THE BIRDS OF THE
DISTRICT OF
GEELONG, AUSTRALIA

BY CHARLES F. BELCHER

WITH FIFTY
PHOTOGRAPHS
BY HUGH RIORDAN
AND OTHERS

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THE KING OF THE DISTRICT
OF CORK, AUSTRALIA

THE BIRDS OF THE DISTRICT
OF GEELONG, AUSTRALIA

CLIMBING BY ROPE LADDER WITH DETACHABLE WOODEN RUNGS.

[Frontispiece]

THE
BIRDS OF THE DISTRICT
OF GEELONG, AUSTRALIA

BY

CHARLES F. BELCHER

MEMBER OF THE AUSTRALIAN ORNITHOLOGISTS' UNION
SOMETIME EDITOR OF "THE EMU"

With Fifty Photographs by Hugh Riordan and others

W. J. GRIFFITHS
GEELONG

JAN

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TO THE MEMORY OF
MRS. WILLIAM BERTHON
LATE OF WYBALENNNA, AIREY'S INLET,

THIS BOOK IS DEDICATED

BY THE AUTHOR

PREFACE

THIS book is not a scientific treatise, but merely the outcome of a personal desire, which I have long cherished, to give some permanent and orderly form to the odd notes, jottings, and recollections of some five-and-twenty years upon the birds inhabiting the district lying about my native town of Geelong. If my own satisfaction comes first, it can only be increased by the feeling that at the same time I am passing on to those who are already lovers of birds the fruits of my experience, scanty as these may be, and also that my little book may be the means of communicating to the general reader something of that enduring charm and delight which from childhood I have found in the observation of wild birds.

I must confess that the argument that we should study and protect our native birds because of their economic utility leaves me rather cold. Without doubt most kinds of native birds, in obtaining the food which keeps them alive, do greatly help the farmer, orchardist, and gardener ; just as it is certain that five out of every six of the species introduced

from other countries have done and are doing considerable damage to our agricultural industries. But I find the most compelling claim of Australian birds upon our affections to lie not so much in their money value as in the direct influence of beauty which they will exert upon anyone who cares to open his eyes and ears to the life that is all about him by green forest, open plain, or sounding shore. There is always something rich and strange happening in the populous world of birds ; I speak from experience when I say that I cannot take a half-day's walk or drive afield from the town without learning, of one bird or another, something which I did not know before. No single bird is there but has some peculiar beauty. The Cormorant reveals a shining lustre on his ebon wings which no art of modern silk-weaver could hope to imitate ; and the low, ground-built nest of the plain little Bush-lark may, as has been said of another bird's nest, "hold all the joy that is to herald the feet of many rose-red dawns."

When, therefore, it is proposed to exterminate water-fowl at their nests or their roosting-places because they eat fish (any enthusiastic fisherman will prove to you that an adult Cormorant gets through I forget how many tons of choice fish in a year). or, again, when some one discovers that the Satin Bowerbirds like fruits in season, and sets about a ruthless crusade against such of them as may still survive, reflect : a little concerted human action could destroy almost any native bird we have, and once

extirpated, not all the scientific world and its appliances could restore the species to us.

The birds noted in this book are those which have been known to occur either as residents or visitors within a radius of about thirty-five miles from Geelong as the crow flies, country on the other side of Port Phillip being, however, excluded. It will be seen that I record 244 species, and I have no doubt that further investigations would add from twenty to fifty more to the list. In Victoria altogether there are hardly more than 400 species, so that ours is really a thoroughly representative district.

Nor is this to be wondered at. No other Victorian countryside with which I am acquainted presents so diversified a physical aspect or such a consequential variety of birds of different orders. There are the plains of the west and north for the Crows, Hawks, and Quails; the Barwon, Moorabool, and Leigh Rivers whose bushy margins shelter countless of the commoner small birds; the open waters, reedy swamps, and mud-flats attracting Waterfowl in numbers to the vicinity of Connewarre; and, lastly, the Otway Forest, which, with the messmate bush adjoining it on the east, is the home of some of the rarest and most interesting birds in Australia.

I have adopted, so far as it was applicable, the scientific nomenclature put forth by Mr. Gregory Mathews in his *List of the Birds of Australia*, published last year in connection with his greater work on *The Birds of Australia*, now in course of issue in parts.

Not every Australian ornithologist accepts Mr. Mathews's conclusions either as to names or systematic arrangement. I do not desire here to say more on the subject than this, that it appears to me self-evident that a man who has devoted seven years of his life to the study and elucidation of the question, as Mr. Mathews has done, has a better chance of being right in his conclusions than the most enthusiastic amateur or body of amateurs can hope to be.

The systematic list will, I hope, be of service to those who may wish to proceed from field observation to the scientific study of ornithology. To such I would strongly recommend the perusal of Mr. Robert Hall's *List of the Birds of Australia*, Mr. A. J. Campbell's *Nests and Eggs of Australian Birds*, and the books of Messrs. le Souëf and Leach, besides a reference, whenever possible, to Mr. Mathews's great work above mentioned, of which there is a copy in the Melbourne Public Library.

Most of the photographs were taken for me by Mr. Hugh Riordan, whose energetic assistance I desire specially to acknowledge. I am indebted to Messrs. A. Purnell, H. A. Purnell, Morrow, and Hurst for the photographs under which their names appear respectively. No photograph is "faked."

My thanks are due to those who have kindly given me notes, and in particular to my old and valued friend Mr. J. F. Mulder for permission to refer to his fine collections, and for many notes

drawn from his unique knowledge of the birds of Connewarre and the Forest.

I have been told that I should have covered a wider field than the district of Geelong, and so appealed to a larger public. Well, while I believe that there will be found in this book something of interest for every Australian, especially for every Victorian, I think it is better to write of what I know best, and to describe my book accordingly. Every county in England has its local bird-books, done by local men; such a thing has not hitherto been attempted for any Australian district of corresponding size, but I feel that is all the more reason why someone should lead the way.

C. F. B.

GRAY'S INN, LONDON.

March 14th, 1914.

A CLASSIFIED LIST OF THE BIRDS OF THE GEELONG DISTRICT, VICTORIA, AUSTRALIA

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THE BIRDS OF THE DISTRICT OF GEELONG, AUSTRALIA

CRESTED PENGUIN

Eudyptes pachyrhynchus

So very rare a visitor is it to our ocean-beaches that the most devoted lover of birds and the sea may count himself favoured if he has seen a Crested Penguin in the flesh. There is no possibility of mistaking the bird if one does come upon it; for the only other Penguin we have has no yellow in its plumage, while this one has a stripe of pale yellow feathers over each eye, lengthening into a crest behind.

Torquay fishermen have more than once seen it on that part of the coast; there is, too, the well-authenticated instance of a Crested Penguin which was caught alive on the bathing-beach at Lorne and lived for some days in a freshwater swimming-bath. Each time it was taken down to the sea it waddled back after its captors, until at last some one swam far out with the bird beyond the breakers, and it answered the call of the deep, and, speeding southwards, was

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seen no more. The Crested Penguin does not breed nearer to our shores than Macquarie Island, far south of Tasmania, so that the wonder is not that its visits to us are so few, but that a bird which has to rely entirely on swimming should ever make so long a journey. A specimen in the National Museum, Melbourne, was obtained at Cape Otway.

FAIRY PENGUIN

Eudyptula minor undina

WITH the Fairy Penguin I include the birds till recently known as Little Penguins, the authorities having decided that all our small Penguins belong to the same species. Quite one of our commonest sea-birds, it is to be found in Corio Bay, as well as on the Straits beaches. On certain windless evenings of autumn and early winter, when the bay at sunset is like a sheet of turquoise glass, darkening to indigo as the light fades from the west, you may hear from the shore a faint barking noise that seems to come from far out on the water. Direct your attention more closely, and you may perhaps see a small dark object, a mere point on the surface which presently disappears to emerge again farther away. That is the head of a Penguin, coming up to breathe and call to his mates. I knew a bank official who used to go out in a boat and practise at these birds with the office revolver—Dabchicks, I think he called them. But he never shot any ; they possess an almost uncanny

capacity for "beating the pistol," diving, as it seems, on the flash.

Later on in the winter I have watched them from the Yarra Street Wharf, rarely rising to the surface, but quite easily followed by the eye as they swim with shooting flapper-strokes after the shoals of tiny fish which form their food. Corio Bay fishermen dislike them because of their propensity, when in pursuit of fish, for getting inside the set nets.

On the outside ocean-beaches one sees more of the dead bodies of Penguins than of the living birds. Particularly after easterly gales, numbers are thrown up on the sand, battered to death by the surges. Now and again a bird reaches the shore alive, but return is impossible, and it perishes of hunger. No breeding-places of Penguins now exist on the mainland between the Heads and Cape Otway; a few breed on the seaward side of Phillip Island, Western Port. Most of our birds are migrants from the islands of Bass Straits, whence at the approach of the winter storms they move northwards towards the continental bays. In November, 1901, I found this species breeding in large numbers on small islands off Flinders Island. The birds were sitting each on a pair of white eggs, either under the shelter of rocks or tussock-grass, or else in old Mutton-bird burrows.

Granting that all these birds belong to one species, they show amazing individual variations. Of two I picked up at Torquay after autumnal gales in 1911,

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the larger measured $16\frac{1}{2}$ inches from tip of tail to tip of beak, the smaller only $13\frac{1}{2}$ inches. The beak in the former was $1\frac{1}{4}$ inch long and $\frac{1}{2}$ inch deep at base, in the latter $1\frac{1}{8}$ inch long and less than $\frac{3}{8}$ inch deep. Generally speaking, the larger bird was about twice the size of the other, and was dull blue where the smaller bird was deep blue. The larger one had the under side of the flappers and the rim at the bottom of their upper side yellowish. In the smaller bird these parts were pure white.

STUBBLE QUAIL

Coturnix pectoralis pectoralis

IN early October, while yet the green countryside is starred with myriad yellow blooms of the Cape Weed, and in the touch of the north wind there is but a light and transient promise of hot days to come, a sharp triple note from some roadside crop may inform the bird-wise wayfarer that the Quail are making love. Heard for the first time, the call seems hardly strong enough to proceed from so large a bird, and indeed for years I imagined the quick "two-to-weep" was the note of a Lark, until one evening at Apollo Bay, walking over a lush-grassed river-flat, I heard it quite close before me and straightway flushed a fine Quail.

Their numbers vary from year to year, but at one time or another every bit of crop land from a mile

or two out of Geelong has had its coveys. In the summer of 1911-12 they were extraordinarily plentiful, and thousands of eggs and tiny chicks must have been destroyed at the December harvest. For like the Lapwing in Britain, the Quail learns nothing by experience, and disdaining the cover of grass paddocks, chooses a growing crop to deposit, in a rough grass-lined hollow, its clutch of seven to ten yellowish eggs, smudged with olive-green. In our district most eggs are laid in November; but those people who favour a late opening for the shooting-season have no difficulty in providing instances of fresh eggs found in February, March, and even April.

Speaking of general average seasons, the main body of Quail have left us before mid-autumn. Do they migrate? Not, indeed, as does the Snipe, which crosses the world's width twice a year. Yet, within the limits of Australia, the Quail have more or less regular movements which are governed by the quantity of cover and food available; so that in an exceptionally good year when grasses and seeds are plentiful, they stay right through the winter in the vicinity of last year's nesting-place. A lover of the open country, this Quail is never met with in the bush, except where crops have been sown in a clearing or there is a relatively large patch of grass-land.

The female is distinguishable from the male in that her throat is white where his is rufous, and in not having so much black on the chest.

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BROWN OR SWAMP QUAIL

Synoicus ypsiliphorus australis

THE name "Partridge Quail," which also has been given to this species, is suggestive of its general appearance, which is rufous brown washed with bluish ash, with narrow shaft-lines to the feathers of the back. It is now verging on extinction about Geelong, where it was never common within recent memory. Probably the reason for its disappearance is that it is a local species, living all the year round in the same swampy or tussocky area, so that when once a locality is "shot out," the birds are seen there no more. The last places from which I heard of them were Highton and Germantown respectively. At the latter place, near the State School, a pair were shot in 1900. There is a very closely related bird which is still plentiful on the islands in Bass Strait: there, in November 1901, I found the nests placed in grass tussocks and containing up to fourteen eggs, which, of about the same size and ground colour as the Stubble Quail's, are finely freckled all over. In the Geelong district I never heard of a nest.

KING OR LEAST SWAMP QUAIL

Excalfactoria chinensis australis

THIS bird has been shot within recent years on the Black Hills, near Portarlington; I know of no other

certain local record, and the species, like the last, must be close upon extinction in our district. It possesses a hind toe, and is the smallest of the true Quails we have. The male has a semicircular white collar across the back of the throat; the female is inconspicuous in comparison. The only birds with which one might confuse the King Quail in the field are the smaller species of the genus *Turnix*, which, however, are without the hind toe of the Quails proper.

PAINTED QUAIL

Ortygodes varius varius

THE Painted Quail is marked off at once from the Stubble, Brown, and King Quails in that it has no hind toe. Another characteristic of the genus *Turnix* is that the females are larger and better coloured than the males, who indeed are said to leave the females to fight for them, contrary to the accepted rule. The Painted Quail is sometimes called "Bush Quail"—a good name, for it affects the lightly timbered forest country just as does the Stubble Quail the cultivated plain. At Airey's Inlet I once met with several of these birds in quite thick bush. They are not nearly so plentiful as the Stubble Quail. Partly, however, from the fact that they live in rather difficult shooting-country, and partly from their not being found in any one place in sufficient numbers

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to attract sportsmen, the Painted Quail hold their own, and the low drumming "coo," so hard to locate with precision, is still to be heard in the spring of the year in many a bit of woodland in this district. They are especially partial to patches of cutting-grass among gum-scrub, frequenting in general poor, rocky, and hilly timbered country.

The first Painted Quail (or Pepper Quail, as we called it as boys, from its finely freckled eggs) I ever shot rose whirring from a belt of bush grass near Marcus Hill, and at various times I have seen birds at Batesford and Maude; in fact they will settle in any bit of suitable country if not molested. They still breed every year at the Dog Rocks, laying as a rule four eggs in a very slight leaf-lined depression at the base of a grass-tuft. Curiously enough, the only nest I ever found contained but one egg instead of the usual complement, and that one was hard-set. September is about the height of the breeding-season.

Mr. Mulder tells me that he noted a Painted Quail in his garden at Highton on April 12th, 1902. Though the ground was devoid of cover and the observer in full view, the Quail came up to within a few yards of him, picking up a seed now and then, and recalling by its actions a Guinea-fowl. It presently lay on the ground among dead leaves and scratched in them, then got up and appeared to be eating some nightshade berries from a small bush.

SWIFT-FLYING OR BUTTON QUAIL

Austroturnix velox velox

VERY much smaller than the Painted Quail, and, as its specific name indicates, a bird of swift flight, this bird's true home is in the interior; and although in good seasons the grass-lands of Northern Victoria attract a considerable southward migration (especially when drought prevails farther inland), very few traverse the Dividing Range, and fewer still reach the country about Geelong. Those that do come—a keen Quail-shot may find a brace or two in his season's bag—are usually in the company of Stubble Quail. The breeding-habits are similar to those of the Painted Quail, but no local instance of the birds nesting has been recorded.

In May, 1902, these birds were shot in greater numbers than usual in the Western District. That, it will be noted, was the year of a great drought in New South Wales.

PLAIN WANDERER

Pedionomus torquatus

“COLLARED dweller on the plains” is what his scientific name signifies, and seldom it is that one can accord such unqualified approval to an Australian bird's original baptism. For the collar of buff and white

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(black and white in the female) that encircles the neck is the most conspicuous feature of the species, which is pre-eminently an inhabitant of the great plain stretching northwards from Lara. It possesses a hind-toe, and is thereby distinguishable from the Button and Painted Quails, while the nuchal collar will serve to mark it out easily from the true Quail.

No sportsman who has done much Quail-shooting in our district can fail to have remarked this singular bird. Having the general appearance of a Quail, it yet suggests strongly the Bustard or Wild Turkey as it runs along with high-held neck. In its flight, moreover, it is not quite like any other bird. Rising suddenly from the ground, it goes off with a dipping, dropping motion which turns into a steady flutter like that of a young bird. Flight, however, is quite a last resource; more often it hides in a tuft of grass and the dogs catch it. In the Quail seasons of 1911 and 1912 it was very often noted, chiefly about Lara, though several were seen on the border of the Grass Tree Plain near Bream Creek.

The eggs, four in number, are very sharply pointed: they are more like Snipes' than Quails'. The nest is a slight tussock-sheltered hollow, lined with grass. I imagine this bird will be found to breed regularly in the country about Marathon; I have seen one egg stated to have been taken near Point Henry, but doubt its authenticity, as the bird can only be an occasional visitor to the country south and east of Geelong.

PEACEFUL DOVE

Geopelia placida tranquilla

THIS delicate, unobtrusive little native Dove is a bird whose appearance with us is an infallible sign of dry weather in the north; it does not breed in the Geelong district. My friend Mr. J. F. Mulder has in his collection a specimen shot in this locality many years ago, and in 1910 he noted a pair of birds near the tanneries by Prince's Bridge. The only other note I had previously to 1912 was of the appearance of two Peaceful Doves at Airey's Inlet in 1904. On May 11th, 1912, I was walking eastwards along Ryrie Street at about nine o'clock in the morning, when to my amazement I observed one of these really rare little creatures feeding unconcernedly in the roadway near the corner of Fenwick Street. I walked to within a few feet of it, when it flew up, to settle again but a short distance on. It did this two or three times, giving me an excellent view of it. At that time a drought prevailed in the interior.

This species is best distinguished by the narrow bars of black and white which completely encircle its neck, each feather having two black bars and three white ones. It does well in captivity. Its nearest breeding-haunt is the redgum country along the Goulburn and Murray Rivers.

SPOTTED-SHOULDERED DOVE

Stictopeleia cuneata cuneata

I RECORD this species (distinguishable, as its name indicates, by small round white spots on the wings) on the strength of a specimen which Mr. Mulder shot some years ago at Bambra. This can only have been a wanderer from the north, probably from Riverina; it is amazing that these little weak-flighted doves should get so far from their homes, especially as they are not migrants in the true sense.

BRONZE-WING PIGEON

Phaps chalcoptera chalcoptera

MY first recollection of the Bronze-wing in the bush dates back to early boyhood; the summer had come in suddenly that year, and the November day I had chosen for a walk to the You Yangs was one of the hottest before Christmas. Vaguely blue through the shimmering haze showed the lonely divided peak, and as I tramped northward my imagination was occupied with thoughts of bush-fires and deadly snakes lurking among the outcropping granite. But nothing untoward happened, only I got very tired with struggling through dense thickets of snow-mint to reach the isolated Kangaroo-acacia bushes where finches and blue-wrens were still nesting.

By four o'clock I was glad to leave the hill, and

made westwards on my home track, through a belt of the primeval trees of that part, gigantic redgums interspersed with box, intruders these last from the north, with here and there a clump of prickly bursaria and an odd she-oak or two. Looking up into one of these, I lost all my fatigue in an instant as I beheld a good-sized bird, a stranger as I thought, sitting on a slight platform of small sticks. A yellowish spot on her forehead showed more distinctly the nearer I climbed; then off she went with clattering flap of wings, and I recognised the Bronze-wing Pigeon. In the nest were a tiny young bird and an egg, the latter addled; a circumstance which pleased me more than it had the bird, no doubt.

In these days the Bronze-wing is no rarity, thanks to a proper respect for the game laws. In the thick plantations on the lower slopes of Flinders Peak, as well as in the clumps of wild cherry which dot the boulder-strewn hillside, there is just such cover as pigeons love, and they abound there. So also do they in all parts of the district where well-wooded and comparatively secluded spots yet remain. Wherever they are found, they will breed if let alone, laying two pure white eggs on a flat structure of light sticks. Near Lethbridge, in 1906, Mr. Hugh Riordan found a nest with two eggs built on top of an old Babbler's nest. Several nests are built each year at the Dog Rocks; another home is the woodland about Ocean Grove and Drysdale. They lay in all months from August to December. Their

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chief food is the seed of leguminous plants, such as the various species of *Acacia*; at Airey's Inlet they get very fat in the autumn on the fallen seeds of the Ironbark Scrub (*A. verniciflua*).

When first flushed from the ground where it feeds, the Bronze-wing flies rapidly and noisily to the branch of a tree usually twenty or thirty yards away, where it is quite easy of approach. "Moongoobera" was the district native name, suggesting well the soft and musical yet melancholy note.

BRUSH BRONZE-WING PIGEON

Cosmopelia elegans neglecta

A VERY clear mark of distinction between this bird and the larger Bronze-wing is that the latter has the throat white, while in the Brush Bronze-wing it is yellow. The Brush Bronze-wing is now a rare species (it was probably never common) and its limits not easy to define. Certainly you will not find it anywhere but in the coastal scrubs of the Eastern Otway, and probably never east of Airey's Inlet. In that locality my friend Mr. Edward de C. Berthon has often come upon this species, which in the bush is distinguishable as well by its low horizontal flight as by its smaller size. Once Mr. Berthon found a pair of the pure white eggs laid on the ground in a very scrubby part. I have never seen the nest myself, but it is stated to be usually built like the Bronze-

HAUNT OF THE RUFOUS BRISTLE-BIRD.

wing's in a rather lower situation in a deep gully or heavily timbered forest tract. Mr. Mulder has a specimen of the bird, which he obtained at Bambra.

SLATE-BREASTED (LEWIN'S) RAIL

Rallus pectoralis pectoralis

FIVE kinds of Rails occur sporadically throughout the Geelong district where suitable conditions prevail, that is to say, abundance of water and abundance of tussocky grass for cover. The largest and probably the commonest is the Land-rail, which I shall mention next; the other four are all rare, and Lewin's rarest of all. It is rather smaller than the Land-rail, from which it may be distinguished by its uniform slate breast and the absence of any white streak over the eye. At the same time I am bound to say that, running as they do with very great speed in and out of the grass and sedges they love, none of the Rails give an observer much time for their identification, so it is possible that Lewin's Rail is less of a *rara avis* than one thinks.

There are two specimens in the Geelong Museum, which I understand were got by Mr. Mulder at the Connewarre Lakes, that veritable happy hunting-ground for marsh-haunting birds. The species is a stationary one, and it may be assumed that it breeds in the large areas of thatch-grass which lie about the Lower Barwon River.

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Towards the end of the year 1893, in rank grasses growing about an overflowing dam on Woolloomanata, near the Peak, I found several empty nests which I have always thought were this bird's, as they were too small for Land-rails' and rather large for the smaller Rails'. They were built up to a height of about 6 inches from the water, where the grass grew thickest, and were themselves of dry grass, neatly compact. However, as I saw no birds, I must just quote the incident and leave it, with the further remark that a friend told me he had found Rails' eggs in the same place a year or two before.

LAND-RAIL

Hypotaenidia philippensis australis

FOUND throughout the length and breadth of the continent as well as in Tasmania, the Land-rail (marked by his white-barred breast and white eye-stripe) is the only Rail that can be described as common, and then only in a relative sense. As I recall my memories of the species I find they are quite few, and widely separate in time. Curious it is how, when one thinks of any given kind of bird, it seems to come up to the mind's eye in a series of shifting pictures. Now it is an excursion train roaring down, on a Sunday evening, from Bacchus Marsh to Melbourne, full of tired, happy people, *quorum pars minima fui*. A party of city lads, faces flushed with the October

sun, and eyes still sparkling with the wine of the free air after pent weeks in Collingwood, have been ferreting and shooting—everything is game to them, and a poor Land-rail lies crushed among the limp rabbits on the rack. A kind of duck, they say.

And then swift thought runs to a quiet valley on the south coast, where a little knot of ironbarks broods over the still waters of Airey's Creek (was there ever such a bit of swimming-water?), and behind them the moist flat is covered with clumps of stringy yellowish grass, not tussock and not sword-grass, but something between. In the centre of one high-growing tuft a Land-rail has flattened down the stems and laid her pretty clutch of creamy eggs, spotted with brown and purple and grey. Then back yet a few years and as a boy of eleven I am peering with the delight that only a bird-loving boy can know into just such another nest, this time deep among stalks of barley on the slope of Leopold Hill.

One might come nearer home and still find the Land-rail. They nested for years in long grass near the now dry pond in the Eastern Park. One cat was, I know, responsible for at least three of these birds. Probably their last remaining stronghold close to the town is the samphire scrub which the Salt Works so steadily reduces in area. When that is gone we shall see no more Land-rails, except it be a stray bird or two along the banks of the two rivers above the junction.

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November is the usual breeding-time, but Campbell mentions a nest found at Heidelberg on July 4th, 1895. Reading his note recalled almost the first birds' nest of whose finding I can fix the date. It, too, was at Heidelberg, on August 18th, 1885. With some other children I had been let loose for the afternoon on the pleasant wattle-scented banks of the river. A lady found and showed me, in a tuft of rushes, a Land-rail's nest of eight eggs, partly covered with mud. The birds were not about, the nest having evidently been flooded out and deserted, so we took the eggs home, only to find in each a dead young one; and nothing remained to us of the great find save the recollection of a child's holiday, which still, perhaps, is worth something, for after nearly thirty years I find it potent to recapture the scent of the wattles and the sound of swift broken eddies beneath the trees' green feathery overhang.

Somewhere, I think from the Ballarat district, I heard how fowls' eggs used to be taken from the nests on a farm, and the empty shells, sucked clean, would be found a little distance away. Watching for the thief, the farmer saw a Land-rail run out of cover close by and into the nest, pierce an egg, devour the contents, and so back to hiding. The fowls in this case were "laying away" on the ground or in tussocks in the neighbourhood of springs, but the Land-rails were quite prepared to visit the fowl-house itself when no eggs were to be had outside.

SPOTTED CRAKE

Porzana fluminea fluminea

OF the three smaller Rails, or Crakes as they are more usually called, this, the largest, differs from the Little Crake in having the under tail-coverts pure white instead of barred with black. Both these species have the back splashed with white, and this is the point wherein they differ from the Tabuan or Spotless Crake, which is of a uniform rusty-brown above and dark slate-grey on the under surface. I fear it is hardly practicable to recognise these distinctions save from museum specimens or by shooting the birds—the latter a thing I am very loth to suggest in the case of rare birds, even though it be in open season and quite lawful. Knowing as I do the delight to be derived from the sudden discovery of some hitherto unknown bird in its native haunts, the pleasurable speculations as to its identity, the interest of watching its movements through a good field-glass, I have always been averse to taking such a bird's life, and so depriving some one else of the chance of enjoying the same experiences. It may be that very few take interest in these things, but if there is one, it is enough. And I believe there still are places where, if an observer will choose his point of vantage and keep quiet, he may get close enough to a Crake to establish its identity by the use of glasses.

The first Spotted Crake I saw was on April 9th,

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1892, near the Breakwater ; it was running jerkily about on the mud near some reeds, flicking its tail and showing the white patch beneath it as it went. Ten years later a rather curious circumstance led me to the discovery of what is, I think, the chief breeding-place of these birds. On a fine winter morning at Campbell's Point, Connewarre Lake, I lay basking in the sun near the edge of the lake, watching the slow evolutions of swans on the wide water. Near me a dilapidated boat was drawn up, its bow half covered by a mass of dry weed which high tides had washed up from the lake. Half unconsciously my eye rested for a moment on this, and focussed on a small object lying on the seaweed. Presently, convinced that this was something unusual, I got up and went over, to find an egg, rather like a Butcher-bird's, but with ground-colour and markings alike obscured by salt incrustation and the staining of weeds. Taken home and laboriously cleaned and revived with applications of oil, it proved to be an egg of the Spotted Water Crake. Clearly it had not been laid where I found it, and after some calculations as to prevailing winds and the tide, I fixed upon a tussocky marsh a mile away across the lake as its probable place of origin.

When, after some years, the opportunity presented itself of making a close examination of this area, my surmise proved correct. We found six old nests, some probably years old. Each was built on the slightly raised earth in the very centre of a clump

of grass of the kind called by farmers thatch-grass, and cut by them for covering haystacks. The only way to find the nests was to part the stems from the top.

One nest, more recent than the rest, and containing identifiable fragments of egg-shell (green on under surface, spotted red-brown and stone on the outer), exhibited a passage both ways to it through the tussock. This nest was about $2\frac{1}{2}$ inches high off the ground, and had on top of it a slight half-inch-deep depression in which the eggs had been laid. At the base it was built of leaves of thatch-grass 4 to 6 inches long. Then came finer leaves of the same intermixed with grass stems, and curved right round to the shape of the nest. Nearing the top the materials became gradually finer, with less thatch-grass, till the eggs rested on quite fine grass, now in very short lengths owing to the weather breaking it up. Another nest was about 9 inches from the ground, and appeared to have been built up in successive layers, perhaps to escape gradually rising waters. It was December when I saw these nests and the ground about was all dry, but I conclude that water had been lying there when the nests were built earlier in the year.

Farmers who cut their thatch here from about the end of October onwards tell me they find many of the nests in the cut tussocks, with eggs which the birds then usually desert.

I have little information as to the occurrence of this bird away from the Lakes and marshlands of the

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Lower Barwon, which I believe to be its chief home in our district. They have been seen at intervals about the patches of reeds which dot the banks of the river between Barwon Bridge and Prince's Bridge.

LITTLE CRAKE

Zapornia pusilla palustris

ONE of the more extensive backwaters of Lake Connewarre is called by the shooters the Hospital Lake, because, they say, the wounded swan and duck make for its weedy shallows and rush-begirt banks to recover or perish, as fate may have it. Now, on this Hospital Lake, near the marginal sedges, there is much weed on the surface of the water, and so thickly matted together as to form a kind of blanket, which the shooters call "bullock-hide." And this "bullock-hide" is one of the surest places to see what the lake-men call "Water-wrens," but which are, I believe, the Little Crakes, for, though I have never absolutely identified this bird in the open, I know the shooters distinguish the "Water-wrens" from the larger Crakes (Spotted Crake) which build in the thatch-grass.

It is only very early in the morning, when the shooter is lying *perdu* in his flat-bottomed punt in some thick clump of reeds, waiting for the whistle of heavier wings, that his attention is apt to be caught by these very small Rails as they dart out from the

rushes on to the bullock-hide, and then run quickly to and fro searching for the insects on which they feed. Doubtless it is in these clumps of sedge that the Little Crake breeds in the spring, their nesting habits being similar to those of the last-described species.

I have only known two instances of the finding of eggs near Geelong. Colonel Garrard knew of an egg taken at Connewarre Lakes in the seventies, and another nest with a clutch of four was found in the Queen's Park shortly after the great flood of 1881. The eggs of this species, being of an almost uniform dark brownish-olive, are much easier to tell from the Spotted Crake's than one bird is from the other.

TABUAN OR SPOTLESS CRAKE

Porzanaidea plumbea immaculata

THOUGH its unrelieved plumage of brown above and grey below renders the Spotless or Tabuan Crake easy to distinguish from its relatives when seen at close quarters, it is so rare a bird that few local bird-observers have met with it afield. Once only did such good fortune (for to the lover of birds the sight of a rare bird is the most delightful of happenings) fall to my lot. In that strange isolated patch of granite and gabbro which we know as the Dog Rocks there lies, on top of the main hill, a wide grassy valley, on whose sides the growth of redgums attests

the general wetness of the neighbourhood. On a brilliant autumnal morning I was strolling with two companions and a fox-terrier across this depression, when suddenly, midway in the long soft grass, the dog sprang at something which we thought was a rat, till in a moment he reappeared bearing in his mouth the first and last live Tabuan Crake I ever saw. Another local specimen, obtained by Mr. Mulder, is in the Geelong Museum. I know no instance of the finding of nest or eggs.

BLACK-TAILED NATIVE-HEN

Microtribonyx ventralis whitei

DRY indeed must the season be in the north, and uncommonly wet in these parts, before the Native-hen comes to join the Waterfowl of the Lower Barwon and the Lakes. It is about the size of a smallish domestic hen, having the upper surface brownish olive, under surface dark bluish grey, with white markings on the flank-feathers. The middle toe and claw measure $2\frac{1}{2}$ inches. Bill and frontal plate are apple-green, feet not webbed. Across the Murray in Riverina it is a resident and breeding species.

During two years spent in the Goulburn Valley I observed on more than one occasion a southward irruption, for it is no less, of these quaint and fowl-like creatures. They seemed attracted thither by irrigation floodings as elsewhere by natural floods, and in

the early morning, riding alongside a channel, one might see dozens running along and across the high banks or gathered about storage dams. At times they mixed with Barn-door Fowls in farmers' yards, flicking pert tails and picking up the grains of wheat with the best of the Brahmaputras. One, indeed, is said to have fought and beaten a rooster double its size.

In Western New South Wales, in areas subject to drought which correspondingly blossom as the rose directly good rain falls, the Native-hen comes in thousands from no one knows where as soon as creeks begin to run, to breed and then disappear magically when dry days return. I do not think we have had them on the Barwon, certainly not in any numbers, since 1892, nor do they breed south of the Dividing Range. Specimens in the Geelong Museum were shot about Connewarre in the early nineties.

WATERHEN

Gallinula tenebrosa tenebrosa

THIS is quite a local species, and you may find it in any one of half a dozen places about Geelong, of which I may mention the Barwon River at Ceres and Marshalltown respectively, Bream Creek, and the Duck Ponds Creek. It might at first sight be mistaken for a Bald Coo, but the absence of pronounced blue in the plumage should enable one to

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identify the Waterhen even at a little distance. Moreover, it swims readily and habitually, while I do not think I ever saw a Bald Coot swimming. The Waterhen's plumage is chiefly dull greyish black, the frontal plate orange-coloured. It has a loud, staccato, yet not altogether unmusical call.

Its favourite abode is in reed-beds which grow along the banks of our slow-flowing rivers and creeks; for breeding in, it must have a patch of the sort of bulrushes called typha, so frequently found in the deep pools, marking perhaps the old course of the river, which lie parallel with the Barwon about Ceres. These rushes are the sort of which the brown velvety heads are sometimes used for decorative purposes. The reason the Waterhen prefer them to the taller and stiffer feather-topped or pipe reeds (*Calamus*) is that they are so much easier to break down when a nest foundation is needed. The broad leaves, too, bitten into suitable lengths, dry into a comfortable resting-place for the sitting bird and her clutch of eight or nine eggs.

When I first saw Waterhen I mistook them for Australian Coot (*Fulica*). They were swimming about alongside a patch of bulrushes on Bream Creek. It is one of the most secluded stretches of water that I know—a deep, unruffled, scarce-moving stream shadowed with the rounded outlines of ancient ti-trees which overhang it, with here and there a manna-gum or a prickly bursaria. Revisiting the spot in the spring, I discovered, in the first clump of rushes

explored, two nests, one with eight eggs and one with nine.

Another spot well-beloved of these birds is the second Breakwater, where the Barwon narrows almost to nothing before emerging in the broader, salter waterway that leads through an avenue of giant reeds to Connewarre Lake. All about are desolate marshlands, right from the limits of the ancient stream at Moolap on the north to the Barwon Heads road on the south. Just at the Breakwater the land is particularly wet and treacherous, and it is here, where stunted willows grow about rushy pools, that the Waterhen's cry sounds continually from the green growth, and towards the year's end the nests are built at the roots of a willow or in the centre of a bulrush bed—mere heaps of flag-leaves slightly hollowed to receive the eggs.

In the Geelong Museum is a Waterhen, apparently of larger size than the ordinary, with darker bill and legs, and with a few white feathers on the flanks and belly, something like those of the Native-hen. Mr. Mulder tells me that the shooters say this bird has a different cry and goes in pairs, being also better eating than the Common Waterhen, which they say sometimes goes in flocks. The shooters shot him a pair on request; these, however, were identified by Mr. A. J. Campbell as the Common Gallinule. Mr. Wm. Lewis, of Moolap, showed me three Gallinules, shot June 1st, 1912, of which one had the white belly-markings of Mr. Mulder's bird (though none

right on the flank), also the dark bill and green legs. But the legs showed a yellowish band above the knee and looked as if they might turn yellow later on, and I concluded it was a young bird. In size it was the same as the other two, which were ordinary Waterhen, but it was much browner than they in general plumage.

By a strange inversion of names, the Lake shooters call the Waterhen "Bally Coot" and the Bald Coot "Waterhen."

BALD COOT

Porphyrio melanotus melanotus

I JUDGE this to be the most numerous of all our Rail-like birds, as it is certainly the largest and most conspicuous. Most of us have met with the Bald Coot at some time or other, whether at the opening of the Duck season as he beats past on agitated wings with long legs trailing behind him, hoping no doubt against hope that the gunners crouching beneath the reeds at the end of the point may be better sports than to shoot such an easy mark and poor addition to the bag; or later when, his fate sealed, he hangs miserably in some poulterer's window, the glorious purple plumage dulled and stained—penultimate stage before his final appearance on the *menu* of some fourth-rate eating-house under the charitable pseudonym of "teal." A shame it is to shoot these

BALD COOT'S NEST IN SEDGE, CONNEWARRE.

poor birds, which, doing no harm, are beautiful in the freedom of the marsh and (to make a more likely appeal) very little good to eat.

Plentiful as Bald Coots still are about the Connewarre Lakes, I know no other part of this district where they are to be found. There were numbers at Airey's Inlet twenty years ago, but the draining of Lugg's Swamp deprived them of their breeding-place, and all left. During minor floods they are to be seen all over the lignum scrubs along the Barwon below the Willows, perched on the bushes or walking about the mud flats with a curiously preoccupied air and inconsequential flickings of the tail.

Like the Moorhen, the Bald Coot spends most of its time in the tall feather-topped reeds, but it does not breed there. At nesting-time, early in October, the Bald Coots repair to a kind of rushy sedge about 3 feet high, which is found at infrequent intervals along the banks of secluded arms of Connewarre. While examining such a spot in November, 1911, we found several large platforms built of piled-up wet rushes and the like, just within the sedge at the end of the waterway. Stray feathers of the Bald Coot suggested the builders, but from their exposed position and general wetness it seemed obvious they were not meant as nests, rather probably feeding or observation stations.

The real nests we discovered 50 yards and more away; much neater structures these, composed of stalks of the sedge itself, heaped up to about 18 inches

from the ground, hollowed at the top, and evidently added to from time to time, some pieces being quite green as if newly picked. Many more even of the real nests seemed to be built than actually used. As with most Rail-like birds, there was a regular passage to the nest. The eggs are usually four in number, larger and more boldly marked than the Waterhen's. The green stalks of reed and bulrush form the principal diet of this species.

COOT

Fulica atra tasmanica

THE Connewarre Lakes and contiguous waters are the sole resort of the Coot in this district; it is not a resident there, but an occasional visitor from its nesting-quarters in the swamps and billabongs which flank the course of all the rivers confluent to the Murray. On these movements southward it is gregarious, appearing in immense numbers, suddenly and at irregular intervals, but more often in the early autumn than at other times of the year. Once when the absence of these birds for many seasons had become a subject of comment among the shooters, hundreds of thousands arrived in a single night, and the Lake next day was covered in all directions with dense flocks.

Very fresh and vivid in my mind are recollections of a happy camp beneath the ti-tree at Fisherman's

Point at Easter, 1892, a year in which all Waterfowl were in plenty, and Coot more numerous than any. After the first night in camp, when, as is the wont of boys in the circumstances, we hardly slept for excitement, I got out of the tent about six, and, gun in hand, explored the farther side of the point. Emerging from a lignum clump, I came suddenly in full view of an immense flock of Coot, most of them in the water, but some on the bank, only about 20 yards ahead of me. In those days the average schoolboy of fifteen had, perhaps, a somewhat lower standard of sport than that which I am told actuates his successors of to-day; further, I knew that the flesh of the Coot, though dark, is excellent eating, and camp meals have a double flavour if the *pièce de résistance* is the produce of the chase. Anyhow, I let fly "into the brown," and bagged more of the luckless birds than I like now to remember.

The flocks remained about the Lake till well on in the winter that year; it was the last really great visitation there has been. Of quite recent years (which, it may be noted, coincide with good seasons and plenty of water inland) nothing has been seen of them, except for an odd bird or two.

The most obvious distinguishing mark of the Coot, apart from the fact that he is the only Rail-like bird that swims in flocks, is his lobed or half-webbed feet, somewhat resembling the Grebe's. Like the Grebe, too, he is ordinarily an apparently poor flier, skimming the water and not going very far, though

his migrations make it clear that on occasion he can travel high and fast, probably only by night.

Coot used to breed in the swamps behind the boat-sheds along the Yarra, near Prince's Bridge, and may still do so in the Melbourne Botanic Gardens, but no instance of their breeding anywhere in the Geelong district is within my knowledge.

CRESTED GREBE

Podiceps cristatus christiani

ONCE seen at reasonably close quarters the Crested or Tippet Grebe will easily be recognised ; the double crest and strange projecting ruff on the upper part of its long neck make it conspicuous among all water-birds. Its range in this district covers the Connewarre Lakes and Corio Bay ; whether it is a mere visitor or a breeding species has not been absolutely determined. Travelling from Geelong to Melbourne by boat, I have sometimes seen half a dozen or more of these birds together in the Hopetoun Channel—usually on very calm autumn days, when the water was smooth as a mirror, so that as they rose and fluttered along for a hundred yards or so, the noise of the wings striking the water sounded like the paddles of some miniature steamer. These birds were probably undergoing the moult.

On the Connewarre Lakes, rather more often in the “ nineties ” than later, I have seen them at the

opening of the Duck season (then December 21st) flying swift and high as the guns drove them with the Duck from the weedy backwaters to the big Lake. With outstretched neck and rapid wing-beats they were not a difficult target to those to whom all that flies is fair game. The time of year, the number and condition of the birds seen, and the suitability of the locality combined to make me believe that they had nested, or perhaps were nesting even then, for all Grebes lay fairly late. Market-shooters call this species the Grebe, and its congeners (which they do not distinguish from each other) Dabchicks.

BLACK-THROATED GREBE

Tachybaptus ruficollis novæ-hollandiæ

OF the three Grebes inhabiting this district, the Black-throated is by far the most frequently seen. Like so many other of our birds, it would appear to change its quarters at the end of the summer without travelling so far as to entitle it to the name of migrant. In the autumn and winter it frequents the bay in company with the other Grebes, and also the Barwon River between the two breakwaters; at this season the head in each sex is dark grey and the throat pure white.

Early in October, however, when love calls, the white throat changes to glossy black, the rest of the head deepening to black also, and the paired birds

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resort to fresh-water ponds to breed. That is the time when they may best be observed, and the ideal place is a dam in timbered country, whose surface for some distance from the bank is covered with low-growing water-weeds. In these the nest is placed, a heaped-up pile of water-grasses, not hidden in any way, but yet protected by the effect which it produces of being simply an accidental heap of wet weeds. Looking at it for the first time, it is the last thing in the world you would suppose was a bird's nest. In one which I saw at Marcus there were six eggs, of which the last-laid alone was pure white, the others shading through degrees of stained walnut to the first-laid egg, which for practical purposes was black.

Lately, spending the summer holiday at Airey's, I had a good opportunity of noting these pretty Grebes. At least four pairs inhabited a sheet of fresh water of about an acre. There were two or three nests, but only one which I could examine closely; this was at the edge of a lot of surface weed floating in water about 3 feet deep. The sitting bird was very conspicuous, and did not take much notice of passers-by, though there was a good deal of traffic, and the nest was not 20 yards from the path; but if you stopped to look at her, she would presently become agitated, and from all round the nest with quick movements of her little dark head she pulled the nest-material lightly over her eggs and then slipped into the water, her mate waiting close at hand.

On the last day of the year we waded in to photo-

Photo by H. Hurst, Esq.

NEST OF BLACK-THROATED GREBE, LAKE ANGAHOOK,
AIREY'S INLET.

graph the nest, and found the eggs quite covered and invisible ; on removing the wet grass which hid them, we saw there were six, all well browned and therefore presumably near hatching. Meanwhile the little birds swam about in great alarm, coming to within a few yards of us, and now and again uttering a prolonged shrill twitter which is the only note of the Grebe known to me. Hardly had we covered up the eggs again and left the nest, when the bird we took to be the female was back guarding her treasures. In swimming, both birds held their necks erect like miniature swans, not bent like a duck's, and the head and neck together appeared to be about equal in length to the body.

HOARY-HEADED GREBE

Poliiocephalus poliocephalus poliocephalus

THE Hoary-headed Grebe is the same size as the Black-throated, but may be distinguished, especially in summer, by the white hair-like tips to the feathers on the top of the head and sides of the face, these giving the streaked greyish effect from which the bird's name has been given. In winter the plumage is paler than in the breeding-season. This is quite a common bird in Corio Bay in the months from May to September ; on calm days you may generally see a few of them swimming about a hundred yards from shore, north of Cowie's Creek, for instance.

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But I think most of these birds move northward to the Murray River swamps as the summer draws on, for, common as the birds are in winter, the nest has very seldom been found in the Geelong district. How do such wretched fliers as Grebes get from Geelong to the Murray? you may say. Well, in spite of the commonly held opinion that Grebes can do no more than flutter along the surface, they are capable of extended flights at times. I was duck-shooting one February, near the old Wyuna Homestead, Tongala. A pair of birds, Ducks as it seemed, came flying fast and high, so high as to be almost out of range, down the wind along the course of a lagoon on whose bank I was posted. I fired when they were at their nearest, bringing one down, and was greatly surprised to find it was a Hoary-headed Grebe. My theory as to the Grebes generally is that during late spring and summer all the Grebes can fly and do fly strongly and well, but only at night, except when driven out of the water by people shooting.

That a few Hoary-headed Grebes breed at intervals in the Geelong district is certain. In December, 1901, I was exploring an extensive shallow swamp (since reclaimed) on what is now Sparrovale, with the object of discovering the breeding-place of the Marsh Tern. After some hours of wading I came upon a small "rookery" of the Terns' nests, and among them three nests of this Grebe, one with four eggs and two with three each, built of heaped weeds in about a foot of water, among growing marsh-grass.

The eggs were uncovered, and I did not see any of the birds ; but there could be no mistake in identification, for the eggs, besides being larger in size than the smooth eggs of the Black-throated Grebe, were covered with rough nodules or excrescences of lime, a certain means of distinguishing them. Probably the birds were in hiding close by. This fact, of Grebes nesting with Marsh Terns, has been noted by Campbell, though there it was the Black-throated bird. It may be that the Grebes consider their nests less likely to attract attention if built among a lot of more or less similar nests, as the 'Terns' are.

YELLOW-WEBBED STORM-PETREL

Oceanites oceanicus exasperatus

THIS is a small Petrel, with general plumage sooty-black, rump white, and centres of the webbed feet yellow. Its only known breeding-places are on the fringe of the Great Ice Barrier of Antarctica, where Wilson found it laying in January in deep crevices in the frozen rock. After nesting is over there is a movement northward of this and other species of Petrels, and through the greater part of the year one may expect to note this bird among those that follow in the wake of passenger steamers through Bass Straits. It has only been obtained once in this district, and then in unusual circumstances.

A few days before Easter, 1910, a schoolboy saw

a strange bird lying dead beneath a hedge by the cross-roads at Marshalltown, distant about eight miles from the nearest ocean beach. The bird was in splendid condition, evidently not long dead, without a mark of any sort on it. It had lost its bearings, and either struck some obstacle or simply died from exhaustion. The boy took it to his teacher at Germantown, Mr. H. B. Williamson, whose love of nature we have to thank for this record, the first, I believe, for Victoria. He forwarded it to the authorities of the Melbourne Museum, where it may now be seen.

WHITE-FACED STORM-PETREL

Pelagodroma marina howei

A GRACEFUL little sea-bird, with upper surface grey and brown and pure white face and under parts, this is the commonest of the smaller Petrels (if we except the easily distinguishable Prions) on our southern coast; so that if one hears, as sometimes happens, of the finding of a Petrel inland, this is most likely to be the bird, though of course it may be something much rarer.

I was once asked to look at an unknown bird which a gentleman living in Newtown had found the night before on his lawn, and had brought to town carefully enclosed in a brown-paper bag. I was no less surprised than delighted to find, when the bag was opened, that the occupant was a veritable White-

faced Storm-petrel. With some ceremony it was taken down to the end of the pier and there released, flying off uncertainly enough, but let us hope to an ultimate meeting with its friends. For there exists to this day, within thirty miles of Geelong, inside the Heads, a thriving colony of these Petrels. Till a few years ago boys from fishing-boats used to pelt each other with the eggs (white they are, like Pigeons' eggs), and it was after seeing one or two which had been saved from such heartless sport and brought to Queenscliff, that I determined to visit Mud Island in the spring of 1901.

The man who sailed me over told me that basketsful of the eggs had been taken during the week preceding my visit on November 17th. It took me some time to find the rookery: at last a dead bird lying on some pig's-face weed showed the spot, and presently I had discovered some hundreds of shallow burrows in the ground. These were from 1 to 4 feet long, and at the end of several I examined there sat the little Petrel close on her single egg. I took one bird out and threw it gently into the air. Poor little thing, it seemed frightened by the glare of sunlight, and floated feebly to the ground, there to crawl under the nearest shelter. The sexes appear to share the incubation, one staying at home and the other out at sea till dusk, when places are changed and the lonely islet becomes a scene of great animation.

Shortly after my visit, in consequence of representations made to the authorities, Mud Island was

proclaimed a Bird Sanctuary, and now these tiny wanderers have peace when they come up out of the sea to the island beaches in the spring. Peace at least from the fisherfolk, and one trusts that the enlightened naturalists who from time to time visit the place for the advancement of science, may interpret their permission to take specimens in a way which will not be altogether ruinous to the breeding Petrels.

BROWN-BACKED PETREL

Reinholdia reinholdi byroni

THIS is a small Mutton-Bird with white breast and under surface. I record it for this district on the strength of three examples in the National Museum at Melbourne, which are marked as having been obtained from Queenscliff in October, 1884, and probably were shot by fishermen in the vicinity of Port Phillip Heads. The species breeds on islands off Newcastle, N.S.W., as well as on Norfolk Island and certain islets north of New Zealand. It is noteworthy that the eggs are laid in July, most of our Petrels being November breeders. The Brown-backed Petrel is closely allied to species inhabiting the Northern Hemisphere, and one may suggest that a "colony" which moved south into Australian seas kept closer to the northern seasons than the southern birds of the same order,

MUTTON-BIRD

Neonectris tenuirostris brevicaudus

THOUGH there are rookeries of considerable extent on the seaward end of Phillip Island—I have picked up scores of the bodies of birds which had fallen victims to foxes in the dense growth of scrub which covers the outlying peninsula at Cape Schanck—the Mutton-bird is very rarely seen, alive or dead, on the coast to the west of Port Phillip Heads. An old fisherman once told me how, visiting a sequestered and rock-girt bay in the wild irregular line of cliffs that stretches from Torquay to Point Addis, he found hundreds of these birds dead, piled up on the beach, killed no doubt by the final crash of the surges on the treacherous reefs which have before this meant death to more than Mutton-birds. Another, who plies his calling within Port Phillip, says that Mutton-birds were once numerous throughout the bay in the summer months.

My own experiences of them about Geelong are limited to the sight of a few birds at different times in the outer harbour and the finding of an occasional little dusky body on the sandhills to the south; the last was in March, 1911, near the mouth of a ravine called “Jaar-nu-ruc”—“The Place of Conference”—on the old maps, not far from where the bones of the Scammell lie embedded.

So rare is the bird with us, that it is difficult to

believe that but a hundred miles away, across the sea to the south-east, lie islands where the Mutton-bird practically supports the human population, and where the musky reek of the gathered myriads of breeding birds in the season of the year carries miles down the wind from the island rookeries.

Smells—scents, if you will—have a way of clinging in the memory. Two will never be effaced from mine. One is that of the blossoming Sicilian orange-groves, wafted to a great liner midway in the Straits of Messina; the other, the strange uncanny savour of Chappell Island, as one warm November morning in the little *Star*, of Launceston, I passed under the lee of its burrow-riddled peak on the way to the “mainland of Flinders,” as they call it in these stormier southern straits.

It was at the little settlement on Cape Barren Island that the universal immanence of the Mutton-bird was most forcibly borne in upon me. True, we had eaten it, pickled, on the boat—eaten it rather oftener than was necessary, I thought—and had tasted the renowned eggs. But at Cape Barren, as later on other islands, we found the talk was of nothing but birds, or “bairds,” as the islanders pronounce it. Bird for them means Mutton-bird—it is *the* bird *par excellence*; just as in Scotland a “fish” means a salmon. A quaint race, these islanders; descended from Tasmanian blacks with heaven knows how many intermediate crossings, they one and all show some traces of their aboriginal ancestry, be it only in

profile or a peculiar crispness in the hair ; in colour they exhibit as many shades as there are between chocolate and cream. What they do not know about the Mutton-bird, at least as to that part of its life which is passed in Bass Straits, would not be worth recording.

Here I may say that where the birds go between April and September nobody knows with certainty. Provisionally, we may say that they go somewhere in the Pacific to the north ; for migrate they undoubtedly do, and most birds breed at the colder end of their migratory journey. Then, about mid-September, having probably already mated, they arrive at their numerous breeding-islands in the Straits, to clean out their long rabbit-like burrows in the sandy soil among the snake-infested tussocks. Day and night the spring-cleaning continues, clouds of dust marking the openings to the burrows. Then there is a short recess, during which the birds go out to sea.

