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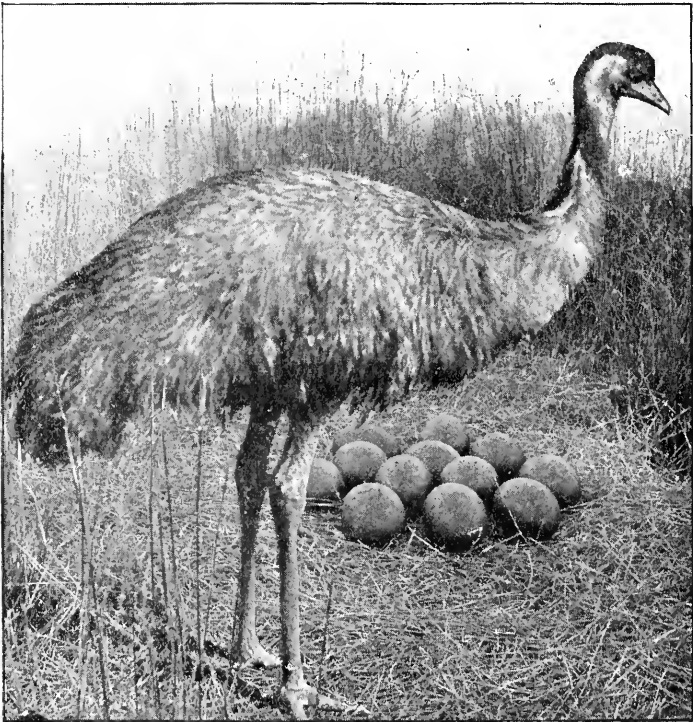




# The Emu

A Quarterly Magazine to popularise the Study and Protection  
of Native Birds.

OFFICIAL ORGAN OF THE AUSTRALASIAN ORNITHOLOGISTS' UNION.



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## CONTENTS OF VOL. IV.—1904-5.

- About Members, 32, 181.  
*Egotheles nove-hollandica*, 173.  
 Albinism (*Rhipidura tricolor*), 169.  
 Audubon Societies in Relation to the Farmer, 29.  
*Auk, The*, 24, 80.  
 Australasian Ornithologists' Union, The—Sydney Session, 85; Presidential Address, 93; Excursion to N.S.W. National Park, 157.  
 Australian Birds in the Zoological Gardens, London, 1903-4, 11.  
*Avicultural Magazine, The*, 27, 74.
- Big Bags of Game, 34.  
 Bird Distribution, 24.  
 Bird-Life in British Papua, Some, 52.  
*Bird-Lore*, 27, 74, 141, 178.  
 Bird-Names of Aborigines, 168.  
 Bird Protection—Abroad, 26; in N. America, 29; in New Zealand, 149.  
 Birds' Eggs in the Dresden Museum, 125.  
 Birds of the Wongan Hills, W.A., The, 69.  
 Birds Observed and Skins Examined in 1903-4 near Hobart, 175.  
 Bird Sanctuaries in New Zealand, 59.  
 Bird Visitors to the Botanic Gardens, Melbourne, 170.  
 Black v. Rufous Butcher-Birds, 138.  
 Blue Wrens, 180.  
 Breeding of Some Waterfowl at Gooch in the Year 1903, 24.  
 Brush Bronze-wing Pigeon, The, 79.  
 Brush-Turkey, The, 75, 143.  
 Bush-Chats and Song-Larks, 47.  
*Bulletin of the Philippine Museum*, 25, 74.
- Casterton District, Field Notes on Some Birds of the, 124, 161.  
 Central Queensland Notes, 171.  
 Character of Birds' Wings, 141.  
 Clarke Island (Bass Strait) Notes, 21, 174.  
 Clermont (Q.) Notes, 174.  
 Coloured Figure Fund, 149.  
 Coloured Plate, 184.  
 Coomoolaroo Notes, 67.  
 Corrections, 35, 185.  
 Crossbred Parrakeets, 67.  
 Cuckoo, Why Does the Young Eject its Foster-Brethren? 172.
- Expunged Islands, 32.  
 Ewing Tit, The, 73.
- Feather-plucking, 24.  
 Finches, 73.  
 Finches in N. Queensland, 68.  
 Finch, Red-tailed or Red-faced, 178.  
 Finch, Pectoral or White-breasted, 24.  
 Finch, Yellow-rumped, 20, 177.  
 Forgotten Feathers, 22.  
 Fom Magazines, &c., 24, 73, 139, 177.  
*Geelong Naturalist, The*, 27, 75, 178.  
*Genera Avium*, 139.  
 Great Lake, List of Birds Observed at the, in the Month of March, 103.  
 Guttated Bower-Bird, 73.
- Honey-eaters in Captivity, 26.  
 Honey-eater, New, for N. Queensland, 67.  
 Honey-eater, Yellow-throated, 170.  
 Honey-eater, Yellow-eared, 169.  
*Hypotaenidia philippinensis*, 168.
- Ibis, The Straw-necked, 78.  
*Ibis, The*, 28, 77, 140, 178.  
 Incubation after Removal from Nest, 20.  
 International Catalogue of Scientific Literature, 142.
- Kagu of New Caledonia, The, 166.  
 Kestrel, Description of a New, from W.A., 1.  
 King or Least Swamp Quail, 143.  
 Kolora Notes, 67.
- Lighthouses and Bird Observations, 63.  
 Marcus Island, Birds on, 144.  
 Melanism and Albinism in Birds, 76.  
 Melbourne Zoo Notes, 168.  
*Melithrepti*, Remarks on Certain, 70.  
 Migration of Birds, Some New Facts about, 179.  
 Migration, Origin of, 81.  
 Migratory and Nomadic Birds, 139.  
 Migratory Birds, N. Queensland, Notes on, 43.  
 Modern Egg-Collecting, 179.  
 Moore River, W.A., A Glance at the Birds of the, 132.  
 Musk Lorikeet, 171.
- National Park, 84.  
 Nature Study Societies, New, 186.  
 Nightjar, Little, 168.

- Notes and Notices, 35, 83, 148.  
 Obituary—The late Mr. H. E. Hill, 185.  
 Oril River, N.-W.A., A Trip to the, 37.  
 Ornithological Association of S. Australia, 31.  
 Ornithological Congress, Fourth International, 186.  
 Pigeon, Crested (*Ocyphaps lophotes*), in Captivity, 182.  
 Penguin, A, at Play, 172.  
*Ptilotis fasciocularis*, Description of the Eggs of, 137.  
 Reviews—"Animals of New Zealand," 82; "Catalogue of Birds' Eggs," 30; "Catalogue of Canadian Birds," 182; "Nests and Eggs," 145.  
 "Rookery," A Favourite, 138.  
 Rottneest Island, W.A., A Visit to, 129.  
 School in Wild Life, The, 57.  
 Scientific Bird Names, The Use of, 18.  
 Sea-Birds on Land, 102.  
 South African Ornithologists' Union, The, 65.  
 St. Kilda and its Birds, 26.  
 Stray Feathers, 20, 67, 138, 168.  
 Survey Camp Notes, 71.  
 Swifts and Swallows, 20.  
 Tasmania Ornithologically Considered, 142.  
 Thickhead (*Pachycephala horewensis*), 78.  
 Upper Yarra, Birds of the, 163.  
*Victorian Naturalist*, 73.  
 Victorian and Tasmanian Birds, Some Comparisons of, 109.  
 Wekas Breeding in Captivity, 141.  
 Western Notes, 169.  
 Western Australian and Allied Species, Notes on Some, 48.  
 Western New South Wales in 1859-60, 76.  
 Wilmot (Tas.), Bird Notes from, 14.  
 Wing-Beats of Birds, 25.  
 Winter Whitening of Plumage or Fur, 140.  
 Wongau Hills, W.A., Notes on a Trip to the, 2.  
 Yandanooka District, W.A., Notes on a Trip to the, 151.  
*Zoologist, The*, 28, 178.

## ILLUSTRATIONS IN VOL. IV.

Nest and Young of Frogmouth <i>Podargus strigoides</i> ..	plate i
Frogmouth <i>Podargus strigoides</i> by Nest with Young ..	plate ii
Boobook Owl <i>Ninox boobook</i> .. .. .	plate iii
Playhouse of Great Bower-Bird <i>Chlamydera nuchalis</i> ..	plate iv
Flight of Bare-eyed Cockatoos <i>Cacatua gymnopsis</i> ..	plate v
Nest of Red-throated Honey-eater <i>Entomophila ruficularis</i> )	plate vi
Nest, with Young, of Black Butcher-Bird ( <i>Cracticus quoyi</i> )	plate vii
Nest <i>in situ</i> of Black Butcher-Bird ( <i>Cracticus quoyi</i> ) ..	plate viii
Red Gum Tree containing Seven Species of Brooding Birds	plate ix
Flooded Gum, with Nest of Black-throated Butcher-Bird ( <i>Cracticus nigrigularis</i> ) .. .. .	plate x
Nest of Bell-Bird <i>Oreoica cristata</i> .. .. .	plate xi
The Kagu ( <i>Rhinocetus jubatus</i> ) of New Caledonia ..	plate xii
Rutous Bush-Lark ( <i>Mirafra woodwardi</i> ) .. .. .	plate xiii
Black Grass-Wren ( <i>Amytis housei</i> ) .. .. .	plate xiii
Chestnut-bellied Whiteface ( <i>Xerophila castaneiventris</i> )	plate xiii

# The Emu

Official Organ of the Australasian Ornithologists' Union.

"Birds of a feather."

VOL. IV.]

1ST JULY, 1904.

[PART I.

## Description of a New Kestrel from Western Australia.

BY ALEX. WM. MILLIGAN

(Hon. Ornithologist, Perth Museum, W.A.)

I HAVE great pleasure in adding what I consider a new Kestrel to the list of Australian species. The bird was captured alive some weeks ago at Yalgoo, in the north-western portion of this State (where it is said to be a very common form), and sent to the Western Australian Zoological Gardens, Perth. The Director, Mr. Ernest Le Souëf, and the head keeper of the Gardens, Mr. Giles, were, on its arrival at the Gardens, at once struck with its diminutive form and general rufous colouration as compared with living forms of *Cerchneis cenchroides* (Vig. and Hors.) which they had in the Gardens.

The new bird differs from the common form in not possessing any white or pale feathers on the under parts of the body, those parts being a decided cinnamon-pink and making it very distinctive. In addition, the tail is not grey, but rusty-cinnamon, and the legs pea-green and not orange-yellow. It also is much smaller.

The following is a specific description of an adult male:—

The whole of the upper surface is deep rusty-cinnamon, the crown and neck feathers with longitudinal black striations, the mantle with black arrow-heads sparsely distributed, the wing coverts and secondaries with narrow black crescentic markings. Tail feathers (rusty-cinnamon, not grey) with black transverse bars, subterminal black band, and whitish tips. Whole of under surface, including under surface of wings, cinnamon-pink, paler than the upper surface, with a few feathers of the breast striated with sepia. Ear coverts inclining to greyish-brown. Narrow circle of feathers above eye, and a tuft below eye, blackish-brown. Culmen light reddish-blue; cere light blue, with yellowish tinge; eyes and feet pea-green.

Type in Western Australian Museum, Perth.

Owing to the partiality of the bird for young chickens, it is known locally as the "Chicken-Hawk." As a consequence poultry-owners wage a ruthless war with members of the species.

Cases have been recorded in Europe where Kestrels, when pressed hard for food, have had recourse to young game. I have not, however, observed this habit with the Nankeen Kestrel in Victoria or Western Australia, and have had splendid opportunities of observing their habits in both States. It is said that the common Kestrel of Europe is represented by a dark resident race in countries bordering on its southern range. Allowing for a tendency towards variability in size and colouring amongst members of the genus, I think, nevertheless, that upon a comparison of the new species with that of the Eastern bird (which is identical with our coast bird) the specific differences will appear such as to justify, on sight, the above separation.

I assign the scientific name of *Cerchneis unicolor* to the new bird, and the vernacular name of Western Kestrel.

## Notes on a Trip to the Wongan Hills, Western Australia.

BY ALEX. WM. MILLIGAN

(Hon. Ornithologist, Perth Museum, W.A.)

### PART II.

NESTS AND EGGS.—From the preceding remarks (Part I., *Emu*, vol. iii., p. 217) it will be gathered that most of the birds had finished nesting, or had, at least, brought out their first broods. Some, however, were still nesting, such as *Glycyphila albifrons*, *Glycyphila fulvifrons*, *Ptilotis sonora*, and *Micræca assimilis*. I was much pleased to discover the pretty nest of the last-mentioned on our return journey, between the Mission Station and Mogumber. The nest was placed in the fork of a fallen branch of a eucalypt, which had become barkless and bleached from decay and weather. The branch was close to the main road, where vehicles and horsemen passed daily, but the traffic evidently caused the birds no grave concern. Whilst the bird sat on the nest until we approached within a yard of it, it was almost impossible to detect it, so alike were the general colours of the bird, nest, and branch.

Of nests containing young the most notable were those of *Podargus strigoides* and *Uroæetus andax*. Of the former species we observed two nests, each containing two young ones. The first one was discovered in an isolated *Casuarina* belt on the lake country, and so closely did the nest and young resemble the surrounding branches that we should have passed within a yard of it had not the parent bird flown away and thus drawn our attention. A photograph of the nest is reproduced. The nest itself was an ill-constructed, shallow, flimsy structure, the builders having evidently relied to a great degree on the inclined fork and under twigs of the dead sapling for the strength of the structure. The second one was discovered by our driver in a



Nest (*in situ*) and Young of Frogmouth (*Podargus strigoides*).







Frogmouth (*Podargus strigoides*), by Nest with Young.



York gum tree, the main branches of which overhung the road. The nest was placed some 30 feet high above the road. One of the attendant parent birds, on observing us, immediately elongated itself and became rigid along the length of the limb, and so resembled the surroundings as almost to defy detection. I have always been struck with the similarity of the habit of the bird in so elongating and stiffening itself to that of some of the iguanas, which perform the same acts when observed. Can it be a device by each to escape detection inherited from a common ancestor? As regards the second nest, Mr. Conigrave climbed up a neighbouring branch of the same tree, and on our passing up his camera, he in that unique position took a photograph of the nest and young on a level plane. Unfortunately, on reaching Perth he found that the plate had been damaged in transit. We could not help remarking the swift, straight, and prolonged flight that the owner of each nest made when disturbed. As these were flights made in the daytime it may be fairly assumed that the strong light of day does not materially affect their sight.

Another interesting nest that we discovered was that of *Uroaëtus audax*. It was situated in the fork of a salmon gum tree at a height of about 50 feet from the ground. The materials forming the nest structure would, we estimated, half-fill a dray. It was composed outwardly of dry sticks. Underneath the nest was a litter of the same material, which had either fallen in the course of construction or with the winds, or perhaps from both causes. In the litter we picked up the lower part of the leg of a young kangaroo, newly killed, as also the skull of another one. The other portions of the bodies had evidently provided food supplies for the young, whom we could see as they craned their necks and scrutinized us over the rim of the nest. Unfortunately, we had not any climbing apparatus with us, and as the trunk of the tree was too thick and free of smaller limbs and the bark too smooth, we had to abandon the desire we had to make a closer inspection of the occupants and their home, and to get a photograph illustrative of the young Wedge-tailed Eagle *chez nous*. One of the most interesting nests was probably that of a new species recently described—*Acanthiza pallida*. The nest was built in a small tree on the roadside opposite a brush-fence enclosure which had been used to muster bush sheep. The nest was fully 2 feet long and divided into four compartments for the reception of eggs, each compartment surmounted with a "look-out" or "cock's nest." Unfortunately the laying season had passed, and the nest or nests was or were untenanted, and it was therefore impossible to say whether or not a separate pair of birds occupied each. Judging by the residues left in the bottom of each nest, I am inclined to think that they were separately tenanted, but I should not care to positively assert that they were so. It is perhaps interesting to know that these birds share with the African Weaver-Birds the sociable habit of

building their nests under one roof, so to speak. It is said in respect of this latter family that the greater number of their settlements is formed of nests containing merely the chamber for the young and the apartment arranged by the male for his own occupation, and that some males build separate nests for themselves. It is perhaps more than a coincidence that the male of the species under notice (as also its ally, *Acanthiza chrysorrhoa*) builds a so-called "cock's nest," and which is generally thought to be for his own occupation. I recorded an instance (see "Notes on a Trip to the Stirling Range," *Emu*, vol. iii., page 17) where I found the "cock's nest" an independent structure, but in the same bush. The "conglomerate" nest of the local species was not only long, but bulky. The unusual size was due to the great amount of raw wool which had been filched from the sheep enclosure in the vicinity and which had liberally, if not extravagantly, been interwoven into the structure.

DISTRIBUTION OF SPECIES.—The trip afforded the best of opportunities for making observations on that interesting phase of ornithology—namely, the distribution of species. From the results, I have been enabled to fix the northern or southern limits of many Western Australian species, and also the eastern or western limits of many others. Further exploration will doubtless cause alteration in the limits fixed, but I think not very materially, as I have had the advantage of examining as well a collection of bird-skins obtained by one of the Museum collectors at Wurarga and Day Dawn, some 200 miles north of the Wongan Hills, as also another made by Mr. Bruce Leake, of Kellerberrin, in his district (distant some 160 miles south-easterly from the Hills), and donated by him to the Museum. I have also had to aid me our collection from the Stirling Range, distant some 350 miles in a southerly direction from the Hills, and my own personal knowledge of coastal distribution from Lake Yanchep in the north to Cape Leeuwin in the south.

As our starting point was near the northern end of the great coastal mountain chain of Western Australia, the Darling Ranges, I was further enabled to obtain sufficient data upon which to base, or perhaps confirm, the positive existence of purely coastal forms as contradistinguished from purely inland ones, or, as I prefer to term them, "ultramontane" forms. Doubtless farther north, where the influence of the natural barrier of the coastal range is not felt, and where species are free to come and go without interruption, the fixed limits for eastern and western species will not apply. The natural formations of country over which we passed (and which for the most part ran north and south) were most clearly defined, and thus conduced not only to easy observation of species, but also to positive results in recording them. These well-defined formations might and could be likened to a vertical section of different rock strata placed upon a horizontal plane.

As showing their distinctness, it may be mentioned that from Mogumber to the Mission Station (a distance of 15 miles) the nature of the soil was gravelly, forested with "jarrah" (*E. marginata*) and "red gum" (*E. calophylla*) trees. From the Mission Station for another 10 miles eastward granite overlaid with gravel prevailed, with forests of "York gum" (*E. loxophleba*), "jam" (*Acacia acemurata*), and "sheoak" (*Casuarina*); then succeeded a sandy plain covered with low, dwarf vegetation and isolated clumps of dwarf Murray pine. Then the red soils began to appear, and with them belts of gimlet gums (*E. salubris*), then another plain, more extensive, covered as before; next further strips of red soil and gimlet gums; afterwards a narrow, depressed tract of sandy, saline marshy country, resembling an old river bed, studded with salt and brackish lakes; and at last the Wongan Hills themselves, composed of conglomerate, with deep red soils at their bases clothed with gimlet, salmon, and morrell gums, quandongs, sandalwood, hibiscus, and high and low-growing scrubs.

As already mentioned, the ocean influence is apparent on the vegetation for some 15 miles beyond the Mission Station, and the place where such influence no longer operates is well indicated, and in one particular place already mentioned the coastal vegetation became absolutely dwarfed, and a few yards farther on purely inland forms at once appeared. As might be expected, the avifauna was almost as strongly marked. As we had, when leaving Mogumber, a walk of 50 miles ahead of us, we determined not to collect on the way, but to push on with all speed to our destination and to make full observations on a leisurely return. Therefore, I purpose dealing first with the local species at the Wongan Hills and then backwards to Mogumber. At the Hills such species as *Sericornis brunnea*, *Acanthiza uropygialis*, *Malurus pulcherrimus*, *Drymaëdus pallidus*, *Hylacola cauta*, *Cinclosoma castanonotum*, *Ptilotis novæ-noriæ*, *Ptilotis cratitia*, and *Misocalius palliolatus* were, so far as our observations went, purely local. Digressing, it may be remarked that there the genera of *Rhipidura* and *Petræca* were unrepresented, and that consequently such familiar forms as *Rhipidura tricolor*, *R. precissi*, and *Petræca campbelli* were missed. *Glycyphila albifrons* was present at the Hills and further westwards towards Mogumber for 10 miles. It then suddenly disappeared, as also did a tall inland form of *Grevillea* which bore long spikes of yellow bloom, and which at all times seemed a source of great attraction to the species. The range of *Malurus leucopterus* began with the depressed saline area at the base of the Hills and extended westwards for about 20 miles, but the species was only found in the depressed area mentioned and the sand plains which were sandwiched in between the red soils and gimlet gums. *Malurus splendens* appeared only when the plains were passed and when nearing the Mission Station. The lines of demarcation between the three last-named species could not have been more clearly

defined. *M. pulcherrimus* had the western limits of its habitat in the Hills themselves. From that line *M. leucopterus* held sway until within the ocean influence, when *M. splendens* appeared and continued to Mogumber. *Pomatorhinus superciliosus* extended from the Hills for 20 miles westward, and then disappeared with the red soils and gimlet gums. *Petræca goodenovi* was not found at the Hills or in their vicinity, but was first met with at some 27 miles westwards, and thereafter continued up to a point within 6 miles of Mogumber, but not farther. At this point *Petræca campbelli* was first seen; and this would appear to be the line of osculation. *Manorhina obscura* was not seen until we reached Mogumber. We did not anywhere meet with such common coastal forms as *Meliornis longirostris*, *M. mystacalis*, *Acanthochæra lunulata*, and *Acanthorhynchus superciliosus*. Evidently we were some distance from the southern limits of such species as *Climacteris superciliosa*, *Ephthianura aurifrons*, *E. tricolor*, *Acanthiza robustirostris*, *Xerophila castaneiventris*, all of which are found at Wurarga and Day Dawn, some 200 miles northward.

