April 8, 1922, and on May 2, 1923. My observations also seem to suggest that the two sexes migrate at different times. However this may be, it is clear that the Red-capped Robin is by no means stationary in some parts of its range.

On the opposite side of the continent, the late Mr. Tom Carter recorded that it appeared about June at Broome Hill, south-western Australia, but was absent in the summer, and in 1911 he noted its first arrival for the year on May 8. (Mathews's *Birds of Australia,* VIII., p. 93). In that region it breeds during the winter or early spring, as he records finding nests in July and September. I do not at all think that it was breeding in the Westwood district during the winter, though the season of its visit coincided with that when it is breeding at Broome Hill. This suggests that rainfall rather than temperature controls the breeding season of this species, since the rainy season in south-western Australia is in winter, and in Queensland in summer. In any case, it seems evident that there is still much to be learnt about the seasonal movements of the Red-capped Robin.

Stray Feathers and Camera Craft

The Large-billed Scrub-Wren.—Although by no means a rare bird in the brushes lying between north Queensland and Victoria, the Large-billed Scrub-Wren (*Sericornis magnirostris*) is not a well-known species. The explanation lies in its extreme quietness, vocally; in its colouring and its manner of feeding. The bird's peculiar habit of rearing its young in old nests of the Yellow-throated Scrub-Wren (*S. lathami*) attracts some notice, however. On December 25, 1931, my brother and I attemped to photograph the parents of a young "Large-bill" which we found in an old nest of the Yellow-throated species. After my brother had succeeded in exposing several plates on the adults clinging to the side of the nest, I removed the fully-feathered young bird to a nearby root upon which my camera was focussed. The birds came and fed the young readily, but their quick movement spoilt several plates. When alarmed at the nest the Large-billed Scrub-Wren adopts the mouse-like attitude similar to that adopted by the common Blue Wren (*Malurus cyaneus*). Occasionally it flutters over the dry leaves and debris with tail and wings outspread, scolding in the manner of the White-browed Scrub-Wren (*S. frontalis*) and the Yellow-throated species. When excited on such occasions the mimicking of small birds comes easily to this forager of the jungle branches.—ARTHUR O. ELLIOTT, R.A.O.U., Cambewarra, N.S.W.

Large-billed Scrub-Wren.

Photo. by Arthur O. Elliott, R.A.O.U.

The Black-backed Wren.—One of the delights of the Wyperfeld Camp-out of September, 1931, was the finding of *Malurus melanotus*. It is very difficult to describe and do justice to this wonderful little blue gem of feathers. The male, in full plumage, has head, throat, abdomen, upper part of back, upper and under tail coverts of brilliant metallic blue, with beautiful verditer-blue ear coverts; back of neck, lores and bands across breast and lower part of the back, glossy black; green on wings; tail, greenish; bill, black, and legs brownish black. The female is very much like the female of *Malurus cyaneus*, with the exception of the tail, which is green, the bill is light brown, and the legs are slate. Both male and female have white tips to their tails. These birds have been described as very shy and hard to see. Gould says in his *Birds of Australia*, Vol. I, page 322, "It is a most charming species in as much as it possesses characters intermediate between *M. cyaneus* and *M. splendens*, having the blue belly and conspicuous pectoral band of the latter, and the black band of the former."

Miss C. Travers (a Tasmanian member of the Union) and I were fortunate enough to get in quite a lot of time with these birds during our stay at Wyperfeld of several days. Having observed a family carrying food, undoubtedly for young birds, our next move was to find the nest. That was not quite so easy as it sounds, as the nest was situated in an acacia of about 10 feet in height, almost completely covered in dodder, both of which were more or less dead, and very dense. The birds were flying in and out at one side of the dodder-covered top, and using different angles by which to enter the nest. In order to locate the entrance, we crawled through an opening of the dodder near the ground, and lay on our backs until we discovered the base of the nest, then getting a long thin branch, poked it up through the head of the dodder-covered acacia, and by this means discovered the entrance, which was wonderfully camouflaged. The nest was composed of soft pieces of bark and grass; it had the entrance on the side fairly near the top, and contained three young birds, which claimed a tremendous amount of attention. Feeding them were a most brilliant male and two females, all of which worked desperately hard. Although we had them under observation at different times of the day and up to two hours in duration, their attention was ceaseless. The feeding seemed to be done in turns, except on several occasions when one of the females took the food from the male when he brought it near the nest, and she fed the young whilst he went out for more supplies. The food consisted wholly of winged insects, quite large specimens being brought at times. In attendance also was an immature male, which had a vantage

