

693
W58
Birds

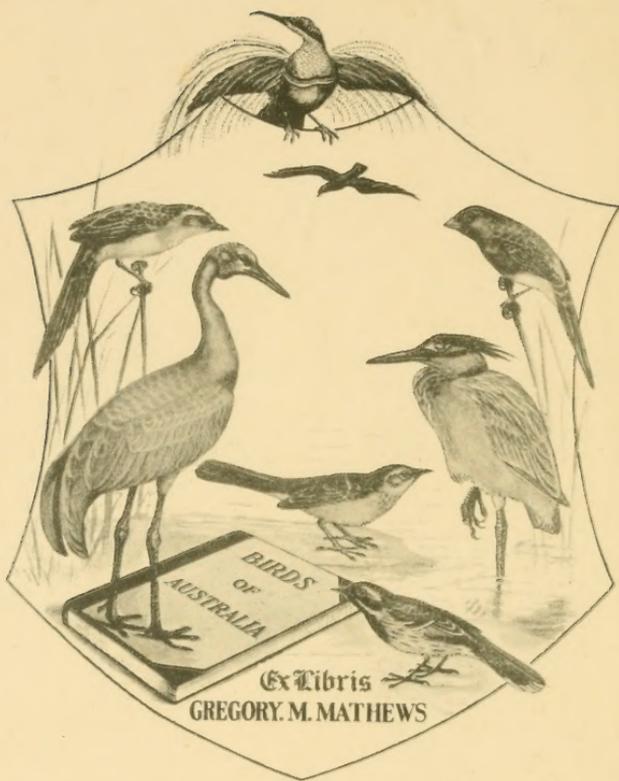
ORNITHOLOGISTS

AT

WARUNDA CREEK

BY

CAPT. S. A. WHITE.



C. Wilmon

To Gregory Matthews Esq

F.L.S. F.R.S. Esq

with the authors
order

"Wilmot"

March 25/10

E-5

Smithsonian Institution
Libraries



Alexander Wetmore
1946 *Sixth Secretary* 1953



93
W58
Birds

FOULDS COURT,
FAIR OAK,
HANTS.

A RECORD

OF THE

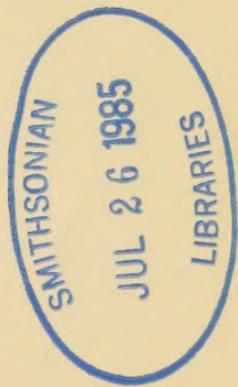
A.O.U. EXPEDITION TO EYRE'S PENINSULA,

OCTOBER, 1909,

WITH NOTES ON ORNITHOLOGY, BOTANY,
AND ENTOMOLOGY,

By CAPT. S. A. WHITE, A.O.U.

111



ADELAIDE :
W. K. THOMAS & Co., PRINTERS, GRENFELL STREET.

1910.



PREFACE.

The only explanation I can give as to the reason for my writing this record, is that I felt the necessity of recording such an important working camp-out as took place on Eyre's Peninsula, in October, 1909, under the auspices of the Australasian Ornithologists Union. I say important because, although several ornithologists had done good work on the Peninsular, this was the first attempt to make a list of the birds found in that district. I will not say a perfect list, because the limited time spent in this research would not permit of the list being a perfect one. I have written of our doings in camp from day to day, not so much in a scientific way, but in a chatty strain in hopes it may rouse an interest in bird life; and, better still, their protection. Should this be the case with but one individual, I will be repaid for all my trouble.

The list of birds attached to this record will be found correct I hope. The scientific names are after Mr. G. Matthews, F.L.S., F.G.S., M.B.O.U., &c. The vernacular names are those contained in the list compiled by the committee appointed by the South Australian Ornithological Association to carry out this work.

I have to thank Mr. A. H. E. Mattingley, C.M.Z.S., Mr. and Mrs. H. Burrell of New South Wales for the use of their splendid nature photos. I am indebted to Mr. H. H. D. Griffith for the list of entomological specimens, and for his correcting proof of same.

“Wetunga,”

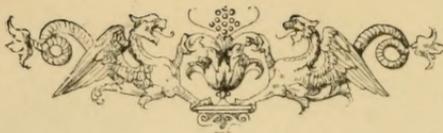
Fulham, South Australia.

February 23, 1910.

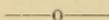


MEMBERS ON BOARD THE S.S. "RUPARA."





INTRODUCTION.



In case this record should come under the notice of others than members of the Australasian Ornithologists Union, I deem it necessary to state that the objects of the Union are "the advancement and popularization of the Science of Ornithology and the protection of useful and ornamental avefauna." Each year a session is held in one of the States and after the transactions of business matters, &c., a working camp-out takes place. For the year 1909 the session was held in Adelaide, and it was first thought of holding the camp in the Far North, but the season proving unpropitious, it was decided to try Eyre's Peninsula, (for reasons stated on another page), with this end in view accompanied by my wife I made a hurried trip to the Peninsula, where I found the roads almost impassable after the heavy rains which prevented me visiting several localities. Being handicapped with orders to curtail expenses, I selected the camping ground close to the railway line, some 28 miles from Port Lincoln, at Warunda Creek for the reasons, that after disembarking from the train no transport would be required, permanent water close to hand, mid-way between the Koppio Range and the Broom Country with the West Coast within easy reach, and a railway on which to draw fresh supplies. Mr. J. W. Mellor at his own request conducted almost all the arrangements for the provisioning and housing of the party which was no small task. In conclusion I must say that the expedition has borne good fruit already, for it has been the instigation of a rare and beautiful family of birds (neophema) being placed on the totally protected list, and the islands in Coffin's Bay being proclaimed bird sanctuaries. As to the work done in camp, I will leave the reader to judge after this record has been carefully read.



A.O.U. Camp, Warunda Creek, October, 1900.

THE members of the Australasian Ornithological Union left Port Adelaide by the well-equipped and comfortable steamer Rupara for Port Lincoln on October 5. The party, including the interstate delegates, were 25 strong—counting the cook. New South Wales was represented by Mr. and Mrs. Burrell; Victoria by Mr. J. A. Leach, M.Sc. (head of the Nature Study Department in the sister State), Dr. Horne, Messrs. A. H. E. Mattingley, C.M.Z.S., C. L. Barret (The Melbourne Herald staff), Barr, Rosenhain, Clarke, and Z. Gray; Tasmania by Mr. R. Hall, F.L.S., C.M.Z.S., (Curator of the Hobart Museum), and Mrs. J. W. Israel; South Australia by Mr. F. R. Zeitz (representing the Adelaide Museum), Dr. Angove, Messrs. R. Crompton, John F. Mellor, J. W. Mellor, Mrs. Mellor, and Misses Mellor (2), Mr. H. D. Griffith, Capt. and Mrs. White, and Mr. A. C. Edquist (of the South Australian Nature Study Department). The party reached Port Lincoln on the morning of October 6, and proceeded by special train to the camping ground at Warunda Creek, a picturesque spot overshadowed by ancient sugar gums. The remainder of the day was spent in pitching tents and forming camp. On the following morning reveille was sounded at 6 o'clock, and after a dip in the creek by the gentlemen of the party, breakfast was served under the wide-spreading branches of a mammoth sugar gum. All appetites were sharpened by the invigorating atmosphere, charged with sweet scents from dew-laden shrubs which grew in great profusion around us. Soon a start was made to explore the surrounding scrub. Ornithologists with their fieldglasses, notebooks, and tomahawks sallied forth to make observations, and to cut their



His Excellency the Governor visits the Camp.



Party leaving for the West Coast.

way to the top of tall trees to observe our feathered friends in the act of nidification, while camera men took pictures of the young and eggs in what seemed inaccessible places to the uninitiated in such work.

—Interesting Observations.—

Those who had the pleasure of seeing that world-renowned Nature photographer, Mr. A. E. H. Matingley, C.M.Z.S., at work will never forget it. He straps on the climbing irons and scales the bare smooth trunk of a huge eucalypt of over 100 ft. without a branch. Then he hauls up his valuable camera by means of a line, and perched in a most dangerous position on some decayed limb, takes pictures of the young birds and their nests. The botanists went forth loaded up, for on their backs they carried bulky packs of paper in frames, in which to press their specimens. The entomologist took his bottles, jars, and chip boxes, and also a large umbrella, into which he shakes the leafy-covered branches of trees and shrubs in search of minute insects which are concealed among the leaves and stems of overhanging branches; but as soon as the branch is touched, these insects let go their hold and drop in a lifeless fashion to the long grass beneath. The entomologist guards against this by intercepting the fall with the up-turned extended umbrella. The bright-flowering shrubs are searched for the gorgeous beetles that belong to the Buprestide, or Setonicidae family, and exist upon the sweet nectar abstracted from the wild flowers. Bark is carefully removed from the trunks of trees in search of insects of more sombre colouring, and dead logs and stones are overturned in quest of beetles, spiders, and land shells. Last, but not least, the geologist thrusts his short-handled miner's pick into his belt, straps on a strong canvas bag to his shoulders, in which to carry back to camp fragments of rock and stones which may be of special interest; and with hammer in hand he is soon at work among the relics of bygone ages. The tapping of his hammer grows fainter in the distance as the prospector works his way over the range or up some rocky ravine. So, radiating from the camp to all points of the compass, small parties of two and three go out, and the camp would be deserted but for the cook—an important individual in any camp; for, in spite of the advance of science, the scientist requires his three square meals a day as well as anyone else does, especially after a 15 or 20 mile tramp.

—Startled Birds and Animals.—

The harsh cry of the parrots is heard among the brushwood; the birds have been disturbed, most likely by some one from their morning meal amid the berry-laden bushes or seedy grasses; or, it may be, the brush-tongued lorkeets have been frightened from



Noon-day halt in the scrub.



Nest of the Grey-breasted Robin (*Eopsaltria—gularis*).

Photo. by Mr. Mattingley.

their breakfast of honey amid the bright flowering eucalyptus overhead. The timid little brush wallaby pauses a moment to listen as the cracking of a stick amid the undergrowth sounds out. He waits but a second to view the intruder into his solitude, and then this miniature kangaroo bounds off to the more secluded thickets of the bush. Kangaroo and Emu in like manner give the scientists a wide berth, for—sad to say—in these parts our strange and interesting animals have long since found out that man is bent on their extermination. Scenes like these pass before the naturalist's eyes; his nostrils are filled with the sweet and invigorating scents of the Australian bush; his pulse beats rapidly, and the blood courses through his veins as he views all Nature around him as the Creator of all things has placed it. But, alas! the vision of the inevitable passes before the Nature student—the axe, followed by fire; the scrub-roller with more fire, stumpjump plough, the seed drill. And so the natural fauna and flora are wiped out on the piece of ground for ever. It is a pity that the Government could not reserve a fair-sized block in each district so as to hand down the indigenous trees, shrubs, and flowers to the coming generations; and these reserves could be made sanctuaries for our native birds and mammals.

—In Camp Again.—

At luncheon time the pot lid summoned the camp to eat, but few would put in an appearance. Most of the members took their luncheon with them and a billycan, thus saving the precious time to keep forging ahead. Towards dark groups of twos and threes would appear in the vicinity of the camp, loaded with specimens, leg-weary and with appetites of the proverbial hunter. Only on one occasion did a member of our party fail to arrive in time, but he eventually turned up in the small hours of the morning. Darkness had overtaken him before he reached camp, and—it being a cloudy threatening night—the heavens were obscured; so there was nothing for it but to take shelter in a hollow tree and wait till the clouds rolled by. After a clean-up all assembled at the mess tent and did justice to the culinary efforts of our military cook. Pipes were lit; specimens were brought forward to the big camp fire to be identified and examined; notes were compared; graphic descriptions of the wanderings and the country through which they passed were given; and arrangements were made for the morrow. The camp fire burned gradually lower and lower, and the members one after another silently found their way to their tents to seek the rest so necessary after a day's tramp in such bracing atmosphere. One by one the lights were extinguished till our camp was in darkness. The white tents rose like phantoms as they were outlined by the starlight against the dark foliage of the sugar-gums. All was at rest in sleep with the exception of one member



Scrub Robin (*Drymacedus—brunneopygius*)
with nest and young.