Hereunder I tabulate the results of my observations as regards the limits of certain species mentioned before:—

## SOUTHERN LIMITS.

<i>Malurus leucopterus</i>	<i>Misocalius palliolatus</i>
<i>Acanthiza pallida</i>	<i>Drymaëdus pallidus</i> .

## NORTHERN LIMITS.

<i>Malurus pulcherrimus</i>	<i>Ptilotis ornata</i>
<i>Calamanthus montanellus</i>	<i>Calyptorhynchus baudini</i>
<i>Cinclosoma castanonotum</i>	<i>Platycercus icterotis</i>
<i>Melithreptus leucogenys</i>	<i>Strepera plumbea</i>
<i>Glycyphila fulvifrons</i>	<i>Petræca campbelli</i> .
<i>Ptilotis cratitia</i>	

It would appear that *Malurus pulcherrimus*, *Calamanthus montanellus*, *Cinclosoma castanonotum*, and *Ptilotis ornata* are supplanted at Wurarga (200 miles north) by *Malurus assimilis*, *Calamanthus campestris*, *Cinclosoma cinnamomeum*, and *Ptilotis plumula* respectively. *Climacteris rufa*, which is said to have a northerly range, is represented at the same place by *Climacteris superciliosa*.

## EASTERN LIMITS.

*Petræca campbelli*.

*Petræca goodenovi* and its doubtful ally, *P. ramsayi*, evidently take the place of the *P. campbelli* at Wurarga. The former is found in great numbers at Rottnest Island, which must be taken for the present as its most southern habitat.

## WESTERN LIMITS.

<i>Sericornis brunnea</i>	<i>Glycyphila albifrons</i>
<i>Acanthiza uropygialis</i>	<i>Misocalius palliolatus</i>
<i>Malurus pulcherrimus</i>	<i>Psephotus multicolor</i> .
<i>Calamanthus montanellus</i>	

*Malurus pulcherrimus* and *Calamanthus montanellus* appear to be associated species. Both were found by us in the foothills of the Stirling Ranges.

## COASTAL SPECIES.

*Petræca campbelli*                      *Meliornis mystacalis*  
*Meliornis longirostris*              *Acanthorhynchus superciliosus*.

All these species appear to be purely coastal. They are certainly found on the inland side of the Darling Ranges, but then only in the southern coastal districts.

## ULTRAMONTANE SPECIES.

*Malurus leucopterus*                      *Sericornis brunnea*  
*Malurus pulcherrimus*              *Acanthiza uropygialis*  
*Micræca assimilis*                      *Hylacola cauta*  
*Oreoica cristata*                          *Cinclosoma castanonotum*.  
*Pomatorhinus superciliosus*

Having worked the coast from Lake Yanchep to Cape Leeuwin, I can confidently say that not any one of the above species is found on the coastal side of the Range. Being birds with a limited power of flight, and being more terrestrial than arboreal in habit, it is probable that the Darling Ranges formed an insuperable barrier to their eastward movements rather than that they had a predilection for inland dry areas. As against the latter notion it may be mentioned that *Oreoica cristata*, *Pomatorhinus superciliosus*, *Calamanthus montanellus*, and *Malurus pulcherrimus* are found in the Stirling Ranges, which are well within the coastal influence of the Southern Ocean, and where the rainfall is the heaviest and most frequent in the State. All these last-named species, excepting *Malurus pulcherrimus*, are more numerous than in the Wongan Hills district. I do not pretend to say that the species enumerated under the last two headings are the only ones inhabiting coastal and inland areas respectively. They are the only ones which call for attention, resultant upon the trip to the Wongan Hills.

Before concluding this paper by adding the list of species obtained or observed during the trip, I should like to refer to an instance or two of the direct influence that the avifauna has in the distribution of the flora. Whilst scouring the bases and sides of the Hills I observed that the quandong trees, or native peach trees, as they are locally called, frequently appeared in groups, and I was much perplexed how to account for it. However, one day I came across a similar group of these trees growing on the saline plains, but looking very sickly. It suddenly occurred to me that Emus were the agency of distribution, and that, after swallowing them, the hard, indigestible nuts passed uninjured.\* On mentioning the matter to a solitary cattle-minder whom we met, he stated the berries were in country districts more frequently called "Emu berries" than

\* This is only another proof of a well-known fact.—H. K.

quandongs. On another occasion I was in a similar perplexity as regarded certain "jam" or acacia trees which were growing up the clear gorge where we were camped, and which was the only place in summer where fresh water was obtainable. These trees were the only ones in the Hills, and as a fact the locality was not what is known in Western Australia as "jam" country, trees of that species being found on a widely different location. There seemed no solution of the problem until I heard the trumpet-coo of a Bronze-wing near our tents. The reason for the presence of the jam trees at once became apparent. The Bronze-wing was the distributing agency. The seeds of this acacia form the staple food of the birds. Doubtless some of these birds, having visited the trees in the proper "jam" areas and fed largely upon the seeds, had flown to and quenched their thirst at the spring in the gorge, and then stayed for the night in the locality. The undigested seeds would be deposited, and grow in due season. By these means birds unconsciously provide for certain future seasonal food supplies, and at the same time add certain vegetable forms to a particular district where such forms are not present, and also perpetuate the same forms in districts where they are present, but where the growth of young trees in the shelter of parent trees would tend to the exhaustion and ultimate extermination of both. We meet the same distributing agents in the Mistletoe-Birds (*Dicaeum hirundinaceum*) who in a like manner carry and deposit the glutinous-covered seed of the mistletoe from tree to tree and from district to district.

LIST OF BIRDS.—Appended is a list of birds taken or observed during the trip:—

UROAËTUS AUDAX (Wedge-tailed Eagle).—Saw one pair only.

HIERACIDEA BERIGORA (Striped Brown Hawk).—Not common. Shot a fledgling.

CERCHNEIS CENCHROIDES (Kestrel).—Not common.

NINOX BOOBOOK (Boobook Owl).—Heard at night near camp.

CORONE AUSTRALIS (Raven).—Numerous. Nest with young near camp.

STREPERA PLUMBEA (Leaden Crow-Shrike).—Not common.

GRALLINA PICATA (Magpie-Lark).—Not numerous. Only seen near settlements.

COLLYRIOCINCLA RUFIVENTRIS (Buff-bellied Shrike-Thrush).—Fairly common.

GRAUCALUS MELANOPS (Black-faced Cuckoo-Shrike).—Not numerous.

LALAGE TRICOLOR (White-shouldered Caterpillar-eater).—Very numerous everywhere.

MICRÆCA ASSIMILIS (Lesser Brown Flycatcher).—Fairly numerous everywhere along route.

PETRÆCA CAMPBELLI.—See article.

PETRÆCA GOODENOVI (Red-capped Robin).—Not numerous. See article. Shot one with red throat.



PETROECA RAMSAYI (Red-throated Robin).—Doubtful species. See note to last preceding species.

SMICRORNIS BREVIROSTRIS (Short-billed Tree-Tit).—Very numerous, particularly at the Hills.

PSEUDOGERYGONE CULICIVORA (Southern Fly-eater).—Fairly numerous.

MALURUS SPLENDENS (Banded Wren).—See article.

MALURUS LEUCOPTERUS (White-winged Wren).—See article.

MALURUS PULCHERRIMUS (Blue-breasted Wren).—See article.

RHIPIDURA PREISSI (Western Fantail).—This doubtful species seen, but not inland.

RHIPIDURA TRICOLOR (Black and White Fantail).—Seen, but not inland.

SISURA INQUIETA (Restless Flycatcher).—As above.

ACANTHIZA APICALIS (Broad-tailed Tit).—Fairly numerous at various places.

ACANTHIZA UROPYGIALIS (Chestnut-rumped Tit).—Very common in the Hills.

ACANTHIZA PALLIDA (Pallid Tit).—Small companies at many places inland. Their notes are weaker than those of *A. chrysorrhoa*.

SERICORNIS BRUNNEA (Redthroat).—Very numerous in Hills. See article.

SERICORNIS MACULATA (Spotted Scrub-Wren).—One bird was shot. Cannot believe to be identical with the coast bird.

CINCLOSOMA CASTANONOTUM (Chestnut-backed Ground-Bird).—Rare. See article.

DRYMAEDEDUS PALLIDUS (Pale Scrub-Robin).—Several seen. See article.

HYLACOLA CAUTA (Red-rumped Ground-Wren).—Not common. Very local. Rump colouring nearer dark red than chestnut.

POMATORHINUS SUPERCILIOSUS (White-browed Babbler).—Common inland. Obtained one nest containing eggs in sandalwood shrub.

CINCLORHAMPHUS RUFESCENS (Rufous Song-Lark).—Heard and saw some birds in cleared country near Mission Station.

CALAMANTHUS MONTANELLUS (Rock Field-Wren).—Numerous at the Hills and on the plains.

EPHTHANURA ALBIFRONS (White-fronted Chat).—Numerous in moist country, particularly at Lake Hinds.

GYMNORHINA DORSALIS (Varied-backed Magpie).—Numerous near Mission Station, less common inland. Young flying about.

CRATICUS LEUCOPTERUS (White-winged Butcher-Bird).—Fairly numerous. Young birds well forward, leaving or just about leaving nests. I consider we have a species distinct from above and *C. destructor*.

OREOICA CRISTATA (Bell-Bird).—Only two pairs heard and seen. See article.

EOPSALTRIA GULARIS (Grey-breasted Shrike-Robin).—Rare. See article.

EOPSALTRIA GEORGIANA (White-breasted Shrike-Robin).—Mr. Conigrave states he saw one in gimlet woods between the Mission and the Hills.

PACHYCEPHALA OCCIDENTALIS (Western Thickhead).—This very doubtful species was sparsely distributed.

CLIMACTERIS RUFA (Rufous Tree-creeper).—Common everywhere. Only species seen.

SITTELLA PILEATA (Black-capped Tree-runner).—A few companies met with occasionally.

ZOSTEROPS GOULDI (Green-backed Silver-eye).—Numerous everywhere.

MELITHREPTUS LEUCOGENYS (Western Brown-headed Honey-eater).—Very numerous about the Hills, always in companies. The only one of the genus met with.

GLYCYPHILA FULVIFRONS (Tawny-crowned Honey-eater).—Common at many places along the route. Nest and eggs taken.

GLYCYPHILA ALBIFRONS (White-fronted Honey-eater).—Very common inland. Many nests and eggs taken. Young birds numerous.

GLYCYPHILA OCULARIS (Brown Honey-eater).—Common. Nest and eggs taken.

PTILOTIIS SONORA (Singing Honey-eater).—Sparsely distributed. Took nest and eggs. Nest composed of greenish grass-stems.

PTILOTIIS NOVÆ-NORCLÆ, sp. nov.—See article.

PTILOTIIS CRATITIA (Wattle-checked Honey-eater).—Fairly numerous in Hills. Breeding season.

PTILOTIIS ORNATA (Yellow-plumed Honey-eater).—Very numerous in eucalypts at bases of the Hills. Breeding season.

MANORHINA OBSCURA (Dusky Miner).—Common near Mogumber.

ACANTHOCHLERA CARUNCULATA (Red Wattle-Bird).—Numerous along route and at the Hills.

DICÆUM HIRUNDINACEUM (Mistletoe-Bird).—Not numerous.

PARDALOTUS ORNATUS (Red-tipped Pardalote).—Fairly common. The colours of the birds obtained were very rich, much more so than the southern and coastal birds. The only species seen.

CHERAMECA LEUCOSTERNUM (Black and White Swallow).—A few seen on the moist country. A dead bird was obtained in a shallow excavation on a quartz outcrop.

PETROCHELIDON NIGRICANS (Tree-Martin).—Fairly common everywhere.

ANTIUS AUSTRALIS (Pipit).—Common at foot of the Hills and on the plains. Obtained nest and eggs.

ARTAMUS SORDIDUS (Wood-Swallow).—Common in many places.

PODARGUS STRIGOIDES (Fawny Frogmouth).—See article.

MEROPS ORNATUS (Bee-eater).—Seen at Mogumber.

HALYCON SANCTUS (Sacred Kingfisher).—Common.

CUCULUS PALLIDUS (Pallid Cuckoo).—Not common.

CACOMANTIS FLABELLIFORMIS (Fantailed Cuckoo).—Fairly common in eucalyptus belts.

MISCALIVS PALLIOLATUS (Black-eared Cuckoo).—A few birds were distributed in the green timber at the bases of the Hills.

CHALCOCOCCYX BASALIS (Narrow-billed Bronze-Cuckoo).—Fairly numerous.

GLOSSOPSITTACUS PORPHYROCEPHALUS (Purple-crowned Lorikeet).—Numerous in the green timber near the Lakes.

CALYPTORHYNCHUS BAUDINI (White-tailed Cockatoo).—Very few.

PLATYCERCUS ICTEROTIS (Yellow-checked Parrakeet).—See article.

BARNARDIUS SEMITORQUATUS (Yellow-collared Parrakeet).—Numerous in places.

PSEPHOTUS MULTICOLOR (Many-coloured Parrakeet).—See article. Not numerous.

PHAPS CHALCOPTERA (Bronzewing Pigeon).—Rare. One bird only seen.

PHAPS ELEGANS (Brush Bronze-wing Pigeon).—Rare. One pair seen. One bird shot.

TURNIX VARIA (Painted Quail).—One bird seen.

EUPODOTIS AUSTRALIS (Bustard).—One bird shot. Reported to be very common on the plains.

BURHINUS GRALLARIUS (Stone-Plover).—Heard at night frequently.

ZONIFER TRICOLOR (Black-breasted Plover).—A member of our party reported he saw one in field near the Mission Station.

ÆGIALITIS RUFICAPILLA (Red-capped Dottrel).—Many seen on shores of Lake Hinds.

ÆGIALITIS CUCULLATUS (Hooded Dottrel).—One of a pair shot on the margin of a brackish lake.

CLADORHYNCHUS LEUCOCEPHALUS, Vieill. (Banded Stilt).—See article.

PODICIPES POLIOCEPHALUS (Hoary-headed Grebe).—Several were seen on a dam about 6 miles beyond the Mission Station.

CASARCA TADORNOIDES (Mountain-Duck).—One pair seen in the Lake country.

NETTION GIBBERIFRONS (Grey Teal).—I shot a pair of what I take to be these birds. Saw many others at the dam mentioned.

NYROCA AUSTRALIS (White-eyed Duck).—Saw many at the dam mentioned.

DROMÆUS NOVÆ-HOLLANDIÆ, Latham (Emu).—Saw fresh tracks of these birds in many places in the Lake country.

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## Australian Birds in the Zoological Gardens, London, 1903-1904.

BY ED. DEGEN, PARSON'S GREEN, LONDON.

A SERIES of visits recently paid to the world-famous collections at the menageries in Regent's Park discloses two noteworthy features to the ornithologist with a predilection for the Australian avifauna.

Only 60, or about one-twelfth of the total of the Australian birds classified in the "Vernacular List," are clustered round the positive pole, leaving no fewer than 700 to be disposed of on the negative extremity of the circuit, many of which (up to the present, at least) are either lost in space altogether or may have to be looked for, as a highly desirable addition, in their native haunts. It may readily be inferred from this that a

really splendid opportunity offers itself to an Australian visitor or a returning colonist to supplement the list and fill in existing gaps. This defect could be remedied with such species without inconvenience to an enthusiastic traveller, and without any particular risk to live stock which do not depend on insect food exclusively. Of these there are many so sparsely represented that whole genera, even families, are totally absent.

For the housing of animals, including the birds, extensive alterations are at present in progress, or to be taken in hand shortly, when a replenishing of the aviaries would probably receive the attention of the authorities.

Several large aviaries have been built or are in course of construction, in which Australian birds might find a suitable home. One which has been erected on the north side of the Gardens is a spacious structure, destined to accommodate certain Parrots during the summer months. Whether its position (on the banks of the Canal) is a well-chosen one it is perhaps too early to decide.

The "birds of prey" are sparsely represented by a handsome specimen (which has lived in the Gardens for some years) of the Wedge-tailed Eagle (*Uroaëtus audax*). Hawks, Buzzards, and Falcons, as well as Ospreys are unrepresented.

Of the Owls, the only member of the family was the Winking Owl (*Ninox connivens*), which died during the time I visited the gardens. The Lesser Masked Owl (*Strix delicatula*) also died.

Amongst perching birds in the Crows' Aviary may be seen the Raven (*Corone australis*) and two specimens of the Grey Jumper (*Struthidea cinerea*).

Birds of Paradise (sub-family *Epimachinae*, as well as *Paradiseinae*) and the Australian representatives of the family *Oriolidae* are unrepresented.

The numerous Wood-Shrikes are also wanting. These being principally insect and grub-eating genera, one is not surprised to find them absent, as well as all the Flycatchers and Warblers.

Amongst the *Timeliidae*, or Babbling Thrushes, we have the Satin or Silky Bower-Bird (*Ptilonorhynchus violaceus*) represented by two specimens only, and luckily a Regent-Bird (*Sericulus melinus*).

Babblers and Titmice are absent, but among the *Laniidae*, or Crow-Shrikes, both a male and a female of the Black-backed Magpie (*Gymnorhina tibicen*) and a splendid male bird, as well as a young male, of the White-backed Magpie (*G. leucanota*), delight the ear of the visitor.

All the genera of the sub-family of *Pachycephalinae*, as well as the whole of the representatives of the families *Certhiidae* and *Nectariniidae*, or Sun-Birds, are absent, and among the long list of *Meliphagidae* the Warty-faced Honey-eater (*Meliphaga phrygia*) is a solitary bird, which has been placed in the Parrot-house.

The numerous species of Wood-Swallows have one representative—namely, the Masked Wood-Swallow (*Artamus personatus*).

Of Weavers there are several, all placed in the Parrot-house or the Insect-house, such as the

Chestnut-eared Finch (*Tænipygia castanotis*).

Banded, or, as here called, Bichenó Finch (*Stictoptera bichenovii*),

Chestnut-breasted Finch (*Munia castaneithorax*),

Modest, or, according to bird vernacular nomenclature, Plum-head Finch (*Aidemosyne modesta*),

Black-throated (here Banded) Grass-Finch (*Poephila cincta*), and The Scarlet-headed Finch—truly called here the Beautiful Finch (*Poephila mirabilis*)—not to forget what ought to have preceded the last—*c.g.*,

The Gouldian Finch (*Poephila gouldiæ*).

The only Lyre-Bird (a female specimen of *Menura victoriæ*) died a few months ago.

Pittas might do very well. Other Polynesian species are to be seen.

Amongst Picarian birds the Brown Kingfisher or Laughing Jackass (*Dacelo gigas*) is represented by three healthy-looking specimens in the Eastern Aviary.

The Australian section of the Parrots contributes largely to the present exhibition in the house especially devoted to this noisy community. Amongst the *Loriidæ* one finds:—

Blue-bellied (here Swainson) Lorikeet (*Trichoglossus novæ-hollandiæ*) and the scarce Red-collared (Red-banded) Lorikeet (*Trichoglossus rubritorquus*) from N.W.A., not less resplendent in colours.

Of the family of the *Cacatuidæ* there are the rare Gang-Gang Cockatoo (*Callocephalon galeatum*), White (here called the Great Sulphur-crested) Cockatoo (*Cacatua galerita*), Pink Cockatoo (*C. leadbeateri*), Bare-eyed Cockatoo (*C. gymnopsis*), Blood-stained Cockatoo (*C. sanguinea*), Rose-breasted Cockatoo (*C. roseicapilla*), Long-billed Cockatoo (*Licmetis nasica*), and in the Western Avairy the Cockatoo-Parrakeet, or Cockatiel (*Calopsittacus novæ-hollandiæ*), male and female.

Among true Parrots the sub-family *Palæornithinæ* is represented by the following:—

Green-Leek Parrakeet (*Polytelis barrabandi*).

Red-winged Lory (*Ptilistes erythropterus*), and

King Lory (*Aprosmictus cyanopygius*).

The true Parrakeets, or *Platyercinæ*, are in force, and comprise the following:—

Crimson or Pennant Parrakeet (*Platyercus elegans*).

The always magnificent Masters Parrakeet (*P. masterianus*)\*.

Adelaide Rosella (*P. adalaidæ*).

Yellow Parrakeet (*P. flaveolus*).

Pale-headed Parrakeet (*P. pallidiceps*).

The rare Smutty or the Brown Parrakeet (*P. browni*).

Rosella, originally named Rose-hill Parrakeet (*P. eximius*).

Yellow-checked Parrakeet (*P. icterotis*).

Yellow-banded Parrakeet (*Barnardius zonarius*).

Mallee Parrakeet (*B. barnardii*); a hybrid between the Golden-shouldered Parrakeet (*Psephotus chrysopterygius*) and the Many-coloured Parrakeet (*Psephotus multicolor*).

The Red-backed (really Blood-rumped) Parrakeet (*Psephotus hæmatonotus*); and finally the

Betcherrygah, or Warbling Grass-Parrakeet (*Melopsittacus undulatus*).

The *Peristeridæ*, or Pigeon family, have three species to represent them:—

Brush Bronze-wing (*Phaps elegans*).

Naked-eyed Partridge-Pigeon (*Geophaps smithi*).