In the third week of November they begin to return, continuing to arrive in increasing numbers, till the great body comes swarming in after what the islanders call the "Mutton-bird Gale," about the 25th. The hen bird lays her egg and then goes to sea for a week while her lord keeps the house, she perhaps returning for the nights, as he does next week, when it is his turn off duty. So it goes on till the egg is hatched at the end of eight weeks. Fed assiduously by its parents—each pair have but one offspring—the young Mutton-bird waxes exceeding fat, till by mid-April

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he is simply a ball of grease. Then his father and mother forsake him, and for ten days his condition comes off and his feathers come on, till hunger drives him from the burrow, and off he goes to sea in the wake of his elders, having first, it is alleged, eaten a lot of sand, whether as a digestive or by way of ballast is not clear.

Such is the ideal and predestined life-history of the young Mutton-bird; but there is the "birder" to reckon with. With his entire family and relations, this gentleman, whom I have already described, descends upon the rookeries, just what time the young bird is getting restless in the burrow. A long crook fishes him deftly from the burrow's end; his neck then ruthlessly stretched, he is spitted with half a hundred of his kind on a long stick, head upwards. For the reddish oil with which he is replete has a commercial value for the preparation of leather as well as for crude lighting, twenty birds yielding a gallon of it, and it is therefore carefully drawn off and bottled.

To return to our Mutton-bird, he is plucked, scalded, his feet cut off, and later he is cleaned, decapitated, salted, and pickled in a barrel. Part of the finished product is kept for home consumption, but part reaches Victoria, where, despite a certain fish-like flavour, it is, when boiled lightly, then fried, and eaten cold, quite as well worth trying as some other imported *delicatessen*.

Slaughter for food and the taking of eggs for

biscuit-making have sadly diminished the numbers of the birds since Matthew Flinders, in 1798, saw a flock which took an hour and a half to pass his ship, and was estimated to number a hundred and fifty million individuals. There were no "birders" in those days. Flocks and herds, too, break in upon and destroy the burrows on islets where once the birds bred undisturbed. But, spite of all, they still exist in countless thousands.

The coming-in of the Mutton-birds at evening has often been described; words, however, can hardly convey an idea of the populous eeriness of the dusk when the flight comes home from far out at sea, and dark forms throng round the watcher like swift uncertain arrows in the gathering gloom, and the ground under one is full of chuckling noises. I stood in the midst of a large "rookery" on Kangaroo Island (off Flinders Island) one sultry evening at the end of November, and saw it all from start to finish; it was one of my most wonderful experiences among birds.

SILVERY-GREY PETREL

Priocella antarctica

THIS Petrel may best be described as looking like a rather large common Seagull—the name Silvery-grey describes it admirably. There are two examples in the Melbourne Museum, taken at Queenscliff in December, 1882, and it is because of these that I

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include the species here. It has an immense range, occurring (probably with slight geographical variations) in all the southern waters of the globe, from Cape Horn to the Cape of Good Hope, Kerguelen to New Zealand.

Little is known of its breeding-habits, but from its frequency in the Bay of Valparaiso, where in the month of November I saw great numbers feeding on harbour refuse, tame as Seagulls, I should judge that there must be some thickly populated homes of this species on islands along the Chilian coast or perhaps even south of Tierra del Fuego. At sea, where I first noted it in lat. $48^{\circ} 22' S.$, long. $142^{\circ} 14' W.$, it was shyer than other Petrels following the ship, and had a curious habit of turning a sort of half-somersault as it went to pick up food thrown overboard.

GIANT PETREL

Macronectes giganteus albus

THIS immense dark-brown bird, the largest by far of the Petrels, is to be recorded as an occasional visitor, the Melbourne Museum possessing a fine male obtained at Portarlington in July, 1896. The only bird it looks anything like in flight is the Sooty Albatross, but the long stout nasal tubes on the bill are sufficient to distinguish it, apart from its heavy, lumbering flight and general ugliness. A few of these birds kept company with a steamer in which

I was, nearly all the way from Cook's Strait to Valparaiso. In the latter port they were plentiful, picking up a living with the Silver-grey Petrels from sewer refuse. An unpleasant habit with which they are credited is that of pursuing smaller seabirds and breaking in their skulls with a blow of the strong beak (whence the name "Ossifrage").

They are known to breed on Kerguelen Island, also in Patagonia, and are found practically all round the world south of the thirtieth parallel. From what breeding-centre the Portarlington bird may have come is hard to say, seeing that Quoy and Gaimard saw individual birds of this species flying for days together without a break, in latitude 59°, at a time when continuous daylight made it possible to watch them. On the voyage above mentioned, I saw an albino of this species, with just a few dark flecks on its dead-white plumage. Cook's sailors christened these birds "Mother Carey's Geese."

CAPE PIGEON

Petrella capensis australis

OF course the name "Pigeon" is a misnomer; the bird is a true Petrel, the most strikingly coloured and best known of all the smaller seabirds to those whose life lies on the deep waters. But so long has it been called "Cape Pigeon" that I do not care to change the name for the more correct "Spotted Petrel."

Like so many other Antarctic Petrels, it is distributed

widely over the southern oceans, breeding on Kerguelen Island and lonely rocks nearer still to the perennial ice. It is not, therefore, surprising that it has been sometimes recorded on our coast. The fishermen of Torquay have seen it while out in the straits, and there are specimens in the Melbourne Museum from Melbourne (1861) and Cape Otway (October, 1878).

The head and mantle are dark chocolate, almost black, under surface pure white, and back mottled black and white. Large white patches on the upper surface of the wings are very noticeable in flight. The Cape Pigeon flies with a rapid motion of the wings, then soars, then resumes the wing-beats; somehow it always reminded me of the Black-cheeked Falcon in this respect, dissimilar as the birds are in colour. Indeed, there is no other bird which at all resembles the Cape Pigeon.

I found this to be almost the commonest of the many birds which followed the *Knight of the Garter* from three days out of Sydney right into Valparaiso. There is a quaint reason given for the dislike of sailors to having these birds killed: it is that they are the spirits of dead mariners—"shellbacks"—following ever in the wake of ships for yearning for the old life overpast.

This is the bird of which the poet Masfield speaks in his description in "Dauber" of the ominous oily calm before the advent of a storm off the Horn:

"The pigeons quarrelled, clattering in the track:
In the south-west the dimness dulled to black,"

SHORT-BILLED PRION

Pseudoprion turtur

THE Prions are a group of beautiful dove-like small Petrels, bluish grey above and white below, which are commonly classed by fishermen with several other kinds of Petrel as "'Coutta-birds," following as they do the great shoals of barracoutta which visit our shores in autumn, and feeding on such minute crustacea as the greedy fish may eject from his capacious maw. Unless one can arrange to go out with the fishermen, it is not often that one sees a Prion alive. They keep, as a rule, well out from shore. The first I ever saw was skimming along in the trough between huge ocean rollers near the mouth of Bream Creek, and never since have I noted a live bird so close to the beach.

There are four species, indistinguishable from each other when flying about and only to be identified after close examination of the bill, where the points of difference arise. All of them suffer from the fury of the westerly gales which rage through the Straits from May to October (and the rest of the year as well, some travellers would say). After a heavy tempest in June, 1911, I found the remains of twenty birds, among them two of this species, on the beach at Torquay. They had, doubtless, battled against the inshore wind till, unable any longer to keep out to sea and safety, they fell exhausted on the sand and were literally beaten to death by the surges.

Torquay fishermen say that the month of May is that in which Prions are most plentiful. In the Pacific sailors call them Ice-birds. They are found all over the Southern Ocean; near the Chatham Islands I saw hundreds of thousands of them at the end of October, 1913, flying to and fro like swallows. This species is perhaps the easiest to pick out from a number of Prions. It is shorter in the body and has a stumpier, more compressed bill; indeed it has the most dove-like appearance of any of the group.

It is said to breed on various islands in Bass Strait, notably Albatross Rock and North-east Island. It certainly does not breed on the mainland.

THIN-BILLED PRION

Heteroprion belcheri

THIS species was not known until the examination by Mr. G. M. Matthews in England of the birds which I found as above mentioned on the beach at Torquay in 1911. Two of these were deemed to be entirely new to science, and were named for the first time accordingly. The bill-characteristics of the species are relative length, narrowness at the base, and slenderness in the centre when viewed from the side. The bird's habits are probably similar to those of other Prions; its breeding-place is yet to be ascertained.

ABORIGINAL KITCHEN-MIDDEN, BREAM CREEK : DOTTEREL'S NEST IN FOREGROUND.

MATTINGLEY'S PRION

Heteroprion desolatus mattingleyi

THERE exists on the Laurence Rocks, islands off the coast near Portland, a breeding-colony of Mattingley's Prion, known to the local fishermen as the Snow-bird. Hence come probably the majority of the Prions which follow the barracoutta shoals off Torquay in the autumn, for out of eighteen birds found dead on the beach in June, 1911, no fewer than thirteen belonged to this species. The bill is about equal in length to that of the last-described bird, but is broader at the base and not so slender in the centre. This Prion, like all the rest, lays one white egg, deposited at the end of a shallow burrow beneath coarse vegetation on some islet in the Straits.

WANDERING ALBATROSS

Diomedea exulans rothschildi

AT least four kinds of Albatross rove up and down the turbulent sea-way we call Bass Strait, and of these the least frequently seen, but incomparably the largest and noblest, clean dwarfing all the rest with its wing-spread of 11 feet from tip to tip, is the Wandering Albatross. Sailors and fishermen, indeed, refuse the name Albatross to all but this, classing the rest as Mollyhawks.

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On the westward voyage from Melbourne the Wandering Albatross, though it has been recorded from Port Phillip Heads, is never plentiful till the Bight is reached, being then lost again soon after the steamer heads north-west across the Indian Ocean from Fremantle. On the other side of the Continent I found that all the way from Sydney, via Cook Strait to Valparaiso, we were rarely without a few accompanying the steamer for what they could pick up. Our route lay directly past what is, I think, the nearest breeding-place to Australia—namely, the islets lying south of the Chatham Group. At times Wandering Albatrosses are seen by fishermen off Torquay, and even venture inside Port Phillip,

Apart from his size, the full-plumaged adult may be known from other Albatrosses by the centre of the back being whitish. The young vary greatly in colour, some seen in October, 1913, off Sydney being all dark brown save for the belly and head, which were white, but divided from each other by a broad pectoral band of brown. Others, again, exhibited a sort of chocolate crown on top of the head.

I referred elsewhere to the superstition of sailors that Cape Pigeons following ships are the transmigrated souls of dead sailors; in the same way they say of the Wandering Albatrosses that they are the spirits of departed captains.

YELLOW-NOSED ALBATROSS

Nealbatrus chlororhynchus bassi

I HAVE only once met with this bird in the vicinity of Geelong, and that was a mile or two out from shore off Torquay, on May 19th, 1912. Mr. Hugh Riordan and I were going round the crayfish pots with two fishermen, the boat tossing up and down in what seemed to us an exceedingly rough sea, though, as I remember, the men said it was merely a "poggle," whatever that may mean. Half a dozen Shy Albatrosses had followed for some time the barracoutta lines which trailed behind from the stern; but once having identified that species for certain, we felt stealing over us a strange loss of interest in everything except the prospect of getting back to solid unoscillating land.

Then suddenly from somewhere in the south-west came up a single stately bird, wheeling over the grey-green waves, and as we saw the black bill with its clear ridge of yellow along the top, we hailed, with the pleasure only naturalists know, the appearance of a new species, and sea-sickness was forgotten. The back and top of wings were much darker than in the Shy Albatross, indeed practically black, the eye having, as it seemed, merely a small circular patch about it, not a long "eyebrow" like the other bird. It did not follow the boat for long, nor associate with the other Albatrosses, but presently, after circling

about us once or twice, disappeared in the distance. While I feel fairly satisfied about it, I should observe that it may conceivably have been a Flat-billed Albatross (*Thalassogeron chrysostoma culminatus*) which has not been recorded for this neighbourhood.

WHITE-CAPPED OR SHY ALBATROSS

Diomedella cauta cauta

You may be pretty certain, if you pick up an Albatross's skull, or find a dead Albatross or any of its feathers anywhere on the beach between Point Lonsdale and Lorne, that this is the bird. For the breeding-colony on Albatross Island, Hunter Group, the nearest one to our shores, belongs to this species, which is consequently the Albatross most often seen in Bass Straits. At times it comes up through the Heads, and even as near home as the Hopetoun Channel, where a fisherman once caught one by throwing it scraps of fish, till growing bolder and bolder it came at last within reach of a sudden grab of his hand.

At the Rip, and about the Scammell Reef off Torquay, throughout the winter months, the Shy Albatrosses are ever waiting for the advent of the barracoutta boats and the feast of old baits and fish offal which at such times falls to their lot. If ever a name was given on the *lucus a non lucendo* principle, it is that of "Shy" applied to this bird. As it is the most numerous, so it is the boldest and most confident

of our larger sea-fowl. Off Torquay I saw them come to within a couple of feet of the boat to seize a bit of meat thrown on the waves; one or two sat at the channel through the reef waiting for us to come through. Quite often they are hooked on the barracoutta lines. I saw one which had been so caught at Ocean Grove, July 12th, 1902, and another, taken at Torquay and brought into town, lived for a year or more in Karduna Park.

Like the other Albatrosses, this bird does not soar to any great height above the water, but rather wheels to and fro at a few feet from the surface, displaying at one time the pure white of its under parts and at another the broad dark-grey band of the wings and back, the white rump and dark tail-edging. There is hardly a wing-beat as the great birds rise and fall, the tense curve of the wings producing on the beholder the impression of some sure-moving, living boomerang, whose variations in direction are produced by no discernible effort; while in the wing-tips as they just flick the surface of the water on a *vol-plane* one imagines a marvellous and quivering sensibility.

An easy way to identify this among our other Albatrosses of a similar size is by the colour of the bill, which is always bluish horn-colour. On November 27th, 1904, I saw a magnificent bird of this species sail close past the promontory of Point Addis on which I was standing; on no other occasion have I seen one from the land.

SOOTY ALBATROSS

Phœbetria fusca campbelli

A Sooty Albatross was shot in Hobson's Bay in 1861, and is now in the Melbourne Museum ; the fishermen who ply their calling off Torquay tell me they often see them, but here the possibility intrudes that they may not distinguish between the Sooty Albatross and the Giant Petrel. Both are fairly uniform dark brown in general colour, but once seen together there is no confusing them afterwards. I had this opportunity half-way between New Zealand and South America, and noted the absolutely graceful movements of this most "clipper-built" of all the Albatrosses as compared with the ungainly lumbering flight of the Great Petrel. Further, the Albatross's tail, seen in flight, is sharply pointed, the body tapering off beautifully from the shoulders ; while the Petrel has a heavily wedged tail, which reminds one of that of the Wedge-tailed Eagle.

There are no breeding-places of this Albatross within many hundreds of miles of the Australian coast.

WHISKERED OR MARSH TERN

Hydrochelidon leucopareia fluviatilis

I LIKE better the old name Marsh Tern, as appropriate an one as ever was given, calling up to my mind as it does upon the instant a picture of those

wide weed-grown shallows about the Reedy Lake, starred with yellow-flowered water-plants ; of silver-crested reeds quivering in the sea-wind ; and of sparse companies of ethereal and dusky-breasted birds questing low over the water, crying betimes sharply yet plaintively, and ever and anon turning their beautiful heads quickly down in scrutiny of what the summer sun may have called into life upon the surface of the mere.

Late in September they come to us from the Western District, as I think, where *Terrinallum* still enshrines the native name for the bird, and we find them all along the Barwon, from Breakwater or even higher to the Lakes. After Easter the majority disappear. There is another Tern—the Fairy Tern—rather similar in general appearance, but the Marsh Tern, which is like a little sharp-winged, dark-capped Gull, may be distinguished easily by its very dark under surface.

That these visiting flocks of Marsh Terns quite usually nest at one point or another about Connewarre is certain ; once only, however, did I light upon a breeding-place. On December 15th, 1901, I waded far in towards the centre of a swamp which then occupied the site of what is now part of Sparrovale Model Farm ; all bird-lovers and some others will say it had been more profitable to leave it to the birds, but that is another story. At all events, there was on that day a great crowd of Terns hovering over this morass, and after an hour's search my eye

was caught by something white on top of the water among short reeds. I walked over, and found a dead Tern lying across a nest with broken egg-shells upon it—a mother killed while defending her treasures. A few yards away was another nest and more shells, then more and more, quite forty of them, all with the beautiful mottled litter of broken eggs in or around them, save one which held dead young. The nests were built up from the bottom in water about two feet deep, and the upper part of each was formed of the dry stalks of slender reeds. Either water-rats or foxes, probably the latter, had wrought the tragedy, for the greater part of the eggs had been fresh.

I have been told by Mr. Mulder that some years previously a fisherman, drawing in his net near the Bald Hill on the big Lake, had brought with it to shore dozens of these Terns' nests, all with eggs, and that the weight of sodden water-weed actually broke the net.

The eggs are usually three, and are typical Terns' eggs, being greyish green in ground-colour and plentifully spotted and blotched with markings of various shades of grey and brown. People living by the Lake call the birds "Fishermen," because they catch small fish as the waters recede; and describe the period of their stay as lasting from October to February; but I have records of my own as early as September 7th and as late as March.

GULL-BILLED TERN

Gelochelidon nilotica macrotarsa

THERE is an example of this bird in the Geelong Museum, and Mr. J. F. Mulder has seen one or two other specimens obtained in this district; wherefore I record it, but have not observed it myself south of the Divide. It is about the size of a Common Seagull, and is more Gull-like than any other of our Terns. Pale grey above and pure white below, it has in summer a black cap which disappears in winter in both sexes, being then indicated merely by blackish streaks on the feathers of the crown and a back patch about the eye. It is almost more of an inland-bird than a sea-bird, for in parts of New South Wales it breeds in colonies at any time of the year when water abounds. I had some eggs sent to me which were taken on Kilfera, Ivanhoe, N.S.W., during a flood in April, 1900, and I have seen the birds on Lake Cooper near Corop. But they are rare in Victoria.

CASPIAN TERN

Hydroprogne tschegrava strenua

THIS, the largest of our Terns, is distinguishable at once by its size and by its red bill. It is a consistent but occasional visitor to the district. I suppose, if one were constantly in the vicinity of the Connewarre Lakes, one might see two or three in a year. As it is, I do not think I have met with it here more than a dozen times in twenty years. In October, 1911, I

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noted a pair flying high over the north-eastern end of the Eastern Park, making southwards towards the ocean. In 1912 I saw a solitary bird, on October 6th, hawking up and down the lower reaches of Bream Creek, close to the sandhills, and on November 3rd another on the south shore of Connewarre, near the Bald Hill.

Like all the larger Terns, the Caspian breeds not on the mainland, but on the tussocky islands of Bass Strait. On a visit to the Furneaux Group, in November, 1901, I found that this Tern, though not uncommon, lived in pairs, and never in large companies as most of the others do. Whenever we saw a pair hovering about an islet, we tried to find the nest, and were twice successful. The first time, knowing that the birds were said to nest on the summit of the island, I carefully scrutinised the ground as I ascended, and yet all but walked on the pair of handsome eggs, lying in a slight shell-lined hollow of the black friable soil, rather like a large dotterel's nest, and not in the least resembling the nest of the Pacific Gull, whose eggs, though smaller, are like the Tern's, and might be confused with them were the nests not so entirely different.

On another islet we found a pair of young in down near the spot where they had been hatched, on the topmost ridge of all. Always in the breeding-season these birds are very noisy, and fly screaming about the nesting island, as if fearing for the safety of their eggs or young.

BASS STRAITS TERN

Thalasseus bergii poliocercus

THIS is the commonest Tern we have. If you happen to be at Torquay in the autumn, and see a squad of what coast residents call "sea-swallows" squabbling over the tit-bits as the barracoutta are being cleaned after a heavy catch, or in more passive mood camped with snowy Seagulls on a sandspit, or yet again, in Geelong, perched in winter along the "wires" at the baths, you may be tolerably sure they are Bass Straits Terns. Bearing, like all Terns, a superficial resemblance to the Gulls, they may easily be distinguished by the darker back and the black patch on the head, and in flight their more pointed wings work with a jerky mechanical motion which contrasts with the slower and rounded flight of the Gull. From the other Terns the Bass Straits Tern is easily told by its bright yellow bill.

It is quite fascinating to watch one of these Terns fishing. With down-pointed bill he hovers over the stretch of bay he is working, eyes always sharply on the lookout for a fish. There! he has seen one. Wings shut close to the sides, head first, the body shoots down like a weighted grey arrow, and as it enters the water a little cloud of spray goes up. Presently out comes our friend with a fish, rarely visible, but certainly there, and even as he gulps it he is hawking again for fresh booty.

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The breeding-places of the Bass Straits Tern are various islands in the Straits from which it is named, and thither repair about October a great many of these birds which have frequented the mainland bays during autumn and winter ; some, however, remain about Geelong all through the year, probably those which owing to immaturity will not be breeding till next season. In the early autumn we see on the bay many Terns with back and wings strongly mottled with brown ; these are young birds of the year, which have accompanied their parents on the flight from the breeding-islands when summer is done. From the fact that on November 12th, 1902, I counted, at the Eastern Baths, eleven of these birds which were still in immature plumage, I surmise that the species does not attain the adult dress till the second year—it was too early in the season for them to have been hatched that year.

WHITE-FRONTED OR BLACK-BILLED TERN

Sterna striata melanorhyncha

THIS bird is smaller than the Bass Straits Tern, and can be readily identified by its black bill. I have seen one or two on Corio Bay, none on the ocean beaches ; they are more common on the Melbourne side of Port Phillip, along the beaches of the southern suburbs. When these Terns come north on a winter

visit from the Straits Islands where they breed, it is, of course, rather to be expected that the greater number would preserve a direct course and go on till checked by the land at the extremity of Hobson's Bay; of course the same might be said of Bass Straits Tern, but then that is an infinitely more plentiful species even where they both breed, and certainly in all parts of Port Phillip. The habits of the Black-billed Tern are similar to those of the Bass Straits Tern.

LITTLE TERN

Sternula nereis nereis

It was not until quite recent years that I found that the flocks of Marsh Terns which come to Lake Connewarre in the summer are usually accompanied by a few Little Terns, the reason for the lateness of the discovery on my part being that a superficial likeness between the two species had led me to overlook the real difference.

On December 27th, 1911, I identified the species clearly for the first time. On that day Mr. Riordan and I saw one flying close past us, on the "Hospital Lake," at a point about a mile west of the Bald Hill and quite close to the Barwon Heads (Lake) Road. A Marsh Tern happened to fly by at the same time, and to note the points of difference was easy, the pure white under surface of this species and its jet black cap and smaller size contrasting sharply with

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the dusky under parts and indistinct coronal patch of the larger Marsh Tern.

The Little Tern is generally looked upon as a "salt-water" species. It breeds at Port Albert, and formerly did so in small numbers on Mud Island; the eggs are laid in a slight hollow on the shingle. But at times in the summer these birds follow the course of the Barwon right up to Prince's Bridge, where on January 14th, 1912, I saw one hovering over a small swamp, skimming the water and striking it time after time as it went, presumably filling its bill with water-insects. A few days later I noted four or five hawking up and down the river between the Barwon Bridge and the Breakwater. Mr. Riordan has seen them on several occasions about the Gut. It is improbable, however, that any breed in the district.

SILVER GULL

Bruchigavia novæ-hollandiæ novæ-hollandiæ

INDISPUTABLY best known of all our sea-birds, the Silver Gull had yet for me in childhood all the charm of an unsolved problem. We used to find, I remember, the discarded and spineless shells of some species of Sea-urchin on the muddy foreshore; Seagulls' eggs, we were told, and quite believed it, manifold as were the questions that suggested themselves. A little later I was given a large heavily marked egg to console the tedious hours of a long convalescence; I

know now that it was an Oyster-catcher's, but the donor's assurance that it was a Seagull's egg and found on the sea-sand was the stimulus to many a weary and fruitless hunt up and down the beach by Brighton Pier. Alas! that had gone with the rest of childhood's illusions many years before I saw a real Seagull's nest.

That was in the great breeding-ground of all our Sea-fowl, the islands of Bass Straits. It was on one of that curious group of islets, known to the natives as the Cabasheens, east of Flinders Island. We had gone there to photograph the famous Gannet rookery, and were returning to our boat when we stumbled upon a small lot of Gulls' nests. There was but one egg in each nest, for the crew of a schooner had been there the day before in quest of a change of diet. There were altogether about thirty nests, built in and upon grass-tussocks.

It is rather curious that there should be no known breeding-place of this species inside Port Phillip, nor (on the coast) nearer to us than Phillip Island on the east and Yambuk on the west; another is on the Laurence Rocks off Portland. But I am told, though I have not seen it, that there is an immense colony on Leslie Manor Station, Cressy; and no doubt the birds build on other protected western waters, which fact would suffice to account for the numbers of Gulls that we see at all times of the year on Corio Bay.

On the south coast it is not by any means so common a bird. There is no other species of Gull in Victoria

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except the Pacific Gull; which is so much larger than the Silver Gull that one could hardly be mistaken for the other, apart from great difference in plumage; and the black cap of the Terns will enable the observer readily to distinguish a Silver Gull from any of these.

BLACK-BACKED OR PACIFIC GULL

Gabianus pacificus pacificus

SEE a young bird of this Gull, with uniform dirty-brown plumage and horn-coloured bill (he is called "Mollyhawk" when he is like that), and then look at an adult in his beautiful livery of black back and wings, spotless white head, neck, and under surface, and bright yellow bill: you will find it hard to believe that the two birds are not of different species. The brown plumage-phase is that more often seen, since the birds do not attain their full plumage until at least two years after they are hatched, as I learned by watching one kept in captivity. And it is quite easy to mistake the immature bird at a little distance for a hawk, so that one can understand the common name.

In calm weather we do not see these birds very often on the Geelong foreshore; they evidently prefer the other side, as it is only a very strong north wind that brings them over to hunt along the southern shore for such edible debris as may be thrown up on the beach. At such times they even pass a mile

or two inland, beating athwart the wind exactly like great slow-moving birds of prey. Curiously enough, they are not at all common on the coast outside the Heads, though it is nearer to their breeding-places.

The nesting season begins early in November, and at that time these gulls are to be found on all the smaller islands of Bass Straits, particularly such as have a rocky central ridge with a good growth of tussocks. Not in colonies, like the smaller Gull and the Terns, but scattered along these windy ridges the Pacific Gulls make their coarse nests, mere rough cups and depressions in the tussock grass, laying usually three eggs, in colour olive, handsomely marked with varying shades of brown and amber.

This Gull has a loud and harsh cry—some say it repeats the word Ours ! Ours !—and is very pugnacious, quite belying its name. No Gannet dare leave her nest for a moment if there is a Pacific Gull in the vicinity, or goodbye to the egg.

ARCTIC SKUA

Stercorarius parasiticus

THE Arctic Skua shares with some of the Sandpipers the distinction of being the farthest-travelling of our migratory birds. As yet it is not known in what part of the Northern Hemisphere those Skuas breed which come to us in our summer—the common view is that they nest in Asia within the Arctic circle ; but even supposing that they do not go farther north

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than the latitude of Japan, it is a sufficiently wonderful flight. We only see them in their winter dress, dark on the back and whitish below, the breast always with a certain number of transverse mottled bars. There are three specimens in the Melbourne Museum taken at Queenscliff in the summer of 1881-2. Of these, one, a male, has the under parts quite white except for a mottled breast-band about $2\frac{1}{2}$ inches wide; the others have the breast mottled all over. In those birds which I have noted within Port Phillip, there has been a great deal of variation in the amount of brown on the breast.

The readiest way to observe this species is from the stern of a bay steamer in the summer, particularly between Williamstown and Portarlington. They follow the boats for scraps from the galley. I have been told by fishermen that they keep with the morning boat from Melbourne until the Geelong boat passes, when they return with the latter to Williamstown, thus ensuring to themselves a maximum of garbage. I have seen them in the steamer's wake even in the Geelong outer harbour, but that is unusual.

At first sight they are not unlike Mutton-birds, but have a more direct and Gull-like flight, fast though it can be; they come quite close overhead when one is watching them from a steamer's deck, and the two longish tail feathers sticking out sharp behind them make an excellent identification mark. The various bay steamers would seem to collect the

majority of the Skuas about them, as I spent a whole day in a motor-boat trying to secure a specimen without getting more than one shot, and indeed only seeing four birds altogether. The fineness of the day may have had something to do with it; fishermen say the Skuas only appear in any numbers when it is rough.

Further, they state that it is the habit of the Skua to chase a Gull about until the Gull passes excrement, which the Skua then devours, and they have given the Skua a fittingly opprobrious name. My informant told me that he was quite certain the Gull does not *disgorge* the food when chased by the Skua. I have on more than one occasion seen a Skua hotly pursuing a Gull, but never saw what ultimately happened.

The earliest and latest dates of my own records of the Skua are November 17th (Mud Island) and February 13th (off Osborne House); I must, however, add that I had it on good authority that several were seen following the steamer on Eight Hours' Day (April 21st), 1913. This, it will be seen, cuts the time within which the Skuas have to cross to the Northern Hemisphere, rear a brood, and return with the young down to a fairly short period.

PIED OYSTER-CATCHER

Hæmatopus ostralegus longirostris

THE magnificent stretch of sandy shore which runs with a few rocky interruptions from Port Phillip

Heads to Torquay makes, one would think, an ideal environment for this Oyster-catcher; yet, in spite of its abundance throughout the Straits Islands, I have only two instances to record of its occurrence on this part of the coast. Mr. Hugh Riordan shot one at Easter, 1909, close to the mouth of Bream Creek, almost at the spot where I had seen a bird of this species for the first time in 1901. It is a bird of striking black and white plumage, with red bill, so that one is not likely to miss it on such an open shore, if it is there. A few are said to breed on Phillip Island; the occasional visitors here noted may have come thence. Connewarre market-shooters tell me they have sometimes seen birds at the Black Rocks near the sewer outfall.

SOOTY OYSTER-CATCHER

Hæmatopus niger fuliginosus

THIS bird closely resembles in its habits the Pied Oyster-catcher, from which its uniform sooty plumage will distinguish it. Both species are called Red-bills in places where they are common. From my experience of them in the Furneaux Islands, I should say the Sooty Oyster-catcher prefers a rocky coast, the Pied favouring sandy beaches. I have never seen the Sooty Oyster-catcher on this side of Port Phillip, but have had unimpeachable testimony to its occurrence both at Lorne and Apollo Bay—and being found in such localities it certainly would breed there.

THE BLACK ROCKS (BASALTIC FLOW), NEAR BREAM CREEK.

RED-KNEED DOTTEREL

Erythrogonys cinctus

THERE are a considerable number of species, of which this is one, which might be classed as irregular limited migrants—that is, birds which do not leave Australia at any time, but, breeding regularly in one part of the Continent, visit other parts of it, not systematically, but occasionally, in the autumn and winter.

The Red-kneed Dotterel, though quite a small and slender bird, is most closely related to the Spur-winged Plover; but the bird for which it might most easily be mistaken is one of about its own size, namely, the Black-fronted Dotterel, both having a black V-shaped mark on a white breast. On its rare visits, however, to the neighbourhood of Geelong, the Red-kneed Dotterel would appear to prefer salt marshes near the sea, the Black-fronted Dotterel being a resident species which rarely leaves the margins of fresh-water streams and lakes. So that the likely localities for the respective species do not overlap, and in any case the Red-kneed Dotterel stands a good deal higher than the other bird, and its bright red colouration on the leg above the knee should be a sufficient distinguishing mark. Singularly enough there is quite a strong first-sight likeness between the eggs of these two birds; but again geographical distribution helps, for the Red-kneed Dotterel never breeds south of the Divide, while I have seen eggs of the Black-fronted bird from as far south as Airey's Inlet,

There are three examples of the Red-kneed Dotterel in the Geelong Museum, shot at Point Henry; others have been obtained at Avalon. These instances will be found usually to occur in autumn or winter; in the early summer the Red-kneed Dotterels are all at their breeding-places on the banks of lakes and dams in the interior. I have seen eggs from Kilfera, Ivanhoe, N.S.W. The species is to be regarded in this district as one of the rarest wading-birds.

SPUR-WING PLOVER

Lobibyx novæ-hollandiæ

HARDLY less eloquent of the desolate wilderness than is the long-drawn melancholy wail of the Curlew, the sharp, rasping cry of the Spur-winged Plover rings out often enough even now by night over the town and its suburbs; whether it be that the birds for safety choose the cover of darkness when changing their feeding-grounds, or find a weird pleasure in mere aimless pilgrimaging high in the realms of night. For Spur-wings are widely distributed over this, as indeed all other, parts of the State. The autumn is the season when they appear most numerous, for then they form great bands which frequent alike the samphire scrubs bordering Stingaree Bay, the edges of Reedy Lake and the wide water-meadows about the Gut, and the mangrove flats on the lower River towards the Heads, as well as all inland waters of any extent. Quite early in July they pair off for

nesting, nor, I think, do the whole of our autumn birds stay in this district. A nest I found near Mount Moriac in the first week in July contained three hard-set eggs; they were lying in a slight depression on the top of a low mound in wet crab-hole country. A small island near the edge of a swamp is another favourite nesting-site. The young, like those of all Waders, can run as soon as they are hatched, and hide very dexterously.

The use of the yellow spur on the shoulder (which, it should be remarked, is possessed not alone by our bird, but in greater or less measure by various related Plovers all over the world), and the true significance of the curious yellow wattles, or lobes, which depend from the sides of the face, have not yet been satisfactorily determined.

The sportsman is no friend of this Plover, for it has the unique faculty of giving with its hard cries a timely warning of the gunner's approach, however stealthy, to the Ducks or other game upon which he is advancing. I have heard old Duck-shooters solemnly aver the existence of a compact between the Plover and the Black Duck—a one-sided one, surely, for though he is not bad eating, there are few who will shoot a Spur-wing Plover unless out of sheer exasperation; indeed, the bird is well-nigh as sacrosanct in the eye of country youth, all legislative protection apart, as is the Magpie or the Laughing Jackass. That is, I think, the chief reason why the Spur-wing Plover is not materially diminishing in numbers in our district.

BLACK-BREASTED OR LITTLE PLOVER

Zonifer tricolor tricolor

THE Spur-winged Plover, as we saw, is a denizen of the marshlands; the Little Plover frequents the plains, and particularly that wide belt of bluestone-strewn country which, beginning north of Lethbridge, comes right down to Fyansford. On the south side of the town it is less often seen, and here its range is practically limited to the open stretch lying south and east of the ridge on which are Mounts Moriac and Duneed.

This, too, is a stony place, which, like the northern belt, bears to-day in its myriads of fragments of decomposing igneous rock evidences of a period of volcanic activity and correspondingly great lava-streams in the remote past. The Little Plover finds shelter in these rocks, and is in some measure protected when among them by its harmonisation with its surroundings.

It is a very local species. There is some tendency to form flocks towards the end of the year, which keep together till the following May; but these are never found at any considerable distance from last season's breeding-place. There is a resemblance between this bird and the Spur-wing Plover, particularly when the birds have their backs to the observer. When you can get a frontal view, there is no difficulty in recognising the Little Plover by the broad belt of black across his breast, the under parts

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of the Spur-wing being pure white. The Spur-wing largely exceeds the Little Plover in size, and its cry is harsher and louder; the Little Plover's is a thin metallic note, though, when the birds have a nest in the vicinity, it works up almost to a scream as they fly down again and again to within a yard of the intruder's head.

The breeding-season commences, on the plains north of Avalon, as early as July; on the basaltic plain it is a little later, and most birds have not hatched their broods till the end of August. I believe only one brood is reared in the season. Four is the invariable number of the full clutch of eggs; they are laid on the ground in a slight depression, sometimes sheltered by a low rock, and are pyriform, of a greenish-olive ground colour spotted all over with varying shades of brown. In my experience this is one of the most difficult nests to find, even when one is certain from the birds' behaviour that one is within fifty yards of it.

The Plover-habit of running swiftly for a few yards, then stopping motionless for perhaps minutes at a time, is well exhibited in this species. Its flight is singular, the wings being worked with a quick spasmodic beat, which is like that of no other bird except the Spur-wing's. The latter is, however, slower and heavier. The food of the Little Plover consists mainly of ground-dwelling insects.

GREY PLOVER

Squatarola squatarola hypomelus

WITH this species we come to the first of a numerous class which may be termed Asiatic Migrant Waders ; of whose breeding-habits, though a great deal has been written and repeated, our real knowledge remains practically nil. These birds are the Eastern counterparts of many species which spend their winters in the United Kingdom and Central and Southern Europe, and return to breed within the Arctic Circle in the northern summer. The Eastern birds, which, speaking roughly, reach Australia in September and leave again in March, are in each case slightly different from the corresponding Western form, showing that, close as may be the relationship, the two forms have separate breeding-areas. If they bred together, subspecific differences would disappear. Our knowledge of Australian birds cannot be considered satisfactory until some one with the time and enthusiasm necessary for the task has discovered and described for us the nesting-habits of these exceedingly interesting species. They may, of course, go right up to the limits of the Polar tundras, in the north of Asiatic Siberia, as is commonly said ; but such investigations as have been made there have been resultless. Or they may, and this I think more likely, have their summer home in the uplands of Northern China. The Snipe, we know, breeds in Japan.

All these species exhibit greater or less changes in plumage, in the direction of brilliancy in the breeding-season and dullness at other times. The Grey Plover, as we see it in the Southern Hemisphere, has a uniform plain grey colouration; in summer the male has a striking black throat and chest. It is quite possible that from time to time birds of this species, as well as other migrant Waders, may be found in Australia exhibiting full summer plumage; these may be birds just about to make the great northward flight, or they may be those which for one reason and another have remained behind when the main body has gone north and have assumed summer dress without fulfilling the reason for it—that such instances occur is well known.

We have in the Geelong Museum the only example of the Grey Plover which I have seen from the district. It was shot by Mr. L. Buckland in February, 1893, at Mud Island, when in company with a number of Lesser Golden Plover.

GOLDEN PLOVER

Pluvialis dominicus fulvus

As we usually see this bird, it is of buff-coloured plumage mottled all over with brown, presenting a generally spangled appearance. In the northern summer the under surface is of a jet black, margined with a white line. The total length is 10 inches.

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The bird has no hind toe, differing in that from the last-described species.

Little is known of the dates of its arrival and departure. It is to be found in small numbers every year about Christmas, on the Mangrove Flats about the reaches of the Lower Barwon River, and seems to prefer a locality where cover grows fairly high. My one experience with Golden Plover was at the Salt Pits, Point Henry, towards the end of the year 1897. I saw a bird on the edge of some samphire scrub, bobbing its head up and down while keeping its bill at the horizontal in a way many wading birds have. I managed to secure it, and later on the same morning three or four more. They were in very good condition. In flight they seemed rather larger than in fact they are; they did not rise high, but kept close over the salt-paddocks. In a collection of birds made many years ago at Lake Connewarre by the late Mr. A. M. Campbell, I saw two specimens of this bird, one in winter plumage and the other in full summer dress. We know nothing of its nest, eggs, or breeding-place, except by inference.

DOUBLE-BANDED DOTTEREL

Cirrepidesmus bicinctus

UNTIL in the Eastern Hemisphere there is adopted the method, now coming into vogue with European ornithologists, of "marking," by means of metal

rings, or otherwise, large numbers of birds at their breeding-stations, so as to make them identifiable at whatever place they may migrate to, we shall remain in ignorance of the full life-history of many of our birds. Of these, one of the most perplexing is the Double-banded Dotterel. The current statement is that it breeds in New Zealand and migrates to Australia for the winter. The facts certainly do, so far as they go, fit in with this theory, which, if proved, constitutes the unique instance of a wading bird travelling east and west on its seasonal migrations instead of north and south. There is a quite obvious reason for the Asiatic Waders coming here: they procure for themselves thereby a double, in fact a perpetual summer and continuous food-supply. But why should a small bird leave New Zealand and cross a thousand miles of ocean to spend six months in a climate which can exhibit very little difference from that which it would have experienced had it remained in New Zealand the winter through?

The full summer plumage of the Double-banded Dotterel is greyish-brown on the upper surface, white on the under; the breast has a narrow zone of black, slightly beneath which is a second and much broader band of chestnut. In the winter the chestnut band becomes fainter. In young birds, while there is always more or less of a grey mottled band across the lower neck suggesting the ultimate upper band of black, the chestnut band is absent.

Here in Geelong, which is probably the best place

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in Victoria for observation of this species, we are accustomed to meet with birds in every stage of plumage. Rarely, however, does one see a specimen with the two bands in perfect colouring.

The birds arrive in this district early in April, and remain through the winter. The latest date upon which I have noted them is September 30th, at Torquay.

The localities they visit are the following: the Salterns at Stingaree Bay, particularly near the junction of the Point Henry and Portarlington Roads; the seaward side of the Connewarre Lakes and Lower Barwon Mangrove Flats; and the Ocean Beach from Point Lonsdale to Torquay. Formerly they came every April to the grassy common near the Breakwater now occupied by the Racecourse; I have not seen them in that locality of late years. Once I remember noting a flock in a grass paddock at Moolap, birds which had come across from the Salt Works, I imagine.

Because of the number of immature birds, the fact that they are chiefly in winter dress, and their habit of associating in flocks with the Red-capped Dotterel, it is not easy to pick out the Double-banded Dotterel at any distance. In fact, all these smaller Waders are so much alike that without shooting them one can never be quite certain of their identity. One may say, however, that in the localities indicated this will be the commonest "Sandpiper" at that time of year; it is to be told from the Red-capped Dotterel,

with which it is most likely to be confused, by its rather stouter build and the presence of more or less markings on the chest.

RED-CAPPED DOTTEREL

Leucopolijs ruficapillus ruficapillus

THE Red-capped Dotterel, an all-the-year-round resident on the margins of salt-water areas in our district, is characterised by a yellowish-rufous cap and pure white breast, the upper surface being brownish. Like all other wading birds, you will find it in flocks in the autumn, yet never far from its breeding-grounds. The best idea of its distribution will be conveyed if I mention the places in which during the past twenty years I have known it to nest. These are: North shore of Corio Bay (Avalon); Salt Pits; Point Henry (extremity); Lake Victoria; lagoons between Black Rock and Bream Creek; sandhills at mouth of Bream Creek.

In all these places there is abundance of broken cockle or whelk shells, and it is among these that the eggs, two in number, are laid in the last part of September or the beginning of October. They are deposited in a hollow as big as the palm of your hand, generally on some little ridge on a bank of sand and broken shells, the nest itself being lined with small bits of the broken shells. When any one approaches, the Dotterel slips off her eggs and runs away in a direct line for perhaps ten yards; then

she will partly turn and go off in another course, and perhaps contrive, by an apparent disablement which may be produced by cunning or by sheer terror, to draw one's attention upon herself and away from her pretty spotted treasures.

There is at the mouth of Bream Creek an immense "Blackfellow's kitchen-midden," as it is called, a bank upon which are myriads upon myriads of the broken shells of whelks, and their opercula, left there after the feasts of countless generations of aborigines. Here in the nesting-season you may see numbers of Dotterels running about or flying off with sharp single notes of alarm. The nests are not easy to discover at first in such surroundings, but two of us managed to find five in one afternoon. Young birds one does not often see: like all these Waders, they can run the moment they are out of the egg, and there seems to be hatched with them an amazing aptitude for taking suitable cover.

One notices the Red-capped Dotterel sparingly on the ocean beaches in the winter months, but I have never yet seen them in the vicinity of fresh water nor where there was no deposit of broken shell, although at the Salterns I once found them nesting not on the adjacent shelly banks, but on a patch of ground from which the samphire scrub had recently been cut away and burned; the nest hollows were lined with tiny lengths of stick and twigs, and the eggs were splendidly protected by their similarity to their surroundings.

NEST OF RED-CAPPED DOTTEREL AMID SHELL-REMAINS OF ABORIGINAL FEASTS.

HOODED DOTTEREL

Charadrius cucullatus cucullatus

I DO not know a more charming little bird than this representative in Australia of the Ringed Plover of Europe. Scattered in pairs during the summer all along the ocean beach from Port Phillip Heads to Point Castries, near Lorne, you may see the plump little bodies on tiny twinkling feet racing down from above high-water mark where their nest is hidden, then hurrying along the hard beach at the water's edge in front of you, the cock bird conspicuous with black head and white collar, the hen suited in plainer grey. Follow them along the beach, and after a few hundred yards they will fly out to sea and behind you to their home again.

The breeding-season is at its height in the month of November, but I have seen a young bird at Torquay on October 20th, and eggs at Airey's Inlet in January. Three eggs are usually laid, the site of the nest, which is a mere unlined or very scantily shell-lined depression in the sand, being a sandy ridge, often strewn with bits of dried kelp, above high-water mark. Sometimes, indeed, it is a hundred yards from the beach, up one of those miniature ravines which one finds running into the coast sandhills from the seaward side. I have on occasion found the nest by tracing the footprints of the birds.

Winter is the only season which draws the Hooded

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Dotterel from the ocean shore, and then they do not go farther inland than half a mile or so. On a dried salt-marsh not far west of Barwon Heads, on May 5th, 1912, I saw about forty of these birds in small flocks, the largest numbering fifteen individuals. Many of the males were in full plumage. It has been stated that the males lose their black hoods in winter, but, so far as my experience goes, it is not so.

BLACK-FRONTED DOTTEREL

Elseya melanops melanops

WE saw that the Red-capped Dotterel frequents salt areas of broken shell, the Hooded Dotterel the ocean beach. This third species of resident Dotterel, the smallest of the three, has an equally well-defined range. Its home is at the side of inland fresh-water rivers, ponds, or lakes, and you will never find it near the sea-coast unless there is a lake of fresh water in the vicinity. It is a curious fact that the haunts of our three local species of Dotterel should not overlap, and it makes it much easier to identify the species in that one can know exactly where to look for each. A band of black across the breast serves further to differentiate the male of this from the two other species in the field.

The fresh-water streams with occasional wide strips of gravelly shingle along their course, and fresh-water

YOUNG HOODED DOTTEREL, COAST NEAR TORQUAY.

lakes which this bird prefers, are not characteristic features of the Geelong district, so that it is rather rarer here than in most parts of the State. Once I saw a pair on the main road to the You Yangs, near some small lakes on Lara ; while close to North Geelong Station, on the banks of the Barwon, at various points between Barwon Bridge and the Breakwater, at the "Gut" at the entrance of Lake Connewarre, and at Airey's Inlet I have seen birds from time to time.

My attention has usually been drawn to the presence of the birds by their note, which, though not loud, is high-pitched and cannot be forgotten when one has once heard it. I only regret that I have no means of conveying to my readers the countless varying whistles, calls, and songs of our native birds ; attempts to do so in imitative language are usually worse than futile in that they are so easily misleading. Let me just say that every one of our two hundred odd species (except such as utter no sound at all) has its own series of separate and distinct notes, none of which is exactly like the note of any other species ; that a young ornithologist can, given a decent ear for tone, in a year or two, pick up the notes of at least 50 per cent. of our birds ; that I believe it would be humanly possible to learn them all ; and that the ear is (in most cases) a much better guide than even the eye in helping us find the particular bird of which we may be in search.

No doubt the Black-fronted Dotterel breeds wherever it is found, seeing that it has no migratory

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movement of any consequence ; but the eggs, laid on the bare ground or shingle a few yards back from the water's edge, are not often discovered, and the only district note I have is of the finding of three at Airey's Inlet in the month of December. They are of a buff ground-colour, crossed and recrossed with a network of amazingly fine lines.

WHITE-HEADED OR LONG-LEGGED STILT

Himantopus leucocephalus leucocephalus

Two kinds of Stilt and one Avocet, all of them known inland (where they are more common) as "barkers," from their yelping cries, visit our district occasionally. Though none of them can be described as common, it is more usual to hear of the present bird than of either of the others. The Avocet's long, upturned bill distinguishes him from both the Stilts, and the Long-legged Stilt is easily known by his longer legs from the Banded Stilt. A visitor to Connewarre, therefore, who sees a flock of birds which appear to be chiefly black and white with something of the flight of Plover, but less spasmodic, and travelling in a more compact body and at a greater height, with legs stretched out behind, may safely conclude that these are Long-legged Stilts. I believe they have been becoming more plentiful on the Lake in recent years, and it is quite likely that they nest there.

WHITE-HEADED OR LONG-LEGGED STILT 87

Local residents at the Lake, who call the birds "Avocets," tell me that they make their appearance with the fresh water after spring floods, disappearing soon after Christmas. I append a few field notes :

October 26th, 1902.—A flock of about twenty on the south-west margin of the Racecourse Swamp ; always flew back there when disturbed.

November 16th, 1902.—Rather fewer birds at the same place.

November 22nd, 1902.—A very small flock still there.

October 21st, 1911.—Mr. J. F. Mulder reports a small flock on Fyans' Swamps, Prince's Bridge, recently, and about this date there was a large flock on Connewarre Lake.

The White-headed Stilts bred on an artificially filled swamp on Wurrook South, Rokewood, in the spring of 1912. Mr. Allen Noble tells me that about fifty birds arrived in September and began building about October 8th. There were some twenty nests, built of water-grass and dotted about the swamp. Horses grazed in the swamp (which had about 2 feet of water in it, and was refilled from time to time), and Mr. Noble saw the birds beating up the water with their wings about the nests to drive the horses away. The young resembled young Plover, and though, of course, not web-footed, they swam readily. The eggs numbered two, three, and occasionally four. The nests were not built up from the bottom, but

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floated on the water, and were kept in position by growing grass. As water was from time to time pumped into the swamp, the birds built up the nests to keep the eggs dry, and at last even covered the eggs over with grass.

BANDED STILT

Cladorhynchus leucocephalus

IN general appearance and habits this bird resembles the Long-legged Stilt, but has much shorter legs, and is also to be distinguished by the broad chestnut band across the breast, from which it derives its name. Curiously enough, this band is not attained until maturity, the young having a pure white breast; examples of each stage of plumage are in the Geelong Museum. I have not myself noted the Banded Stilt in this district, although Mr. W. Lewis, formerly of Connewarre Lake, assured me that they accompany the White-headed Stilts to the Lake annually in the late spring. Mr. Mulder has seen birds of this species near the Old Pump on the river above Prince's Bridge. No record can be discovered of the Banded Stilt breeding anywhere in the vicinity of Geelong.

AVOCET

Recurvirostra novæ-hollandiæ

IT is on the authority of Mr. Wm. Lewis and of Mr. J. F. Mulder that I record this bird for the district. Mr. Lewis states that they are very rare visitants to

Connewarre; Mr. Mulder has also noted them there occasionally; and there are three birds, probably obtained locally, in the Geelong Museum, but without data. The Avocet is clearly distinguished from all other large Waders by its upturned bill and red head and neck. It is an inland-breeding species.

SEA-CURLEW

Numenius cyanopus

THE Sea-curlew is at once the largest and, by reason of its amazingly long decurved bill, the most conspicuous of those birds which I have designated as Asiatic migrant Waders. Salt-marshes or mud-flats in the immediate vicinity of the sea, or the ocean coast itself, are the haunt of the Curlew, which feeds by preference on the small burrowing crabs to be found in great numbers at ebb tide. These it extracts with the long delicate bill so finely adapted by nature to the purpose. Its flight is comparatively slow and heavy for a Wader; while on the wing it utters a high, clear, almost wailing call. I have seen small companies of Sea-curlew (ten or twelve is an average flock) at different points on the reefs west of Barwon Heads, and as far west as Airey's Inlet, but its favourite feeding-ground in the district is the mangrove-flats to the south-east of Lake Connewarre towards Barwon Heads. In lesser numbers it may be observed at Stingaree Bay.

The migrations of the Sea-curlew are still enveloped

in mystery. Mr. P. L. C. O'Shanassy, an observer at Hastings Western Port, where the conditions are similar to those at the Barwon Estuary, made some interesting observations on this species in the year 1912, which he communicated to *The Argus* Nature Notes. He found that in April and early May they were present in thousands. They were even fairly plentiful in June, when, according to received ideas, they should have been nesting in north-western Asia. And in the end of July the large flocks began to appear again, so that at the most these had been away two months—a very short time in which to travel say twenty thousand miles and rear a family between-whiles. Two great flocks were seen to arrive from the open sea by daylight, flying slowly and at a great height, and keeping up a continuous call as if bird after bird in succession kept uttering each a single note. By August 23rd Westernport Bay was swarming with them, though the observer notes that usually they do not return in full force before the end of August or beginning of September.

The general plumage of the Curlew is of varying shades of brown, blotched and striated; the bill is about 7 inches long.