point on a dead stick on a level with the nest and within a few feet of it; his sole occupation apparently was to keep the nest clean, as he visited it at intervals and removed the excreta. On the last day of our stay the young birds were evidently ready to leave the nest, as one of the females kept pushing one of the young birds back from the edge of the nest as if she was afraid of its taking flight. These birds were located in a belt of partly dodder-covered acacias on the edge of a sand ridge, in front of which there was a saucer-like clearing, from which the food was obtained. Silvereyes also inhabited the acacias, especially those free from dodder. Red-capped Robins were there also and kept to the saucer-like depression, from which they also were obtaining food supplies. The picture of these two birds (*Malurus melanotus* and *Petroica goodenovii*), like superb little jewels, flitting from point to point in the brilliant Mallee sunshine, attending to their household duties, is a picture which will live long in our memories.—(Miss) M. L. WIGAN, R.A.O.U., Melbourne.

Magpies and Small Birds.—Daily in this district one sees the Black-backed Magpie (*Gymnorhina tibicen*) in hot pursuit of a Pipit, Thornbill or some other small bird, every turn and twist of the pursued followed closely by the pursuer, the chase usually rising higher and higher, until either the Magpie desists and returns to its feeding, or the small bird finds a haven of peace in a tree or elsewhere. Much speculation concerning this habit of the Magpie has arisen, as every observer in Magpie country has witnessed such an episode. Until recently, I always assumed that it was done for sheer sport, but my opinion has now altered. On May 27, 1932, a male Flame Robin (*Petroica phœnicea*) that was feeding close to where I was working, was swooped down upon, seized by a "black-back", and was borne in the latter's bill to a tree some few score yards away. What the ultimate fate of the Robin was can only be conjectured, as I was unfortunately unable to follow up.—A. E. BRIDGEWATER, R.A.O.U., Mansfield, Victoria.

Origin of Certain Bird Names.—The Official Checklist of *the Birds of Australia* (Second Edition) seems to be largely responsible for the misconception among ornithologists that John Gould described and named several species of Queensland birds on page 105 of Jardine's *Contributions to Ornithology*, which was published in 1850. A reference to that publication reveals that pages 92-105 are devoted to a series of letters from John McGillivray, naturalist aboard the H.M. surveying ship "Rattlesnake", to John Gould. In one

of those letters McGillivray mentions several of the new birds he had collected on the Islands along the Queensland coast, and refers to a new Kingfisher of the genus *Syma* and "also a *Monarcha* like *M. trivirgata,* but having black wings." Gould refrained from naming these birds in that publication but in the *Proceedings of the Zoological Society* of London for 1850 he described them, along with other species collected by McGillivray, as *Halcyon* = *Syma flavirostris* and *Monarcha leucotis.* It is apparent that all references in the "Checklist" to the *Contributions to Ornithology,* 1850, especially page 105, should be referable to the "P.Z.S." for that year.—D. J. DICKISON, R.A.O.U., Melbourne.

Notes on the Red-capped Dotterel and the Period of Incubation of its Eggs.—Considerable space has been devoted to the Dotterel family in recent issues of *The Emu,* and the following observations may be of interest to members dealing with this interesting group.

During past years large areas of low-lying land and tidal flats along the foreshores of the Hunter River, about Newcastle, have been built up by dredging sand from the river. These sand flats have made ideal nesting sites for the Red-capped Dotterels (*Charadrius ruficapillus*), and a good number breed along the river each year. In this district they begin to breed in late August and continue until the following January.

Whilst walking over a small isolated patch of sand on September 7, 1929, my attention was arrested by the actions of a Dotterel. It was chasing a Pipit (*Anthus australis*) along the sand. After running a few yards the Pipit flew away; the Dotterel then retraced its steps and sat on the sand. As the bird remained in the same position for many minutes it was disturbed by me and found to be sitting on a single egg.