Dr. Angove and Mr. Leach comparing notes.

of the party, who was renowned for heavy breathing. The noise at times that issued from his tent would make one imagine a water hog had invaded the camp! Night birds gave forth their lonely calls. The boobook owl was heard in the big timber calling to his mate with the familiar "mopoke!" "mopoke!" The weird and plaintive whistle of the stone plover, or curlew, as he dwelt upon the last note of his call, was merged into the rest of the sound. A great chorus of frogs kept a grand concert going with immense zest through the livelong night. The occasional thud or breaking of a stick close by in the scrub betrayed the jumping gait of some marsupial, but even these sounds soon seemed further and further away as we gently slid into the Land of Dreams. Just as the silvery light of the coming day becomes perceptible in the eastern sky (long before Old Sol paints that point of the compass with his fiery tongues of light), the harsh, "Quack-quack" of the wattlebird is heard in every tree as immense numbers of these birds awake into activity. Soon afterwards the reveille arouses the camp into life; and lightly clad forms are seen in the early morning light, issuing from the tents with towels in hand on their way to the creek. And so another day begins.

—Off to Coffin's Bay.—

On Friday, October 8, a party consisting of Dr. Horne (V.), Dr. Angove (S.A.), Messrs. Leach, M.Sc., Barrett, and Barr (V.), Mr. Robert Hall, F.R.S. (T.), and Mr. Edquist (S.A.), left the main camp for a flying visit to Coffin's Bay, on the west coast. The geologists of the party were anxious to explore an island in Coffin's Bay, where interesting fossil remains were supposed to have been discovered while prospecting for phosphates. It was a warm day, and the sun was well overhead before the little band of scientists were under way in a backblocker's vehicle, drawn by horses whose education was not quite so complete as that of the party who sat behind them. Soon a mallee brumby had the party in trouble. Splintered mallee swingbars, combined with hair and flesh, were flying around. This caper, as a rule, does not last long, and when the brumbies had quietened down, a piece or two of good old mallee, with a few feet of cocky's friend (fencing wire), soon put things to rights, and the flying column was again on the way.

—Through the Mallee Country.—

The track led through a dense mass of mallee, and nothing but this stunted eucalyptus was to be seen on either hand. When a ridge was crossed the party could see for miles one unbroken sea, rising and falling like billows, according to the undulating nature of the ground on which it grows. Amid this dense bush and solitude the scrub wren pours forth its melodious song, and that



Mr. Mattingley climbing by aid of climbing irons.



Mr. Mattingley photographing Mallee Hen's Nest
(showing quartzites).

enigma among birds, the mallee hen, constructs its natural incubator; the wallaby hops along its well-defined track, which leads to some claypan or feeding ground. The party pushed on, and, with a halt now and again to observe some bird in the vicinity of the track, the horses were kept up to the collar. At Lake Wangary camp was called for the night.

—A Happy Hunting Ground.—

On the following day all members of the party were about early, anxious to explore the new fields. A start was made for Horse Peninsula, a narrow strip of land jutting out into Port Douglas, forming on the east side Mount Dutton Bay. This peninsular was once a great camping ground of the aborigines, and therefore of great interest to some of the scientists, for they soon traced the extensive stone fishtraps into which the dusky warriors (now long since passed away) have driven many a shoal of fish to be speared. Their cooking places were to be seen all around where the fish and cockles had been cooked for ages past. Many rough implements used by the almost extinct race for the preparation of food—of course all stone—were unearthed or lay bleaching on the sand.

—An Aboriginal Graveyard.—

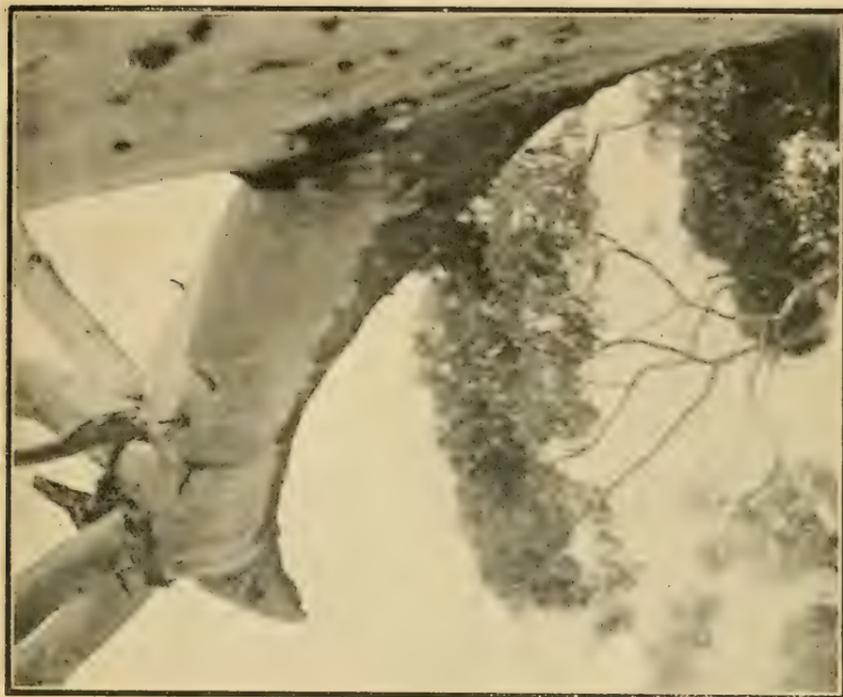
Ancient burial grounds were in the sand, the surface of which has become disturbed by the action of the wind. Fragments of human skeletons were found after groping for several hours amid the sand, which had many times been damped by tears of friends of the departed (aborigines are great at lamenting), sand which had absorbed many human bodies.

—A Human Pitfall.—

The scientists moved on up the coastline to where it rose in bold relief in cliffs from the rocks below, on which the ever restless ocean breaks in foam. This spot is marked as a point of interest, for it was here many years ago about 50 of the now-despised natives were forced after a tedious drive to the edge of the cliff and then over it at the muzzle of the settlers' guns, to be dashed to pieces on the rocks below, simply for spearing stock that had been let loose upon their own country which white man had robbed them of, just as we would nowadays shoot a neighbour's fowls that continually trespassed upon our land.

—A Picturesque Coastline.—

The party retraced their steps along the bay to Wangary, and thence along the shores of Mount Dutton Bay and Killidie Bay. The day was a fine one, and the land and water scape were charming beyond description. The fine landlocked harbour of Port



Frog-mouth (*Podargus—strigoides*) on nest.



Frog-mouth (*Podargus—strigoides*) on nest.

Douglas, its glossy surface glistening in the noonday sun transmitting glorious shades of colouring, from the light green of the shoal waters to the deep blue of the centre harbour, backed up by rugged and majestic rocks, or maybe by dazzling white sand dunes dotted over by the light green shrubs characteristic to our seashore, was a delightful picture. Drinking in these lovely vistas as every opening on the coastline revealed them, like the drawing back of a curtain, the members of the party were enraptured.

—Country Rich in Birds.—

The party trudged on, the ornithologists noting each bird that came within their scope of observation, be it a small wren, a tit, or a honeyeater amid the undergrowth. The waders, some of pied uniform, were standing on their long legs far out in the lake, but powerful glasses made the birds appear within one's reach. The shore birds, as they ran along the glistening sand in the sunlight, were noted. The nature photographer, ever on the watch for a picture, trudged along under his heavy load of photographic paraphernalia. If a nest was found with eggs or young, the camera was fixed up and a record taken, and perhaps the parent bird was snapped as she came or he came back to the nest. The collector of oboriginal remains was continually on the outlook for any indications of native occupation.

—A Friend in Need.—

At last the party reached Coffin's Bay homestead, one of the many properties owned by Mr. Mortlock, and our people were fortunate to find the owner there, for by Mr. Mortlock's generosity in placing a boat at their disposal they were enabled to visit an island in the bay, where many objects of interest came under the scientists' notice. The party returned to Wangary that night, well satisfied with their day's work.

—The Back Trail.—

Next day the malle brumbies were yoked up, and after a little persuasion got off the mark and headed for Marble Range. Just under the most southerly end of this bold pile of rocks the ornithologists struck a rich spot, for it appeared as though many species of birds had congregated under the sheltered side of the range to build their nests and rear their young. Here among an undisturbed natural flora rare birds allowed photographs and observations to be taken of them in the act of nidification, and showed but little or no fear. The party were loth to leave so lovely and so rich a spot in ornithological material, but it was imperative to reach the main camp by dark, so with regret our feathered friends were left alone in their secluded spot to enjoy a brief period till the axe, fire, and scrub roller come their way with the ever-des-



Aboriginal Remains laid bare by the action of the
wind on loose sand.



Black Cockatoo (*Calypt orhynchus—fumeus.*)
Photo, by Mr. Mattingley.

troying hand of man. The horses' heads were turned into the dusty track through the mallee once more, and as the short twilight of the Australian bush was giving way to the darkness of night, and the dear old laughing jack was giving his final hoot before turning in his head to rest, the cheery camp fire was seen burning brightly through the timber, and the wanderers and their camp friends were soon exchanging coo-ees.

I daresay those who read of scientists going into camp imagine it is a time for relaxation, and that they have a real good "loaf." Could these people only see the daily work gone through by the hard workers (of course, there are always one or two in every society who take things easily) they would soon change their opinion in regard to campers. When a party of scientists are quartered in a certain locality they are nearly always limited to time, and at once set about doing as much work within the hours of daylight as can possibly be managed, so that the district shall be thoroughly worked.

—Other Detachments Leave Camp.—

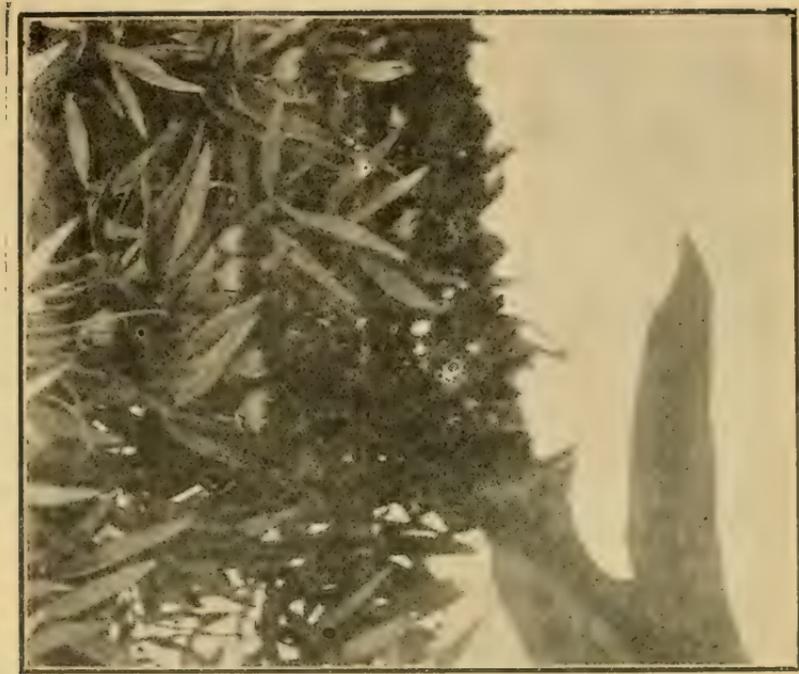
On October 12 another party left for Lake Wangary and the west coast, made up principally of conchologists. There were also botanists and entomologists. They took the same route as the first detachment, and the botanists and entomologists worked the country on the way down. The conchologists commenced operations as soon as they reached the coast. By this time most of the country within many miles of the camp had been worked. Preparations were therefore made to go further afield. On October 13 a detachment of nine left early in the morning, packed pretty tightly in a small spring dray. They headed to the east. The progress was slow, for the first seven or eight miles over rough country, which lay between the camp and the range.