WHIMBREL

Phæopus phæopus variegatus

ONE evening, in the autumn of the year 1878, Mr. J. F. Mulder was tramping back to Geelong after a

day's shooting in the marshes of Connewarre, when he espied a large flock of Plover-like birds feeding on the grassy upland which lies between the Queens-cliff Road and the Breakwater, about where the Geelong Racecourse now is. Heavy westerly winds had been blowing, and the birds had the appearance of being tired from a long flight. The identification of the bulk of the flock as Golden Plover was no difficult task for a naturalist of Mr. Mulder's experience, but suddenly his keen eye picked out a stranger. It was fully 90 yards away; he took his chances as the bird raised its head to fly, fired, and to his delight secured the prize, getting, as the flock rose, a brace of Golden Plover with a left barrel "into the brown." The first bird proved to be a Whimbrel, in such good condition that the fat was literally running out of its beak—and this was the first and last Whimbrel that has ever with certainty been recorded for the Geelong district. The bird is 15 inches long, and has the bill distinctly arched, though it is but 3 inches long as compared with the 7-inch bill of the Curlew. The plumage of the upper surface is brown, blotched and streaked with darker brown, the breast buffy-white with brown shaft-lines.

Mr. W. Lewis informed me that in 1907, on Connewarre, he shot thirty-six out of a flock of forty-two birds, which were described by the salesmen as Whimbrels, but I have not been able to ascertain whether these were Whimbrels, Little Whimbrels, or possibly Godwits.

BARRED-RUMPED GODWIT

Vetola lapponica baueri

THIS species is another large Asiatic Wader, the male $14\frac{1}{2}$ inches long, the female a couple of inches longer ; the former's bill is about $3\frac{1}{2}$ inches, the latter's nearly $4\frac{1}{2}$ inches. The tail is regularly barred with black and white. Two specimens in the Geelong Museum, male and female, were shot by Mr. Mulder at Point Henry in November, 1886. Again in 1888 the birds were very plentiful, Mr. A. J. Campbell in that year seeing scores of them for sale in the Melbourne markets. In the Geelong district these birds are still occasionally seen at Connewarre Lakes and the Salterns, but must now be classed as rare.

GREENSHANK

Glottis nebularius glottoides

GRACEFUL and light of build, tall, with beautiful grey-mottled plumage on the upper parts and pure white under surface and rump, the latter particularly noticeable in flight away from the observer, the "Silver Snipe," as the market-shooters call it, is one of the easiest recognised of our Asiatic visitors. Sometimes its inclinations are solitary—the first I ever saw was standing alone and motionless by a little salt-pool in the Samphire Marsh behind the Rifle Butts. More often it is met with in flocks of from six to

twelve, haunting lagoons and estuaries. Being a quick flyer and very wary, it does not often figure in the amateur gunner's bag, although it is a very regular visitor to localities such as Lake Connnewarre and the Lower Barwon Flats, where there is abundance of the small shell-fish and crabs on which it feeds. A small flock was seen at the Lakes in the first week of June, 1912, so that as in the case of so many other Waders, it would appear that a certain number of individuals spend the winter as well as the summer here.

LITTLE STINT

Pisobia minuta ruficollis

Of all the twenty odd species which pass under the popular term "Sandpiper," the Little Stint is at once the smallest in size, and in point of numbers the most abundant. Measuring rather less than 6 inches in length, there is but one bird, the Red-capped Dotterel, likely to be mistaken for it; the latter, however, is rarely seen in such big flocks as the Stint, of which I have sometimes seen as many as a thousand together. On the south-eastern side of the Big Lake at Connnewarre you may frequently see such a flock wheeling about in the air, now flashing white as the countless tiny breasts turn as one towards you, now occulting into brown again.

The specific name, *ruficollis*, comes from a rusty tinge on the throat, donned in the breeding-season,

but scarcely discernible when the birds reach Australia. These little birds associate most with the Curlew Sandpiper, and like best to feed on a broad open expanse of wet salt mud, such as those from which the receding tide pours in streams along the banks of the Lower Barwon. They are quite plentiful also at the Salt Works from September to April. Some, indeed, spend the whole year with us. On June 3rd, 1912, Mr. Hugh Riordan shot a male in winter plumage at the Salt Pits, and I have seen a vast flock on Lake Connewarre towards the end of July. In appearance the Little Stint is like so many Waders—brownish above and pure white below.

SHARP-TAILED STINT

Limnocinclus acuminatus

THREEPENCE per pair is what the shooters get in the market for the Sharp-tailed Stint, or Marsh Tringa (Teringa it is pronounced “in the trade”), and yet so great are the flocks of this species which annually about September arrive in the swamplands of our district, that men make quite a good living out of them even at that figure. Nor are they to be despised as table-birds; I consider them quite as good eating as the Snipe, though of course they are less than half the Snipe’s size.

The general plumage is dark grey above, lighter below, with a rufous tinge about the head and throat on the bird’s first arrival, which disappears as the

change into winter plumage is completed. It is rather like a big edition of the Little Stint, in whose company it is often found. It feeds upon ground-insects and worms in the brackish swamps which are its favourite resort. If a shot be fired in the direction of a flock of Stints feeding on a mud-bank, it is characteristic that not all will fly; even though those that remain be quite unhurt, they have the habit of staying where they are until the shooter is surprised to see a bird get up and take wing from beneath his feet as it were.

This is one of the visiting Waders which at times leave the muddy margins of lakes and rivers for drier grass paddocks; its favoured feeding-place, however, is a grass-grown flooded flat with still an inch or so of water on it. The species is peculiarly abundant in the backwaters of Lake Connewarre and on the Geelong Salt Works; it settles, however, throughout the district where there is a sufficiency of swampy land. About April the flocks leave again for the north, and I am doubtful whether any birds remain with us for the winter; certainly not many do so. The Sharp-tailed Stint is fast on the wing, and it takes a good shot to bring down a single bird.

CURLEW SANDPIPER

Erolia ferruginea chinensis

IN the Curlew Sandpiper, so called because of his slender and slightly decurved bill, we meet a com-

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panion of the Little Stint. From the month of September, when the Waders begin to reappear in large numbers on the Salt Works water-paddocks, until their northward flight in the following autumn, it is not uncommon to see a crowd of birds feeding together on the mud, about half each of Little Stints and Curlew Sandpipers. At the same time, this is a less widely distributed species than the Sharp-tailed Stint, which it closely resembles when in flight. For, as I mentioned, the Sharp-tailed Stint is found wherever there are swamps, and likes those with a growth of grass; the Curlew Sandpiper I have never seen except in the vicinity of the Salt Works, and there some at least remain all through the year, not mere occasional individual stragglers, but small flocks of up to a dozen. One was shot on July 1st, 1911 (it was in company with several others), and another (also from a small flock) on June 2nd, 1912. Both were in winter plumage (ashy brown, white on under parts), with no trace of the rich rufous on the breast which the species exhibits in its summer dress.

In the Geelong Museum there are two examples of this bird, one in nearly full summer plumage and one showing a trace of rufous colouring. Upon the analogy of what occurs with other species, these would probably have been birds either just arrived or just about to depart—*i.e.* either September or April birds.

If you listen on almost any clear, fine, and windless night in the month of September, you may hear the call of birds passing overhead—Waders these certainly,

on migration. In the circumstances it is difficult to identify species, the sounds coming down to us very faintly, too, at times; but it is my belief that I have heard the call of the Curlew Sandpiper more often than any other in these mysterious nocturnal hosts.

KNOT

Canutus canutus rogersi

YET another Asian migrant, and so far as my experience goes, a rare one in the Geelong district. In the breeding-season (April to June) it, or a kindred form, is widely distributed along the Arctic Circle from Hudson Bay eastward across Greenland and the north of Europe to Asiatic Siberia; it is then rufous-coloured on the breast and under parts with a shade of the same above, very much as is the Curlew Sandpiper, from which, though the two species undergo corresponding changes of plumage, it may be distinguished afield by its much larger size and straight bill. There are specimens in the Geelong Museum shot in the district in both phases of plumage. That in winter dress was obtained near Point Henry. Campbell records the shooting at Westernport of a group of three, a male in full breeding-plumage, an adult female, and a young female. That was in the month of May, showing that the birds don their summer livery before migrating northwards.

It seems to me, considering that the Western

Knots which breed in Northern Europe only travel as far south as Southern Europe in winter, more reasonable to suppose that our variety of the Knot does not make such a huge journey as to the extreme north of Asia, but breeds somewhere in the Northern Chinese uplands, a district which when well explored will, I think, be found to contain the solutions of a number of problems in Australian ornithology.

SNIPE

Ditelmatis hardwickii

THE Australian Snipe nests in Japan—this is one of the few facts which may be stated with certainty about the breeding of any of our Asiatic bird visitors—where eggs have been found on the grassy moorlands at the foot of the volcano Fujiyama which figures so largely in Japanese art. Conversely it may be stated with equal authority that our Snipe does not breed in Australia, in spite of the fact that there are few old inhabitants of Snipe-haunted districts who will not be willing to argue, or even wager, that they have known of authentic Snipes' nests. Most of these cases, when investigated, have proved to refer to the Painted Snipe, a distinct and resident species, or to the Collared Plain Wanderer, whose eggs have something of the Snipe character.

At the end of the northern summer the birds, impelled by the vague and little-understood stimulus

which drives so many birds across half the world twice a year, move southwards via the Philippines, missing, as it would seem, the coasts of China, to Northern Australia, and then work down along the eastern coastline until the farthest-flying reach Tasmania about the beginning of September; in the meanwhile birds have been "stopping off" and turning inland all the way down the shores of the Continent, so that during our Australian summer the Snipe is fairly widely distributed, and may be found in any district, but preferring timbered belts, where there is sufficient water and grass.

Melbourne sportsmen assign the arrival of the Snipe to the period of the full moon nearest to the end of August, and assert that they travel by night only. The numbers in which they appear vary, the impression prevailing that of late years they have steadily decreased. First of all after their arrival they are found in open well-watered country; later, as the summer heats increase, they favour the shelter of timber and the high grass that grows along the margins of swamps and fresh-water streams. They will suddenly appear in a place, and as suddenly leave it, so that the sportsman who hears the magic word "Snipe," knows that he must act promptly, even were no others on similar purpose bent.

Doubtless the Snipe is the king of all our sporting birds; he is certainly the hardest to shoot, though said not to "zig-zag" in his flight quite so much as his English relative. The average weight is 5 or 6 oz.,

but birds running up to 10 oz. have been shot at the end of summer in a good season. A peculiarity of the Snipe is his habit of perching, though rarely, in trees. He is a great bird to run when he has pitched, and very seldom gets up quite where expected.

The Snipe's cry is something like "Kek-kek-kek," uttered as he begins his rocketing flight. About Geelong it is almost always in bush country that one sees him, such as by the small fresh swamps in the vicinity of Ocean Grove; but the last one I happened to note flew from the banks of the Barwon just a little below Ceres Bridge; it was on October 22nd, 1911.

PAINTED SNIPE

Rostratula australis

THIS is a purely Australian species, which does not leave the country, but breeds in swampy parts of the interior, such for instance as Southern Riverina, and occasionally wanders as far south as the Connewarre Lakes—I have no information as to its occurrence in any other part of this district. There are two in the local museum which were shot near the Lakes in January, 1892, and I have seen other specimens from the same place in private collections. I never met with this bird in the field. On the south side of the Lakes as many as six were shot at one time some few years back, but they are now reported as much scarcer.

In size and shape the Painted Snipe bears some resemblance to the Common Snipe, but has a shorter bill, and the plumage is richly mottled with divers shades of grey and brown, the feathers being highly esteemed for use in the manufacture of artificial flies, though the lustrous sheen of the living bird quickly fades after death. A structural peculiarity of this species is a remarkably long and convoluted windpipe. In flight the bird's rounded wings give it much less pace and render it consequently easier to shoot than the ordinary Snipe. There is a common idea that if a dead Painted Snipe is put with other game it causes the rest rapidly to decompose. I cannot vouch for its justification.

SOUTHERN STONE PLOVER OR CURLEW

Burhinus magnirostris magnirostris

THE strictly correct English name for the Curlew is the Southern Stone Plover ; which I do not propose to avail myself of, as it is too cumbersome ever to stand any chance of popular adoption, while the name Curlew is in universal use.

It is a bird which is far more plentiful on the north of the Dividing Range than on the south, where its habitat becomes yearly more constricted as the firewood requirements of the cities clear the countryside of its primeval woods. Well within my own memory it was a common species in the bush on

each side of the Queenscliff Road, whereas now I doubt if one could find a pair of the birds on the whole peninsula east of Geelong. Probably the increase of that pestilential importation, the English fox, has had something to do with the decrease, but the Curlew loves lightly timbered bush, and as that is cut out the birds go too. In these days it has a limited habitat in the areas south and west of the town, being found particularly in the belt of country which, from Torquay westwards, lies between the bush proper and the plains. Gnarwarre and the country for some miles to the south of Mount Moriac are still, I believe, strongholds of this beautiful and interesting bird, whose wailing night-call rises and falls as if it were the very spirit of the lone moonlit bush made vocal.

Well do I recall the finding of my first Curlew's egg. It was Saturday, December 3rd, 1890, and with two other boys I was bird-nesting at Grub Lane. We had set out on foot, at 2 a.m., and the sun had not long risen when we were passing through a well-wooded paddock about fourteen miles from town. Something on the walk had given me a sore heel, and I was limping along rather dejectedly in the wake of my companions, my eyes on the ground. Suddenly there leapt to my sight, on the bare ground beneath a she-oak tree, what seemed to me the most beautifully mottled and marbled egg, in all shades of green, olive, and brown, that I had ever seen. We saw no sign whatever of the bird.

CURLEW'S NEST, TORQUAY ROAD.

The eggs in the photograph were found about ten miles from town, near the Torquay Road, on November 9th, 1912. Only two eggs are laid, usually in the month of November, the site chosen being a timber paddock with a good many dead bits of stick lying about, near one of which the eggs are placed. There is no nest, and only the grass pressed down to the ground about the eggs to show that the bird has been sitting.

The Curlew rarely flies by day, except when disturbed, when she goes off with a peculiar spasmodic wing-stroke. In the months of spring the Curlew appears to be on the wing, wailing continuously, half the night through.

BUSTARD OR WILD TURKEY

Austrotis australis australis

IN former years abundant on the great plain which stretches from Fyansford westward to the South Australian border, the splendid Bustard, to which our fathers gave the name Wild Turkey, is now practically extinct in the country about Geelong; and, indeed, is rare in any part of the State, thanks to closer settlement, indiscriminate shooting, and the fox. Not once in twenty-five years have I been fortunate enough to see it in this neighbourhood, though I am glad to be able to record that within the past six or seven years Wild Turkey have been

reported from Avalon and Burnside. Mr. Mulder has seen one near Lara. The all-year protection which the legislature affords may have some effect in staying the bird's total disappearance; but if it should survive as a wild creature, it will be due almost entirely to the measures taken by a few public-spirited Western District landowners to give to this and other examples of our swiftly vanishing native fauna a real sanctuary within the limits of their estates.

The Wild Turkey lays but a single egg, on the bare plain, without any nest.

WHITE IBIS

Threskiornis molucca strictipennis

ALL large white birds look very much the same at a distance, but with a good glass there should be no difficulty in identifying the White Ibis by his long down-curved bill and the few stiff black dorsal plumes which set off the snowy general plumage. And while the White Egret, for instance, may be expected on the Barwon in any year, you will not meet with the White Ibis except in a season of drought in the interior. They breed, associated in large flocks, in parts of Riverina, treading down masses of rushes in a swamp to form their nests; there are also places in the Victorian Western District where the nests have been noted, but it is probable that the birds which visit Geelong come from the north.

I have notes of their appearance in the years 1892

and 1902. In 1892 I saw a few on Lake Connewarre on April 2nd. In 1902 there were twenty on a swamp at Merrijig (Grassdale) Pettavel, on January 3rd; on the 19th of the same month a flock was seen on the old Racecourse. On July 13th a flock of twenty or more were noted on the lower River. On August 17th and November 22nd respectively a few were observed about the Lakes, and the last appearance was on December 7th, when there were three on the old Racecourse swamp, then nearly dry. The White Ibis is only found in swampy land.

STRAW-NECKED IBIS

Carphibis spinicollis

SEEN from a distance, the Straw-necked Ibis appears to be a black and white bird; really it is dark bronze-green above and white below. It is by far the most numerous of the three species of Ibis which visit this district. In its haunts it differs from the other two in this, that it is found just as often feeding on high grass-lands as in the neighbourhood of water. It is probable that in every year at least a few Ibis visit us, but it is in drought years only that large flocks arrive. They breed in immense so-called "rookeries" in Riverina swamps, the nests being piled up in the *Mühlenbeckia* or lignum bushes; in this part of Victoria they do not nest, though they have breeding-places in the Casterton district.

The food of all the Ibis tribe consists largely of grasshoppers and other ground-dwelling insects; they are, of course, not plentiful enough to make any appreciable difference to the insect pests of these parts, and are rather to be preserved as handsome and interesting birds than on account of any special economic value. They fly slowly, and sometimes, when on a long journey, in circles at a great height in the air.

I append three sets of field notes made at ten-year intervals :

1892. *January 23rd.*—Large flocks near the Gut.
End of February.—Abundant on flats near Willows.
March 7th.—Seen near the Gut.
March 12th.—A solitary bird on the wing near Bell Post Hill.
April 2nd.—Several seen at Connewarre Lake.
1902. *January 25th.*—Two at Merrijig Pettavel.
May 3rd.—Two near railway line, Little River Plains.
May 24th.—Flocks seen at Ceres by Mr. H. E. Hill.
June 15th.—One near Bell Park, feeding.
October 26th.—Two near south-west margin of Racecourse Swamp.
November 16th.—Three or four near Gut.
- 1912.—*May 25th.*—Six noted feeding in a grass paddock near Cowie.

GLOSSY IBIS

Plegadis falcinellus

THE Glossy Ibis, which is closely related to the Sacred Ibis of Egypt, is of a rich dark chestnut in general colouration, with bronzy-green feathers on the wings and lower part of the back; at a distance it appears to be uniform dark brown, almost black; it is a good deal smaller than either of the other two Ibis. I never saw these birds here before 1902. On November 16th of that year I saw on a swamp (now part of Sparrovale) a flock of about twenty-two; six days later I counted there twenty-five, evidently the same flock. On December 7th, by which time the great swamp was almost dry, their numbers had increased to about forty. That is the extent of my personal acquaintance with these birds; but on December 25th, 1911, Mr. J. F. Mulder saw a number of them on Fyans' Swamp, Prince's Bridge, in company with some of the Straw-necked birds. Shooting drove them away.

This species differs considerably in its nesting-habits from the other Ibis, for it builds a nest of sticks on a tree in a swamp and lays dark glossy-green eggs, those of the two other species being white. The Glossy Ibis breeds in the interior of New South Wales, and never, so far as can be ascertained, in Victoria.

BLACK-BILLED SPOONBILL

Spatherodia regia

WE have, in Australia, two kinds of Spoonbill, or "Spoonbill Crane," as they are sometimes called. Both are of pure white plumage, and both have long bills which, narrow in the middle, widen out into a spoon-shaped end. In the present species the bill is black; in the other it is dull yellowish. The Black-billed Spoonbill is a rare bird with us, but there are well-established records of its occurrence. In the Melbourne Museum there is a male bird obtained in 1860, and a pair, male and female, shot in June, 1872, all marked as from Geelong, which probably means the Connewarre Lakes. Mr. Mulder told me, in 1911, that one of his sons had not long before seen a good-sized flock quite close to him on the Lakes. The bird breeds in the interior of the Continent.

YELLOW-BILLED SPOONBILL

Platibis flavipes

THIS is the larger and more common Spoonbill, to be distinguished by its yellowish bill and legs, as well as by its size. I find that the Lake market-shooters know the bird, which they class, with several other species, under the heading of "White Cranes"; but it is at best an occasional visitor so far south. In the

splendid bird-year, 1892, I saw a flock of seven pass the Willows on their way to the shallow-water areas of Lake Reedy, on March 28th, and on April 2nd several were seen on the Lake. There are protected waters in the Western District where it is said to breed. The only nest I have seen was on the banks of the Goulburn, near Wyuna ; it was a flat structure of sticks in the fork of a redgum, about 30 feet up from the surface of the river which the tree overhung.

PLUMED EGRET

Mesophoyx intermedia plumifera

THIS is a small white Egret with greenish-yellow beak and legs and large dorsal train of plumes. It is best known as one of the species which are the victims of the feminine passion for wearing aigrettes, and must be an exceedingly rare visitor to this part of the country ; I record it, however, on the strength of an example in the National Museum, Melbourne, which is described as having been obtained on the Barwon River in 1861.

WHITE EGRET

Herodias alba syrmatophora

I CAN best record this large and beautiful White Egret as a certain annual visitor to the Barwon River and

Lakes, but in very small numbers. In its conspicuous and stately appearance lies the chief danger to the species, for it is very apt, in spite of its being protected all the year round, to be shot on sight, sometimes simply to gratify curiosity to find out what it is. This could be done just as well with a good pair of field-glasses, and the bird's life spared to perpetuate its interesting kind, and give pleasure to other observers. As for the argument one sometimes hears, "Well, if I hadn't shot it, some one else would," it is unworthy of a man who considers his influence and example worth anything, and whose is not?

The White Egret has a short, dagger-like bill, yellowish in the winter and black in summer. There are specimens of each phase in the National Museum, Melbourne. On the back the bird carries a short train of white plumes. Mr. J. F. Mulder has a pair of specimens, one obtained at Fyansford and the other near the Gut. Connewarre shooters say there are usually a few on the Lake every year; there were two on Lake Reedy in June, 1912. On May 17th of the same year, Mr. Hugh Riordan noted a fine example on the bank of the Barwon at the bridge; it was standing close to a Blue Crane, so that the difference of 5 inches in height, in the Egret's favour, could be well seen. Nesting in colonies in the Riverina, these birds probably only come south in autumn and winter.

WHITE-FRONTED HERON OR BLUE
CRANE*Notophox novæ-hollandiæ*

HERE, at least, is a species which shows no signs of approaching extinction, but is relatively abundant in every part of the district, excepting, perhaps, the thicker recesses of the forest. There can be hardly any one who does not know this bird ; yet when he is standing among vegetation in a swamp he may easily escape notice, for so well does his soft bluish-grey plumage harmonise with his surroundings, that it is only the patch of pure white on his face which betrays his presence. As one approaches too close, he rises with a harsh "Gurh !" and flies away on slowly beating wings.

At most times of the year his favourite resort is estuarine mud-flats, such as lie along the Lower Barwon near the Heads ; here he will stalk, with slow, deliberate tread, the livelong day, picking up with sharp beak his favourite food of crabs and other small creatures of the ooze. Sometimes flocks of Blue Cranes frequent the reefs which low-tide exposes along the ocean beach. From the Upper Breakwater to the Lake it would be hard to go a mile without seeing a Crane perched high on some riverside gum tree. On the shores of Corio Bay, and the several smaller bights opening from it, the bird is equally at home.

In the autumn it is the wont of this, as of so many other species, to congregate into flocks.

The breeding-season is early in the spring. On Avalon and along the Barwon, at Winchelsea, nests were found as early as July. In my experience, however, the majority of Cranes lay in August.

There comes to my mind as I write an ideal haunt of these birds ; it is an overflowed dam in the centre of a paddock of tall redgums, which cluster thickest round the water. One, indeed, grows right on the edge of the water-hole, and so wide has the overflow spread among the sedge on that side that the tree appears to be standing in the centre of a small swamp. It is an old tree, very gnarled and branching, the lowest limbs dipping right to the water. On a horizontal fork, 25 feet up, a pair of Blue Cranes have built a rough, yet secure, platform of sticks and twigs, looking from below somewhat like an incomplete Magpies' nest. But we have seen the grey form slip off, and heard her cry of alarm ; and there on the nest repose five pale-blue eggs, than which I know no birds' more beautiful.

The Blue Crane makes an admirable garden pet, and will readily eat scraps of meat and the like.

PACIFIC HERON OR WHITE-NECKED CRANE

Myola pacifica

BESIDES being considerably larger than the Common Blue Crane, the White-necked Crane or Pacific

Heron may be distinguished half a mile away by his white head and neck, which contrast strongly with the dark olive-green of the general plumage of the body.

It is not a resident species with us, but merely a casual visitor to the Lakes in dry seasons inland. So it comes about that the notes I have refer entirely to the years 1892 and 1902; in the former year it was frequently seen on Connewarre from January until after Easter. On August 17th, 1902, I noted one at Reedy Lake, one on the Racecourse Swamp on November 16th, and at the same place eight or nine on November 22nd, the last being the greatest number I have ever seen together.

Except that it usually builds in small colonies, the breeding-habits of the White-necked Crane are similar to the Blue Crane's. I have heard of nests in the Western District (in parts of which, indeed, the conditions approximate to those of the Riverina country), but I know no case within my own experience of this bird's breeding south of the Dividing Range.

REEF HERON

Demiegretta greyi

I RECORD this bird because there is (or was) a specimen in the Melbourne Museum stated to have come from the Barwon River. I know of no reason why it should not occasionally come to this district. The species

has two phases of plumage, a grey phase, which is very like the Blue Crane, but without the white on the face, and a pure white phase. It would appear to be found breeding on ledges of rock on parts of the South Australian coast, but I have never myself met with it here.

NANKEEN CRANE OR NIGHT HERON

Nycticorax caledonicus australasiæ

So great is the difference between young and adult Nankeen Cranes, that one might easily conclude they were separate species. When mature, both sexes are cinnamon-brown or "nankeen" above, white below; the head is crowned with black, and from it two narrow white plumes fall down the back of the neck over the back. In this stage they are quite rare in our district; indeed, the only instance I can recall is of a pair which inhabited a cluster of tall ancient ironbarks on the side of Mount Berthon at Airey's Inlet. These birds were never absent for many years, and it is possible that they bred there, although it is commonly stated that the Nankeen Crane (which lays usually four bluish-green eggs in a loose stick-nest in a tree) is an inland-breeding species.

As to birds in the immature dress of buff spotted with white, in which, when first seen, they bear some likeness to the Bittern, these were formerly to

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be found in numbers at Bream Creek, near "Charlemont" homestead, during at least the first eight months of the year. In the daytime they sat perched in the thick shady boughs of the ti-tree which there fringes and overhangs the creek, a tame and sleepy company which never stirred unless actually driven out of their retreat. At night these birds fly about uttering a harsh croak.

The only Nankeen Crane I have seen in recent years was one which I put up from a growth of rushes near a salt-lagoon about three miles east of Torquay, and an equal distance from the spot on Bream Creek referred to above, the date being November 11th, 1911.

The principal nesting-places of the Nankeen Crane are redgum areas along the Murray River and its tributaries. The nest is built of sticks, and is placed in a tree near water.

LITTLE BITTERN

Ixobrychus minutus dubius

WE have no rarer or more interesting resident species in the Geelong district than the Little Bittern, whose haunt would appear now to be confined to the dense beds of pipe-reeds and tall bulrush which grow in and about Lake Reedy. It was probably never plentiful. Some 10 inches in total length, and looking just what it is, a Bittern in miniature, it

could hardly be mistaken for any other bird, should the bird-lover be favoured with a sight of it on a tramp through the marshy places which it frequents.

Mr. J. F. Mulder has a specimen which his son caught with his hand, after some manœuvring on his part, and not a little fight shown by the bird, in a clump of reeds near Lake Connewarre many years ago. Another example, also from Connewarre, I saw in a collection which was made by Mr. Neil Campbell's father. And that the species is not yet extinct was proved by Mr. Riordan on November 3rd, 1912, when he flushed a single bird from a patch of bulrush just below the Gut. The Little Bittern never leaves the recesses of these tangled reed-beds unless disturbed into a short flight to another similar position.

Its eggs are pure white; I have one which was taken by Mr. H. G. Evered near Mathoura, N.S.W. The nests he found were open structures built between reeds standing in the water of a swamp, and were composed of water-plants and grasses heaped up.

BITTERN

Botaurus poiciloptilus poiciloptilus

ALWAYS there has been some flavour of mystery about the Bittern, whose unearthly booming call, proceeding as it seemed from the depths of the lonely swamp, gave rise in the minds of the blacks (and others) to a more or less fixed belief in the existence of the bunyip, half animal, half evil spirit. It is

rarely that the Bittern rises from the reed-beds; when the unheeding wayfarer, trespassing too near the bird's domain, does startle it out, its flight is slow and flapping, heavier even than that of the generality of Herons, nor does it travel far, but presently drops heavily again into the shelter of the brake.

Bitterns probably once inhabited all parts of the district where there is any growth of reeds; now they are confined to Lake Reedy and the adjoining parts of Lake Connemara and the Barwon River, where their bull-like notes may be heard in the last three months of the year, and particularly in the early morning before the sun is up.

I never yet met any one who had seen a Bittern's nest, whether professional or amateur shooter; and in truth the parts of Lake Reedy, where the typha bulrushes grow, the Bittern's chosen abiding-places, are so treacherous with feet of black mud beneath their inches of water, that a person on foot can only with the greatest difficulty penetrate their recesses, while the stems grow too thickly and there is too much rotting vegetation cumbering the surface to allow passage even to a duck-punt. I do not think the Bittern is, of late years, diminishing in numbers, though if ever the Reedy Lake is "reclaimed," it will become extinct in a very few years. The nest, as observed in other parts of the State, and especially in swamps fringing the Murray, is a pile of heaped-up reeds hollowed at the top, the eggs, of an uniform olive-green, numbering five.

BLACK SWAN

Chenopsis atrata

ON the western side of Port Phillip there is surely no more admirable home or resting-place for Waterfowl—and of these the Swan is pre-eminently the chief—than the Connewarre Lakes. The very name of the water is due to the great dusky birds which thronged it in the days of the Blacks—Koonwarra means the Black Swan in the dialect of the tribe which roamed the lands of Corio before our fathers dispossessed them. At times the birds are there in plenty still; but even a quarter of a century has made a change.

While life lasts I shall not forget my first sight of the Big Lake. It was towards the end of the year 1886 (how the ink has faded in my first bird note-book, and how fresh the world surely was on that scented November morning!). With another boy, who also was fired with the desire of knowing wild nature in the open, I had gone by train to Leopold (Kensington then), and tramped southwards a mile or two without being quite sure of our destination, only guided by the vaguest knowledge that somewhere ahead lay the ocean, whose faint odour and murmur were borne to us on the south-east wind.

Suddenly, as we reached the top of a grassy rise, there burst without warning on our astonished young eyes the great splendour of the Lake. At our feet

the ground fell sharply away to the lignum-lined margin of Connewarre, whose waters stretched far and wide in front to where, miles away to southward, the gleam of yellow sand-hills marked the outside sea. Flanked with wooded hills to left and right, the glassy lake would have been beautiful enough under that cloud-flecked sky of itself alone ; but our boyish vision was closest held by the bird-life that thronged the broad expanse.

In lines, companies, and great hosts the lordly swans sat upon the water, their long necks now held upright and now bent beneath the surface in search of food from the weed-grown bottom. Some swam slowly about, and even as we looked a whole dusky squadron rose with a clamour of feet and beating wings. And when that had ceased, all the summer air was still haunted by the wild and flute-like song of the Black Swan, notes which from that day to this I cannot hear but there rises up clear before me, out of the delicate mists of boyhood, the happy memory of a perfect bush day. I do not know how many thousands of Swan we saw—probably not so many as in our excited little minds we thought ; I only know that they dotted the water everywhere, and that we hardly heeded the mobs of Duck and Coot which shared the scene with their more stately neighbours.

Never having found a Swan's nest on Connewarre myself, I, some time since, asked a veteran Duck-shooter if he had ever done so. His reply was that

he had known the Lake as man and boy for thirty years, and only three nests had he seen, all old ones. I conclude that the Lakes are nowadays not sequestered enough, there being also too much disturbance from shooting, for the Swan to build in their vicinity; most of the birds we see there would be consequently but birds of passage, breeding, it may be, in Murray swamps, and perhaps in protected Western District waters. The average weight of a Black Swan is 10 lb., but they have been known to go up to 16 lb. The moult is about midsummer, and then it is easy to run them down in a boat. Indeed I have more than once caught a moulting Swan hiding among the sedge a couple of hundred yards from the water, quite incapable of flight.

There is much movement of Swan, by night and day, over Geelong, to and from Connewarre on the one side and, as I imagine, Corangamite on the other. They fly in an imperfect V-formation—say a dozen on one arm of it and only two or three on the other. Usually they are two or three hundred feet up, but one hears the heavy beat of their wings and an occasional wild note.

MAGPIE GOOSE

Anseranas semipalmata

I AM told, by men who know the Lake well, that the Magpie Geese are occasionally, but very rarely, seen there in these days; their black heads, necks, and

wings, contrasting with the pure white of back and breast, render them conspicuous birds, and unlikely to go unnoticed if in the neighbourhood. Only once have I seen them close to Geelong. It was about the year 1896 that a small flock visited the Salt Pits, Point Henry. These Geese do not breed south of Riverina. The nest is described as a bulky mass of dead flags built among bulrushes standing in the water of a swamp. Up to thirteen eggs have been noted in a clutch.

Mr. F. R. Smith, of Noorat, tells me that there were in the early days enormous flocks around Terang and Mortlake, on the marshes, but that they were shot out and have been extinct for the past fifteen years. A pair or two sometimes visit the "Marshy Lake" on Nerrin Nerrin, which, through the exertions of Messrs. Smith and Quiney, has been proclaimed a sanctuary, so that now its five hundred acres of reed-beds form a veritable paradise of Waterfowl.

CAPE BARREN GOOSE

Cereopsis novæ-hollandiæ

THIS, the finest of our Australian Geese, is a true seasonal migrant, breeding according to the well-established law at the southernmost point of his journeyings, namely, on the desolate islands of Bass Straits, and visiting the mainland to spend there the summer. The nesting-season of these Geese

is very early, many eggs being found on Passage and Forsyth Islands, their headquarters, in the month of June.

I met with them in large flocks on Preservation Island, on the west of Flinders Island, and there, too, found a nest built of a thick layer of grass and lined with down, placed among tussock grass growing in a high ledge of a sort of granite tor overlooking the sea. The goslings had just left it, and were running about close by. This was remarkably late, at the end, indeed, of November, and it may have been that the rest of the flock were but waiting for this tardy brood to develop enough strength of wing to take them across the Strait. Mr. F. S. Smith tells me that the Cape Barren Geese usually arrive in the Western District plains early in November, and leave again after the first cold autumn rains, about the end of March.

Their fly-line lies over Cape Otway, but flocks have been seen coming in from the sea in the direction of Port Campbell. The area upon which they settle in Victoria is the plain country lying (roughly) south of a line drawn between Geelong, Ballarat, Hamilton, Terang, and Camperdown, and within this space they especially affect the sheep-country between Woorndoo and Lake Corangamite. On Nerrin Nerrin Mr. Smith has seen flocks of from sixty to seventy. Their food is the water-grass which grows in old water-courses. A curious habit of this Goose is that of sleeping all night standing on one leg, after wading

out as far as the bird can get into the shallow water of a lake ; this is, perhaps, resorted to as a protection from foxes. Though they love to graze and play about water, the Geese do not swim for choice, but only upon compulsion. To Lake Connewarre a few come almost every year.

The general plumage of the Cape Barren Goose is brownish grey ; the crown of the head is whitish. The wing coverts and shoulder feathers have a dark spot near the tip. The cere is lemon-yellow.

MANED GOOSE OR WOOD DUCK

Chenonetta jubata

WHATEVER was the case in former days, the Wood Duck or Maned Goose (it is really a Goose, not a Duck) is now exceedingly rare in the neighbourhood of Geelong. From my own notes I find that the last I saw was on the Barwon River at Easter, 1892 ; up to that year they were also not uncommon at Airey's Inlet. They are timber-loving birds, and are fond of perching along the water-courses high up in trees, in the hollows of which they make their nests. In Northern Victoria they are still to be met with along all the streams running into the Murray.

The male has a glossy brown head and neck, black neck-plumes ; the back grey, shoulder feathers margined with black ; rump and tail deep black, as are under tail coverts and abdomen ; breast heavily mottled greyish-white and black. The female is

plainer coloured, having the sides of the face speckled with white and the abdomen and under tail coverts white.

WHISTLING DUCK

Dendrocygna javanica gouldi

FROM other Ducks the Whistling Teal, as it is called in Connewarre, is at once distinguishable by the elongated plumage on its flanks, the feathers being buffy-white in the centre with black margins. The name has been given because of the bird's loud whistling note, and not from the sound of its wings in flight; though it has been observed that in flying over a swamp Whistling Ducks sometimes bunch so closely together that their wings strike with a clattering noise.

It is quite a rare bird in this district. Mr. Mulder met with but three in a lifetime's experience. One was in the collection of the late Mr. Keeble, taxidermist; another was shot on the Connewarre Lakes. The third he himself shot on Fyans' Swamp, near Prince's Bridge. It was a cloudy night, and Ducks were coming in from time to time, dropping down with a "swish" into the still water. As one came close past him, Mr. Mulder fired, and the bird fell, but could not be found in the darkness. In the morning he went down early and discovered a fine specimen of this beautiful Duck—minus its head. A water-rat had been earlier astir than the sportsman.

MOUNTAIN DUCK

Casarca tadornoides

WE may know Mountain Ducks in flight by the conspicuous white patch of the wing coverts which gives the birds almost a pied appearance. In summer and autumn the favourite feeding-grounds are the salt-lagoons and marshes which lie just within the sand-hummocks fringing the coast; the Connewarre Lakes are never without their flocks of Mountain Duck at these seasons. In the months of June the birds pair, and then go farther inland, spreading wide over the plains wherever there are gum-trees of a sufficient height to afford suitable nest-hollows and not too far away from a waterhole. The species is still quite common in our district, probably being found in greatest numbers about Inverleigh and Winchelsea. The flight is comparatively slow. Heard by night, as it usually is, the call of the Mountain Duck is almost startling, a sort of deep guttural croak.

I have known Mountain Ducks to nest close to Gnarwarre. The old birds get the young out of the nests by carrying them in their bills, except when the hollow is directly over the water, in which case the young drop without assistance. If you come upon young Ducks of this species out on the plains, they conceal themselves by flattening themselves out close to the ground and remaining motionless, even allowing

one to pick them up without exhibiting any signs of life. The breeding-season ends in August in this part of the State.

BLACK DUCK

Anas superciliosa rogersi

REPRESENTATIVE in Australia of the Common Wild Duck of Europe, the Black Duck is a fine sporting bird, and quite as satisfactory to eat as he is to shoot. At one time these birds were exceedingly numerous in the Geelong district; lately they have decreased, but they still come in good-sized flocks to the Lakes, and even breed in the district, choosing a variety of sites. At the You Yangs I saw a hole in a redgum tree growing in a waterhole which, for several years in succession, sheltered broods of Black Duck; at Airey's Inlet, as late as Christmas time, I found a brood which had been hatched in undergrowth about a swamp. A nest at Connewarre was built in a crevice on the sloping side of a straw-stack. Ten is an average clutch of eggs.

The call is a succession of quacks, and by this a mob of Black Duck can be distinguished in the darkness from Teal, which do not make any vocal sound when in the air. The distinct black and buff stripes on the side of the face form the best distinguishing marks of the Black Duck.

TEAL

Virago castanea castanea

THERE is still doubt whether there are two kinds of Teal—chestnut breasted and grey respectively—or only one with plumage which varies in colour with the age and sex of the individual. Hall gives the length of the male Chestnut-breasted bird as $18\frac{1}{2}$ inches, female 16 inches, and states that the male of the Grey Teal is 2 inches longer than the Chestnut-breasted male. That, if based upon a sufficient series of skins, would seem to conclude the matter, for it is not questioned that the male which exhibits the rich chestnut breast and shining metallic green head and neck is an adult phase, and birds do not grow smaller as they grow older. Keartland, on the other hand, gives the average weights as follows : Chestnut male, 1 lb. 9 oz. ; female, 1 lb. 8 oz. ; Grey male, 1 lb. 2 oz. ; female, 1 lb. 1 oz. Salvadori, however, considered, and at the time of writing Mathews is disposed to agree with him, that both sexes of the Grey Teal were absolutely similar both in colour and dimensions to the female of the Chestnut-breasted bird.

Connewarre shooters recognise two kinds : they say the Grey Teal is the commonest Duck on the Lakes, but that the Mountain Teal (so they call the Chestnut-breasted birds) are much rarer, only coming occasionally. In size they say there is little difference, but maintain that they can tell the female Mountain

Teal from the female Grey Teal by some peculiarity of the feet, of which they were unable to give me closer details.

Campbell states that the eggs of the Mountain Teal are rich cream-colour and larger than those of the Grey Teal, which are creamy-white.

In my opinion the evidence, conflicting as it is, does not warrant our recognising more than one species in the present state of our knowledge.

I agree with the market-shooters that throughout this district the Grey birds are in a great majority over the Chestnut, though the former are not so abundant as they were. Of the large flocks which even yet visit Connewarre, very few pairs breed in the district, and I believe none breed where you might expect them to, that is, in the tussock-grass on the Lake banks. The only nests I have seen were at Bream Creek and the You Yangs, in both instances consisting of a pile of grey down plucked by the birds from their breasts, in which the eggs were buried, the site being in each case the hollow spout of a living redgum. Teal at one time nested freely along the Little River, Moorabool, and Barwon; always in hollows of trees.

GARGANEY TEAL

Querquedula querquedula humeralis

IN the year 1898 a pair of Garganey Teal (till then never observed in Australia, their nearest habitat

being the Malayan Archipelago) were shot by Mr. William Lewis on Lake Connewarre. He was out on the Lake after Duck, and had just got within range of a large flock of Grey Teal, when he noticed some strange birds among them. Firing, he brought down a pair of these interesting Ducks, which he sent in to a Geelong fishmonger, by whom they were sold to the late Mr. William Shaw, who set them up and had them identified in Melbourne.

It is, of course, very easy to say that these birds were escapees from a Zoo; it is, indeed, a statement which is made with the utmost regularity every time a hitherto unknown bird is recorded. But it has not been proved in the case either of the Garganey Teal or of one or two other notable finds in the Geelong district. There are not many zoological gardens in Australia, and one would suppose that a pair of valuable birds like these would be missed at once; but no such loss was reported from any of them. An Asiatic Wagtail was once shot in Queensland. No doubt attached to its genuineness, I suppose because Wagtails are not usually kept in a Zoo. If this weak-flighted little bird found its way down from the Philippine Islands, why should not a pair of strong-winged Ducks be supposed capable of a slightly more extended flight?

SPOONBILL OR BLUEWING DUCK

Spatula rhynchotis rhynchotis

ON the Lakes, and in other parts of the district where Ducks resort, such as the lagoons on the north shore, Stingaree Bay and the coastal creeks, the Spoonbill, Shoveller, or Blue-wing, as he is variously called, is quite common, if one can say of any member of such a hotly hunted family as the Ducks that it is common. In point of size the Spoonbill lies between the Black Duck and the Teal, with the flocks of which latter species it is wont to associate itself. For it has this peculiarity, of attaching itself to other Ducks in their flight-movements rather than forming flocks of its own kind.

I have only seen one nest in the district ; it was in the hollow of a redgum tree near the foot of the You Yangs, and contained, deeply embedded in down, nine eggs, of a creamy-white with a greenish tinge, rather larger than Teal's eggs. The bird is marked by light-blue wing-patch and shovel-shaped bill, whence it is sometimes called Shoveller.

WIDGEON OR PINK-EARED DUCK

Malacorhynchus membranaceus

IN ordinary seasons this is one of the rarest Ducks, and even when unusual floods in the Barwon attract Widgeon to the river and lakes, one does not see

them in great numbers. The bird's appearance is distinctive; it is the only Duck we have whose breast is regularly barred with brown and white, and from these bars the common name Zebra Duck is derived. The specific name *membranaceus* has reference to the soft membrane which hangs at the side of the bill towards its tip, while an oblong patch of rose-pink feathers behind the eye gives the reason for the vernacular or "list-name" Pink-eared Duck. Seen on a flooded river, this is the tamest and most graceful little creature imaginable. I have rowed to within a yard of Widgeon on the Barwon, near the Breakwater, in flood-time, without the birds taking alarm. Corangamite is said to be a great resort of this species. In the Geelong district it does not breed.

FRECKLED DUCK

Stictonetta naevosa

SHOOTERS in other parts of Australia call this the Monkey Duck; here it is better known as the Gadwall, from a supposed resemblance to that European Duck. Very little is known of its habits. The centre of distribution of the species would seem to lie in the southern parts of the Continent, and yet it is not a common bird here or elsewhere. Though in its plumage of uniform dark brown, minutely freckled with white, the Freckled Duck has about it something which suggests the Musk Duck, it differs from that

bird in being remarkably good eating. The eggs have seldom been found, certainly never in this locality to my knowledge.

The birds' habits are almost eccentric. A little company of them will come down to water after dusk, pitching one here, one there, yards away each from the others; and each individual will remain for hours in the position it originally took up, not even feeding. A shooter told me how once he came upon some of these Ducks on Connewarre, sitting in shallow water, head under wing. Because it is hard to kill ducks when they are in that position he called out to startle them; they did not stir. He rattled a board in his punt; no result. Finally, in desperation, he fired at short range and killed one, when the others, as if wearied by the succession of noises, flew unhurriedly away.

HARDHEAD

Nyroca australis

THIS species has a central focus of distribution, being a strictly inland-breeding bird, which only comes to the Connewarre Lakes in any numbers at times of flood on the river, or at all events of drought in the interior of the Continent, which curiously often coincides with a period of flooded streams here in the South. It is known to scientists as the White-eyed Duck, and in New South Wales is called Brown Duck,

from its upper plumage, which is uniform brown. The abdomen is whitish, and there is a bar of pronounced white across the wings which shows up very plainly when the bird is flying.

Every year there are a few birds in the Lakes, but one does not see nowadays companies of the size which visited us in 1892, when there was seen an immense flock stretching in a continuous line for a mile up the river from the Sheepwash.

BLUE-BILLED DUCK

Oxyura australis

RAREST of all our indigenous Ducks is this bird, whose most striking feature is sufficiently indicated in its name. Only one example is known to have occurred in this district; it was shot by Mr. Mulder, between the Prince's and Queen's Bridges, on the Barwon, in the eighties. He tells me it was as easy to approach as is a Musk Duck, to which, indeed, this species is closely related, for it has the same sort of very narrow and stiff feathers in its tail, and is also noted for its powers of diving. It does not breed anywhere in the vicinity of Geelong.

MUSK DUCK

Biziura lobata

I THINK we see far fewer Musk Duck on the lakes and river than was the case twenty years ago; nor is the

reason far to seek, for, while there is little joy in the shooting of him, and less in the eating, the Musk Duck falls an easy prey to the fox as well as to the indiscriminate shooter, both of which nuisances have largely increased in the period referred to. But there are still many of the birds in the Lake, particularly in autumn, a season when one may also see flocks on the waters of Port Phillip, near the eastern shore. In the spring most of these probably return northward to breed in the swamps of Riverina. It has been sufficiently proved that they can fly well and strongly; but they travel chiefly at night, and for that reason are not often seen on these partial migrations, and, as every shooter knows, they never attempt to fly when discovered on a river, but merely flap or dive.

The male is about as big again as the female, and he has a curious pouch, or lobe, beneath the bill, whose use has not been ascertained—at all events, it has nothing to do with the musky odour attaching to the bird, for of this the source lies in the two oil-glands at the base of the tail. I heard, in 1911, of Musk Ducks laying in protected waters near Colac; the eggs are three in number, and are, in proportion to the size of the bird, very large, much larger than any other of our Ducks' eggs.

LARGE BLACK CORMORANT

Phalacrocorax carbo novæ-hollandiæ

THERE need be no difficulty in distinguishing this bird from the other three species of Cormorants found about Geelong, for two of them are black and white, and the third, though black, is much smaller than this one. Wherever there is enough fish to satisfy his hunger, one may expect to find the Large Black Cormorant, and he has a correspondingly wide distribution in our district. I should say that the old wrecked piers at Point Henry are among his most favoured resorts, but he is found all round Corio Bay, on the Connewarre Lakes, where he is particularly plentiful, Barwon and Moorabool Rivers, and on fresh-water areas of any extent, as Lake Modewarre. He occurs also all along the south coast, where reefs and rocky headlands exist, from Point Lonsdale to Lorne and beyond.

On the sea-coast he is wont to gather into small flocks—I have rarely seen more than twenty birds together—but along the rivers it is usually a solitary bird that one sees perched high on some dead gum or like point of vantage. And, at all events on the lakes and coast, the Black Cormorants rarely roost in the vicinity of the place where they have been fishing during the day. From Connewarre, for instance, though the other Cormorants remain all night about the lake, the Large Black birds, about

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an hour before sunset, fly north-westwards, probably to Point Henry, for the night. At Torquay you may watch them, flying close to the waves, in the early morning, as they leave the high cliff-ledges where they have passed the night, to fish on the flat reefs five miles or more away; and in the evening they return by the same route.

I find that this species does not mix much with any other. Of 559 Cormorants which in half an hour I counted flying from the Bay to the old pond in the Gardens on the evening of May 1st, 1902, not one was a Large Black; and among a thousand odd at Point Henry, on August 24th, 1912, there were but half a dozen of this species. Conversely, it has the ocean reefs practically to itself; one rarely notes any of the other Cormorants there.

Gluttonous and destructive as he is—who has not watched a Cormorant dive and swallow, dive and swallow, till it seemed a special provision of nature that he did not burst?—the Cormorant is still a fine creature with his glossy coat of greenish black. There is something of the nobility of a bird of prey about him, and he is quite as hard to approach as is the variest of the Falconidæ. Nor is he unmitigated greed. During a battue on Lake Wendouree, a Cormorant was seen to carry a fish to a wounded mate in a tree.

I am inclined to think that this species nests in crannies of the high cliffs between Torquay and Airey's Inlet. The birds are there at all seasons of

the year. In the year 1890 I was shown at Airey's Inlet what I believe to have been a nest of this species. It was composed of seaweed, piled up on a ledge on the seaward face of the cliff near the caves. For a year or more it had not been tenanted, but certainly it was a Cormorant's nest, and the Large Black is the only species at all common in that part. In some other parts of Australia this bird nests in trees, but does not do so in the Geelong district.

In flight, the whitish feathers on the sides of the head and throat are conspicuous.

LITTLE BLACK CORMORANT

Mesocarbo ater ater

MUCH smaller than its Large Black relative, and without the whitish head-feathers, the Little Black Cormorant may also be distinguished by the curiously thick appearance of the neck seen sideways in flight. I find they are the rarest of our four local species, and although they are always to be seen in small numbers on the Bay, I have few notes concerning them. They breed nowhere in the district. The most I ever saw at one place were less than a dozen, at Point Henry, on August 24th, 1912. Out of the flock of 559 Cormorants referred to in the notes on the preceding species, there were only five Little Blacks. It is rarely, if ever, seen on the Barwon or Lakes, and I do not recollect meeting with it along the coast.

Its general habits are those of all Cormorants, that is to say, it eats inordinate quantities of fish, and spends the intervals standing motionless on some prominent object near the water, at times expanding its wings and keeping them so, as if enjoying a sun-bath.

LARGE BLACK-AND-WHITE CORMORANT

Hypoleucus varius hypoleucus

I CONSIDER this to be our next most plentiful Cormorant after the Little Black-and-white. During an afternoon at Point Henry, August 24th, 1912, we estimated that we saw about a hundred of these birds. I have noted it in small numbers on Lake Connemara, but not at all on the ocean coast.

It is a large bird, in general colour apparently black and white as it flies; but examine a dead one and you will note that wings and mantle are of a metallic bronzy-green sheen, each feather being margined with black. The back and rump are dark greenish black, with reflections. The flanks are black. The whole under surface, including the under tail coverts, is white, as are the sides of the neck, leaving just a narrow strip of black down the back of the neck. On top of the head there are hoary-grey markings in the black. The tail feathers number eight. The eye is slate-colour; bill light horn, bluish at base. The eyelid is bluish, like the base

of the bill. A most prominent mark is a bright orange patch in front of the eye and extending to the base of the bill. In all, therefore, it is a handsome species, but my especial reason for giving rather full details of its appearance is that it has at times been confused with the White-breasted Cormorant, a bird which I do not think occurs here, but may, perhaps, do so, its most striking point of difference being that it has a purple eye-patch where this bird's is yellow.

In general appearance the Large Black-and-white Cormorant is like the smaller but similarly coloured species, which I shall mention next; but if you can get a look at the two birds side-on when they are flying, you will see that the neck of the larger bird appears almost all white; in the smaller one the black stripe is broader, and comes down farther on to the sides of the neck.

Fishermen tell me that some twenty years ago there was, on Mud Island off Queenscliff, in mangrove trees on the east side of it, a great rookery of Black and Black-and-white Cormorants' nests. I am inclined to think that this was one of the species, and perhaps the Large Black the other, but it is, of course, impossible now to determine the matter, and I merely place the fact on record.