On September 21, the locality was again visited and both Dotterels were present at the nest. A mere depression in the sand, lined with a few small flat shells, it then contained two eggs, one much shorter than the other. On returning to the eggs the Dotterels used to look from side to side and run in short stages to the eggs.

The next visit was made one week later. Both birds were present and there were still two eggs. On this occasion they were both agitated at my presence, going through the antics typical of the species when disturbed during the nesting period. Again on October 6, the area was inspected and to my surprise the birds were still in attendance at the eggs. They were greatly disturbed during the inspection and came within a few yards of the eggs. At 10 a.m. on the following day both young had hatched out. They were found close to

where the eggs had rested so long, but a careful search failed to locate the egg shells.

The period of incubation in this case proved to be thirty-one days—rather a long time for such small birds. The growth of the young appeared rather slow, for on October 13, six days after hatching, the young were still covered with down, there being no trace of feathers showing. The only parts that appeared to have grown were the legs. They were definitely longer and stouter than on the day of hatching.—A. J. GWYNNE, R.A.O.U., Carrington, N.S.W., 27/7/32.

Protective Colouration.—Thirty-six years ago there was published in the American journal of ornithology, *The Auk*, a contribution* which was destined to revolutionise the attitude of naturalists towards colour in animals. A supplementary article followed in the next issue of the same journal, and later, in 1909, there appeared a remarkable book,† giving facts and details, and many splendid illustrations, of the theories advanced in the two previously-published papers. Most scientists were at first loth to accept the views expressed; however, the advent of the Great War and the use of camouflage to disguise objects, amply justified the results of the original research carried out by Abbott H. Thayer and Gerald H. Thayer.

Without discussing the various types of markings and their relationship to environment I submit the attached photograph of a Black-fronted Dotterel (*Charadrius melanops*), which serves to illustrate what was termed by the Thayers, "ruptive" and "secant" colouration. On handling a skin of the species in question it might seem that the bold markings of the feathers would make it a conspicuous object, even in its normal surroundings. This is not so, and anyone who has watched the bird in life knows the difficulty of keeping it under observation, notwithstanding that it inhabits country almost entirely devoid of cover. The effect of any markings whatsoever tend to break up the outline or silhouette of the object, whereby it is recognised. On glancing at the bird in the photograph it will be seen that there is scarcely a marking, and in life a colour, that cannot be matched with the high-lights and shadows of its surroundings, and this despite the fact that the Dotterel is in accurate focus. Its obliteration would be even more pronounced were the bird sitting and not standing over its eggs as herein shown.—K. A. HINDWOOD, R.A.O.U., Willoughby, Sydney.

*"The Law Which Underlies Protective Coloration," A. H. Thayer, *The Auk*, 1896.

†*Concealing Coloration in the Animal Kingdom*, Gerald H. Thayer, 1909.

Black-fronted Dotterel at Eggs.

Photo. by K. A. Hindwood, R.A.O.U.

Blue Wren's Moult.—Some discussion has been going on in one of our Tasmanian journals as to when the male Blue Wren (*Malurus cyaneus*) dons the colour again after the moult towards the end of summer. My own garden *Malurus*, which dropped the blue and donned the grey by the end of February, was in "high blue" again on May 20, and will continue so through the remainder of winter, spring and most of summer, until February comes around again. Many folk seem still to be bemused with the idea of a "winter moult", and think that the appearance of a Wren in full blue in the months of June and July is exceptional, whereas it would be exceptional to see an *adult* Wren in grey during those months; only the young males hatched during the previous spring appear in grey plumage in the winter, and are distinguished from the females by blue tail-feathers.—H. STUART DOVE, R.A.O.U., West Devonport, Tas., 24/8/32.

Bird Notes from Tasmania.—August, 1932. Lewisham. Numbers of Flame-breasted Robins (*Petroica phœnicea*) are flitting over the recently-ploughed paddocks. Skylarks (*Alauda arvensis*) have also reappeared. In the beginning of the month they were in flocks, but have now separated. Many are singing in the paddocks. They nest freely in October. A single specimen of the Hoary-headed Grebe (*Podiceps poliocephalus*) has spent some months in the company of a neighbour's Ducks frequenting a small lagoon.

