bank of the lagoon, with their heads bent forward, studiously watching the water ; at other times I have seen them standing

straight up, almost perpendicular—I should say this is the proper position for the bird to be placed in when stuffed. When speaking of lagoons as the places where they are to be found, I may mention that I caught one about two miles in the bush, on the bank of a creek, but the creek led to a lagoon. They live on small fishes or the roots of reeds ; I should say the latter, because at the very place where I caught one, I observed the reeds turned up and the roots gone ; they are very solitary, and always found alone, and stand for hours in one place. I heard a person say that he had opened one and found a large egg in it. They breed on the ground, in very obscure places, and are, on the whole, a rare bird. I never heard their cry.”

The fact that the Little Bittern was noticed by Mr. Ellman, in 1861, was overlooked when this paper was written. Mr. G. R. Gray, in his “List of the Birds of New Zealand and the Adjacent Islands,” p. 24, puts this query,—“What is the Little Bittern, Ellman, *Zool.*, 1861, p. 7469?”

In plumage, our Little Bittern of the West Coast rather resembles the American wader (*Ardea virescens*) than the Little Bittern of Europe.

No. 87.—*OCYDROMUS AUSTRALIS*, Sparrm.

(See also Vol. ii., p. 70.)

The history of the Weka, the Wood-hen of the settlers, is not yet complete ; there exist varieties which are marked, although ornithologists might object to class them as distinct species.

Whilst camping in one of the gorges of the Rangitata, a very striking variety used to visit the tent constantly ; the individuals of either sex were above the average size ; the general colour of the plumage light greyish brown ; the feathers marked or barred with shades of dark brown ; the uropygium and in some instances the tips of the primaries rich chestnut ; throat and cheeks grey. The young were dark brown, perhaps not to be distinguished readily, if at all, from the young of the ordinary brown Weka (*O. australis*).

Some months since, a specimen with the entire plumage of pure white, was caught alive at Mt. Four Peaks ; the legs and bill pale red ; irides reddish brown ;—not the light pink that is characteristic of the albino.

One of the best walkers amongst our birds, the Weka's step is usually deliberate and slow ; its carriage is particularly noticeable, it is so remarkably bold and confident, yet wary ; the neck raised, with the head carried forward with a listening and yet contemplative air, one is loth to believe that the bird is such a mischievous rogue. When at full speed, the neck is extended, the head lowered, with the point of the beak slightly depressed ; if pursued, it turns and doubles rapidly, availing itself of any shelter in which to find refuge. It regains confidence quite as readily as it exhibits fear, and if left in peace, emerges from its place of concealment with the same coolness of demeanour that usually distinguishes it. We have caught a whole family of

old and young ; after being released, they started off, but returned soon afterwards with their ordinary air of inquisitiveness. When two males quarrel, they fight with determination, sometimes coming out into the open ground ; the victor becomes a relentless persecutor, driving off his antagonist at every opportunity ; on these occasions one can appreciate the speed and alertness which both pursuer and pursued display, in getting over the ground and threading the interlaced maze of shrubs and grassy tussocks.

The nest figured (see Plate VII.) is placed amongst the sheltering leaves of snow-grass tussocks, in which the roughly-finished home of the Weka is frequently constructed.

The colour of the down of the young affords a fair indication of their age, the darker shades of brown characterizing extreme youth, yet the lighter shades which their plumage gradually assumes offers great variety. Such is our experience after quietly looking at some scores of broods ; there is in their early stage of growth a resemblance to the Cochin China chick about them, this would be stronger but for their smooth tarsi and dusky hue ; perhaps this idea is due to the absence of even an apology for a tail, for the caudal plumage is not assumed until half their growth is reached, but whilst they are still under the guidance of the parent birds. Whilst being led forth food hunting, the brood is most sedulously attended by the old birds, although perhaps they may not be at one time both close together ; insects, worms, lizards, etc., seem their principal food, yet nothing comes amiss to these omnivoræ. When an old bird is aware of a lizard lying *perdu* beneath the sharp pointed leaves of an *Aciphylla*, the beak is thrust into the plant in defiance of threatened wounds, the wings are suddenly thrust forward, and the adroit Weka backs out with her writhing prey, which the young instantly devour.