LITTLE BLACK-AND-WHITE CORMORANT

Microcarbo melanoleucus

It is remarkable that this little Cormorant, which is by far the most numerous of the four, outnumbering all the rest put together in the proportion of approximately a hundred to one, should not be known to nest anywhere in the district, nor is there any considerable breeding-place nearer than the Murray River. I am told that Cormorants nest on Lake Corangamite, and perhaps this is the species; if not, it is strange that such great numbers of the birds should live on Corio Bay the whole year round when their nesting-home is so far away. Away from the Bay it is less frequently seen. I have met with it on the Barwon, and also at Airey's Inlet, and occasionally on fresh-water ponds in various parts of the district; but Port Phillip is its stronghold.

In flight it has faster wing-beats than its bigger relative, the Large Black-and-white Cormorant, but it is hard to identify either species at say a hundred yards' distance, unless there are examples of the other present to afford opportunity for comparison. The whole upper surface, wings, back, and tail are black with a slight sheen, the under surface pure white. There is a black space in front of the eye. The culmen is black, sides of bill yellow towards tip and yellowish green towards base. The eyelid is dark yellowish green and eye black. Legs and feet

are black. There are twelve feathers in the tail. The flanks are mostly white, under tail coverts black. The bird is little more than half the weight of the Large Black-and-white Cormorant. It dives almost as well as the Grebes and much better than any other Cormorant.

DARTER

Anhinga novæ-hollandiæ

SINCE the year 1892 I have not seen the Darter, but in that autumn, when we had many rare visitors to the River and Lakes, I observed three or four in a single day on the Barwon between Willows and Lakes. They were perched on the topmost branches of redgums by the river-side, giving, as I passed in a four-oar, a clear view of the long serpentine neck from which the bird is called Snake-bird by the dwellers in places where it is a common species. It is nearly related to the Cormorants, resembling the Large Black species most of all, but the great length of its neck prevents any possibility of confounding the two. It feeds, like the Cormorants, entirely or almost entirely on fish. The birds mentioned as observed in 1892 probably came to us from Riverina.

GANNET

Morus serrator dyotti

MOST of us probably know the Gannet quite well by sight without recognising just what bird it is,

for its method of fishing attracts instant attention. Like the Terns, it hovers and hawks over the sea, at a height which would seem almost to preclude the possibility of being able to see below the surface; then, having espied a fish, folds its wings and drops head-first, with arrow-like speed and deadly accuracy, upon its booty, sending up, as it enters the water, a high geyser-like shower of spray. I think it rarely misses a fish.

Never leaving the neighbourhood of salt water, the Gannet is present in small numbers in Corio Bay at almost any time of the year. There are rather more in the Outer Harbour, and you may be even more sure of finding it anywhere off the South Coast, especially between Point Lonsdale and Torquay. It is a large angular-looking bird, with sharp yet heavy beak, much bigger than any Gull. Watching a Gannet from the shore, say at Torquay, one might at first think it was a Shy Albatross; but these latter rarely come close enough in to be seen from the land, they do not dive, and are dark right across the wings, the Gannet being, on the other hand, conspicuous with its white back. The general appearance of the Gannet, at a distance, is that of a white bird with what look like blackish bars on the upper surface of the wings, a slow but high flier.

I believe there was formerly a nesting-place of Gannets on the Laurence Rocks, off Portland. The nearest really flourishing present-day colony is on Cat Island, in the Furneaux Group. Here, in No-

vember, 1901, I saw the birds lined up in hundreds, covering an acre or more of flat rock, each one sitting on a ragged nest of seaweed containing a single white chalk-encrusted egg. Partly eaten pieces of fish littered the intervening spaces, and ever and anon a bird's mate would come in from the sea with a fresh delicacy or to "change guard"—an event looked forward to with interest by dozens of Seagulls, which kept constantly running about the edges of the "rookery," snapping up here an inconsidered trifle of fish, and there an egg left unprotected for a moment; smaller birds, these, than the guardians of the nests, but matchless in cunning.

Sometimes a Gannet, returning from the sea, would miss its way, and try to insinuate itself into some *ménage* other than its own, an action invariably resented by all the birds sitting within a radius of several yards. The intruder had cause to regret his temerity, for the bill of the Gannet is, as we discovered when taking an egg or two, a most effectual and penetrating weapon. Social habits, based on the sanctity of the home, seem firmly implanted in the Gannet character—traits which so impressed one of our party, that he announced his intention of setting straightway to work upon a monograph of this species, to be intituled (somewhat unscientifically as I thought) "The Faithful Gannet," a treatise which has not yet appeared.

The Gannet's general plumage is snow-white; crown of the head sulphurous yellow; primaries and

outer halves of secondary wing feathers black. The iris is grey-green, the bare skin round the eye blue; bill and claws bluish-horn colour; webs of feet dark brown; scales down front of toes light green.

This species is the representative in Australia of the "Solan Goose," which inhabits the Bass Rock, in the sea-gateway of Edinburgh.

PELICAN

Catoptropelicanus conspicillatus conspicillatus

THE Connewarre Lakes, to which I have so often had to refer as the great haven in this district for all water-birds, doubtless had in days long past their colonies of nesting Pelicans. To-day the great ungainly creatures are but visitors there, though it is still, fortunately, nothing unusual to see four or five or even a score basking, with elephantine unconcern of passing boats, on one of the sandbanks or muddy islets which mark the tortuous passage through the shallows of what is left of the Barwon River.

The nearest breeding-place is, I believe, Lake Corangamite, there being one or two other spots where the Pelican nests in the Western District, and there is a certain amount of movement of the birds to and from these inland lakes and Connewarre, passing over Geelong on the way. At times they move at a really immense height, soaring round in circles at what I should estimate to be at least 2,000 feet over the town. I have seen this more than once,

and yet the last flight I saw of Pelicans was of about twenty birds swinging low down over Flinders School, almost within gunshot.

The Pelican's diet is practically all fish.

SPOTTED HARRIER

Circus assimilis

To my mind this is the most beautiful of our many handsome birds of prey, and it is with the greater regret that I must add that we may rule it off the list of birds with which there is a reasonable chance of meeting in our district. Its known occurrences here are few. Mr. Mulder is my authority for stating that it has been shot in the "samphire" marshes, near Point Henry, and in October, 1913, I thought I saw one hovering over an oat-field at Ceres; but I could not get near enough to be sure, and the bird does resemble the ordinary Swamp-hawk on the wing. Close at hand the differences are obvious enough, for the Spotted Harrier has no white on the rump, and if you can get at all under the bird, you cannot mistake the beautiful regularly-spotted breast and the broad bars of alternate brown and grey on the under surface of the tail.

It is a species which would appear to be more plentiful in the interior of New South Wales than elsewhere; there it breeds, not nesting on the ground, as does the Common Swamp-hawk, but in a bush or tree, often at a considerable height from the ground.

SWAMP-HAWK OR GOULD'S HARRIER

Circus approximans gouldi

To tell one Hawk from another on the wing is not the easiest matter as a rule, but the Swamp-hawk can be more readily identified at a distance than most of its kind by the white patch at the base of the tail, which no other of our Hawks has; this is quite conspicuous in flight.

The country frequented by the Swamp-hawk consists of swamplands where there is a thick growth of reeds, tussocks, or samphire, and, in the spring and early summer, fields of oat or other cereals. On rare occasions it is to be found inhabiting sequestered reedy lagoons in the heart of the bush. From the very nature of the Geelong district, it is the commonest and most widely distributed of the Hawks to be met with on the eastern side of the town; on the western plain it is less plentiful. On a trip by boat from Geelong to Barwon Heads, one may be sure of seeing several of these birds while traversing the thousands of acres of low-lying ground through which the Barwon moves sluggishly towards the sea. The flight is heavy and flapping, close to the ground, upon which the bird maintains a close scrutiny for the insects, lizards, and even small birds which form its food.

By mid-October they have paired off, and at the end of the month the nest is built, in any one of a

Photo by A. Purnell, Esq.

YOUNG SWAMP-HAWKS IN NEST, SPARROVALE.

variety of situations. Most frequently it is on the ground, sheltered by the highest part of a growing crop. I have seen it among tall reeds, on the banks of the Barwon and at Reedy Lake, and yet again in a thick growth of rushes in a swamp in open country. Whatever the site, the materials vary but little. They are slight for a Hawk's nest, being commonly a mass of light twigs and stalks of grass heaped up to 6 inches or more, with the egg-depression on top lined with rather softer materials. Four eggs is the almost invariable clutch; they are rather like Hen eggs in shape, pure white, with a green tinge on the inside of the shell.

WHITE HAWK

Leucospiza novæ-hollandiæ novæ-hollandiæ

THE whole of the plumage, in all birds of this species which I have seen from this locality, is pure white, without markings, the legs and eyes yellow. By this time one must call it one of our rarest Hawks, seeing that no amount of education will induce the inhabitants of the forest to leave this bird alone if they have a chance of shooting it. They shoot it because it is beautiful, making to themselves the baseless excuse that it is a Hawk, and that all Hawks are hurtful, which they are not. Then the body of the glorious bird, which but now hovered over the gully, pure white between the emerald of tall gums and the fleckless blue of heaven, is thrown away to rot by

the roadside, and all of us who love the bush and its wild life are the poorer for the senseless slaughter of one of the most beautiful of God's creatures.

I have not seen a White Hawk about Geelong for years, though they do sometimes stray or get blown by tempests hither from their home in the Otway. No doubt a pair or two still nest in the more secluded parts of the scrub, but the settler's axe and fire-stick are baring the land of timber, and the total extinction of this species can only be a matter of a few years.

GOSHAWK

Urospiza fasciata fasciata

THERE are great differences in plumage between the young and adult of this species, and further the female is considerably larger than the male; so that it is one of the kinds of Hawks which have given most trouble to determine. But it is one of the only two of our Hawks which has the breast regularly barred with transverse horizontal bars; these, though finer in the adult and broader and blotchy in the young, are always present. The only bird with which it might be confused is the Collared Sparrow-hawk, which is of generally similar plumage. The chief differences are these:—the males measure respectively—Goshawk, 15 inches; Sparrow-hawk, 12 inches: females—Goshawk, 20 inches; Sparrow-hawk, 14 inches. It will be seen that the female of the Sparrow-hawk might be mistaken for the

male of the Goshawk, so far as size is concerned; but, even without dissection, they may readily be distinguished by the Sparrow-hawk's having a shorter tail, never exceeding $7\frac{1}{2}$ inches, and a long slender middle toe.

The Goshawk has a bad name as a poultry-thief, and is generally shot by bush-dwellers on that account. Nevertheless, it is by no means uncommon in all parts of this district where there is a moderate growth of timber. North of the Barrabool Hills I have not met with it, its place being taken on the plains by the Brown Hawk. It was formerly widespread through the bushlands between Drysdale, Swan Bay, and Ocean Grove, where I have found it nesting; its chief stronghold now is the messmate country which lies south of a line drawn from Torquay to Paraparap, but it also occurs at Anglesea River, and thence until one reaches the moister blue-gum forests about Lorne. The Goshawk is exceptionally powerful and swift on the wing when in pursuit of the small birds which form its staple diet; at other times its flight is high and soaring.

Only once have I heard its cry: we were photographing a nest and eggs near Jan Juc, and the old bird, fearing, quite needlessly, that she was to be robbed of her treasures, kept flying to and fro, uttering a loud twittering sound, just one note repeated time after time in rapid succession, rather like a Kestrel's.

The nesting-season is, in my experience, confined

to the latter half of September and the whole of October ; in fact, one may say that nearly all Goshawks breeding in the district will have laid their eggs by the end of the first week of October, so very regular are they. The nest is sometimes large, but more often quite a small, irregular-shaped, almost frail structure of sticks, looking not much bigger, from below, than a Magpie's nest. It is lined with a few gum-leaves and is placed at an average height of 30 feet from the ground, invariably in a gum-tree, and more often than not in a comparatively small horizontal fork. The eggs are two or three in number, greenish white with a few smears of reddish.

There comes back to me the memory of the September morning when, in the spring of the year, and myself not yet emerged from the happy springtide of boyhood, I found my first Goshawk's nest. There had been some question, I remember, of a visit, on the one hand, to the little-known ridge overlooking Swan Bay, and on the other to the Salt Lake, near Point Lonsdale ; and standing, an hour after sunrise, near the fourteenth milepost on the Queenscliff Road, I decided in favour of the latter course, turning straightway south-east into a valley where the rain-soaked earth gave up the acrid savour of gum-leaves and the air was vocal with cries of a hundred birds. A quick, dark shadow crossed a sunlit patch of grass, but the cause was gone before I could see it. Above my head, near the top of a thirty-foot sapling, was a smallish nest ; I climbed up, only to be disgusted

GOSHAWK'S NEST AND EGGS, JAN JUC.

with the ragged leafy home of a possum, which a little more experience might have led me to diagnose without climbing the tree.

I sat up in the tree-top and looked about me. Suddenly my veins tingled as I saw in a white-gum close at hand, on a level with my eyes, an unmistakable Hawk's nest, and a new one, too. Down in a twinkling, I found myself faced with a stiff scramble to the first fork of the big tree, but a dead wattle leaned against the trunk overcame that difficulty, and I was soon at the nest. As I peered over the edge, I saw for the first time, two of them, on a loose mat of dry gum-leaves, the handsome eggs of the Goshawk, red-stained on a dull white ground. I blew them at the foot of the tree, and not all the mosquitoes of the forest could spoil the delight of that hour.

A simple and even a cruel pleasure, reader, the robbing of a Hawk's nest. That might also be my point of view now. But not then, and the twenty-fourth of September never passes without evoking a picture of the smooth white bole, the big nest, and in the high boughs the cadences of the south-easter, that "thwart sea-wind full of rain and foam."

COLLARED SPARROW-HAWK

Accipiter cirrocephalus cirrocephalus

I HAVE mentioned the prominent marks of distinction between this bird and the Goshawk in dealing with

the latter. The two birds inhabit very much the same class of country, that is to say, the more open parts of the forest, but never the plains; and like the Goshawk, the Sparrow-hawk makes occasional visits to within the very limits of the city. Their habits, also, are identical, this species being equally destructive of small birds and taking also an occasional chicken. The Sparrow-hawk is much the rarer of the two. The last I saw was at Anglesea; it was pursuing a Honey-eater, and darted past at a height of but a few feet over my head at a simply amazing speed.

The nest is built of sticks, and the only one I have seen was placed at least 60 feet high, in one of a clump of ironbark trees two miles west of Torquay. Another, with three eggs, was found not far from Ocean Grove. The eggs are relatively small, and are white, with a few almost black smears and spots.

It will be noted that this bird is not the one commonly called Sparrow-hawk. That is the Kestrel, a bird to which we shall come presently.

WEDGE-TAILED EAGLE

Uroaëtus audax audax

SEEING that our Australian bird is appreciably larger than the lordly Golden Eagle of Europe, one cannot help regretting that it should ever have received the belittling name of Eagle-hawk.

In spite of its suffering the fate of all raptorial birds at the hands of the average country gunner,

EAGLE'S NEST IN IRONBARK, BULL'S WELL.

inspired with the belief that Eagles work enormous havoc among flocks, the Eagle is still occasionally seen in this part of the State, approaching the town itself at certain periods of high winds. It is not more than ten years, I think, since one was shot near the Geelong Football Ground.

Riding one evening from Anglesea to Airey's Inlet, I had just reached the summit of the barren, wind-swept ridge known as Mount Misery, when, from a low clump of gums beneath me, there sailed out on the storm-darkened air a really glorious Eagle. I had never seen such a large one: his great spread of tawny wing stood out clear against the background of the barren ranges across the valley. As he swept farther and farther west into the angry-looking clouds piled about the sunset, I could not but feel the real majesty of the Eagle, who indeed is king of all fowls of the air.

He still builds his eyrie in the giant ironbarks of that forest. In October, 1912, we heard of seven nests altogether in the neighbourhood of Anglesea as having been inhabited from time to time in the few years preceding. Two of these we examined, one at Scrubby Creek and the other at Bull's Well; the former had not been in use for two seasons, but the birds were still resorting to the latter, evidently only as a camping-place or perhaps larder, for they lay much earlier, in July and August.

Another rather more distant breeding-place is the Werribee Gorge, and again the country about Parwan;

but I think the Eagles we sometimes see about Geelong all come from the south. A high wind seems to start them on their travels, and they will, under its influence, go great distances from their usual base.

It is not sufficiently established that Eagles do very much harm among flocks at ordinary times; in droughts and with weak sheep they probably do. I have heard of Eagles which had a nest of young in a paddock where two thousand ewes with lambs at foot were depasturing, yet the birds fed themselves and their young upon rabbits alone.

It is said that Eagles will amuse themselves, when well fed, by taking bits of stick up into the air, letting them drop and catching them again before they reach the ground, and go on at this for an hour or more; also that they drive hares and rabbits from cover by dropping sticks and the like from above, until the animal rushes out. I have not seen either of these things, but there is very good authority for their truth, which, if proved, illustrates the very great degree of intelligence possessed by this our noblest bird of prey.

WHITE-BELLIED SEA-EAGLE

Cuncuma leucogaster

THIS is a magnificent sea-haunting Eagle with white head and under-parts and dark grey wings and back, a most conspicuous bird, which regretfully I record

as not likely to be found again in this district. Mr. Mulder has a specimen in his collection which was shot at Cape Otway, and he tells me that he once followed a Sea-eagle for miles along the Lower Barwon. In twenty-five years I have never met an example of it here; indeed, the only two I was ever fortunate enough to see in the wild state were on the Parramatta River in 1897, and in the Furneaux Group, Bass Straits, in 1901, respectively.

I have always entertained the notion that Eagle Rock, at Airey's Inlet (Eagle's Nest Rest one sees it on some of the old charts), is so called from having once been the nesting-place of this Eagle; the only other Eagle, the Wedge-tailed, would not make its nest on a bare rock as this species does. But I have been able to get no particulars of the reason for the original giving of the name.

WHISTLING EAGLE

Haliastur sphenurus

A LARGE, heavy-flying Hawk, maintaining a much greater average height in the air than do most of his fellows, and identifiable even when very far up by an appearance of raggedness about the tips of his slightly upturned wings, this is one of our commoner birds of prey. Many times, even within the past few years, I have seen one soaring high over the town itself, and there is no part of the district whither he does not wander upon occasion, especially in the

late summer and autumn months. One February, near the Yarram Creek, Marcus Hill, I saw about twenty-five of these cumbersome Hawks in about half a mile's journey. It is possible they were after poisoned rabbits; they are great eaters of carrion, and rarely do harm to anything living, unless it be insects. They are inoffensive, sluggish creatures.

The first I ever remember seeing was at Airey's Inlet in the year 1890. A sheep had been slaughtered, and doubtless the bird had had its share of pickings. Unluckily for it, I was armed at the time with my first (and last) pea-rifle, and the sight of a large and strange Hawk perched conveniently on a dead gum prompted a protracted stalk under all available cover till I deemed myself within practicable range. To my amazement, the bird entirely disregarded my first shot (safety miss), and sat stolidly on till the fourth or fifth bullet laid him low. Instead of the expected praise for slaying a verminous Hawk, I received from my host (who understood and loved birds) a well-merited reproof for killing so useful a creature.

It is quite rarely, despite the name, that one hears this bird whistle; I have heard it twice only, and each time the bird was near its nest. It is a ringing, melodious series of notes in a quickly ascending scale.

The nest is built in a tall tree in that kind of country which at all times the birds most frequent, namely, partly cleared forest or the timbered base of hills bordering a plain; it is an immense structure, visible, if the view be uninterrupted, for at least half a mile.

I have seen five inhabited nests : one at Mount Moriac, two near Grub Lane, one near Torquay, and one at Gnarwarre. The last may be taken as typical. A large flat mass of sticks, it was firmly set in the fork of a huge redgum, at a height of 80 feet from the ground ; the lining was of green gum-leaves, and a few downy feathers adhered in places to the sticks. This nest contained only one egg, a large dull white one, smeared and stained obscurely with reddish brown. More usually the clutch is two, sometimes three. The birds circle high above the nest when it contains eggs or young. In every case I have notes of, the eggs were laid early in September.

At Torquay one or more Whistling Eagles may be commonly seen in windy weather sailing along directly over the beach, looking out for anything edible which may have been thrown up by the sea.

BLACK-SHOULDERED KITE

Elanus axillaris axillaris

IN twenty-five years I have seen but two examples of this rare and beautiful Hawk in the flesh. In the early nineties a bird dashed in a gale against the walls of Christ Church, and was picked up badly injured. The other occasion was in October, 1911, when, on the evening of a day during which a fierce north wind had blown for hours, we saw a Black-shouldered Kite perched upon the telegraph-wire

by the side of the Melbourne line, about seven miles north of Geelong. This bird was evidently very tired ; it allowed us to come almost directly under it, so that we could observe the absence of the black V which is characteristic of its near relative the Letter-winged Kite. Our conclusion was that it had been blown far to southward of its usual range by the gale, and was resting preparatory to an attempt to fly back.

I am convinced that any birds we see are but chance visitors, and that the bird does not breed anywhere in the district. I must add, however, that a few years ago Mr. Riordan noted, at Warrnambool, a pair of these Kites, accompanied by young not long out of the nest.

The general plumage of both sexes is greyish white, with black shoulders and black bar beneath the wings.

LITTLE FALCON

Falco longipennis longipennis

WE have no other Hawk so small as the Little Falcon, nor, I think, any that is quite so fast in the air. In appearance it closely resembles the Black-cheeked Falcon, than which, however, it is very much smaller. Like the Collared Sparrow-hawk, it has a bad reputation among owners of poultry, and in the country districts shares with two or three other species the name of "Chicken-hawk."

But there can only be a very few Little Falcons left now, in spite of its having formerly been a regular breeding species. One was shot on the Beach Hill, immediately north of the Eastern Park, at the beginning of the year 1892, since when I have not met with another close to the town. In 1893 and, as I believe, for a season or two afterwards, a pair of these birds had a nest in a giant ironbark tree on Mr. Berthon's Wybalenna Estate at Airey's Inlet; viewed from below, it seemed rather large for the bird.

The upper surface of this bird is dark grey, under reddish orange; forehead whitish; throat and chest buffy-white, chest feathers with central stripe of brown.

BLACK-CHEEKED FALCON

Rhynchodon peregrinus macropus

THE Black-cheeked Falcon (sometimes called "Duck-hawk") is the Australian counterpart of the Peregrine Falcon of Europe, the bird chiefly employed in the sport of falconry. It is quite certain that, did any one in Australia care to revive this mode of hunting, this Falcon would be admirably adapted to the purpose, for in the bush it is bold in the pursuit of birds much larger than itself, and has, within my knowledge, been seen to kill at one time a Blue Crane and at another a Black Duck in full flight. But the old tale of merciless persecution of all Hawks has to

be told over again in this case, and, in this district at least, there is now only one pair of Black-cheeked Falcons which is known to breed.

The home of this pair is in the face of a great cliff overlooking the sea. It was in the month of November, 1904, that, visiting the locality with a friend and peering over the brink of the precipice, I for the first time saw the two dusky birds dart out from ledges where they had been perching. The nesting-season was then probably over, and the young capable of flight, though we did not see them. But the adult birds kept swooping and soaring past us for half an hour, uttering cries which reminded me something of the Spurwing Plover; a little also there was in it of the complaining note of the Minah. Although very fast fliers when in pursuit of their quarry, on this occasion the flight of both birds was comparatively slow and soaring. The male is smaller than the female in all dimensions.

The same birds have, I believe, bred in the same spot every year since, and as the ledge in the cliff where the eggs are laid is inaccessible without grave risk, it is likely that they will continue to do so until some fiend shoots the mother-bird when, grown bold with the instinct to protect her young, she swoops close to the intruder.

The young probably distribute themselves over the country, taking up, it may be, their abode on more remote cliffs. Apart from this pair, I have only seen isolated birds in the district, sometimes at a

FALCON'S CLIFF, SHOWING LANDSLIP AT FOOT, AND ROPE-CLIMBER ON CLIFF-FACE.

distance from any place where it would be likely that they should breed.

Mr. Mulder has a specimen in his collection which was shot near the Ballarat Road. It was eating a rabbit at the time, and so courageous was it that even when wounded it still kept its hold on its quarry, while vigorously attacking the man who had shot it.

In plumage this Falcon is blackish brown above, belly buffy-white with close narrow bars, breast cream-coloured striped with black, throat cream-coloured.

BROWN HAWK

Ieracidea berigora berigora

OUR commonest bird of prey, the Brown Hawk, will be familiar to every one who has happened to look much out of the carriage windows on the train journey from Geelong to Melbourne. For it is very common from Lara to Laverton, and has the habit of perching on the telegraph posts and wires, no doubt as a point of vantage wherefrom to swoop down upon the mice, lizards, or insects which form its staple diet. In colour it is brown, with buff breast streaked with fine longitudinal markings of brown, nor is it likely to be mistaken for any other Hawk, since its flight is slow as compared with that of others of similar size. The cry of the Brown Hawk is most frequently heard in the months of August and September, when at the mating-time both birds will go through prolonged

aerial evolutions, uttering a kind of squealing chuckle the while.

There has been some debate as to whether we have one or two kinds of Brown Hawk in Victoria. That there is another variety in Western Australia, and perhaps also in South Australia, is probable; but Gould, who recognised the birds as two species, apparently considered the Western bird as confined to West and South Australia. The Eastern and Western forms are, in the light of modern knowledge, to be regarded as at best subspecies produced by differing environments; these would not then both be found within the same geographical area. I mention this because there is a "Western Brown Hawk" in the Melbourne Museum which is stated to have been obtained from Winchelsea. On close examination it will probably prove to belong to the Eastern form.

I referred to the Goshawk's inhabiting the light bush, and not coming on to the plains. The Brown Hawk, on the other hand, is chiefly at home on plain country, and is, therefore, most abundant towards Werribee, on the one hand, and Inverleigh on the other. In the eastern part of the district, towards Queenscliff, it sometimes occurs, but is there not nearly so common as it is on the plains.

The favourite site for the nest is an isolated gum tree on a plain, or else one near the outside of a clump of gums standing by themselves; always the nest-tree is in a commanding position. The nest is a large rough structure of sticks, placed in a thick horizontal

YOUNG BROWN HAWK : A STUDY IN RESENTMENT

fork at a height of rarely more than 30 feet from the ground. It is lined with tufts of cow-hair and strips of bark; the depression in which the eggs are deposited is shallow. Three eggs is the normal clutch, laid in the last week of September or first week of October as a general rule; but I have known eggs to be found in August. They are of a buffy-white ground-colour, heavily freckled and blotched or washed with bright reddish brown. A single egg, taken near Chevy, has the ground-colour almost pure white and a distinct band of reddish brown rather nearer the larger end; but this colouring is as unusual as it is beautiful.

The growing young are apt to knock the nest to pieces, so that, though quite a large structure when built, it may be no bigger than a Magpie's nest by the time the brood leaves it.

KESTREL

Cerchneis cenchroides cenchroides

THIS is one of our most beautiful Hawks, and the one which betrays least fear of man. It is widely spread over the district, alike in lightly timbered country, along the course of the Moorabool and Barwon Rivers above their junction, and in clearings in the bush. To the denser forest it does not resort, and, indeed, this is true of almost all our Hawks. Its most striking characteristic, and that by which it will most readily be recognised (apart from its light fawn colour), is

the habit of poising motionless in air, even in a fairly stiff breeze, wings spread and eyes directed to the ground below.

Occasionally it may eat a small bird (Sparrow for preference), but its ordinary food is insects, lizards, frogs, and, in particular, the mice which infest haystacks. On the road to Torquay, one autumn, I saw a family of seven Kestrels engaged in prospecting one haystack for mice. It would seem that farmers generally recognise what a useful bird the Kestrel is, with the result that it alone of the district Hawks escapes persecution, and is really on the increase.

Another factor which makes for its preservation is that in this part of the country it always lays its eggs on a bed of decayed wood in the hollow of a gum tree—a site which may easily escape detection altogether. In fact I have seen very few nests containing eggs, although dozens of broods must be hatched every year about Geelong. A nest near Ceres was in a doubly secure position, for the dead gum in which the nest-hollow was situate was standing in the middle of a deep pond.

The note of the Kestrel is a shrill twitter of a single, oft-repeated note.

BOOBOOK OWL

Spiloglaux boobook marmorata

THIS is at least one of the birds which produce the so-called “mopoke” sound at night. Far be it

from me, in treating of this moot point, to say that the Podargus or Mopoke does not also emit the sound from which its name is taken. I do not know ; but I do know that the Boobook Owl, at any rate, makes a hooting which is said to be represented by the word " mopoke."

It is a very much commoner bird than one imagines ; but its habits are mainly nocturnal, and even in the day-time it keeps so quiet and harmonises so well with the gum tree upon which it perches that only a practised bird-observer will detect its presence.

I remember once, in May, 1902, capturing a Boobook Owl in a curious way. It was about 5 p.m., a fine evening, and there was a great and, as it appeared to me, unusual twittering going on among a lot of small birds at the bottom of the garden. I went down and found the excitement centred in a dark, thick-leaved shrub, peering into which I espied an Owl with his back to me, and evidently seeking to avoid the embarrassing attentions of the small fry. I quietly moved my hand in, and when within reach grabbed him by the back and hauled him forth. After a careful examination I released him, at night-fall, from an upstairs window ; he sped instantly, without sound, into the dusk.

The description of this bird I will append, as there is some doubt as to whether we have not a species formerly called the Spotted Owl, as well as the Boobook ; Mathews says no. "General colour dark brown with hardly a trace of rufous. Forehead

spotted with very small fulvous-white spots. Crown of head not spotted. Many feathers on occiput have small spots, like those on forehead. Interscapular region not spotted, but towards rump the spots appear again and are larger. Primary wing coverts not spotted, but secondary wing coverts spotted with one white spot each on the outer web near the tip, the spots being comparatively large on those of the secondary wing coverts which are nearest the primary coverts. Scapularies similarly spotted with white, so that, when wing closed, a sort of semi-circle of white spots is seen on it. Breast and abdomen dark brown, the feathers each margined with white, so that the breast seems longitudinally streaked with brown and white. A V-shaped patch of whitish feathers comes down from over each eye to a point at the base of the upper mandible. Ear coverts brown. Irides light yellow. Bill black, with horn-coloured culmen. Feet brownish. Length along back without distending neck, barely 11 inches. Tarsus, $1\frac{3}{4}$ inches. Middle toe, 1 inch."

In the dusk I have often seen the Boobook flitting silently along streets in the suburbs. Farther afield it is particularly plentiful where there is a growth of gum trees sufficiently large to have capacious hollows. It is numerous along Armstrong's Creek, Mount Duneed; at the foot of the You Yangs; and in what still is left of the bush along the Queenscliff Road. At these places the Boobook may be heard on any still evening of spring or summer. There is

YOUNG BOOBOOK OWLS, TORQUAY. (THE PERCH WAS IMPROVISED.)

much variety in the double hoot, and never yet has it sounded to me exactly like the syllables "mo-poke" or "more-pork."

Two or three white eggs are laid in the latter part of October, on dead wood in a horizontal spout of a eucalyptus. One nest I found at Ocean Grove had a half-eaten rabbit in front of the eggs, the Owl having been breakfasting in her room, as it were.

WINKING OWL

Hieracoglaux connivens connivens

THIS Owl might be popularly described as a large edition of the Boobook. The upper surface is dark brown, the lower mottled brown and white. Mr. Mulder has an example which was shot at Birregurra, probably in the forest. I know no other instance of its having occurred here. I have seen it at Kyabram in the Goulburn Valley, but believe it is a rare Owl anywhere in Victoria; it certainly is so here in the south.

POWERFUL OWL

Hieracoglaux strenua

THE forest-country from Anglesea westwards is the home of this huge bird, whose prominently outstanding bill has something Hawk-like in its appearance. Its great size prevents the likelihood of its being mistaken for any other Owl.

One fine specimen was shot by the late Mr. Herbert de C. Berthon at Airey's Inlet in 1895 ; it was sitting on a branch in broad daylight. Another, in Mr. Mulder's collection, was shot at Bambra, about twelve miles away from Airey's. These are the only instances of this bird's occurrence in the district of which I know ; but there must be pairs scattered through the forest, as it is a stationary species, and the only thing likely to exterminate it is the clearing of the big timber.

I have at times heard night-cries in the forest which I believed to be made by this bird. Its note is described by Gould as resembling the "bleating" of an ox, and by other ornithologists as a blood-curdling scream. I am not sure that I know either of these sounds, so do not feel competent to say whether the comparisons are just.

DELICATE OWL

Tyto alba delicatula

THIS Owl is well named, for in the month of July every year specimens are picked up dead all over Victoria, killed, it would seem, by the cold. Sometimes their condition is described as good, at others as being nothing but skin and bone. It is for the reason that many of the birds so found are taken to taxidermists and set up, that this species is so well known, for it is not really such a common bird as the Boobook. With facial disk of white, margined

HOME OF THE DELICATE OWL: A BIT OF BUSH NEAR TORQUAY.

with buff, upper surface yellowish brown delicately spotted with dark brown and white, and white under surface, this Owl is the most beautiful we have. Commonly, and not quite correctly, it is called the White Owl—a name which certainly serves to distinguish it from the dark brown Boobook.

I have never seen its nest ; but in a patch of gum trees on the Torquay Road I once found an interesting retreat of an Owl of this species. It was in a large tree of the kind called, I believe, manna-gum ; about 12 feet from the ground there was a hollow at the end of a branch, and from this hollow the Owl used to fly at our approach. We supposed this to be a nest, but examination showed the bough to be hollow right down into the trunk of the tree, through which there was a passage right to the ground.

At the foot of this passage, and under the spout itself, lay on the ground dozens of the pellets, about 1 inch long and $\frac{1}{2}$ inch wide, ejected by the bird after its meals. These all contained bones of small birds, amongst which we were able to identify the skulls of several Minahs (*Myzantha garrula*). Whenever the Owl flew from the nest there was a great clamour among the Minahs, who flew about the Owl, in the tree to which it had gone, seemingly not at all afraid of it by day, but desirous only to annoy their enemy. We concluded that the Owl seized the Minahs by night, when the latter were asleep in the gum branches.

Except when thus driven from its retreat, I never

saw a Delicate Owl before dusk. This particular Owl left the hollow branch about the month of October, probably to mate and breed, though we could not discover the nest anywhere in the vicinity.

MASKED OWL

Tyto novæ-hollandiæ novæ-hollandiæ

THIS Owl is larger than the Delicate Owl, and has the facial disk purplish, margined with brown spots. The general colour is buff, with brown markings and dotted with white, under surface paler. Mr. Mulder has a specimen which was shot in the forest at Bambra; this is the only instance of its being found in this district of which I know.

GRASS OWL

Tyto longimembris walleri

THIS, too, is a very rare and a very beautiful bird; its long and powerful legs distinguish it easily from its relatives the Delicate and Masked Owls. Mr. Mulder tells me that one of the specimens in his collection was shot by his son one evening in the dusk coming home from Point Henry; the other was obtained at the Breakwater.

I saw what I believe to have been a Grass Owl in a wooded gully near the Bull's Well, Point Addis, in October, 1912; it was on the ground beneath

some saplings in bright daylight, at about 4.30 p.m.; it was out of sight before I could see more than that it was a large Owl, light-coloured, but larger and darker than the Delicate Owl.

BLUE MOUNTAIN PARROT

Trichoglossus novæ-hollandiæ novæ-hollandiæ

THERE are in the collection of Mr. Mulder and in the Geelong Museum locally-shot examples of this bird, from which I conclude that thirty years ago it was not a rare bird in the district. Those thirty years have seen vast changes in our avifauna; and even granted that one may sometimes mistake the Blue Mountain for the common Musk Lorikeet, which also is a swift flier and travels in flocks, I can but state that never (to my knowledge) have I seen this species wild about Geelong since Easter, 1887. There were then, at Highton, a good number of these birds feasting on winter pears in an orchard; they allowed us to come right under them, and even when one was shot the rest stayed in the tree.

The distinguishing mark of this Parrot is the varied colouring of the under surface, the chest being crossed by a rich scarlet band above the deep blue of the abdomen.

The normal food of this and all other Lorikeets is the nectar obtained from the flowers of the eucalyptus.

MUSK LORIKEET

Glossopsitta concinna

MORE often in summer than in winter, but indeed at almost any season of the year, we may see and hear flocks of small but noisy Parrots passing at varying heights overhead. These are Lorikeets, either of this or one or both of the two following species, travelling in search of blossoming gum trees. In one part of the country or another there is almost always some kind of gum tree in flower; except, therefore, in the actual breeding-season, the Lorikeets are literally birds of passage, for their food consists entirely of eucalyptus nectar, except when ripe orchard fruits are available.

The Musk Lorikeet is the largest of the three common species, and with a little experience may be identified as the flock passes over by its scream, which is louder and harsher than that of either of the smaller birds. I have never seen this species mingling in flight with others, though all feed together in perfect amity, even in the same cluster of leaves and flowers at the end of a branch. One can at such times get a good view of these pretty Parrakeets through a glass. Nothing frightens them, and they will stay for half an hour at a time exhausting the possibilities of one tree before flying with a joyous shriek to the next. Stand under a tree in blossom,

and watch carefully. The leaves move : there is a Musk Lorikeet twisting and turning, as happy upside-down as any other way, provided he can get the last drop of sweet juice from the calyx. In the end he usually pulls the flower off, and the carpet of fallen blossoms under a tree betrays the presence of the busy green pilferers. All the time he is feeding, the Musk Lorikeet keeps up an intermittent accompaniment of little gurgles of satisfaction ; in the air between two trees he gives full tongue. The general plumage is green, with crimson forehead and ear coverts.

All the gum-timbered parts of the district are haunts of this Lorikeet, except the messmate scrubs west of Torquay, where, for some reason, it is rarely found. At Batesford and about Pettavel and Gnarrowarre it abounds. The great redgums just at the foot of the You Yangs, a little to the left as you go out from town, are a favourite resort of this bird in spring and summer, and I believe it breeds there. The nest, which I have seen at Bacchus Marsh in October, is a very small hollow in a living branch of a gum, going in a foot or more ; the eggs are two in number, and, like all parrots', white, though sometimes stained with exudations from the decayed wood on which they are laid.

The young from the nest make interesting pets, and live quite well in captivity.

PURPLE-CROWNED LORIKEET

Glossopsitta porphyrocephala porphyrocephala

THIS and the following species are the smallest Parrots we have. The general plumage of this bird is green, as is that of the Little Lorikeet, but it may be identified by its yellow forehead and the deep purple patch on the crown of the head from which it derives its name. In all respects its habits are similar to those of the other Lorikeets: associated in flocks, it travels from point to point, according as the eucalyptus trees are in blossom at one place or another. The flocks vary in size from seven or eight to twenty or thirty; they will halt as readily in a town-garden, if there are flowering gums, as in the bush. The last I chanced to note were feeding in a tall eucalypt in Moorabool Street, just across the road from Christ Church. Young birds were found in a hollow in a growing branch of a gum tree near Marcus in September, 1901; nor is there any doubt but that these Lorikeets breed freely wherever they happen to find a suitable area of large-boled gums in flower in the spring. I should say that this is the commonest of the three Lorikeets.

LITTLE LORIKEET

Glossopsitta pusilla

THE Dog Rocks, Batesford, is a spot rarely untenanted by small roving bands of this Lorikeet, which has a

deep red face and the rest of the plumage grass-green. In winter they are especially numerous, that being the season when most of the gums blossom in that part of the district. The flight is rapid and high when travelling from one part of the country to another; but when once settled in a clump of gums, they are loth to leave it, and you may see a bird for a long time in the same tree, merely fluttering, like a gorged butterfly, from one cluster of blossom to the next.

I have noted this species all over the district in the flower-season, yet have not met with its nest. Its breeding-habits are the same as those of the Musk Lorikeet, save that it lays four eggs. Probably it breeds in the redgums on Woolloomanata, Lara. At the Dog Rocks I have noticed this species feeding in the same tree with Purple-crowned Lorikeets.

BLACK COCKATOO

Calyptrorhynchus funereus xanthonotus

THERE is only one kind of Black Cockatoo in this part of Australia; and while it could not be described as common in this district, where it is at best a travelling visitor, I have usually noted it once or twice in the late spring. It is the extraordinary cry which draws one's attention first; hearing that, I have never had any trouble in espying the birds, flapping heavily along, as is their wont, in a scattered flock of

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eight or ten, at a height of perhaps 30 feet from the ground, and usually travelling in the early morning and from west to east, as if moving camp from the Otway Ranges towards the hills of Gippsland. The long, unwieldy-looking tail distinguishes them from all other birds.

To revert to the cry, I think the syllables "Wy-la," which Gould says is the name by which the Hunter River blacks called it, represent the sounds very well; better, perhaps, than "Eeyeuk," by which our local aborigines knew it, though clearly both names are imitations of the call. The food of the Black Cockatoo consists partly of seed-pods and partly of tree-dwelling insects. I have seen a flock feeding on young pine-cones in the plantation at the You Yangs.

It never nests in this district, but may still do so in the less-settled parts of the Otway, Mr. Mulder having been informed in 1894, by selectors at Bambra, that the birds then bred in the depths of the forest in holes in giant gums. And on November 15th in that year, in the same locality, he was attracted by a noise like that of a cross-cut saw, and found it proceeded from a young Black Cockatoo, about which the parent birds were flying.

He informs me that there the chief food of the species was grubs harbouring in the rotten wood and under the bark of dead and dying trees, which the birds easily tore off with their powerful bills. They were not nice birds to skin, having a smell like half-

rotten seaweed ; knowing which, one is quite ready to believe, as Mr. Mulder says, that they boiled tough and were indifferent eating. They are hard birds to shoot unless hit in the head.

I have the following notes of recent appearances in Geelong :

1908. *December*.—Several small flocks seen flying over Geelong, just above buildings.

1911. *October 17th*.—One flying low over Newtown, 7 a.m. Heading south-west.

October 29th.—Five or six feeding in small pines at You Yangs.

October 30th.—Five seen by J. F. Mulder at Highton.

1912. *May 16th*.—A. J. Greenfield noted flock of about sixteen in the Eastern Park.

1913. *February 16th*.—A pair at Highton.

GANG-GANG

Callocephalon galeatum

THIS is a well-known species, the general colour of both sexes being dark slate-grey. The crest will serve to distinguish male from female : in the former it is scarlet, in the latter grey.

The centre from which flocks travel over the Geelong District would appear to be the heart of the Otway Forest ; for I have observed that, as one gets beyond Airey's Inlet and Lorne, Gang-gangs are present in small companies at all times of the year,

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and I have no doubt at all that they breed in the remoter parts of the scrub, though I have never seen a nest.

Not in every year, but at irregular periods, bands of Gang-gangs work eastward in the autumn, and come right out of the forest on to the open country about Geelong and even into the town. In 1891 they were at Charlemont, Bream Creek; in 1905, 1907, and 1913 they visited the Eastern Park, arriving about March and leaving in October, feeding all through the winter on the seed-pods of the sugar-gums. On the occasion of the last visit there were not less than fifty birds.

Shorter migrations from their breeding-quarters are made annually, with the result that all through the winter they are present in the drier messmate country between Airey's Inlet and Torquay. The species is, of course, only one of a great number of birds which, breeding in the wet forests, spend their winter in drier areas on the surrounding foothills and plains.

The habits of the Gang-gang are such that one wonders it has not been killed out long ago. No forest-bird is so easy of approach. Half a dozen birds will sit quite motionless in different parts of a tree, looking at you; you may go right up to the trunk without frightening them away, and when they do fly, it is never more than a few yards, to the next convenient tree. As they fly, and less often when perched, they utter a hard rasping note, not loud,

but quite unlike any other bird's. Their flight is slow and flapping; their rounded wings give them the appearance rather of some kind of owl than of a cockatoo.

It was pretty to see these birds in the Gardens in the winter of 1913. At sunset they flew down in dozens to a trough to drink, quite unconcerned, the males' crests showing up gorgeous against their plain-coloured bodies. All day they spent in the tall sugar-gums, chewing up the green seed-pods and scattering the ground below the trees with the débris of their feasts. A nest with eggs was reported to have been found in the Park later in the year.

WHITE COCKATOO

Cacatoes galerita galerita

THE White Cockatoo is probably familiar to more people in the world than is any other Australian bird, and I propose here merely to indicate its distribution in the district. It is rarely, if ever, seen on the east or south sides of the town, and is of late years become exceedingly rare in the south-eastern parts of the Otways, particularly east of Lorne. At Bambra, that is to say, towards the northern fringe of the forest, bordering the western plains, it was still common in the nineties, and probably is so yet. The only area, however, where it can be said to be resident that is at all near the town is the wooded country about the You Yangs. There one finds the birds all through the year, and it is likely that they

breed in holes of some of the larger redgums, either there or farther north in the Brisbane Ranges. But they are not numerous even at the You Yangs—you may see half a dozen in a day.

I should say they were the noisiest birds in the bush; their deplorable voices are not in the least in keeping with the glorious white of their bodies seen against the green of ancient gums. "Spirits of light" the explorer Mitchell called them, and rightly; but their note is as the crackling of thorns under the pot.

GALAH

Eolophus roseicapillus roseicapillus

ROSE-BREADED and grey-backed, the Galah is one of the most popular of cage-birds, and it may be that the instances of its occurrence in the open about Geelong are to be ascribed to escapes from captivity. Certain it is that of late years the number of these birds brought to Melbourne markets has greatly increased, and that many of them do get away from their purchasers, and are to be seen flying about Melbourne. Further, the appearance of Galahs in this district is now no uncommon thing, whereas twenty years ago they were practically unknown here.

Mr. Mulder tells me that a farmer at Lara once brought him in three which he had shot there; and in the spring of 1911 I saw a pair prospecting among some dead gums at Jaar-nu-ruc Creek, Torquay, as

AT THE DOG ROCKS: HAUNT OF SPINY-CHEEKED HONEYEATER.

if in search of a suitable nesting-hollow. In Geelong itself I have seen individual birds flying about on numerous occasions within the last few years. The flight is wheeling and irregular, somewhat pigeon-like, and a continual squealing cry is kept up the while.

CORELLA

Licmetis tenuirostris tenuirostris

THE Corella, which is better known as an admirable talker in captivity than as a denizen of our bushlands, is recognisable by his long bill, blue patch of bare skin round the eye, and absence of crest; the general plumage is white. I have never met with the bird in a state of nature in this district, but Mr. Mulder assures me that he has seen large flocks of them at Bambra, and that they have a chuckling call, very distinct from that of the common White Cockatoo, with which it is evident they might otherwise, at a little distance, be confused.

COCKATOO PARRAKEET

Leptolophus auricomis auricomis

No bird has ever produced a more striking impression upon me, at my first sight of it, than did this beautiful crested creature; it was a hot January afternoon, and I was driving over the parched plains between Koyuga and Echuca. We passed a clump of box trees, and two or three lovely grey birds flew out

of the shade, with graceful, undulating flight, suggesting that of the *Graucalus*; they literally glistened in the sun, and it was only when I heard the melodious call (from which, surely, the native name, Quarrior, is taken?) that I recognised what they were; and now I cannot hear the note, even from a caged bird, but a picture rises up before me of tall, motionless box trees, the glare of northern sunlight, and great plains shimmering in the haze.

Mr. Mulder once saw a flock near Birregurra, and he tells me that a Mr. Legge saw several on the road to Torquay, near Geelong. I myself have never met with the birds south of the Divide. It is an inland species, moving to Riverina and Northern Victoria to breed, but I should think very seldom coming so far south as Geelong.

KING PARROT

Alisterus cyanopygius neglectus

I THINK this is the most handsome parrot we have. The male has head and all under parts scarlet, back green; in the female the head is green, the throat and chest green tinged with red, rest of plumage chiefly green.

At Christmas, 1902, Mr. C. T. Seeley and myself walked from Forrest to Apollo Bay, via Mount Sabine. On the long decline towards the sea King Parrots were constantly crossing the road in front of us, shooting across a deep gully like a stain of scarlet

against the background of green gums and undergrowth on the farther side. They breed in that forest. There is a man who, at least until recently, made his living by trapping them in February and March when the young are well grown; his cart, with all its cages, was quite a sight in Geelong streets about Easter time.

I have seen odd birds about Geelong. One gentleman of my acquaintance, who had purchased a young bird, tells me that he caught two others by unintentionally using it as a decoy. These may, of course, have been escapees. The male is interesting in a cage solely on account of its glorious colouring. Song it has none, and it is a poor pupil.

Up till about 1893 King Parrots, generally in immature plumage of all green, used to visit Airey's Inlet in the winter time, drawn by that instinct in forest-breeding species to wander eastward in the wet season, to which I have referred elsewhere. Lately I have not heard of them there: forest fires, scrub-clearing, and trapping have had their natural result. Well, you cannot eat your cake and have it; closer settlement and the King Parrot are mutually exclusive, as the logicians say; but would it do any one any serious harm if now, while yet there is time, the Government set apart say ten miles square of the most mountainous part of the Otway as a sanctuary and breeding-ground for this and other lovely species of native birds which otherwise are doomed to perish utterly?

RED LORY

Platycercus elegans elegans

THANKS to the far-sighted wisdom of the men who designed and planted the noble park which (at the time of writing) still adorns, in unmutilated symmetry, the eastern side of the town of Geelong, numbers of native birds, which otherwise the city-dweller would never see, are attracted to the bushy growth of pines and indigenous trees. Of these birds one of the most noteworthy is the Red Lory or Penant's Parrakeet, small flocks of which, in the immature (all green) stage, frequent the gardens at most seasons, but especially in winter, when they feed on the red fruit of the box-thorn hedges, pepper-tree berries, and various other seeds. At such times the birds are tame and allow a close approach.

They have two notes, one a low throaty gurgle, the other a clear, high-piping whistle, which, I think, is not heard till the birds are approaching maturity. Any one with an ear for musical tones can imitate it exactly without difficulty, and in the bush I have known birds, answering the call, to come from quite a distance to meet their imagined companion.

The chief home and breeding-place of the Red Lory is in the messmate bush, which, beginning about Jan Juc, runs on past Anglesea and Airey's Inlet to near Lorne, and is bounded on the north by the Western Plain. They also breed in the ranges back

from Lethbridge and Anakie, where the bush is of very much the same type. More open country they do not like, except as a winter resort. In many years I never found this species to nest anywhere between Geelong and Queenscliff. In that country and on the sparsely timbered plains the place of the Red Lory is taken by its near relative, the Rosella, which conversely avoids the remoter parts of the bush.

By mid-September the winter's flocks have broken up, and you will see the courting pairs widespread through the Anglesea bushlands, the male resplendent, the female dull. It is a sombre forest enough that, at most seasons; gnarled and stunted trees, dark grey trunks and dark green leaves, and the track a monotonous winding ribbon of white dust in summer and an unspeakable morass in a wet July. But, like every living thing under heaven, it has its *Blütezeit*, its singing-season. Is it not so, in the last week in September, when a dozen different orchids star the sparse-tufted sand with brown and mauve, and the whole tribe of leguminous plants bursts into bloom from stiff, spike-leaved yellow acacia to the modest ground-creeping scarlet-runner, and the carpet of heath pales alternately and blushes, and Honeyeaters are drunk with too much sweet from the myriad flowerlets that cluster on the brown rods of the grass-tree?

That is when the Lories have their spring-cleaning, rooting out all the débris of last year's nursery from the old hollow in some charred messmate stem. It

is usually a perpendicular-walled hollow in which one finds the nest, and there, by the middle of October, six pearly-white eggs will be laid on a bed of soft decayed wood at the bottom, a couple of feet below the point of entry.

The adult male has the whole under surface rich red, feathers of back black, margined with red, shoulders and cheeks blue, and tail edged with pale blue. Authorities have stated that the adult female is similarly coloured: but, of many pairs which I have found breeding in the Anglesea forest, the female has always been clad in a general plumage of green, with traces of scarlet and blue here and there; in no way comparable with the splendour of the male, who must be seen as he flashes through the sober-coloured timber for his beauty to be fully perceived.

ROSELLA

Platycercus eximius eximius

I SOMETIMES wonder whether we should not better appreciate the Rosella's rainbow colouring if it were a rarer bird. It has, I think, the most varied colour-scheme (including, as it does, scarlet, yellow, green, and blue, besides black and white) of any Victorian bird, and by a fitting natural provision it harmonises just as well with the sunlit landscapes which it inhabits, as does the richly but more simply coloured Red Lory, with the subdued lights of the primeval forest.

Birds laying in hollows of trees have, other things being equal, the best chance of survival, and the Rosella is no exception. I notice little change in its numbers in the past five-and-twenty years. Of course the complete clearing of all the old gumtrees will go far to extirpate it; but that time is not yet, and the Rosella is still to be found resident throughout the peninsula to the east of a line drawn from Geelong to Torquay, though moving about a little in the autumn and winter. It goes no farther than the outskirts of the messmate bush, but one finds it again at Airey's Inlet, where the grass-lands on either side of the creek constitute a stretch of open country of considerable extent.

Its favourite resort is an acre or two of old gnarled gums growing in country which otherwise is very lightly timbered. On the west and north of the town it is found everywhere in this class of country, being particularly plentiful on the western slopes of the Barrabool Hills about Mount Moriac and Gnarwarre.