On March 26, 1932, a large flock of Spine-tailed Swifts (*Hirundapus caudacutus*) flew over, heading south-east.

The pair of Whistling Eagles (*Haliætus sphenurus*) frequenting the range of coast from Cape Surveille to Cape Haay left their nesting site near the first-mentioned cape and have made another nest along the strip of coast beyond Waterfall Bay. I have not seen this nest but was told it was built on a rocky projection. Two young ones were reared this past season. For some months they kept with their parents. After separating, one of the fledglings spent most of its time about the Blowhole and the Tasman Arch area. It was a fine sight when the four birds circled over Mount Cash.

Crested Penguin (*Eudyptes cristatus*). One of these birds has come ashore each of two years to moult at Eaglehawk Neck. Its chosen spot is a recess about sixteen feet up the cliffs to which it ascends over a confusion of fallen rocks and debris. Its refuge is partially hidden by the overhanging brows of the cavity and by stunted vegetation growing on the cliff. Occasionally, standing on the more open part, it makes a striking object when the sun's rays catch its breast. It appeared each year in the middle of January, and this year was also about during May. One afternoon it was wandering down to the water when some children

came across it and forming a circle, danced around it. To their great amusement it kept time by bobbing its head and occasionally lifting its feet in turn. Finally it wearied and breaking through the cordon waddled to the ridge and disappeared in the herbage. It frequented the beach for some weeks and was called "Miss Fletcher's Penguin". In May, 1932, I picked up a partly-grown one, dead, on the Inlet side.

Petroica multicolor. The male of the pair of Scarlet Robins which frequented my garden became very tame, perching on my hat or head, my shoe, or the handle of the tool I happened to be using. If I held out my hand he would fly straight to it and perch upon it. Sometimes, I would place three grubs upon it and he would stand and pick up the lot, then look up at me for more. He was particularly fond of the larvæ of the cockchafer beetle. Woodlice, also, he devoured and flew down when he saw me moving an edging board or stone.

Amaurodryas vittata. The Dusky Robins also frequent the garden, and last spring brought their young ones close to the house by the pantry window, feeding them with the crumbs of fat or suet placed there for "Whistling Shrike-Thrushes". The "Duskies" built their nest a few chains from the house in hollows and scars on the peppermint gums. They reared two broods.

Blue Wrens (*Malurus cyaneus*). These birds "police" the garden also and are very partial to the aphis on the rose trees. The male was drowned when the brood of four was two days old. The female fed them herself, coming constantly to the birds' cupboard for crumbs of bread and suet. After a few days she found another mate which followed her about, but I never saw him assist with the feeding of the young ones, which, after leaving the nest, were also brought to be fed at the food depot.

Swamp-Quail (*Synoicus ypsilophorus*). A pair of these Quail nested on the hillside adjoining and brought their young ones into the garden enclosure, spending their time amongst the vegetables and flowers. It was a pleasing sight to see the small brown forms slipping in and out of the plants or crouching underneath the rhubarb leaves. As the months passed their numbers decreased, whether through enemies (tiger cats and native cats still exist here and poultry has to be secured at night) or by the parents driving them off. These Quail drank from the chickens' tins and often ran about their yard picking up grain. Their call resembles that of the Bronze Cuckoo (*Lamprococcyx*). When the female Quail left her nest each day after laying, she whistled to find the whereabouts of her mate. He would answer and it was interesting to hear the call and response nearing each other.

Dove-Prion (*Pachyptila desolata*). One bird was picked up dead on the inner beach after a storm. It bore no mark of injury and may have struck the telephone wires when flying through the Cut.

Disease amongst Noisy Miners (*Myzantha melanocephala*). Last autumn and again this year (1932) a peculiar disease appeared amongst these birds. I first noticed it in the flock frequenting the school grounds at Forcett (near Lewisham) and concluded it must arise from the birds living so much upon the scraps thrown down by the children. But I found the disease was too widespread to be accounted for in this way. The first symptoms were a drooping of the wings, then the legs became affected, becoming paralysed, the bird at times standing on its head and twirling around and around. Then it would sit, or rather lie, on the ground with its head held up and bill open. Finally, the wings became useless and the bird died. The disease was very rapid, often less than twenty-four hours from the time the victim was first observed to be "off colour". There has been a large flock of Miners associated with the playground of the Forcett School for sixty years. Just now, the flock is reduced to a few birds.—(MISS) J. A. FLETCHER, R.A.O.U., Eaglehawk Neck, Tas., 16/8/32.