Although mercilessly persecuted, this Ishmael amongst birds may be found or heard in most up-country districts, but in greatly diminished numbers. The size of the Wekas that are now usually met with, is much smaller than it used to be ; a four-pound bird is now almost unknown, yet, years ago, such a weight was not an uncommon one for a fine hill bird. The greatest sin we can lay to its charge, is the ruthless manner with which it destroys ducks' eggs, in which it is second only to the harrier.

The Weka sometimes, yet rarely, has been noticed to have a white feather or two in the wing.

As an article of food, it is in far less repute than when we first settled here in the days of dear meat ;—(we have since bought sheep at one shilling per head)—our taste is more fastidious, and the Weka is only killed too often for mere wantonness, or the *pleasure of taking life*. The Maoris of Arowhenua make expeditions in the winter for obtaining a supply of these birds, which they preserve in their own fat. On one run, near Burke's Pass, we have been told that above two thousand wekas were secured by a party of natives at one of these hunts.

No. 91.—PORPHYRIO MELANOTUS, Temm.

(See also Vol. ii., p. 71.)

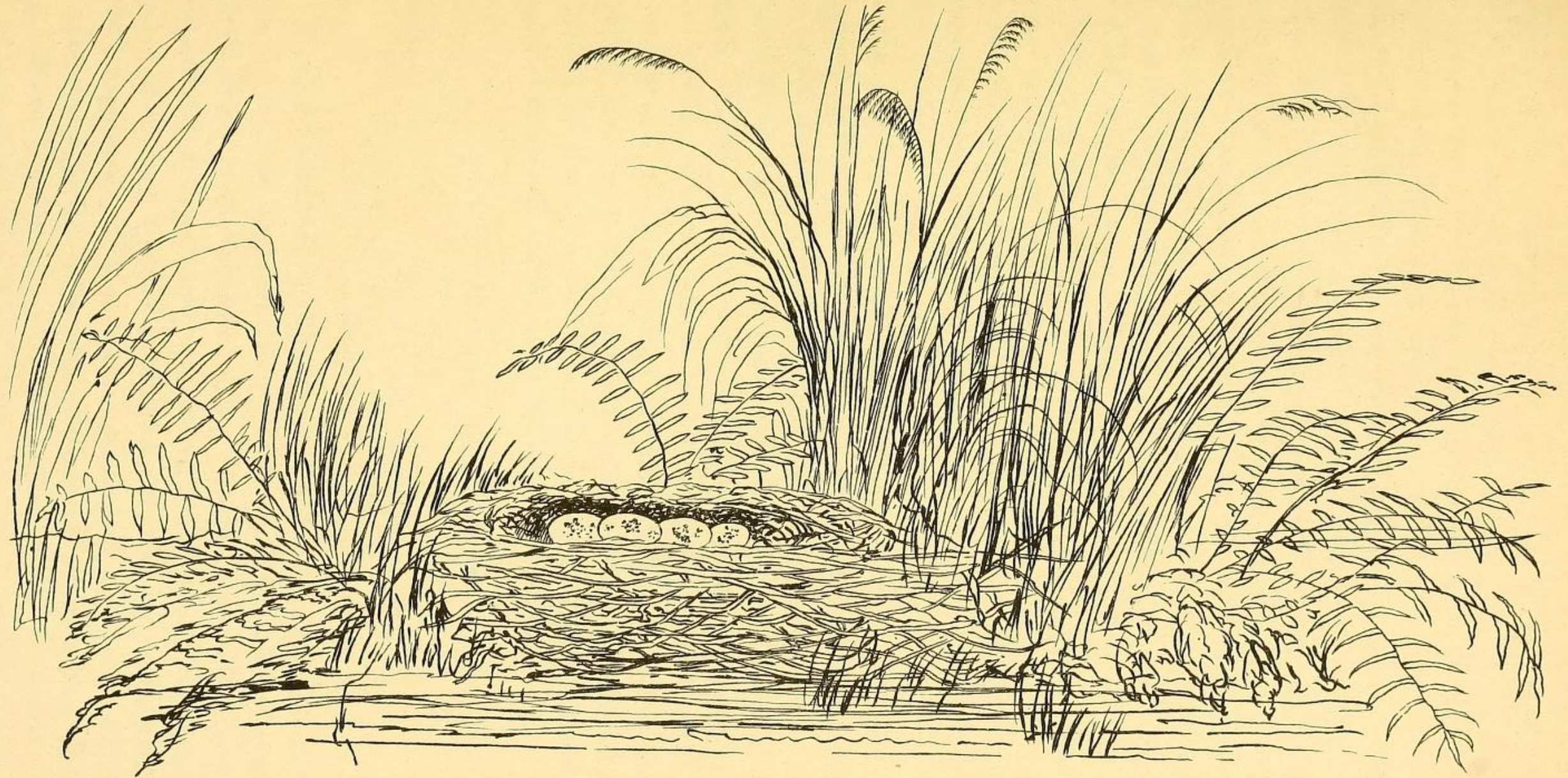
The nest which is figured on Plate X. was procured from the swamp by Lake Ellesmere ; it was firmly built of the leaves of a *Carex*, and formed a compact mass, some eight inches in height, not very easily to be distinguished, as the material of the nest was as green as the surrounding grasses. The eggs are often sucked by the harrier, whose keen sight discovers the very inartificial structure of the Pukeko ; on examining a nest after a harrier's visit, we have observed that the contents of the egg have been extracted through a long hole made at the bilge of the egg. Few birds more frequently become the prey of the harrier than this wader.