Plumed Pigeon or Ground-Pigeon (*Lophophaps plumifera*).

The interesting Megapodes are represented by the Brush-Turkey (*Catharturus (Talegallus) lathamii*), which seems to do very well. These birds have attempted and nearly succeeded in breeding. They were reared in the Zoological Gardens, Melbourne.

\* Said to be a variety of *P. elegans*. Vide *Emu*, vol. iii., p. 197.—EDS.

Hemipodes are missing.

Of the *Fulicariæ* there is only the Pectoral Rail (*Hypotaenidia philippinensis*) to be noted.

The Native Companion, or Australian Crane, and Bustard are also absent.

Plovers are represented only by the Spur-winged Plover or so-called Wattled Pewit *Lobivanellus lobatus*, and a

Lesser Golden Plover (*Charadrius julvus*), which was caught at sea.

Amongst sea-birds there are only to be noticed the

Silver or Jamieson Gull (*Larus nova-hollandiæ*) and the

Skua (*Megalestris antarctica*).

The families *Pelicanidæ*, *Plotidæ*, *Phalacrocoracidæ*, *Fregatidæ*, *Phaethontidæ*, and *Sulidæ*, all composing the order of *Steganopodes*, with the exception of the Pelican (*P. conspicillatus*), and the orders of the *Pygopodes* and *Impennes*, are unrepresented.

In the order of *Chenomorphæ* and family of *Anatidæ* we have amongst *Cygninæ* the Black Swan (*Chenopsis atrata*), which from time to time breeds in the Gardens.

*Anseranatinæ* represented by the Pied Goose (*Anseranas semipalmata*) and Cape Barren Goose (*Cereopsis nova-hollandiæ*), male and female.

Among the Ducks are only the Shieldrake or Mountain-Duck (*Casarca tadornoides*) and Black Duck (*Anas superciliosa*).

The list of "Australian natives" closes with the Struthionide bird whose name has aptly lent itself as title to the official organ of the Ornithologists' Union, namely the Emu (*Dromæus nova-hollandiæ*). Another specimen, at one time suspected to be its "Spotted" congener (*Dromæus irroratus*), failed to prove its identity as a separate species, and the Cassowary (*Casuarinus australis*) is no longer in the world, so far as the Zoo is concerned.

## Bird Notes from Wilmot, Tasmania.

BY (MISS) J. A. FLETCHER.

### PART III.

DURING the season just closing the Tree-Swallows or Martins (*Petrochelidon nigricans*) have been very numerous. In previous years I have only seen an occasional pair, but since last October they have been present in flocks of eight to twenty. They nested in the hollow limbs of the dead trees close to the township. On rainy days they would settle in the yard or would amuse themselves by flying round the house several times; then all would suddenly settle on the ground; up they would rise, then round the house and down again. It was very amusing to watch them, and they will be greatly missed when they leave us next month (April).

In our dark, damp gullies the Large-billed Ground-Thrushes (*Geocichla macrorhyncha*) are to be found, but as civilisation is being extended these birds are withdrawing into the at present untouched scrubs. Last winter (June) I came upon a venerable myrtle tree and discovered three nests of this Ground-Thrush in various parts of the tree. I regret being unable to revisit

the spot since that date, so do not know if the nests were used for the season now closed. Two years ago, on a patch of heath-covered ground, these Thrushes were so numerous as to be remarked upon by many people who were not naturally observant. For what food they were searching I could not find out. Observations were made very difficult by the numbers of bulldog ants that frequented the spot. But the birds did not seem to eat the ants.

The mention of heath brings to remembrance the little Honey-eaters. It is a great happiness to stay quietly on a log and watch these merry little birds. My great regret is that we in Tasmania have so few varieties of them. Conspicuous by its lively action the first Honey-eater noticed will be the Crescent (*Meliornis australasiana*). In a patch of "stink-wood" scrub I found, last October, five of their nests. One was quite finished but contained no eggs. The owner was there also, and made a great fuss until the human stranger had gone. The nests were very slender, and covered on the outside with tiny clumps of moss, which resembled the stinkwood leaves in colour.

The Black-headed Honey-eater (*Melithreptus melanocephalus*) and the Fulvous-fronted Honey-eater (*Glycyphila fulvifrons*) are both to be found in this district; the former generally amongst the young saplings, the latter on the more open heathy patches. The Black-headed is the bolder bird and will go on merrily chirping while hunting for food, heedless of an intruder, whereas the Fulvous-fronted seeks shelter or a hiding place at once. Last November I tried hard to find a nest of the Black-headed which I knew was being built in a clump of eucalyptus saplings, but I was not successful.

Amongst the young growth and shrubs in the clearer paddocks several pairs of the Strong-billed Honey-eaters (*Melithreptus validirostris*) may always be seen. I have found their nests built in ferns and fireweed bushes.

During the breeding season the Yellow-throated Honey-eaters (*Ptilotis flavigularis*) keep in pairs to a particular and restricted spot. Here they build their nests. Their loud, cheerful call quickly betrays the locality and a little patience on the part of the watcher will result in the finding of the nest. One evening I watched one of these birds filling its mouth with hairs from the back of a cow. A tug and a hop, a tug and a hop, and as soon as it had sufficient of this unpleasant tickling burden it flew off to a clump of tree-ferns. I followed it, and in a little time found the nest artfully concealed in the dead pendent fronds of a tree-fern. A visit paid to it a week afterwards found the bird sitting on two eggs.

Last autumn I noticed the Brush Wattle-Birds (*Acanthochæra mellivora*) in an orchard on the banks of the River Forth. I also heard they had built there this season, but did not see the nests to verify them.

The little White-eye (*Zosterops carulescens*) is a frequenter

of the orchards. I found a nest in a plum tree; it contained two eggs.

This district has been settled seven years, but it is only within the last two years that the Ground-Lark (*Anthus australis*) has made this its home. It seems to have followed the grassy paddocks, which are superseding the felled scrub. Early in the morning these birds may be seen running about the gardens after the insects.

The Fire-tailed Finches (*Zonægiathus bellus*) are about in great numbers. Last year they were building early in October, and two years ago this month (March) I found a nest with fresh eggs.

Of the Pardalote family I have noticed two members—the Spotted or Diamond-Bird (*Pardalotus punctatus*) and the Yellow-tipped (*Pardalotus affinis*). Once I found a nest of the former driven in a bank. A few days afterwards I returned and cautiously peeping in saw a snake had possession. Which of us was more astonished was hard to say.

In the tussocks of the swampy flats the Field-Wren (*Calamanthus fuliginosus*) may always be seen, and its nest sometimes found in a tussock. In the same localities the timid Emu-Wren (*Stipiturus malachurus*) may be watched if the observer is a quiet person. They flit from clump to clump, chirping to one another so happily, and rarely show themselves above the level of the grass. Their nest is difficult to find.

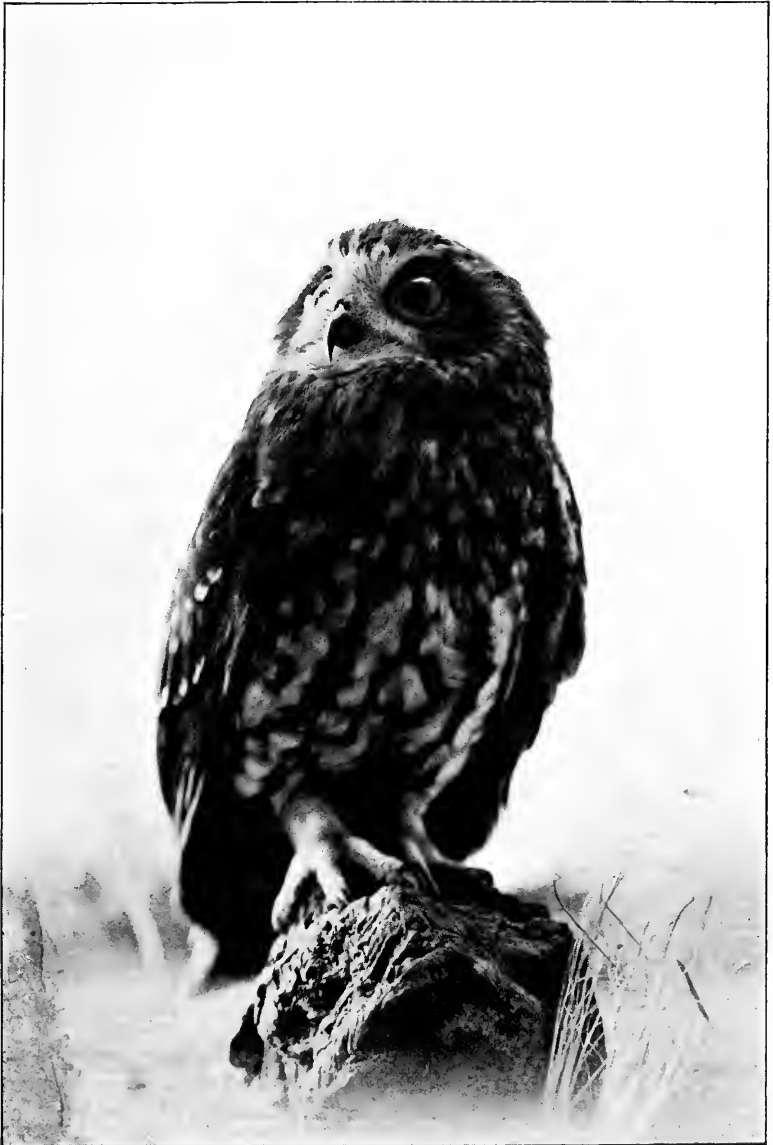
In all parts of the district the familiar Long-tailed Blue Wren (*Malurus gouldi*) is to be seen, generally together in numbers of four or five. In winter they become very fearless of human beings, and their trust is very rarely ill repaid.

The Dusky Fantail (*Rhipidura dicmenensis*) is to be seen and heard near all our creeks, and in the quieter gullies it builds its nest—a beautiful structure.

ADDENDA.—Early in September (1903) a pair of Dusky Robins (*Petroica vittata*) was noticed to be constantly about the back verandah, and after the course of a few days their actions plainly showed they were nest-hunting. The spot selected was in the corner where the school verandah joined the house—not a quiet situation by any means.\* Both birds worked earnestly at the nest, bringing rootlets principally. These they procured from the playground, where several loads of loam had been spread. The situation of the nest was very secure, consequently the nest was ill-constructed. Feathers were used as lining. Before September was past the female was sitting on three eggs. When she had been sitting about ten days our pair of Swallows (*Hirundo neoxena*) returned, and then a war began. They were dreadfully indignant to find the verandah was in strangers' possession, although their own last year's nest was untouched in its corner. Backwards and forwards in front of the sitting

\* Most unusual for this bird to seek human habitations in nest-building.—EDS.





Boobook Owl (*Ninox boobook*).



Robin they would fly, oftentimes snapping at her, until she, driven to anger by their persistency, would dart out and chase them. This decidedly unpleasant state of affairs continued for a few days, until the Swallows seemed to have made up their minds to go to the front verandah, but that would not do, so they went round to the side, but finally came back to their old place, and the war recommenced. But during the few days of peace the baby Robins had been hatched, and both parents were busily feeding them, though every time they came with the food (grubs) they were attacked by the Swallows, who even ventured on the nest. When the young Robins were about four or five days old, they strangely disappeared, and their disappearance was placed against the Swallows. One little naked dead body was picked up in the yard, but the two others were not found. It was impossible for a cat to get at the nest, owing to its situation. I feel certain that the death of the young Robins was caused by the jealousy of the Swallows. Being now rid of their rivals, the Swallows repaired their previous year's nest and succeeded in rearing their four young ones in safety. These latter had been on the wing a fortnight when their parents commenced to build again. They chose the Robins' nest, and for four days carried mud and tried to repair it, but it evidently proved too difficult, so they left it and again repaired their own. Four young this time, and these were safely reared. Early in December the same Robins were again noticed to be constantly about, and it was discovered that they were building a nest on a beam in an outhouse. Three eggs were laid, but only one young bird arrived at maturity, though all the eggs hatched. During the time the female is sitting the male bird feeds her constantly. She keeps up a constant crying call, resembling the word "Jim" very much drawled. So the children called him "Jim." Sometimes at a call from him she would fly out to receive the grub, but as a general rule he gave it to her on the nest. I must find out next season if the female maintains the same cry when sitting on eggs in the paddocks; if so she would speedily betray her nest.

During November the actions of a pair of Wrens (*Malurus gouldi*) attracted some attention. Regularly every day for nearly a fortnight they would dash themselves against a small fixed window, the male bird becoming particularly excited in his efforts to get through. Several experiments were tried to see if it was their reflection in the glass they were attacking or whether they were trying to catch flies. But neither of these seemed to be their object, and the mystery remained unsolved.

The Cuckoos left us, as usual, early in February, but as a rule generally come back in April for a fortnight.

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EDWARD Thomas was fined £2 at the Canterbury (Vict.) court for shooting a Magpie-Lark, a protected bird, on Sunday, 17th April.

## The Use of Scientific Bird Names.

BY RICHARD C. M'GREGOR

(*Philippine Museum, Manila*).

IN *The Emu* for October last I notice a communication in *re* the use of common bird names. To some this matter may seem of little importance, but when we consider that it affects the value of our records I think it will be admitted that the subject deserves our attention. The subject, one in which I have taken considerable interest, was discussed in *The Condor* a couple of years ago, and perhaps a few remarks from an American may be of interest to your readers.

When the A.O.U. formulated its code and worked out the North American "Check-List" there was adopted a list of English bird names along with the scientific ones. In the case of the latter class of names the list has been a great boon to bird students in the United States, especially to the beginner. Unfortunately the A.O.U., with the best intent, no doubt, changed many of the English names in common use, substituting for them names more appropriate, perhaps; but these new names have had a hard time to hold their own. Unfortunately these changes were made in the names of many common and well-known species. Mr. Hill asks if there is anyone anywhere who calls the Laughing Jackass Brown Kingfisher (*Emu*, iii., p. 139). We have the same feeling with regard to the changes made in American bird names. With sincere loyalty to the A.O.U. we tried to remember that the California Quail should be called a Partridge; that the Snow-Bird is a Junco; the Turkey-Buzzard a Vulture; the Rosy Finch a *Leucosticte*, &c. But there has been a growing tendency among writers in the United States to drop back to the old names or to coin new ones. It may be admitted that we *should* be able to have fixed common names, but for all that common names, with us at least, are very apt to be equivocal.

I will here quote part of a letter from Dr. C. Hart Merriam, one of our leading American systematists:—"Your inquiry with respect to the A.O.U. tendency in common names gives me an opportunity to state that I place no weight whatever on the fact of the adoption or rejection of a particular name, or form of name, among the common names of birds as used in the A.O.U. 'Check-List.' In other words, my position is, and always has been, that the A.O.U. ruling on points of scientific nomenclature should carry great weight, but that in matters of common English names of species every man is at liberty to use whatever name he pleases. Whatever one's views may be on this matter, the fact remains that so large a number of writers do use common names different from those in the code that it is absolutely necessary in many cases to give the scientific name if the record is of any value" (*Condor*, iii., p. 52).

Unquestionably the fact that birds have been supplied so

generously with common names has greatly popularized their study. But trivial names are inaccurate, and the wider the territory over which they are used the more inaccurate they become. For instance, the name Yellow-hammer in England means a Bunting (*Emberiza*), in the United States it refers to a Woodpecker (*Colaptes*). Similar curiosities of nomenclature occur with regard to Blackbird, Warbler, Flycatcher, and others. At the same time there are hundreds of birds for which we have no names other than the scientific ones. The latter we must know and should use if we wish to be exact. The common name may be useful over a limited area, but it becomes useless as this area widens, as stated above, while the scientific name has a value any and everywhere. For example, I see the name Mistletoe-Bird in *The Emu*. Now this conveys to me no idea whatever, but as I see it belongs to the genus *Dicaeum* I am able to locate it. Working with my native collectors I find that they learn the scientific names much more readily than they would English names. True, the natives here have names for many birds, but these are seldom of more than generic value.

I am well aware that a general narrative article cluttered with scientific names makes a bad appearance and smacks of pedantry, but this may be avoided by giving the list of scientific names at the end of the article, together with the trivial equivalents. In a faunal list, however, the scientific names must always be used, with or without the common ones as the author may fancy.

I am glad to see that *The Emu* prints names of species dedicated to persons without the " 's," a system, which is, I believe, fast finding favour among American scientists.

In conclusion, I can do no better than to quote the following pertinent words from Mr. Robert Ridgway, Curator of Birds in the Smithsonian Institution, and the highest authority in America on systematic ornithology:—"No reasonable person can make serious or well-founded objection to the use of vernacular names in such publications [popular or semi-popular bird books and journals], but since there are evidently some who regard scientific names as wholly superfluous I desire to present one good reason why the latter should *always* be given, whether accompanied by the vernacular name or not.

"So far as I am aware, no one has yet desired a better index to the literature of a particular species than a carefully prepared 'synonymy,' by which I mean not only the various synonyms themselves but also judiciously selected references under each, arranged in chronological or some other methodical sequence. For several years past the collation of references for such a synonymy of the birds of North and Middle America has occupied a very considerable portion of my time, during which there have been numerous occasions to deplore the absence of the scientific name in connection with some note which records a new fact of geographic distribution, habits, or nidifi-

cation. Necessarily, these have had to be passed by, since vernacular names are unavailable for citation.

"It may be urged that vernacular names are citable as well as scientific names. While this is in one sense true, nevertheless it is impracticable, unless the compiler is willing to double his labour and add unnecessarily to the bulk of his book. In other words, since scientific names *must*, for various paramount reasons, be cited, the addition of vernacular names would but increase the labour of the compiler and still further complicate the topography of the synonymy. . . .

"Personally, I am in favour of the use of vernacular names; but by all means let us have the scientific names also" (*Condor*, ii., p. 41).

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### Stray Feathers.

INCUBATION AFTER REMOVAL FROM THE NEST.—During the breeding season of 1903 a nest of the Hoary-headed Grebe (*Podiceps poliocephalus*) was found by some friends of mine about 20 miles from Casterton. It contained one egg, and was taken to be sent on to me. The specimen was not blown, and after it had laid in the house for a couple of days a chick within was heard chipping. The egg was kept warm until hatched, and the young replaced in the nest. Soon afterwards the chick was seen, accompanied by its proud mother, swimming about the swamp. Miss Carmichael, who informed me of this, said it was hot weather at the time, but that no special attention was paid to the egg in order to facilitate its incubation.—(DR.) E. A. D'OMBRAX. Casterton (N.), 18. 4. 04.

\* \* \*

YELLOW-RUMPED FINCH (*Munia flaviprymna*).—A pair of these bright little birds are in the Melbourne Zoological Gardens, and are just at present busily constructing a bulky dome-shaped nest of grass. The male is of a richer hue than the female; his breast is pale chestnut, back and wings rich dark chestnut, especially on the shoulders; his rump is reddish-yellow, and the tail feathers dark chestnut, with the outer edge of a much lighter hue, the two central feathers have a dark centre and light on each side; all the tail feathers are pointed; top of head and neck greyish-fawn, the centre of each feather slightly darkened, and only indistinctly discernible; just over and below the eye a much lighter shade, almost white; vent white; bill and legs blue. They are altogether very neat and trim little birds in appearance, and seem fairly hardy. This pair came from North-Western Australia, inland from Cossack.—D. LE SOUËF. 11/3/04.

\* \* \*

SWIFTS AND SWALLOWS.—This autumn has been remarkable for the number of times the Spine-tailed Swift (*Chatura cauda-*

*cuta*) has appeared round Launceston. I find that the afternoon of the 13th February was the first occasion on which I noted them. The time was 5 p.m., and the wind from the S.E. The birds came with the wind right behind them and disappeared shortly afterwards in a north-westerly direction. The next birds were not observed until the 18th March, but after that up to the beginning of April they put in many appearances. The time of visit varied from 12.30 p.m. to 7.30 p.m. The sky was always more or less overcast, and the wind in the same direction, S.E. The birds always came right with the wind, and always disappeared at a great elevation almost due N.W. The flocks never exceeded a couple of dozen birds, and they never wasted much time circling round. On the 20th March Messrs. H. and A. Weedon, both of Launceston, who were spending a holiday at Low Head, counted 600 Swallows (*Hirundo neoxena*) perched on the telegraph wires. This was at dusk. Next morning not one was to be seen in the neighbourhood. It was on this date the bulk of the Launceston Swallows disappeared. Two or three pairs stayed behind, and were to be seen about the streets of the city until the middle of April. But this was nothing unusual, as last winter a pair stayed with us the whole time.—FRANK M. LITTLER. 10/5/04.

\* \* \*

CLARKE ISLAND (BASS STRAIT) NOTES.—10th September.—The Cuckoo-Shrike (*Graucalus parvirostris*) has just made its appearance here, in the usual small flocks of 6 or 8. Unfortunately they do not nest here to any extent, and I only know of one clutch of eggs being secured. The Black Oyster-catcher and the Pied Oyster-catcher are busy getting ready for nesting, and one can see the various holes in the sand as a preliminary performance before laying.

20th September.—The Wood-Swallow (*Artamus sordidus*) is also visiting here. It is a very pretty bird—colour deep grey above, breast white and grey, with mottled black and white under belly and butt of tail. A few Swifts were seen to-day, but, unlike most years, have not appeared in any numbers. I have just seen a most beautiful Parrakeet, very rare indeed here; colour—green back, breast orange, bright red bands on either side of face; very long tail (bright green); size of a Wood-Swallow.