Great Barrier Reef (Christmas Expedition).—During every Christmas holiday season since 1925 expeditions of nature lovers and others have been organised by Mr. E. F. Pollock, R.A.O.U., F.R.G.S., to some specially-attractive coastal locality where the members could combine nature study with holiday-making under most pleasurable conditions. Some of these excursions have been to the great Barrier Reef area in Queensland, and another one, to cover entirely new ground, has been planned for this Christmas (1932).

The party will embark on boats at Mackay on December 22 and finish up at Bowen in January. Altogether, twenty-five islands, situated between these two ports, and all of fascinating interest, are to be visited during the month. They include the whole of the famous Whitsunday group, and several others.

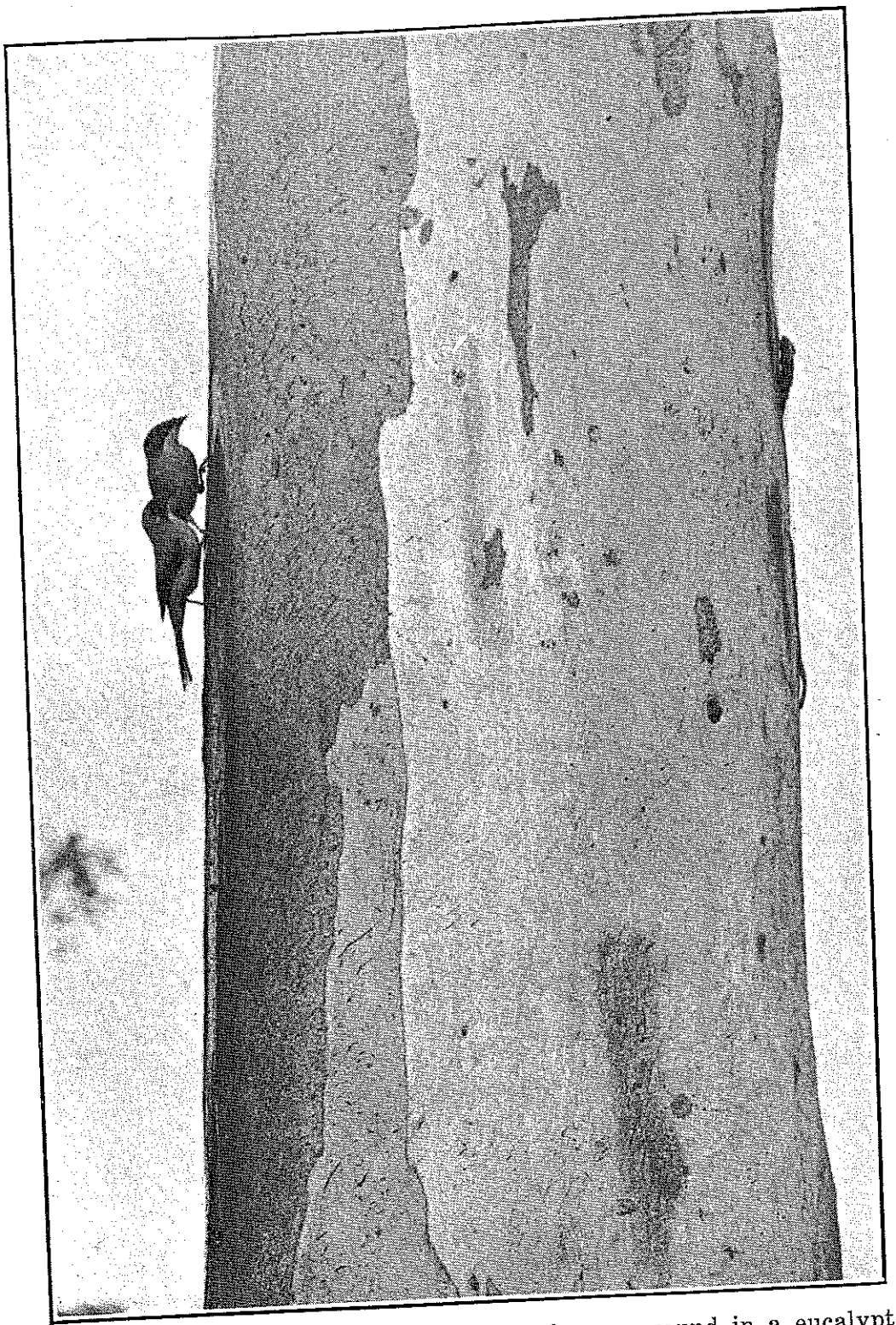
Among the special features of the trip which will assist in keeping the party entertained and interested are:—Sea-birds of many varieties nesting in millions, and land birds on the Whitsundays and mainland; turtles; crocodile and dugong hunting; fishing; corals and coral animals; shell collecting; wild goat shooting; oyster gathering; safe bathing and glorious scenery. Anyone wishing to take part should communicate early with Mr. E. F. Pollock, R.A.O.U., at Carrington Avenue, Strathfield, N.S.W.