No. 95.—SPATULA VARIEGATA, Gould.

Shoveler.

One of the handsomest and perhaps also one of the least known amongst our group of *Anatidæ* is the Shoveler ; the variegated plumage, dark ruddy breast, and bright blue wing of the drake, exhibit one of those instances—as in the case of the mallard, at home—in which nature, for its own special reasons, lavishes much beauty of colour on the male, whilst the female is clothed with feathers of a far less attractive hue. In the case of the Shoveler, may not this remarkable distinction in the plumage of the sexes be regarded as a protection for the eggs during the period of incubation, rendering the female less liable to observation than if she was arrayed with brighter colours, with which she could scarcely elude the keen vision of the harriers, the most successful of egg-robbers. A habit of this duck would appear confirmatory of this view ; we have repeatedly noticed in the breeding season that the groups of Shovelers which dot the lakes, here and there, are nearly all drakes, a fact that indicates that the male bird has little, if anything, to do with the nest or the labour of incubation. It is very generally distributed over the country, although large numbers are only to be met with in certain localities in the North Island, where it is in some parts, or has been, of common occurrence ; for, in the season, numbers were to be seen hanging up in the poulterers' shops in Wellington, which had been brought to that market by the steamers from Hawke's Bay ; we say *has been*, as the supply appears to have failed ; for the past two winters we have certainly missed the Shovelers.

For some years after settling here, we regarded this bird as quite a *rara avis*, we observed it so very seldom, and then only in the neighbourhood of the Rakaia ; it is now much oftener met with than was formerly the case. On the wide expanse of Lake Ellesmere, and the less extensive mountain lakes in the Ashburton country, it is frequently seen in considerable numbers ; occasionally specimens have been obtained near Christchurch.



Nest of PORPHYRIO MELANOTUS.

See Vol. II. Page 71.

T.H. Potts del. J.B. Little.

Printed at the Gen. Gov. Lith. Press by J. Earle.