The eggs are laid on dead wood at the bottom of a gum-tree spout, either perpendicular or inclined to the horizontal, the latter for preference. Five to seven are normal clutches. I have known one instance where a Rosella laid in the old nest of a Babbler, and another where eggs, said to be Rosella's, were found in a rabbit-burrow. The laying-season is at its height in the month of October, but I have found eggs at the end of September.

There is little difference in colouring between male and female, young and adult.

Food consists of seeds, berries, and insects, with cultivated grains and fruits when these are to be had.

RED-BACKED PARRAKEET

Psephotus hæmatonotus

THIS is a bird which belongs to the districts north of the Dividing Range (where it is called the Grass Parrot), and is also found in the western and north-western parts of the Western District plains. To the latter areas, where it inhabits the blue-gum plantations, it probably came from the north via Horsham and Ararat, for it is essentially an interior species. Mr. Mulder says he has met with it on the plains north of Geelong; but my own experience is limited to one occurrence, a flock of seven or eight which I was surprised to see at Torquay in May, 1911. They were restless and difficult of approach, and evidently travelling.

The note is a loud, varied and pleasing whistle; on mild, sunlit winter days a flock will produce what one might almost term a chorus of song.

ORANGE-BELLIED PARRAKEET

Neonanodes chrysogaster chrysogaster

THIS is a small Grass Parrakeet, with blue forehead-band, like the next species, but of a duller general

colouring, and to be identified by a large spot of rich orange in the centre of the abdomen, which otherwise is greenish yellow.

It has a fairly wide range south of the town. I shot one at the Salt Works on September 6th, 1902, and Mr. G. H. Broome another, from a flock of five, in samphire scrub (like that at the Salt Works), near the mouth of Bream Creek, on June 16th, 1912. But its centre for this district must be about Parapara. In January, 1902, when a late hay-crop was being brought in on Mr. G. C. Noble's Merrijig Estate, it was numerous, haunting, in small flocks, the grass-strips along the edges of the field. I saw a single bird at Anglesea in September of the same year, and in the late spring of 1912 a pair on Addiscott.

The birds appear to feed chiefly on seeds, and spend most of their time on the ground, whence they rise abruptly, hardly till one walks on them, to settle a little farther on, or fly to some neighbouring dead tree. They have somewhat of the quick-beating, yet undulating, flight of the Rosella, and at times are capable of flying for a mile or more. I have watched such a flight by a single bird.

Master Cecil Evans told me, in October, 1912, of a nest which had been chopped out of a dead tree at Jan Juc in the spring of 1911.

BLUE-BANDED GRASS PARRAKEET

Neonanodes elegans elegans

I FEEL a little diffident about recording this as a local species on the strength of my own observations ; there was, however, in the nineties, a Parrakeet of the genus *Euphema*, which was not uncommon on the plains between the You Yangs and the sea, where I often saw it, which I believe to have been this species, as it was certainly not the Orange-bellied Parrakeet. It was reported to me that a nest was taken near the You Yangs in a fallen log. I saw another of these birds on Avalon, April 29th, 1912, in she-oak country, but could not get near enough to make sure of its identity. Mr. Mulder has several which he informs me were shot in the district, some on the Upper Barwon ; he says he has only seen this species in pairs or solitarily, while the Orange-bellied Parrakeet is more often seen in flocks.

Upper surface olive-green, under surface yellow, with a conspicuous deep-blue band across the forehead, is a short description of the bird's colouring. It might easily be mistaken for the last species, but the simplest thing is to remember that this species never is found south of the town, while, in my belief, the Orange-bellied Parrakeet is confined to the southern areas.

SWIFT-FLYING LORIKEET

Lathamus discolor tregellasi

IN general habits this Parrakeet resembles the Musk Lorikeet, and somewhat also in appearance; but it may be distinguished by its rather longer tail, and by a bright patch of scarlet under the wings, visible from below when the bird is flying. The face is scarlet, with an orange spot at the gape. I record it on the strength of a specimen in the Geelong Museum and Mr. Mulder's statement that it occurs here. It is probably quite a regular visitor, as it migrates from the north to breed in the south, and especially in Tasmania; but I have not noticed it myself, probably owing to an eye-defect which would render me incapable of distinguishing the scarlet patches against the bird's green body at more than a few feet away; it is likely that I have supposed such of these birds as I have seen to be Musk Lorikeets.

BUDGERIGAR OR LOVE-BIRD

Melopsittacus undulatus undulatus

THAT the beautiful little Budgerigar, or Love-bird, sometimes comes in the summer as far down south as Geelong, seems undoubted. I have never seen it here myself, but my brother, E. N. Belcher, who knew the bird well in its central habitat, the interior of

New South Wales, and therefore would not be likely to confuse it with any other species, assures me that one summer in recent years he met with a flock near Gheringhap on the Ballarat Road.

GROUND PARROT

Pezoporus terrestris terrestris

THE banks of Airey's Creek in its lower reaches, where the fresh water is already mingling with the salt, are clothed, in parts, with extensive clumps of bracken (*Pteris aquilina*) and tussock-grass. From one of these, directly across the creek from Mr. Berthon's Wyballenna homestead, flew one evening in the summer of 1892-3, the only Ground Parrot which I have ever had the good fortune to see in the Geelong district, and I am afraid I must add that the species is probably now extinct in this locality.

Its mode of life is entirely terrestrial, and it has the habit of hiding in the grass or running along the ground which makes it difficult to flush a second time—a peculiarity which places it as much at the mercy of the fox as does the fact that it lays its eggs on the bare ground without protection.

The plumage is dark green; feathers of lower breast, abdomen, and tail barred with yellow and black, black streaks on back of head, touch of orange on forehead. About the whole colouring is something suggestive of a Quail or Game-bird rather than of a Parrot.

MOPOKE OR FROGMOUTH

Podargus strigoides victoriæ

WITH its moth-like mottled and spotted grey plumage and enormous gape, the Mopoke is familiar to most bush-dwellers; where the battle royal rages is round the point whether it really does, at night, utter a cry like "mo-poke" or not. Gould thought it did, had no doubts on the subject; some later writers say that it does not, and that the only sound it makes is a low hiss. It has been definitely proved that the Boobook Owl produces by night a noise which sounds like "mo-poke," the unfortunate bird having been shot in the act. So far the Mopoke has been more lucky, and the point, as regards it, remains undetermined.

Curiously enough the two species are equally well distributed over the whole of the Geelong district. I have seen more nests of the Mopoke, but that is merely because, being built of sticks and placed rather conspicuously in a horizontal fork, they attract more attention than does the Owl's nest, which is deep down in a hollow spout.

The Mopoke is untouched by migratory instinct, and remains all its days in the same locality. It does not take refuge in hollows as one might expect of a nocturnal bird, but slumbers the livelong day motionless on a branch. In the spring you will find its mate usually but a few feet away, taking its ease likewise.

At night they grow more lively, and sally out to feed upon gum-tree moths and other insects, which it would appear that they catch not in flight, but when the insects are resting upon or under the bark of a tree. The Mopoke appears, upon dissection, to have a relatively small brain.

The nest is a slight structure of twigs, lined with a little grass, and placed on a horizontal bough of a gum tree at from 10 to 20 feet from the ground. Two eggs are laid, elongated ovals, pure white. The last weeks of September and first weeks of October form the height of the breeding-season.

At Lake Victoria I once found a Mopoke sitting on a single egg in an old Hawk's nest which she had refitted. At Gnarwarre we found a nest building, the birds asleep in a neighbouring tree. Next week, after gales, the nest had been blown out of the fork, and a single egg remained, caught between a twig and the branch.

For preference the Mopoke likes country thinly timbered with old and wide-branching gum trees; it is accordingly more plentiful at Mount Moriac, for instance, than in the denser forest southward toward Anglesea.

Mr. Mulder has a Mopoke from Airey's Inlet, which, besides being of a chestnut-brown colour instead of grey, has a larger head and stouter beak than usual. At present only one species is recognised as inhabiting this part of Victoria.

·OWLET NIGHTJAR

Ægotheles cristata cristata

THIS curious little bird, the size of a small Parrakeet, in colour dark grey, with a pale buff crescent round the back of the neck, rather like a miniature Mopoke without the disproportionate gape, is quite well distributed in our bush districts, and yet, because of its habits, few but those fairly well versed in bird-life will have recognised it.

It passes the day in the hole of a tree, whence, however, it may easily be dislodged by the sound of a blow struck on the trunk with a stick; it comes then to the entrance of the hollow, looks out, and flies off straight to the nearest tree it can find with another hollow to shelter it. It appears to see better in the daytime than do the Owls. In flight its wings seem feeble, though the course steered is direct enough; it reminds one somewhat of the Minah. It obtains the insects which constitute its food by hunting after dark.

Four eggs are laid on gum-leaves or a little grass in the hollow spout of a gum tree, the season extending irregularly from early in September till near Christmas. The eggs are pure white, oval, and of amazing hardness. I have found or made notes of nests at Marcus, Anglesea, Pettavel, Batesford, and the You Yangs. The Owlet Nightjar favours country where large gum-trees grow at intervals among wattles and other smaller trees.

AZURE OR WATER KINGFISHER

Alcyone azurea victoriae

THIS is the rarest and most beautiful of our three Kingfishers. It is non-migratory, and if you find it anywhere, you may be sure it will breed in the vicinity. It is likely that, in the early days of Geelong, this species abounded along all our rivers; nowadays I doubt if it would be possible to find it nearer than Airey's Inlet, although it is not so many years since I saw a Blue Kingfisher on the Moorabool at Batesford.

The upper surface is ultramarine blue, under surface brownish orange, the colours being more vivid than those of the Sacred Kingfisher, with which it might at first sight be confused. But the habits of the two species differ greatly: this bird never leaves the sides of fresh-water streams, and its flight is low, following the course of the stream, and indeed almost skimming the surface; whereas the Sacred Kingfisher may be found at a considerable distance from water, and perches often-times high on forest trees. The Blue Kingfisher's favourite post is on a small bare bough jutting out from a steep creek-bank and over the water; thence it darts down upon little fish or other aquatic creatures that swim close to the surface, and returning devours them there. When startled it flies along the stream like a flash of blue, to take up a like position a little farther on, uttering in flight a shrill compressed twitter.

Mr. Noël Dyson was good enough to send me a description of a nest which he found in the steep banks of Airey's Creek on December 30th, 1912. "The hole," he says, "was about 2 feet long, sloping down towards the entrance. The nesting-chamber was fairly large, and full of fish-bones and the like; in it were six eggs, five of them hard-set, but the sixth very slightly incubated."

The only nest I have myself found was, strangely enough, quite close to the one Mr. Dyson describes; it was in January, 1892, and I should think it quite likely, indeed certain, that the birds had bred in the same locality during each one of the intervening twenty years. The eggs are glossy white.

On the Erskine River at Lorne there are still one or two pairs.

LAUGHING JACKASS OR GIANT KINGFISHER

Dacelo gigas gigas

PERHAPS it is not a very far cry in a bird's mind from fish, via eels, to snakes; at all events the habit of pouncing suddenly from a tree upon a snake in the grass, and returning to the tree to devour the catch, is the only thing about the Laughing Jackass which suggests, even by analogy, that he is in truth a Kingfisher. I used rather to doubt the reputed virtues of the Jackass as a snake-killer, which certainly have

made him sacrosanct in every Australian's eyes, and protect him more effectually than does the law.

I was, however, greatly impressed some time since by a letter from Mr. Dick Griffin, of Barwon Downs, to the *Argus*, in which he said, "Twice in a month I have been an eye-witness of Jackasses catching snakes. In both cases the bird immediately started to swallow the snake without in any way damaging it. On the last occasion three Jackasses appeared to be having an argument as to which had the best right to the snake. The snake was between 3 and 4 feet long, and after a quarter of an hour's hard swallowing the bird only succeeded in getting down about half of it, the remainder having plenty of life still." That seems conclusive evidence.

The Laughing Jackass is a resident species, and, so far as I have observed, has not even local seasonal movements. You find it in any part of the district where there are old gum trees; it is, perhaps, a little less often met with in the coastal messmate forest than in other timbered parts, having, if anything, a preference for lightly timbered country.

At nesting-time, in the month of October, it exhibits a partiality for the sides of roads, which we shall see characterises one or two other species. I have sometimes seen a nest in a long, horizontal, hollow branch; but that is unusual, and the commonly observed site is an old knot-hole in the main stem of a gum tree, at about 10 to 15 feet from the ground, the birds doing a good deal of hollowing out

MESSMATE TREE WITH NESTING-HOLLOW OF LAUGHING
JACKASS, NEAR ANGLESEA.

and pulling off of bits of bark round the entrance, so that often there are quite a lot of chips on the ground below, and the entrance shows distinctly the work of the feathered carpenters. Three eggs are laid, pure white.

Mr. Riordan notes it as invariable that the hole is so shallow that the Jackass is able to survey the vicinity without getting off her eggs.

The flight of the Jackass is heavy and ungainly, and always, on reaching the branch to which it has flown, it raises its tail once or twice as if to balance itself.

The "laugh" is too well known to need descriptive words of mine; the young lose no time in learning it, but make some weirdly hoarse noises in the process, while the old birds keep up a constant chorus of encouragement.

SACRED KINGFISHER

Sauropatis sancta sancta

If one undertook the classification of our birds according to their migratory movements, it would be seen that there is a considerable and very interesting group, mostly of the smaller species, which might be termed infra-Australian migrants—that is, birds which regularly spend the autumn and winter in the northern or, it may be, central parts of Australia, and return in the spring to breed in the southern portions of the Continent and in Tasmania. The

particular point of interest which has not yet been thoroughly elucidated is, how far north do these birds go—if they all go to the same region? And it will be seen that it lies probably with Queensland ornithologists to answer that question.

Of this group of birds we may well take the Sacred Kingfisher as typical. Why, by the way, it is called Sacred I do not know; it is, of course, a mere translation of the specific name *sanctus*, but Vigors and Horsfield alone, who named the bird, could tell us what prompted them to do so. The name has probably stuck from its sheer meaninglessness.

Some clear memory of their breeding-places must persist in the Kingfishers, for we find them continually returning to the same spots in this district, while others seemingly just as suitable are left unvisited.

The Blue Kingfisher, as we saw, is true to his name; he lives largely on fish and never leaves the riverside. The Laughing Jackass has completely abandoned any fishing habits his ancestors may have had, and chooses his residence quite irrespectively of whether there is water in the neighbourhood or not. Standing midway between his relatives, the Sacred Kingfisher, while he does not eat fish, yet retains some trace of his descent from birds which did so, in that he usually resorts in the breeding-season to a locality where there is either standing or running water. His one necessity is a choice of trees of a sufficient size to contain hollows suitable for nesting.

Sacred Kingfishers come to us in October and leave about January. I find my earliest record is of one seen on September 29th (1912) near Jan Juc (not calling), and latest, February 6th (1902), when I saw one pursued through the air by a Laughing Jackass near the old "Swan's Pond" in the Eastern Park. October is the best month to observe them, for then all are busy seeking nesting-sites, and in a place where they are plentiful, such as the banks of the Barwon, a little below Ceres Bridge, one is never out of the sound of the breeding-call—a single sharp note repeated it may be a dozen times, while the bird sits on a high branch, generally a dead one, motionless except for that horizontal raising and lowering of the neck which is characteristic of the Kingfishers.

The eggs are four or sometimes five in number, pearly white, and are laid on decayed wood at the bottom of a hollow in a tree, generally a rounded chamber where there has been, at one time, a knot in the wood. The hole usually goes in about 6 inches, the eggs lying at such a short distance below the entrance to the hollow that the bird can look out without more than raising herself. I have seen nests at heights from the ground varying from 6 to 30 feet. The birds cease to call about Christmas time, and I think most eggs are laid in November.

Sacred Kingfishers are found in the summer at Ocean Grove, Bream Creek, Anglesea, and Airey's Inlet; and a few visit the suburbs of Geelong.

BEE-EATER

Cosmærops ornatus ornatus

WITH an almost swallow-like grace in the air, which shows off admirably in turns and flashes the beautiful metallic blue-green colours of its plumage, the Bee-eater will be quickly recognised again, when once seen. The two long projecting tail-feathers mark it out from all other birds of similar size.

To the Geelong district it is an infrequent visitor, for though an "infra-Australian" migrant, its limits are restricted, and it rarely comes south of the Dividing Range. One reason may be that the sandy banks in which it tunnels, to make its nest, are more plentiful in the Riverina and Northern Victoria (its chief breeding-places) than farther south. It does, however, reach us sometimes. On October 28th, 1893, I saw a pair in a thickly wooded paddock at the corner of the Grub Lane and the Swan Bay Road, not far from Drysdale, in sandy country where they possibly nested; that was my first and last experience of them.

Mr. Mulder has a specimen which was shot on the Avalon Estate, Lara; and he tells me that many years ago Mr. Noble, at Charlemont, Bream Creek, lost a lot of bees through the depredations of Bee-eaters. In 1911 they were reported as having visited Leopold.

SPOTTED NIGHTJAR

Eurostopodus argus

Two kinds of true Nightjars or Goatsuckers are known to occur in Victoria, the White-throated and the Spotted. The names do not help much, for both have a white gorge, which, however, may be more or less broken in the White-throated bird, but is uninterrupted in the present species. The Spotted Nightjar is by far the lighter-coloured bird, having the belly (which is chestnut) barred; the White-throated Nightjar has no bars on the belly. Further it would seem that the White-throated bird inhabits chiefly the forest country of Gippsland, while the Spotted Nightjar has its home in the Mallee and drier northern districts, occasionally coming on to the Western Plains and even to the neighbourhood of Geelong in summer. But both kinds of Nightjar are exceedingly rare birds.

Mr. Mulder tells me that in forty years' experience he has only seen three specimens from Geelong (of which one is in his collection), and all of those were shot in 1889; one of them by the late Mr. Smith, an enthusiastic naturalist, on the Moorabool near Batesford. I saw in May, 1912, a specimen which Mr. Harry Quiney tells me was shot on April 27th, 1912, by Mr. G. L. Dennis, at Eeyeuk, Mortlake. It was flushed at a Quail shoot. In Mr. Quiney's

thirty-six years' experience of Mortlake birds, it was the first of this species he had seen.

The Nightjar sleeps by day on the ground in shady places, and pursues its food in the dusk, hawking for the insects which form its food with an erratic and wavering yet rapid flight.

SPINE-TAILED SWIFT

Chaetura caudacuta caudacuta

THIS, the larger and infinitely more numerous of the two Swifts which visit us, measures 22 inches across the outspread wings. The development of the pectoral muscles is very great, as befits a bird which passes nine-tenths of its life on the wing. Correspondingly weak are the muscles of the leg. The wing-feathers are set very firmly to the bone, and are only detachable with difficulty. The eye is black, with pupil encased in a horny case, as with the birds of prey. The wings are black, with purple and green reflections. Three or four of the wing coverts are white on the inner webs, making a strong contrast with the rest of the wing. The throat and a narrow band on forehead are white; the under tail coverts snowy white, very conspicuous in flight. The shaft of each tail feather is carried out free of the web for about $\frac{1}{4}$ inch, and stands out like a needle-point. It is from this peculiarity that the bird is named. The back is greyish brown, a little

darker between the shoulders; the belly is dark brown.

Beyond the fact that this, or a closely related Swift, breeds in clefts in the rocky arches of certain waterfalls in Japan, we know nothing of the nesting-habits of the Spine-tailed Swifts; we are also completely ignorant of the route they follow from Asia to Australia and back, and of where they spend the time between their appearances at irregular intervals in the summer in different parts of Victoria.

All we can say is that flocks of Swifts, not massed together, but scattered so widely that they may be hours passing a given point, flying just about within gunshot of the ground, do appear from time to time, for example in this district, in the summer; that their appearance is frequently, but not always, coincident with the passage of a barometric depression; and that while the direction of earlier flights varies, the last flocks of the season are usually seen travelling north-east. They feed, as was proved by Mr. Tom Fisher, of Ercildoune (who also states the flocks pass south about the second week in January), on small black flying beetles and gnats, not on butterflies or such larger insects. And they have never been recorded as voluntarily resting. On March 2nd, 1912, at Mount Duneed, one of a passing flock struck either the telegraph wire or a tree and fell on the roadway behind me. I picked it up, and found it merely stunned. When released, a few minutes later, it flew off unhurt to its companions.

206 BIRDS OF THE DISTRICT OF GEELONG

It may be useful to append a list of the Victorian appearances of this bird in the summer of 1911-12 as recorded in the *Argus*, as follows :

November 6th.—Maffra. Five or six. A. F. Linton.

December 15th.—Tamanick. Fifty. Weston.

December 28th.—Hastings. P. L. S. O'Shanassy.

January 1st.—Fyansford-Batesford. Fifty flying west and north-west. H. Riordan.

January 5th.—Winton North. Two hundred flying north. Miss Weston.

January 6th.—Ringwood. Large flock, flying north-north-east. "Ringwood-park."

January.—Stawell. One picked up with broken wing.

February 2nd.—Hastings. Great numbers. P. L. S. O'Shanassy.

February 2nd.—Geelong. Forty, flying west. C. F. Belcher.

February 2nd.—Lorne. Large numbers, flying west. D. Macdonald.

March 2nd.—Duneed. Fifty, flying west. C. F. Belcher.

March 10th.—Gnarwarre. One hundred, flying north-north-east. C. F. Belcher.

March 20th.—Apollo Bay. Twenty, stationary. "W. J. S." (Hawthorn).

March 30th.—Sale. Immense flock, flying west. "Deeby," Sale.

April 4th.—Curlewis. Twenty, flying east. "Observer" (Meredith).

April 5th.—Ninety-mile Beach. Fair-sized flock, flying south-west along coast. “Deeby.”

April 8th.—Inverleigh. A few. W. Berthon.

April 15th.—Buln Buln. Passing all day, flying south-east. S. M'Culloch.

April 17th.—Tyers. Travelling north-east. E. J. Christian.

April 19th.—Maffra. Several, circling. A. F. Linton.

It is notable that the earliest and latest records are from Gippsland, suggesting a route along the eastern coast-line, both going and returning. Mr. P. L. S. O'Shanassy, of Hastings, writes to “Nature Notes” in the *Argus* of March 22nd, 1913, of this Swift: “On February 2nd last, in the evening of a scorching hot day, I had walked across French Island, noting great numbers of Swifts flying low over the heath. Later the same evening I was becalmed in a yacht off the western coast of the island, and saw scores of Swifts dipping down and touching the water with their feet, sometimes quite close to the boat. They were at this performance till it got too dark to see them, but up to midnight I could hear them flying overhead. There can be no mistake made by a practised ear of the keen whizzing flight of the Spine-tail. I regret to say that I have many times shot individuals of both the Spine-tail and the Lesser White-rumped Swift, and always found their little feet stiffly folded up, and that when stretched open, the soles of the

feet are soft and tender to the touch, as if the bird seldom used them. I cannot imagine these birds perched on anything horizontal. Their very shape and appearance stamp them as denizens of high rocky cliffs, where they would cling to the vertical face of rock with the stumpy tail bent inward, and carrying the weight of the bird on the spines. They are interesting creatures, which one would never tire of studying."

From twenty-five years' observation, Mr. O'Shanassy's earliest date of noting the Swifts is December 17th (1894-5).

WHITE-RUMPED SWIFT

Micropus pacificus pacificus

IN the course of twenty-five years I have only seen one White-rumped Swift in the Geelong district. That was on February 25th, 1913, when, as I was passing the "Bareena" Post Office, in Retreat Road, a bird passed over my head at a height of about 50 feet, flying at great speed, from the south northward, and then turning south again. Though I had never seen this species on the wing before, I had no difficulty in identifying it: for in the White-rumped Swift the rump is white and the under tail-coverts dark, while the reverse is the case with the Spine-tail. Also, the White-rumped is by far the smaller bird, and appears to be speedier in flight.

The wings are relatively long, and the black tail is deeply forked. The throat is white.

Mr. Mulder has a locally obtained specimen, and does not consider the occurrence of the bird to be unusual.

Mr. Robert Hall found White-rumped Swifts breeding in the market-place of Yakutsk, in Asiatic Siberia. Assuming that these were our Australia-visiting birds, we still know practically nothing of their fly-lines or the time they take to pass from one end of their long journey to the other. Their general habits and diet seem to resemble those of the Spine-tailed Swift, but it is a species about which we have everything to learn.

PALLID CUCKOO

Heteroscenes pallidus pallidus

OUR fathers have told us of the delight which the children of England feel in the first hearing of the Cuckoo's call, sign that the winter is over and gone and the time of the singing of birds at hand. No less, I think, do all the memories of one's bush boyhood cluster round the Pallid Cuckoo, which is our season's harbinger, and carries to every native-born ear all the bitter-sweet message of the short Australian spring: season of the incomparable wattle tarnished almost before its aureate wealth has fully crowned the trees, of one perfect September day of

blue and gold set in a wilderness of tempests, of flower-scented bush meadows that the north wind will presently turn to parching wastes. The glamour, the evanescence, the foreboding, all are there in the Cuckoo's chromatic scale, musical, melancholy; no less surely does he speak his message than that other grey bird who welcomes the soft northern summer with his joyous shout of May in leafy Warwickshire.

The Pallid Cuckoo is another infra-Australian migrant, visiting our district in August and returning about Christmas-time northwards: how far north he goes is not definitely known, but probably it is to Queensland. I have seen a Pallid Cuckoo at Batesford on July 12th (1902), a silent bird; my earliest record of the Cuckoo's call is August 7th, on which date in 1913 I heard one in the Eastern Park, not yet in very good voice. The second week in August is, I think, the average time of the Cuckoo's appearance in the country about our town; and it is most unusual to hear one calling after the end of the year. The latest date on which I have noticed a Cuckoo is February 10th. That was in 1902, in the She-oak Wood near Barwon Heads; the bird was not calling.

The ordinary call of the Pallid Cuckoo is the well-known scale-like series of ascending notes. There is another which is developed a little later, just about laying-time, I imagine; this is almost a scream, alternating with three or four repetitions of a single note, uttered when the bird is on the wing, particu-

larly on the long courting-chases through the trees characteristic of the Pallid Cuckoo in October.

In some years Cuckoos come in great numbers; there was such a year in 1891, and another in 1913. I never remember so many Cuckoos about as in the last year: you could not drive two miles out of the town without seeing and hearing them, and the Park resounded with the calls of Cuckoos to their mates.

The flight is direct but undulating. Food consists of insects; they are remarkably fond of caterpillars.

Eggs are not usually laid before the middle of October, and may be found thence up till the beginning of December, in the nests of various species of small birds. I have seen or heard of their being observed in the nests of the Minah, Wattle-bird, Yellow-faced, Lunulated, and White-plumed Honeyeaters, Scarlet Robin, and the imported Greenfinch and Goldfinch; of native birds the White-plumed Honeyeater near the towns and the Lunulated in the bush are the foster-parents for whom the Cuckoo evinces greatest partiality. It seems indisputable that the egg is laid on the ground and carried to the nest in the Cuckoo's beak. It would be quite impossible for the Cuckoo to lay an egg in the nest of the Lunulated Honeyeater, for instance, in the ordinary way. Note-worthy it is, too, that this kind of Cuckoo always puts its egg in an open nest, at least in this district; we shall see that the Bronze Cuckoo invariably chooses a domed nest. The egg is cream-coloured with a few faint reddish-brown spots.

The young Cuckoo (which, having ejected the other inmates soon after their hatching, using its shoulders as a lever, easily fills up all the space in a small nest) has a mottled plumage of black, buff, and white, very different from the olive-brown upper surface and grey breast of the adult bird. This is easily the largest of our four Cuckoos, and should be recognisable by its note alone.

FAN-TAILED CUCKOO

Cacomantis rubricatus rubricatus

THIS Cuckoo is smaller than the Pallid, and has two separate calls, one a trill of about five or six slightly-varying notes repeated so quickly as to run into each other, the other a call (usually heard in damp weather) which sounds like "whit-wee," with the stress on the last syllable, which is protracted.

I have records of the appearance of this species in and about Geelong in every month from June to February, and am convinced that many individuals stay with us all the year round; and that while of the majority there may be some movement northward in winter, it is irregular and cannot be compared with the settled seasonal migration of the Pallid Cuckoo.

Still, the birds are more plentiful in the spring months, and being then in full voice are more readily noticed. In the Eastern Park in a normal year this species is commoner than the Pallid Cuckoo. The mode of life of the two birds is similar, but this

one has a habit of perching on low boughs close in to the trunk of a tree, while the Pallid Cuckoo rests more on tree-tops and fences and in exposed positions.

I have only noted the eggs in the nests of small birds which build domed nests; almost invariably the *Sericornis* is the chosen foster-parent. At Lake Connewarre, in 1888, I found an egg in the nest of the Blue Wren. This Cuckoo is a very early layer. On July 20th, 1891, I found two Fan-tailed Cuckoo's eggs, which, to judge from their marked resemblance to each other, had been laid by the same bird, in separate nests of the *Sericornis*; the nests were about a hundred yards apart.

The Fan-tailed Cuckoo lives largely upon caterpillars and insect-larvæ.

In flight it is slower than the Pallid Cuckoo, and rarely flies more than a few yards, nor is it mistrustful of the approach of a human being.

The egg is purplish white in ground-colour, thickly freckled with reddish and brown spots, which form a ring slightly nearer the larger end. It is about the size of a Sparrow's egg.

NARROW-BILLED BRONZE CUCKOO

Neochalcites basalis mellori

THERE are two small Cuckoos, neither much bigger than a Sparrow, but of longer, slenderer build, which are so much alike that I consider them impossible to distinguish from each other in the field. It is

true that the basal halves of six, at least, of the tail-feathers in the present species are coloured rufous-chestnut (the other bird's tail is uniform), which one might think would show distinctly against the general bronze-green plumage, with the bird in flight, but I have never been able to get close enough to see it. Of this I feel certain, that, when studied carefully, the notes will be found to be distinct, and so afford a ready clue to identity, at least in the breeding-season. But one has to know which bird it is before attributing a particular call to either species.

Apart from the tail, the chief differences (these only to be seen on close cabinet inspection) are that this bird has a thinner bill and longitudinal streaks down the throat, besides having a lighter brown head and paler-coloured back. The Bronze Cuckoo has transverse bars on the throat and a stouter bill.

The general colouring of each species on the upper surface is a dark green with the most beautiful bronzy sheen imaginable, the under surface being more or less transversely barred.

There is a limited migratory movement with both species, but, like that of the Fan-tailed Cuckoo, it is irregular, and I should say that very few of the birds went north of the Divide, as one can see them about Geelong at almost any time of the year.

The call is a cheery single note, loud and full, uttered most often from the topmost branch of some high, dead tree. In flight both these Cuckoos exhibit an undulating, almost Swallowy motion.

Considering how closely the birds resemble each other, the difference in the eggs is striking. The Narrow-billed Bronze Cuckoo lays a small egg, which, like that of the Bronze, is the same shape at both ends, but, in strong contrast to the Bronze Cuckoo's egg, is reddish white in ground-colour, freckled evenly and thickly all over with reddish spots, which, it may be remarked, rub off very easily if moistened.

The egg is deposited (probably by the bird's beak, after being laid on the ground) in the nest of any one of several kinds of small birds, among which, from my own observations, I may note the White-eye, Blue Wren, Yellow-tail, Scarlet Robin, White-fronted Chat, *Xerophila*, *Sericornis*, *Calamanthus* and Goldfinch. The earliest-laid egg I have noted was one nearly incubated in a *Sericornis*' nest at Connewarre, July 29th, 1893. Most eggs are laid in September and October.

BRONZE CUCKOO

Lamprococcyx plagosus plagosus

I HAVE mentioned the distinctive marks of this bird in dealing with the preceding species. In habits it appears to be very similar to the Narrow-billed, and it is only because of the comparative rarity of its eggs that I am disposed to say it is not so common a bird with us as is its relative.

The eggs are among the most remarkable of our smaller birds'. They are of a deep chocolate-brown,

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which, however, is not fast, but may be removed by moistening and rubbing. In the neighbourhood of Heidelberg, Melbourne, this bird's eggs were in the years 1884-5 much more commonly found by the village boys (it was only a remote village then) than were those of the Narrow-billed Cuckoo. Here in the Geelong district, however, you might find twenty of the Narrow-billed's eggs for one of the Bronze. And in my experience the Bronze Cuckoo never chooses for its egg any other nest than that of the Yellow-tailed Tit. I am aware that this is not so in other parts of Australia. I have seen eggs from the You Yangs and the bush about Drysdale, and one from a garden within the Geelong city limits; this egg was of a uniform pale green.

WELCOME SWALLOW

Hirundo neoxena neoxena

THIS I take to be the best-known of all Australian birds. It is universally protected both by law and sentiment; kindly individuals will put up a board under the nest to obviate the litter on the veranda floor rather than destroy the little creatures' mud-built home. September sees a nest or two above shop-fronts in the main street of every Victorian town, and by the end of October the first brood is on the wing, their places in the re-decorated nest soon to be occupied by a second family.

The name "Welcome" rather suggests return after a migration, but the result of my observations goes to show that the Swallows never leave us at all, and are just as plentiful at one time of the year as another.

They spend the greater part of their time in the air, and live entirely on flying insects.

The nest is composed of mud picked from the margin of ponds or street channels, strengthened with grass and vegetable fibre, then lined with grass and abundance of feathers which project above the nest's rim. It is placed (in the neighbourhood of dwellings) against two pieces of timber at right angles so that one forms the base and the other the back, the masonry of the nest being in the form of a semicircle. In the bush the nest is built against the side of the interior of the hollow main trunk of a tree, usually one that has been burnt. Along the ocean beach the Swallow commonly builds its nest on the walls of caves, where these exist, or in the small hollows which abound on the seaward face of the cliffs.

The species must be one of the most numerous we have, and shows every sign of increase. The Swallow has but one enemy, the imported Sparrow; which will wait till the Swallows have laid, and then take possession of the nest, rooting out eggs, feathers, and grass, and repeat this as often as the Swallows attempt to restore their wrecked home. And all this in a pure dog-in-the-manger spirit: the Sparrow does

not use the nest itself, and does not want to. It is, like the Eagle in the poem, a dreadful bird.

Swallows have been known to have three broods, and I have noted nests with eggs in every month from August to December. Four is the usual clutch, white, thickly speckled with red-brown and lilac.

TREE MARTIN

Hylochelidon nigricans caleyi

THIS little Swallow is to be distinguished on the wing from the Welcome Swallow by the fact that it has a whitish rump. The Fairy Martin also has a white rump, but it is dead-white, while the Tree Martin's is dusky-white. These two species are, nevertheless, very hard to distinguish from each other unless flying quite close to the observer.

The Tree Martin is the least abundant of our three Swallows; it is of that class which I have called "infra-Australian" migrants, and though it resorts regularly in the spring to certain definite localities in this district, these are few in number. My earliest note of their arrival is of a flock of a dozen or two seen in redgum timber on the edge of the plains north-west of Gnarwarre, on September 8th, 1912.

Redgums are their favourite nesting-trees: in one large tree at "Charlemont," Bream Creek, several pairs used to breed in the early nineties, and probably do so still. The nest is a small-entranced hollow,

usually high up in the tree ; the eggs are laid on the dust, or on a few dry leaves placed at the bottom of the hollow. November seems to be the height of the breeding-season, but Mr. Mulder has given me a note of the arrival at Bambra in August, 1893, of a pair which immediately nested in a hole in a tree opposite his house. These birds were still about on March 4th, 1894.

FAIRY MARTIN

Lagenoplastes ariel ariel

THIS is the species known in parts of Australia as the Bottle Swallow, because it builds a nest which is shaped rather like an old-fashioned handleless flagon with the neck directed forward.

Odd birds may be seen in any month of the year, but the majority are true infra-Australian migrants, coming to us to breed in September, and returning to more northern parts of the country (just how far inland they go is not known) about April.

The description of a bird obtained at Barrabool on December 8th, 1912, is as follows : Forehead whitish-buff ; crown rufous, very faintly streaked with black ; occiput streaked rufous and black ; mantle and back glossy blue-black, with bases of feathers white ; wings and tail brown ; rump dead-white ; upper tail coverts brownish ; lores black ; chin and throat white streaked with black ; breast and all remainder of

under surface and under tail coverts white ; bill black, very short ; feet black ; rectrices 12 ; primaries 9.

The colonies of nests are placed under either a culvert, the overhanging bank of a creek, or the roof of an old quarry or cutting. I have notes of such nesting-places at Yarram Creek (near Queenscliff), North Geelong, Batesford, and Ceres, so that the birds are fairly widespread through the district ; they are much more plentiful than the Tree Martin, though just as tenacious of their old nesting-sites, nor do they readily adopt new quarters.

On March 10th, 1912, there were still young birds able to fly, about a group of nests in an old quarry near Ceres. Visiting these nests in the following summer on December 8th, we found sparrows in possession of several of the nests, with eggs and young of their own ; the Martins had apparently not succeeded in hatching any eggs.

I judge that they have at least two broods in the year, as I found a small colony at Ceres on October 19th, 1889, all the nests containing eggs. These number three or four, and are narrower, more pointed, and more finely marked than the Welcome Swallow's eggs.

Until about the year 1902 large numbers of Fairy Martins used to assemble towards the summer's end in the Eastern Beach reserve, perching on the pines and willows about the steps going down the hill. Of late years I have not seen these. I could not ascertain that they bred anywhere in the vicinity.

COLONY OF FAIRY MARTINS' NESTS IN OLD QUARRY, BARRABOOL.

The cry of the Fairy Martin is a feeble twitter uttered on the wing; it has neither the sweetness nor the variety of the Welcome Swallow's notes.

BROWN FLYCATCHER

Microeca fascians fascians

THIS plain-coloured little Flycatcher may be known by the outermost feathers on each side of the tail being white; the bird is constantly moving its tail about from side to side as it sits on a fence-rail or stump, and the white side-lines are very prominent. The Australian Pipit or Ground-lark has a somewhat similar tail-colouration, but the habits of these two birds are so distinct that you could hardly mistake one for the other.

It is a non-migratory and very local species, requiring as special conditions a moderately thick growth of wattle, honeysuckle, or ti-tree with open spaces and occasional large gum trees. That is to say, it is essentially a bird of the bush, not the dense wet forest of the Otways, but the drier country of medium growth. Especially is it fond of timber-clumps just bordering a plain or large clearing.

The food of the Brown Flycatcher consists of insects which it takes in the air or from the ground; darting from a post or stump to capture its prey, and returning thither before making a fresh sally.

Its voice is heard oftenest in the spring, and is a

double call repeated, it may be, a dozen times or more, not unmusical: this call has given rise to the name Peter-peter. In this district it is sometimes called Spink or Sphinx.

I have noted this bird in all parts of the district where the conditions are suitable; it is particularly plentiful on the edge of the forest about Jan Juc. The Dog Rocks are now the nearest point to the town at which one would be likely to find it, though I remember a nest in the Eastern Park in the late eighties.

The nest is a marvel of neatness and beauty. Measuring but a couple of inches in diameter, it is a tiny depressed circle of fine grasses sunk in the horizontal fork of a bough—usually of a gum tree; but I have seen them built in honeysuckles and dead wattles, and once even in a fig tree in a deserted bush garden. It is edged and ornamented with little strips of bark taken from the bough. The height at which it is placed may be anything from 5 to 20 feet from the ground. The eggs are never more than two, of a green ground-colour, beautifully marked with red, purple, and brown, thickest about the larger end so as to form a ring.

In nearly every case, if the birds have a nest with eggs and are watched, one of them will eventually fly directly to it—a habit which is rarely noted in other birds. The nesting-season is at its height in November. I have found eggs as early as September 19th.

NEST OF BROWN FLYCATCHER, JAN JUC.

SCARLET-BREASTED ROBIN

Petroica multicolor frontalis

THERE could be no better place to study this beautiful little red-breast than the Eastern Park, where it has in the last decade become so well established that a dozen pairs breed there every year.

The male bird is unmistakable, and it is only necessary to point out that his throat is black, and so distinguishes him easily from the Flame Robin, which has the throat red as well as the breast. The females of the two are more difficult to tell, especially when seen apart; but at all seasons of the year the drab-coloured little mate of the Scarlet Robin has just a flush of red on her grey breast. In the spring it looks quite bright, particularly when the little lady peers at you out of her snug nest, firm-set in an upright fork.

These Robins are quiet birds, loving the ground and the lower boughs of trees, easy of approach if one is careful. They are practically non-migratory, unless it be that they make little winter expeditions to a distance of a mile or two out on to the plains and along the roadsides from their breeding-haunts. The song is heard at its best in August; it is a very subdued yet cheerful little dactylic trill, repeated two or three times. I think the male alone sings.

Nesting starts in the Park in July, at the You Yangs in August, and is later in the southern forest, where I have noted fresh eggs early in November, though

that was exceptionally late. Any moderately thick belt of bushland will serve these Robins as a nesting-haunt. The nest itself is cup-shaped, deep, woven of grasses and rootlets, and often has spider-web binding it externally; within it is warmly lined with rabbit-fur or cow-hair, feathers being seldom used. It is placed about 10 feet from the ground in the perpendicular fork of a gum, banksia, or wattle. The eggs are invariably three in number, of whitish ground-colour and spotted thickly with various shadings, with the ring about the thicker end common to so many small birds' eggs.

FLAME-BREASTED ROBIN

Littlera chrysoptera phoenicea

UP to within the past few years the Flame Robin (you may know the male by the red of the breast extending over the throat as well, and by his back being dark sooty grey, not black) was supposed to breed in Tasmania only, and to be merely a winter visitor to the mainland. I should not like to say that no Flame Robins ever cross Bass Strait; it is, however, my belief that the majority at least of those which we see so commonly on the open country about Geelong, from April till August, breed in the Cape Otway forest westward from Lorne in the months from October to January. That is to say, that this is a migratory species with an exceedingly limited range.

SCARLET ROBIN (FEMALE) ON NEST IN DEAD PRICKLY ACACIA, YOU YANGS.

The appearance of these Robins coincides more or less closely with the first heavy autumnal rains ; but I have known them appear before there was any proper break in the season. In 1902 (a dry year) the first I saw were on April 13th, at Batesford. In 1912 they were seen on March 30th, on the plateau not far from Moorabool station. In 1913, the only other year of which I have records, the first appeared at Torquay on March 21st. That year the autumnal rains came early, at the beginning of March, nearly 6 inches falling in Geelong ; yet I saw no Flame Robins on March 16th between Geelong and Batesford, though the rains were well over.

I am inclined to think the sexes travel out separately from the forest, though of course the sight of a great many males or females together, which is not uncommon, may be but coincidence.

Unlike the Scarlet Robin, which sings all the year through, the Flame Robin does not let us hear much of its pretty cadence till near the time of its departure. It is a pleasing song, beginning on a high note, followed by five or six others, delivered staccato, and ending with a couple of little runs ; louder and merrier than the Scarlet Robin's. I have heard it as early as June 30th, but it is not till August that the birds are in full voice. Curiously, both sexes appear to sing, unless it be that some which I have taken for females are young males which have not yet put on their full dress.

In winter these birds love the basaltic plains ; you

may see them on any of the roads leading out through this kind of country, hopping from stone to ground and back again, or perched on the fence-posts and flying up continually as one passes, to settle a few posts farther on. There is a curious little flick of the wings when the bird is perching, which is characteristic of this and also of the Scarlet and Yellow Robins.

The hen may be distinguished from the hen Scarlet Robin in that she is uniform brown on the back and upper surface generally, whereas the Scarlet Robin has these parts grey, nor has the former more than the faintest trace of red on her under surface.

The species is insectivorous; I know no more beautiful little picture than half a dozen cock Robins following the plough, and now and again turning towards one the blaze of their breasts against the background of black upturned sods glistening from the share.

The nest I have only once seen; on the road from Colac to Gellibrand I noted one placed quite near the ground in a niche in the side of a burnt gum. This is a favourite site, but sometimes a ledge of rock is chosen. It is a rougher nest than the Scarlet Robin's, open, and warmly lined. The three eggs are rather larger, and have fewer and smaller spots, than those of the other Robin.

I noted a dozen pairs of these birds, all apparently mated, between Barramunga and Skene's Creek, Christmas, 1902.

The latest one seen about Geelong is the

second week in September. I believe that numbers of these Robins work back into the forest from the nearest woodland to Geelong which runs continuously into the Otway, that is the Jan Juc messmate scrub. At the end of the winter you may see scores together in the wattles at Torquay, all working westwards. The migration takes place probably by a series of very short flights, merely from tree to tree, rock to rock, till the destination is reached; not, as with some other birds, by one high protracted passage through the air.

PINK-BREASTED ROBIN

Erythrodryas rodinogaster inexpectata

THERE are in Victoria two kinds of Robins with pink breasts; one is this species, and the other is called the Rose Robin and inhabits the wet country of Gippsland, from Fern Tree Gully eastwards. There seems no reason why it should not occur here also; our birds, however, appear all to belong to the Pink-breasted species. The Otway Forest, or even farther east to near Anglesea (I have seen males in full plumage in December at the falls on the Distil Creek), is the nesting-area. In the winter the birds, like the Flame Robin, move out of the forest to the east and north; unlike the Flame Robins, however, they never show themselves on the plains or even in lightly timbered country, but take up winter quarters in the thickest parts of the dry country (Geelong has

a very low rainfall compared with the Otway) that they can find.

It was the late H. E. Hill—a thorough good sportsman and naturalist—who first drew my attention to the presence, during the winter months, of quite considerable numbers of these Robins in the dense ti-tree scrubs at the mouth of Bream Creek. Others come right in to the town and frequent the older, more bushy gardens: you might easily mistake the hen birds, which are plain-coloured little birds, for hen Scarlet Robins; but they are much smaller and have a characteristic short, low, rasping twitter. The male with his lovely breast of pink (not red, but unmistakable pink) cannot be confused with either of the other male Robins.

The Dog Rocks, Batesford, are another favourite winter-resort for the Pink Robin.

It seems a delicate species; I once picked up, in a Geelong garden, a beautiful cock bird dead, with no marks of injury. Many, indeed, fall victims to cats as they perch for the night on low branches. They are exceedingly tame and easy to approach.

As I find the female does not exactly correspond with the description given in Hall's admirable little Hand-list, I will append notes made from a hen bird which was brought in by a cat at Batesford on May 25th, 1912: The first three primaries show no trace of markings; the rest have markings of buff at a point about half-way along them. These markings consist of a strip about $\frac{1}{5}$ inch long on each feather's upper

web ; the markings run on through the secondaries, increasing in size ; and the secondaries show a second and similar series near the ends of the feathers, but the latter set is much fainter. The general appearance, however, is of two clear wing-stripes of buff. The faint forehead-spot is buff, the bases of the feathers so spotted being white. The two external tail-feathers are much lighter than the rest, and themselves are lighter beneath than above, but could not be called white. Wing measures $2\frac{1}{2}$ inches. The lower webs of the wing feathers become gradually lighter, till that of the innermost secondary is almost pure white—these whitish marks are concealed.

Hall says the forehead-spot is buff in the Rose Robin and white in the present species.

My earliest record for the Pink Robin in Geelong is April 4th, 1912, and latest August 30th in the same year.

I saw a male at Anakie on September 10th, 1892, which would seem to indicate that the species breeds in those thickly wooded ranges. A pair were noted at Grub Lane on August 19th, 1892, but I should not think the scrub there thick enough for them to nest in, so that these were probably about to return to the western forest. In the summer of 1895-6 Geelong field-naturalists found a nest in a blackwood at Phantom Falls, Lorne ; and Mr. Riordan found seven or eight nests along the Cumberland River, seemingly ready for eggs, in mid-January, 1908. These were small, round, lined with the red downy

stuff from tree-ferns, and were sometimes placed on the branches of the tree-fern.

BLACK OR HOODED ROBIN

Melanodryas cucullata vigorsi

At once the largest and most conspicuous of our Robins, the Black or Hooded Robin is, I fear, fast becoming extinct in the district. It is only seen in localities where land is fairly heavily covered with bush in various stages of growth; and can no longer be said to be a regular breeding-species except at the You Yangs (probably also the Anakie Gorge) and Marcus Hill, at which latter spot it was within my recollection almost abundant. Mr. Riordan saw a nest there on October 21st, 1905, containing two eggs of the beautiful apple-green tint which makes them readily separable from all others. This nest was placed on a stump about 5 feet high. One which I found in 1904 was a loose structure of grasses and rootlets and built about 7 feet up in the horizontal fork of a honeysuckle (*Banksia*) on the plain north of Jan Juc, which is now cleared of all trees and converted into wheat land. I have seen the birds at Batesford (not recently) and at Anglesea (October, 1912). They must be counted among the rarest of our resident species.

The note of the male is a loud whistle.

The male has the head, neck, throat, and upper surface black, white band on the wings, under surface

white, and white feathers on each side of the black tail. The female is dark grey above, with less distinct wing band, under surface light grey, white feathers at sides of grey tail.

WHITE-THROATED THICKHEAD

Pachycephala pectoralis youngi

THE male of this species is identifiable by his white throat, with a black band under it, and bright yellow breast; he is one of the most beautiful of our smaller birds, and has a cheerful ringing note, though I should pause before calling him a song-bird. The female is very like the female of the next species (the Rufous-breasted Thickhead). I describe both in the next article, but the simplest means of distinguishing them is by remembering that in the town itself and immediate environs we never meet with both species at the same time of year. Between March and September, then, which is the season when one oftenest sees the hen birds about Geelong, you may safely assume that it is the White-throated species.

I never saw a male bird in the town of Geelong, but have noted them at Anglesea (with female), June 1st; Ocean Grove (with female), July 13th; Mount Duneed, August 31st—all in 1902; and at Batesford (with female, and singing), April 23rd, and again on May 26th (two males), and June 22nd, 1912; also at Airey's Inlet and Lorne (singing), March 21st to March 23rd, 1913.

Except Airey's Inlet and Lorne, the places mentioned are not breeding-localities, but only winter-quarters. By the middle of September the White-throated Thickheads have moved back again into the forests where they nest.

They breed at Anakie on the north, and at Lorne, possibly also at Airey's Inlet on the south-west, but not closer in to the town. Here I might note that the forest at the back of Anakie has, so far as suitability as a nesting-place for birds is concerned, much in common with the Otway forest, and many partial migrants nest there which visit the neighbourhood of the town itself in the winter.

The nest of the White-throated Thickhead is a very light structure, shaped like a small, deepish saucer; built of thin dry twigs, and with a very little lining of rootlets, so that almost always the two eggs may be seen through it from below. It is placed in a small fork in a thick green shrub such as a wild cherry (*Exocarpus*) or ti-tree (*Melaleuca*). October and November are the breeding-months. The eggs are of a rich cream ground-colour, with a ring of reddish spots; they are much lighter than the eggs of the Rufous Thickhead.

RUFIOUS-BREASTED THICKHEAD

Lewinornis rufiventris rufiventris

THIS also is a partial migrant, but in exactly the opposite sense to the White-throated Thickhead,

Photo by H. A. Purnell, Esq.

NEST OF WHITE-THROATED THICKHEAD IN WILD-CHERRY TREE, ANAKIE.

We saw that the latter frequents wooded parts of the comparatively dry belt round Geelong in the winter time, and goes back into the better-watered forest areas of the Otway and Anakie to breed. Now, the Rufous Thickhead breeds in just those localities where the White-throated spends its winter, but it does not arrive until the White-throated birds have gone. Where the Rufous Thickhead passes its winter is not with certainty known; but as it arrives here in September with several other species which we know winter north of the Dividing Range, that is on the inland plains, it is reasonable to assume that it does the same thing.

For very many years this has been a regular spring and summer resident in the Eastern Park, about half a dozen pairs resorting thither to breed. The male has a rich and varied call, ending with one note repeated loudly three or four times; it is, in my opinion, a much fuller and more musical strain than that of the White-throated species. One hears it first about the second week in September, immediately on the birds' arrival, and nesting starts a week or two later. The nest is very similar to the White-throated Thickhead's, but is built in a more open position, either in a pine tree (in the Park) or in a eucalyptus sapling, the birds trusting rather to similarity in surroundings than to actual concealment of the nest. The eggs are of a light chocolate ground-colour, with a ring of dark spots rather nearer the large end.

I found this species very numerous at the You

Yangs on October 29th, 1911, whistling all day. One nest was just beginning in a pine tree. Rufous Thickheads are also abundant from October onwards, through the summer, in the bush between Torquay and Jan Juc, and thence are found right on past Anglesea to Airey's Inlet. East of the town one seldom sees them; I never observed the species in the extensive woods between Ocean Grove, Drysdale, and Queenscliff.

The male is grey above, white throat with dark band between it and the orange-brown breast; the female is like the male above, but tinged with ashy brown; lores and ear coverts ashy brown; throat and cheeks white with dark brown streaks; under parts light fawn with distinct streaks on breast, becoming lighter on abdomen, flanks, and under tail coverts. Compare with the female of the White-throated species, which is olive-brown above, wing coverts and secondaries blackish brown, edged reddish brown; primaries edged grey; throat pale brown with white spots; under parts buff without streaks; under wing coverts whitish.