The Koppio Range.—

After reaching the foothills the track became so bad that all had to alight from the vehicle, and it was as much as the old horse could do to pull the dray up with our kit. Here the country changed, and the low broom of the plains gave place to the yucca and heath of the hills, and a dwarf species of *Melaleuca* was found to be abundant. Its delicate pink blossom quite enlivened the landscape with patches of colour. The picturesque spikes of the yucca towered up on all sides, filling the air with sweet fragrance, for these strange flower heads contain an immense quantity of honey, which had attracted many insects, foremost among which was the sugar ant. Wallabies broke cover continually and hopped off to more secluded spots.



Trachydosaurus rugosus, Stump-tailed or Sleeping Lizard.



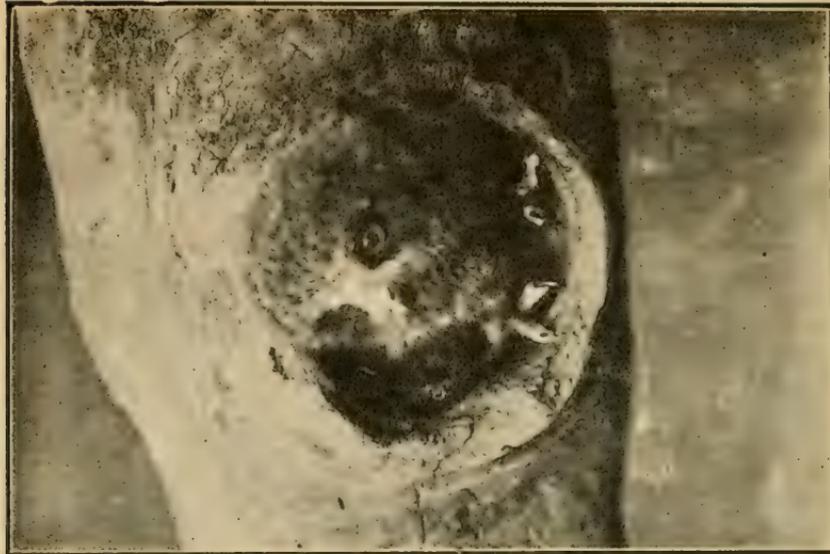
Native Teach or Gurodang (*Fusinus acuminatus*).

—Looking Backwards.—

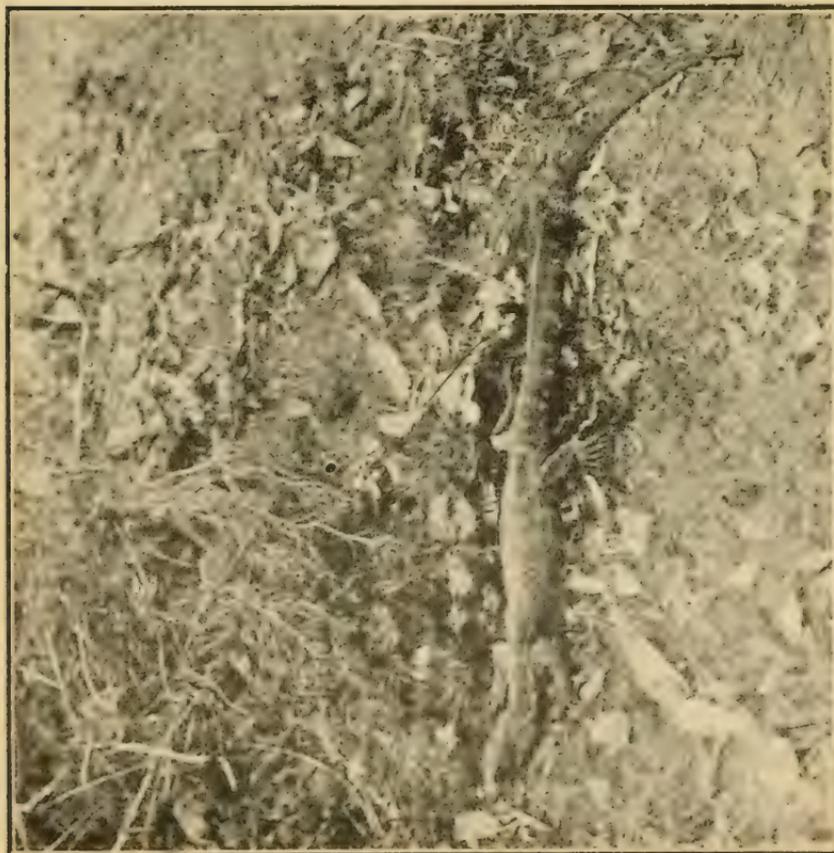
When we reached the top of the first ridge we turned and looked back. A fine view met our eyes, for we were at a fair elevation, and stretching away at our feet, bathed in the bright morning sunlight, were miles upon miles of mallee and broom country, bounded by that fine range of hills, Marble Range, with the bold pile of rocks called North Block, like a sentinel, at the northern end of the range, but distinctly detached from it. These huge rocks, shrouded in a purple mist, ran almost perpendicularly from the dark mallee-covered plain. The latter was broken in a few places by small patches of chocolate-coloured soil in fallow, or maybe a light green patch of corn, with a galvanized-iron hut glistening in the sun, indicating where that plucky and hard-working individual, the mallee farmer, has set himself to carve out a future by determination and heaps of hard work. A spot or thread of silvery light shining in the sun like molten silver, shows the position of a swamp or claypan, filled to overflowing during the past bounteous season.

—In the Ranges.—

Turning our backs on this ever-changing scene (it will not be long before this vast plain will be all under the plough), we descended into the valley beyond, to rise again on the other side to the top of No. 2 ridge, and so on till we had put many miles between us and the plain. The flora had changed considerably, and timber was larger. Great masses of scarlet-flowering bottle brush grew in the valleys, and a tree or two of banksia, as well as sheoak were to be met with. Strange to say, however, the birds had changed little, for we observed the greybreasted robin, rufus-vented shrike thrush, the scrub wrens, black magpies, and many others, all of which we had found on the plains. Having persuaded the old horse to drag the dray so far along a wild and rugged mountain track we called a halt in a wooded valley, and liberated him from his harness for a while. Cameras, satchels, and other impedimenta were soon hauled out of the dray, and the party was swallowed up by the bush, all in search of objects in his or her special line of study. All assembled at the appointed hour, full of what they had or had not seen. The billycan (the indispensable of bush life) was boiling. Tea made and a ration issued all seemed anxious to take the edge off those appetites so well sharpened by the healthful atmosphere of the Australian bush and a good long tramp. After a brief rest we again rambled off for a little while. Soon the return journey had to be made, the track in the ranges being a nasty one, and almost impossible to follow in the dark.



Boobook Owl (Ninox—boobook).



Varanus Varius, Lace Monitor.

—Turning Westward Again.—

The party returned to the first ridge overlooking the plain, where the scene had changed, for, instead of the sun being high overhead, it was fast dipping into the Southern Ocean, and causing those bold peaks of Marble Range and North Rock to cast deep shadows across the mallee-tops almost to the foot of the range on which we stood. Birds on this side were still active in the sunlight, as they flew from tree to tree or among the flower-laden bushes in quest of food. Lower down, however, the deepening shadows gave their warning that the daylight was near an end; parrots, pigeons, and many other birds were assembling at the rockholes in the beds of watercourses (which were being dried up fast by the approaching summer heat) to take their evening drink ere they found their respective roosting places for the night.

The hum of the wild bee had ceased now that the sunlight was gone, and he had hurried home to his associates in some hollow tree, or if belated far out in the scrub, had taken refuge under a piece of loose bark or large leaf from the heavy night dew to await the morning sun. Birds of many kinds made much noise as they called to one another that it was time to go to roost. The scrub wrens and robins were pouring forth their evening song with their lovely melodious voices. Our dear old magpies and laughing jacks, both late birds, were still on the lookout for some dainty morsel such as frogs, crickets, or night moths for their supper. Often when the night has well set in one hears the former bird cleaving the air on rapid wing and with startling cry making for his night perch in some lofty tree. The quaint old jack flaps along with heavy flight, bumps against his mates on some gum branch, and then gives forth that well-known chorus which floats away over the tree-tops on the still night air. With such sounds as these we reached camp, tired and hungry, but rejoicing that we had the chance of seeing so much that day.

—An Enigma Among Birds.—

On the following day word came in that a mallee hen's nest (*Lipoa ocellata*) had been located. A party was formed to visit the spot, and a long walk over rough country brought us in view of one of Nature's incubators, about 18 ft. in diameter, and 2 ft. 6 in. high. The mound was composed of sand, quartz, earth, and debris scratched from all quarters in the scrub up to 20 or 30 yards away. These birds have strongly developed legs and feet, and with the aid of their wings they scrape the material up into a heap in a crater-like depression. In the centre decayed vegetation is placed, open to the rains, and when well saturated is covered in with sand and earth. When the bird lays her eggs she opens out the nest, deposits the eggs on end, and closes it up again. This



Mallee Hen (*Lipua-ocellata*) on Nesting Mound.



The Young of the Southern Stone Plover (*Burhinus-grallarius*) depending on their protective coloration to escape notice.

Photo. by Mr. Mattingley.

process is continued till she has one tier upon another. She then allows the heat generated inside to complete the process of incubation. So soon as the young are hatched they are able to take care of themselves, having full use of their legs and wings, and being well feathered. By the latest observations I have made, and information I have collected, I am sorry to say that without a doubt within a short time these wonderful birds will be birds of the past, as is the dodo, or any other of the extinct animals. The taking up of the land, the destroying of their native habitat, and that great scourge, the fox, are systematically wiping them out. The only way open now to perpetuate these quaint birds is for the Government to take steps and introduce them into Kangaroo Island before it is too late. The photographer having taken the pictures required, the party once more made its way through mallee and thick undergrowth back to camp, which was reached after a long and rough scramble, entered into with much enthusiasm and determination by some of the lady members of the party.

Friday, October 15, brought us near the end of our stay, and much had to be done before we struck camp. For example, there were nests which when discovered some days previously did not contain the full number of eggs, and had been left so that a picture could be taken of the exact number. This in many cases entailed a stiff climb.

—Dangers of the Oologist.—

It is only those who do this work that understand the labour entailed, for not only does one require muscular strength, but the nerve-racking suspense when the finger nails or the short spurs of the climbing irons are barely preventing one from a fall of 100 to 200 ft., is so exhausting that a strong wiry, and muscular man will tremble like a leaf when the critical moment is over.

—Busy Time in Camp.—

Botanists left certain plants and flowers till the last day. A double pressure of work made things fairly lively in and out of camp at this time. The detachments which had made flying visits to the west coast had now returned well satisfied with the work they had accomplished. Other small parties which had been out in other directions had also returned, and with the exception of Mr. A. Mattingley, C.M.Z.S., (V.), (who had journeyed to Port Lincoln for the purpose of giving a lecture) the camp had its full strength.

—More Field Excursionists Leave Camp.—

On the eve of departure Mr. and Mrs. Burrell (N.S.W.), through the courtesy of a local resident, was enabled to make a flying visit



Party of Ornithologists working the Koppio Ranges, with their guide in the foreground.



In Camp—Mrs. Burrell, N.S.W., J. W. Mellor stuffing birds, and A. H. E. Mattingley, the world-renowned Nature Photographer.

to the Tod River, where they did some excellent work, and they were able to add several aquatic species of birds to the list, as well as make some useful observations of bird life found in the hilly country which divided the camp from the Tod River. Mr. Robert Crompton (S.A.), also journeyed to this river, and, after a tramp of 12 or 13 miles, struck it in a more northerly direction at Koppio homestead, where he remained a few days making daily excursions for the purpose of observation. He is to be congratulated on the amount of good work done in that direction.

—A True Bird Lover.—

I.o. on yon branch whose top is dead,
 Over the gums' still clustering shade the black magpie sits
 Torpid and motionless, yet peering round
 Suspicious of deceit, at our approach,
 They mount, and loudly chattering from on high,
 Bid the wild scrub of human guile beware!