15th October.—The Painted Quail (*Turnix varia*) have begun to lay. This is remarkably early, as November is the usual time. They simply make a hole in the ground, wherein are deposited four eggs, smaller than those of the Brown Quail, grey-brown, covered with chocolate and grey spots. The White-eye (*Zosterops*) is nesting too. Being of a green colour, they instinctively choose the young twigs of trees to build their nest in, which is quite a work of art, composed of cobwebs and fine hair on the outside, by which it is bound to the branch, and lined inside with black and white hair. They almost always choose the mountain tea-tree.

8th November.—Whilst examining one of the small ponds on Reservation Island, I came across a pair of Mountain-Ducks with five fledglings. This is the first time for years they have bred here. They were about a week old, black and white in colour. The instinct of self-preservation was strong in them, for upon observing me they instantly hid amongst the rushes which bordered their home. Found also some young teal on the same island, but was unable to locate any nest. It is very difficult in any case, as Teal, &c., often lay half a mile from water. The Brown Quail (*Synæcus australis*) is now laying, but not to such an extent as toward the end of the month. On Cape Barren Island the Quail is very scarce, and one can go a day's journey without encountering one bird, except close to the coast, where they are a little more numerous.

14th November.—Wood-Swallows are still here in small flocks, but are not laying. The Black and the Pied Oyster-catchers are nesting in great numbers along the coast. One will often find the nest of the Black Oyster-catcher close to that of the Pacific Gull, with whom he always seems to be on good terms. Perhaps it is for mutual support against intruders. The Gull is most interesting when he has any hard article of food to deal with. One will see him emerge from some cleft with a large whelk in his bill. The cunning fellow will select a flat rock, rise above it to the height of about 40 feet, and then drop his booty. The shock will generally break the shell, but if not, he will fly up again and again, until his efforts are crowned with success. One will see conspicuous flat rocks along the coast littered with the evidences of the bird's pertinacity. The Mutton-Birds are said to be very scarce this year, which shows that they must be steadily getting worked out. I think that the remarkably wet season we are having has drowned thousands of the young birds. This has been the wettest summer down here on record.—J. D. MACLAINE. 4-2/04.

### Forgotten Feathers.

ALLUSIONS TO AUSTRALIAN AVIFAUNA IN THE JOURNAL OF A VOYAGE OF THE "NIJPTANG."—In an early part of *The Emu* it was suggested that the journals of explorers might be consulted for allusions to Australian birds. The voyage of the squadron under the command of Willem de Vlaming at the end of the 17th century contains some interesting items, which I give, as translated from an anonymous volume published in Amsterdam in 1701 (*Journal Wegens een Voyagie na het onbekende Zuid-land en wyders na Batavia.*) The journal records the course taken by the hooker *Nijptang*, of which vessel Gerrit Collart was captain, Theodoris Heermans "adistant," and Gerrit Gerritszoon first mate. 31° 43' S. is the latitude recorded on the 13th of January, 1697, at which date the vessels were



off the west coast of Australia. On the previous day the first mate of the *Nijptang* and other members of the ship's company (the writer of the journal being present) had been ashore. "No human beings," says the "Journal," "were to be seen, so that it was evident that no good could be done here." And the writer makes the further observations:—"As for the country, it is sandy, and, in part in which we were, it is covered with trees, amongst which some were from three to four fathoms in diameter at least, but they bear no fruit; in short, it abounds in thistles and thorns. Several of the trees yielded a kind of resin, almost like gumlac, of a brownish-red colour. Everything was shy, human beings and also birds, such as Swans, Gannets, Pelicans, Cockatoos, Parrakeets, &c. The best of the place is that there are no vermin (ongedierte) to be seen, but in the daytime one is sorely tormented by flies (vliegen)." \* On the 15th day of the same month our author again records the ship's position—30° 17' S.—and again goes ashore with two boatloads of men and officers. "We went," he says, "about six (statute) miles inland, but found no men and no fresh water, only a few human footprints and some resembling those of a dog and a Cassowary." †

On the 30th day of January the ships anchored near South Passage, leading into Denham Sound, and on the 1st of the following month two of the captains went ashore. In the entry for the 2nd of February we read:—"The two captains (for De Vlaming also had gone ashore) returned on board late in the evening; they had proceeded inland for a distance of from 24 to 28 (statute) miles. Our captain brought with him the head of a large bird; they said that they had seen two nests built of branches and three fathoms at least in circumference."

On the 4th of February, 1697, at about 4 o'clock in the afternoon, the ships anchored at Dirk Hartog's anchorage, at the north end of Dirk Hartog Island. In the entry for the day in the log-book of the *Geelvink*, De Vlaming remarks:—"The country here is everywhere dry and sandy and treeless, and one can catch or turn over at night as many turtles as one desires to have, and also procure as many turtles' eggs as one requires." ‡ And the author of the *Nijptang* "Journal" says:—"On the 6th (February) there was still much wind. We made but little progress during the day, and returned to the land at night. We saw many turtles and an exceedingly large nest on the top of a great rock, made after the fashion of an 'oyevaar's nest.' § I have not been able to trace the word "oyevaar" and can only conjecture that it may be a misprint and that "byenaar" may be the word which was used by the writer as a synonym of "bijenvalk." (Honey-Buzzard).—JAMES R. M'CLYMONT. Sandy Bay, Hobart, 3/5/04.

\* "Journal," p. 16.

† "Journal," p. 18.

‡ Extracts from De Vlaming's "Journal" are given by Mr. P. A. Leupe in "De Reizen der Nederlanders naar het Zuidland," pp. 153-184.

§ "Journal," p. 21.

## From Magazines, &c.

FEATHER-PLUCKING.—In the February number of the *Avicultural Magazine* Mr. A. G. Butler points out that this "disease" is due to "two causes—incorrect feeding or insect pests." He proceeds, after many comments:—"I think it possible that . . . if . . . a little magnesia is stirred into its drinking water occasionally, and its diet is strictly attended to, the irritation may pass off," &c. In some species the habit is cured by giving the bird—presumably a Parrot—wood or bark to gnaw at.

\* \* \*

*The Auk*.—The April number of this magazine (vol. xxi., part 2) contains some valuable papers on the bird-life of North America, with some good photo. plates. An article from the pen of Mr. William Morton Wheeler deals with what he describes as the "myth-nimbus" which has grown around so many birds and animals, particularly in what are called "nature books." Some interesting correspondence between the great Audubon and Spencer F. Baird is included in the number.

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"ON the Breeding of Some of the Waterfowl at Goochest, in the Year 1903," is the title of a paper by F. E. Blaauw, C.M.Z.S., in *The Ibis* (January, 1904). Included is an interesting note on Cape Barren Geese (*Circopsis nova-hollandiae*), concerning which some of our members have information of their own. A full clutch of five goslings was reared to maturity, notwithstanding the occasional frost and snow of their adopted northern home.

\* \* \*

THE PECTORAL OR WHITE-BREASTED FINCH.—A fairly good black and white figure of this Finch is given by Mr. D. Seth-Smith in the February issue of the *Avicultural Magazine*. In the accompanying reading matter the author furnishes a full description of the species, also of its habits and habitat. "*Munia pectoralis*," the author of the article says, "appears to be confined to the north-west of Australia;" and (in England) "the birds appear to be hardy and easily kept in health on a diet of canary and millet seed, though grass in flower is appreciated, and should be supplied when obtainable." Have none of our Australian members any experiences in this matter?

\* \* \*

BIRD DISTRIBUTION.—An extract in *The Ibis* from "The Journal of Edward Wilson, M.B., Surgeon and Zoologist to the National Antarctic Expedition," mentions such familiar species as Gannets, Terns, and Petrels, and describes the habits of some, as well as giving some idea of their habitat. As the problem as to whether Antarctic birds and those of Australasia are as closely linked as seems probable is one still remaining for solution, the article should be of interest to our readers. To solve the prob-

lem of the lines of distribution of species, with its intricate geological and aerial underlines, would need more than a Wallace amongst us. Is he to be found?

\* \* \*

BIRDS' EGGS IN THE DRESDEN MUSEUM.—The study of oology as a branch of natural science is proceeding apace. The birds' eggs from the Australian region alone in the Dresden Museum, according to a list compiled under the direction of Dr. A. B. Meyer, reach the respectable number of about 550 species, including many, especially from New Guinea, possibly not described, and certainly not yet figured. Among those little known, or undescribed, of purely Australian species, may be mentioned *Scricornis lævigata*, *Sittella leucoptera*, *Cyclopsittacus maccoyi*, &c.; but it would be extremely interesting to learn the history of the egg or eggs of the extinct Kangaroo Island Emu (*Dromæus ater*), said to be in the collection.

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*The Ibis*, vol. viii., No. 14, contains a coloured plate by Mr. Goodchild of *Mirafraga degeni*, which may possibly only interest Australian readers from the fact that its specific name is based on that of a gentleman who not only did good work in Australia, but is pursuing his investigations to good purpose in Africa. There are two more coloured plates in this number—one by the same artist, the other some admirably figured eggs of Palæarctic birds. Reviewing a work on the latter subject the editors favour the binomial system of nomenclature, and “prefer adding *typicus* to the name of the type species, when it is required,” to such an alliterative system as “*Pica pica pica*,” &c. They are staunch advocates of what seems the more sensible course.

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*Bulletin of the Philippine Museum*, No. 3 (30/1/04) contains an important paper by Mr. Richard C. McGregor on “Birds from Benguet Province, Luzon, and from the Islands of Lubang, Mindoro, Cuyo, and Cagayancillo.” This is the second of a series of reports on zoological collections made for the Philippine Museum, and contains a record of all identified species of birds collected or observed on recent expeditions directed by Commissioner Dean C. Worcester, Secretary of the Interior, to the Islands of Lubang, Verde, Cagayancillo, and Agutaya, and to the Province of Benguet, Luzon; also species recently secured in Cuyo and Mindoro, which are believed to be new to those islands.

\* \* \*

WING-BEATS OF BIRDS.—Dr. Jonathan Dwight, jun., writing on wing-movements in *The Auk* (April, 1904, vol. xxi., p. 286) says:—“On several occasions I have had opportunity for watching Herring Gulls (*Larus argentatus*) following in the wake of a steamboat running at the rate of 10 or 12 miles per hour,

and on calm days I find the wing-beats in this species average about 180 to the minute. . . . Laboratory experiments abroad, with harnessed birds, show that the wing-beats of a Sparrow are 780 a minute, of a Duck 540, of a Pigeon 480, and so on." Dr. Dwight points out that this is an almost untouched field of study, and everyone will agree that bird-flight, both in this and other phases, presents some most interesting problems.

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BIRD PROTECTION ABROAD.—Contrasting the measures adopted for bird protection in New Zealand with those provided in the U.S.A., Mr. F. S. Palmer (*Bird-Love*, Jan.-Feb., 1904, p. 36) says of the latter:—"In marked contrast with our practice, she has found it advantageous, in spite of her varied climatic conditions, to have a uniform open season of moderate length for all game, instead of seasons of varying length extending over eight or nine months for different birds. Spring shooting is thus done away with, and more effectual protection given to migratory shore-birds and water-fowl than is possible under our present laws." But what as to other birds? Will not most observers think that a modification of the zone system is better for Australasia?

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ST. KILDA AND ITS BIRDS.—In a lecture delivered before the Liverpool Biological Society by Dr. J. Wigglesworth, F.R.C.P., M.B.O.U., and which has been published in book form, with some good photo. illustrations, the author describes the little island off the coast of Inverness-shire. Not only are the inhabitants of historic Hirta depicted, and their mode of life described, but a list of its birds, notes on their habits, &c., are given. Beyond the fact that at one time a large proportion of the islanders migrated to Australia, the book will possess interest for local readers from the fact that it deals with, amongst the 25 species listed, such birds as Gannets, Fulmars, Cormorants, Gulls, &c. The publication was kindly lent for review by Mr. D. Le Souëf, C.M.Z.S.

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HONEY-EATERS IN CAPTIVITY.—In a recent number of the *Avicultural Magazine* is given an article (illustrated with some very good photo.-prints) dealing with the interesting experiment which Dr. and Mrs. G. Horne, and their niece (Miss Bowie) have been carrying out for some time with many species of these birds. Their success has been great. Many forms have become so familiarized to their new surroundings (an aviary in which living shrubs are grown) that they look on human visitors as friends, and boldly endeavour to extract their favourite food from flowers which the visitors wear. There are many points in bird life which can only be studied when birds are under such close observation as is possible in a case of this kind,

and it would be well if more bird-lovers accepted the advice—"Go thou and do likewise." The author of the paper is Mr. A. J. Campbell.

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*Bird-Lorc.*—The frontispiece in the March–April issue of this magazine (vol. vi., No. 2) is a coloured plate of two species of Warbler (Wilson's and the Canadian), executed by Mr. L. A. Fuertes. A subsequent coloured plate depicts two other species of this family (the Black-throated Green and the Golden-cheeked). Many interesting bird photos. (and notes) are given. In the editorial article it is said:—"A bird's economic value . . . is not to be ascertained by 'common observation.' . . . Nor can the best-equipped observer hope to reach satisfactory conclusions merely from observing the bird out of doors. This is an important side of his work, but must be supplemented by detailed stomach analyses wherein he avails himself of the services of specialists in other departments of science—entomology, botany, mammalogy, &c." The Audubon Society's chairman hardly seems optimistic on this occasion over the state of matters *re* bird protection.

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*The Geelong Naturalist.*—After many vicissitudes for thirteen years, the organ of the Geelong Field Naturalists' Club has been revived in the shape of a quarterly journal, with which has been incorporated *The Wombat*, under the hon. editorship of Mr. John J. Cary. No. 1 (March, 1904) of the second series is to hand, and the local club is to be congratulated on endeavouring to maintain a journal of its own. In these days, when so-called "law of priority" is so much worshipped by naturalists, it is just as well to have one's "proceedings" in type, although it would be difficult to prove that priority does not really count from the time when a paper is read and accepted before a properly constituted meeting of a club or association, notwithstanding the paper and facts are only recorded in the official "minute book." The present issue of *The Geelong Naturalist* contains "District Bird Notes"—brief field observations of half a dozen common species—by "G. F. B.," and a note on the White-browed Wood-Swallow by Mr. W. Shaw.

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*The Avicultural Magazine.*—In the number for April, 1904 (vol. ii., No. 6, p. 179) Mr. Reginald Phillipps deals with the White-throated Ground-Thrush (of which an admirable coloured plate by Mr. Grönvold is given), and chronicles its habits in a way that should be most valuable to ornithologists. "Turtle Dove Hybrids and their Fertility" (Mr. T. H. Newman, F.Z.S.) raises some problems which have a bearing both on these birds and some of our own; and in "Notes on Parrakeets" Mr. John Sergeant records amongst other interesting items that many of these birds do not seem to be affected by any severity of

weather. "Red Rosellas, Mealy Rosellas, Crimson Wings and Barnard's I have found equally hardy; all took their bath summer and winter alike with no sign of either distress or discomfort." Blue Mountain Lories have proved quite hardy with Mr. Sergeant, who gives them "the ordinary seed diet with two or three times a week a tablespoonful of honey and some sponge cake." This number also contains the announcement of the resignation by Mr. Phillipps of his position as business secretary of the Avicultural Society. Mr. T. H. Newman succeeds him.

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*The Zoologist*, No. 754 (April, 1904) contains an article which under the heading "Biological Suggestions" opens up some fields of thought which are worth further study—even amongst ourselves. The article is but the first of a series, and has for sub-heading "Rivers as Factors in Animal Distribution." Already some of our own observers (such as Mr. Lane, of Alexandra) have noted the effect of riparian influence on some phases of bird life, and the writer only emphasizes how much there is to be learned, not only as to course of migration, but also as to differentiation of species, when he says:—"As far as his knowledge extends, in a *general* way rivers do not qualify the distribution of genera and species, but in a much more *limited* sense they *do*." Another noteworthy paper is that in which Mr. G. H. Paddock controverts the theory of Professor Coues ("Field and General Ornithology"), who holds that "the egg traverses the passage small end foremost, like a round wedge, with obvious reference to ease of parturition." Mr. Paddock's experiments prove that the egg was delivered "invariably 'blunt' end first." He argues that this is only natural; "mammalian births, when normal, are head ones, and the large end of the egg contains the head of the chick." Mutton-Bird-egggers on the islands of Bass Strait who occasionally deliver a female Mutton-Bird (Petrel) of her egg will uphold Mr. Paddock's contention.

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*The Ibis* (January, 1904) contains the "Ornithological Journal of a Voyage round the World in the *Valhalla* (November, 1902, to August, 1903)." By invitation from the Earl of Crawford, F.R.S., Mr. M. J. Nicoll, M.B.O.U., the author, accompanied him as naturalist, during a cruise through the Straits of Magellan to the South Pacific, thence through Torres Strait and the Austro-Malayan Archipelago, returning to England by the Red Sea route. Besides oceanic birds noticed in the southern seas, the most interesting parts of the journal to Australians are probably the accounts of how the yacht touched at Pitcairn Island (a coloured figure of a remarkable little bird—*Tatara vaughani*—known to the islanders as a "Sparrow" is given), Tahiti, Upolu, and Fiji. Australia was touched in Torres Strait at Thursday Island and Prince of

Wales Island. On both of these 12 well-known Australian species were secured, including the Dusky Honey-eater (*Myzomela obscura*), a nest of which, containing one egg, was found suspended in the leaves of a "willow" tree on the latter island, and on a coral reef off Thursday Island a Curlew-Sandpiper (*Tringa subarquata*) was shot on the 18th May in full winter plumage, the only specimen seen. Two hundred and twenty-five specimens of birds were collected during the voyage. These have been presented by Earl Crawford to the British Museum.

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AUDUBON SOCIETIES IN RELATION TO THE FARMER.—Under this title is reprinted from the U.S.A. *Year-Book of the Department of Agriculture for 1902*, a pamphlet (just to hand) which records the immense work done by these societies in the field of bird protection, and some able arguments in the good cause. Mr. Henry Oldys, the author, points out that "with proper restraint and the adoption of systematic measures to maintain the supply, such as are in vogue in some sections of the country, the United States might easily have a stock of game birds so abundant as to furnish a cheap and readily attainable food supply worth many million dollars annually." He also directs attention to a fact which every ornithologist—everywhere—knows, "that various investigations . . . show the importance of the service rendered by birds in keeping down the floods of insects and weeds that assail crops." Fashion decrees *re aigrettes*, &c., came in for some severe handling in the comments, in which it is mentioned that a single shipment from Archangel (Russia) consists of 10 tons of Ptarmigan wings, and that a Government record shows a slaughter of nearly 2,000,000 Grouse in four years in that province. Egg-collecting is rather hardly handled, apparently with good cause. The pamphlet contains a "Bird Chart issued by the Massachusetts Society" figuring 26 useful birds, and a coloured plate of the Wood-Thrush, as a specimen page of that society's illustrations adapted for "school work." There is a great deal in the pamphlet (space precludes quotation) which would furnish valuable reading to residents in Australasia, and which would teach us all some admirable lessons. Valuable hints are given as to the direction our action should take.

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BIRD PROTECTION IN NORTH AMERICA.—Mr. William Dutcher, chairman of the A.O.U. committee appointed to supervise this matter, reports that the Audubon Societies and subscribers to the Thayer Fund have every reason to congratulate themselves on the steady progress being made. The A.O.U. model law has been adopted in nine States during 1903, and a glance at the accompanying maps (*The Auk*, vol. xxi., p. 99 *et seq.*) shows that quite half the States have now fallen into line. In five States it is admitted the committee were unsuccessful in their efforts to bring the Game Laws up to date. "Day by day and year by year" (Mr. Dutcher says) "there is a steady growth of

sentiment in favour of bird protection." One of the most important advances during the year has been an agreement arrived at between the members of the Millinery Merchants' Protective Association and the bird Unions, by which the former undertakes to discourage the use of the plumage of many specified birds, either native or imported. The Audubon Societies and the A.O.U. undertake to prevent illegal interference with the millinery trade and to refrain from aiding the passage of laws which would hinder the use or sale of feathers from domesticated fowls or those mentioned in a list given. Steps have been taken to protect the fast-diminishing game birds of even such outlying possessions as the Philippine and Midway Islands. As is the case between our own States—Victoria and New South Wales, for instance—anomalies in the Game (sometimes non-game) Laws cause trouble, and the matter of a border-line presents a serious difficulty. Efforts are being made to remedy this, as they should be here. From many of the States the sentiment against the useless destruction of bird life is reported as growing, and the whole movement in favour of bird protection seems alive. In some cases States have gone so far as to "limit the bag which anyone may make in a day." Mr. Dutcher's report is accompanied by some very good half-tone illustrations.

## Review.

### "CATALOGUE OF BIRDS' EGGS."

THE catalogue of the collection of birds' eggs in the British Museum has reached its third volume. Owing to the unfortunate ill-health of Mr. Oates, the Museum authorities have found it necessary to invite the co-operation of the well-known ornithologist, Captain Savile Reid, to complete the "Catalogue." Captain Reid revised the manuscript of Mr. Oates and the proof sheets.