OLIVACEOUS THICKHEAD

Timixos olivaceus tregellasi

ON September 20th, 1913, Mr. H. A. Purnell and I were walking from Wensleydale to Anglesea across country, in the hope of discovering the haunt of the Geelong Ground-wren (*Hylacola*). For about a mile our course lay along the left bank of a marshy creek

NEST OF RUFIOUS THICKHEAD IN MESSMATE, JAN JUC.

which we later ascertained to be a tributary of the Anglesea River. In the bed of this, which had apparently been burnt out a few years before, was a dense growth of young ti-tree, the home of numberless Crescent and other Honeyeaters: and in places clumps of the original tall ti-tree, spared by the fire, stood among high sword-grass festooned with trailing masses of the beautiful coral fern. Passing one of these, we heard a strange bird-call of two notes, one high, the other much lower, quite musical and easily imitated by whistling. After a ten minutes' wait we saw the bird emerge from the verdure; to our surprise, it was an Olivaceous Thickhead, the first either of us had ever seen in the district.

No doubt the bird breeds in that locality, but it was then rather too early for a nest. I have seen nests at Fern Tree Gully, where the species is not uncommon; it is a much larger and thicker structure than either of the other Thickheads', with strips of thin bark between the outer frame and the lining of rootlets. In this circumstance and the fact that the sexes are alike in colour this species stands nearer the Harmonious Thrushes than to the Rufous and White-throated Thickheads.

Mr. Ross tells me he has often met with it at Lorne, and Mr. Mulder says it bred regularly in the ranges near Bambra in 1894. Of the call, he observes that the first note is on the fifth of the scale and that the second comes down to the octave.

It is a seclusion-loving species, and non-migratory.

YELLOW ROBIN

Eopsaltria australis viridior

ANGLESEA has not changed much in general view since I first saw it at seven o'clock on a winter's morning of white frost and glorious blue sky in the year 1889; but the Yellow Robins have gone. There was then a dense thicket of tall ti-tree all along the eastern bank of the creek. I knew it was not the nesting-season, but wild horses would not have prevented my before-breakfast exploration; and I found the ti-tree just full of those queer little cup-shaped nests, built of fine pliant twigs, lined with a few gum-leaves neatly worked into the fabric, and ornamented on the outside with hanging strips of ti-tree bark. So barely they sat on the lateral boughs, 4 or 5 feet from the ground, that one wondered how the birds could use so little concealment. You had but to bend down (I don't think, in those days, even that was necessary in my case) and look through the thick network of ti-tree, and in one direction or another there was sure to be a nest within a dozen yards. And the birds, with their grey and green backs and bright orange breasts, flitted here and there, or clung to a ti-tree stem a yard away, and looked sideways at me—the tamest, prettiest little creatures that ever were.

Bush fires have burnt the ti-tree, burnt the little Robins too, I suppose, and now you would be hard put

Photo by H. A. Purnell, Esq.

YELLOW ROBIN ON NEST.

to it to find one at Anglesea. There are, I know, three or four pairs at Point Roadknight in the dense scrub that lines the sand-hummocks, and at Airey's they still haunt the creek about the old bridge; but you must go to the St. George River, at Lorne, before you are really in their home.

In the year 1900 I found a nest containing two young ones at Point Addis, and at least one pair still breed in the Bull's Well. Nearer Geelong than that they do not occur. In my recollection there never were any on the Queenscliff side of the town. Northwards one meets them in fair numbers at Anakie, and also, as I am informed, on the Upper Moorabool above Lethbridge.

The eggs are laid in September, as a rule, but in the wetter country about Lorne pairs breed as late as the New Year. The eggs are of a green ground-colour thickly freckled with red and brown.

WHITE-SHAFTED FANTAIL

Rhipidura flabellifera victoriæ

INCREASED greatly in numbers during the past twenty years, this sprightly little Flycatcher, with his dark grey body and spreading tail shafted with white, is a bird one may hope to see on almost any walk near the town, especially in the autumn, when there are more about than at any other time. The Eastern Park has proved a sanctuary to this, as to so many other species. Visiting it at first only from February

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to July, a few pairs presently remained in the park to breed, and since about the year 1898 several broods have been hatched there annually.

Purely insectivorous, it is fearless of man in its pursuit of its booty of gnats and other flying insects. A friend camped on the Cumberland, near Lorne, was watching a Fantail, when suddenly it flew directly at him, perched on his left shoulder, then flew round his back to his right shoulder and again to his left before darting off again to a tree. I have known these birds pick flies off a gun-barrel which a man was holding still as he waited for kangaroo.

The flight is erratic, with much movement of the tail, which, indeed, is never at rest when the bird is awake. No one could describe the song; it is cheerful and varied, if a little "tinny"; one could imagine it to be the tuning-up of a fiddle in some orchestra of Lilliputian wood-sprites.

The nest is one of the marvels of Australian bird-architecture. It is commonly and well described as looking like a wineglass with the base broken off; the cup of the glass being the nest itself, while the stem is the curious "tail" which, attached to the nest, hangs below the horizontal twig upon which the nest is built. The whole is woven of fine grasses, lined with rootlets or a little hair, and thickly coated outside with a finish of spider-webs which gives the nest a smooth grey appearance. Built usually about 4 feet from the ground in a gum sapling, acacia hedge, or ti-tree, it is one of the most difficult nests

WHITE-SHAFTED FANTAIL ON NEST, JAAR-NU-RUC CREEK, TORQUAY.

to find, because of its smallness and assimilation in colour to its surroundings. The birds generally desert the nest if a finger is inserted before the eggs are laid, and sometimes even if they see you watching it.

The nesting-season is from October to January; later in the moister country than in the dry. Regular breeding-spots are the ti-tree on the coast at intervals from Point Lonsdale to Bream Creek, the woodlands about Ocean Grove, and the whole forest west of Torquay. The birds, however, are now almost everywhere in the district, and will breed wherever they may have the seclusion of reasonably thick scrub.

The eggs are creamy white with a band of small red, lilac, and brown spots round the thickest part.

RUFOUS FANTAIL

Howeavis rufifrons inexpectata

THE Rufous Fantail is rather larger than the White-shafted Fantail, and may be known at once by the tawny patch at the base of the tail, which shows prominently when the bird is in flight. Also, it is less agitated in its movements than its smaller relative, and does not spread its tail so much. Only at one time of the year do we see it actually in the town, namely, from March till May, when a few of the Rufous birds are generally to be seen in the company of the numbers of White-shafted Fantails which are then present in the Eastern Park and private gardens,

It has a remarkable liking for flying inside buildings. I caught one in March, 1910, in the kitchen of my house; and Mr. Riordan tells me that at the end of March, 1909, he saw one inside Dalgety's show-floor, very tame, and hopping about within 3 feet of him. The same habit has been noticed in this bird in Melbourne at the same time of year. It may be that the little birds enter in pursuit of flies.

Their summer home is in the densest and most remote from human habitation of the Otway gullies, so that they have had no cause to fear man or his dwellings. I do not remember ever seeing more than one of these birds together, and I have never seen one except when White-shafted Fantails were in the vicinity.

They do not appear to stay with us all the winter, but retire to the forest sooner than most forest-breeding species, late though their nesting-time is. Mr. Riordan found a nest on January 19th, 1908, in the Cumberland Gully, Lorne, containing two slightly incubated eggs. It was composed of the red shoots of moss, wound round with cobweb. The "tail" was made of grass and a soft pulpy substance, and the nest was built on a thin branch of a live musk tree, amidst particularly dense scrub. Both nest and eggs are larger than those of the White-shafted Fantail, which otherwise they resemble.

I noted one of these birds in the blue-gum plantation, Station Peak, in November, 1910; but I think it must have been a wandering individual.

It is likely the species breeds in the ranges near Anakie.

The Rufous Fantail has a low and pleasing song, but does not often display its powers.

WAGTAIL OR BLACK-AND-WHITE FANTAIL

Leucocirca tricolor tricolor

BLACK-AND-WHITE Fantail, Shepherd's Companion, Willie Wagtail, he has a variety of names, and is one of our most popular birds, living almost, as it seems, for preference in the neighbourhood of dwellings in the country, and constantly to be seen perched on the backs of sheep or cattle, searching for parasitical insects.

Though sometimes found in the drier parts of the bush, it evinces a decided preference for water, and is therefore most abundant along the course of the Rivers Barwon and Moorabool. But there can be few parts of this district where it is not to be met with. In the Otway forest it is only seen in clearings, not (like the two other Fantails) along the timbered valleys of mountain streams. Flat country it likes better than hilly. It is an entirely resident and non-migratory species.

It is vocal throughout the year, and has two dissimilar sets of notes. One is that usually represented by the words "sweet pretty creature"—a sound which recalls to me a camp at the Sheepwash, at which one of these birds invariably perched on top of

the tent at about 3.30 a.m., and performed till seven, or we grew desperate and hunted it away, whichever first happened. The other note is a harsh, grating sound, usually known as the alarm note, though it is made use of by the bird quite ordinarily.

The Wagtail nests from September till December, October being the month when most eggs are to be seen. The nest is a round cup, lined with horse hair or fine rootlets, bound externally with cobwebs, and is placed on a horizontal fork of a tree, frequently projecting over water. Willows and redgums are favourite nest-trees, but any kind will serve. I remember seeing a nest at Lake Connewarre, built about 25 feet up in a she-oak—an unusual height; about 8 feet from the ground is common.

Three or four eggs are laid, creamy buff as to ground-colour, with a well-defined circle of red, brown, and lilac spots.

The bird might possibly be confused, at first sight, with the Restless Flycatcher, but the latter has a white throat, while the Wagtail's throat is black. The Satin Flycatcher has a black throat, but is a slender bird and has not an expansive tail; further, it is very rare.

SATIN OR SHINING FLYCATCHER

Myiagra nitida nitida

IN this rare and interesting species the male has throat and upper surface glossy black, breast and

abdomen white. The female has the upper surface duller than it is in the male, and the throat of a rusty-red colour. In and about the town we only see it as it passes through, in autumn, as it goes northward to spend the winter in the dry interior; and again at the approach of summer, when it is returning to the Otway Forest, where it breeds. In Geelong itself I have only seen male birds, never a female; and rarely more than one or two males in a year.

I have notes of a male bird seen at the Gum Flat, near Anglesea, on April 21st, 1902; another in Garden Street, Geelong, on November 28th of the same year. On December 3rd, 1911, I saw one, also a male, between Jan Juc and Anglesea; and I noticed another some years back, in October, in the ti-tree at the mouth of Bream Creek.

The note of the male bird is a harsh, resounding trill, a little like one of the notes of the Restless Flycatcher, but shriller. When this bird is perched on a tree (usually it chooses very high branches), it has a habit of violently agitating its tail, not moving it any great way to either side, but giving it a kind of rapid shivering motion, and calling the while.

At Airey's Inlet this species once bred regularly, but no longer does so. In November, 1894, I found two nests, each with the bird sitting, built within a hundred yards of each other, in messmate trees on the flat near the bridges. Each was at a height of about 30 feet, but placed on a slender horizontal fork of an inaccessible branch.

Present-day breeding-places would probably be Lorne and Anakie. I saw one bird at the latter place on November 1st, 1891, the date indicating that it would nest locally.

Like the next species, the Satin Flycatcher has erectile feathers at the back of the head which it puts up like a crest when calling.

RESTLESS FLYCATCHER

Seisura inquieta inquieta

VERY often this is mistaken for the Common Wagtail : it is of about the same size, but may be known by having a pure white throat. The sexes are practically alike in plumage. This bird is sometimes known as the Crested Wagtail, because it can erect the feathers on the occiput into what looks like a short crest.

It is well distributed through the district, and resides all the year round wherever it breeds, but it is not nearly so common a bird as the Wagtail. Nor does it exhibit the same liking for water ; I have seen several nests with eggs in the district, but all were built in trees in well-wooded country and not near water. The favourite haunt of the species is gum scrub of medium growth, such as exists on the outskirts of the bush about Jan Juc and at the You Yangs. It is also resident at the Dog Rocks, and occurs here and there throughout the woodlands between Ocean Grove and Drysdale.

It has a variety of notes. One, the most frequently

heard, has given the bird the name of Scissors-grinder—it is exactly like the sound of sharpening scissors on a wheel. This noise is made while the bird is hovering in the air at a few feet above the ground, agitating its wings violently. The other notes are a loud whistle only heard in the breeding-season, and a trill resembling that of the Satin Flycatcher.

The Restless Flycatcher breeds in the months of September, October, and November. The nest is round, warmly lined with rabbit or other fur, and feathers, and ornamented on the outside with pieces of bark, lichens, and cocoons, which render it one of the most beautiful among our Flycatchers' nests. It is situated usually at from 10 to 20 feet from the ground on a horizontal gum bough. The eggs are usually four, lighter in ground-colour than the Wag-tail's, and more boldly spotted with lilac and brown.

These birds visit the Eastern Park occasionally, but any passage-movement is exceptional with the species, and it is in no sense migratory.

BLACK-FACED CUCKOO-SHRIKE

Coracina novæ-hollandiæ melanops

EXCEPT in the breeding-season, or say from the middle of September till the end of November, this bird, which may be better known under the names of Blue Jay or Graucalus, is always moving about either singly or in small companies from place to place, in a more irregular fashion than any other bird, except

some of the Parrots. This is the more remarkable in that it is an insectivorous bird, and, one would think, could find suitable food in most places.

Its uniform bluish-grey body and strongly contrasting black face make it a noticeable bird; it is rather larger than the Pallid Cuckoo, which in build it somewhat resembles. Its flight is distinctive; a few very fast wing-beats and then a float, then more wing-beats, another float, and so on, giving an effect of graceful rising and falling. The note is a flute-like musical trill, generally produced during flight.

I think we see rather more of these birds about Geelong at midwinter than at any other time. The Dog Rocks are a favourite place of call for them, as also is the Eastern Park. Indeed, they will make in their peregrinations for any locality which offers tallish gums, for it is these trees they love to perch in.

The only nests I have found were two near Ocean Grove in October and November, 1896; each was a very slight shallow structure of grasses and roots, roughly edged with bits of bark, and was placed in a horizontal fork of a gum tree at about 25 feet from the ground. In one case it was in a live branch, the other a dead one. The eggs in each case were two, of an apple-green ground-colour, and thickly covered with large reddish spots and blotches.

There is no doubt that this species also breeds in the neighbourhood of Jan Juc and throughout the forest north of Anglesea and Airey's Inlet. I think it is on the increase.

WHITE-SHOULDERED CATERPILLAR-EATER

Lalage tricolor tricolor

“LIKE a little Magpie-lark,” I have heard the male of this species described, and though the black-and-white colouring is differently distributed, it will perhaps serve better than anything else to identify a bird which is certainly among the most conspicuous of the smaller birds of the bush. The hen is more plainly coloured; she is brown above, buffy white below, with brown indistinct speckles on the sides and front of the breast.

This is another infra-Australian migrant, and as it is also one of those species which have accepted, within recent years, the hospitality of the Eastern Park, it is not difficult to observe its movements. It would seem to spend the winter in the north of New South Wales, and makes its appearance about Geelong simultaneously with the arrival of the Rufous Thickhead, about a month after the Pallid Cuckoo.

From 1886 to 1897 I do not remember seeing this bird in the Park, as I believe I should have done had it come there; but for the last seventeen years it has been an unfailing annual visitor, and there must be now a dozen pairs there every spring, making their clear ringing calls heard on all sides. When they first arrive, the male birds seem charged with restlessness; they are for ever perching on the top of some tree,

flying down in a long glide to the ground, back again, next poising in mid-air (doubtless over an unseen caterpillar), and so on—never still for an instant. The flight varies: sometimes, as when nest-building, it is direct; at others as uncertain as a Swallow's.

An account of the way in which the nest is built is given by "Mallee Bird" in the *Argus* of September 13th, 1912: "The male started by collecting small bits of fibre and cobwebs. After he had laid two or three layers to form a foundation, the female came with some material and took up a position in the centre of the nest. When the male arrived with more material, she helped him to place it in position, putting her beak over the outer edge, employing it and her throat much in the same way as a mason uses his trowel for the purpose of smoothing, and thus working all round the outside of the nest. The time that the male took in getting material and returning was between thirty and forty seconds. The birds only worked for a short period in the early morning; then about the same time again in the afternoon. The male gathered most of the material for the outside, while his mate attended to the inside decoration and lining of the nest. So the work went on, taking two days to finish. The first egg was laid on the second day after the nest was completed."

The nest is built upon a horizontal fork, and is a neat, small, and shallow structure. Trees favoured are pines, banksias, and she-oaks; the usual height

for the nest-site is about 8 feet from the ground, but the first nest I found was 60 feet up on a projecting branch of a giant ironbark at Airey's Inlet. In that case, also, the male did all the fetching and carrying of material for the nest, going over a hundred yards for it ; I did not see the female at the nest.

This bird is a regular spring visitor to the You Yangs, Dog Rocks, and Jan Juc bush.

GROUND-BIRD OR SPOTTED GROUND-THRUSH

Cinclosoma punctatum neglectum

TRAVELLERS by vehicle from Jan Juc to Anglesea and Airey's Inlet may have noticed a bird of varied plumage rise, with a whirr like a Quail, from the heathy growth by the roadside, to pitch abruptly, after a low, rockety, undulating flight, a matter of 20 or 30 yards farther off. This is the Spotted Ground-thrush, a bird which, while now becoming rare, is still well distributed over the more secluded belts of bush, and may be found all the year round at Ocean Grove, Anakie, and the forest about Anglesea. It has no migratory movements, but in the autumn, after the first rains, one comes sometimes upon half a dozen birds together.

The male has a black throat and chest-band ; the female's throat is whitish, and she has no pectoral band.

The food of this species consists entirely of ground-dwelling insects. Very rarely, indeed, does the bird fly up into a tree when flushed, but it can run at considerable speed along the ground.

The only note of the Spotted Ground-thrush is a long whistle, low but clear; I have not heard it save in the breeding-season, when mated birds are calling to each other.

August 22nd is the earliest record I have of a nest with eggs; that was in 1891, near Marcus. I observed a nest in the same district with young on October 31st in the same year. The nest is a loose, open structure of strips of gum bark and leaves, placed on the ground in the shelter of a fallen log.

Two is the invariable clutch of eggs: they are white, thickly covered with spots, mostly small, of brown and lilac. The down on the young is sooty black. To judge from the number of individuals seen in family groups in the autumn, I think it probable that two broods are hatched in the season.

GEELONG GROUND-WREN

Hylacola pyrrhopygia belcheri

THE Hylacolas are desert-loving birds, and, except for a single specimen recorded from Lethbridge and another from Dandenong, were not known until recently to inhabit any part of Victoria south of the Dividing Range.

In October, 1910, with my friend Mr. R. P.

NEAR ANGLESEA: HAUNT OF GEELONG GROUND-WREN.

Godfrey, I was taking a short cut by the hill-track through Mr. Alexander McDonald's (then Mr. Harvey Sichlau's) Norsewood Estate at Anglesea, and when nearing the top I heard the note of a bird which was new to me, a short, rasping chirp, and caught sight of a small brown bird with conspicuous chestnut rump, as it flew from one grass tree to another, into which it ran among the leaves at the base. We put it up several times with considerable difficulty, for it would not fly until one got right to the bush where it was, and then it generally made a hurried exit on the opposite side. It was rather like a *Calamanthus*, or even a *Sericornis*, but the bright reddish rump-patch is not seen on any species of those genera, and, remembering the name "Red-rumped *Hylacola*," we concluded that this was one—the first and only time I have found a vernacular name of any use for identification purposes.

Two years later, on October 16th, 1912, Mr. Hugh Riordan and I came suddenly upon a little group of five of the same birds, on the other side of Anglesea on a gravelly ridge clad with stunted gums, heath, and desert-loving herbage, which overlooks Point Roadknight. They were making the same noise as the bird I had seen at Norsewood, and now for the first time I observed their actions on the ground. They ran with tail held up at right angles to the body, at great speed, and dodged in and out of the fallen brushwood in most agile fashion. In perching they also held the tail high, after the manner of a

Calamanthus. We obtained two of these birds and sent the skins to England, where Mr. Gregory Mathews declared them to be young birds of a new sub-species of the Red-rumped Hylacola, to which he gave the vernacular name of Geelong Ground-wren.

On December 29th, 1912, I met with another pair at Airey's; they were on a piece of scrubby, ferny ground on the hillside between Lugg's and the Lighthouse. These birds first drew my attention by their song, a sweet warbling strain suggesting somewhat that of the Calamanthus, quite different from the harsh note I had previously heard, and delivered from the top of a low bush where the bird stood perched with tail erect.

Judging that the headquarters of the species would prove to lie somewhere on the barren grass-tree country between Wensleydale and the coast, I arranged with Mr. Herbert A. Purnell to make a walking-tour from the Saddle to Anglesea, on a route which would take us through the heart of it. This we carried out on September 20th, 1913, and had not gone more than a mile south from Wensleydale before we met with our first pair of the birds. Six other pairs we observed before nightfall, and of the last we found the nest, seeing the bird fly from it, a domed structure of grasses placed in a small hollow in the ground which the birds had scraped out at the foot of a tuft of herbage. It was lined warmly with feathers and had an entrance at the side. The three eggs were of a purplish white ground-colour

with dark markings, resembling closely those of the Calamanthus.

I should expect to find this species in the somewhat similar barren country about Stieglitz.

BABBLER

Pomatostomus temporalis tregellasi

ABOUT the size of the Minah, with dark brown upper surface, white chest, broad white stripe over the eye, and conspicuous white-tipped tail, the Babbler (also called Chatterer, Parson Bird, and Twelve Apostles) is a bird which one can hardly fail to notice if in the vicinity. But it is not nearly so common as once it was: there are a pair or two in an acacia-hedged paddock, on the Barwon Heads Road, about eight miles out; a small flock near Mount Duneed; odd birds on the back road to Ocean Grove; and a fair number at the foot of the You Yangs, at Gnarwarre, and towards Paraparap. That is all. Once they were spread throughout the district.

It is the habit of the Babbler to feed in a small company on the ground; when disturbed they fly with a noisy chattering sound to the nearest tree and hop one after the other up a branch till they get to the top, which, as each attains, he flies off to the next tree, where the process is repeated as if it were a game of follow-my-leader. The chattering is interspersed with a loud, very unmusical whistle.

Much mystery still attaches to the nesting-habits of these birds. One sometimes finds half a dozen to twenty nests in an area of, perhaps, a hundred yards square; they are built either in she-oak, bursaria (prickly box), or gum trees, or in an acacia hedge; enormous structures of sticks, domed, with a spout entrance on the outer side of the tree (they are always placed at the extremity of a branch) near the top. The entrance generally appears closed, as if the birds pulled twigs across it when they left. Rarely have I known more than one nest in one of these groups to contain eggs. It may be that the birds build a lot of dummy nests, or use some of them as camping-places only. Nor do we know whether the whole flock builds the nests co-operatively, or whether each pair is responsible for its own arrangements.

The eggs number up to six, and are laid on a bed of soft powdered bark, or, as it has sometimes appeared, dry horse- or cow-dung. They are whitish in ground-colour, lightly blotched with purple and crossed and re-crossed with fine hair-like lines of black, which give a curious marbled appearance. These hair-lines rub off easily when the eggs are fresh, and seem to be caused by the deposit on the surface of the egg, at the moment of extrusion, of a very fine filmy web.

Towards the end of July most eggs are laid. I have also found them in August, but rarely later.

COCKTAIL

Calamanthus fuliginosus albiloris

I OBSERVE that this bird is called in the books the Striated Field-wren. I do not see why we should not call it *Calamanthus* simply: it is easy to say, and is probably used by quite a number of working ornithologists. But as it seems *de rigueur* to employ an English name, I choose one which has been used for years by some very old friends of mine for this bird, and has the merit of suggesting at once a characteristic attitude of the species. I do not like the name Striated Field-wren. Certainly the bird is streaked; but it is not a Wren, and the word "field" is out of place in this country, even if the bird inhabited fields, which it does not. Also there are so many names of this type—Striated Field-wren, Grass-bird, Grass-warbler, Grass-wren, Ground-wren, Scrub-wren, and Little Field-wren,—none of which express any distinctive character, that one gets simply confused and cannot remember which is which. At least, speaking for myself, I never can.

It is plentiful enough, this species, as soon as one gets a few miles out of town, along any road to the south and east. Furze hedges by the roadside are a great resort: you may see the bird, rather like a small Ground-lark, but with tail held up over its back after the manner of the Blue Wrens, perched a few moments on the fence-post, pouring forth a

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sweet, high song before he drops among the sheltering grass at the hedge-foot. Then there are other classes of country the bird loves—the “samphire” scrub at the Salt Works, and all the way round to Point Henry; and again marshy ground with a heavy growth of tussocks, such as the Big Marsh running from Connewarre across the Barwon Heads Road almost to the sea, or like that which lies along the lower reaches of all our “dim-weeded ocean creeks” and within the sand-hummocks. On the grass-tree plain near Torquay it is abundant, and is found at intervals throughout the drier parts of the forest beyond. It does not occur in the denser wet forest past Airey’s Inlet. North and west of Geelong you will find it wherever there are areas of tussock-grass. Its favourite position, when not on the ground, where it spends most of its time feeding on insects, is perched on the top of a low bush.

Nests may be found from July to December; most eggs are, I think, laid in August. A nest found on December 1st, 1912, in the middle of the Big Marsh, Barwon Heads Road, contained three hard-set eggs. It was placed on the slightly raised earth in the middle of a tussock about 2 feet high; though resting on the ground, it was also built among the bases of the grass-stems. It had quite a wide opening with a sort of ledge or rim on the outside, the eggs being in a pocket below. The nest was very slightly domed, the opening taking up nearly all one side. As to material, its composition was fine. Exteriorly

CALAMANTHUS' NEST IN TUSOCK, BIG MARSH, CONNEWARRE.

it was of the dead stalks, about 3 inches long, of some species of flowering grass; these showed the dead seed-heads in most cases, and in some the roots also, and must have meant at least two hundred journeys for the birds. There were a few bits of "bark" from the thick stems of the thatch-grass, and some pieces which looked like dry, segmented branches of a water-plant. The eggs rested on a pad of feathers, including those of the Spotted Crake, some of smaller birds, and one small, downy Swan's feather. Interwoven in this pad was a very little of the fur of some small animal, probably a rat. Beneath the feather-pad the nest-material was denser but of finer pieces than the external wall, being of short bits of exceedingly fine, almost hair-like grass.

The eggs were buff-coloured, spotted and blotched rufous and chestnut.

Sportsmen call this bird "Stinker," as it has a strong smell, and dogs set to it.

BROWN SONG-LARK

Cinclorhamphus cruralis cruralis

A PECULIARITY of this species is that the male is more than twice as big as the female. Both are brown in general plumage; but the female is considerably lighter in colour than her mate.

It is a summer visitor to this district from the north, coming in October and leaving in February, but is more often seen in some years than others. Its

favourite haunts are wide grassy meadows remote from habitation, such as the low-lying land between the second breakwater and the southern arm of Lake Connewarre, or uncultivated strips adjoining crop-lands. In such places it nests, making a loose open structure of dried grasses in a slight depression sheltered by a tuft of growing grass; the nest has not yet, however, been recorded from this district. The eggs are three or four in number, of a white ground-colour thickly freckled with small red spots.

The Brown Song-lark has a loud strident note, uttered as it rises abruptly from the ground and soars into the air. I have only heard the male. I never saw this species perch in trees, and only occasionally on a fence; it is a ground-loving bird.

The last one I saw was at Ceres. I have also met with it at Gheringhap and Warren Ponds. It is never a common bird.

RUFOUS SONG-LARK

Ptenœdus mathewsi vigorsii

IN the middle eighties boys living near the Eastern Park called this bird the "Indian Ground-lark," by way of differentiating it from the Common Pipit or Ground-lark, to which it bears a superficial resemblance. But the song of the male at once distinguishes it; few of our birds have a richer, fuller series of notes. It rises from the ground with a burst of song, sings all the time as it flies higher and higher in a series of

upward movements with partial descents between, and continues singing after it has perched on the top of some tree, whence presently it will fly back to earth again.

These birds have from time to time visited the Eastern Park in the spring and bred there, coming in October and leaving in January. But there have been long periods during which they have not come to us. From 1885 till about 1892 they were in the Park every year; then they came no more till about 1898; after which they appeared regularly up till and including the spring of 1901, since when we have not seen them. It may be more than a coincidence that 1902 was the year of the great drought in New South Wales and Queensland.

The nest rests on the ground at the foot of a clump of coarse grass; in the Eastern Park the birds usually nested close to the old filled-in pond. The eggs are of a purplish-white ground-colour thickly sprinkled with red; their brightness of colouring would mark them out at once from the eggs of the Ground-lark.

GROUND OR MOUNTAIN THRUSH

Oreocincla lunulata dendyi

It is now over twenty years since I last saw a specimen of this shy and forest-loving Thrush in Geelong, whither at one time an odd bird or two came in the winter, frequenting shrubberies in public and private

gardens. Now, I think, it is not to be found nearer than Anglesea, nor is it plentiful there. I spent a fortnight there in October, 1912, without seeing a bird, though two old nests, which had been tenanted earlier in the year, were pointed out to me. From Airey's westwards it is met with more frequently, and at Lorne is never hard to get a sight of in the deep gullies with huge moss-grown boulders, over which the birds trip silently, in search of the small fresh-water snails that form a chief part of their diet.

Roughly it may be said to look something like a very large English Thrush. The upper surface is olive-brown, each feather having a crescentic mark of black at the tip, the under surface white with similar black marks on each feather; so that the bird appears to have a heavily-mottled breast. In habits it is one of the quietest we have, and is rarely seen in the open, preferring the half-lights of the deepest gullies. Here one may catch, sometimes, a faint rustle, and perceive the Thrush busy among leaf-mould on the ground. If disturbed, it flies low down and quietly, never going very far.

In winter and spring, particularly about sunrise and sunset, one hears the song of the Ground Thrush, not much louder than a Robin's, but varied and sweet. It would remind an Englishman of the Robin's winter song at home.

The nest is unmistakable: it is rather larger than an English Thrush's, and is lined with rootlets and ornamented outside with moss as is no other bird's

MOUNTAIN THRUSH'S NEST, ANGLESEA.

of its size. It is placed either in a hollow, on top of a dead stump, or in the upright fork of a tree near a creek, or in a damp gully, and at about 8 or 10 feet from the ground. The eggs number usually two, and are greenish stone-colour, heavily marked with reddish brown; they are not unlike large eggs of the Blackbird.

Only once have I known this bird to breed on the eastern side of the town. I found a nest with two new-hatched young near Grub Lane on the Queens-cliff Road, on September 3rd, 1892; it was in the central upright fork of a native honeysuckle, about 5 feet from the ground. Another nest, with two eggs, which I found at Airey's Inlet on July 18th, 1893, was about 15 feet up in a well-grown ironbark sapling.

WHITE-FRONTED CHAT

Epthianura albifrons albifrons

WITH grey upper surface and white breast crossed by a black band, the Chat or, as it is variously called, Tintat, Dotterel, Tang, Tinnie, Ringneck, or Ringdove, is one of the best-known little birds we have, and so is likely to continue, for it accommodates itself well to a life in the vicinity of human dwellings, and appears to have few formidable enemies.

The local names given above are all founded in good sense. "Tintat," "Tinnie," and "Tang"

come from the plaintive single note which the last name expresses exactly. "Dotterel," I suppose, refers to the bird's appearance when on the ground or the sea-beach, where it runs about quite like a Sandpiper; and of course the names "Ringneck" and "Ringdove" refer to its black pectoral crescent, which, by the way, is much fainter in the female, she being altogether a duller-coloured bird than the male.

I suppose others have noticed how like the Chat's note is to that of the Chestnut-eared Finch; we do not get the latter bird in this district, however, so no difficulty will be occasioned to the bird-observer by reason of the similarity.

It is easier to say where the Chat is not found than where it is. Excluding timber country, which it does not like, the Chat is found throughout the length and breadth of our district, having an especial preference for river estuaries and samphire flats near the sea, and for patches of furze. In the autumn you may find it in bands; I saw hundreds together following the plough for worms and insects on a farm at Avalon on April 29th, 1912. Of these birds the great majority were males.

The nesting-season runs from August to December. I should be inclined to say that most of the birds lay in October; but the season is much earlier in the north (about the You Yangs) and later at the Connewarre Lakes.

I have seen the nest in a great variety of bushes and herbage, in which it is placed usually not more

CHAT'S NEST IN FURZE BUSH, CONNEWARRE.

than 3 feet from the ground. Of these nest-bushes I may mention samphire, lignum, furze, kangaroo-acacia, tussock, and giant thistle. Once I found a nest at, Moolap, placed right on the ground in the grass on the steeply sloping side of a ditch. It is always well concealed. The eggs number usually three, sometimes four, and are white in ground-colour and spotted sparingly with red. In one variety the markings are nearly black.

Greatly discussed has been this bird's habit of fluttering off the nest and along the ground in front of one, as if simulating a broken wing, and inciting to a pursuit which will draw the intruder away from its nest. Now, I don't think this is quite what is in the bird's mind. The habit is probably not merely fifty years old nor yet five hundred; I imagine that Australian Chats fluttered in much the same way before there were even any blacks in Australia, yes, maybe what time the lumbering *Diplodocus* crashed heavily through the samphire swamp where now the glistening salt awaits the harvest. For habits like this do not grow in a day, and even fifty years ago these birds had naught to fear from man.

Not cunning device, but semi-paralysed fear, is the cause of the phenomenon, in my opinion. You will observe the bird to flutter farther and be apparently more distressed the nearer her eggs are to hatching, and the more her maternal instinct and anxiety for her treasures are developed. She, sitting close, becomes aware of some disturbing noise. If she has sufficient

brain-development to go through the mental processes involved in recognising (without seeing the intruder) that it is a human being, that he will wish to catch her, that there are such things as broken wings, which by feigning she may lure him on to follow her; if she is wise enough to reason thus, she is also wise enough to sit tight and escape observation altogether—but she does not.

A nest found in a furze bush near the Big Marsh, Connewarre, on December 1st, 1912, was well hidden in the bush, but had four long pieces of thatch-grass, one a foot long, with one end worked loosely into the nest and the other projecting on to the outside of the bush, and so rendering the nest easy to find. It is possible these straws are left purposely by the birds as guiding-lines: I have seen them very often. This nest was built exteriorly of dead grass-stems and roots, the former in many cases showing the dead seed-heads still attached, and several little clumps of grass with roots and all. There was one piece of dead furze. Thus was formed the base; the nest proper was cup-shaped, 3 inches across and $1\frac{1}{2}$ deep; the rim formed of longer stems, running, some of them, round the greater part of the circumference, and the cup itself formed of finer grass-stems without seeds or roots. The lining-pad was of horse-hair, and a very little of the grey fur of some small animal. There was not a single feather employed anywhere in building the nest.

REED-WARBLER

Conopoderas australis australis

HERE is another familiar bird ; without question our finest native songster, and probably the only one of our birds which our European friends would admit to have any song at all.

It is an infra-Australian migrant. How far into the continent it wanders in winter we do not yet know, but it appears with regularity in the Geelong district in the first warm days of spring. The first arrivals chirp from the reed-beds along the Moorabool, at Fyansford, in the earliest days of September ; after that their numbers increase till, in mid-October, when nesting has fairly commenced, every patch of reeds below the junction of the rivers has at least its pair of birds. They go farther up the Barwon than its sister stream, and are plentiful as far as Ceres Bridge, just below which certain reedy waterholes on the river-flat are crowded with the Reed-warblers, and a great volume of happy song and busy nest-building chuckling pours without intermission from dawn to dark in the early summer days.

The bird is not difficult to identify, for it is the only small bird which inhabits the reed-beds of the upper reaches ; it is dark brown above, lighter below, with whitish throat, and is usually seen flying hurriedly, with a quick fluttering motion, close to the water from one patch of reeds to another.

The nest is built of dry, soft reed-skins, lined with fine grasses or flower of reeds, cup-shaped and deep, and is supported by three or four stems of the pipe-reeds, growing in the water, round which the exterior walls of the nest are woven.

The eggs number three, and are of a greyish ground-colour with irregular blotches of brown, lilac, and yellow.

Sometimes the nest is built in a willow tree in swampy localities; one was once found in Kardinia Park in such a site. In certain gardens in Newtown there are clumps of tall bamboo, from which, about the middle of September, Reed-warblers' notes are frequently heard, and I should think they nested there.

Whether the Reed-warbler migrates by day or night is not known. The birds become silent soon after the New Year, and by April the last have left us for the season.

CROP-WARBLER

Cisticola exilis exilis

THIS is a very small bird, not more than 4 inches long; an inconspicuous little creature, blackish brown above and buff below, but readily identifiable by its song once this has been heard. It is a short, rich trill, often repeated, and is delivered while the bird is rising from the crop into the air, which it does with a buzzing motion of the wings and short jerky graduations, mounting till one can hardly see it.

With only one other bird could it be confused: Horsfield's Bush Lark, which inhabits the same sort of country—that is, fields of oats and wheat. But the Lark is larger and very much commoner, and has not, when in the air, the butterfly-like appearance of the Crop-warbler.

Another of our Australian migrants, it reaches us when the oat-crops are well forward, and leaves again for the north not long after harvest. The earliest of the few records I have is of one seen singing over a crop at "Gillies," on the Barwon Heads Road on October 14th, 1911. In November it is frequently to be noted in crops all through the district, except within about three miles of the town; at this season many of the birds also resort to the marginal strip of fine tussock-grass which fringes the Barwon between the Willows and the "Gut," and the bulrush-covered edges of some of the shallow arms of Connewarre: these places, no doubt, were the sole resort of the species in days before there were any crops.

The nest is a small purse-shaped structure of fine grasses and lined with seed-down; it is slung between stalks of grain or in the centre of a tussock. The eggs are beautiful bluish green with a few reddish spots.

LITTLE GRASS-BIRD

Poodytes gramineus wilsoni

WHOEVER has gone shooting at Connewarre or over almost any swampy country in the district has heard

a low, melancholy, whistling note issuing from out low bushes. That is the Little Grass-bird, a plainly coloured bird, brown above, and grey faintly streaked with brown below. It is a resident and non-migratory species, and is especially plentiful all over the flat country immediately west of Lake Connewarre. Another favourite resort is the samphire scrub near the Salt Works, and about the mouth of Bream Creek.

It has not diminished in numbers, as have so many of our birds. On November 26th, 1911, we found it plentiful along the north-west shore of the Lake from Campbell's Point to Fisherman's, haunting the lignum bushes, and again among the lignums bordering the Reedy Lake water-reserve. On the north bank of the "Hospital Lake" it was in great numbers; inhabiting in this locality the rushes intergrown with couch grass. Eight nests with eggs were noted during the day, six with three each and two with four each.

The nests were roughly built of dried grasses, in form deep cups, and invariably were lined with large feathers, sometimes whitish, more usually dark, Swan's being the commonest, plucked from the dead bird. A few of these feathers usually curl over as if to shelter the eggs. Some nests were found just ready, others had young; but this appeared to be about the height of the breeding-season. As to site, two of the nests with eggs were found in the rushes, the rest in lignum bushes; the height of the nest from

NEST OF LITTLE GRASS-BIRD, SHOWING SWAN-FEATHERS BENT OVER EGGS.

the ground varied from a few inches to about 3 feet. Many times birds rose from the pipe-reeds and typha bulrushes, but in neither of these did we find nests.

The whistle is double- or treble-noted, musical, and easily imitated. There is also a harsh, chattering alarm note. In flight the long wedge-shaped tail is the bird's conspicuous distinguishing mark. I was informed by Mr. Purnell that these birds kept whistling about their camp on the Lake bank all through the preceding night. Except the Chat, it is the commonest indigenous land-bird at the Lakes.

On December 1st, 1912, I found several nests in thatch-grass in the Big Marsh, Barwon Heads Road. Two were side by side in the same tussock, one containing broken eggs and the other newly hatched young.

At Point Henry the nest is built in the samphire. I once saw one in a box-thorn hedge near Lake Connewarre; another at the Gut was built among pipe-reeds in the water, the usual site near Melbourne and a most unusual one here. The immense majority are in the low lignum bushes.

This is a description of a nest from the thatch-grass in the Big Marsh: Deep, cup-shaped, narrower at top, built externally of dry grass, including a few pieces of thatch-grass, very few seed-heads or roots. In the lining, consisting of about fifty feathers, were identifiable many feathers of the Spotted Water-crake, a few primaries and secondaries of small birds

and some larger buff-coloured feathers with down at base, and one like a Guinea-fowl's.

The eggs are white, thickly freckled all over with very small red spots, sometimes so as to form a ring at the larger end.

The earliest I ever saw eggs was on July 27th, 1891, (in lignum bush at Connewarre). The season continues till the end of the year.

It is a bird of skulking habits, not flying till forced to, and then low down near the ground.

CHOCOLATE-BIRD

Chthonicola sagittata inexpectata

I GIVE the district schoolboy name for the bird, taken from the colour of its eggs; chiefly because it is the name I am used to, but also because it is quite as good as any other, and not in the least confusing. It may be inapposite, but it is not more so than Striated Field-wren. Some of these English names for Australian birds will not be definitely settled before the species become extinct.

It is a resident species, having no migratory or seasonal movements, but must be classed as one of our rarer birds. Two or three pairs inhabit the southern slope of Station Peak; others may be met with along the northern edge of the forest between Torquay and Jan Juc and farther west. Formerly the bush between Drysdale and Ocean Grove was a

favourite spot for them. Curiously enough for such a bush-loving bird, a few have at times lived in the Eastern Park, and in 1904 to my knowledge a pair nested there.

It is rather less in size than the Sparrow, which in its mode of flight it resembles; it has a brown back with white breast, strongly striped longitudinally with blackish brown. These stripes are easily visible, and with the white superciliary stripe are characteristic distinguishing marks.

It usually feeds in pairs on the ground in timbered country where there are many fallen logs and branches lying about; when disturbed, the birds fly up with a chirp, and settle, perhaps, thirty yards farther on: they are very easy to approach. In the breeding-season, say early October to December, they have a varied and pleasing little song, not loud but sweet. They fly at a height of from 10 to 12 feet, and perch readily on bushes and trees when flushed from the ground.

For the nest a slightly-rounded hollow is first scraped out in the ground under the shelter of a tuft of herbage; in this is built a neat, domed nest of grass, with side entrance. It is one of the hardest nests to find, unless you see the bird carrying building-material or flush her from it at your feet as you walk. The eggs are usually three, of a warm reddish-chocolate colour, sometimes with a few dark spots.

BROWN TIT

Acanthiza pusilla macularia

THERE are three kinds of Tits, all common at one point or another of the district; and sometimes two of these, at least, are found together. In the bush, without killing the birds, it is only possible to distinguish them by learning the several notes and observing the kind of trees or shrubs frequented, for each in this regard has its predilections. Shortly, one may say that the Brown Tit is universally distributed through the district in parts where there is bushy undergrowth; that the Little Tit is (outside the Eastern Park) only found where there is a good deal of acacia, either *decurrrens* (black wattle) or *pyncnantha* (golden wattle); and that the Striated Tit is confined to the gum forests about Ocean Grove (where it is rare), and from Jan Juc westwards right through the Otway (where it is common).

If it is desired to kill a bird or two for identification, you may observe that the Little Tit is distinguished from either of the others by a yellowish wash on the belly, and *not* by its size—for they are all practically the same size—the Brown Tit has little roundish or crescentic marks on its forehead, and the Striated Tit has distinct streaks on its forehead.

There are two other birds very like these Tits—the Tomtit and the Bush Tomtit; but each of the latter has a bright-coloured rump, and none of the other Tits has.

NEST OF BROWN TIT IN SWORD-CRASS, MOUNT MISERY, ANGLESEA.

To commence, then, with the Brown Tit. It is quite usually found in gardens in the town : I once saw a nest built in some creeper growing on wire-netting only a foot or two away from a library window. In the Eastern Park many pairs breed annually. It is common along those parts of the shore of Lake Connewarre where there are well-grown ti-trees, and in the belts of star-flowered *Leptospermum* which grow on the shoreside of the coast sandhills it is found from Point Lonsdale to Airey's Inlet and beyond. In fact you will find it anywhere where there are thickly foliated trees or bushes, from the young pines at the You Yangs to those grey shrubs that grow near the beach at Torquay. It inhabits the banks of both the rivers above the junction.

It spends its time in the thicker shrubs or in bracken or undergrowth near the ground, never haunting the topmost branches of tall gums, as do the two others of its genus. From time to time it utters a short strain of song, sweet and rather loud for so small a bird.

Nests of this species, with eggs, may be found at any time from the beginning of August till the end of October ; about the end of August, however, is the usual breeding-season. The nest is generally built in a thick bush within 6 feet of the ground. I have, however, seen one in quite an exposed position, about 12 feet from the ground, in a banksia ; while another, at Bull's Well, was suspended, like the nest of the Striated Tit, among the leaves of an over-

hanging ironbark, quite 15 feet up. At the You Yangs the nest is commonly placed in a kangaroo-acacia bush. In the forest a favourite site is a clump of dwarf ti-tree growing by the roadside in a wet patch of country.

The nest is domed and is neatly constructed of fine grasses and lined with fur and feathers; it does not, however, compare for beauty with either of the other *Acanthizas*' nests. Its small, round entrance marks it off from the Blue Wren's nest.

The eggs, always three in number, are white, with a well-defined ring of red spots round the larger end.

LITTLE TIT

Acanthiza nana mathewsi

I DID not identify this species before the year 1901, but ever since that date it has gradually become one of the commonest small birds in the Eastern Park and neighbouring streets and crescents, where it is to be seen in the topmost branches of pepper trees prospecting for blight (*aphides*) and similar small insects. In the Park it affects the tall sugar-gums which form an avenue along the south drive; from the tops of the trees its faint double chirps may be heard continually, the birds remaining vocal all through the year. It is easier to distinguish in the smaller pepper trees, for, these being so much lower, one can without difficulty make out the yellowish

under surface which marks the bird out from its congeners.

In the district outside the town its distribution is somewhat capricious; though where once it is established it remains the year round, and breeds. At the You Yangs it is not uncommon, generally keeping to redgum saplings and the large black-wattle trees (*Acacia decurrens*), of which there are several near the camping-place. At Batesford I once found it nesting in a paddock of golden wattle (*A. pycnantha*) and redgum saplings; the nest was in the topmost twigs of a redgum. I have also noted it at German-town, and about seven miles out along the Anglesea Road, and in wattles at Ocean Grove. Probably it will be found to occur in any area where the golden wattle has been allowed to attain to an age of ten years or upwards.

Of nests I have seen some half-dozen in all; not that it is not quite a regular local-breeding species, but because, of all the 'Tits', this nest is the smallest and hardest to find. One built in a light pine tree in the Eastern Park was practically invisible from below, the tiny round ball of the nest matching exactly in colour the green-grey of the pine-needles. Another, also in the Park, was at the top of a light-foliaged indigenous shrub, whilst a third was in a pepper tree. At the You Yangs the nest is always placed at the very extremity of a black-wattle bough, usually of a large tree, among the feathery fern-shaped leaves. In such a position the nest will pass un-

discovered unless the observer happens to see the bird go to or come out of it.

The nest is small, round, and compact, with a side entrance; often, especially at the You Yangs, ornamented with a little moss on the outside. It is lined with feathers and fur. The three eggs are like those of the Brown Tit, but taper more gradually towards the small end, and are proportionately thinner through in the centre.

I do not think this species is found in the forest from Jan Juc onwards.

STRIATED TIT

Acanthiza lineata chandleri

No small bird is more common in the Otway Forest and the scrub lands about Jan Juc, Anglesea, and Airey's Inlet. On a still grey day in the bush, when the sun is behind clouds and most birds consequently are silent, the little "chip-chip" of the Striated Tit sounds ceaselessly from the messmate tops as the tiny creatures search the smaller boughs for their insect food. When they fly, it is but to another neighbouring branch or tree. Very seldom does one see them near the ground.

I am in doubt whether this species occurs at the Dog Rocks, but it is certainly still to be found in what is left of the eucalyptus bush between Ocean Grove and Drysdale. That is the only place away

NEST OF STRIATED TIT IN IRONBARK SAPLING, BULL'S WELL.

from the Southern Forest where I have with certainty identified it; from analogy, however, I should say it would occur also in the Anakie and Brisbane ranges.

The white streaks on the crown of the head are not, as a rule, visible when one is watching this bird in the branches of a tree, but with a glass one can make out irregular stripe-like blotches on the throat and chest which will serve as identification marks. It could only be confused with the Brown Tit, but as the latter is rarely seen high up in a tree, there is not much chance of mistaking one for the other.

Anglesea is a particularly good place to observe this bird, and there I have seen seven or eight nests. Without exception they were built in gum trees (messmates near Anglesea, young ironbarks in the Bull's Well), and were always suspended in a cluster of long leaves in such a way as to be very hard to see from below. In every instance we found the nest by watching the birds carrying nest-material to it or food to their young.

The nest is neither so small nor so compact as that of the Little Tit, but is very beautiful. Composed outwardly of fine strips and shreds of the reddish bark of the messmate, it is lined with small feathers, fur, and downy substances.

The eggs are three in number, like the other *Acanthizas*', but slightly longer and narrower than those of the Brown Tit. From the Little Tits they are difficult to distinguish. October is the nesting-season.

TOMTIT OR YELLOW-RUMPED TIT

Geobasileus chrysorrhous sandlandi

THE Messmate Forest is the only part of the district in which the Tomtit is not to be found ; there its place is taken, as we shall see, by a close relation. Elsewhere it is widely distributed in all directions, from the You Yangs to Torquay, Queenscliff to Inverleigh, and no bird is better known throughout the countryside. The bright yellow patch at the base of the tail distinguishes it at once from every other small bird.

It is not in any sense migratory, but forms in the autumn into small bands and companies of from half a dozen to twenty or thirty. These break up at the end of May, for the species pairs early ; on one occasion I found a nest half-finished on June 26th, and again hard-set eggs in another on July 9th. I have often noticed that the Tomtits begin to build when the first "spring-flowers" or "harbingers of spring" appear, which is rarely later than the first week in July.

Tomtits, especially when in flocks, feed largely upon the ground, which they search systematically for insects. They sing right through the year, a very merry, lively little strain, which Gould somewhat flatteringly compared to the song of the Goldfinch.

The nesting-season, commencing, as mentioned, in July, goes on until November, probably at least

TOMTIT'S NEST TYPICALLY SITUATED IN OVERHANGING SHE-OAK, TORQUAY.
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two broods being reared ; but the same nest is not used twice.

The nest is a comparatively large and rough structure of dead flowering grasses and rootlets, with a great deal of whitish materials, such as cocoons, seed-pods, and the like, on the outside ; internally it is warmly lined with a thick pad of feathers and rabbit-fur. The entrance is at the side, usually with a slight spout or hood. What has caused much speculation is a sort of second chamber built on top of the nest proper, and usually open, though I have seen it almost completely roofed over. This second chamber is never lined. It is popularly called the "cock's nest" ; but it is not known whether the male bird ever roosts in it. Nor does every nest have it. The Bronze Cuckoo has been known to deposit its egg in this "cock's nest."

There are two situations which, above all others, the Tomtit prefers as nest-sites : one is the projecting boughs of a kangaroo-acacia hedge, the other the drooping overhang of the she-oak. I should say quite 50 per cent. of all Tomtits' nests in this district were built in acacia hedges. It was in such a hedge that I beheld my first Tomtit's nest in August, 1884. It was rather well hidden, as I remember, and about 8 feet from the ground. I was held up by a natural-history-loving uncle, and allowed to see the cosy little domed dwelling and even for a moment to handle a pearly-white egg. Thirty years ago, but the memory is as fresh as this morning's paper.

The eggs number usually three, more rarely four; they are either pure white or have a few small reddish spots here and there. One type has a distinct ring round the top, but of these I have seen very few.

On the Western Plains the Tomtit frequently builds its nest into the base of a huge Crow's nest, and the two families are reared close together, with apparent satisfaction to all concerned.

BUSH TOMTIT OR BUFF-RUMPED TIT

Geobasileus reguloides connectens

THIS bird is obviously closely allied to the Common Tomtit, and takes the place of the latter in the bush. There are, of course, localities where you may find the two species within a few hundred yards of each other—I am thinking particularly of Airey's Inlet—but I do not remember ever to have seen them actually associated. For years, as a boy, I believed they were the same bird; then I noticed that the bush bird had a more "tinny" and less varied song, and not quite such a bright patch on the tail—buff where the Tomtit has yellow.

The resemblance ceases as one considers the nest, which in the case of the present species approximates to those of the other Tits rather than to the Common Tomtit's nest. It is found in one of three positions—namely, between a loose strip of gum-tree bark and the trunk; in a niche or shallow hole on the main

trunk of a big gum tree ; or, thirdly, right on the ground among scrubby herbage. In any case it is built of fine strips of inner bark and fine grasses, but has no cocoons or other white adornment, and presents a reddish appearance. It is domed, with a small entrance hole at the side, and is warmly lined with fur and a few feathers. It is a much smaller and neater nest than the Common Tomtit's.

The eggs number four as a rule, and these, too, are more like one of the *Acanthiza*'s ; they are small and white, with a well-defined ring of reddish-brown spots round the larger end.