For years we hunted unsuccessfully for the nest, trying the most likely swamps in the neighbourhood of its haunts, in the hope of making the discovery, but our diligent quests were in vain ; one of the writer's sons was at last successful, as the following communication will show :—"Hurrah for the Shovelers ! Yesterday (Nov. 7), we found a nest at last ; it was placed not in a swamp, or even near water, but on the side of one of the low downs in Craig Phillips (near the Rangitata), sheltered by a couple of tufts of tussock and a plant of Spaniard grass (*Aciphylla*) ; it was made of fine grass, in which was a fair amount of down, but not so much as is usually seen in the nest of the grey duck (*A. superciliosa*) ; it is deep, and rather narrow across the top (about 7 inches) ; the eggs, ten in number, ovoiconical in form, very smooth and fine in texture, creamy white with a slight greenish tint, measure in length 2 inches $1\frac{1}{2}$ lines, with a breadth of 1 inch $5\frac{1}{2}$ lines."

This nest was probably commenced in the first week of October, as some of the eggs placed under a hen were hatched on Nov. 18. The young bird greatly resembles young grey duck in colour, being clouded with brown and yellow, but the peculiar form of the bill, with its broad point, is noticeable when it emerges from the shell.

The singular shaped bill, which gives a name to this duck, is well worth studying ; it is nearly three inches in length, much dilated near the extremity, the upper mandible possessing great flexibility, is abundantly furnished with nerves, conferring a great degree of sensibility on that organ, which must greatly aid the bird in selecting its food ; it terminates in blunt unguis of considerable hardness. Both mandibles are furnished with a pectinated appendage, in which laminae are closely arrayed, the sharp and projecting teeth of the upper mandible overlapping and acting against the peculiar apparatus of the lower mandible. From this elaborately-organized trap, even the smallest aquatic insects could not escape.

No. 98.—HYMENOLAIMUS MALACORHYNCHUS, Gml.

Whio.

Blue Duck, Mountain Duck.

(See also Vol. ii., p. 73.)

Having stated that the Blue Duck occasionally breeds in holes of banks, it is worth recording, perhaps, that we found the nest in situations that did not afford any great amount of shelter ; one of these instances was met with on a spit in the Upper Ashburton River, about three miles below the glacier from whence that river derives its source ; the nest was placed in a solitary snow-grass tussock of moderate size, within two or three yards of the stream ; it was made of grasses, the interior composed of cut grass like chaff, down, and a few feathers.

In examining an embryo of three weeks, we found that the form of the

bill was well developed, showing on the sides, near the end of the upper mandible, the peculiar membranous appendage of a darker colour than the rest of the bill, but were unable to discern the presence of lamellæ; the caudal down was produced to a marked degree.

When hatched, the young are large compared with those of *Fuligula Novæ Zelandiæ*, measuring 7 inches in total length, of this nearly one-third is contributed by the tail; bill from gape 9 lines.

Bill horn colour, lightest on the lower mandible, unguis rosy at the point; membranous appendage slaty black, well overlapping the lower mandible, furnished with lamellæ along its basal half, which work against the finely serrated sides of the compressed basal half of the lower mandible; upper surface dull green, brightest on the back; over and behind the eye irregular streak of white; under surface white; wings and upper part of thighs brownish; tail green above, at each side a patch of chestnut; under surface of the tail chestnut, covered with thick down, longest on the back; legs and feet yellowish flesh colour.

As will be seen from the above description, the Mountain or Blue Duck in its earliest stages of growth is very prettily marked, with its green and white down, relieved by patches of chestnut; it differs much from the young of any other native species of *Anatidæ* with which we are acquainted; the tail is much produced, in swimming it is carried well above the water. When the parent birds have their brood in charge, they certainly exhibit much less craft as well as energy for the protection of their offspring than any other duck; with them there is little, if any, attempt at concealment of the young, none of the ruses are made use of, which, with the paradise ducks, often prove so successful in misleading their enemies; usually, they simply drop down the rapid, trusting apparently for escape to the turbulence of the stream—an asylum safe enough from most, if not all, indigenous persecutors, but not from the settler's dog; they seem loth to land, and if compelled to do so, their progress is not very rapid, in fact, they impress one with an idea of their helplessness. The duck marches in front, with her low wailing call, the small brood follow, whilst the drake protects the rear, or rather offers himself as the first victim to the pursuer.