The third volume is continuing from the *Psittaciformes* to the end of the family *Pycnonotidae* of the order *Passeriformes*, corresponding with the orders in vols. ii. and iii. in the "Hand-List of the Genera and Species of Birds" by Dr. Bowdler Sharpe. Nine hundred and seven species of eggs are carefully catalogued and described, of which number over 100 are Australian, 11 of them being figured in the beautifully coloured plates (I. to X.) The following five species are figured for the first time, namely:—*Petroica phanica* (Flame-breasted Robin), *P. rhodinogaster* (Pink-breasted Robin), *P. vittata* (Dusky Robin), *Pardalipicus capito* (Large-headed Robin), and *Graculus parvirostris* (Small-billed Cuckoo-Shrike). One new description of especial interest pertains to the Spine-tailed Swift (*Chaturus caudacuta*), called the Siberian Spine-tailed Swift, two eggs having come through the "Crowley Bequest," collected at Segai, N. Mongolia, by A. Rückheil. The dimensions furnished are 1.22 x .75 and 1.2 x .75 inches, the colour, of course, being



plain white. Had many of the "Gould Collection" of eggs been described by that author when they fell into his hands, their description would have anticipated many later day authorities. Of these, such rare eggs may be mentioned as *Neophema splendida* (Scarlet-chested Grass-Parrakeet), *Pseudogerygone culicivora* (Southern Fly-eater), *Graucalus lineatus* (Barred Cuckoo-Shrike), &c., &c.

It is most interesting to notice regarding the Australian eggs how many well-known collecting grounds are given—Dawson River (Q.), Dobroyde (N.S.W.), Dandenong Ranges, Oakleigh, Somerville, even that old-time collecting haunt Albert Park (Vic.), Reed-Beds (S.A.), and so on. Exception, however, may be taken to Tasmania for *Calopsittacus novæ-hollandiæ* (Cockatoo-Parrakeet), and Melbourne for *Halcyon macleayi* (Forest Kingfisher). The respective species are not found within the States to which they are accredited. But it is just possible that authenticated eggs may, by exchange, have passed through collections in these places.

### Ornithological Association of South Australia.

THE bi-monthly meeting of the association was held at the residence of Dr. A. M. Morgan on Friday evening, 13th May. Capt. S. A. White presided.

Mr. Symonds Clark gave an account of the manner in which the Black Duck (*Anas superciliosa*) conveys its young from the nesting-place to the water—a distance often too great for the little ones to traverse on foot—the information being vouched for by a relative of Mr. Clark (Mr. Thomas Goodwin, of Yelda Mission Station, on the Lower Murray). The parent bird was observed to fly in from the scrub and alight near the water's edge, whereupon several ducklings appeared upon the scene from the duck's back. These were secreted closely by the mother, who departed, and in about 20 minutes returned with the remainder of her brood—eight or nine in all—who were soon enjoying their natural element.

The hon. sec. (Mr. J. W. Mellor), who had been appointed by the Aust. O.U. at the annual meeting in Hobart as the South Australian representative of the special committee to revise and bring up to date the "Check-List" of Australian birds, brought the subject before the meeting, with the object of coming to a decision as to uniformity. After a lengthy discussion as to both classification and vernacular names, it was decided to pass the matter on to a sub-committee, who will report to a future meeting of the association.

Amongst specimens shown were some by Dr. A. M. Morgan, who had a series of sternum bones, and explained the peculiarities of the various species of our birds, as well as the *modus operandi* of determining the species to which they belonged. His exhibit comprised:—Eggs of the Crescent-marked Oriole (*Mimeta flavocincta*), the Honey-cater *Ptilotis fusca*, and the White-throated Nightjar (*Eurostopus albigularis*). Mr. J. W. Mellor exhibited specimens of the Rock Pebbler (*Polytelis melanura*) and the Least Swamp Quail (*Excalfactoria lineata-australis*). Capt. S. A. White showed a series of species of the African Weaver Finches and their nests, collected by himself while in Africa. He pointed out the peculiarity of these birds in placing their nests in most inaccessible places and the well-defined limits of the various species.

## Expunged Islands.

WITH a view to exploring the Royal Company's Islands, said to be situate about 400 miles southward of Tasmania, and discovered about 1840, to ascertain their avifauna and the geographical distribution of certain birds, the Council of the Aust. O.U. has been in communication with the Admiralty authorities, to fix, if possible, the exact position of the supposed islands, or if they be non-existent to establish the fact, because the islands appear on some of the Admiralty's own charts as well as on many up-to-date maps. Consequent upon the correspondence the hon. secretary of the Union, Mr. D. Le Souëf, has received a letter from Mr. W. J. L. Wharton, Hydrographer to the Admiralty, accompanied with a copy of the following "Notice to Mariners":—

### ROYAL COMPANY'S ISLANDS—NON-EXISTENCE OF.

On old charts of the South Pacific Ocean, in the area south of Australia, a group of islands, named Royal Company's Islands, are marked as existing in lat. 50° 20' S., long. 140° 0' E. They have consequently been inserted for many years in the Admiralty publications.

These islands are not mentioned in any Sailing Directions, the original report of their existence cannot be traced, nor have they apparently been seen by any passing vessel.

Since 1860 the Hydrographic Department of the Admiralty has been collecting data showing where ice and icebergs may be met with in the Southern oceans, and this has necessitated plotting the tracks of many vessels passing south of Australia, several of which have passed over or close to the position assigned to the Royal Company's Islands without seeing them, or any sign of land near them:—thus in 1892 the *Pakeha* passed 1 mile north of their assigned position; in 1893 the *Crusader* passed 5 miles north of them; in 1894 the *Rangatira* passed 15 miles north of them; in 1895 the *Maori* passed 2½ miles south, and the *Rangatira* 15 miles south of them; in 1880 the *Rangatira* passed 1 mile south of them, and the *Matatua* 2 miles north; in 1900 the *Matatua* passed over the position in which they are supposed to be situated; in 1901 the *Karamca* passed 40 miles south of them, and in 1902 the *Pakeha* passed 12 miles south of them.

As no certain information is available as to why these islands were originally placed on the charts, and as it is evident from the tracks plotted that no land exists in the locality in which they are marked on the charts, they have now been expunged from the Admiralty publications.

This notice affects the following Admiralty charts:—Atlantic and Indian Oceans, &c., No. 2,483; Pacific Ocean, Nos. 2,683 and 788.

By command of their Lordships,

W. J. L. WHARTON, Hydrographer.

Hydrographic Office, Admiralty, London, 2nd April, 1904.

## About Members.

MR. A. Mattingley (hon. treasurer Aust. O.U.), Custom House, Melbourne, has a duplicate copy of "The Birds of Australia," by G. J. Broinowski, comprising 300 full-paged coloured illustrations,

with descriptive matter, &c., of over 700 species. The whole cost £21, and is newly bound. Can be had for seven guineas.

THE great Boer War brought the bond of British brethren all over the world closer together in more ways than one. The prominence which it gave to the colonies caused the British Ornithologists' Union to create a "colonial membership." This distinction fell upon two members of the Aust. O.U. last year—namely, Col. W. V. Legge, F.Z.S., Tasmania, and Capt. F. W. Hutton, F.R.S., New Zealand; while the honour this year—the sole one for Australasia—has fallen to Mr. A. J. Campbell. Colonial memberships are limited to ten residents in the British colonies and India.

CAPTAIN F. W. HUTTON, F.R.S. (President of the Aust. O.U.), and Mr. James Drummond are publishing a work, "The Animals of New Zealand," which should be valuable to all Australasian naturalists. The aim of the authors has been "to combine popular information with the purely scientific," and in their prospectus they acknowledge that they have drawn freely on the work of others to make their own complete. This is as it should be. The contents embrace almost everything from mammalia to the N.Z. batrachia, and the list of birds dealt with is so full that to ornithologists the work should be a treasure. Whitcombe and Tombs Limited are the publishers, and the specimen illustrations are as excellent as the text.

THE following are extracts from a private letter received from Mr. Ed. Degen by Mr. A. J. Campbell:—

"Once more I am happy to inform you I am on my way to the Dark Continent, on which we hope to land within a few hours. This time I am a member of the exploring staff of a private expedition of French enterprise—namely, that of the Baron Maurice de Rothschild of Paris, a young and enthusiastic traveller. As usual, I am to look after the preserving and collecting parts, but it offers a good deal of other opportunities to make oneself useful, such as anthropological research, photography (of which we have about a dozen different apparatus, as well as cinematographs, &c.) The actual leader will be the Marquis de Bonchamps, a famous explorer, and a companion for some time to Colonel Marchand, of Fashoda fame. I am engaged as second naturalist, and my colleague, Dr. Neuville, of the Paris Museum, to my exquisite delight, is a capital chum. So also is our medical member, Dr. Roger, who also had some previous experience in Abyssinia. We shall go through that country again, going up to Addis Abbeba, the capital, and thence south *via* Lakes Zual, Hogga, Lausana, Abaya, Stephanie, and Randolph, finally picking our way to the south-west into the districts between the Victoria Nile and the sources of the Albert Edward, and west and south of them to the Semliki Forest of the Upper Congo, having, if possible (seasons and circumstances permitting), a peep at the Mountains of the Moon, an ambition we all cherish. In magnitude our caravans will assume considerable proportions, and will not be very much inferior to those of such explorers as Livingstone, Stanley, or Burton. Time permitting, a decent 'bag' ought to be obtained (providing we have not to leave

behind our own valuable skins', in which case an Okapi might be one of the results. But this is anticipating. There will be over 500 camels ready when we get into the desert country from the heights of Abyssinia, to the latter of which we shall avail ourselves of mule transport from Harrar. This will be our actual starting point, the latter being now made accessible by the railway line from Djibouti to up some 250 miles, within a two-days' journey."

### Big Bags of Game.

THE *Kerang News Times*, under date 7 6 04, gives two "record" bags of Quails obtained on the Benjeroop (Murray) stubbles—a party of four shooters in five hours securing 171 brace of birds, and the second party (2 guns) obtaining 98 brace. A thoughtful sportsman is satisfied with 10 brace of birds for his day's enjoyment, or, say, an outside limit of 20 brace; but these ardent Kerang shooters have each exceeded by one hundred per cent. the latter number. Surely this is killing "the goose that lays the golden egg." In the near future, in the interest of the birds, as well as the shooters themselves, the law may step in, as it does in America, to "limit" the number of bags.

Since the above was written, the following clipping has been taken from *The Argus*, 18 6 04:—"Three well-known sportsmen of the Western District—Messrs. De Little, Hood, and Affleck—left Murtoa on Friday with a bag of 1,003 Quail, the result of three days' shooting."

In connection with "big bags," attention may be called to the following passages from a lecture delivered last year by Mr. E. North Buxton before the British Society of Arts. They have a definite bearing on the subject:—"While in Vienna the other day I saw, at the taxidermist's, the bag of a sportsman just returned from Somaliland. Amongst other things were 70 heads of Soemmering Gazelle. What can any man want with 70 specimens? But the remarkable thing about them was that nearly the whole were females or immature males. . . . I am here to-night to try and focus and unite the growing public sentiment in favour of the restriction of that class of sportsman whose frenzy and ignorance have been responsible for such terrible destruction." Once the fauna of South Africa was the richest in the world; for many years all the region from the Cape of Good Hope to Orange River has been denuded of game, much of Central Africa as well. Since Lord Milner has been in power some reserves have been proclaimed; but is it not a fact that it is almost an impossibility to get anything like the full number of species of bird or beast back to a place where it has been ruthlessly slaughtered? According to Mr. Buxton, "every British protectorate in Africa has now a series of ordinances for the protection of wild animals and birds." Some of the larger species of game are altogether

protected. A license must be taken out to shoot game; the number of each bag is limited, and a return of the number and sex of each species killed must be furnished. Theoretically, even Africa is in advance of Australia. It would be most interesting to know how many birds in the Victorian "big bags" so gloried in were "females or immature males." Is not such heartlessness a menace to any species? In America, as previously pointed out in *The Emu*, not only the shooter of illicit game (over-large bags included), but what the law terms a "common carrier," and the railway authorities who convey such freight by train, are liable to penalties. From India, as well as South Africa, the export of certain forms of game, as well as their products (plumes, &c.), is forbidden, save by special license, and ruthless shooting is thus discouraged.

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### Corrections.

TURNIX TANKI.—Mr. D. Seth-Smith, F.Z.S., points out that in a reference to an article of his on this bird the range of the species was given not as he intended it to be read (see *Emu*, vol. iii., p. 195). The editors regret that Australia was inadvertently given for the species instead of for the genera.

THE VARIED LORIKEET.—Mr. Reginald Phillipps, in a letter to the editors of *The Emu*, desires them to correct a statement on p. 195 (vol. iii.) His male bird of this species, he says, "had not the red crown when first received, because it was immature, not because it was a male. . . . It was the owner of the birds who was trying to pass them off as true pairs, the mature specimens as males, the immature as females." It is regrettable that this misreading occurred, and the editors apologize.

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### Notes and Notices.

THE fourth annual session of the Aust. O.U. will be held in Sydney on the 28th, 29th, and 30th November next. From preliminary arrangements already afoot the function promises to be the most successful yet held.

THE following appeared in the Melbourne *Age* under "Sporting Notes":—"Mount Gambier.—The annual Parrot match was well competed for, and was won by Dr. F. D. Jermyn from H. E. F. Sturm with 15 birds, first miss out conditions. H. Hammer won two sweepstakes afterwards." Why do not the many bird protection societies of South Australia protest against this cruel destruction of indigenous birds? If the Gambier Gun Club must have such sport (?) there is plenty of vermin, and to spare—to wit, Starlings—to shoot.

DONATIONS to the Coloured Figure Fund:—Dr. E. D'Ombraïn, 5s. 6d.; Mr. H. Quiney, 10s.

NOTES, &c., received:—"Migratory Birds," C. G. Lane, Alexandra; "Heron, &c., Rookeries," A. J. Simson, Ulupna West; "Yellow Grass-Parrakeets," T. Hurst, Melbourne; "Flight of Cockatoos," photo. by W. Grant, per favour Dr. E. D'Ombraïn, Casterton; "Young Crested Tern," photo. by J. W. Beattie, per favour J. R. McClymont, Hobart.

MR. CYRIL GRANT LANE, of Alexandra (Vict.), who has already made a name by a work on dogs, has, at the request of Messrs. Hutchinson and Co. of London, prepared a book dealing with some phases of the natural history of Australia.

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### The Illustrations.

PLATE I., "Nest and Young of the Frogmouth," is from a photo. by Mr. C. P. Conigrave, interesting particulars of which are found in Mr. A. W. Milligan's article on the Wongan Hills, Western Australia.

PLATE II. represents an adult Frogmouth (*Podargus strigoides*) in characteristic attitude near its nest and young. This picture was taken at the opposite side of the continent to Mr. Conigrave's, on the eastern shores of Port Phillip, by Mr. J. Sears, on the grounds of Dr. Chas. Ryan.

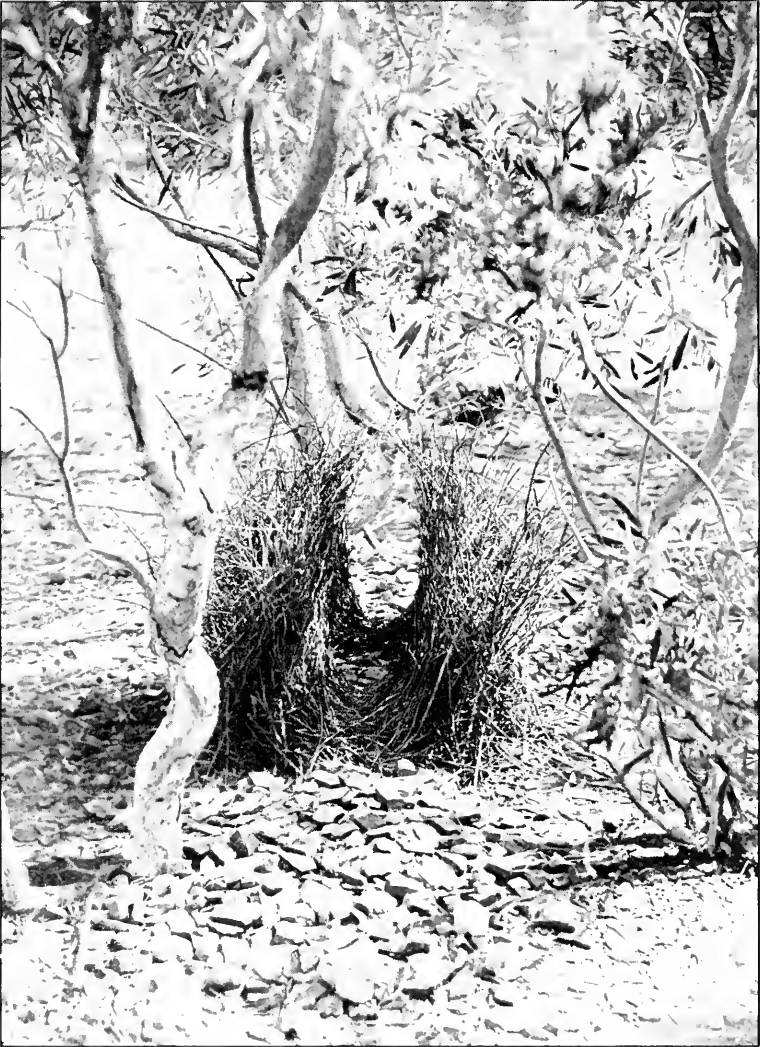
PLATE III. is from a photo. by Mr. D. Le Souëf, and represents the well-known Boobook Owl (*Ninox boobook*), taken at the Zoological Gardens, Melbourne. It is strange that some "bush" naturalists and tyros still confound this Owl with the Frogmouth, averring (erroneously, of course) that the Frogmouth and not the Owl utters the familiar cry of "mo-poke" at night.

The photo.-blocks are, as usual, engraved by Messrs. Patterson, Shugg and Co., 256 Elizabeth-street, Melbourne.

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*N.B.*—The handsome uniform cases for back volumes of "The Emu" may be had on application to Messrs. George Robertson and Co. Limited, Elizabeth-street, Melbourne. Price (including binding), 2s. 6d. each.





Playhouse of Great Bower-Bird (*Chlamydera nuchalis*).

FROM A PHOTO BY A. CAMPBELL (WYNDHAM).



# The Emu

Official Organ of the Australasian Ornithologists' Union.

"Birds of a feather."

VOL. IV.]

1ST OCTOBER, 1904.

[PART 2.

## A Trip to the Ord River (N.-W.A.)

BY JAMES F. KILGOUR, WILLIAMSTOWN.

THE Ord River takes its rise in the rough country in the north-west of the Kimberley goldfield, and, after a circuitous route, passes through the Hardman Range and flows thence in a more or less northerly direction until it empties its waters into the Cambridge Gulf about 15 miles to the north of Wyndham. During its course it absorbs the flood waters of the Nicholson, Osmand, Negri, Ban, Behn, and Denham Rivers, besides numerous smaller streams. It abounds throughout the whole of its course with bird-life, and no matter where an ornithologist strikes it he will be sure to find forms that will greatly interest him.

It was, then, with real pleasure that I stepped ashore at Wyndham, on the 3rd of April last, from the s.s. *Moira*, intent upon spending two years collecting in the Ord valley.

The next morning I was pleasantly awakened by the carol of a Pied Butcher-Bird (*Cracticus nigrigularis picata*) on the hill that overlooks the little township, and during the subsequent drive to the Six-Mile Hotel I was enabled to notice that the wet season, against expectations, was not ended. Egrets, Jabirus, Ibises, and other waders were to be noticed here and there along the fringes of the marsh.

A few days were spent at the Six-Mile, and during that time I had several rambles in search of birds. The Finches, *Taniopygia castanotis*, *Poephila acuticauda*, *P. personata*, and *P. mirabilis (gouldiæ)*, were common. A nest of the Chestnut-eared variety was situated in a small gum-tree in front of the hotel, and contained five fresh eggs. The Great Bower-Bird (*Chlamydera nuchalis*) was to be seen close to the hotel, and also several bowers. One, newly made, was beautifully constructed. The actual bower was about 2 feet through, of small twigs, closely woven; height, 16 inches. Stones, shells, and glass were laid to a distance of 2 feet from each end of the bower, and some were also placed in a depression in the centre. This model is always followed. I have never seen any brilliant objects, such as feathers, used, and the stones are always waterworn,

generally limestone. The birds nest during the wet season, in common with the majority of birds in the district. The nest is placed in the forks of a baubinia—sometimes, though rarely, in a river-gum; it is placed at a height of about 10 or 12 feet, roughly constructed of twigs, with a few eucalyptus leaves for lining, and adjacent to water. One egg is laid, very seldom two.

A large flock of Bare-eyed Cockatoos (*Cacatua gymnopsis*) passed over the hotel before sundown every night, going to their roosting-places in the hills. I estimated the number at between sixty and seventy thousand.

Horses being unprocurable at Wyndham, I was obliged to accept a friendly offer of a lift with a party taking up some twenty odd head of Western Australian "brumbies" to the Ord River station, about 200 miles from Wyndham, where some friends of mine would be able to let me have horses suitable to my work.

The experiences of the trip, apart from the observations of bird-life, would fill a book. Between shortness of "tucker," half-broken horses, wet clothes and blankets, swimming flooded rivers and wading for miles through swamp and bog, we had quite sufficient to keep our minds occupied. However, after some little trouble in mounting our horses, and with the packs all secure, on the 10th of April we started our journey. The horses were bad to drive, and had such a dislike to water that we were only enabled to travel about 10 miles that day, the last four miles being through water of an even depth of about 2 feet, and very heavy going. We camped on a small stony rise known as the Twelve-Mile. Here I noticed that several Ducks were nesting in the grass and undergrowth between the rocks. Two nests were found, much incubated, of the Whistling-Duck (*Dendrocygna arcuata*), containing respectively twelve and thirteen cream-coloured eggs. I also found an egg of the Masked Plover (*Lobivanellus miles*) upon the bare red ground within 30 feet of the edge of the swamp. At sundown large flocks of Whistlers passed overhead from the rough country in the rear, going down to the swamp to feed. In a large channel of the swamp Pelicans (*Pelicanus conspicillatus*), Egrets (*Mesophoyx plumifera*, *Herodias timoriensis*, and *Garzetta nigripes*), Black Ducks (*Anas superciliosa*), Pigmy Geese (*Nettion pulchellus*), White and Straw-necked Ibises (*Ibis molucca* and *Carpibis spinicollis*), and the Herons *Notophoyx nova-hollandiae* and *N. pacifica* were to be seen.