The Bush Tomtit lives even more on the ground than does the Common Tomtit, and is generally met with in flocks of about six. As they rise from the ground they all twitter freely, and also give one a chance of identifying them by the buff patch on the rump, which is very conspicuous in flight.

The nesting-season is at its height in September, but Mr. H. A. Purnell found a nest with eggs near Jan Juc on October 13th, 1913. On August 29th, 1891, a nest was found in the same district, in a niche in a messmate trunk about 3 feet from the ground, with one egg. On October 22nd, the following year, it was found to contain three eggs, the birds having relined it. It is most unusual for small birds to use a nest more than once, especially in consecutive years.

The Bush Tomtit is plentiful throughout the eastern part of the Otway Forest and adjoining messmate scrubs ; so also is it at Anakie. At the

You Yangs and the Ocean Grove to Drysdale bush it is less common, but is, nevertheless, to be found in both localities.

OTWAY SCRUB-WREN

Sericornis longirostris harterti

FROM Queenscliff to Point Lonsdale and thence at intervals along the coast, as for instance at the White Bank at Ocean Grove, and the mouth of Bream Creek, there is a more or less dense growth of ti-tree (*Leptospermum*) of the kind which is greatly in favour for making hedges round seaside cottages. This scrub grows immediately on the landward slope of the sand-hummocks, the trees often attaining a considerable size, and so affording shelter to a number of kinds of small birds. Of these undoubtedly the commonest, though from its inconspicuous appearance the least known, is the Scrub-wren or *Sericornis*.

The back is of a dark chestnut-brown, lighter on the tail, and gradually darkening towards the neck and head. Some of the feathers on the forehead and at the base of the bill are white, edged with black or dark brown, giving a spotted appearance; no white stripe over eyebrow; bill horn-colour; eyes black; throat white, some of the feathers having black spots; belly and chest creamy-white clouded with light umber and grey. Tail same as lower back, no markings. Tips of some of the shoulder feathers white, giving effect of spots; flanks light brown. This

description is of a bird obtained by Mr. Mulder at Bambra, but there would appear to be but one species throughout the district.

At Bream Creek these birds abound in the ti-tree. They have a short, rather grating note, very like one of the notes of the Brown Tit, a bird usually present in the same scrub. If one sits down in the shade of a tree and keeps quiet, it will not be more than a few minutes before one or more *Sericornes* come hopping about, moving quietly among the lower branches and brushwood with just an occasional "cheep" until they are within a yard or two. They seem to obtain the insects upon which they live both from the ground and from beneath the loose bark which hangs in untidy strips from the ti-tree. Of short rounded wings, they rarely fly farther than from one bush to the next, or rather to the ground adjacent, where they alight and run into the bush at its base.

At Bambra, where the settlers call them Fern-birds, Mr. Mulder found these birds so tame that they would come into the shed where he was working, and hop about unconcernedly.

As to distribution, the next most favoured area after the coastal thickets is the samphire scrub about the Salt Works, Stingaree Bay. There is, undoubtedly, no difference between these birds and those of the coast, but I am not so sure about those inhabiting the banks of freshwater forest-streams from Airey's Inlet westward; these seem to me rather richer in colouring

and to have more white about them, and may turn out to be subspecifically distinct. Mr. A. G. Campbell has identified the samphire and coast birds as *S. osculans*. Along the Moorabool and Barwon Rivers *Sericornes* are found at intervals, but are not plentiful. At Lake Connewarre they were formerly abundant in the lignums, but have become scarcer in recent years. There are always a few pairs inhabiting gardens in the town, and Mr. A. J. Greenfield tells me that in 1913 a pair nested in the conservatory in the Eastern Park.

The nest is a loose, bulky structure nearly the size of a Sparrow's, and is situated so as to gain security from observation rather by harmony with its surroundings than by actual concealment. In the coastal *Leptospermum* scrub it is placed resting on a broad horizontal fork, where it looks like a collection of loose bark and rubbish which has accidentally collected. At Connewarre Lakes I have seen it 10 or 12 feet up in the bushy extremity of a melaleuca bough, or again set among the long grass growing up the centre of a low lignum bush. At Point Henry Mr. Riordan found one built on the ground among herbage in an open space. On the banks of the Moorabool and at Lorne the nest is placed either right in a grass tussock or in a heap of dead brushwood a foot or two from the ground.

I have found eggs as early as July 20th (Connewarre) and as late as the beginning of December; but August is the chief breeding-month.

Photo by H. Morrow, Esq., per L. de C. Berthon, Esq.

SERICORNIS' NEST BUILT IN STRAW HAT.

Mr. Morrow, of Ballarat, took the photograph facing p. 284 of a nest in an old straw hat at Mr. Berthon's Wybalenna homestead, Airey's Inlet, Christmas, 1912. When the nest was being built the hat was hanging on a peg against the wall just inside a door which was always left open, and the birds flew in and out to it. The nest was not discovered till in the holidays some one took the hat down to wear it, and then the birds deserted the nest before having laid. The hat was put on the floor to be photographed, as in its original position no part of the nest was visible, except one or two pieces of material sticking out.

The entrance to the nest is at the side, usually slightly protected by a "hood." The lining is of soft feathers, and frequently contains one or more feathers of the Rosella Parrot. Eggs number three, and are large for the size of the bird. They somewhat resemble those of the Sparrow, and are of a purplish-white ground-colour with a ring of confluent spots and blotches about the larger end.

BLUE WREN

Malurus cyaneus henriettae

ONE good word the lover of birds may say for the African box thorn, and that is that wherever it has established itself it has materially assisted in the increase of the Blue Wren, one of the loveliest and most charming of our native species. I think everyone knows these cheerful little things. Both sexes

carry the tail high over the back, and move over the ground with great rapidity in a series of tiny hops; but the female, plain brown above and whitish below, is hardly comparable with her splendid mate, whose light metallic-blue crown and upper back, contrasting with the velvety black of the rest of the upper surface, make him the most admired of small birds.

Many, perhaps all, of the males moult once a year, losing then the bright plumage, and taking on for the nonce a sober coat where just an odd glint of blue shows here and there; at that season they are only distinguishable by the black beak and the deep blue of the tail. But you may see, in May, June, July, and August, dozens of male Blue Wrens resplendent in full plumage, so that it is clear that the moult does not occur in all the birds at the same time.

No species is more widespread in its distribution. It is to be found, I should think one is safe in saying, in every country hedgerow in the county of Grant, and is as much at home in our town gardens as in the seclusion of the deep gullies through which tiny creeks trickle down towards the ocean from the Otway hills. Only it must have bushes of a fair size; you will never find it on treeless plains, however thick the tussocks grow. If I had to select the spot where I thought it most abundant, I should say the hill-slopes of Airey's Inlet; but really it is everywhere.

The nest is oval, built of fine grasses externally, and lined with hair and feathers. The side entrance is so large that one can only just say of the nest that

BLUE WREN'S NEST AT FOOT OF LILAC BUSH, TORQUAY.

it is domed ; almost always the eggs are visible from above, and sometimes the opening seems to be right at the top. With the qualification that it is never built more than 3 or 4 feet from the ground, I would say that you can expect to find it in any kind of thick bush or herbage. The first I ever found was in September, 1885, in an acacia hedge (set low down and well into the centre among dead thorny branchlets—a favourite position) ; the last, in October, 1912, was in some heathy plant almost on the ground. I have seen nests in gooseberry bushes, lilac shrubs, rosemary, box thorn, ti-tree, and a dozen different kinds of native bushes.

The eggs are three, rarely four, varying greatly in size. They are white, with a ring of red spots slightly above the middle. Frequently, one egg has larger spots than the rest, and those distributed evenly over the surface.

The Blue Wren is entirely insectivorous. It has a rich, hurried little song, and while it is flying from one bush to another, which it does with a very rapid wing-motion and tail carried straight out behind it, it twitters continuously.

Mr. Mulder notes that the male sometimes breeds before attaining the full adult plumage.

EMU WREN

Stipiturus malachurus tregellasi

THERE are perhaps half a dozen well-defined areas in this district where one may still meet with the

Emu Wren, a species which is little known, both because of its shyness and also of the remoteness of its haunts. It is a beautiful little bird, and interesting if only on account of its extraordinary tail. The feathers of which this is composed are long and skeletonised, suggesting at once the feathers of the Emu (whence the name), or the inner ones of the tail of the Lyre-bird. So fine are they that when the bird is in flight it is hard to see the tail against a dark background, and the tiny creature seems to have none at all. Both sexes have the long tail, but the male may be known from the female by the royal-blue colouring of his throat.

Many pairs still inhabit the samphire scrub fringing the shore at Stingaree Bay and extending thence right round Point Henry to the Outer Harbour. There is a patch of similar scrub bordering the north-eastern side of Lake Connewarre, which I am told is also frequented by this species. Once I met with it in the lignum scrub at the Willows, on the St. Albans side. From the Gum Flat towards Anglesea it is not uncommon in long tussock-grass fringing the creek, and a pair or two may always be seen on Norsewood Estate, where they haunt a patch of dwarf ti-tree growing in a valley where the soil is usually damp. At Airey's Inlet I have observed the birds in heathy country close to the sea, and they are likewise to be found at intervals on the heathy scrub-lands which extend from Wensleydale for some miles towards the coast.

It seems, at first sight, strange that a species generally associated with swampy country should also resort to these bleak, wind-swept uplands; but one may note that even here there are numerous shallow valleys with a thick growth of low ti-tree and other herbage which form ideal spots for the birds, for the ground is kept moist by the showers which fall in these coastal districts more or less throughout the year.

I have only once found the nest. On September 20th, 1913, Mr. H. A. Purnell and I were about a mile south of Wensleydale, on our way to Anglesea, when we heard the faint twitter of these birds (rather like a weak imitation of the Blue Wren) in a heathy bottom; and as we sought to catch sight of them, always a difficult matter with so ground-loving and secretive a bird, one flew out hurriedly from almost beneath my feet. There was the nest, set firmly in the branch of a diminutive ti-tree, a little smaller than a Blue Wren's, but of similar materials and, like it, having a large side entrance; there were three eggs, large for the bird, white, with a ring of reddish spots.

Mr. Purnell found a nest built in samphire scrub at the Salt Works on October 25th, 1913, which contained one egg of the Emu Wren and one of the Narrow-billed Bronze Cuckoo. This nest was, like the nests of most birds which breed in the samphire, constructed entirely of fine dried seaweed of the sort which one finds in large masses on the beach there. It was lined with feathers and other soft materials.

RUFIOUS BRISTLE-BIRD

Maccoyornis broadbenti broadbenti

So far as Victoria is concerned the Rufous Bristle-bird is confined to the western side of Port Phillip Bay, and in that respect is one instance of many which prove the Bay to be a real and definite natural boundary, the effect of which is to enable us to study the effects of isolation on several species.

The Bristle-bird's present eastern limit is a patch of scrub about two miles south-west of Torquay. From that point it is found in increasing numbers in the coast ti-tree and dwarf gums right round to Apollo Bay, and probably farther, seeing that a specimen has been recorded from Portland. There is a Bristle-bird in South Australia which is certainly closely related to this species, and may prove to be identical with it.

Near the eastern extremity of its range it hardly leaves the sea-coast. In the Bull's Well one finds a pair or two about a mile from the sea, and the same is the case at Anglesea and Airey's Inlet. Once, however, we reach the country of greater rainfall and freshwater streams, about five miles east of Lorne, the Bristle-birds are found farther inland, and from Mount Sabine to the sea on the Forrest—Apollo Bay Road their voices are to be heard in all the mountain gullies.

Both in appearance and general habits the Bristle-

bird greatly resembles the English Blackbird (female). It lives, however, almost entirely on the ground, over which it runs with great swiftness, its tail raised above the horizontal and slightly outspread. As might be expected, the leg-muscles show great development, while the wings are proportionately feeble. It is one of the hardest birds to get a sight of. I did happen, once, at Point Addis, to see one fly about fifty yards, from the top of an ancient landslip to some ti-tree growing out of the fallen earth below, but that was exceptional, and as a rule one is lucky to catch a bare glimpse as it halts for a moment on top of a log or of some low bush.

The note has so often been described as resembling the noise of a creaky cart-wheel that I hesitate to say the comparison might be bettered. The call consists of three or four pairs of notes, uttered with a rising inflection and in quick succession, and concluding with a note which suggests the "crack" of the Coachwhip-bird; double, however, where the Coachwhip's is single, the second part not being accented. Immediately, the bird is answered by its mate, who utters what sounds like an echo of the last three notes of the first bird. There is also a single note, less frequently heard. Bristle-birds call all through the months from October to March inclusive. In the breeding-season the series of notes is produced about every five minutes.

The nest is a rough-looking domed structure with a large entrance at the side. It is built externally

of thin long dead twigs of the ti-tree, and is lined with finer materials such as grass, but no hair, fur, or feathers. The nest site is a clump of sword-grass, or, more often, the tops of young ti-tree scrub, at a height of about 3 feet from the ground. Only two eggs are laid; they are of a whitish ground-colour, but so thickly spotted and blotched with red and purplish as to let very little of the under colour be seen.

I have found eggs as early as October 16th and as late as December 29th; early in November seems to be the height of the laying-season at Anglesea; but the forest-dwelling birds of this as of most other species lay later than those which inhabit the drier areas to eastward.

MASKED WOOD-SWALLOW

Campbellornis personatus munna

THIS species is an occasional summer visitor, there being commonly a small percentage of Masked Wood-swallows in the flocks of the White-browed birds which every year visit this district from the north, and sometimes stop to breed. But whereas when the White-browed Wood-swallow breeds it does so in considerable numbers, the Masked species I have only met with nesting once, when a pair built on an upper bough of a spreading cypress tree in the Eastern Park.

The Masked Wood-swallow is easy to pick out from a flock of White-browed birds, for it has the throat

BRISTLE-BIRD'S NEST IN FLOWERING SHRUB, POINT ROADKNIGHT.

jet-black in strong contrast with the light bluish grey of its general plumage.

The nest is a frail, small structure of very light twigs, lined with a few rootlets ; it is placed (in other districts) at varying heights from the ground. The eggs are two or three, heavily blotched all over with brownish markings.

On October 6th, 1912, I saw a solitary individual of this species perched on a fence at Bream Creek. This was early in the season for Wood-swallows, and the only occasion on which I have seen one of these birds by itself.

On October 29th, 1911, at the You Yangs, a flock of Wood-swallows flew over, of which the great majority, nearly forty, were of this species.

The under surface is beautiful bluish grey, with which strongly contrasts the jet-black face and throat in the male bird ; the female has these lighter.

WHITE-BROWED WOOD-SWALLOW

Campbellornis superciliosus superciliosus

At rare intervals, not oftener, I think, than once in ten years on an average, the Wood-swallows come to Geelong in swarms about the end of October, borne down to us from the interior of the continent on the wings of the north wind. And even when there is such a visitation, not all the birds remain to breed. In the year 1891, for instance, they descended

in thousands upon the Queenscliff Road bush about the middle of October, exhibiting every appearance of staying for the summer. But by the end of November most had gone, and my record of nests found there that season amounted to seven only. Sudden cold weather would probably turn back all those birds which had not actually begun to nest.

There was another smaller irruption towards the end of 1897. I do not know whether in that year they settled in the Queenscliff bush, but they were breeding in small numbers at Freshwater Creek, and were plentiful at Highton, where Mr. Mulder notes that on December 24th there were nests all over his orchard on branches of the fruit trees. He found the birds very tame, the male bird sometimes sitting on a branch a few feet above his head and scolding vigorously. On this occasion some nests were found on low bushes and in hedges, and even on the tops of haycocks in a field. On Christmas Day in that year he noted them as being plentiful at Bream Creek, accompanied by a few pairs of the Masked species.

In subsequent years they have not appeared in great numbers, though it is usual for a few pairs to come to the Eastern Park every summer, and these probably breed.

Between April and September we never see them; during that period they are probably very far inland. The first warm north wind in spring is sure to bring them south; they may, perhaps, not come to earth at all, but if on such a day you hear

a faint twittering from high up in the air and see there a flock of small birds alternately soaring and working their wings quickly, you may safely conclude they are White-browed Wood-swallows on their travels.

At the You Yangs, on October 29th, 1911, when after a dewy night a warm north wind sprang up about 9 a.m., veering later to north-west, the skies continuing cloudless all day, glass falling, great numbers of Wood-swallows kept flying over towards the north-west, in the teeth of the wind. A very few perched on the plantations near Lara, but the great body flew far to westwards.

Geelong is rather far south for them. They breed more freely about Melbourne, and visit the districts to the east of the metropolis more frequently than they do this part of the country.

On October 26th, 1912, I noted for the first time a flock of Wood-swallows flying during a south wind. They were moving north-west, over Aberdeen Street, and had doubtless come down from the interior with a north wind which had blown all the preceding day.

The nest is a very slight structure of twigs and barely lined with rootlets; the eggs, numbering two or three, can be seen through the nest from beneath.

In colour this bird has the under surface rich vinaceous chestnut, and is easily identified by the broad white eyebrow, which is more conspicuous in the male.

SORDID WOOD-SWALLOW

Pseudartamus cyanopterus

THIS is a duller-coloured and less conspicuous bird than either of the other Wood-swallows, and differs from them also in that it is regularly found in the same spots throughout the spring and summer; and although it is generally called a migratory species, I believe many of the birds stay with us during the winter as well.

Never yet have I seen a flock of these Wood-swallows on the wing, nor more than, at most, a dozen together. They are usually in pairs, and are fond of perching on the tops of charred stumps of trees, whence they sally forth in quest of flying insects. Their flight closely resembles that of the other species, Swallow-like glides with outstretched wings alternating with a few very quick wing-strokes.

The note is usually hardly more than a sharp twitter, but there is a regular little spring-song, generally sung by a mated pair sitting close together on a bough.

The season of nesting commences towards the middle of October; eggs may be found until early in December. The nest is larger and more carefully constructed than those of the other Wood-swallows, but is built of similar materials—that is, thin dry twigs externally, with a lining of roots.

The position chosen for it varies greatly, the

essential being a secure base as a protection for such a frail structure from the wind. This seems to me characteristic of the leisurely resident as compared with the hurried nesting of the other two species, which, though their nests are much frailer, being built in a quarter of the time, yet display no care whatever in finding sites, but place them, as if at haphazard, on anything that will hold for the time. The Sordid Wood-swallow's favourite site is a niche in the side of a burnt stump; at other times they will build up the nest in the split stem of a gum, sometimes for a height of a foot or more, till they are satisfied with their foundations. Again, the space between a loose (but not too loose) piece of bark and the trunk is utilised. At Merrijig Creek I once found a nest placed right on top of a fence-post, the wood having rotted just sufficiently to form a shallow depression. At Batesford I have seen a nest in a prickly hakea bush.

The eggs number three or, rarely, four; and are very different from the heavily-blotched brownish eggs of the other species, being creamy-white with a beautiful thick ring of brown, red, purple, and lilac spots slightly above the centre.

As to distribution, the Sordid Wood-swallow is universal, and shows no signs of losing ground. A few pairs nest in the Eastern Park, and I know no piece of bushland where you will not be likely to meet it. It has rather a preference for plantations of blue gums, on the one hand, and on the other

for burnt country where the charred trunks are yet standing.

Local names for the species are Wood-martin, Cherry-bird, Bluey, and Summer-bird; the last three names being used for the other Wood-swallows as well. This species is dull brown in colour, with a slightly darker chin.

HARMONIOUS THRUSH

Colluricincla harmonica victoriæ

RATHER larger than the English Thrush and with longer tail, the Harmonious Thrush is a familiar bird to dwellers in the bush, and from time to time accords even to us who dwell in the towns an opportunity to admire its dove-grey plumage, if not its song; for although not a migrant in any extended sense, this Thrush may occasionally be seen during the winter months on the Eastern Park. At that time of the year its note is single and flute-like; in September, when the call of spring is in the blood of bird and man, a really sweet series of notes is developed, five or six, rich and melodious.

It is my continuous regret in writing this book that no means exist to enable me to indicate in more than the vaguest fashion the beautiful woodland phrases that one hears from fifty different bird-throats in the last four months of the year. I do not extol the Australian birds as song-birds—in the English

HARMONIOUS THRUSH'S NEST IN CHARRED STUMP, BULL'S WELL.

sense very few of them are ; but each has its unique appeal to the native-born :—

“ Weed ye trample underfoot
Floods his heart abrim—
Bird ye never heeded,
Oh, she calls his dead to him ! ”

Useless to try to copy it in mere words.

The Harmonious Thrush is most plentiful in the messmate bush between Torquay and Anglesea. I have had occasion to speak often of this fascinating woodland area ; it extends from Addiscott, near Torquay, to the valley of the Anglesea River, and from Paraparap on the north to the ocean beach on the south, and though firewood-cutters make annually increasing inroads into its recesses, it still presents the richest field for the study of bird-life lying within fairly easy reach of our town.

Other parts of the district where this Thrush may be found are the bush between Drysdale and Ocean Grove, the Anakie Forest, the Dog Rocks, and, indeed, any well-wooded tract of country.

The nest is built almost entirely of bark, lined sometimes with a few rootlets. The traditional site is in the hollow of a charred stump, but I have seen it also in a clump of sword-grass, in the centre of an acacia hedge, among flood-drift caught in the fork of a redgum sapling, and once in a quite exposed position about 20 feet from the ground, in the fork of a she-oak tree.

The eggs are usually three in number ; pure white

300 BIRDS OF THE DISTRICT OF GEELONG

as to ground-colour, with a number of well-defined spots of red, brown, and lilac, sometimes in the form of a ring about the larger end.

The months of September and October form the breeding-season.

The Harmonious Thrush is arboreal in its habits ; it is not fond of long flights, and is one of the tamest of bush birds, allowing one to get right under the branch on which it is perched. I have seen it come right inside the open door of a dining-room in a bush homestead and pick up crumbs from the floor. This bird is also fond of picking at the fat on sheepskins hung on a fence to dry, though in the bush it is exclusively insectivorous.

It is sometimes called Mountain Thrush, but it is better to keep that name for the bird to which it was originally given.

MAGPIE-LARK

Grallina cyanoleuca cyanoleuca

THIS is the bird commonly called Mud-lark or Peewee. Each name has something in its favour : the bird is black and white like the Magpie, it spends a great part of its day on the ground like the Lark. Mud forms the chief material of its nest, and its cry is as near to "pee-wee" as it is to anything else.

The rounded wings and comparatively laboured flight proclaim that the Magpie-lark is no migrant ; yet in the autumn it experiences that unexplained restlessness and tendency to form into flocks which

characterise so many of our indigenous birds. This usually manifests itself at the end of April: the birds gather on trees and then fly circling and crying continuously, and at times make mile-long flights high in the air. There is, further, a well-held belief that to see Magpie-larks flying north is a sure sign of rain; but from my own experience I should say that while they are very susceptible to atmospheric changes, so that their autumnal movements are probably connected with the "break in the season," it is not the case that every considerable northward flight portends rain in the locality whence the flight is made.

The food of the Magpie-lark consists of insects obtained chiefly on the ground.

The nest is interesting as being one of the three Australian birds' nests which are built of mud, either solely or in great part. The other two birds are the White-winged Chough, which, as we shall see, inhabits parts of the Geelong district, and the Grey Struthidea, which is not found south of the Divide.

The Magpie-lark's nest is bowl-shaped, and is affixed to the horizontal branch of a tree; generally a eucalyptus, though I have seen them in willows and on two occasions in she-oaks. It is not so easy to discover as from its exposed position would appear probable; it has the look of a large natural excrescence on the bough. Nearly always the tree is near fresh water.

Four is the usual clutch of eggs. They vary in

ground-colour from white to cream and buff; the markings, usually reddish and grey, are disposed in a zone about the larger end.

In the Geelong district the Magpie-lark is most plentiful along the two rivers, but is found also wherever there are large water-holes with gum trees in the vicinity. It seems to have a liking for farm homesteads; there are few of the older country-houses but have their pair of Magpie-larks.

The female has the throat white, the male's is black; this is the easiest way to distinguish the sexes.

MAGPIE

Gymnorhina hypoleuca leuconota

OF all our birds the Magpie, without question, is the one which has adapted itself best to extending civilisation. Not always blameless at such times as the sprouting fields offer banquets of grain to be had for the pulling up, the Magpie has yet succeeded in inducing the greater part of the community to place him, with the Jackass and the Swallow, in the category of sacred birds, and that quite apart from the protection which the law affords him. I do not suppose the Magpie does any more economic good than the Quail, which we cheerfully do our best to exterminate; but not even the town boy will kill a Magpie—it is “bad luck.”

Is the Magpie one of the greatest living song-birds?

The question is usually answered at once in the affirmative by the more enthusiastic school of Australia-for-the-Australians naturalists, who will not run the risk of having their judgment shaken by first waiting till they can hear the song-birds of other countries. The important thing to decide first is, of course, what does one mean by a song-bird? For that, seeing that even in the State schools we have not entirely rejected the English language as effete, we must inquire what do people in England mean when they speak of a song-bird? The answer is, birds with notes such as the Thrush's, Skylark's, and others familiar in the English country-side. We have in Australia a few birds which in this sense are song-birds, but emphatically the Magpie is not one of them. It is, of course, quite open to us in Australia to provide a new and local meaning for "song-bird," and extend it to include any bird whose note gives us pleasure. Then it will be time enough to include the Magpie; and if you go further and let the term cover any Australian bird which makes a noise (as I have no doubt the enthusiasts will desire), I shall be the first to welcome the Australian Raven as the Caruso of the South.

But song or not song, the Magpie's note is something dearer to the Australian-born than almost any other bird-music he might hear. I remember one June morning at Inverleigh—a fine winter's morning, but white mists filled the valley of the river so that only here and there could you see the tops

of the redgums—and from those redgums there poured from a hundred unseen throats of early-mating Magpies a chorale of the joy of life unquestioned, which will never be equalled for me by any carol of Thrush, or Nightingale's song of the northern June in a Surrey copse.

In the Geelong district the Magpie is universally found, exhibiting a preference for lightly timbered country. It is rare in the heart of the messmate forest, whither it only penetrates as the trees are gradually cut out for firewood and settlement extends. Probably before the days of the white man the Magpie's chief home was on the she-oak plains about Avalon and to the west of the bay. But it must always have abounded on the rivers. The name Barwon comes from "Barroworn," the local aboriginal word for the Magpie; we see it also in the form "Parwan," a place near Bacchus Marsh.

The adult male may be distinguished by his pure white back. The backs of the female and young are clouded with grey.

The food of the Magpie in its wild state consists of insects, with a little grain when obtainable. At Bambra, Mr. Mulder found that they would readily shell and eat choice garden-peas, but left dun peas alone.

In flight the Magpie, which is a very strong bird on the wing and will fly a mile or more at a height of two or three hundred feet, may be distinguished by his regular and sustained wing-beats and the fact

MAGPIE'S NEST IN MESSMATE, NORSEWOOD, ANGLESEA.

that he does not soar, except when just coming to perch on the top of a tree.

The nest is bowl-shaped and constructed of a mass of thin twigs firmly interwoven and lined with grass intermingled with rabbit's fur, but rarely with feathers; it is placed near the extremity of the branch of a tree at a height which, taking an average, is about 20 feet from the ground. I have seen nests in little pine trees which could not have been more than 4 feet from the ground, and others 60 feet up in lofty eucalypts. When built in a she-oak tree on the plains, a long horizontal bough with a clear space over it is chosen. Nests of wire, built on telegraph lines or in trees, are quite common, even when plenty of normal nesting-material is available.

The eggs number from three to five, usually the former; they are of an immense variety of shades of green and blue with reddish spots or irregular lines. It is the exception to find a specimen with a well-developed zone, though the markings are generally thicker towards the larger end. We once found a Magpie's egg in a Raven's nest with a clutch of the rightful owner's eggs.

The nesting-season is compressed into a short interval; practically all Magpies about Geelong lay in the last week of August or first fortnight of September, being just a little later than the Crows. At that season, as is well known, they are savage and will swoop upon any intruder.

BUTCHER-BIRD OR COLLARED CROW-
SHRIKE*Bulestes torquatus olindus*

RESEMBLING the Magpie in respect of its shape, colouring, general disposition and nest-economy, the Butcher-bird yet belongs to a distinct genus, and, as it is so much smaller than the Magpie, there should be no confusing the two. The Butcher-bird's back is dark greyish brown, merging into black on the neck and crown of the head; the under surface is greyish white, and there is also a good deal of white in the wings and tail which shows when the bird is in flight.

The wing-beats are quicker than is the case with the flight of the Magpie, and there are frequent short intervals of soaring.

No one could possibly describe adequately the Butcher-bird's note: it begins with a loud, confused medley of sound, and ends with single notes. It has been described as discordant, but in my opinion is one of the most cheerful and joyous bird-voices of the bush. Singularly enough, it is at its best in the autumn, a season when odd birds leave their regular quarters and move about the district, one or two penetrating to the Eastern Park.

Like the Magpie, the Butcher-bird is fond of the neighbourhood of houses, and if a farm-house has a belt of *Pinus insignis* trees near it, may build in one

of them ; but in the bush it frequents lightly timbered country, and especially poor sandy lands on which bracken flourishes and where the timber is chiefly bull-oak, honeysuckle, or more or less stunted gums. Once a pair of Butcher-birds have taken up their abode in such a spot, you will find them there year after year.

Places which occur to me as regular homes of the Butcher-bird are the beginning of the bush on the Swan Bay Road, a mile or two beyond the Wallington, and the ferny country west of Gnarwarre. It does not penetrate into the messmate bush, but is well distributed elsewhere ; though it is nowhere a common bird, and I daresay if I were to take a bird-lover out with the intention of showing him a Butcher-bird, I might go all day without coming across one.

The food of the Butcher-bird is chiefly insects and perhaps an occasional lizard. I have not personally known an instance of its taking canaries out of cages ; but I do not doubt that such have occurred, for the bird has much in it of the true Shrikes (you have but to look at the hard, hooked bill to see that), and has been known to impale its victims upon thorns as they do.

This species has, I believe, but one brood in the year, and the eggs, three or four in number, are laid almost invariably in the third week in September, in a nest which is bowl-shaped, but smaller and shallower than the Magpie's, though neatly lined with rootlets and with a well-formed depression. It is built never

more than 20 feet from the ground—10 feet would be about the average in my experience—and is placed at the end of a horizontal branch or, more rarely, near the top of a sapling. The native honeysuckle or *Banksia* and the bull-oak are its favourite nesting-trees.

I once found seven eggs together in a nest; these were clearly separable into two sets of four and three respectively, and had no doubt been laid by different females. The eggs are in ground-colour apple-green; but the spots, instead of being equally diffused as is the case with the Magpie's egg, are generally formed into a distinct ring round the larger end.

At nesting-time both birds are very fierce and fly at anyone who approaches the nest; but I have not known of their actually striking a man with their beaks.

CRESTED SHRIKE OR FRONTAL SHRIKE-TIT

Falcunculus frontatus flavigulus

IN the bush it might be possible, at first sight, to mistake this bird for the male of the White-throated Thickhead, for they are about the same size and each has a yellow breast; but the Shrike may always be distinguished by his crest, which is black with a white stripe below it. Nor has he the white throat and black neck-band which, as we saw, characterise the Thickhead.

YOUNG BUTCHER-BIRDS IN NEST, SCRUBBY CREEK.

There are now so few of the Crested Shrikes left in the district that it is difficult to infer whether, in their original numbers, they had any migratory movements; I am inclined to think that they had, like the White-throated Thickhead and the Flame Robin, a tendency to leave the forests and move to the better-timbered parts close to Geelong in the autumn. I have seen birds at the Dog Rocks in the winter, but have not known them breed there.

The call is a single-noted whistle, high-pitched though not loud; the bird also draws attention to itself by the sharp noise it makes in cracking, with its powerful bill, pieces of bark and twigs in the search for the timber-dwelling insects which form its food.

The Crested Shrike builds, in the month of October or November, a cup-shaped nest of grasses coated externally with cobwebs and lined with fine grass and rootlets. It is placed in the topmost upright fork, strong enough to bear it, of a tall gum tree or sapling, usually at a height of not less than 30 feet from the ground, and is the most difficult to find of any of our birds' nests. The eggs are usually two, white with fine purplish spots all over them.

Up till the end of the nineties these birds were in fair numbers, and nested regularly, in the bush on each side of the Grub Lane between Ocean Grove and Drysdale. This country is now so largely cleared that the Shrike, with other bush-loving species, is on its way to extinction in that part, but it is still to be met with at Airey's Inlet.

It is rarely seen in flight, spending its time hopping about the upper branches of the gums and tearing off strips of bark to get at the insects which lurk beneath.

WHITEFACE

Aphelocephala leucopsis leucopsis

THIS is a small bird, say two-thirds the size of a Sparrow, of very plain plumage, being brown above; lighter below, with forehead and space in front of eye white; but it is an interesting species in that it is essentially an inland bird which has wandered south. I first met with it on the plains at the foot of the You Yangs in 1896; the intervening years have seen it gradually establish itself over the district in suitable areas, though as yet, I think, it is not found on the eastern side of the town.

The spots at which at the present day the Whiteface may be found are: along the Barwon Heads Road between Marshalltown and the sixth milepost; along the Torquay Road between the eighth milepost and Bream Creek (inhabiting in each locality the acacia hedges); among the she-oaks on the plain to the north of the western end of the Barrabool Hills; and at Lethbridge, where it is numerous in acacia hedges about a mile south-east of the township. In the other places mentioned it only occurs in pairs.

The note is faint and "tinny," but not like that of any other species.

It feeds principally on the ground, on seeds and

insects, and permits a near approach ; when flushed, it flies but a few yards away and settles again either on the ground or on a tree or hedge ; it is never found far from she-oak trees or acacia hedges.

The nest may be found at any time of the year between July and December ; I have seen nests with fresh eggs in the former month at the You Yangs, and in the latter at Batesford. The situation chosen varies greatly. On the plains a deep cleft in a she-oak trunk is selected ; elsewhere the nest is placed well in towards the centre of an acacia hedge or isolated bush. In one case I found it built in the middle of a bunch of mistletoe growing on a she-oak. It is a loose structure of grasses, with side entrance, and is warmly lined with feathers ; it rather suggests a small nest of the Sparrow. That is the type ; but in September, 1902, I found one in the projecting branch of a kangaroo-acacia bush at Jan Juc, which was absolutely similar in every respect to the typical nest of the Tomtit (*Geobasileus chrysorrhoa*). This nest contained an egg of the Narrow-billed Bronze Cuckoo in addition to two of the Whiteface.

The eggs may best be described as like Sparrow's eggs, but two-thirds of the size.

ORANGE-WINGED TREE-RUNNER

Neositta chrysoptera lathamii

EXCEPTING during the breeding-season, the small bird known as the Tree-runner is only to be seen in

small bands of half a dozen or so, which travel rapidly through considerable areas of forest, the flock settling in the higher branches of a tree, and each individual working head-down along a limb towards the trunk in a spiral course, carefully examining every nook and cranny for insects. Never is the Tree-runner at rest in the daytime; one tree done, there is a little twittering and calling, and the flock moves off to the next likely prospecting-ground, and so on. I never saw these birds on the ground. In flight the wings are kept more outspread and the appearance is consequently more Swallow-like than is the case with most of our smaller bush birds.

It is peculiarly a forest-dweller, and best of all loves the outskirts of the messmate lands; for the messmate's rough, loose bark gives shelter to numbers of insects. The Tree-runner is partial also to dead trees, though one would suppose the possibilities of insect food would there be less. While one flock will probably keep more or less to the same belt of forest, their travelling habits make them uncertain birds to find.

The southern messmate forest, the Anakie Forest, and the bush along the Queenscliff Road are the localities in which this species is best established, and it breeds in all of them.

On December 19th, 1911, Mr. Riordan and I found a nest in a messmate tree near Bull's Well; and on the 26th of the same month, by which time three eggs had been laid, Mr. Riordan managed, in spite

ORANGE-WINGED TREE-RUNNER ENTERING NEST, JAN JUC.

of a high wind and consequent difficulty of keeping a foothold and fixing the camera 30 feet above the ground, to take several interesting pictures. The nest was admirably calculated to escape observation, so completely did it harmonise with its surroundings. It looked like a mere thickening of the fork. The birds had pulled small strips of bark from the very branch on which the nest was built, and fitted them neatly on to the side of the nest, in the same direction as the grain of the branch and made fast by sticky cobweb. The nest walls were thin, the rim cut clear and sharp. Inside it was lined with dark green and white cocoons. Timid as was the bird at first, she returned later and sat with unconcern on the bluish, red-smudged eggs, till at last the photographer could actually stroke her back without disturbing her.

The Tree-runner's back is grey-brown, with a dark brown stripe down the centre of each feather. The male's head is dark brown, almost black, the female's lighter. The tail is black, tipped with white; this white tip and the golden-orange bar on the wing, from which the bird is named, are most conspicuous when the bird is flying.

WHITE-THROATED TREE-CREEPER

Climacteris leucophæa leucophæa

ON an overcast still day in the bush the call of the White-throated Tree-creeper carries farthest of the

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few bird-voices ; it is a long succession of perhaps twenty or thirty staccato notes in quick succession, usually preceded by a somewhat higher one. To discover the bird is not always easy, even when you have traced the note to a particular tree, for its dark olive-brown back harmonises well with the dark branch or trunk of the messmate tree over which it is working in ascending spirals, searching every cranny for insects.

It will be noted that in the main this bird works in the opposite way to the Tree-runner, for, flying from one tree to the very bottom of another, the Tree-creeper always works upward ; while the Tree-runner, which lights on a tree near the top, works downwards. The Tree-runner rarely descends to the main trunk below the branches, but it is just in that part of the tree that one sees the Tree-creeper most frequently.

The white throat and centre of the abdomen will serve to distinguish this species from its relative (much rarer in this district) the Brown Tree-creeper.

Not only does this Tree-creeper prospect the bark of the tree, but it also enters the hollows which one sometimes finds at the bases of growing trees, and it is in these hollows that I believe the birds usually rest at night during the non-breeding season.

The species is non-migratory and nests regularly wherever it is met with ; but so loth is the bird to approach the nest-hollow when it knows it is being watched, that nests are but rarely found, except by

hitting the trunks of likely trees with a stick and watching for the birds to fly out.

A nest observed between Jan Juc and Anglesea on October 19th, 1912, was at the bottom of a hollow, upright branch of a messmate, about 3 feet below the opening. The hollow narrowed from 6 inches at the mouth to 4 inches at the nest, which consisted of shredded messmate bark, and contained two young birds, about half-grown, showing a dark rufous-brown rump. October is the usual breeding-month. The eggs are white, speckled with reddish brown.

This species is very common from Torquay westward right into the Otway Forest; and equally so in the bush at Anakie. In the Queenscliff Road bush it is becoming extinct with the cutting out of the timber. One or two pairs are established at the Dog Rocks.

It is insectivorous; the parent-bird brought to the young mentioned above at least one large moth.

BROWN TREE-CREEPER

Neoclima picumna victoriae

THIS is a larger bird than the White-throated Tree-creeper, and has the throat dull buff-coloured instead of white. The note, though loud and ringing, is not repeated continuously as is that of its white-throated relative, and the present species also spends much of its time on the ground in the vicinity of large trees.

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I have never seen the White-throated Tree-creeper on the ground.

Furthermore, the Brown Tree-creeper is only found in fairly open country timbered with a few large trees, whereas the White-throated Tree-creeper is, as we saw, a bird of the forest.

The only place in which I have met with the Brown Tree-creeper in this district is near Paraparap. Some ten years ago I saw about half a dozen of these birds on the outskirts of the bush, about two miles south from what was then Mr. G. C. Noble's Merrijig homestead, and is now known as Grassdale. It was, I believe, an isolated colony, for I know of no others within fifty miles, and the patch of suitable country in which they were was of restricted area.

No doubt the birds breed in that particular spot ; their nesting-habits in general resemble those of the White-throated species, the eggs being larger and more thickly blotched with red.

WHITE-EYE OR SILVER-EYE

Zosterops lateralis westernensis

GREEN-BODIED, grey-backed, with a little white circlet round his eye, this really beautiful little bird is at once the delight of the rose-grower and terror of the orchardist, as his respective names Blight-bird (in New Zealand) and Cherry-picker (in Victoria) denote.

Very rarely does one see White-eyes in the actual

bush. Before the country was settled, they probably kept to the coastal ti-tree, to which they still resort in large numbers to breed ; but so well do the conditions of civilisation suit them that they are now equally plentiful, especially in the winter, in public parks and private gardens in the town.

The species is not strictly migratory, but moves about in flocks according as it finds food in one place or another. This consists, in winter, of the nectar derived from flowers, in particular the blossoms of the melaleuca, the garden pittosporum, and the almond ; and also of small seeds and berries, such as those of the pepper tree. Aphides and other insects, winter pears, and the fruit of the pomegranate form changes of diet. Then in the end of November, when the first cherries ripen, the White-eyes descend upon the orchards and will not leave them so long as there is any fruit soft enough for their sharp little bills to penetrate. At such times they are very bold and careless of man's approach ; the late Mr. William Berthon used to kill many by knocking them from the trees in his orchard with a stick. They will eat a pear out till they can get right inside it, and presently it is nothing but stalk and skin.

The flight is spasmodic and darting, and all the time a short but musical note is produced. While in a tree the birds are very lively, moving continually about from flower to flower or fruit to fruit. Sometimes in the branches of a pepper tree one may see, during the summer, a pair sitting close

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together like Love-birds, the male warbling a quiet but varied little song as if under his breath.

When feeding, the birds are in companies of eight to ten; but they travel sometimes in large flocks numbering many hundreds.

The breeding-season extends from October to January, and is rather later in the coast scrubs than in inland orchards. The nest is a delicate cup of fine grasses sometimes ornamented with moss, and always lined with more or less horse-hair; it is suspended in a thin horizontal fork at a height averaging 5 feet from the ground. At Boat Creek, Airey's Inlet, where the birds breed in great numbers in early January, the nest is built in a ti-tree. In orchards any kind of fruit tree, but preferably a pear, is chosen. I have seen nests in elm trees in Geelong streets.

The eggs are three or four in number, of a pale greenish blue which gives them a place among the most beautifully coloured of our native birds' eggs.

SWALLOW DICÆUM OR MISTLETOE-BIRD

Austrodicæum hirundinaceum hirundinaceum

I CANNOT ascertain that this strange and beautiful little species was ever plentiful in our district. Lieutenant-Colonel Garrard tells me that he remembers finding, as a boy, a nest in the vicinity of the Dog Rocks where now the bird is but an occasional autumnal visitor.

In the male the upper surface is glossy black, throat and breast scarlet, and belly white with a black central patch ; while the female is duller-coloured, and has the throat and centre of abdomen buff.

The species has been called Flower-pecker and Mistletoe-bird, the latter because of its fondness for the seeds of the forest mistletoe ; but it also eats insects. Its actions in a tree, as it creeps swiftly about the branchlets, are restless, reminding one of the Tree-runner ; its swallow-like flight is high, but sometimes extends no farther than to the next suitable tree. The bird also bears some resemblance to a small Swallow in form and colouring.

Whenever I have seen this bird in the Geelong district, and that is not often, it has been “on the move.”

The nest is small, purse-like, very compact, soft, usually white in colour, owing to its composition of spiders' cocoons and vegetable down. It has a narrow side entrance, and is suspended from a thin branch of a gum or wattle at a height of 10 or 15 feet from the ground. The three eggs are pure white.

It is to my mind improbable that the numbers of the Dicæum in this district can ever have been so great as it would be necessary to believe they were if the bird is to be regarded as the sole cause of the spread of the mistletoe. That the seed is spread by birds of one sort or another or of many sorts is clear, as also it is that the species concerned are not birds which have a gizzard, seeing that the grinding process which

there takes place would probably mean that the seeds, when finally passed, would have had their fertility destroyed. The *Dicaeum* has no gizzard, but neither have many other small forest-birds.

I personally first noted this species in the district at Anakie on September 23rd, 1900. Mr. Henry Lidgett mentions having found a nest at the Werribee Gorge on October 24th, 1897, by watching the bird collecting cobweb from the trunk of a fallen she-oak, and taking it to the outer end of the branch of a small black wattle a quarter of a mile away. Twelve days later there were three eggs in it, and on November 7th he found another nest in the same locality, also with three eggs.

Mr. Mulder has three specimens of this bird, obtained several years ago at Fyans' Swamp, Prince's Bridge.

SPOTTED PARDALOTE OR WHITTITUKE

Pardalotus punctatus interjectus

WE have in this district two, if not three, species of Pardalote. These are very small birds which, except in the nesting-season, spend all the hours of daylight prospecting for insects in the leafy twigs of gum-tree boughs, and are, therefore, but little noticed by a casual observer.

They are all beautiful little creatures, but I think the Spotted Pardalote is the prettiest. The male

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has crown, wings, and tail black, spotted with white ; white stripe over eye, rump rufous, upper tail coverts crimson, throat and chest bright yellow. The female is less brightly coloured.

This species may, briefly, be known at once from the Striated Pardalote by having rounded spots on top of its head where the Striated Pardalote has longitudinal streaks. I have found it possible in the field to get quite close enough to these little birds when feeding in low bushy eucalypts to note this difference. A more obvious difference lies in the note, the Spotted Pardalote having a low, clear two-noted whistle, while the Striated Pardalote has a three-noted call which the names Wadelock (New South Wales) and Whittituke (Victoria) are meant to represent, and also a rather harsh-sounding trill. The Striated Pardalote is also the larger bird of the two.

The Spotted Pardalote feeds, for preference, in quite low bushes ; the Striated, while frequenting all kinds of eucalyptus trees, has a special liking for the topmost boughs. In the field I find that the surest way of ascertaining the whereabouts of, and differentiating between, these two species is by listening for the note.

The Pardalotes are short-tailed, and have small rounded wings which they work very rapidly in flight, having something of the stumpy appearance of a giant flying beetle.

Spotted Pardalotes abound on the lower slopes of

Station Peak among the thick growth of young gums of various kinds which covers the northern approach. They are also plentiful at Anglesea and in certain parts of the Queenscliff Road bush. A fairly thick growth of timber and the presence of sandy soil seem to be necessary conditions. The nest is a tunnel in a low, sloping, sandy bank such as one finds at the side of bush roads, or, and this is the typical case, it is made in the wall at the entrance to a rabbit burrow. The tunnel is little more than wide enough to let the bird in, and runs for an average length of 18 inches to a terminal chamber about 4 inches in diameter. In this, in the dark, quite a neat nest of strips of bark is fashioned, lined with rootlets and finer bark, domed, and having a side entrance which, of course, faces the tunnel.

The eggs are four in number, pure white, and smaller than those of the Striated Pardalote. The nesting-season is at its height at the end of September, by which time most eggs have been laid; but from observations made near Marcus I think there is a second brood in some cases, about a month after the first eggs have been hatched.

I have heard and seen the Spotted Pardalote at rare intervals in the elm trees in residential streets in the town and suburbs; these are casual wanderers, there being no regular seasonal migration with this species.

SPOTTED PARDALOTE'S NEST-BURROW AT MOUTH OF DUG-OUT RABBIT-HOLE, FULL'S WELL.

STRIATED PARDALOTE OR
WHITTITUKE*Pardalotinus striatus substriatus*

THIS Pardalote may be known from the smaller Spotted Pardalote by the white stripes on the crown of its head, and also, as mentioned, by its triple note of "Whittituke," which is chiefly, I think, a breeding-call, the other note, a trill, being heard at all times of the year. One must not, however, forget that in the general awakening of all animal and bird life which takes place at the end of the Australian summer, when nature is refreshed by the first warm autumnal rains, and there comes in the pleasant season which a young friend of mine used to call the "Little Spring before Winter," many birds sing and call to each other with just the notes of which they make use in the real spring later in the year.

This bird is much commoner and more widely distributed than the Spotted Pardalote. You may rely upon its presence wherever there are large old branching gums; in particular, redgums. Authorities say it is a migratory species, visiting the south of Victoria to nest; I can but give my experience, which is that I notice no difference in its numbers from one time of year to another in this district. Areas where it is particularly plentiful are the wooded portions of Woolloomanata Station, Lara; the Dog Rocks, Batesford; Gnarwarre, and Mount Moriac.

It is not yet settled whether the Striated Pardalotes include two separate species or not. Mathews takes the latter view, and as I am adopting his nomenclature I treat the species provisionally as one. At the same time I am bound to say that the colour of the speculum or wing spot, and the number of the primary wing feathers which are edged with white—the two points hitherto chiefly relied upon for species differentiation in these Pardalotes—vary greatly in specimens from the Geelong district. If these are only subspecific differences, then we have two different subspecies of the same species inhabiting the same geographical area; and yet it is of the essence of subspecies that they inhabit separate geographical areas, and indeed have been produced by circumstances of one sort or another bringing about the isolation of the respective areas.

Only once, and that at the You Yangs, have I obtained a specimen of the Pardalote with bright red speculum, and this bird had a distinct white wing-patch, *i.e.* several primaries edged with white. All other local Striated Pardalotes have the speculum deep orange, *not* red; and the number of primaries edged with white has varied, in specimens I have examined, from one to five.

Then there is the question of nesting. We find some Striated Pardalotes, notably at the Yarram Creek and at Gnarwarre, tunnelling into the perpendicular bank of a creek, with nest-chamber and nest at the end like those of the Spotted Pardalote, made

of bark and roots; others nest in the hollow of a gum tree, and of these nests I believe most are made of grass, though I have seen few of them myself. At Batesford you may see one lot of birds nesting in the trees, and not more than a quarter of a mile away others occupying the creek-bank tunnels.

I am aware that the Sacred Kingfisher both tunnels in banks and uses tree-hollows, and that the Kestrel uses a hole in a tree or the deserted nest of a Raven; but these alternative nesting-modes are not found, in my experience, to occur together in the same district. So that I feel that we shall presently be able to split up these Striated Pardalotes into two species; and it would be well worth the attention of some of our younger naturalists to study these interesting little birds and determine the point once and for all.

Four eggs are laid by all Striated Pardalotes, and the nesting-season begins in October and is at its height in early November. Like the Spotted Pardalote, the species has, I think, a second brood, early in December. The eggs are white.

A curious habit which at least those Striated Pardalotes which build in trees exhibit, is that of holding their wings at right angles to the body and agitating them vigorously with a fanning motion, as I understand is done by certain bees at the entrance of the hive. This the birds do when perched in the nesting-tree, but not necessarily near the nest. Frequently two or three pairs occupy different holes

in the same tree, and one may watch several individuals engaged in this fanning performance at the same time. It is not kept up for more than a second or two at a time, but is frequently repeated. I have only noticed it during the actual nesting-time.

LUNULATED HONEYEATER

Melithreptus lunatus lunatus

ALL the Honeyeaters are wanderers. They have their breeding-places, to which they faithfully repair when the season comes round; their movements, restricted or extended, during the rest of the year are largely dictated by the abundance in one spot or another of their favourite food, the sweet nectar found in flowers. As we saw when dealing with the Lorikeets, it is the numerous species of eucalyptus trees that, in the bush, provide the greatest quantity of flowers; and the only safe rule one can lay down for naturalists who may wish to observe the habits of the Honeyeaters is, that these birds will be found wherever the gums are in blossom, using their brush-like tongues to extract the nectar from the flower-cups. Insects form always a part of their diet, but the nectar is the chief thing.

In general appearance the Lunulated Honeyeater, which is one of the smaller kinds, is green above and pure white below, with a black head which has a white crescentic mark running round towards the

back of it. A most striking feature is the bright red space just above the eye.

We seldom see it in the town of Geelong, though I have at times noted small companies of four or five flying over the Eastern Park; at such times one identifies them by their plaintive flying-call, from which as boys we called the birds "tweeas."

At the Dog Rocks it is plentiful when the gums are flowering. Another place where I found it exceedingly numerous was between Torquay and Jan Juc, on the back (northern) road, in August, 1912. It is never found in pairs or solitary at such seasons, but always feeding in flocks of from half a dozen to twenty, not necessarily, however, keeping to the same tree.

Some twenty-five years ago these birds bred regularly in the bush at Grub Lane (Queenscliff Road), where boys called them "Blackcaps." Some may still nest there, but the nearest spot at which I have myself noted the nest is Anglesea River, where in October, 1912, I watched from the hotel veranda a pair of birds building in a tree about thirty yards away. Airey's Inlet is a regular haunt of this species, the breeding-season there being rather later than farther east. Nests were not usually noted before the beginning of December.

I cannot do better than quote in full a note given me by Mr. Noël Dyson, which describes what, speaking from my own experience, is a typical nest and eggs. He obtained them on January 1st, 1913, on a thickly

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timbered flat bordering on Airey's Creek, the trees being chiefly young gums and ironbarks :

“ *Nest*.—Pensile, suspended in the drooping leaves of an ironbark tree about 30 feet from the ground ; cup-shaped, diameter 2 inches, depth $2\frac{1}{2}$ inches. Material, fine strips and shreds of bark interwoven and held in place with cobweb and spiders' cocoons. It was the same inside as out, except that there were a few of the birds' own feathers as lining, but no cobwebs.