It was most gratifying to all members to hear Mr. Crompton's graphic account, on his return from Koppio, of the way in which the owner (Mr. Richardson) rigidly and jealously protects the native birds upon his station. We were all delighted to hear this news, and it is a pity there are not more landowners like Mr. Richardson, who, apart from the love of the birds, recognises the great good our native birds are doing. I feel sure if the owner of Koppio, as an observant man, will have discovered long ere this that he has been repaid a hundredfold by the good work the birds have done for the trouble entailed in their protection. I only wish the Government, in fact, every individual in Australia, would awaken to the fact, and stamp out the many enemies of our native birds—fire and poison, and the boy with the pea rifle—and grant them suitable reserves where they can safely live and multiply. Like America, Australia will awaken to the fact, but it will be too late!

—The Last Excursions.—

The last field Excursion the writer made was at the invitation of Mjr. George Horne, M.D., of Melbourne, a most unselfish and genial spirit who delighted in seeing others happy. The party consisted of Surgeon Mjr. Horne, Mr. Robert Crompton (S.A.), and the writer and his wife. Mjr. Horne had spent considerable time and energy the day before beating up the district for some mode of conveyance. Of course it is very nice when one has a long tramp to a farmer's home, and is told that he cannot hire, lend, or give any transport, but Mr. So-and-So lives 12 or 13 miles from here in that direction, and he most likely can let you have a horse and dray, and when you get there this man tells you of



Nest of the Spur-winged Plover (*Lobivanellus-lobatus*).

another neighbour in quite a different direction. Anyway at the appointed time a small spring cart and a pony made its appearance, and I was done the honour of being entrusted to pilot the party on the journey.

—A Secluded Spot.—

We made a considerable detour to strike and make use of a track which led into the ranges, and we were on the gradual ascent all the way. After leaving the foothills we came upon a pretty, secluded valley, with a nice stream of water running through it. Here we tied up the horse and proceeded to follow up the creek on foot, which had swampy ground on either side, covered with water grasses and rushes, among which tadpoles scuttled away in the shallow water. Once a little landrail (*Hypotaenidia-Philippinensis*) ran from a thick bunch of rushes, paused for a while as we stood still to survey us in astonishment, and with a funny little twitch of the tail, which is carried erect, the bird darted off into the long rushes. The New Holland honeyeaters kept up a continual squeaking amidst the large patches of bottle brush, where they build their nests. A little later on we espied a mud nest of the jay (or corcorax) high over our heads, and after a climb it was found to be an old one. The full, liquid call of the sbrike thrush sounded up the gully in rich cadence; and a solitary black cockatoo flew by, giving forth its harsh, screeching call, which clashed on the ear after the sweet notes of the thrush. Far overhead soared a pair of wedge-tailed eagles, keeping an ever watchful eye over their big nest in a lofty gum. After proceeding a mile, the valley broadened out where two gullies met, and in the rainy season emptied out their streams, spreading over a flat some four or five acres in extent; but at this time it was covered with a verdant grassy carpet, which would rival any lawn, with a few gums dotted about, also bottle brush. On the soft soil were seen many imprints of the emus' feet, showing that these strange birds have not been entirely exterminated.

—Among the Songbirds.—

Ye children of man whose life is a span
 Protracted with sorrow from day to day,
 Naked and featherless, feeble and querulous,
 Sickly, calamitous creatures of clay.
 Attend to the words of the sovereign birds—
 Immortal, illustrious, lords of the air
 Who survey from on high with a merciful eye,
 Your struggles of misery, labour, and care.

Resting for a while to listen to the rufus-breasted thickhead's lovely note we observed many birds in a clump of sheoak which



Pied Fantail feeding young (*Ripidura-tricolor*).



The Nest and Young of the Black Magpie (*Strepera-fusca*).

ran down the hillside. Among them were the lovely little red-capped robin darting about after winged insects like fire-flies. The noisy black magpies, or *Strepera*, were making a great fuss because they had a nest of fledglings close by. A male bird of the rufus-breasted thickhead sat upon a dead twig and poured forth his delightful song to his spouse, who was in the act of incubation in the adjoining tree. A little colony of *Sittilla* attracted our attention by their quick movements as they searched each she-oak trunk for insects, keeping up a continuous twittering the while; and a fantailed cuckoo gave forth its regular and mournful note from the top of a dead tree just over the valley.

—Returning to the Camp.—

We were loth to tear ourselves away from such an animated scene, but time waiteth for no man, and evening was drawing nigh. On reaching the starting point we found that the ever-thoughtful Mjr. Horne had the billy boiling, so with a cup of refreshing tea and something to eat we were on board again, and descending the steep hills. Just at dusk, as we came out on the low country, we drove up to a pretty sight—a pair of brush kangaroos were feeding at the edge of the scrub and allowed us to approach within 10 or 15 yards of them, and on our pulling up they went on feeding unconcerned and allowed us ample time to admire them. Poor animals! It was with pleasure mingled with pity that we viewed them. Almost every man's hand and every dog's teeth were against them, and the time will not be long before their tenure of this country will be over. We reached camp after a long and profitable day (thanks to Mjr. Horne, who made the last part of the journey pass very pleasantly with his many humorous tales and anecdotes), just in time to take part with our camp mates in the evening meal.

—The Last Evening in Camp.—

This was the last evening in camp, and a rather mournful air pervaded the groups of campers, who stood or sat upon logs around the huge fire, for I am sure there was not one who did not regret that the outing was at an end. The general topics of conversation were mostly on how long members would remain in each State as they passed through on their way to their respective homes, and the likelihood of meeting one another next session. Also who would take up the work of describing the different sections of research; but as the evening wore on sleep made itself felt, and the little groups became smaller, till all had melted away around the white tents to seek their last night's repose under canvas for some time to come.



White-browed Wood Swallow (*Artamus-superciliosus*).

—Striking Camp.—

Saturday morning broke dull and threatening, and by 7 a.m. a steady rain began to fall. This was unfortunate, because it was not nice work or satisfactory to strike tents in the wet. Thanks to the courtesy and forethought of the Resident Engineer of the Railway Department (Mr. Hayman) the railway carriage of the special train was sent up at an early hour, and formed a haven of refuge for the ladies while the tents were being struck.

—Homeward Bound.—

Every one worked well, and by noon the whole of our kit was well packed in the truck, the engine appeared on the scene, and we left Warnuda Creek, if not in tears, decidedly on the damp side. Still we should not have complained, for by the beaming faces of the farmers who we passed along the line unmistakably told us that this rain meant much to them. Arriving at Port Lincoln in good time, the truck was shunted down the pier to the ship's side, and, amidst a steady downpour, was unloaded into the hold; and at a little after 5 p.m. the comfortable little steamer Rupara threw off her moorings and stood away to Port Adelaide.

—Regrets.—

There are always some things we are sorry did not come to pass after every outing; might be for pleasure or work. Foremost among our regrets were that our President (Mr. A. J. Campbell, Col. Mem. B.O.U.), and our past President (Mr. D. Le Souef, C.M.Z.S.), both men of sterling worth and keen ornithologists, were not with us on the camp out; and, again, all regretted we had not the time to complete the research which we had only just begun. I regret very much that Dr. A. M. Morgan was unable to accompany us, for we are greatly the losers by such a keen ornithologist being absent.

—Many Kindnesses to be Thankful For.—

A trip like we have just taken can be helped along considerably, and can even be marred or made a success by the surrounding outside help, and we had many to thank for their assistance. First of all the Adelaide Steamship Company for the generous way in which they met us, and the untiring efforts of their officials to make things go smoothly. The genial, warm-hearted skipper of the Rupara, who did everything he could for us, even to arranging a smooth passage there and back. Then our heartiest thanks are due to the Premier for the splendid way in which he met us in regard to transport on the railway; also the railway officials at Port Lincoln, especially the Resident Engineer



View of the Camp.



Mr. Robert Zietz, of the Natural History. Museum, Adelaide,
at work.

(Mr. Hayman), who was untiring in his efforts on our behalf. Our thanks are due to the Supply and Tender Board for the splendid tents supplied by them; and we have also to thank Mr. J. W. Jones and Col. Weir, also Mr. Thos. Gill (Under Treasurer), Mr. Osbourne was thanked many scores of times during our stay in camp for his very generous gift of fruit. Last, but not least, we thank the postmaster at Port Lincoln for forwarding our letters, the district council, the President and Vice-President of the Port Lincoln Institute for their many kindnesses.

A good deal having been written on the ornithologists' camp some will naturally wonder what good has come of it all. I will, therefore, give a brief outline of the work which was accomplished during the short time which was at the disposal of the field workers. The reason should be first stated for selecting Eyre's Peninsular as the camping place. First of all, on this peninsular the bird life is of special interest to the scientist, for the reason that this form of life has shown no defined boundary between the southern and western forms. One overlaps and mingles with the other. To ascertain by compiling a list of birds found on Eyre's Peninsular, and to prove how far this inosculation takes place, was one of the chief reasons for selecting a camping site at Warunda Creek. Although the campers represented many branches of science—ornithology, botany, entomology, conchology, geology—all met under the auspices of the Australasian Ornithologists' Union, and we will deal with that branch first. Bird life was found to be fairly plentiful for such an arid country, and when one considers that a list of 105 species of birds were seen and identified, without doubt it proves that Dame Nature has been fairly liberal with the distribution of bird life on this peninsular.

—Birds of Prey.—

First, that noble bird, the wedge-tailed eagle (*Uroaetus-undax*), was seen in pairs in several localities, where it had built its nests (immense structures of sticks) in high sugar gums, and in most cases eaglets, covered in soft white down, occupied the home. I ascended to one far up in an old sugar gum, where I found a fluffy, downy eaglet, which opened its bill, sat back upon its tail, and clawed in the air with its strong talons as my head appeared over the side of its stick home. Close to the young one lay a freshly killed wallaby, from the carcase of which the parent bird had been feeding the young one when she was disturbed. Few Australians know that this eagle is the largest of its kind in the world. I am sorry to say that the harm (if any) which he is supposed to do, is much exaggerated; for, after close and minute observation we have found that this bird does far more good than

harm. If one takes the trouble to investigate the surroundings of one of these bird's nests it will be found that hundreds of rabbits are brought as food for the young. Sometimes a single lamb's remains are found, but in all cases these lambs are weaklings, which would be little or no loss to the owner. Probably they have died from cold or other causes, and have been conveyed to the nest after death. A strange feature connected with these birds' nests is that invariably the little yellow-rumped tit builds its dome-shaped nest among the sticks of its noble relative's huge nest, where it rears its family in perfect safety. The black-checked falcon (*Falco-melanogenys*) was once seen to dart down amid the timber in pursuit of some small rodent or reptile, alighted for a moment on a branch, turned its black face towards the observer, and was gone again on swift wing. The rare and swift-flying hawk, the black falcon (*Falco-subniger*), was reported as having been seen on one occasion. The western brown hawk (*Hieracidea occidentalis*) was closely observed by several of the ornithologists, and it was noted for its small legs, compact body, and long-pointed wings. Its flight was elegant, made up by long sweeps and curves, and manoeuvring close to the ground. The latter trait is peculiar to the hawk family, which prefers plenty of wing room when performing in the characteristic sweeping movements. The bird's diet consists chiefly of lizards, frogs, insects, caterpillars, and carion. Those useful little birds, the nankeen kestrels (*Cerchneis cenchroides*), so wrongly called sparrow hawks, were seen in almost every locality, especially about the wheatfields, where they kept watch for mice, lizards, and large insects. They were frequently seen suspending themselves over some particular spot in midair without the slightest apparent motion of the wings. One of the most graceful of the hawk family, the letter winged kite (*Elanus scriptus*) was noticed by me on one occasion sweeping by. These birds are fairly plentiful in the central part of Australia, but an odd one or two pay an occasional summer visit to the south. The bird derives its name from the coloration of the undersurface of the wing, which when extended forms the letter V, and if both wings are seen from underneath at the same time the letter W.

In the hollow branch of a dead old gum which hath neither
leaf nor flower.

The boobook owl doth dwell.

Dull, hatred despised in the sunshine hour,

But at dark is abroad and well.

Not a bird of the scrub ever mates with him,

All mock him outright by day,

But at night when the scrub is still and dim

The boldest will shrink away!