For the last two years we have seen fewer Mountain Ducks than usual; if anything can save them from utter extermination it will be the remoteness of their haunts. Protective enactments have doubtless proved beneficial in restraining the unscrupulous in many cases, but such laws would probably be better observed if better known, for when one observes a string of ducks hanging up at a house in *December*, it must surely arise from ignorance of our legislative enactments that such an outward and visible sign of their infringement is made patent. In winter time they congregate in flocks of moderate numbers.

Before leaving these Notes on the Blue Duck, there is one peculiar habit that might be noticed, it is the manner in which it can turn in the water; however rapid the stream, it can turn instantly, as though worked on a pivot; doubtless the produced tail gives this facility. When it is quietly fossicking amongst the soft banks of the mountain stream, it may be seen indulging this habit, without apparently losing an inch of space.

No. 99.—*PODICEPS RUFPECTUS*, Gray.

Little Grebe, Red-breasted Grebe, Dab-chick.

(See also Vol. ii., p. 73.)

Few, if any, of our aquatic birds display more restless activity than the Red-breasted Grebe; this quality is exhibited in a variety of ways; look at the enquiring jerky manner in which the head and neck are carried, slightly in advance, yet continually moving from side to side; a habit that may result from the mode in which its food is obtained. When diving and searching for its prey, the head is doubtless moved from side to side, in order to scan as much of its watery track as possible before returning to the surface; by this restless air the bird seems perpetually on the watch for a surprise, yet it displays a frequent boldness in gratifying its curiosity that is seldom, if ever, shown by many water birds. Then, in watching its progress when swimming, its action appears fitful rather than regular; should any unusual object excite its curiosity or suspicion, it advances towards it with a regular zigzag approach. Its diving power is admirable; how easily and gracefully it is effected—the head by a rapid motion is lowered, and in smooth water a few air bubbles rising to the surface alone denote the spot from whence it disappeared. The length of time it can remain submerged is astonishing, and this, too, we have observed in a swift eddying stream at the confluence of two large creeks. We have ever thought it a pretty sight to watch a family of Grebes on some lonely tarn or pool, fringed by a narrow but dense belt of *Discaria* or *Olearia*, that afforded an efficient screen for observation.

We never saw more than two young ones in a brood; very often the labour of the parents is most equally shared, by each appearing to take charge of a young bird, which float about quietly, often with the neck bent back, the head resting between the shoulders, now and then uttering a soft trilling note not unlike, but less marked, than the call of the parent birds.

The old Grebes dive incessantly, remaining but a very short time under water; when their effort has been successful, a soft call summons the young bird, and the aquatic morsel, whether fish or insect, is always dipped in the water before it is offered to the young one. In the brief intervals between the dives, the wings are carried high, somewhat swan fashion, as if the more readily to catch the drying influence of the air. For some weeks the young preserve a greyish tone of plumage over the upper surface, the head retains some light greyish down, whilst the breast is pale rufous.

The figure (Plate VIII.) represents a nest built against one of those large black stems of *Carex virgata*, which so often dot the shallows of some of the inland lakes ; it is constructed of aquatic plants and roots, is screened by the long sweeping leaves of the *Carex*, which hang over till the points of the leaves dip the water. It is only by wading and very close search that these nests are to be discovered. We have not, as yet, remarked that the bird covers the eggs on leaving the nest ; this is a habit which many writers attribute to the Grebes of Europe.