After some horse-hunting in the morning we got all our charges mustered and packed up. The next 10 miles was through a continuous swamp with deep channels through it; and what a sight for an ornithologist! Everywhere were to be seen the heaps of reeds that had formed the nests of the Pied Goose (*Anseranas semipalmata*), while in and around the channels and pools were hundreds of the Egrets before mentioned; but the most plentiful of the lot were the interesting Pied and Allied



Flight of Bare-eyed Cockatoos (*Cacatua gymnopsis*).

FROM A PHOTO. BY W. GRANT.



Egrets (*Notophox flavirostris* and *N. aruensis*). After a weary and wet ride we arrived at Goose Hill (Wyndham 26 miles) and camped. The next morning a start was made for Mantini Swamps; soon after starting I espied a Coucal's nest (*Centropus phasianus*) in a low bush. Looking into it from the saddle, I saw there were four young in down, about the size of a young Lyre-Bird newly hatched. As the horses took most of our attention I was unable to make any observations riding along, but here, although water is very plentiful, the aquatic birds and waders decrease, while the other birds begin to increase in numbers. At Mantini I noticed a Babbler (*Pomatorhinus*) whose note was unfamiliar to me. Here also were numbers of Cockatoos (*Calyptorhynchus macrorhynchus*, *Cacatua gymnopsis*, and *C. roscicapilla*). The breeding season of the Cockatoos and the other members of the *Psittaci* or Parrot tribe extends from the end of the wet season to about July, the main months being March, April, and May.

At daylight next morning the cornet-like notes of some Native Companions (*Antigone australasiana*) were heard.

The track is through some very barren hilly country, where birds are scarce, with the exception of the Red-collared Lorikeets (*Trichoglossus rubritorquis*), that were to be seen in flashes of colour flying over the hills to the river. Emerging from Button's Gap we find ourselves on the Ord River frontage, about four miles below the stud station belonging to Messrs. Connor, Doherty, and Darack. As we were anxious to get across the river, we pushed on past the homestead to the crossing place. Here a tremendous current was coming down over the ford, the water there reaching half-way up the saddle flaps. After some swimming and one or two attempts we managed to get our "brumbies" over without mishap, although alligators are plentiful here while the river is in flood.

On the next stage nothing of particular interest was seen, and we camped on the edge of a sandy belt of country between Emu and Cockatoo Springs. The bird-life consequently began to alter. Owing to the sugar grass being in maturity travelling was anything but comfortable. This grass has much the appearance of gigantic oats, growing from 6 to 15 feet high. It stood at an average height of 8 feet all along the track for about 30 miles, and the least touch would cause it to send its javelin-like seeds in a shower about you, and as they had a barbed point, which entered the skin, the language of the whole party during our passage through "the sand" was decidedly lurid. A eucalyptus with a large salmon-coloured flower, almost identical in appearance with *E. ficifolia*, was everywhere in blossom, and afforded food for immense numbers of Red-collared Lorikeets (*Trichoglossus rubritorquis*). Some of our horses got separated, and in looking for them I flushed a White-quilled Rock-Pigeon (*Petrophassa albipennis*) from its nest, which was a slight hollow in the sand and lined with grass;

the eggs were two in number, cream-coloured, pointed at both ends, and about half as big again as those of the *Lophophaps*. As will be noticed, I subsequently saw the Rock-Pigeons in great numbers in this same place.

The next camping place was Golden Gate. Here we were drenched early in the evening, and had to sleep in wet blankets. All through the night I could hear a "toot" coming from the hillsides, which the black boy said was made by a Quail. This was afterwards verified by several observant bushmen. The next stage was to Nick's Creek, where all night we could hear the sound of an immense flock of Great-billed Cockatoos (*Calyptorhynchus macrorynchus*). On the road to Argyle station the Finches were becoming numerous as we were getting into good grassed country. *Taniopygia castanotis*, *Munia pectoralis*, *Bathilda ruficauda*, *Poephila acuticauda*, *P. personata*, *P. mirabilis* (*gouldiæ*), and *Ncochmia phacton* were to be seen in numbers feeding on the grass-seeds. Amongst insectivorous birds were the ever-common Black and White Fantail (*Rhipidura tricolor*), Little Flycatcher (*Sisura nana*), Red-backed Wren or "Brigham Young" (*Malurus dorsalis*), and the Honey-eater—Golden-backed (*Melithreptus lætior*) and Red-throated (*Entomophila ruficularis*).

From the Argyle station we ran the Behn River up for 25 miles to what is known as the Top Crossing. Along its course we saw many interesting sights. I here saw for the first time a White Hawk. No doubt I had seen many before, but at a first glance one is so apt to take them for White Cockatoos, as they frequent the trees along the rivers. A few weeks later I saw two of the Goshawks (*Astur nova-hollandiæ*) in company with Kites (*Milvus affinis*) and Whistling-Eagles (*Haliastur sphenurus*), wheeling in the air on the Negri River in the Northern Territory. The blacks say that they lay a single egg and nest near a stream, and that their food consists of fish and birds, and that they often eat the fresh-water turtle. In a quiet pool of the river a stately Jabiru (*Xenorhynchus asiaticus*) lent a charm to the landscape as it stalked through the water. From the Top Crossing to the Wild Dog Police Camp (16 miles) we entered on a remarkable tract of country—volcanic soil covered with pieces of basalt from an inch to a foot in diameter, and stretching on either side as far as the eye can reach. With the exception of the Finches and one or two small birds these downs are rather bare of bird-life.

From Wild Dog on to the Negri River the most interesting birds are the Finches, and in what numbers! *Poephila mirabilis* (the Gouldian Finch) could be seen in companies of from six to about twenty, and what a pretty picture they formed when sometimes four or five perched on and bent a stalk of sugar-grass.

The next stage from the Negri to the Ord River station, 30 miles, was travelled for the most part through heavy rain, and





Nest of Red-throated Honey-eater (*Entomophila ruficularis*) in branchlet of *Heterodendron oleifolium*.



we were not sorry when the roofs of the homestead came in sight.

I had to wait in all six weeks on the Ord station before I could obtain the horses I required, and whilst there I had many opportunities of renewing my acquaintance with my feathered friends. Along the river the modest "queep" of the Little Flycatcher (*Sisura nana*) was heard. A nest I discovered in February, 1903, was on the branch of a very slender cajeput about 15 feet from the ground; it was constructed of fibres and rootlets, bound together on the outside with cobwebs and ornamented with small pieces of "paper bark." The Buff-sided Robin (*Pacilodryas cerviniventris*) is also common along the river banks; it has a very mournful note, although it is a bright-looking and active little bird. With reference to Gould's *Rhipidura picata*, I am of opinion that such a species exists, as well as the smaller race of *R. tricolor*. One bird has the plain black throat and the other has the throat mottled and a distinct line of white feathers from the gape along the side of the throat; beside this I have taken eggs from a "Chigaret's" (native name) nest that were white with a belt of distinct spots around them. My only regret is that circumstances have prevented me from solving the question. One of the commonest birds around the station is the Red-throated Honey-eater (*Entomophila rufigularis*). During the wet season its pendulous nest is to be seen everywhere. The diversity of markings of separate clutches of eggs is indeed remarkable, but the commonest markings are of chocolate, lightly sprinkled. Wherever there is a fair-sized hole on the river one is sure to find a pair of White-headed Sheldrakes or "Burdekins" (*Tadorna rajah*). They appear to breed all the year round, but the favourite time is about June to August. My opinion is that they mate permanently.

During the wet season the Oriental Pratincole (*Glarcola orientalis*) makes its appearance in large flocks. They may be seen skimming over the plains until they strike a suitable patch of young locusts. Unlike Mr. G. A. Keartland's experience\* in West Kimberley, they never make their appearance in East Kimberley until the wet season has well set in. When the plains are well soaked and the grass a good height the grasshopper tribe are to be found in immense numbers on the plains; it is then that the Straw-necked Ibis (*Carphibis spinicollis*) is to be seen in flocks of tens of thousands, feeding on the pest, and beside them Wild Turkeys (*Eupodotis australis*) and the Kites and Falcons, all of which get extremely fat.

In the beginning of the wet season the Black-faced Wood-Swallow (*Artamus melanops*) constructs its nest in the small timber on the plains, almost every tree having at least one nest.

Almost wherever there is water the Purple-crowned Wren

\* Proc. Roy. Soc., S.A., vol. xxii. (1898), p. 16c.

(*Malurus coronatus*) is to be seen. It is indeed a beautiful little creature, and has an exquisite little collection of notes.

During a trip along the Negri River, within the Northern Territory, I noticed particularly that the White-bellied Plumed-Pigeon (*Lophophaps leucogaster*) was breeding everywhere amongst the spinifex, and a nest that, judging by the tracks was within an inch of being crushed by the buggy wheels of the musterer's cook, contained four creamy-coloured eggs. This, however, is exceptional, as the general number is two. These are indeed lovable little birds, and great favourites with bushmen. They are so tame that the black boys often kill them with a stockwhip from the saddle.

On my trip down the road to Wyndham there were one or two interesting experiences. At Nick's Creek I camped in the middle of the flock of Great-billed Cockatoos mentioned previously. The noise was indescribable. The birds were feeding on the fruit of the "pear" tree and also on some plant growing between the sugar grass, but what it was I was unable to find out. The ground under the trees was strewn with branchlets that had been nipped off with their immense bills.

At Golden Gate during a wet night I was awakened by something pulling at my mosquito net, and looked up to find a dingo amusing himself by tearing it in ribbons. Passing again through the sand, and being this time alone, I had an opportunity of seeing the rare Rock-Pigeon (*Petrophassa albipennis*) in numbers. They were to be seen every 20 yards along the road feeding in company with the Brush Bronze-wing (*Phaps elegans*). On being disturbed they would fly away with a distinct peculiar metallic sound, and are easily recognized by the white patch on the primaries. I am told by bushmen that immense numbers are to be seen in a certain sandstone range to the west of the Ord River, and that at the end of the season, when the water is drying up, they live in holes in the rocks. I am also confident that the Rufous-quilled species will be found in the same locality.

For a week or so before I was compelled to return home I camped on the Goose Hill Swamps, where I had an opportunity of studying the various water birds that are to be found there. A friend of mine had a pair of young Jabirus (*Xenorhynchus asiaticus*) that were almost full grown. The bright plumage and colouring of the legs had not been assumed, the colour being a uniform brown. I afterwards saw the nest, which was built on the edge of a swamp in a pear-tree about 20 feet from the ground and of large proportions. On the swamps the pretty little Green Goose-Teal (*Nettopus pulchellus*) was common, and I found its flesh excellent eating. Pied Geese (*Anseranas semipalmata*) were also found in good numbers, both old and young. The young have not that peculiar development of the trachea Mr. A. J. Campbell mentions,\* and I have noticed that single individuals will often perch on a tree-top.

\* "Nests and Eggs of Australian Birds," p. 1,018.

The Night-Heron (*Nycticorax caledonicus*) is very numerous in the thick jungle that grows in the centre of the swamp. I shot a Jacana (*Hydractator gallinaccus*) and a Fawn-breasted Kingfisher (*Dacelo cervina*)—a female. In a patch of flowering Grevillea were numbers of Red-collared Lorikeets, Red-throated Honey-eaters, Little Friar-Birds (*Philemon sordidus*), Black-faced Wood-Swallows (*Artamus melanops*), and several other birds. That patch of Grevillea will be long remembered by me, as the next morning I received an urgent telegram of a domestic nature that caused me to catch a boat for Perth two days later. However, I trust that I may yet be enabled to return and complete my field work in this most interesting ornithological region.

## North Queensland Notes on Some Migratory Birds.

(March, 1902–July, 1904.)

BY FRED. L. BERNEY.

THESE notes are a continuation of others published in *The Emu*, vol. ii., p. 210.

My district consists of a radius of 50 miles, situated just below the township of Richmond, on the Flinders River, and will be about 240 miles from the east coast and 280 from the north.

As regards migration, the movements were normal up to the spring of 1903, but the season mentioned, together with the autumn of 1904, were very disappointing, most particularly as regards the Limicoline family. These birds pass here in the spring on their way south, only a small proportion remaining through the summer, but we get the return wave of migration, as a rule, in the following autumn. Both specifically and individually the number were short in the spring of 1903 and almost totally absent in the autumn of 1904.

WHITE-SHOULDERED CATERPILLAR-CATCHER (*Lalage tricolor*).—Summer residents, during which time they are fairly numerous. The bulk of them leave the neighbourhood in April, returning to us again in October; some few of them remain throughout the winter, but amongst these a full-plumaged male is most rare. I feel very doubtful about their nesting in this district.

WHITE-SHAFTED FANTAIL (*Rhipidura albiscapa*).—This pretty and energetic little Rhipidura confines its visits to us to the winter months alone. I cannot call it a resident, its numbers are so limited, and its appearance unreliable. I saw it in 1899, 1901, 1902, and 1904, my records being confined from middle of April to middle of August. Only once have I seen two together.

RED-CAPPED ROBIN (*Petroeca goodenovi*).—My first meeting with the Red-capped Robin was in the winter of 1902. Subsequently I saw it frequently, becoming well acquainted with it. They are typical Robins in all their actions. The female in her modest dress is a most charming

little bird; she is such a dainty, delicate wee thing in form and manner. In 1902 they were here from end of March to September, during which latter month they entirely left. In 1903 they did not show up at all, but this winter I saw the first of them on 20th May, and now (July) one may generally be seen any day in their haunts—thinly timbered country where there are low bushes for them to sit on; they are particularly partial to the prickly acacias (*Acacia farnesiana*) growing along the gullies on the open downs.

BLACK-BREADED SONG-LARK (*Cinclorhamphus cruralis*).—A common summer resident. We have them here, too, through most winters, but in greatly reduced numbers, and in numbers, too, that vary one year with another. This winter (end of July) they are more numerous than usual for the time of year; last winter they were entirely absent, with the exception of an odd bird, while through the winters of 1901 and 1902 there were a good many about. But our summer Larks and our winter Larks are different individuals, the former moving off in April or May, and the latter taking possession within a week or two, but in the interval there is a total absence; but September again finds the winter birds slipping away until we have practically none in November, and thus we remain until our summer lot comes back to us during December. They nest in the district. I have found eggs and young squabs through February and March, my earliest date being 8th February (four eggs, slightly incubated). I once found a nest with five eggs (14th February). The male is rather grotesque-looking, with long legs and big feet, and he does not add to his appearance when he sits on the top of a fence post with his tail stuck up at right angles to his back—an attitude that doesn't seem decorous. His song, too, is just such as you would expect from him, quaint and unmusical, but, being in no way discordant, is pleasant to listen to. Although the winter birds sing while with us they do not don the black breast.

RUFIOUS SONG-LARK (*Cinclorhamphus rufescens*).—A solitary male, obtained on 24th February, 1904, is my only experience of this species.

TRICOLORED BUSH-CHAT (*Ephthianura tricolor*).—Undoubtedly, I think, a migratory bird, but it is hard to distinguish its movements. It is in the district all the year round, but much more numerous in the winter, the influx commencing during March.

SWALLOW (*Hirundo neoxena*).—A winter visitor only, never being seen in summer. I have record of them from October to March inclusive; never at any time as numerous as its ally, the Fairy Martin (*Petrochelidon ariel*). During the winters of 1903 and 1904 it was represented by one solitary individual only each year. Previous to 1903 it appeared to arrive during April and leave again in August, a few remaining into September, but being all gone by the end of that month. On the wing it is easily distinguished from *ariel* by its forked tail, which part in the latter bird looks stumpy by comparison; then the dark rump in *neoxena* is in strong contrast to the light rump of *ariel*.

BLACK AND WHITE SWALLOW (*Cheramaea leucosternum*).—May be seen here at any time almost through the year, but never in any numbers, twenty being the most I ever saw at one time. Though here at all seasons, their appearance is very irregular and uncertain; they are here to-day and gone to-morrow, never staying long enough to nest. I believe there is the same migratory movement with these birds as there is with *Petrochelidon ariel* and *Cinclorhamphus cruralis*—that is, our summer residents go north at the approach of winter, their place being taken

here by birds from the south. I have no record of ever having seen Black and White Swallows in either March or September; those are the two intervals.

FAIRY MARTIN (*Petrochelidon ariel*).—Two lots, a summer and a winter lot, the former arriving in November and leaving again in March, while the latter arrive in April or May and leave us towards the end of August. None about—practically none—from the middle of April to early in May, and the same from middle of September to early in August. The birds are very much more numerous in summer than winter. Both lots nest in the district, December–February and July–August.

GROUND-LARK (*Anthus australis*).—There is a migratory movement among these Larks, but I have not so far given them sufficient attention or collected the requisite data to say what its extent is. During the past summer, 1903–4, it has been totally absent, but one showed up on 22nd May this year, since when they have been constantly in the district. As to whether subsequent notes will confirm or upset this remains to be seen.

BUSH-LARK (*Mirafra secunda*).—Is with us all the year round, but much more numerous in summer than winter, and I expect there is a double movement with these as with the Swallows and Black-breasted Larks, the summer residents leaving us during April. Nests with eggs found through January and February, my latest date being 26th of the latter month. Has this species been previously recorded for Queensland?

WHITE-RUMPED SWIFT (*Micropus pacificus*).—Always more numerous than their Spine-tailed relative. In 1902 they did not show up till 2nd January, while in 1903 they made their first appearance on 5th November. In both years they left again during the first week in April.

SPINE-TAILED SWIFT (*Chaetura caudacuta*).—In the summer of 1902–3 they did not arrive till 2nd January, and in 1903–4 did not show at all.

ROLLER (*Eurystomus australis*).—Arrives in these parts in October, my earliest record being the 7th, in 1902. In the years 1903 and 1904 they have been all gone by end of first week in April. In my previous notes I stated that they were scarce out west, but my experience then had been confined to the open downs country, which these birds avoid. As a matter of fact they may be seen or heard any summer's day among the big gums on the Flinders River, from Hughenden down.

BEE-EATER (*Merops ornatus*).—Following on my previous notes the first Bee-eaters to arrive in the spring of 1902 showed up on 28th August. The succeeding winter (1903) they never left the district—a most unusual proceeding, more particularly as we had some pretty cold weather in June, with sufficient frost to kill the "pig-weed." Up to the end of that month Merops were plentiful, but during July their numbers were greatly reduced, though still there were a fair number that were "cracking hardy," but the early part of August found us with only a few individuals. From this out they gradually increased again, and the summer of 1903–4 found them as plentiful as ever. On two occasions I watched the capture of specimens of the largest dragon-flies; they were swallowed whole, wings and all, after a few blows on a dead limb to break their bones. They stayed a bit late last autumn, but were all gone early in June. Their migrations appear to be made in daylight, as between the 16th and 27th March this year I saw four flocks, consisting of 28, 50, 28, and 100 in number, pass overhead, fairly high up, their pipe attracting my attention.

They were not hawking for insects, or sunning themselves, but attending strictly to business, keeping a straight line and going north-west. They were at the time crossing open, treeless downs, where as a rule they are never seen. In some data kindly forwarded me by Mr. Smedley it is curious to note that though the Bee-eaters remained here through the winter of 1903 they were quite absent at Homestead that year from May to 29th August.

KOEL (*Eudynamis cyanocphala*) is a rare bird on this part of the Flinders River, being but seldom heard; its cry, "co'ey, co'ey, co'ey, co'ey, co'ey," uttered most monotonously and finished off now and again with "wo wo wo wo wo wo," is so strange and striking that it could not be passed over without being noticed. In 1902 I first heard it on 17th December, and in 1903 on 27th November. The month of January is my last date. Mr. Smedley writes me from Homestead, on the Campaspe River, N.Q., that the Koels had all left that district by 18th May, 1903, and did not show up again till 26th August the same year.

CHANNELBILL (*Scythrops nova-hollandiae*), or "Storm-Bird," as it is universally called out here, was first heard in 1902 on 3rd December, and in 1903 on 6th November, while Mr. Smedley reports their first appearance at Homestead, on the Campaspe River, on 11th September in 1903. My latest date in 1903 is 4th April, while in 1904, although they had practically all gone by the first week in April, yet I heard one on the 29th of that month—an exceptionally late date—and on my expressing surprise, I was told that the young Scythrops had been reared in a Crow's nest close by, and was still following its foster-parents about.

COUCAL (*Centropus phasianus*).—From Homestead Mr. Smedley reported on 18th October, 1903, that they had not so far shown up. In the autumn of the following year he wrote that the Coucals had all left by 18th May. Personally I have never come across it on the upper parts of the Flinders, and I do not think it ever extends very far from the coast. Homestead is 128 miles east of Townsville.

PRATINCOLE (*Sialia isabella*).—Through the summer they are here in large numbers, but during the winter months they are practically absentees, being represented by only irregular visits of odd birds and small parties, which latter never remain any time. During the winter of 1902 they were, I think, quite absent. In April they leave us, returning again after middle of August. During the past two years I have found eggs or youngsters from December to February.

ORIENTAL PRATINCOLE (*Glarcola orientalis*).—In the summer of 1902–3 the Oriental Pratincole was seemingly behind time, the first occasion I saw it being 2nd January, and I saw none after the middle of February. In the spring of 1903–4 summer they arrived on 5th November, and for few weeks following were here in large numbers.