—Owls.—

It is more than likely that the barn or delicate owl (*Strix delicatula*), is found on Eyre's Peninsular, but did not come under the notice of our party during the time we were there. The mopokes, or boobook owls (*Ninox boobook*) were heard every night calling to one another amid the timber on the creek, where no doubt they had their nest in some hollow gum bough. A bird closely allied to the owls and which came under our notice was the podargus, or frogmouth (*Podargus strigoides*). Like the rest of the genus these birds are strictly nocturnal. They sleep through the day on some dead branch of a tree, across and never parallel to the branch. They sit in an upright position, and so resemble the wood on which they are perched. It is hard, therefore, to distinguish them from the tree. I discovered a pair of these quaint birds in an old gnarled sugar gum. It was found that the female was sitting in a loosely constructed nest of sticks, carelessly interwoven and placed in a fork of the limb. Later on several of the photographers took pictures of the bird on the nest. She allowed one to climb within a few feet, and she was almost taken in the hand. When, however, she flew off with lazy flight with heavy flapping wings to a neighbouring tree, it was found she had two young birds covered in the whitest of white down. The food of these birds consists entirely of insects, and they are, therefore, of much value to the State. Many are of the opinion that this is the bird that makes the call at night of "Mopoke." This is a great mistake.

—Swallows.—

The welcome swallows (*Hirundo-neoxena*), was found to have the same liking for the habitation of man as it has all over Australia, and welcome it should be, for the thousands of flies and mosquitoes it devours in a day is wonderful. The tree martin (*Petrochelidon-nigricans*), was observed skimming over the surface of lagoons or waterholes, or hawking high up over the treetops, ever on the lookout for insects. It selects the holes in trees to bring up its young. Little or no nest is made—perhaps a gum leaf or two, or it may be that three or four pinky-white freckled eggs are laid on the soft dust of the hollow limb.

—A Lovely Bird.—

The bee-eater (*Merops ornatus*) has so many attractions that doubtless it may be always regarded as a bird of prominence in Australia. It is often called the rainbow bird by the settlers from its many brilliant colours. The extreme beauty of its plumage, the elegance of its form, and the gracefulness of its flight, all draw one's attention. The eggs are deposited, and the young

reared in holes made in a sandy bank of a river or dry water-course. The entrance is scarcely larger than a mouse-hole, and is three or four feet deep. A chamber is constructed large enough to contain five or six pinky-white eggs.

—The Wood Swallow.—

Two species of these extremely useful birds were noted near the camp. The dusky wood swallows (*Artamus-tenebrosus*), were found nesting in the upright forks or behind bark in the timber along the creek, and their familiar call was heard all day long as they chased winged insects near the watercourse. The wood swallow should be a general favorite with Australians, not only for its graceful and pleasing actions, but for the great amount of good it does, and from its trustful nature. They will often take up their abode near houses, and rear their young within the sight of human beings. A large flock of masked wood swallows (*Artamus personatus*) were identified by the aid of fieldglasses as they passed overhead, evidently migrating to some locality to lay their eggs and rear their young. Those pretty and useful little birds the striped diamond birds (*Pardalotus-ornatus*), were in great numbers among the timber along the creek, and could be seen in every tree hopping about among the green foliage in search of insects and parasites which are so injurious to the healthy growth of the eucalyptus. As these birds hopped from twig to twig and leaf to leaf they kept up a continual call of two notes, which resembled the words "be quick, be quick." One of the most conspicuous and plentiful birds about the camp was the black magpie or strepera (*strepera-fusca*). These birds seek their food on or near the ground, sometimes in swampy situations. In Tasmania and the Bass Straits Islands one of this family is to be seen searching among the rocks and seaweed for marine insects. Grasshoppers and insects of every kind are eaten by them. These are varied sometimes by seeds and berries. They hop with remarkable agility over the ground, and leap from branch to branch with great ease. Their flight is short and heavy. They seldom mount high in the air, and during flight they usually utter a shrill cry which is frequently repeated and answered by other birds of the same troop.

Ye birds on swift wing who cleave the air,
 What lessons you teach us and messages bear;
 You beckon our spirits from this earth to rise,
 And tell us all lowly actions to despise.
 You tell of how earth's pursuits are vain,
 Even pleasure is toil and ambition is pain.

That very familiar bird the magpie, comes next under notice.

There is little need to dwell on its usefulness, for every one knows what a great friend the magpie is to agriculturists and pastoralists. One of these birds will do more work of its kind in a day than three men. This bird is known to the scientist as the white-backed crow shrike (*Gymnorhina leuconota*). Small families of six to ten are often seen running over the newly turned up soil in search of insects, and the number of locusts and grasshoppers they devour is immense. Who is there who has not felt a thrill of delight when, on some morning in early spring, the magpie's carol floats out on the bright, clear air from some high dead eucalypt?

—The Cuckoo Shrike.—

A few pairs of the black-faced cuckoo shrikes (*Coracina robusta*) came under observation. Its undulating and powerful flight, also the peculiar call, would soon draw attention to this useful bird, which lives almost exclusively on insects and their larvae. It has a remarkable habit of perching on the top of a dead tree for hours; occasionally it will sally out in pursuit of some insect that may have come within the range of vision, then back to its perch again. The nest of this bird is placed in the fork of a horizontal branch, and is composed of small dead twigs glued into position by fine cobwebs, and in many cases pieces of "lichens" are attached to the nest to make it resemble the bough on which it is placed. The nest is very shallow, barely high enough to keep the three brownish-green eggs in position. The bird is rather conspicuous in coloration, for the plumage is of a delicate grey, with a deep contrast in forehead and face, which are deep black.

—Thickheads.—

One of the most interesting and sweetest song birds on the peninsular is the Rufus-breasted thickhead (*Pachycephala rufiventris*). This pleasing little bird has a wide range, being found over the whole of southern Australia, and is to be found fairly plentiful around the partially timbered country, and few birds in Australia utter a more animated and lovely song or loud continuous whistle. The thickhead's food consists of insects of various kinds, and, like other members of the family, it creeps and hops about the branches of the trees in a gentle and quiet manner. The nest is of cup shape, and very loosely put together with roots and fibres. It contains, as a rule, three eggs of an olive tint, with a zone of indistinct spots and blotches. The white-throated thickhead (*meridionalis*) were also met with in the scrub near the creek.

—Thrushes.—

Another beautiful songster was the buff-bellied shrike thrush (*Colluricincla riviventris*). This bird's beautiful liquid notes resounded through the scrub clear as a bell, and would be easily mistaken for that species found around Adelaide (namely, *C. harmonica*), the harmonious shrike thrush; but on comparing the two birds they will be found to differ in the following particulars:—The whole of the upper surface is pure grey instead of brown; the abdomen and undertail coverts are deep buff, instead of greyish white. This is one of the interesting forms of bird life found in Western Australia, and overlaps on Eyre's Peninsular. Thrushes spend nearly as much time on the ground as they do in trees, and their food consists of insects and their larvae.

A Great Ventriloquist.—

The crested bell-bird (*Oreoica cristata*), was observed by me not far from Port Lincoln. This is a singular bird, and is thinly dispersed over the southern portion of Australia. It is extremely local, and nowhere very plentiful. From my experience I have found that it frequents the stony ridges or open patches in scrub country. It keeps much to the ground, over which it moves with great rapidity, and when flurried generally flies a short distance and alights on a branch near the ground. The note is indescribable, and must be heard to be understood, for this bird is a perfect ventriloquist, and often its mournful whistle seems at a great distance, while the bird may be a few yards away concealed in the thick scrub. I quote Mr. Gilbert, who says:—"At first this bird's note commences in so low a tone that it sounds as if at a considerable distance, and then gradually increases in volume until it appears over the head of the wondering hearer; the bird that utters it being all the while not more than a few yards distant, its motionless attitude rendering its discovery very difficult." It has two kinds of song, the most usual of which is a running succession of notes, or two notes repeated very slowly, followed by a repetition three times rather quickly, the last note resembling the sound of a bell, with a ringing tone. Its food consists chiefly of caterpillars and grubs, and it is, therefore, a very useful bird.

—Flycatchers.—

The pied fantail (*Rhipidura tricolor*), is one of the most tame and familiar of Australian birds, and is a great favourite on account of its great liking for the habitation of man, for it frequents the houses, gardens, and stockyards, rides upon the cats' and dogs' backs, is a great friend to the stock, the latter showing great appreciation for the services rendered by this little bird in ridding

them of flies and many other insects. A good many pairs of these friendly little birds were observed at Warunda Creek busily bringing up their families. Another representative of this family of flycatchers was met with in the restless flycatcher (*Seisura inquieta*) which ranges over the whole southern portion of Australia. It is a bird possessing many very peculiar habits for it not only captures its food like other flycatchers, but it will suspend itself in the air over open patches in the scrub and this is accomplished by a remarkable quick motion of the wings, and ever and anon it will dart down on some insect that is seen moving upon the ground, precisely like a kestrel or falcon; and it is while performing these movements that it utters the peculiar sounds from which it has received the name of "scissors grinder." This bird is found in varied situations, and seems as fond of the thick scrub as it is of the open timbered land. It has a loud, clear whistle; but its more singular note—like a razor grinder at work—is uttered while hovering over the ground in search of prey.

Sing on sweet bird, like thee
 When with the gay the free,
 If sorrow should be mine,
 I'll not sing o'er the hours
 Gone, faded like these bowers,
 My song shall be like thine.

—Robins.—

That beautiful and useful little bird the red-capped robin (*Petrocea goodenovii*) was identified, but not seen in any numbers. These birds seem to prefer the thinly timbered country during the greater part of the year, but towards the spring they repair to the pine or mallee scrub, where they build a most beautiful nest, cup-shaped, and very compact, composed of bark, and decorated outside with mosses and bright-coloured lichens, and so resembles the tree on which it is placed that it is with the greatest difficulty it can be discovered. The male bird has a most delightful song, but the female has but little voice. The next species of robin which came under our notice was the very solitary bird in habits, the scrub robin (*Drymodes brunneipygius*). Its plaintive call was heard at times; but, being a very shy and wary bird, it was seldom seen, and it was only after great length of time, keeping perfectly still and repeating its call, that I managed to call this very interesting little bird out of the dense scrub to a clear patch. After answering my whistle for some time, a male bird at last hopped out where I could get a good view. It seemed to keep much to the ground, and pass most of its time among the underwood. It appeared rarely to take wing, but depended upon the quickness of foot to enable it to escape into the scrub. I did

observe it on one occasion to perch on the top of a low bush, where it gave forth its plaintive whistle. Its nest is very hard to discover, being placed among the dead leaves and twigs at the foot of a tree. Another of those western forms again came under our notice having overlapped on to Eyre's Peninsular, and that is the grey-breasted robin (*Eopsultria-gularis*). These are quite conspicuous birds, owing to their bright colouring, which, like all things in nature harmonizes so well, the beautiful tint of grey which colours the upper part of this little bird blending with the rich yellow of the under surface. The nest is very difficult to detect, for the situation selected is a gumtree with ragged bark which hangs down in strips is on the fork of one of these trees. The nest is plainer, constructed of narrow strips of bark bound into place by cobweb, while round the outside dangling pieces of bark are suspended, making the fork resemble those in the vicinity and a very unusual thing with the robin family, no lining is placed in the nest, but the two brown eggs are laid upon the strips of bark. All this family of birds are most useful in destroying the many winged insects, caterpillars, and grubs which are so injurious to vegetation. When one watches these birds hopping from twig to twig around the rough bark of a tree, peering into every crevice and crack in search of grubs and larvae, it comes very forcibly before one that if the native birds had been protected from the first a lot of trouble and expense would have been saved in fighting the codlin moth.

Birds, the free tenants of land, air, and ocean ;
 Their form all symmetry, their motions grace ;
 In plumage delicate and beautiful—
 Thick without burthen, close as a fish's scales,
 Or loose as full-blown poppies on the breeze,
 With wings that might have had a soul within them,
 They bore their owners by such sweet enchantment.