We have not seen the Grebe on land, and seldom flying ; when on the wing it just skims the surface of the water, with a very rapid motion of the wings. On one occasion we noted several in company, on a lake of moderate size, making use of their wings.

B. 131.—STERNA (ALBA, sp. nov. ? Potts).

White Tern.

In Gray's "List of the Birds of New Zealand and the Adjacent Islands," may be found,—*Gygis candida*, Wagl. White Tern, Lath. *Sterna alba*, Gmel. *Sterna candida*, Gmel. Habitat, Norfolk Island.

Now, whether the bird we have lately seen is identical with that in the above list, we cannot undertake to decide, and briefly record the occurrence of a White Tern, under conditions presumptive of its breeding here.

On the 4th of January, whilst crossing "the plains," from the Rangitata to the Rakaia, amongst a large number of the common tern (*S. antarctica*), wheeling and hovering about one of the streams of the Ashburton, we first observed this white bird. The shingly river-bed about this spot had been selected as a breeding place by the common tern, for, crossing it about five weeks previously, we had noticed many of their dusky-coloured eggs lying in couplets on the bare gravel.

On sighting the White Tern, we left our horses to graze on the soft grass that fringed a rippling creek, and watched its movements with great interest ; the orange-billed *S. antarctica*, vociferous and bold, flew screaming, with rapid darts, close enough to be reached with a riding-rod, marking their irritation at our intrusion by swooping close to our faces, sometimes ejecting a whitish fluid on us ; the stranger, less confident, kept rather aloof, with a different style of flight to that of its congeners, less rapid, but not to our thinking did this arise from any lack of power ; the wings appeared more bent, the stroke more deliberate. As we watched its devious course up and down the stream, its pure white plumage was easily followed ; sometimes it skimmed over the surface of the swiftly flowing river, or hung hovering for a few moments a few feet above, now and then rising to a considerable height, often to an elevation only reached by a few of its busy companions. Several times it was observed to settle on the shingle, soon rising again, wheeling about with renewed activity. As the tern's breeding season, in this country, may be considered at its height

at this time, we should be inclined to think that the stranger was nesting here.

The entire plumage was white, upper, lower surface, and *head* also; the bill appeared to be light coloured. Our observations were made chiefly during its rapid movements, so that of the bill, tarsi, and feet, we cannot pretend to give a reliable description.

No. 134.—*PHALACROCORAX (GRACULUS) CARBO*, Linn.

Kauau tuawhenua.

Great Shag, Cormorant.

This large species of our native *Pelicanidae* must enjoy a most extensive range, as there appears to be not much doubt of its identity with the European cormorant which is met with in the highest latitudes of the northern hemisphere; it would seem that it was formerly known sometimes as the sea-raven or crow, from its rapacity. It is worth recalling, that our eldest poet, that great student of nature, mentions these birds together in two consecutive lines,—

“The hote *cormèraunt*, full of glotonie
The *ravin* wise, the *crowe* with voice of care.”

This fine-looking bird, one of the most industrious of fishers, appears to be generally distributed throughout the country; unlike *G. punctatus*, *G. brevirostris*, and others, it is of rather solitary habits, whereas those species delight in the association of numbers, their rapid motions imparting an air of liveliness and gaiety to the rocky wave-worn coast line, or the placid waters of the deep inland lake. It is usually classed as a sea bird, yet, although it frequents our coasts and harbours, it is to be observed a great way inland, and, taking the width of the island into consideration, a very long distance from the sea; we have noticed it to the west of Lake Coleridge. Except during the breeding season, it may be said to pass rather a solitary life; its favourite post, where obtainable, is the outstretched limb of some blasted tree on the verge of the bush, or a ledge of rock near to a stream or lake; but although thus solitary, it is by no means to be considered shy or timid; it does not “fly the haunts of men.” We have often observed it perched on the lofty chimneys of the public buildings in Christchurch; two years since a mass of its nesting materials was cleared away from some part of the roof.