RED-KNEED DOTTREL (*Erythrogenys cinctus*).—Saw ten round a small hole on 25th August, 1902, this being my solitary record for two years.

ORIENTAL DOTTREL (*Ochthodromus zerecus*).—Arrived 21st and 22nd September, 1902, and my last note of them in the following autumn was 10th March. On 2nd October, 1903, their short, sharp note caught my ear at daylight, and hurrying out I was in time to see three, the first of the season, flash past. Later in the day I saw sixteen more, and those are the only birds I saw that summer.

RED-CAPPED DOTTREL (*Egialitis ruficapilla*).—One solitary bird at a lagoon on 24th March, 1904, is all I have seen of this neat little Dottrel.

BLACK-FRONTED DOTTREL (*Ægialitis melanops*).—My previous notes lead me to think *melanops* was a summer resident with us, and that their winter movements depended on the severity or mildness of the season. My experience of the last two years leaves me in a state of uncertainty. Time and further watching will be required before I can come to a decision about them.

AUSTRALIAN DOTTREL (*Peltohyas australis*) is a very irregular visitor ; have only seen it twice in two years, 23rd and 25th September, 1902—three together on the first occasion, and nine, which is my record number, on the second, of which nine a Black Falcon (*Falco subniger*), swooping with terrible swiftness, carried off one before they had gone 200 yards.

LITTLE WHIMBREL (*Mesoscolopax minutus*).—I estimated there were between two and three thousand on an open lagoon on 9th February, 1903, which number came down to seven hundred a week later, and by the end of the month was reduced to *nil*. The following spring I only saw five and twenty, and these were distributed between the 17th and 30th October, with no further record till 6th March, 1904, when a solitary bird passed, calling, overhead. The big lot I watched with my glasses. It was a most interesting scene ; they were crowded down on to the water's edge, the birds on the outskirts being pushed into the water. They were all busily engaged preening their feathers, evidently having fed, keeping up the while a constant chattering as they pecked at one another in their endeavours to find elbow (or rather wing) room.

GREENSHANK (*Glottis nebularius*).—Single birds about during January, 1903 ; saw two together on 13th November following, and on 18th February, 1904, I heard them calling as they passed overhead at night.

LITTLE STINT (*Limonites ruficollis*).—6th November, 1903, with my field-glasses watched a party of seven on some swampy ground.

SHARP-TAILED STINT (*Heteropygia acuminata*).—None in the spring of 1902, did not see any till 11th January, 1903, and then only in very small numbers. On 17th October, 1903, sixteen appeared and constituted my only note of them for the summer of 1903-4.

[Such notes as those Mr. Berney has furnished are most valuable, *re* bird habits and some of the abstruse problems concerning migration, the latter of which should be more closely studied by members of the Aust. O.U. It does not redound to our credit that so little has been done as to the last-named phase of ornithology. In what has already been contributed to *The Emu* there is some valuable material available, and it would be a step in the interests of science if some enthusiast would tabulate the results already recorded. Has not too much attention been given to mere "collecting," which perforce introduces a bitter personal element, and the really scientific phase—observation, close observation, and still closer observation, *re* life and habits—been overlooked?—H.K.]

BUSH-CHATS AND SONG-LARKS.—Last summer flocks of beautiful Tricoloured Bush-Chats (*Ephthianura tricolor*) visited the district of Murtoa, and this winter a few Black-breasted Song-Larks (*Cinchorhamphus cruralis*) remained, but they were without the black markings on the breast, and did not sing.—J. A. HILL. Kewell, 16/8/04.

## Notes on Some Western Australian and Allied Species.

BY ALEXANDER WM. MILLIGAN, PERTH, W.A.

PACHYCEPHALA OCCIDENTALIS (Ramsay) and Allied Species.

Dr. E. P. Ramsay, in separating *P. occidentalis* (one of the white-throated, yellow-breasted section of the *Pachycephalæ*) from *P. gutturalis* (Latham), relied on the following differences in the males:—

- (a) Tail grey, without olive wash on basal margins of feathers.
- (b) Width of blackish subterminal band of tail less than one-third of length of tail.
- (c) Yellow neck-band very indistinct or broken.
- (d) Olive of upper surface of a more greenish tint.
- (e) Yellow of under surface paler.

Lately I have had the opportunity of handling and examining a large series of skins of both sexes, adult and young, collected at various places in Western Australia along the western and south-western coastal districts, extending from Perth to Albany. The results of the examination clearly indicate that the differences relied upon by Dr. Ramsay are not always constant or apparent. Difference (a) appears to be constant in mature birds. Difference (b) does not appear to be well sustained, for in 12 adult male skins, forming part of the series, the tail of every one measured 3 inches and in two instances (Perth and Cape Naturaliste birds) the subterminal band measured  $1\frac{1}{4}$  inches, or more than one-third of the length of the tail. Difference (c) received partial confirmation in one skin only, and in that one the neck-band was indistinct but not broken. As to difference (d), I am unable, in the absence of a series of skins of *P. gutturalis*, to make a comparison, but as regards difference (e) I found that the breast colour varied in intensity from pale lemon colour to orange-yellow.

In distinguishing the females of the species mentioned, Dr. Ramsay relied on the following:—

- (1) Lower part of chest, flanks, and abdomen, and under tail coverts rufous-buff, but not ashy-grey as in *P. gutturalis*.
- (2) Under wing coverts light rufous-buff, but not ashy-grey as in *P. gutturalis*.

These differences are not borne out by the examination, as the following cabinet notes, in reference to four adult females, evidence:—

Specimen (a).—Chin white-freckled, chest grey, abdomen and under tail coverts buffish, under wing coverts creamy or dull white.

Specimen (b).—Chest freckled-grey, abdomen paler shade than preceding specimen, under wing coverts as in (a).



Specimen (c).—Similar to last preceding except that the throat-freckling is in regular crescentic lines.

Specimen (d).—Breast pale buff, under wing coverts as in (a).

Leaving the comparison of the above species, the following plumage phases of the young males of *P. occidentalis* may perhaps be interesting:—

*Head.*—Brown in fledgling, slate-blue in 6 months and 18 months old birds (these age-computations are only approximate, and are based on the assumption that the young bird was hatched in December); black in adult.

*Breast, Abdomen, and Under Tail Coverts.*—Impure white in the fledgling, buff in the 6 months old birds, deeper buff in the 18 months old birds. (In one of the last-mentioned the breast was pinkish-buff, with yellow patches here and there.) Yellow in adult.

*Secondaries.*—Exposed upper surfaces boldly marked reddish-bronze in fledgling and 6 months old birds, blackish-brown with olive-grey margins in the 18 months old birds.

*Tail.*—In all immature birds a plain uniform brown, with narrow edgings of paler brown in the first two phases, but with olive-grey edgings in the third phase. In mature birds, grey with blackish band.

From the above it appears that there are three plumage phases at least in the young birds. The last phase is either incomplete or there is a fourth one; for, although there are, in one skin, evidences of a transition from the pre-mature to the mature in the breast plumage—namely, from pinkish-buff to yellow—there are not any evidences or indications of corresponding changes to the black pectoral band, or the black head, or the white throat or grey tail of the full-plumaged adult. I have field notes (not my own) showing that the sexes breed before assuming full plumage. This trait is not peculiar to the *Pachycephalæ*, for I have similar notes regarding *Petræca goodenovi*. The young male, in a general sense, resembles the adult female. The former, however, is readily distinguishable by the *presence of an inconspicuous and concealed tuft of undeveloped yellow feathers at the vent.*

In the course of my examination I was much struck with many variations in the colouration of parts of *P. occidentalis*, which more or less have been relied upon as distinguishing characteristics in allied members of the genus, both Australian and extra-Australian.

In one skin of an adult male the under tail coverts were almost pure white—one of the two differences urged in the separation of *P. glaucura* (Gould) from *P. gutturalis*. In two skins the yellow nuchal collar continued uninterruptedly to the yellow breast, breaking the continuity of the black pectoral band with the black head—characteristics, according to specific descriptions, which are peculiar to at least 11 members of the genus, including

three Australian ones, and ones upon which Count Salvadori sought to distinguish Strickland's *P. macrorhyncha*. In all other skins, except the two mentioned, the pectoral band was connected with the black head. In one other skin the same crescent was abnormally broad, and the area of the white throat-space, in consequence, less, thus furnishing a resemblance to *P. schlegeli* (Rosenb.) of New Guinea. The breadth of the band in the skin mentioned measured  $\frac{1}{2}$ -inch, while in all other skins the breadth of the same band varied from  $\frac{1}{8}$ -inch to  $\frac{1}{4}$ -inch. In another skin the breast was orange and the axillary regions and under tail coverts were of the same shade, thus departing from the type of *P. occidentalis* and approaching *P. mentalis* (Wall.) in those parts. The slate-coloured head of the young male of *P. occidentalis* furnishes a resemblance to the slate-coloured occiput of *P. innominata* (Salvadori).

RHIPIDURA PREISSI (Cabanis) and R. ALBISCAPA (Gould).

I examined a series of these skins from various parts of the State, including the Murchison District, in the north-west, and in every specimen not only was the blackish chest-band present, but, in addition, strongly marked. The birds from the Murchison differ slightly from the southern birds in the plumage colour of the abdomen, the ochreous-buff of the former being almost lost. The brown (in some blackish-brown) shafts of the two central tail feathers and the white shafts of the other tail feathers are constant features. The upper and lower lines of the chest-band of the northern birds were more sharply defined than in the southern ones, the lower line in the latter being irregular, uneven, and ragged. The same peculiarities are also observable in specimens of *Orcoica cristata*, the northern birds having the pectoral band as sharply defined as that of *Pachycephala occidentalis*.

PETRECA GOODENOVI (Vig. & Hors.) and P. RAMSAYI (Sharpe).

Supplementing Mr. Robert Hall's observations on these species in vol. i., part 1, of *The Emu*, I have to record that, in a collection of birds obtained at Wurarga, Murchison, last year, I selected out of a number of skins of *P. goodenovi* one with a red throat. In my notes on the Wongan Hills trip (see *Emu*, vol. iv., part 1) I recorded having myself shot a bird of the same species possessing a similarly coloured throat. I have already recorded a field note (not my own) of a pair of this species having bred whilst in immature plumage. If variations conversely occur in corresponding parts of *P. ramsayi* I should be inclined to agree with Mr. Hall's conclusions as regards the status of *P. ramsayi*. *P. goodenovi* is found on Rottneest Island, opposite Fremantle (the port of Perth), but, strange to say, not anywhere on the mainland between the sea-coast and the mountains. On the inland side of the mountains the bird is, comparatively speaking, plentiful in favoured places. The colour of the cap of the Rottneest Island birds varies from pale pink to deep scarlet.

ACANTHOCHÆRA MELLIVORA (Latham) and A. LUNULATA (Gould).

In my notes of the Stirling Range trip (*Emu*, vol. iii., part I.) I mentioned that I had shot an *Acanthochæra* which bore a striking resemblance to *A. mellivora*, by reason of the white central streaks on the mantle feathers, and I then entertained the notion that both species would be found on comparison to be identical. Since then I have compared a number of skins of the Western form with a skin of the Eastern one, with the result that I find that my surmise has not been justified. In the latter form the head, hind-neck, and mantle are boldly streaked, while in the former the streaks are confined to the mantle only. The head and hind-neck are, however, in most instances minutely spotted with white. The most striking differences are those mentioned by Gould—namely, the very much longer bill of *A. lunulata* and the presence of the conspicuous tracts of glossy white feathers extending from the gape over the ear coverts, along the sides of the neck. Each form has the remarkable "meteoric shower" on the chest and breast. I do not know of any Australian species where individual members of both sexes exhibit *inter se* such variations in size as in *A. lunulata*.

PTILOTTIS LEILAVALENSIS (North) *vel* P. CARTERI (Campbell).

I recently examined four skins collected on the Yule River, in the North-Western Division of this State. Three of the four were males, two of the four being adult, and the remaining two, judging by their light horn-coloured bills and cinnamon-yellow plumage, immature birds. Mr. North, in his specific description of *P. leilavalensis* ("Australian Museum Records," vol. ii., p. 106), stated that the species might be distinguished from *P. penicillata* by (*inter alia*) the *absence of the blackish line* which separated the silky-white patch of feathers from the ear coverts. In the Yule River mature birds I find that the *blackish line is present*, and that in one of the immature ones the line is also present, but is smoky-brown in colour. I also find that the crown of the head and hind-neck of the mature birds are pale brown (as the mantle), but distinctly washed with lemon-yellow, thus defining a shade-line between the hind-neck and mantle. The lores, forehead, sides of the head, and cheeks, *and also the chin and throat*, are bright *lemon-yellow (not olive-yellow)*, the bases of the feathers of the last-mentioned being greyish-white. On each side of chest there is a patch of feathers of the same colour as the mantle and connecting with it. These patches are, in turn, connected by an obscure band across the breast of a paler brown, and diffusely marked with pale yellow and greyish white, similar in pattern to the same part of *P. sonora*. Mr. North does not make any mention in his description of these brown chest-patches or of the breast-band, consequently I am inclined to think, for that reason and owing to the differences above specified, that the Yule River birds and *P. leilavalensis* are not identical. After examining Gould's coloured plate of *P. flavescens* and the letter-

press accompanying it, I should not be surprised if it were hereafter found that the Yule River birds were nothing more or less than a southern race of *P. flavescens*.

MALURUS LEUCOPTERUS (Quoy and Gaim.) and M. LEUCONOTUS (Gould).

In a collection of skins made in the Murchison district, the collector drew my attention to the fact that the conspicuously white wing-patch of two of the male skins sent not only extended to but encroached on the back, but without encompassing it to the extent existing in *M. leuconotus*. In one of the males shot during the Wongan Hills trip I observed a similar condition of things. As the ranges of the two species are to a great extent identical, the above forms would appear to be intermediate ones between the two species. Mr. A. J. Campbell states ("Nests and Eggs of Australian Birds," pp. 174, 175) that *M. leuconotus* was obtained by Mr. Tom Carter at Point Cloates, North-Western Australia, where he shot one after a hurricane. Mr. Carter, in his "Notes on the Birds Occurring in the Region of the North-West Cape," does not refer to the species, but mentions *M. leucopterus*, adding that that species was abundant after the hurricane of 1898.

## Some Bird-Life in British Papua.

BY R. A. VIVIAN, MELBOURNE.

WHAT British Papua lacks in big game it contrives to fill the bill with fowls of the air, which, though varied and numerous, do not exist in that enormous quantity one would be led to expect of a fertile country lying only a few hundred miles south of the equator.

No classification of a technical nature, but a brief description of the different species and their habits, where known, being the object of this paper, further remarks will be unnecessary in introducing to the reader the typical birds of Papua, or New Guinea—viz., the Birds of Paradise, principally *Paradisca raggiana*. Our Teutonic neighbours evidently admire the birds so much that they have given them the premier position by striking local coinage on the obverse side with a somewhat exaggerated design of the Greater Bird of Paradise (*P. apoda*).

The exquisite plumage of these birds having been already treated to a presumably microscopical survey, it is scarcely necessary to dwell further in that respect, but rather on their apparent desire to be noisy. Their rapidly ascending, shrill "caw-caw-caw," repeated, penetrating the ordinary stillness of the forest, being akin to a clarion call, awhile on a tree limb their prancing, which the natives introduce and imitate in their dances, is very ludicrous. Moulting seems to take place about August, which is near the end of the dry (or south-west) season. The

noise of the rapids in large rivers and creeks appears to attract them, as they congregate there chiefly.

The writer is not aware whether it is widely known among ornithologists that a blue-plumaged Bird of Paradise exists in Papua.\* Neither can he recollect meeting anyone who has seen the particular species in the flesh. The assumption is based on seeing tail feathers of a sky-blue tint of a Bird of Paradise in the head-dress of a chief of the Opi tribe. The latter could not be induced to part with the rarity for an ample consideration. Where and when it had been obtained the native knew not, beyond pointing vaguely towards the mountains far inland. The local name, "Damba," as for a *raggiana*, was also given.

The enormous Goura Pigeons (*Goura coronata*) are glorious creatures. The noble crests, of mottled and slate-coloured hues, give the birds an almost commanding appearance. A peculiarity about these birds is that only in the River Musa district (lat. 9° to 10° south) are they to be found in considerable numbers. Whether a special kind of fruit tree only exists in the locality would be interesting to know, as otherwise that particular part of the mainland scarcely differs in any respect from other portions of the country east of long. 148°. It is well known, of course, that a different variety of bird inhabits the Fly River districts (*G. d'albertis*).

Pigeons of a lesser size—viz., the blue, white, black and white Torres Strait and white neck-laced varieties—mostly inhabit the mangrove trees on the coast, in flocks, and towards sunset can be easily shot, flying with alarmed cries in circles above their roosting-place and returning in a few minutes within the zone of the sportsman's deadly gunfire. In the islands in the south-eastern portion of the possession, the beautiful blue-green bronze pigeon with white tail and long neck feathers ("Nicobar") and a species with a remarkable black fleshy protuberance at the base of the upper mandible make their home in the thick scrub.

The varieties of Doves are numerous, amongst which might be mentioned a very pretty parti-coloured one with green, white, and yellow on its body and a patch of magenta above the beak, found on the Conflict Group. Also the almost tame green and brown species of the Lachlan Islands.

At all times of the day and night Cassowaries can be heard uttering their peculiar plaintive cry as they wander through the dense forest. They are very hard to approach, and only on one occasion was the writer permitted to see a wild one, and that was through the effect of a lucky shot by a recruit in the armed constabulary. So far as it is remembered, the bird was of the common type peculiar to the country, and stood about 5 feet in height. A one-time planter in Milne Bay once kept a pair

\* I have since seen in the National Museum, Melbourne, a skin, which is named *P. rudolphi*. [This species is recorded in Wallace's list of the Birds of Paradise published in "The Malay Archipelago," 1890 edition. The habitat is there given as S.-E. New Guinea.—EDS.]

of these birds and trained them to perform the duties of watch dogs. As would be expected, black, and also White (Triton) Cockatoos (*Cacatua ducorpsi*); red, green, and blue Parrots, Rifle-Birds (*Craspedophora magnifica*), and scarlet-breasted green Parrakeets, are very numerous, and are to be found in flocks where cocoanut, bread-fruit, banana, wild cherry, and plum trees are in bearing. Plait-billed Hornbills (*Rhytidoceros undulatus*) in particular devour these fruits greedily, and travel long distances from their nests to satisfy their wants, making a start from home regularly at daybreak and returning at sunset. The male usually possesses a really fine head of golden feathers, which extend from the base of the bill quite 4 inches down the neck. The hen birds are all black, with the exception, as with the males, of a few white feathers on the under part of wing. Corrugations to the number of nine have been seen on the beak. What do these indicate? The rustling noise these birds make when on the wing is of a weird character, and, together with the hoarse note they produce, suggests to the imaginative the approach of something ill-omened. They fly in couples, at an estimated speed of 15 to 20 miles an hour in calm weather.

On a small island in the China Straits our boating party on one occasion disturbed a huge Pelican (*Pelicanus conspicillatus*) that was evidently seeking food on the shore. Preparing to shoot it, we were discomfited by seeing it take a few bounds and with an apparent effort rise on the wing, and, lazily sweeping in gradually increasing circles, ascend until it was a mere speck in the sky.

The musical note of a Magpie is heard occasionally in Papua. There is no mistaking its carol. The bird may possibly prove a new variety. Everywhere Obi Paradise Crows (*Lycocorax obicus*) in moderate numbers split the air with their hoarse cries, and plunder banana plantations, and are especially fond of the paw-paw fruit.

Snipe (*Gallinago australis*) have been shot on the north-east coast, where in January they are found when migrating, though from whence, or whither bound, it is hard to say. Wild Duck, too, are plentiful in the same locality. On the south coast and in the Gulf district small Duck with a broad patch of white on the wing, and a variety about the size of Teal, have been obtained.

*Vide* extract of an expedition up the Morehead River, Western Division, several years ago:—"There was a great variety of bird-life, amongst which there were observed the White Ibis and Great Heron, Shags, enormous Goshawks (*Erythroriorchis doriae*), Wild Geese and Ducks; most beautiful long-tailed green and scarlet Parrakeets; tiny jewelled Kingfishers (*Ceryx solitaria*), and a little dark chocolate-coloured velvety bird that lived in the reeds (probably *Megalurus alboscapulatus*), and quantities of Pigeons, Cockatoos, and Parrots."

The black-feathered Scrub-Hen, or Brush-Turkey (*T. jobiensis*), is far from being a rowdy bird, and for its modesty in that respect

rarely fills the sportsman's bag. A sudden flutter of wings and a dark object flying at a moderate rate towards where the scrub is thickest complete the disgust of the man with the gun. One receives some compensation, however, by being able to rather easily raid the ground nests of these birds for eggs. The nest, or rather natural incubator, is usually at the base of a large tree trunk, where the hen lays her eggs and then covers them over with a huge but light mound of dry leaves 2 to 5 feet deep, and quite 12 feet in diameter. The heat of this rubbish does the rest, and the young find no difficulty in scrambling out into the daylight in due course. The egg is of a light pink colour and is about the size of a domesticated Turkey's. Nests have been discovered at a height of 2,500 feet above sea level.

On a Government banana plantation, and on large streams, the writer often perceived hosts of Swifts (*Collocalia terra-francica*) appear an hour before sunset, darting rapidly hither and thither, as if feeding on minute insects of the air. This generally occurred during the wet season—November to February.