Under the family of *Malurus* are grouped those wonderful little birds the blue wrens, or superb warblers—one of the most useful of Australian types. Sixteen species are found throughout Australasia. We observed two species of these lovely little birds on Eyre's Peninsula namely, *Malurus cyanocephalus* and *Malurus assimilis*, the firstnamed being that familiar little blue bird to be met with in many of the gardens around Adelaide. These birds are gregarious for a few months of the year—that is, they travel about in family circles composed of the brood of that season, for as the young birds leave their nests they generally remain with the parent birds till the next nesting season. During the winter months they become very tame, and will frequent the gardens

and shrubberies near the city, and if domestic cats are not kept will build their nests and rear their young in a shrub close to the garden path in spite of persons passing up and down. This shows that they rather cultivate than shun the presence of man. Their food consists chiefly of moths, flies, numerous kinds of winged insects, and the larvae of many beetles. The services they render the gardener and orchardist can be imagined when one is reminded that the average daily diet of a wren is 100 grubs. *Malurus-assimilis* is very like the above-mentioned relative both in colouring and habits, but it is not nearly so plentiful. At the first glance it can be distinguished by the red markings of the body. Another wren-like bird which came under our notice amidst the brushwood was the red-rumped *Hylacola* (*Hylacola-cuta*). In habits it is very like the wren, and also in structure, for it carries its tail erect, but is larger in size and of more retiring nature. Next upon the list comes that very common but extremely useful bird, the yellow-rumped tit (*Acanthiza-chrysorrhoa*), named from *akanthis*, a linnet; *chrysos*, gold; *orros*, a tail. Nearly every observant Australian lad is familiar with this little bird, which congregates in small families, hopping over the ground in search of insects with great rapidity, and when flurried the bright yellow tail coverts show most conspicuously. It flies but a short distance, and alights again to carry on its useful work. I observed two nests of these little birds containing young placed in the huge stick nest of the wedged-tailed eagle, showing that one of Australia's smaller birds was on friendly terms with the world's greatest eagle, who is branded so wrongly and so darkly by our squatters. Often the narrow-billed bronze cuckoo places her egg in the tit's nest, allowing the latter to hatch and foster the young bird, who, in time, manages to throw the rightful owners from the nest, so that all the food carried by the poor little parents, will build up and fatten the big intruder. One of the three chats found in Australia came under our notice in the white-fronted chat (*Ephthianura albifrons*), a bird which does much good to the pastoralist, for, of bright and sprightly habits, it is to be seen hopping over the ground in search of caterpillars, grasshoppers (in their miniature stage), and grubs. These birds congregate in large flocks during the winter months, and wage war upon all insect life. Being of rather pugnacious habits, great fighting takes place, as the spring comes around, among the male birds, as to their future wives. All having won or stolen their brides, the colony disperse, and look out their building site. The nest is of cup shape, and generally built near or on the ground at the side or in the centre of a bunch of rushes. I have on many occasions observed their nests in shrubs and thistles 2 to 3 ft. from the ground.

What time the timirous hare leaps forth to find,
 When the soft-winged owl skims over the grassy mead
 Then high in the air, and poised upon his wings,
 Unseen the soft enamoured lark doth sing.

The ground pipit (*Aethus-Australia*), from Tuthus, a small bird and *Australis*, southern, although called a ground lark, differs much from the true lark, both in habits and structure of bill and feet. It is essentially a ground bird, for it will sooner try to escape on foot than take to the wing, and when compelled to fly its flight is of short duration, and it alights again after 20 or 30 yards. This most useful bird is an unpaid worker, and does his duty well in keeping down the insect pests. Pipits are dispersed over the whole of southern Australia, and are to be met with on the mountain side and on the plain in almost all localities, providing the timber is not too thick. Others of the lark family who rival in song their cousins of the Northern Hemisphere were not met with on the trip, but may put in an appearance later on as this country becomes cleared of timber and broom.

The crows and choughs that wing the midway air
 Seem scarce so gross as beetles.

(Shakspeare).

The next to come under our observation was the much-abused "crow" *Corone-Australis* (Raven). Many tell us of the harm this bird does, but they pause not a moment to put his good traits on the other side of the scales. Apart from the discoveries made by Australian ornithologists, we see that America has spent much labour and money in this research. The Government at Washington had the stomachs of crows examined at all times of the year. Crows to the number of 1,000 were dissected, and Dr. Hart Merriam tells us after 10 years of research (most of the time occupying the attention of specialists) that crows have a liking for insects possessing a strong smell. For this reason they destroy much insect life that may be passed by other birds. The amount of fruit eaten is very small, the number of birds' eggs and young poultry show 1 per cent. of food for the year. Insects form 26 per cent. of entire food, and in conclusion Dr. Hart Merriman tells us that the crow is a decided friend to the farmer and not an enemy. So much for our poor old crow, who has the same nature as his American cousin. The white-browed babbler (*Pomatorhinus superciliosus*) has been called the "codlin motheater" by many, which goes to show what good our native birds will do if only encouraged by protection. Babblers live in small communities, and are most restless birds. They are continually on the hop and jump over the ground and logs, prying into every crack and

corner in search of insects. When disturbed they chatter in a most indiscriminate manner, hence the name of "babbler."

—Honeyeaters.—

One of the most typical families of Australian birds are our honeyeaters, and this species are legion. Of course, as may be supposed, Eyre's Peninsular is not overflowing with either milk or honey; still the flora of that country, combined with the insect life, is sufficient to support many species of this large family of birds. Many of them are beautifully coloured and their song is most pleasing to the ear. One of the most plentiful birds, not only on the peninsular, but in many parts of Southern Australia, is the yellow-winged honeyeater (*Meliornis Nova Hollandiae*). It shows a more decided preference for shrubs than for larger timber, and where the bottlebrush or banksia abound so will these birds congregate, and on being disturbed will keep up an incessant sharp squeaking. Their strikingly contrasted colouring and markings makes them not the least attractive of our Australian avifauna. When darting on swift wing from bush to bush the bright yellow markings of the wing are very conspicuous, and it is often called the "Yellow Wing" by the settlers. During my visit to Port Lincoln a month prior to the camp-out I observed these birds in thousands among the stunted eucalypts at the back of the town. The gums were then in flower, and hundreds of young birds, fully fledged and attended by their parents, were to be seen everywhere, keeping up an incessant squeaking—the young to the parents and the parents uttering notes of alarm to their young. The singing honeyeater (*Ptilotis sonora*) was not observed in the vicinity of the camp, but I believe it was identified by the party who visited Coffin's Bay amid the low bush on the sand dunes (a favourite locality for this species). This bird is sombre in plumage, but it makes up for the want of colouring with its full, sweet note, which is most pleasing to the ear of the traveller in the solitude of the low scrubs on our coastlines. The wattle-cheeked honeyeater (*P. cratitia*), was seen by me but once on my former visit, so little or no observations were obtainable. It is named from two fleshy pendants of a plum colour, which hang on either side of the cheek, and give the bird a most striking appearance. The yellow plumed honeyeater (*P. ornata*) were fairly numerous, but not nearly so as they were a month earlier, when I visited the same locality. They showed a preference for the bigger timber, where they were to be seen flitting about the blossoms and foliage in a quick but graceful manner, descending sometimes in a quick circular motion (like a piece of revolving paper falling from a height) in pursuit of some insect which was falling to the ground to escape capture. Among this family of

honeyeater we find that very familiar bird the red wattlebird, (*Anthochaera carunculata*), or the "wattle bird" of the settlers. These birds were very numerous among the timber on Warunda Creek, and as soon as the first glimmer of light was to be discerned in the eastern sky their harsh call resembling "quack, quack," came from every treetop. In their native bush they are very useful, being continually on the hunt for insects, but since man has destroyed much of their hunting ground and planted such enticing baits in the shape of fruit trees it is not to be wondered at that, like Eve, they determined to taste, and are branded by the settlers as thieves. The flesh of the wattle bird is considered by many to be superior to quail. A large species, which is a native of Tasmania, was one time to be seen daily in the poulterers' shops of that country. A closely allied species to the above bird in the brush wattle bird (*Anellobia-chrysoptera*), was observed on the peninsula, but it was very scarce, and only one or two birds came under our notice while there.

—Insessores.—

How pleasant the life of a bird must be,
 Flitting about in each leafy tree,
 In leafy trees so broad and tall,
 Like a green and beautiful palace hall,
 With its airy chambers, light, and room,
 That open to sun and stars and moon,
 That open unto the bright blue sky,
 And the frolicsome winds as they wander by.

The grey-backed zosterops, or sliver-eye (*Zosterops cerulescens*) were observed hopping about among the undergrowth in search of insects and grubs. These lively little birds are looked upon by the orchardist and vigneron too harshly by far; there is no doubt they attack the soft fruit at times, but it must be remembered that all the rest of the year they are hard at work destroying the many pests and blights in the orchard and flower garden, in the shape of codlin moth, aphides, and so on. Speaking from personal observations, I am perfectly sure the good they do outbalances by far the small quantity of fruit destroyed by them. While making observations in a belt of sheoak on the side of Koppio Range a little colony of those most fascinating birds, the black-capped tree-runner (*Neositta-pileata*), came under notice. Although these little birds resemble the treecreepers (*Climacteris*) much in their habits, and are identical in diet, the treecreeper flies to the butt of a tree, clinging to the bark with its strong toes and supported by its tail, ascends the tree in a series of circles, or spiral motions, diligently searching the while every crack and crevice in search of insects. Now the sittella reverses the order of things, for it

flies to the top of the tree, and goes through the same spiral movements, descending with the head downwards, few insects or their larvae escaping its quick eye. On reaching the ground it takes to wing, flying to the top of the next tree, and repeats the performance. The nest of this bird is a wonderful construction, and mimics its surroundings to a nicety. Placed in an upright fork, it is made of soft grasses and vegetable fibres, and covered on the outside with spiders' webs, to which are attached lichens and pieces of bark, so as to resemble the bough on which it is placed.

—Cuckoos.—

All the species of these birds found in Australia (with the exception of one or two examples) are parasitic, for they deposit their eggs in nests and entrust their young to the fostering care of other birds. Of this family three species came under observation on Eyre's Peninsula, namely, the little bronze cuckoo (*Chalcococcyx-malayanus*). Often the mournful call of this bird would be heard floating out from the top of some dead gum, where the bird would sit motionless for hours at a time, calling in its weird way. Then again, in the stillness of the night its voice blended with that of the stone plover or the Boobook owl. The little bronze cuckoo, like others of the family, shirks all domestic duties, deposits its egg in the nest of a wren or tit, leaving the poor little foster parents to incubate and rear the intruder, which, being much larger and stronger, generally manages to push the lawful tenants out of the nest, so that it may monopolize the whole of the food. The colouration of the cuckoo's and the wren's eggs is so similar that the wren cannot distinguish between them. *Cuculus-inornatus* was noted, also *Cacomantis-rufulus* was observed near the camp.

—The Black Cockatoo.—

One of the strangest and most ungainly looking birds on the peninsular is the black cockatoo (*Clayptorhynchus funereus*). It is easily identified by its harsh scream and its flapping, labouring flight, although when alarmed and passing through timber it will dive about at a great rate and in a most remarkable way. This is without a doubt a useful bird, for its principal food consists of the large larvae of grubs which are ruinous to many of our fine timber trees. It varies its diet at times with the seeds of the banksias and yucca. The hard, nutlike seeds of the former plant are split open by its powerful bill with great ease. The black cockatoo is a timid and wary bird, and if not approached during feeding time, when it is near the ground, it will seldom allow the observer to get close. They generally travel about in small societies, and some of the members are always perched

high up in a lofty tree, whence they have a good view of the surrounding country. On the first glimpse of an intruder a discordant note is uttered by the outpost, and immediately the remainder of the party take their heavy flopping flight, giving forth most diabolical screeches and cries.