This ruthless desecration of the lares and penates did not cause the abandonment of the settlement; with the clear sparkling Avon flowing immediately below, the situation was too good a one to be forsaken without the display of more active hostilities. These favourite posts still continue to be frequently occupied, notwithstanding that birds are sometimes shot there, for the protection of the young trout, with the acclimatization of which our silent fisher unwisely interferes.

Its flight occasionally is very lofty, seldom very straight; from watching

its progress whilst soaring or wheeling aloft, one might imagine it to be trying "great circle sailing;" it approaches and glides to its perch with sweeping curves rather than by a direct course; its appearance is the signal for alarm amongst all poultry within reasonable distance, yet it is harmless and peaceable except where fish are to be found. After much occupation on or in the water, it has a knack of drying its feathers in a peculiar manner, which gives it a most grotesque appearance; it stands, say on a sunlit rock, stretching out its quivering wings horizontally, till it really looks not at all unlike the old-fashioned sign of the "spread eagle."

Its activity in the pursuit of its finny prey is indeed remarkable, and, as is well known, in some countries led to the taming of the bird for the purpose of rendering this dexterity of service to man; one of the old offices in the royal household of England was that of Master of the Cormorants.

Its breeding station sometimes is shared by others of the species, whose nests are built in pretty close proximity; sticks, partially decayed leaves of *Phormium*, and coarse grasses, furnish the materials of these structures, which yield from the accumulated filth, a powerful and disagreeable odour. The eggs, at most four in number, are long ovoiconical in shape; they are greenish white, covered with chalky incrustations; they measure 2 inches 5 lines in length, and 1 inch 6 lines in breadth. The young birds remain in the nest till they have attained a considerable size.

In the neighbourhood of Christchurch, not very far from the sea, is, or rather was, a swamp of considerable extent, which was selected some years since as a breeding station by certain species of our numerous family of the *Graculidæ*. Numbers of birds were attracted to the spot; a visit to this nursery ground showed them in multitudes, arriving, departing, or stationed in quaint attitudes about the huge tufty heads of the pendant-leaved *Carex*. It was noticeable that the tops of the Maori-heads were almost invariably occupied by the large coarsely-built homes of *G. carbo*; beneath, against the dark tufted root-stems, the less ambitious little river shags reared their offspring. Unsavoury odours, of a most penetrating kind, pervaded this colony and its neighbourhood, from the great accumulation of slimy exuvæ; one could conceive that it was possible for the sea-washed rock to be changed into the guano island—it would be simply a sum in multiplication worked out by Time. Without staying to moralize on the fact that the same great Chemist transmuted the poison stench of one age into a commercial item which has afforded employment to thousands of human beings in another, we may mention that our little colony was not without its value, outside of its purpose for bird incubation.

As the explorer somewhat carefully picked his way, his advancing footsteps shaking the trembling morass, eels of the largest size disturbed were observed threading the watery mazes of the quaking bog, their bulk and condition

proofs that the bird colony furnished them with abundance of fattening food. The following year this locality was abandoned by the shags, who established themselves on a swamp by the Purakanui; this likewise was deserted at the next breeding season. Why? If this change of quarters was rendered necessary by the presence of vermin or filth, how is the guano island built up, unless, indeed, the salt breezes of the ocean befriend the birds by destroying their parasitic tormentors.

ART. XII.—*Notes on an Egg of Alca impennis, Linn., in the Collection of the writer.* By T. H. POTTS.

[Read before the Wellington Philosophical Society, July 16, 1870.]

ALCA IMPENNIS, Linn.; Great Auk, or Gare-fowl; the Geir fugl of the Icelanders;—is the rarest of the *Alcidæ*, and probably also, it is the rarest bird of the northern hemisphere.