“ *Eggs*.—Three, pointed, very pale flesh-colour, almost white, spotted with reddish-brown and purplish-brown markings, which form a zone round the larger end. Measurements : .76 inch by .59 inch.”

Mr. Dyson notes that the call when the birds are busy in the tall gums is something like a grating “chep-chep,” and differs from the flying-note. He also informs me that the bird sat very close on its nest and allowed him to lift her off the eggs.

BROWN-HEADED HONEYEATER

Melithreptus atricapillus submagirostris

GOULD says of this bird, “At a first glance almost any ornithologist would imagine these birds to be the young of the Lunulated Honeyeater,” and although he spoke of a comparison of skins, the same thing might well be said of the living bird in the wild state. For nearly ten years after I first saw these birds at Grub Lane I firmly believed them to be young

“Blackcaps.” They look just like dull specimens of *M. lunatus*, and have what sounds like a harsh, unfinished imitation of that bird’s note. But examination of the skins, as Gould noted, settles the matter at once. The Brown-headed birds are larger and stouter, have the eye-space greenish blue instead of red, and the under surface drab-coloured instead of pure white. The crown of the head is brownish, not black, and the occipital crescentic band is buff, where the Lunulated Honeyeater has it white.

And after watching their habits in the bush one notes differences in mode of life. True, one may find both species together, but rarely; in general the Lunulated Honeyeater loves valleys and the neighbourhood of water, be it only a salt creek like Anglesea, while the Brown-headed is found farther back in the more arid and barren parts of the bush, whether hillside or open depression, such as the Bull’s Well, where they are always numerous.

They feed principally on insects, whereas the Lunulated Honeyeater chooses honey. On an average the companies of Brown-headed Honeyeaters do not comprise so many birds as those of the Lunulated, and the former species may be met with in isolated pairs, feeding, too, rather higher in the trees than their congeners. As to trees, Lunulated Honeyeaters prefer the white-gums of the creek-valleys, Brown-headed Honeyeaters the forest messmates.

I have met with the Brown-headed Honeyeater at Grub Lane, Batesford, the You Yangs (plentiful),

and all through the drier, more hilly, grass-tree covered parts of the eastern foothills of the Otway, from Jan Juc to the vicinity of Lorne. I think that, owing to its depending more on insects and less on flowers, it does not move about so much as the Lunulated Honeyeater.

Probably it breeds wherever it is found, but I have only seen one nest, which Mr. H. A. Purnell discovered in October, 1912, near Jan Juc, in a projecting messmate bough about 12 feet from the ground. It was larger and less neatly made than the Lunulated Honeyeater's, with more grass and less bark in its construction. The birds deserted this nest before it was finished.

SANGUINEOUS HONEYEATER

Myzomela sanguineolenta sanguineolenta

THE only specimen of this bird which, so far as I am aware, has been observed in the district was exhibited by the late Mr. William Shaw before the Geelong Field Naturalists' Club, on September 5th, 1902, having been shot at Queenscliff by Mr. Batchelder shortly before. It is a bird whose home is in the coastal scrubs of New South Wales, and probably the great drought of 1902 had something to do with its appearance here. Except the wings and tail, which are black, the male bird (the above specimen was a male) is of a rich, shining scarlet colour.

SPINEBILL

Acanthorhynchus tenuirostris victoriae

You will see this bird sometimes in gardens in the town, especially where there are flowering bushes, and in particular the lantern-flower with its pendent blooms of yellow and purple. The Spinebill in his long and delicately curved bill has a perfect instrument for the extraction of the nectar from these flowers.

It is a restless species, and gives one little chance of prolonged observations upon it; but when seen close at hand it is, in my opinion, as lovely a small bird as any we have, so slender is it, so graceful in movement, and so varied in colouring. The top of the head is greenish black, passing through chestnut on the back to grey over the tail. The throat and chest are white, with chestnut-brown centre-patch. The tail is black, some of the feathers being tipped with white.

When flying, which it does with an irregular rocketting motion, it often makes a castanet-like noise as of two bits of wood flicked sharply together. Mr. Mulder is of opinion that this is caused by the wings meeting over the back, and is not produced by the mouth. The ordinary note is a monotonous, oft-repeated piping whistle.

In September, 1896, Mr. Mulder saw hundreds of these birds feeding on beds of flowering heath (*Epacris*

impressa) at Bambra, when they seemed to be traveling north. In my own experience I have rarely seen this bird except singly or in pairs, never, I think, more than four or five together, save when feeding.

It is nowhere plentiful, but is very widely distributed, preferring forest land. I believe I have met with it in every timbered part of the district; in the south-west it becomes more numerous the nearer one gets to Lorne.

The breeding-months are from September to January; the only nest I have myself found was in the latter month, on the banks of Airey's Creek, near the Duck Holes, about 5 miles from the township. It was built, as is usual with nests of the species, in the perpendicular fork of a small ti-tree, and contained two young. It is rather curious that a bird which spends so much time in eucalyptus and the like open trees should resort to the thick ti-tree scrub, in which one does not at other times see it at all, to build.

The nest is heavier and rougher built than those of most of the small Honeyeaters, and is not pensile in the true sense. It is lined with feathers.

Mr. Mulder records a nest built at Bambra in a hole in the side of a gum tree, about 3 feet from the ground.

TAWNY-CROWNED OR FULVOUS-
FRONTED HONEYEATER*Gliciphila melanops chandleri*

THIS has always been a favourite bird of mine, from the time when I first found it, in 1890, on the Grass-tree Plain, about eleven miles out along the Torquay Road, where you may see the birds to-day. There is another common Honeyeater in that belt of country, the New-Holland Honeyeater, with yellow wing-marks and striped breast; but you can always tell the Tawny-crowned Honeyeater by its fulvous forehead and the line of dark brown which runs down each side of the white throat, nearly meeting on the breast. It is fond of perching on the telegraph wires on the Torquay Road at the spot referred to, and will fly off as one approaches, travelling high and straight for a considerable distance before dropping to the low scrub, somewhat after the way of the Skylark.

The note I can only describe as being like the whistle of a boy who is learning the art and has not much idea of how to produce a musical sound. It is the most human-like of all bird-notes which I know.

These birds are distributed widely, if nowhere plentifully, over the heathy country which is met with from the Grass-tree Plain at intervals westward. Often enough I have seen them among the trees of

the messmate forest in the neighbourhood of the Bull's Well; but where one is sure to find them is on the treeless tracts covered with heath and innumerable varieties of close-growing plants, characteristic of phenomenally poor soil, which exist on the seaward side of the timber country all the way along from the Bull's Well to Airey's Inlet and beyond.

Similar country, which in September the red and white *Epacris* and the yellows and reds and browns of a hundred leguminous bushes turn into a wild garden of amazing beauty, is encountered on the coast road from Wensleydale to Airey's Inlet, and that is another great resort for the Tawny-crowned Honey-eater. I believe I heard this bird also on some grass-tree land a mile south of Drysdale on December 11th, 1910, but I have never actually seen it east of the Torquay Road.

Nests I have seen from August to October at Bull's Well, Mount Misery (near Anglesea), and on the Torquay Road. At the last-mentioned spot they were built in low bushes about 3 feet from the ground, but at the other two places were right on the ground at the foot of a tuft of herbage. The nest is thickly built and warmly lined with seed-down; the eggs, always two, are nearly white with a very few faint spots of reddish; their proportionately large diameter and rounded smaller end will distinguish them.

WARTY-FACED HONEYEATER

Zanthomiza phrygia phrygia

THIS, one of the largest and certainly the most showy of the Honeyeaters, is but a rare and casual visitor to the Geelong district, in no part of which, so far as I can ascertain, has it been known to breed.

I first noted the species in the month of July, 1890, when I remarked a fine pair, conspicuous in their spangled livery of black and pale yellow, disporting among the low ti-tree scrub which grew about what was then the Round Swamp, Airey's Inlet, and is now part of Mr. Sutherland's famous forest dairy-farm. I am afraid that the exigencies of settlement make it unlikely that the species will ever be seen there again, but during the last few years I have on several occasions seen it in autumn at the Dog Rocks, where it frequents the tops of the larger gum trees, not staying long in one tree.

The note is high-pitched and distinctive.

YELLOW-FACED HONEYEATER

Paraptilotis chrysops beaconsfieldi

OCCASIONALLY seen in the town in winter, when it appears to be peculiarly attracted by the blossom of almond trees, the Yellow-faced Honeyeater is by nature a dweller in the forest proper and the scrubs which line our southern coast. It is exceptionally

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plentiful along the banks of the small creeks which enter the sea between Airey's Inlet and Lorne, and beyond the latter place. Eastward one sees it less often, though it is found in the ti-tree scrub on the flat at the mouth of Anglesea River, and in the more secluded parts of what is left of the bush along the Queenscliff Road.

In appearance it is not unlike the common Greenie (*Ptilotula penicillata mellori*), but is a much shyer bird, and it is seldom that one can get near enough to make out, without field-glasses, the alternating face-lines, two of black and one of yellow, which form the best mark of the species. The call, however, is a ringing series of notes audible a couple of hundred yards away, and not at all like that of any other Honeyeater. It loves to perch on the tops of high trees, and flies high in air.

I have seen a nest with eggs as early as September 22nd (at the You Yangs, 1912) and as late as February 12th (Lake Connemara, 1890). The former nest was the only one I have ever seen in a golden wattle (*Acacia pycnantha*); the latter was in a typical position in the outer twigs of a thick, projecting bough of a ti-tree. Rarely is the nest placed out of arm's reach from the ground. It is a thin cup of dried grass, ornamented exteriorly with moss and lined with rootlets and sometimes a little hair; it is slung by the rim to a thin horizontal fork of any small thick-foliaged tree, rarely a eucalyptus. I have seen nests in *Acacia* hedges, briar bushes, "fireweed,"

Photo by H. A. Purnell, Esq.

YELLOW-FACED HONEYEATER'S NEST AND EGGS, YOU YANGS.

and lightwoods. Very often, towards the Otway, the nest-tree overhangs a creek. The eggs are of two types, buff with a few reddish and grey spots, and white thickly spotted with red.

This species in the bush lives more upon insects than upon honey, but when fruit is ripe it becomes one of the chief of the feathered foes with which the orchardist has to contend.

It is usually a solitary bird or seen in pairs. On September 20th, 1913, however, Mr. Purnell and I saw at least two hundred of these birds together in a belt of flowering heath near the Scrubby Creek, Anglesea, evidently gorging on nectar, as birds kept rising all round us when we were almost treading upon them.

SINGING HONEYEATER

Meliphaga sonora

THIS species resembles the Yellow-faced Honeyeater, but is much larger; it has the space about the eye and a line down the sides of the neck black, with pale yellow ear-coverts; the grey throat and breast are noticeably striped with brown.

It would not have occurred to anyone meeting this bird in the Geelong district to call it the "Singing" Honeyeater, for its notes, though loud and clear, could not possibly be called a song.

Rarely does this bird leave the ti-tree on the coast sandhills which is its breeding-haunt and chief resort

the year round. At Torquay, however, I find that it comes in winter to the garden of my cottage, about three hundred yards from the sea, in order to get honey from the yellow brush-like flowers of that kind of acacia which is best known by the offensive smell of its seeds when crushed. Similarly at Airey's the bird is known to travel some half-mile inland to feed on the ironbarks which bloom in July. At the Sheepwash on the Lower Barwon I have noted it at Easter-time among the melaleucas, and on more than one occasion I have seen it in Geelong, whither it must have travelled from the south coast.

These instances are exceptional, and at ordinary times, though to meet with it you have but to visit any clump of ti-tree on the coast between Barwon Heads and Lorne, you will not find it inland. Curiously enough, I have never seen the Singing Honey-eater on the eastern side of Barwon Heads, even at Queenscliff, where there appears to be abundance of suitable cover.

It is heavy in flight, compared with other Honey-eaters, and yet goes jerkily: it is fond of perching on the top of some ti-tree and thence delivering its rolling notes.

In the summer it lives largely upon insects.

The nesting-season lasts from mid-October to the end of January, and it is my opinion that two broods are reared.

It is a most conservative bird as to nesting, for it builds year after year almost in the same spot. I

have seen as many as four nests in one small ti-tree, in various stages of dilapidation. The nest is placed either in the thick boughs of a grey-leaved shrub which grows in depressions in the coast sandhills, or else near the top of a ti-tree, usually one on the seaward side of a clump. The height varies from 5 to 10 feet from the ground. The nest is cup-shaped, but widens more abruptly than do most Honeyeaters'; it is built of longish stalks of grass, and is elastic in texture. Ornamented with a few white cocoons on the outside, it is lined usually with seed-down.

The eggs are usually three, of a pale salmon-pink with a very few minute spots of red.

WHITE-EARED HONEYEATER

Nesoptilotis leucotis melanodera

THIS is to be classed among the handsomer of the Honeyeaters. It is olive-green above, yellowish olive below, with throat and chest black, and a patch of beautiful silvery-white on each side of the head at the ear. It would be impossible to mistake it for any other bird.

Very clear is the remembrance of my first view of these birds. It was early in the summer of 1888, but quite a hot day (were the summers really hotter in one's boyhood?), and the locusts rattled shrill and incessant from the tops of drooping gums by the sandy Swan Bay Road as I left Marcus Hill Station

behind me and began my first voyage of discovery in a delightful bushland: which I felt sure was crowded with strange and beautiful birds, so that my blood ran high with excitement and my ears listened intently for the slightest new sound. I passed through some thick timber, and came suddenly upon a square clearing, site of the home of some settler of the fifties who must have been burned out. There were just the faint outlines on the ground to show where the blocks had been, a few crumbling bricks from the fallen chimney, and, sole living witness of human habitation, a dense growth all around of furze bushes and scented geraniums.

And just as I took in the scene I heard and then saw the new birds, four of them. They hopped from gum boughs to furze bushes, they flew back to high branches, and let me hear their strange note, which from that day I have always mentally compared to a stone falling into underground water with a singularly cheerful "plop." "Never," said I, "have I seen such lovely birds. I will call them Saffron-birds." And so I did, and that is what they still are in my mind, though never, I think, have I told anyone of it till now; finding out later, as I did, that I was not their first discoverer by some ninety years. However, the birds were new to me, and that is the chief thing when one is twelve years old.

I found an old nest or two in the furze bushes, but nothing more, as my feet burned for further explorations and I plunged deeper into the wood-

WHITE-EARED HONEYEATER'S NEST, SHOWING KANGAROO-FUR LINING, ANGLESEA.

land. I don't remember whether I found anything else that day; but I know that, ever since, the smell of scented geranium calls up a vision of a clearing in the gums, furze bushes with seeds that crackle in the heat, and my sweet-throated Saffron-birds.

The White-eared Honeyeater is found at intervals, very rare now, in the Queenscliff Road bush, inhabiting the growths of dwarf ti-tree that one sometimes finds in damp places or sandy roadside rises in the forest, and also furze-patches surrounded by timber. In the cleared districts it does not occur, and one must go some distance into the southern messmate forest before meeting with it. At Anglesea, and particularly following up the creeks, it is one of the commonest of bush birds. At Airey's Inlet and beyond I think it is not so numerous. I have never seen it at the You Yangs. Its typical resort is a valley among timber, wherein there is sufficient undergrowth of ti-tree or the like for the bird to nest in. For it is a stationary species, breeding in the same spot year after year, and remaining there all the year through. The nest is firmly set in a low fork; it is strongly built and lined with a thick felting of wool or fur. The eggs, two in number, are pale cream-colour with a few reddish spots.

As a remarkable exception as to locality I must record a solitary bird of this species which I saw at the very extremity of Point Henry, perched on a beacon, early in October, 1913. I cannot suggest how it got to such an unlikely spot.

YELLOW-TUFTED HONEYEATER

Lophoptilotis melanops meltoni

It is remarkable that, however great the similarity of birds of the same family to each other in general habits, one finds that their notes are invariably quite distinct—a circumstance the knowledge of which has led me to the discovery of more than one new species for the district. So it was that on August 18th, 1912, as Messrs. Purnell and Riordan and myself were driving along the Barrabool Hills Road near Gnarwarre, the strange piping note of a bird which flew very like the White-eared Honeyeater pulled us up sharp; for even the White-eared species would be rather out of its beat on those windy hills. It turned out to be the first recorded Yellow-tufted Honeyeater from this district.

They are said to occur at Melton, but, so far as I know, are not found elsewhere south of the Divide, and the bird we saw was evidently a stranger, for it flew constantly from tree to tree towards the west, keeping high in the air. Another bird, which I believe to have been of this species, we saw about two miles west of Torquay, in lightly timbered country, at Easter, 1913. This bird may be known by its bright yellow throat and tuft of rich yellow feathers behind the ear.

YELLOW-PLUMED HONEYEATER

Lichenostomus ornatus

THIS is another Honeyeater of what may be called the "Greenie" type, but is distinguishable by its yellow ear-tufts and longitudinal breast-markings of brown. A specimen in the Geelong Museum has no accompanying data, and I have not observed the species here since the year 1888, when in the winter months they were present in small numbers in the eastern part of the town, feeding on the nectar obtained from the heavy-scented pittosporum flowers. I had one of them, which had been wounded, in an aviary; it fed avidly at first on flowering boughs introduced into the cage, but after a few days appeared to pine and was released.

WHITE-PLUMED HONEYEATER

Ptilotula penicillata mellori

EVERY schoolboy knows this bird as the "Greenie"; it is to be distinguished from all other birds by the small tuft of silky-white feathers behind the ear-coverts—generally referred to by boys as "a white ring round the neck."

While the majority of our native birds, and particularly the useful ones, are dying out as settlement extends, there are some species, of which the present is one, which have adapted themselves admirably

to the altered conditions, and are as much at home among the flowers and shrubs of town gardens as ever they were in the bush. Particularly is the White-plumed Honeyeater partial to the blue-gum trees (*Eucalyptus globulus*) which one finds in some of the older gardens; often one may see the Greenie from the top of one of these, on a summer evening, dart up into the air, apparently just for pure enjoyment, singing as he goes, and after undulating rises to a height of 30 feet or so, drop back into the tree-top.

It is found throughout the district where the country is lightly timbered, but is perhaps nowhere more abundant than in the Eastern Park. Into the messmate forest west of Torquay it does not penetrate, its place there being taken by the Yellow-faced and White-eared Honeyeaters.

I have seen a nest with eggs as early as July 4th; the ordinary breeding-season is August and September. The nest is pensile, and is swung to the outer twigs of a leafy eucalyptus branch near the ground or among the drooping needles of a she-oak. Such are typical positions, but in the Park I have often noted the nest in low thick bushes, in which case it is more roughly and heavily built than when suspended from an overhanging bough. It is cup-shaped, built of fine grasses with some white exterior ornamentation of wool, cocoons, and the like; and is lined with a little seed-down, fur, hair, or feathers. Usually one can see the eggs through the nest from below. They are two or three in number, and vary

YOUNG WHITE-PLUMED HONEYEATER, LILYDALE, BATESFORD.

in ground-colour from light cream to deep reddish buff, with red-brown spots which, while more plentiful towards the larger end, do not usually form a ring.

CRESCENT OR TASMANIAN HONEYEATER

Phylidonyris pyrrhoptera indistincta

I do not know any bird which has a louder voice for its size than the Crescent or Tasmanian Honeyeater ; it suggests an excited tuning of high-pitched fiddles, and rings out startlingly in the dense gullies which are the home of the species. A few birds we see in the winter about the town ; with the splash of reddish gold across their wings they might at first be taken for the larger, commoner, and more brilliant New-Holland Honeyeater, of which I shall speak presently, but if you can get a look at one from the front you will see a lunar-shaped black mark down each side of the breast, curving so as almost to meet in the centre, from which comes the name Crescent or Horse-shoe Honeyeater. They are slenderer-built, too, than the New-Holland bird, and move about the bushes more sinuously. The female is much duller in plumage than the male, and has merely a trace of gold on the wings.

In the month of August these Honeyeaters are numerous in the flowering hedges of kangaroo-acacia about two miles west of Torquay, but do not appear to breed there, nor indeed anywhere west of Anglesea. Here, in a thick growth of young ti-tree about a

mile from the township, I came upon a well-grown young bird in October, 1912; while on the Scrubby Creek some miles nearer Wensleydale the species is quite common.

Its ideal haunt is a wide stretch of green, close-growing young ti-tree on either side of the bed of a swampy creek, such as commonly springs up a year or two after the taller, original growth has perished in a bush fire. There are several such places along the Scrubby Creek, and also on the Distil Creek, which is one of the streams forming Airey's Creek. In the drier, more open country which the New-Holland Honeyeater affects, the Crescent Honeyeater is rarely found in the breeding-season.

At Airey's Inlet at the end of September, 1902, I found several nests of this species. One was set low down in bracken fern (*Pteris aquilina*) in what was formerly the Long Swamp, but has since been reclaimed by Mr. Sutherland; the others were in low ti-tree bushes. The nest is wider and has a broader rim and shallower cup than the New-Holland Honeyeater's, and is lined with rootlets and not with seed-down; while between the lining and the outer fabric I generally noted one or two broad dead bits of eucalyptus leaf.

The eggs are smaller than those of the New-Holland Honeyeater; in colour they are creamy-buff with a few brown spots set in a ring about the larger end. Three is the full clutch. I should judge that most eggs are laid in the month of August.

NEW-HOLLAND HONEYEATER

Meliornis novæ-hollandiæ assimilis

WITH wax-yellow wing-bars and white breast broadly striped with black, the New-Holland Honeyeater is certainly the most striking, as it has lately become in the town one of the most common, of our Honeyeaters. It is a bold and noisy bird, the note varying from a sharp harsh chatter to a loud reeling note which distinctly suggests a song.

Up till the year 1890, and probably later, this bird was only a winter visitor to Geelong. I remember a great influx of them in the month of May, 1889, when a number of tall aloes blossomed and the clusters of flowers at the end of the lateral branches were centres of attraction for hundreds of Honeyeaters, from the little Spinebill to the great grey Wattlebird. But these all returned to the forests with the advent of spring, and I heard of no nests of the present species until about 1893. Now it must be almost as common as the Greenie, and breeds in numbers every year in the Park.

A nest Mr. Greenfield showed me in 1913 was built at the top of a pittosporum tree, an unusual site, as the bird most often builds in a low bush and not more than 3 feet from the ground.

One does not see this bird in absolutely plain country, but it abounds wherever there is a patch, however restricted in area, of bushland or flowering

shrubs, especially if surrounded by hedges of kangaroo-acacia (*A. armata*), for in these it prefers to make its nest.

It is insectivorous and nectar-loving. At Batesford one can watch these birds feeding at the honey-coloured flowers of the *Banksia* (wild honeysuckle), and ever and anon darting out into the air to capture some flying insect.

August is the chief breeding-month. The nest is strongly but roughly built of dead grass, bents, and rootlets, lined invariably with seed-down or smaller dead flowers of one sort or another; it is placed firmly in a thickish fork in an acacia hedge, prickly mimosa bush, or small shrubby ti-tree. I have seen a nest in a honeysuckle tree, and another, at Torquay, in a passion-flower vine trained on wire at the end of a veranda.

In 1911 I found a nest early in August in a clump of ti-tree at Jaar-nu-ruc Creek, Torquay (the Deep Gully). By the end of August this was deserted and a new nest built not 2 yards away, in another bush. In this new nest there were on September 17th two fresh eggs. On October 1st I found that one was deserted and the other broken, the nest clearly having been deserted, while 10 yards away there was another nest containing two eggs which appeared to be nearly incubated.

The eggs number two usually; in some hundreds of nests which I have examined I have only seen one clutch of three. They are of a buffy ground-

NEW-HOLLAND HONEYEATER'S NEST, TORQUAY.

colour with a ring of dark brown spots. At Airey's Inlet, where the bird is very common, I once found a nest containing two fresh eggs on March 31st, and have heard of young birds in May.

MINAH OR GARRULOUS HONEYEATER

Myzantha melanocephala whitei

GOULD spells this bird's name "Miner," and that is in consequence the spelling adopted by those who accept Gould as authoritative on all questions of bird nomenclature. I cannot help thinking, however, that the name was given to the bird by early Tasmanian settlers who had been in India and who noticed a sort of resemblance (perhaps in its yellow bill) to the Myna or Minah of that country. That was the way names were given in those days. It must be remembered that it is easier and more natural for a settler to christen a strange animal or bird straight off by the name of some other one which it appears to be like, than to wait and name it from some peculiarity which later on it may be found to have. Witness the numbers of our birds called Magpie, Wren, Thrush, Finch, Robin, etc., none of which belong even to the same genera as the English species from which they were named. Moreover, there is no conceivable reason why any one should have called the bird "Miner"—it does not mine any more than it toils or spins. I think Gould got the name right but the spelling wrong.

This was once a common species in the Geelong district, but can hardly be said to be so any more. It is very local, never found in thick bush or in absolutely open country, but only in places which are lightly timbered with gums interspersed with she-oaks, bull-oaks, or honeysuckles. It was formerly, and probably is still, to be found sparingly throughout the less dense parts of the woodlands between Port-arlington, St. Leonards, Queenscliff, Ocean Grove, and Drysdale. One meets with it again in a patch of timber on the Grass-tree Plain, and at intervals in the gum scrub which fringes the messmate forest about Jan Juc and Paraparap. At the foot of the You Yangs it is still numerous.

No bird's-nest is easier to find than the Minah's, except on those rare occasions when, in the absence of its favourite trees, it resorts to the gums; in these its nest is much less conspicuous. Ordinarily it chooses a low, projecting bough of a honeysuckle, bursaria, or she-oak, and makes a nest so large and with so much woolly adornment of the exterior that one can hardly miss it. It is open, and built, as to the main fabric, of wiry grasses; within it is nearly always lined with a pad of sheep's wool, of which also strips are used to ornament the outside.

The eggs are laid in August and are three in number, dull white in ground-colour and thickly spotted and blotched with red, especially towards the thicker end.

The Minah flies comparatively slowly, though its

MINAH'S NEST IN PRICKLY-BOX TREE, YOU YANGS.

rounded wings work hard all the time ; it is one of the most ungraceful of the Honeyeaters in the air.

Its cry is loud and dissonant ; there is not one of its half-dozen calls which has anything pleasant or musical in it, and it seems specially designed by nature for the office of general frightener-up of game, which it so readily fulfils, and which causes it to be so cordially detested by the sportsman. Other birds do not at ordinary times take much notice of man ; not so the Minah—it treats him as if, like the White Owl, he were an hereditary enemy. You may see as many as a dozen Minahs collect on the high boughs of a tree and all join in what seems a continual querulous complaint at your presence in the neighbourhood.

WATTLE-BIRD

Coleia carunculata tregellasi

THE largest of the Honeyeaters, the Wattle-bird, is not likely to be confounded with any other, unless it be with the Brush Wattle-bird, which is smaller and has not the yellow patch in the centre of the abdomen which distinguishes the present species.

Not even the most devoted Australian patriot could describe the hoarse bark of the Wattle-bird as a song, and yet in August the bird knows how to exchange the croak of the rest of the year for a call of joyous exultation, which is as fine a strain of wood-

land music as any you may hear in that great chorus of the bush that awakes with the throbbing of spring.

He is a good flier, too, an unusual quality in a Honeyeater, reminding one, by his alternate wing-strokes and glides, of the flight of the *Graucalus*. In February and March one may see small companies of Wattle-birds, ten to twenty birds in each, passing over the town in what almost looks like a migration. It is, however, that the gums have done flowering where the birds have been, and they seek fresh fields.

The Wattle-bird is found throughout the district, in the same classes of country as the Minah—that is, patches of fairly open woodland. During the autumn and winter it concentrates in spots where the honey on which it feeds is plentiful. Paired by the end of July, the birds nest in mid-August. I once knew a pair make a third nest and lay a third pair of eggs after the former two had been robbed, and I think it likely that at least two broods are regularly hatched. I have found eggs as late as December.

The nest is larger than any other Honeyeater's and is composed of a rough outer frame of thin dried eucalyptus twigs, lined with grass, strips of bark, and rabbits' fur. It is firmly fixed in a fork of a tree, usually a gum sapling, at a height of about 12 feet from the ground. In the Eastern Park I once saw a nest in a cypress-pine tree.

The eggs are of a reddish ground-colour, marked with chestnut and brown spots, usually in the form of a broken ring about the larger end.

BRUSH WATTLE-BIRD

Anthochaera chrysoptera intermedia

THIS species bears a general likeness to the Wattle-bird, but may be known by its smaller size and the absence of any yellow on the breast. It has of late years become one of our rarest Honeyeaters; I know but two places where it is still to be found with certainty—viz. the You Yangs and Airey's Inlet, and at neither is it common.

It has an even harsher and more disagreeable, because shriller, cry than the ordinary Wattle-bird. Gould says the blacks named it "Goo-gwar-ruck" because they thought it sounded like a man in the throes of sickness. However, the bird appears to rejoice in the effort.

In the autumn and winter you may see this bird at Airey's Inlet feeding in company with the larger Wattle-bird and other Honeyeaters at the blossoms of the tall ironbarks. As the spring approaches they retire to the most secluded and wooded gullies, and there build their round, rather shallow, open nests, of twigs lined with bark, and very small for the bird's size, in ti-tree or similar swamp-scrub at a height of 10 or 12 feet from the ground. At the You Yangs I found a nest built of similar materials, but placed in a banksia tree within easy reach from the ground.

The eggs number two, and are smaller than the Wattle-bird's, being hardly distinguishable, except

by their slightly richer spotting, from those of the Spiny-cheeked Honeyeater.

SPINY-CHEEKED HONEYEATER

Acanthagenys rufogularis cygnus

THE You Yangs, Batesford, and the coastal ti-tree from Queenscliff to Ocean Grove comprise the true homes of the Spiny-cheeked Honeyeater, and are the only places at which it is known to breed, if one excepts a pair or two which may at times rear broods in the Eastern Park.

It exhibits a marked preference for the clumps of wild cherry tree which grow among the huge granite boulders at the Dog Rocks and on the sides of Flinders Peak, and here may be found all the year round, feeding as well on insects as on the honey which it extracts from the flowers of the Banksia and the various species of eucalyptus.

While it bears a general resemblance to the Wattle-birds, it far surpasses them in vocal powers, having one of the sweetest and most liquid songs of any of our birds; not loud, but full and varied, pouring out, as some one has said of the song of the Nightingale:

“Like water bubbling from a silver jar.”

The upper surface of the bird is brown, black stripe behind eye and on sides of neck, and above the latter a stripe of dusky white; curious white hairs on the cheeks (whence the name); throat and upper chest

light rufous, and rest of under surface whitish with brown stripes. The tail is tipped with white, and this shows very conspicuously when the bird is flying.

The nest is not at all of the type one would anticipate from the bird's large size; it is relatively small and of the type of that of the White-plumed Honeyeater, though, of course, it is bigger than that. Built of long, well-woven, whitish dried grass-stalks, in the form of a deep pensile cup, wider at the top than at the bottom, and lined with a little fur, it is slung in the smaller bushy boughs of a wild cherry or she-oak tree, or, on the coast sandhills, in a ti-tree. The birds appear to have two broods, as I have known of eggs in August and also at the end of September and beginning of October, which is the more usual time. One nest, found in leptospermum scrub at Ocean Grove, contained three fresh eggs on November 9th, 1898.

The eggs are buff-coloured, marked with deep brown and lilac spots, inclining to a zone round the larger end.

GROUND-LARK

Anthus australis australis

IN this species we meet with another bird which seems to take no harm from the spread of settlement; it is found far and wide throughout the district, along every roadside, and wherever there is grassland or indeed even rough heath. It is not subject to

any migratory movement, and breeds wherever it is found at other times of the year. It lives upon insects and the seeds of grasses.

Everyone knows its habits who has ever driven along a grassy country road. It runs with rapidity for a little distance, and then halts, balancing its white-edged tail up and down, presently to run on again, halt again, and finally fly with a little twitter, to repeat the performance a few yards farther on. It perches readily enough on stones and fences, but, strangely, never on trees except when it is actually nesting, and then it seems to prefer settling for a moment on the swaying end of a bough to anywhere else. It does not perch on the branch like an ordinary passerine bird would, but seems to try to hang on uncertainly on top of the leaves.

At this season of the year, too, it has what almost amounts to a song, a cheerful little chirrup, which it trills as it flies up into the air, drops a little, up again in a curve, drops, curves again, and so forth, till it attains a height which might almost be the envy of a Skylark, singing at each upward curve, only to descend, immediately the top of its flight is attained, like a stone to the ground.

Most nests I have seen had eggs in the month of September. The nest is composed of fine dry grass only, without feathers, and is fashioned to the shape of a neat cup in a depression sheltered by a tuft of grass. The usual clutch of eggs is three, but on two occasions I have seen four. They are of a dull

white ground-colour, heavily marked all over with greyish brown.

HORSFIELD'S BUSH-LARK OR CROP-LARK

Mirafra javanica horsfieldii

It would be difficult to find a less suitable name for this species than that of Bush-lark, by which ornithologists have generally known it. Never by any possibility does one meet with it in the bush. I have adopted the name Crop-lark because the bird lives in the growing crops from August until harvest, and nests there. Even after the crops have been cut it frequents the stubbles.

I have had some doubt as to whether the species migrates north in winter, but I am inclined to think it does not. So prominently does its song bring it under the notice of the bird-lover in the spring that he is apt to suppose that in the months during which it is silent, say from December till July, it is no longer in the district. In May, 1904, numbers of Crop-larks were present in the stubbles on Mr. Cochrane's farm "Aitkenside," Ceres, and on April 12th, 1912, they were equally plentiful on the plains beyond Moorabool Station. Probably the birds spend the winter in the field where they nested in the previous season, if the stubble remains; if the land is ploughed up, I think they merely move to the nearest stubble

or grassland, there to stay till the new year's crop is high enough to afford them cover.

It is the only wild bird we have in this district which mimics others, and that in the spring months it does to perfection. Rising abruptly from the growing crop, it soars, with a little original song of its own, to a height of from 100 to 150 feet from the ground, or even higher, with a very quick fluttering movement of the wings. At the top of its flight, still on agitated wings, it begins its series of imitations. The bird's own natural song, which sounds a little like the Skylark's but is not nearly so strong and full, forms the base or undercurrent, and is interposed between all the imitations. Suddenly one hears the cheery double "sweet-tweet" of the Swallow, followed shortly by the merry little rippling song of the Tomtit, reproduced *à merveille*. Then one may get the chatter of the Sparrow in the hedge, the "two-to-weep" of the Quail, or the hurried alarm-notes of the cock Blue-wren.

Other birds I have heard it imitate are the Greenfinch, Goldfinch, Silver-eye, and Skylark. The last was a good effort (it was near Wauru Ponds bridge, and I had got off my bicycle to listen), but from the oatfield below shot up suddenly into the blue the English singer himself, pouring his heart out until "all the earth and air with his voice was loud," and in that flood of melody the Crop-lark's little strain faded altogether.

In autumn and winter, when it inhabits the stubbles

and tussocky lands, the Crop-lark has no song, not even the faintest of chirps as it rises before one, differing in this from the Ground-lark. It does not go far, and may also be distinguished from the Ground-lark on such occasions by its jerky, spasmodic motions in the air, and its smaller, stumpier body, thicker beak, and shorter tail. The whitish feathers on each side of the tail are very similar to the Ground-lark's.

Dogs point to this bird just as they do to the Calamanthus; and, curiously enough, Crop-larks are very often found in the autumn in the same fields with the Stubble Quail.

The nest is like the Ground-lark's and placed in similar positions, but usually in a growing crop. The eggs, three in number, are smaller and rather glossier and darker than the Ground-lark's, but otherwise similar in colouration.

The Crop-lark is distributed throughout the Geelong district, and its song may be heard over almost any crop-land in the month of September. It is much smaller than the English Skylark, with which, when on the wing, it might be confused.

SPOTTED-SIDED FINCH

Stagonopleura guttata philordi

THIS beautiful little Finch, now a rarity in the district (the last I saw was near Ceres Bridge in October, 1911), might, when it is feeding on the ground, where

it spends most of its time, at first sight be mistaken for the Chat, for the striking characteristic of each is a pure white under-surface crossed by a deep black band on the chest. But the white-spotted flanks, red bill, and above all the brilliant scarlet patch above the tail, render very little observation necessary in order to distinguish the Spotted-sided Finch.

I do not remember ever to have seen it on the eastern side of the town, nor, I think, on the southern, though friends of mine have noted it at Airey's Inlet. The birds I have seen have always been at one point or another along the rivers above the junction, or on the plains sparsely dotted with she-oaks which lie to the west about Inverleigh and Gnarwarre. I have not seen more than two or three birds together.

The call is a long, loud, and yet melancholy single-noted whistle, an extraordinary one for so small a bird. It is not unlike the note of the Spotted Ground-thrush.

I should think it not unlikely that this bird breeds regularly on the plains, and particularly towards the north, but have myself only seen one nest. This was in a bunch of mistletoe growing within reach from the ground in a she-oak tree at the Dog Rocks, Batesford, in November, 1897, and contained one fresh egg. It was built of grass, and was large and loosely constructed, with a spouted entrance projecting in front.

FIRE-TAILED FINCH

Zonæginthus bellus bellus

IN July, 1893, I obtained at Airey's Inlet a single bird of this species, which was set up by Mr. Mulder and is now in the Geelong Museum. I never saw it in the district before or since. Probably the individual referred to came from the Otway Forest, where in the denser parts it might still be possible to find the species breeding. It is a plain-coloured bird, upper surface brown and under grey, but beautifully pencilled all over with tiny narrow black lines. At the base of the tail is a bright patch of scarlet. I would remind young bird-students that though this is the bird which scientists call Firetailed Finch, the bird commonly called Firetail is the Red-browed Finch.

RED-BROWED FINCH

Ægintha temporalis tregellasi

THIS is the species widely known as "Firetail" or "Red-head." It is of a greenish-brown colour above, greyish below, and its conspicuous marks are a crimson patch over the eye and another at the base of the tail; by these, and the absence of a white ring round the eye, it may be known in the field from the White-eye, with which, in my experience, one is rather apt at first to confuse it, as the two birds have much the same sort of flight and note, and move about

in flocks of about the same size, and inhabit similar classes of country.

The Red-browed Finch is a much less common bird than it was, owing perhaps to bush-fires destroying many of the nests containing eggs and young. This would happen especially about Anglesea and Airey's Inlet, where the diminution in the numbers of this bird is most noticeable.

It visits Geelong in small numbers in the autumn and winter, but its true home is in well-wooded country and along the thickly-timbered banks of forest creeks. At the You Yangs it frequents the southern slopes of the hills, building in the isolated acacia bushes; it is found in smaller numbers in the Queenscliff Road woods. Early in November, 1886, I found a great many nests in the ti-tree fringing Lake Connewarre along the shore to the north of Campbell's Point; at this spot it would now not be easy to find a bird, much less a nest.

In the southern forest one finds it first at the Bull's Well, and from that point on it becomes increasingly numerous to Lorne. It is rarely if ever seen in the drier parts or on the hillsides, but keeps to the gullies and creek flats.

The structure of the nest may have something to do with this, for it is composed of long grasses which it would not be easy for the birds to procure except in the damper gullies; these are worked when almost green into a large round nest like a hollow ball, with a long, spout-like entrance. There is no

RED-BROWED FINCH'S NEST IN KANGAROC-ACACIA, YOU YANGS.

attempt at concealing the nest, which is placed in almost any sort of shrub, though preferably in a kangaroo-acacia or prickly mimosa. Another favourite site is in the contracted dead tops of some tall-stemmed sapling which has been killed by a bush-fire.

The eggs are generally six in number, pure white.

So closely does the bird sit and so long is the entrance spout that as boys we found it quite easy to catch the sitting hen by approaching the nest quietly and placing a hand at the entrance, when she would fly right into it. We probably enjoyed the subsequent harmless examination of her beautiful little form better than did the bird.

ORIOLE

Mimeta sagittata sagittata

THIS Thrush-like bird may be distinguished from any other bird of similar size by the pear-shaped streaks of black all down its white breast. It is now an exceedingly rare bird in the district; I had, indeed, supposed it to be long extinct, when, in the early morning of September 20th, 1913, I heard its trilling, flute-like call near the railway at Gherang, on the line to Wensleydale, and presently saw the bird perched on the top of a dead gum. It had no doubt just arrived (the species is a spring and summer visitor only to Southern Victoria), for it kept flying from tree to tree in a westerly direction until it passed out of sight.

Lieutenant-Colonel Garrard, when a boy, found a nest of this bird in what was then well-timbered country to the west of Mount Duneed. It was a large, cup-shaped structure of grasses placed conspicuously at the very end of a projecting eucalyptus branch, and contained a pair of eggs, rather like those of the Wattle-bird, cream-coloured, with amber, brown, and lilac spots and blotches.

When I first identified this bird, at Fern-tree Gully, near Melbourne, about the year 1902, its note seemed vaguely familiar, and I believe I must have met with it in the early nineties in the neighbourhood of Grub Lane on the Queenscliff Road, a locality which certainly it has long ceased to inhabit.

SATIN BOWER-BIRD

Ptilonorhynchus violaceus violaceus

It is hardly too much to say that this is the most interesting bird to be found in the Geelong district, that very few people know of its existence, and that it is rapidly approaching the point of complete extinction.

Having its central home in the depths of the Otway Forest (if one can still so speak of a forest which is yearly disappearing before the settler's axe and fire-stick), the Bower-bird, like so many other species, makes eastward in the winter towards the belt of smaller rainfall which lies towards Geelong. So far

as I have been able to ascertain, it has never approached nearer to the town than Paraparap. Mr. Allen Noble frequently noticed small flocks at Merrijig Station, Pettavel, in the winter months of the year 1902. I have not myself seen this species since the year 1890, when in July it was comparatively plentiful at Airey's Inlet, the old males being in the proportion of perhaps one in forty.

There is as great a difference between the plumage of the old male Bower-bird and that of the female and young male as one could well conceive. The adult male has the whole plumage deep, shining blue-black, while the females and young males are of a greyish-green colour on the upper parts, lighter below with scale-like brown markings and with a wash of yellow. That the adult plumage is not attained in the first year is clear from a note of Mr. Mulder's as to a pair which took up their quarters in the garden of his house at Bambra; that is, assuming that the birds do not make bowers until they have attained sexual maturity.

This pair were both in the green, speckled phase of plumage. In a fir tree (*Pinus insignis*) growing over the kitchen they built a bower of fir sticks laid across several horizontal limbs of the tree at a point close to the main stem. It was about the size of a Magpie's nest, covered in at the top and with a hole at the side, and about it the birds played all day long, making at one time noises like the snarling of a cat, at another suggesting the whirring of a wheel, and

sometimes imitating other birds. This was early in October, 1893.

The instance is the only one I know of a bower being built in a tree ; the *nest* is always in a tree, but is a small structure not in the least like the bower. It is remarkable that no nest of the Bower-bird has ever been found in the Otway Forest, where undoubtedly the birds breed, or did breed, every season.

The flight of the Bower-bird is easy and slow, and it lives almost entirely in trees, feeding on seeds and insects.

CROW OR RAVEN

Corvus coronoides perplexus

I AM aware that I should follow the scientific authorities and call this bird the Raven ; but as I believe that this bird is quite as similar to the English Crow as it is to the English Raven, and as, out of possibly one million people in Victoria who know the bird by sight, nine hundred and ninety-nine thousand nine hundred would call it a Crow, I have decided to bow to the weight of popular usage.

I want to make this clear. There is another, a different, sort of Crow in Northern Victoria which, to the best of my belief, never comes south of the Dividing Range, and if it should occasionally do so, has certainly never reached the Geelong district. Now, the ways in which, if you should happen to visit

the Wimmera or the Goulburn Valley or other parts of the Northern Plain, you may, if you care to, distinguish this other Crow are these: it is smaller, and it has an appalling cry, like the shrill despairing cry of a child, in place of the good deep "waa-aa" of our larger southern Crow.

The confusing thing is that they have the larger Crow in the north too, and in some parts it is the commoner bird; but we never get the smaller Crow near Geelong.

The Crow is a bird of the wide plain and not of forest country, and in the Geelong district is very plentiful on the plains north of the Barrabool Hills which merge into the Western District country, as also it is about the Werribee, Little River, and Lara; but on the east (Queenscliff) side of the town it is a rare bird, while in the southern forest it is never seen in the spring and summer. Only occasionally is the forest visited by bands travelling about in the autumn and early winter.

It is really a beautiful bird, in spite of the prejudice against it, and makes an amusing garden pet, being very vain and fond of having someone to watch its antics.

The Crow nests earlier than any other bird in the district, taking the whole number of individuals and comparing them with those of any other species. It has only one brood, and the enormous majority of pairs nest in the month of August. Of very early nesting Mr. Allen Noble sent me a note from Wurrook,

Rokewood, on June 3rd, 1912. That autumn had been dry. For some time prior to the date of his letter Mr. Noble had seen a Crow carrying sticks and sheep's wool to a windmill in a paddock where ewes were lambing, and by June 2nd the nest was completed on the windmill platform and one egg laid. The nest was afterwards blown down.

The nest is a wide and deep structure of heavy sticks of she-oak or gum, lined with a thick pad of wool, cow-hair, or rabbit's fur. On the plains it is generally built in a she-oak tree, and is then often visible for a considerable distance, particularly when fixed in the top fork of some central branch of the tree, just a little below the leaves. Sometimes it is within 8 or 10 feet of the ground. Nearer the hills the nest is built in an almost inaccessible position in a redgum.

The nest is sometimes added to and used in a second season.

The eggs are three, four, or five in number, slightly larger than a Magpie's, but in comparison wider at the "shoulder" and tapering more to a point. The ground-colour is bluish green, which is spotted all over except right on the smaller end with spots, streaks, and irregular-shaped markings of dark green, reddish, and brown, with usually one or two small spots or streaks of jet-black.

Photo by H. A. Purnell, Esq.

SHE-OAK TREE WITH CROW'S NEST, ON PLAINS NEAR GNARWARRE.

OTWAY FORESTER OR PIED CROW-
SHRIKE*Strepera graculina*

RATHER smaller than the Grey Crow-shrike or Black Magpie, with which I shall deal next, the Otway Forester may be known by his loud, mellow, chuckling cry, which is repeated twice or thrice as the bird flies from tree to tree, and also by the blackness of its general plumage, relieved by the white markings of the wings. The base of the tail is also white, both above and below. It is at first sight somewhat like the White-winged Chough (which, however, has no white on the tail), but if it be borne in mind that the Otway Forester goes about singly or in pairs, while the Chough is always in small flocks of five or six to twenty, no mistake is likely to be made. Further, the Chough is quite a common bird in some districts and not difficult to approach, whilst the Otway Forester is without exception the most wary of all the forest-dwelling birds, as it is also one of the hardest to find if you happen to want a specimen.

Its breeding-place has not yet been discovered, but doubtless is in the Otway Ranges. I believe some birds breed in the hills behind Lorne, as they appear in gardens close to the sea every summer and autumn. At Airey's Inlet it is not seen till the fruit ripens, and then makes regular forays upon the orchards from the hills above, in company with the Grey Magpie.

Of the two species the Otway Forester is the more audacious and cunning robber. The raids continue till the end of autumn, as long as any fruit is left on the trees.

On July 21st, 1902, Mr. Mulder noted several of these birds in an orchard at Highton, this being the first time he had remarked them in that district. About the year 1888 seven or eight Otway Foresters visited the Eastern Park; I have no note of the date, but believe it was in the winter, that being indeed the only time of the year when Geelong is visited by forest-breeding species.

The eye of this bird is of a bright golden yellow.

GREY MAGPIE

Neostrepera versicolor vieilloti

THIS species occupies in the drier messmate scrubs to the east of the Otway the place which the Otway Forester holds in the forest proper, the two species being found together at Lorne and sometimes at Airey's Inlet, from midsummer till July. The Grey Magpie is noticeable for its large size, general grey plumage and white markings on the wings.

An occasional odd bird may be found in winter or early spring at some distance from the breeding-haunts (I have seen individuals at the Dog Rocks, at Torquay, and even in the Eastern Park), but in general the species keeps to the same quarters all

STREPERA OR GREY MAGPIE ON NEST, NEAR JAN JUC.

the year through. It is nowhere more abundant than between Jan Juc and Anglesea. At Airey's Inlet and at Lorne it gathers in bands for the fruit season, but at other times is not so plentiful. It is also resident in smaller numbers in the bush between Drysdale and Ocean Grove, and at the You Yangs and Anakie.

When no fruit is to be had, these birds, like the Otway Foresters, live upon insects, feeding chiefly on the ground. The late Mr. William Berthon, of Wybalenna, Airey's Inlet, once related to me how he had watched one of the Colac tribe of Blacks in the early days catching these birds for food. A pair were feeding in an open bit of grass-land; the native broke a large green bough from a gum tree, and going down on all fours, holding the bough in front of him, began to creep towards the birds, making halts every few yards so as not to alarm them by too rapid an approach. To Mr. Berthon's amazement, the Blackfellow in this way got actually to within arm's length of the first bird; shot out his hand from behind the screen, grabbed the bird by the neck, and killed it by pressure in such a way that the bird had no time to utter a sound; and then, proceeding with his bough, repeated the process with the second bird; then returned smiling to the astonished witness of his skill.

The flight of this species, though heavy and lumbering to watch, is not by any means slow. On the wing they utter their strange ringing shriek which sounds like a sudden protest from some piece of

badly-oiled machinery. They have no other call but this, and, except that they are a little more noisy in the spring, seem to be in equally good voice all through the year.

The nest, which I have been able usually to distinguish from a Common Magpie's by the greater distance which the twigs project outwards from the framework, is of rather fine, long, dead eucalyptus twigs; open, shallower than a Magpie's, and never lined with any other material but rootlets. It is placed in a messmate tree, often a mere sapling, at a height of 15 to 30 feet from the ground.

The eggs are laid early in September, and are usually two in number; in colour they are of a beautiful pinkish-buff ground shade, with brown and lilac markings, most of which appear to be rather deeply laid into the shell than superimposed upon it, so harmoniously do they blend with the ground-colour.

CHOUGH

Corcorax melanorhamphus whiteæ

THE Chough exhibits almost as great a contrast in its two different sets of "calls" or notes as it does in the black and white of its plumage. If one comes upon a flock in the forest, as, for instance, between Jan Juc and Anglesea, they are usually on the ground feeding or hunting for nest-mud. As they rise, often twenty or more together, they show a brilliant

CHOUGH'S NEST IN BLUE-GUM, YOU YANGS.

white patch on each wing against the jet-black of the rest of the plumage, and at the same time give vent to a series of the most grating, rasping discords that ever it lay in a bird's power to utter. But among these even as they fly you will hear an occasional flute-like whistle through the din, and as they reach the boughs of the trees where they perch and hop about, the whistling predominates and makes an effective and not at all unmelodious chorus. Clearly this is the normal "song," the other but the alarm-note.

Choughs are very local; they keep to the same spot all through the year, and from one year to another. And always that spot is near water of some kind, be it only puddles where the bush road goes through a bit of swampy land, for the Choughs must have mud for their nests.

There is hardly a forest-area in the district where a family or clan of Choughs may not be found; I have notes of such at Lethbridge, Anakie, You Yangs, near Ocean Grove, Anglesea, and Airey's Inlet.

The wing-beats in flight are inclined to be quick, and are at regular intervals without undulation. Flights are always short and merely from the ground to a tree or one tree to the next.

The nest is placed at a considerable height from the ground, depending, of course, on the kind of trees available, but not usually lower than 30 feet. It is always in a eucalypt; I have seen nests in messmate, white-gum, and blue-gum. It may shortly be de-

scribed as an open bowl of mud fixed firmly to a horizontal branch.

A nest found at the You Yangs weighed $5\frac{1}{2}$ lb. and was approximately 8 inches in diameter and 25 inches in circumference. The mud was built well down along the sides of the bough to form a firm holding, and then in successive layers upwards. Although the eggs rested only $1\frac{1}{2}$ inches below the rim of the nest, on a layer of fine shredded bark and rabbits' fur, there was, below the latter, going right down to the bottom of the nest and touching the top of the bough, so as to fill up the nest, a mass of shredded bark and grass. This mass was built into the mud of the sides all the way up, and much of it was firmly set into a kind of plaster where it met the mud. The depth of the nest in the middle, from a level with the sides to the top of the bough on which the nest rested, was 4 inches, and thence another 2 inches to the bottom of the mud on each side of where the bough had fitted. After the nest was removed, the place where the bough had been looked like a smooth groove in the bottom of the nest. A gum leaf was worked into the mud in one place from the inside, and a tuft of rabbit's fur showed half-way down the outside, these being intended as strengtheners. The mud was greyish black.

The eggs are four, rarely five, of a creamy ground-colour, with a few large blotches of brown and lilac.

Most Choughs lay in the last week in August, but I have notes of fresh eggs being seen by Mr. Riordan

in the valley of the Moorabool, at Lethbridge, on November 12th, 1911, which, with other late records from near Ocean Grove, lead me to the conclusion that more than one brood is hatched in the season.

Several nests are often found in the immediate vicinity of each other, as might be expected in the case of a bird which is rarely seen except in flocks; but I have never met with a case where it was clear that more than one female had laid in the same nest, as has been recorded of this species by other observers.

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