—Parrots.—

There is no part of Australia where one or more species of this great family of birds so characteristic to Australia are not to be found. The parrot which first attracts one on Eyre's Peninsular is a very local one. The Port Lincoln parrot (*Barnardius zonarius*) is a fine bird of striking colouration, being of a rich dark green above and straw yellow beneath, with the head black and a deep ring of yellow round the back of the neck. Owing to these parrots living well in captivity and being good whistlers, they are much sought after, and I am sorry to say becoming each year fewer in numbers—only an occasional pair to be met with in the timber on the creek. The birds which made the most noise and were found in the greatest numbers were the gorgeous plumaged Blue Mountain Lorikeet (*Trichoglossus*—*Novae Hollandiae*), which had collected in great numbers to nest in the hollow gum boughs near the creek. Their chattering and screeching were kept up the livelong day, and in some of the old sugar gums, where several pairs were nesting in the same tree, the noise was deafening. They lay but two white eggs (of a slightly elongated form), on the bare wood of a hollow limb, sometimes following the hollow of the limb some distance to the main trunk of the tree. From the continual passing in and out, to feed the young, many of the brightly coloured feathers are pulled out by the uneven white ant-eaten wood, and at times handfuls of their bright feathers are found in the passage to the nest. Another exceedingly interesting parrot came under the notice of the party who visited Coffin's Bay, and that was the pretty little rock parrot (*Neophema petrophila*), which has been lately placed on the totally protected list by the Government—very rightly, too, for it is a very harmless, shy bird. Unlike other parrots, it does not seek hollow limbs in which to rear its young; but in the nesting season repairs to some barren island, and high up on its sea-girt coast, among boulders and rocks, it seeks out holes or crevasses in the cliffs to deposit its round white eggs on the decomposed rock, where it rears its white downy little fledglings. One of the little lorikeets was found nesting in an old gum, and several others had nests in the same tree. This species, the porphy-crowned lorikeet (*Glossopsittacus porphyrocephalus*) widely dispersed over southern and Western Australia, and depends entirely upon the honey-producing flowers of the eucalypti for its food. These little birds

seem fond of company, and are often seen in large colonies feeding in the gumtops with equal numbers of the musk lorikeet (*G. Australis*), and often the third species of the family the little lorikeet (*G. pusilla*) are to be seen in the same tree. If the day be bright the scene is an animated one, as these lovely little birds chase one another about amidst the foliage and blossoms of a scarlet-flowering eucalypt, showing off the brightly coloured undersurface of their wings each time they are expanded, keeping up their shrill cry all the time.

—Order Rasores—Pigeons.—

But one species of this family came under our notice at Warunda Creek, and that was the bronzewing (*Phaps challoptera*). A few pair were flushed amidst the undergrowth, and sailed away on warring wing. It is not to be wondered at that more birds of the order Rasores were not seen, for Australia is not representative in this order, although the few which are found certainly are peculiar, such as the lepoa, the talegallus, and the megapadus, and a few of the larger pigeons which are to be found in the eastern States.

The emu (*Dromaius Novae Hollandiae*) is still to be found on the peninsular, for, although none of us actually saw one, fresh footprints were seen frequently in swampy ground, and settlers all said an odd one or two were still to be met with in the scrub. Now we come to the southern stone plover, commonly called the curlew (*Burhinus-grallarius*). I would think almost all Australians are familiar with this bird and know its weird call at night. It is like a long-drawn "wee-lo," two or three times repeated. Several pairs of these birds were noted during our stay on the peninsula, and they formed one of the nocturnal orchestra which performed each night. Always a very shy bird, one requires much patience to get close enough for observation, and, having a most wonderful protective colouration of plumage, the bird will often squat beside a stone or fallen tree, which objects it so resembles that one might almost tread upon it. The curlew is a stately bird when walking, but, although it will mount high in the air at times, its flight is rather a heavy and laboured motion. Its eggs, which, like its plumage, have a wonderful protective colouration, are laid on the bare ground, without a semblance of a nest. The curlew generally feeds at night, and its diet consists of insects, grubs, and so on, varied at times by berries. Another very familiar bird which was identified on the peninsular was the land-rail (*Hypotaenidia philippensis*). This pretty little bird makes its appearance in the gardens around Adelaide about September, and at once looks out its nesting spot, which is generally in some standing crop. The nest is but a loose collection of straw

and dried grass placed in a slight depression in the ground, where the bird lays six or eight eggs of a cream colour, blocked over with dark red spots. The young when hatched are covered with a black down, and resemble chickens very much in their early stage. The land-rail is most useful in the garden, and I have known a pair of these birds to completely rid the flower beds of slugs where previous to their coming it was impossible to rear early seedlings.

—Ducks.—

The Australian black duck (*Anas superciliosa*) was seen on several occasions in the rockholes of the creek, and was generally attended by a clutch of ducklings, more than likely the second brood for the season. There was a very big surprise in store for me, because towards the end of the camp a member of the party discovered a little colony of the freckled duck (*Stictonetta noevosa*), which had taken up their quarters on a pretty little lagoon at the mouth of the Warunda Creek. I have seen these birds south only during a dry season in the interior, and I much regretted that our stay in the district came to an end so soon, for I should have liked to ascertain whether they had nested in that locality. A pair of Australian shovellers flew rapidly from a bend in the creek, and were soon lost to sight in the timber. It was no surprise to meet with this member of the family at this time a year, because they often nest and rear their young among the rank herbage of the Adelaide Plains. In conclusion to this series of articles on the bird life of Eyre's Peninsular I may say that I have not dealt with the sea birds or the waders—a great many of which came under the observation of those members of the expedition who visited Lake Wangary and Coffin's Bay—because the able pen of Mr. Robert Hall, F.L.S., C.M.Z.S., has been devoted to the species.

Associated with the ornithologists during their expedition to Eyre's Peninsular were several well-known specialists in botany, entomology, and other branches of natural history. It is my intention to give a brief outline of the work entered upon by these branches of natural science.

Stars there are wherein we read our history,
 As astrologers and seers of old,
 Yet not wrapped about with awful mystery,
 Like the burning stars which they behold.

Wondrous truths and manifold as wondrous
 God hath written in those stars above,
 But not less in the bright flowerets under us
 Stands the revelation of His love.

Bright and glorious is that revelation
 Written all over this world of ours,
 Making evident our creation
 In these stars of earth—these golden flowers.

It is always with the greatest interest that botanists behold that flora which the father of Australian botanists, Robert Brown, F.L.S., beheld with so much delight a century ago; and no wonder, for he was the first scientist to view South Australia's flora, and I believe that in the herbarium of the Botanic Gardens, Sydney, some of the original specimens collected by him during that memorable voyage of the Investigator in 1802 are still to be seen. So the botanists of our expedition trod the same soil, looked upon the same flora, and, I dare say, could well understand the feelings of that great man, who visited this district for the first time. The flora of the peninsular was fairly rich and very characteristic of that semi-desert country. At the time of our visit many plants and shrubs were in blossom, and gave our specialists plenty of work. One of the most marked features of the district was the quantity of broom bush which belongs to the teatree family (*Melaleuca-uncinata*). This seemed to vie with the mallee in density. Of the stunted or dwarf eucalypts two species seemed to predominate (*Eucalyptus-calycogona* and *E.-uncinata*). A pretty pink flowering dwarf teatree (*Melaleuca-decussata*) was very attractive, and it was from the sweet-smelling flowers of this shrub that many captures in insect life were made. Of timber trees the sugar gum (*Eucalyptus-corynocalyx*) was most in evidence, and we were all disgusted at the wanton destruction of this splendid timber gum. *Eucleoxylon*, *Esodorata*, and *Essantalifolia* were also identified. The flowering shrub which was growing in most profusion around Warunda Creek and enlivened the landscape with its wealth of bright yellow flowers was the *Hibbertia-stricta*, and *H.-sericea* was also noted. A large and handsome flowering hibiscus drew forth much admiration from the party. It was the *H.-wrayae*. This plant seemed to have a partiality for damp situations, and was to be found on flats and low-lying places where the creek had over-flowed. Here large bushes 10 to 12 feet high were found. In like localities the handsome bottlebrush (*Callistemon-coccineus*) was found in full flower, making a blaze of colour with its bright red flowers. Mr. C. Barrett (Victoria), writing lately on the flora of Warunda Creek, says:—"The flame bush had been a fitter name for this lovely plant. The term bottle brush describes the general appearance, sans colour, of the bloom, but sounds harsh and ugly." I quite agree with him; such a gorgeous shrub deserves a better name. The

yucca bushes (*Xanthorrhoea-semiplana*), generally known as grasstrees, formed a leading feature in the landscape, their quaint flower spikes standing up 10 or 12 feet. A strange flowering shrub was also met with near the camp and proved to be *Calythrix-tetragona*. A very pretty little red flowering *Grevillea* was discovered near the camp and was pronounced to be *Grevillea-aspera*. A charming little white-blossomed sundew (*Dorsera-menziellii*) was found climbing over the shrubs. The native peach or quondong tree (*Fusanus-acuminatus*) was found on several occasions in the scrub, but the fruit, although well developed, was not nearly ripe. There were a good many plants of the orchid family in flower, and some of very peculiar formation. That most prickly of all grasses, the spinifex (*Triodia-irritans*) was well out in flower, and its featherly blooms waved in the breeze, looking most soft and delicate; but the new chum who tries to gather the grass heads finds that a thousand spear points lurk below to lacerate the hand. The strawberry bush (*Lencopogon-ovalifolium*) was fairly abundant. The bushes were covered in what appeared to be fruit, but on closer inspection proved to be leafy galls, and Mr. H. H. D. Griffith has since ascertained that these galls are formed by a Lepidopterous larva.

A flower is not a flower alone,
 A thousand sanctities invest it,
 And as they form a radiant zone
 Around its simple beauty thrown
 Their magic tints become its own,
 As if their spirit did invest it.

As one would suppose from the nature of the country in which we were camped wattles took a prominent part in the surrounding vegetation. That robust flowerer *Acacia-acinacea* was observed. Many of the party had their attention drawn to *Acacia-armata* from being pricked by its very sharp leaves. *Acacia-pycnantha* was fairly common about the camp, and what I took to be *Acacia-Gilli* (lately named by Mr. J. H. Maiden, F.L.S.) was also seen. *Acacia-longifolia* and *A. Anceps* were also met with. In conclusion, I may say that the variety of plant life was exceedingly large, and, although there were many bright-flowering and elegant shrubs and plants, yet the bulk of the flora reminded one that the great arid tract of country (which stretches down from the centre of our island continent almost to the seacoast) was not far distant, because the desert forms showed themselves in many varieties.

—Beetles.—

Their shape would make them, had they bulk and size,
 More hideous foes than fancy can devise,
 With helmet heads and dragon scales adorned,
 The mighty myriads now securely scorned
 Would mock the majesty of man's high birth,
 Despise his bulwarks and unpeople earth.

Insects (omitting mosquitoes) were scarce on the peninsula during our visit. The absence of some of the most noticeable Coleoptera family was due most likely to the gums not being in flower at the time. A small eucalyptus in flower was spied by Mr. H. H. D. Griffith soon after landing from the steamer at Port Lincoln, and on searching he was repaid by capturing a pair of very pretty Longicorns (*Amphirhoe-decora*). On close examination it is found that these insects have most extraordinarily developed "thighs" (femora). This capture is of great interest, because that renowned entomologist, the Rev. Mr. Blackburn, worked this district thoroughly, and had never met this species within 10 miles of Port Lincoln. At Lake Wangary the ant-like Longicorn (*Zoedia-divisa*) was found on dead boughs, the minute Buprestid (*Germarica-casuerineae*), on the foliage of the casuarina, and a species of *Belus* on the leaves of the golden wattle. Along the lower levels of Marble Range insect life seemed more plentiful. The "broom bush" (*Mellaleuca-uncinata*) attracted several species, and among them were identified a *Paropsis* (*Chrysomelidae*), *Pelrorrhinus* (*Curculionidae*), and several species of *Stigmodera* (*Buprestidae*). Of the last-mentioned family I captured several fine specimens of the species (*Stigmodera-sanguinosa*, Hope), fine insects, with their dark-red wing cases pitted all over with metallic green. Several of these brilliant insects were captured by other members of the expedition. An insect belonging to the family *Curculionidae*, namely *Rhinotia hocoptera* (Kirby) was taken in the vicinity of the camp, and so also were *Stigmodera-octospilota*, *S.-octomaculata*, *S.-amphichroa*, and *S.-simulata*. Some very small insects were taken, mostly *Curculionidae*, of the subfamily *Erihrinides*. A small dark Carabid occurred under stones, and in the creek were considerable numbers of *Dytiscidae*, belonging to *Copelatus*, and allied Genera from the broom bush.