Various authors have described it as living, except during the breeding season, almost habitually at sea, where its wondrous powers of swimming and diving procured for it a constant supply of food; we know from good authority that formerly it was to be found at St. Kilda, the Orkney and Farøe Islands, Iceland, etc., but however numerous the flocks then met with, in various parts of the stormy northern seas or its rocky ice-bound shores the Gare-fowl rapidly became scarce. Perhaps its numbers were diminished to satisfy the craving appetites of half-frozen whalers and sealers, whose visits too would most probably take place during the breeding season, when the brief summer opened up a track for the vessels through boisterous seas, haunted with floating icebergs. I think Henry Hudson, the old navigator of those inclement seas, intended the Gare-fowl when he wrote:—"They killed and brought with them a *great fowle*, whereof there were many and *likewise some eggs.*" There was evidently no *close time or fence month* observed for the Great Auk; bird and egg was equally welcome to those "toilers of the sea."

So rare at last became this sea-fowl, that the only specimen the British Museum possessed for many years, was the bird obtained by Mr. Bullock, and which was purchased at his sale, May, 1819. The curious naturalist will find in the catalogue of that great sale of zoological curiosities:—"Lot 43; Great Auk (*Alca impennis*), a very fine specimen of this exceedingly rare bird, killed at Papa Westra, in the Orkneys, the only one taken on the British coast for many years," etc.

So long a period has elapsed since a living specimen has been observed, that many naturalists, amongst them Professor Owen, are inclined to regard its extinction as an accomplished fact, for, notwithstanding the scientific explorations, more or less exhaustive, which have characterized the various Arctic expeditions, not a single instance of the occurrence of the Gare-fowl is recorded.

From notes and observations of various travellers, sportsmen, and collectors,

who have been led to visit the high latitudes of Iceland and other places, we believe that the Gare-fowl still exists and breeds on some of the surf-beaten Skärs and Skerries, where a frightful surge almost perpetually rages, and denies access to the boldest explorer. (Would that some of *our rarer* birds could be sheltered from impending extinction by a barrier as secure, and thus be saved from the destructive attacks of the mercenary plunderer.)

The author of *Ten Years in Sweden*, writes:—"I do not believe this bird is extinct, although not one has been seen or an egg taken for several years. The value of this bird is as well known in the North as in England."

So highly is an example of this bird esteemed in collections, that in Wood's *Natural History of Birds*, a list is given of all those specimens of the bird or egg which are known to exist in the various museums, and public and private collections, throughout Europe and America, recording the number of specimens which each country possesses.

Baring-Gould, in his *Iceland, its Scenes and Sagas*, who contributes a fund of valuable information as to the probable habitat of the Gare-fowl, makes the total number larger than that given by the Rev. J. G. Wood.

For several years I could boast of having three of the eggs in my possession; Dr. Meyer, the author of *British Birds and their Eggs*, inspected and made notes of these ornithological treasures. When, in 1853, I parted with some portion of my collections, one of these rare eggs was purchased at public auction for £30. This was commented on by some of the serials of that date as an extraordinary fact.

The egg which the drawing exhibited is intended to represent, and the smallest of the three mentioned above, measures in length 4 inches 8 lines, by 2 inches 10½ lines in breadth; it is white, slightly soiled in two or three places with dull yellow, marked and oddly streaked, principally at the larger end, with black and blackish brown.

Some twenty years ago very excellent imitations of the Auk's egg were manufactured in France; they were intended to fill up the place of the real egg in the cabinets of oologists; some of these specimens soon crossed the English Channel, and attempts were made to pass them off as genuine. I well remember the pleasure with which a communication was received from a leading naturalist and dealer, that he was at length in possession of some eggs of the Great Auk; on examining these so-called eggs, I was at once struck with their weight, absence of pores, and the extraordinary fact that all were alike, mark for mark; on placing one of my own specimens before my correspondent, he saw at once that he had been gulled, and admitted that he had been cheated out of £18 for half-a-dozen specimens in plaster-of-paris; he, however, fell back on the doubtful consolation that he was not the only sufferer, for, according to a police report of a charge of obtaining money under false pretences, a brother naturalist had been similarly cajoled.