Nest Destruction.—With reference to Mr. Elliott's "Notes on the Brown Warbler," which gave cases of wilful nest destruction perpetrated by the bird itself, the following incident which came under my notice seems to denote that the New Zealand Warbler (*Pseudogerygone igata*) has the same habit. About three years ago the writer observed the half-finished nest of a Grey Warbler hanging from the branches of a small *Carpodetus serratus* (Puta-puta-weta). It was about twelve feet from the ground and in a quiet, rather dark corner not very frequently visited. Close by ran the drive from which the nest could be seen by an observant person. The day after the writer first found the nest she returned to make further observations, intending to lie concealed and watch the birds at work. To her immense annoyance the nest had been torn to pieces and lay scattered on the ground. Had the writer touched the nest with her hands or remained very close to it for sometime and disturbed the birds, she would have suspected that they might have abandoned the nest, but it had only been found the day before and the writer had merely marked it down for future observation. That birds dislike being overlooked when nesting is well-known, and a "Tomtit" which built in the rafters of the garage decided to move after building a most complete nest, simply because the car was taken out of the garage three times in quick succession. When leaving it tore its nest to bits and left it to fall to the ground.

At first the destruction of the Warbler's nest seemed to be the work of children, so the writer accused her son of allowing a friend (known to have been in the grounds about the time the nest was destroyed) to tear down the Warbler's nest. It transpired, however, that neither of them had done it, and seeing that practically nobody would be likely to wander into that particular corner up a long private drive, I suspected that one of the only two other possible miscreants that could have torn the nest must have done so. In Nelson we have no Currawongs to interfere with other birds' property, but we have the Tui (*Prosthemadera novæseelandiæ*) and a Kingfisher (*Halcyon sanctus*), either of which might have been the culprit. The latter bird builds every year on the place, but although it is certainly an enemy of young birds, the writer doubts whether a half-finished nest would be of interest to it. Of the Tui's respectability one cannot be sure, seeing that he is always poking and prying about, and the writer, as noted, has before now seen him inspecting a Fantail's nest. However, it seems more logical to conclude that the Warblers, having seen the writer approach the nest, tore it down themselves, seeing that they are known to do this elsewhere. It is quite possible they found themselves too close to the drive, with its traffic, and when the writer found the nest they decided it was better to seek a more isolated spot.—(Mrs.) PERRINE MONCRIEFF, R.A.O.U., Nelson, N.Z.

Honeyeaters at Play.—Autumn, in the neighbourhood of Sydney, is an ideal season to observe the ways of many of the Honeyeaters. It is obvious that at this time of the year there is a gathering of the various species. Such birds as the Black-capped (White-naped), Brown-headed, Yellow-faced, and Yellow-tufted Honeyeaters, which normally inhabit forest country when breeding, leave their haunts of the spring and summer and seek the flowering banksias on the heathlands, and the company of their fellows. The movements and call-notes of this numerous assemblage, when combined with the activities of the usual Honeyeater population of the heath, are so striking that even a casual bird-observer could not pass by without pausing to admire the birds and listen to their joyous voices. The spirit of play seems to predominate; nowhere is there apparent the hostile assertiveness common to nesting birds. The charming-voiced Tawny-crowned Honeyeater sips nectar from the flowering cones of the shrub from which the raucous Brush Wattle-bird takes his portion. Here, at the bountiful autumnal feast spread on the tables of the hills, birds forget the laws of territory and the cares of breeding.