—Mammalia.—

'Twas the Creator,

He sought in every volume open to him,
 From the small leaf that hides an insect's web,
 From which ere long a colony shall issue
 With limbs and wings as perfect as the eagle's.

To the stupendous ocean that gives birth
 And nourishment to everlasting millions
 Of creatures, great and small, beyond the power
 Of man to comprehend how they exist.

—The Pelican Island.

Our stay on the peninsula was not long enough to do much work relative to the animals. However, the few observations made, notes taken, and specimens captured showed us that the scrub kangaroo (*Macropus-giganteus*) is not yet extinct, but soon will be. One evening when returning to camp after an excursion in the Koppio Range a party of us drove up to a pair of these poor animals just as the light was fading out of the western sky, and they allowed us to approach within 20 yards. While we admired them they went on feeding, and the only remark made was, "Poor things; their day will soon come." Mr. Robert Zietz captured a fine specimen of Lesueur's rat kangaroo (*Bettongia-lesueurii*). The dama wallaby (*Macropus-eugenii*) were very plentiful, and came out in numbers at sunset from the broom bush to feed. The dingo (*Canis-dingo*) is still in the district, there is no doubt, for on the morning following our first night in camp a large piece of roast beef was missing, and from impressions in the soft soil there was ample proof that we had had canine visitors.

—Opossums.—

Of opossums, or phalanger, there are two species. The common opossum (*Trichosurus-vulpecula*) was captured and identified, and from information acquired from the settlers there is little doubt that the ringtailed opossum (*Pseudochirus-pergrinus*) is found there also.

—Bats.—

At dusk numbers of small bats came out to wage war against our enemies the mosquitoes. I was unable to procure a specimen for closer observation; still I am sure the species was the little bat (*Vespertilio-pumilis*)?

—Wombats.—

The large burrows of these strange animals were seen on several occasions, but being nocturnal animals it would be only after dark that they would come forth to feed. I fancy there is only one species found on the Peninsular—*Phascolumys-latifrons*. They live in large colonies in one warren, and often attain a great size, and weigh 100 pounds at times. They are very powerful animals, and it is almost impossible for the strongest dogs to kill them. Their flesh is much relished by the aborigines. I believe there is

a species of bandicoot on the peninsula which differs from the one around Adelaide—*Perameles obesula*—and I should have liked to come across this animal to clear up the doubt. Reptiles seem to have made themselves scarce at the time of our visit. Very few snakes were seen, and, with the exception of the sleeping lizard, all lizards were scarce. A few small desert forms as well as one or two lace lizards (*Varanus*) were captured.

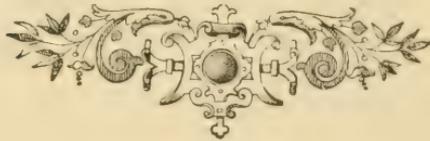
The attached list of birds are the names of those which came directly under my observation with the exception of *Falco-subniger* (which was reported one evening as being seen during that day). *Coturnix-pectoralis*—I heard the call of this bird several times in the wheat crops, and I feel sure there is not the slightest doubt, for I know its call so well. *Lipoa-ocellata*—Although I did not see this bird, several of their nesting mounds came under my notice and I saw two eggs which had been taken from a nest in the vicinity of the camp. *Dromaeis-novae-hollandiae*—This bird was often close to the camp during the nighttime, the fresh foot-prints and excreta having been seen by me. *Corcorax-melanorhamphus* was there without doubt, for in the presence of Mr. R. Crompton, (S.A.), I climbed to a deserted nest. The scientific names are in order with Mr. Gregory Mathew's Hand List which I consider the most up-to-date. The venacular names (with one or two slight alterations)—namely, Blue Mountain Lorikeet to Rainbow Lorikeet, Port Lincoln Parrot to Yellow-banded Parrot, White-bearded Honeyeater to the Yellow-winged Honeyeater, are those compiled by the Committee appointed by the South Australian Ornithological Association. In addition I am attaching a list of birds identified by Mr. R. Hall, C.M.Z.S., as published in *The Emu*, Vol. IX., pt. 3.

<i>Uroaetus-audax</i>	Wedge-tailed Eagle.
<i>Falco-melanogenys</i>	Black-checked Falcon.
<i>Falco-subniger</i>	Black Falcon.
<i>Cerchneis-cenchroides</i>	Kestrel.
<i>Elanus-scriptus</i>	Letter-winged Kite.
<i>Ninox-boobook</i>	Boobook Owl.
<i>Podargus-strigoides</i>	Frogmouth.
<i>Carone-Australis</i>	Raven.
<i>Hirundo-neoxena</i>	Welcome Swallow.
<i>Petrochelidon-nigricans</i>	Tree Martin.
<i>Meropus-ornatus</i>	Bee Eater.
<i>Artamus-tenebrosus</i>	Dusky Wood Swallow.
<i>Artamus-personatus</i>	Masked Wood Swallow.
<i>Pardalotus-ornatus</i>	Striped Diamond Bird.
<i>Strepera-fusca</i>	Black Magpie.
<i>Gymnorhina-leuconota</i>	White-backed Magpie.
<i>Corcorax-melanorhamphus</i>	White-winged Chough.
<i>Coracina-robusta</i> ?	Black-faced Cuckoo shrike.
<i>Pachycephala-rufiventris</i>	Rufus-breasted Thickhead.

<i>Pachycephala-meridionalis</i>	White-throated Thickhead.
<i>Collyriocichla-rufiventris</i>	Puff-bellied Shrike—Thrush.
<i>Oreoica-cristata</i>	Bell Bird.
<i>Rhipidura-tricolor</i>	Pied Fantail.
<i>Rhipidura-albiscapa</i>	White-shafted Fantail.
<i>Sisura-inquieta</i>	Restless Flycatcher.
<i>Petroeca-goodenovii</i>	Red-capped Robin.
<i>Petroeca-leggei</i>	Scarlet-breasted Robin.
<i>Drymacedus-brunneipygius</i>	Scrub Robin.
<i>Eopsaltria-gularis</i>	Grey-breasted Robin.
<i>Malurus-cyanochlamys</i> .	Blue Wren.
<i>Malurus-assimilis</i>	Chestnut-shouldered Wren.
<i>Hylacola-cauta</i>	Striated Field Wren.
<i>Sericornis-maculata</i>	Spotted Scrub Wren.
<i>Acanthiza-chrysoorhoa</i>	Yellow-rumped Tit.
<i>Ephthianura-albifrons</i>	White-fronted Chat.
<i>Anthus-Australis</i>	Ground Lark.
<i>Cincolorhamphus-eruralis</i> .	Black-breasted Song Lark.
<i>Pomatorhinus-superciliosus</i>	The White-browed Babbler.
<i>Meliornis-Novae-Hollandae</i>	Yellow-winged Honeyeater.
<i>Glycyphila-melanops</i>	Tawny-crowned Honeyeater.
<i>Ptilotis-eraticita</i>	Wattled-checked Honeyeater.
<i>Ptilotis-ornata</i>	Yellow-plumed Honeyeater.
<i>Melithreptus-brevirostris</i>	Brown-headed Honeyeater.
<i>Anthochaera-carunculata</i>	Red Wattled Bird.
<i>Anellobia-chrysoptera</i>	Brush Wattlebird.
<i>Zosterops-caerulescens</i>	Silver Eye.
<i>Neosetta-pileata</i>	Black-capped Treerunner.
<i>Chalcococcyx-plagiosus</i>	Bronze Cuckoo.
<i>Barnardius-zonarius</i>	Yellow Banded Parrot.
<i>Trichoglossus-Novae-Hollandae</i>	Rainbow Lorikeet.
<i>Glossopsittacus-porphyrocephalus</i> .	Blue Crowned Lorikeet.
<i>Phaps-chalcoptera</i>	Bronze Wing Pigeon.
<i>Burhinus-grallarius</i>	Scrub Curlew.
<i>Hypotaenidia-philippinensis</i>	Land Rail.
<i>Anas-superciliosa</i>	Black Duck.
<i>Spatula-rhynchotis</i>	Shoveller.
<i>Stictonetta-naevosa</i>	Freckled Duck.
<i>Bizura-lobata</i>	Musk Duck.
<i>Coturnix-pectoralis</i>	Stubble Quail.
<i>Lipoa-ocellata</i>	Mallee owl.
<i>Lobivanellus-lobatus</i>	Spur-winged Plover
<i>Hydroprogne-caspia</i>	Caspian Tern
<i>Sterna-nereis</i>	Little Tern.
<i>Larus-Novae-Hollandiae</i>	Silver Gull.
<i>Phalacrocorax-hypoleucus</i>	Pied Cormorant.
<i>Dromaeus-Novae-Hollandiae</i>	Emu.

Birds appearing in Mr. R. Hall's, (C.M.Z.S.), list published in The Emu and which did not come under my observation and were mostly recorded on the expedition to Coffin's Bay, I am purposely omitting (*Strepera-melanoptera*), because the only *Strepera* seen had distinct white markings on wing, and *S.-Melanoptera* shows no white whatever.

<i>Petroeca-bicolor</i>	Hooded Robin.
<i>Smicromis-brevirostris</i>	Short-billed Tit.
<i>Malurus-cyanotus</i>	White-backed Wren.
<i>Amytornis-textilis</i>	Grass Wren.
<i>Megalurus-gramineus</i>	Grass Bird.
<i>Acanthiza-apicalis</i>	Broad-tailed Tit.
<i>Calamanthus-montanellus</i>	Rock Field Wren.
<i>Aphelocephala-leucopsis</i>	White Faced Tit Mouse.
<i>Ptilotis-sonora</i>	Singing Honeyeater.
<i>Cheramoeca leucosternum</i>	Black-and-White Swallow.
<i>Artamus-superciliosus</i>	White-browed Wood Swallow.
<i>Dacelo-gigas</i>	Laughing Jack.
<i>Cuculus-inornatus</i>	Pallid Cuckoo.
<i>Psephotus-muticolor</i>	Many Coloured Parakeet.
<i>Neophema-petrophila</i>	Rock Parakeet.
<i>Melopsittacus-undulatus</i>	Warbling Grass Parakeet.
<i>Microtribonyx-ventralis</i>	Black-tailed Native Hen.
<i>Gallinula-tenebrosa</i>	Black Moor Hen.
<i>Porphyrio-melanonotus</i>	Bald Coot.
<i>Haematopus-longirostris</i>	White-breasted Oyster Catcher.
<i>Haematopus-unicolor</i>	Sooty Oyster Catcher.
<i>Zonifer-tricolor</i>	Black-breasted Plover.
<i>Aegialitis-ruficapilla</i>	Red-capped Dottrel.
<i>Aegialitis-cucullatus</i>	Hooded Dottrel.
<i>Clad. hynchus-leucocephalus</i>	Banded Stilt.
<i>Recurvirostra-Novae-Hollandiae</i> .. .	Red-necked Avocet.
<i>Numenius-varigatus</i>	Whimbrel.
<i>Pisobia-ruficollis</i>	Little Stint.
<i>Hydroprogne-caspia</i>	Caspian Tern.
<i>Sterna-bergi</i>	Crested Tern.
<i>Gabinius pacificus</i>	Pacific Gull.
<i>Macronectes-gigantea</i>	Giant Petrel.
<i>Notophoxyx-Novae-Hollandiae</i>	White-faced Heron.
<i>Nycticorax-caledonicus</i>	Night Heron.
<i>Chenopsis-atrata</i>	Black Swan.
<i>Cereopsis-Novae-Hollandiae</i>	Cape Barren Goose.
<i>Casarca-tadernoides</i>	Shelduck.
<i>Nettion-castaneum</i>	Eyton Teal.





3 9088 00019 5362

SMITHSONIAN INSTITUTION LIBRARIES