This was amply demonstrated to three friends and myself when, in June of this year (1932), we undertook an excursion to a favoured spot some twelve miles north of Sydney. Honeyeaters were everywhere, and, watching them, it was noticed that some "Yellow-tufts" and "Yellow-faces" frequently flew from the banksias to an isolated tree growing on the heath. The birds were seen to be flitting about an old nest near where several branches joined a larger bough. As we were a little distance away a sight was taken through field glasses: presently a "Yellow-face" flew to the nest and settled on it, remaining there for perhaps half a minute. Then another bird took its place, then a third. Entertainment of this nature was worth closer attention, so we walked to within twenty feet of the tree and for a quarter of an hour watched both the Yellow-faced Honeyeaters and at least two "Yellow-tufts" indulge in what seemed to be a modified form of "follow-my-leader". Soon after one bird had left the nest another would occupy it, and scarcely a minute passed without one or the other of the two species being at the nest, which was apparently that of the Rufous-breasted Whistler. While one bird would be sitting several would be amongst the branches close by, uttering their cheerful notes. The carefree "Chick-up, chick-up" of the Yellow-faced Honeyeater was certainly in keeping with the occasion, though the "Yellow-tufts" were not so demonstrative. When we left for fresh fields the birds were still at play. Play it certainly was, for the birds, having a plenitude of food, were in a responsive mood, and the sight of the nest, combined with the spirit of a day, spring-



Yellow-tufted Honeyeaters taking gum from a wound in a eucalypt.

Photo. by K. A. Hindwood, R.A.O.U.

like in its warmth and atmosphere, must have mildly aroused their nesting instincts and caused them to indulge in a little house-play.

One cannot study the ways of birds without being aware of the fact that they respond to happy circumstances and exhibit an intelligent appreciation of their surroundings. I use the term "intelligent appreciation" as though it were applied to humans, and I think there are few nature-lovers who will deny that something more than instinct enters into the lives of birds. That they make use of a fortuitous food supply is also certain. In this respect I recall an afternoon in autumn two years ago when a companion and I were walking in a paddock near Bankstown (Sydney). Several Yellow-tufted Honeyeaters were fluttering about the trunk of a large eucalypt. On approaching the tree it was seen that the birds were feeding on the dark-red gum oozing from a wound in the bark. They would make quite long flights to the tree from various parts of the paddock, and at one time five of them were clustered about the break in the bark. One could distinctly see their tongues greedily licking the gum. This was surely an avian "all-day-sucker".

A somewhat similar instance to that recounted above was recorded in *The Emu* (Vol. X, 1910, p. 52, pl. 10) by C. P. Darnell-Smith, who noticed six species of Honeyeaters at a large wound in a grey gum (*Eucalyptus punctata*) growing on Milson Island, Hawkesbury River, N.S.W. So numerous were the birds, and so anxious were they to taste the exuding gum, that newcomers fluttered about looking for a foothold on the trunk of the tree. The gum had a very sweet taste and on being analysed at the Sydney Technological Museum proved to contain, as its principal constituent, the sugar known as raffinose or melitose.

Yellow-tufted Honeyeaters are much given to play and it is pleasant to watch them darting through the scrub, incessantly chattering. The play-antics of these birds have been frequently recorded and I cannot do better than quote from the writings of A. H. Chisholm, who describes a dancing performance presented by about thirty birds: "It was most engaging. With wings drooped and tails raised, the graceful creatures bowed, advanced, retired, hopped around, and amid much excited chattering, went through a highly-spectacular display . . ." (*Mateship with Birds*, p. 96).—K. A. HINDWOOD, R.A.O.U., Willoughby, Sydney.

The next species to be figured in colour will be the White-breasted Whistler (*Pachycephala lanioides*).