It was from the same point—Cape Nelson—that a coming "blow" from the southward was always heralded some hours before by the appearance of a few Frigate-Birds (*Fregata aquila*), which hovered in the locality while the wind lasted, and as like mysteriously disappeared. It would be more appropriate to call them "Prophet-Birds." During a gale they meet the fierce gusts with seeming equanimity, neither wing moving, but with bodies rigid and heads to windward they remain almost stationary, except occasionally a slightly perceptible swaying and momentarily opening and closing of the tail feathers—a steadying agency probably, besides an aid to ascent—of which a few remarks will be added later. Then with a lightning turn they gracefully sweep at a downward angle with fearful velocity for any given distance with the wind, and then with the most consummate ease bring up "all standing," poised as before (see fig. 3), the wings meantime remaining stiff, but scarcely horizontal, at the time the bird prepares to turn. Such a resistance do they offer to a storm that when sometimes a bird is balanced a short distance overhead one can almost imagine seeing the wind rushing past its form. They have never been observed to approach the water closer than 300 feet, while on the other hand they often soar upwards to a considerable height. The evident method these birds adopt to ascend is peculiar, and very interesting to watch at close quarters. For, though the bird itself is practically rigid, except for slight movements—particular parts of which have been alluded to—yet those simple actions really explain how the bird rises. Thus, in addition to what has already been stated, they consist of upward and forward motions, as if, while pressing against the wind, advantage is taken when a lull occurs (see fig. 1); and, secondly, with head still to windward, allowing itself to fall back a few yards as though for a "breather," *but*





make the owners of chickens very wrathful, owing to their depredations in the poultry-run.

It may not, by the way, be out of place to devote a few lines to the native breed of domestic fowls. The male is a very pretty bird, very like a game-cock, with a long pendant on either side of the tail. A pure white variety is also bred, and is highly prized by the Papuans. Query—Where did these birds originally come from? All explanations are vague on the matter.

In the islands and several parts of the mainland Curlews, Golden Plovers, and Herons, both black and white, are free agents, and at as high an altitude as 6,000 feet on the main range the rare Orange-crested Bower-Bird (*Amblyornis subalaris*) has its playground.

Respecting the "Death-Bird" of New Guinea, too much credence should not be indulged in until confirmed. Native myths are numerous and extraordinary, even precise in details. The moon—we are impressively told by some Papuans—was originally found in the soil by one of their number, who, in attempting to carry the luminary to his village barely escaped with his life through not relinquishing the prize as it ascended heavenwards!

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## The School in Wild Life.

BY FRANK M. LITTLER, F.E.S., LAUNCESTON.

THE author of a paper under the above heading in *Chambers's Journal* for May, speaking of the song of both wild and cage birds, evidently does not believe that birds inherit their vocal powers from their parents, but that each and every young bird has to "learn" how to whistle or sing its range of notes. He states that breeders of cage birds often put the eggs of the Rose-Linnet into the nest of the Canary, who will hatch them out. The young Linnets do not attempt their own song, but imitate as closely as possible that of the Canary. Personally I am of opinion that many birds *do* inherit their vocal powers from their parents, and would place birds on a higher plane of intelligence than of mere automatons. Those who have kept "Jackasses" and "Magpies" must have noticed that when they are old enough they commence practising their native notes so long as they have not had "Sweet, pretty boy," &c., &c., whistled at them. In a short while they will, without ever once hearing another bird of their own species, whistle as well as any in their native state. Tame birds of the species mentioned are great imitators, and they will rather learn a "foreign" language than allow their native harmony to mature. The author of the paper under notice admits that young birds inherit the aptitude for the song of their parents, but thinks that this aptitude is equally strong in picking up the song of

any other species heard from its nest. But is he right? To transfer one of his examples from England to Australia, we get the following:—A nestful of young Jackasses with silent parents hear round them day after day the rich warbling notes of the Magpie. The young birds, as soon as they are old enough, commence practising, not their own notes, but those of the Magpie, and when they are fully fledged they will be Magpies in as far as their powers go.

What would happen if half a dozen or more species of song birds were to bring up their broods close to one another? Would the species with the loudest or most harmonious song teach the whole six broods its own song, to the exclusion of the other parents? I think not, but rather that each species would retain its own note. Suppose clutches of eggs of half a dozen species could be hatched and the young reared in an incubator, what results, as far as vocal capabilities, would we have? Each species would develop its own particular song, independent of its neighbour.

To pass on to another portion of the article, that which treats of nest-building. The author asserts that the young birds, aided by their natural sharpness, learn the art from their parents, and that while they are nestlings, they make mental notes of their cradle, inside and out. I quite reject the theory that birds are mere copyists and automatons. Birds do not "learn" how to make a nest, the gift being handed down from generation to generation. Nor do they blindly build whether environment be suitable or not. They display an intelligence oftentimes marvellous, and build nests by "instinct;" but it is their "intelligence" that tells them whether it would be safe or not to nest in a seemingly suitable situation. Birds are quick to employ new materials in the construction of their nests should they prove suitable. But how did they learn the suitability or otherwise of certain materials? How did Silver-eyes and Robins become acquainted with the suitability of cow and horse hair for their nests? Or how did other birds—several may be named—learn the use of string and wire?\*

In conclusion, the author of the article deals with the evergreen, ever-mysterious subject of migration. Speaking of the habit many species of birds have of quitting the Arctic Circle on the approach of winter, and returning again in spring to nest, he says:—"There may have been a time, before the snow crept so far down, when they spent the whole year farther north, and being very much creatures of habit, they still return to the old

[\* There is a subtle question as to heredity or instinct involved in Mr. Littler's notes. Some of the problems he propounds are not readily answered, and open up a field of study the width of which has not been more than half realized by the few Australasian observers who have ventured to treat it at all. The further one goes into such a problem the more involved he becomes, unless he be one of those fortunate individuals who, passing life out of doors, is not only exceptionally favoured as to matters of observation, but does not shrink from sacrificing a theory for truth.—H.K.]

home whenever the way opens. . . . What of the larger ranges—of birds which leave the edge of the eternal snows and do not stop till they sight the coast of Africa? For a solution the mind goes back to the Ice Age, when the hard conditions extended so far that a winter in Europe, except in the extreme south, was as cold as in the Arctic Circle now." He is of opinion that in no instance do young birds start without leaders; that it is often a question of luck whether they will reach their destination or perish on the way; and will not admit that the migratory instinct is inherent in the young of migratory species. This is a matter on which many ornithologists will disagree with him. To me it seems beyond doubt, so far as we can tell. If birds could speak, it is questionable if they would be able to say why they go south in the winter—and far south too, sometimes—and why they return north again to nest. They would simply answer that what their parents and great grandparents had done was good enough for them, and that they would expect their children and children's children to do the same. Much has been learnt and written on this fascinating question of migration, but still very much more requires to be known before we can say that we understand it.\*

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### Bird Sanctuaries of New Zealand.

NEW ZEALAND has done two things thoroughly, as the following paper from *The Argus* of 23rd July, 1904, will show. One of these is to preserve those wingless birds so characteristic of the country, and which, because of their helplessness, would soon disappear as settlement increased; the other is to acclimatise the best game of other countries. Thus, in turning down Canadian moose in their mountains, they brought a Canadian forester to look after the young calves, and a Scotch gamekeeper is now engaged attending to the Grouse. Resolution Island, in Dusky Sound, West Coast, discovered by Captain Cook, is named after one of the ships in which Cook made his first voyage. There is material for a charming little book on Nature in this official document, the last place where a Victorian, knowing something of the character of his own Government

[\* Here again we are only on the verge of knowledge. The heredity of a migratory instinct, more particularly when one remembers that from extreme north to extreme south there was virtually a bridge of land, and that, according to some theories as to the origin of species, these began in north and passed stage by stage to south, possibly in search of food, or more possibly in search of favourable quarters for breeding. The latter theory would seem most feasible. But how, after all, account for the fact that birds desert comparatively warm and favourable regions in our south for such places as the steppes of Siberia. Most of those who do pass feed either on insects or the food which a sea-shore produces, and as tropical regions are especially favoured in this way, why should they be passed by? The theory as to following the line of an old sea-shore does not seem to fit in with every circumstance in the migration of those birds which are usually known as "Wanderers."—H. K.]

reports, would look for it. And Mr. Henry's chat about the birds which are in his charge, and have become, in some instances, his pets and friends, is so homely, so sympathetic, shows so much of close and loving observation, that something material to the literature of Nature in New Zealand would have been lost had the notes not been published.

The wingless birds that are being given sanctuary on Resolution Island are the Weka or Wood-Hen (*Ocydromus australis*), the Kakapo or Great Ground-Parrot (*Stringops habroptilus*), the Roa (*Apteryx haasti*), and the Kiwi or Apteryx (*Apteryx owenii*). In addition to these, which are his special charge, Mr. Henry writes of all the birds which are either native to or visit the island. It is the wingless ones, however, that are of chief interest. Had New Zealand possessed amongst its native fauna any destructive animals, such as the Australian dingo or the Tasmanian devil, these birds would have been extinct long ago. In settled country both dogs and cats play havoc with them, and the English weasel, which, as Mr. Henry observes, would never have been introduced had its habits been known thoroughly, is also destructive. When rabbits became such a nuisance that poisoned wheat was laid for them, some of the wingless birds were killed in thousands, like the English Pheasants, which had been so successfully acclimatised. In many of the public reserves of New Zealand, such as the charming gardens at New Plymouth, one can hear the Pheasant calling constantly in the brush, and it is this thick native underwood which gave originally complete protection to the wingless birds.

The Weka or Wood-Hen is evidently one of the most interesting of the residents on Resolution Island. The quaint ways and quick sagacity of two of them, "Chicken" and "Scrag," who visit the caretaker's house on the look-out for table scraps, and share the contents of the dog's dish without risk, are amusingly described. These birds mate for life, and take turn about in hatching and protecting the brood. One of them is never absent from the nest from the time the first egg is laid until the young—which look like balls of soft down—are able to protect themselves. This care is the more necessary as both the eggs and young are destroyed by rats, weasels, and Sparrow-Hawks. Sometimes, of an evening, when the tide is low, the Wood-Hens take their families out on the beaches, and the Sparrow-Hawks watch for them there, and kill the young by scores. The Weka is, in its turn, destructive. Paradise Ducks (*Casarca variegata*), like the Wild Ducks of Australia, cover up their eggs carefully with a mat of down when leaving the nest, but the Wekas have an hereditary knowledge of the trick, and a young bird, which has never seen a Duck's nest, tears away the down to get at the eggs the moment it discovers one. If they find a hen's nest with the eggs uncovered, they always go through the motions of tearing away the nest before starting to eat the eggs. Although on friendly terms with the caretaker, they hide their own nests away from

him very carefully, and, if one of the pair come to the house for scraps for its mate, it always takes a roundabout track to the nest, and is careful to see that it is neither watched nor followed. They kill each other's young, so that every pair on the island has its own run, and no others are allowed to intrude. Mr. Henry considers these birds most valuable as insect-destroyers in an orchard, and observes that, if they were difficult to get, fruit-growers would be quite keen about them. On the table-land above the Otira Gorge, when crossing from the west coast, one often sees the Weka and her brood running along the track in front of the coach. When the first brood have been hatched and are fairly grown, the hen hands them over to her mate, and starts to lay again. The male shepherds the young persistently, apparently gives them all the food he can find, and, if they call for help in danger, he is with them in an instant, keen for a fight. When he finds a rat he tackles it instantly, though not strong enough to kill it single-handed. The squeaking of the rat is a signal to another Weka, who rushes up and helps to kill the enemy.

It is surmised that the Kakapo, or Great Ground-Parrot—the only Parrot which does not fly—had once the use of its wings. Finding in New Zealand no ground enemies and abundance of food and cover, it ceased to use its wings, which only subjected it to the risk of being taken by a Hawk, and as the wings degenerated from disuse, the legs developed in the same proportion, so that now it is a good runner. Tree Parrots in Australia are awkward on the ground, but the seed-eating Grass Parrots all run quickly. In addition to the islands, which are so convenient a sanctuary, the Government has two preserves for Kakapos on the mainland. They are night-feeders, though fruit-eaters—an unusual combination, as Mr. Henry points out. Like the Owls, they have a disc of prominent feathers about the eyes, and near the nose those long hair-like feathers or feelers common to nocturnal birds or those which have their home underground. They are so feeble, so unconscious of having enemies, that one may go up to them without their showing any alarm. If touched they are resentful, but if you sit down beside the bird a little while in daylight it tucks its head calmly under its wing and goes off to sleep again. Unlike the Weka, the Kakapo hides her nest away carefully from her own mate, who is generally both fat and indolent. These birds only breed every second year, and the curious point about them is that all the birds lay in the same season—a peculiarity which naturalists are quite unable to understand. Their call at night is very much like the booming of a Bittern in the swamps, and the night-drumming is only heard just before the nesting time. In the following year they are silent. The birds are always plentiful where wild berries grow thickly, and New Zealanders speak of such spots as "Kakapo gardens." The young, when first hatched, are

covered with a snow-white down. The holes so frequently found in their gardens, where they have scratched, suggest that they dig for truffles, and it is known that they eat mushrooms.

The Roa, another of the wingless birds, is distinguished by its wonderful beak—long, slender, and slightly curved. This, too, is a night bird, and rarely found far away from forests. It uses its long, Snipe-like bill just for the same purpose that the Snipe does its bill, except that it works in harder ground, and its chief food is earthworms. Its sight is poor, but Nature, as is usually the case, compensates for this defect by sharpening up its sense of smell and hearing. When seen in the moonlight, it moves slowly along with its bill outstretched, and often stands with the point of its bill resting upon the earth, as though either trying to scent the worms or feel for their movements underground. The peculiar thing about their breeding habits is that a young bird a week or so old and a fresh egg are frequently found in the same nest. Like the Wekas, the parent Roas share the cares of a family, though in another way—the male does all the hatching. The young are born with all their feathers like mature birds, and apparently all their intelligence as well, for as soon as they are hatched they start to search for their own food, and require no hints as to the best place to find it. The single egg, like that of the Mutton-Bird, is exceptionally large. Thus, in the nesting season the hen, always in fine condition, weighs about 8 lbs., the "hatcher" 5 lbs., and the egg 18 ozs.

The Grey Kiwi is described as a shy, gentle little thing, that seems to depend wholly for its existence on its ability to hide away in lonely places. They are shaped much like the Roa, but have straight beaks. It is a light-loving bird, that feeds by day, mostly upon white grubs. It resembles the Roa in its breeding habits, laying one large egg, hatched by the male bird, but while in the nesting season the pair of Roas are rarely separated, the Kiwis are just as rarely found together. The young are very beautiful little birds, quite silent, but so alert and cautious that if you take your eyes off them for a while they disappear. When grown, they have a shrill whistling note, which Mr. Henry describes as like the guard's whistle in a railway train heard a little way off. In summer both the Roa and the Kiwi like to go up to the high ground, affecting naked mountain crests, and their pathways are clearly marked. The Kiwi builds in a short burrow underground, generally protected at the mouth by the root of a tree. In the case of both the Roa and Kiwi, it looks as though the male bird hatched continuously for about 30 days. They go on the nest fat and plump, and by the time the young bird is hatched are feeble skeletons.

## Lighthouses and Bird Observations.

ABOUT twenty years ago the Zoological Society (Melbourne) distributed to the light-keepers on the Victorian coast schedules to record data regarding the movements of birds, chiefly those that struck the glass of the lantern.

The data collected were scant and meagre, such as, for instance:—  
“Queenscliff, 30/10/85, 7.50 p.m.—Stormy-Petrel struck lantern, not killed; weather overcast.” “Cape Nelson, 6/10/85, 11.25 p.m.—Parrakeet struck lantern; weather dull.” “Wilson’s Promontory, 25/3/85, 1.30 a.m.—Sparrow-Hawk struck lantern, killed; weather misty.” “Cliffy Island, 18/11/85, 10 p.m.—Several Mutton-Birds struck light, one killed; weather misty.” “Gabo Island, 9/10/85, 4.30 a.m.—Two Plovers struck light; weather very hazy.”

Mr. W. E. Cordell, formerly for many years in the Department of Ports and Harbours, Victoria, has kindly furnished some reminiscent remarks on the subject. He states:—“I have come to the conclusion that migratory birds do not follow the coast line. If they do then they fly very high and by night. I am led to believe this by the small number of birds that have struck the various lights where I have been stationed. At Gabo Island, where I was for six years, the number was exceedingly small, and on no occasion was a body recovered. The lighthouse is built on an extreme point of land, and as the birds usually struck in stormy weather they were carried into the sea. At the Eastern Light, South Channel, Port Phillip, I was never troubled with birds. At Cape Otway I can only remember one instance of recovering a bird that had struck the light, and it was not a migratory one. But I have had Parrakeets in numbers sitting on the handrail for hours at a time, at night.”

During the last twenty years ornithology, particularly field work, in a general way has made rapid strides, and it has occurred to the Australian Ornithologists’ Union that the ever-watchful light-keepers might again be approached with regard to recording observations respecting birds, especially migratory ones. Handy schedules have been printed, with concise instructions, and have been kindly distributed in batches to all Australian lighthouses through the goodness of the various State Harbour or Marine Departments. Indeed, the Union’s schedules have already reached extra-Australian parts, notably New Zealand and some of the Austro-Malayan localities.

The first acknowledgments of the schedules have come from Tasmania, through Mr. J. Adams, Secretary Marine Board, Hobart, with encouraging remarks and a willingness on the part of the light-keepers to meet the Union’s wishes.

Mr. E. Neilson, Superintendent, Table Cape, writes:—“During the seven years I have been at this station the only time that birds come about the lantern at night is during the latter part of summer, when some come in foggy or misty weather. They

do not strike the light with great force, and usually remain about the lantern till daylight and then fly away. I have never found birds dead about the tower. The kinds that come are all land birds. I have never observed any sea birds near the tower, day or night."

Mr. G. P. Huxley, Superintendent, Currie Harbour (King Island), writes:—"It is very seldom that any birds strike this lighthouse other than small sea-birds, and then only in calm, thick, rainy weather. They chiefly strike it on the west side, but not hard enough to kill themselves."

Mr. Wm. Hawkins, writing from South Bruni, states:—"There are no migratory birds in this locality excepting the Mutton-Bird, which appears in September and departs the latter end of April or early in May. In reference to birds striking the light, there have only been two occasions that I recollect. On both occasions the birds were Bronze-winged Pigeons and were stunned by the impact."

From Cape Wickham (King Island) Mr. Superintendent G. Johnston writes:—"The direction of birds striking the light is varied; in fact, I have reason to believe that this will not be a guide as to the direction of flight. For instance, a bird may be flying north and raise or lower its flight until it gets into the focal plane of the light, when it flies straight at it, perhaps at right angles to its previous flight. This is accounted for by catching small birds (that gather round the light in fine overcast weather) and putting them low down under the balcony. No matter how they take off, when they rise to the focal plane of the light they dash at it, sometimes from the opposite direction to that which you release them. Migratory birds that strike the lantern are Ducks of different species. Swans never strike the lantern, although they often fly past N.W. or S.E. about sundown—a sure indication of S.E. winds. Have made notes of this for 25 years and have never known it wrong. The half-caste islanders on the eastern side of Bass Strait always remove their boats for S.E. weather on seeing Swans fly over. The weather is always more or less overcast when birds strike the lantern; never to my knowledge in clear weather. The names of birds known to gather round the lantern in fine overcast weather are:—Flame-breasted Robin, Pink-breasted Robin, Dusky Robin, White-eye (*Zosterops*), Olivaceous Thickhead, Pallid Cuckoo, Bronze-Cuckoo, Larks, Ground-Parrakeet, and Summer-Bird (*Graucalus*), and on two occasions Bronze-winged Pigeons. Some larger birds flutter on to the lantern, but never strike hard enough to disable themselves. I will be pleased to forward any time information that the Union may request."

Mr. Tom Iredale, of Christchurch (N.Z.) writing under date 30/7/04 to the Hon. Secretary of the Aust. O.U., states:—"I noticed in the daily papers here that notices had been distributed to the lighthouses, and was very pleased, as I am certain much that is new will be the result. I am an Englishman, and have



only been out here two years, but all that I have observed tends to prove that much more migration takes place to New Zealand than is generally accepted. At Lake Ellesmere, in 1900, the first example of the Spotted Plover for the South Island was shot. The first specimen of the Little Whimbrel for N.Z. was also shot in June, 1900. In February, 1902, a specimen of the American Godwit was obtained; in March, 1902, a specimen of the Spotted Plover in breeding plumage; in July, 1902, the Red-necked Stint was added to the list, whilst in April, 1903, a specimen, or, rather, a pair of the Curlew Sandpiper was obtained. I believe I am correct in saying that these are all due to the efforts of one man, Mr. Edgar Stead. I think it would be too much to try to believe that the above are the only individuals that happen to reach New Zealand.

“Speaking of migration, on the night of the 5th May there was a migration of White-eyes over Christchurch. From 7 to 10 p.m. the air was full of their notes. It was a cloudy night, with an east wind, and the birds were flying very low, and next day odd parties were flying about and around the city. I saw 13 engaged upon the skull of a dead sheep one day the week after.”

The information is still very meagre, and contrasts strangely with recorded observations from European lighthouses; but it is the first step in a good work. One fact is notable—the flight of the birds which do strike the lantern cannot be as rapid as that of the migratory species of the Northern Hemisphere. There many are killed by the impact; here, at most, but stunned. A question suggested is—Are the flights on this side of the equator as dense or as rapid as those on the northern one? Stray specimens only are here recorded. It is too early yet, however, to form a definite opinion on the subject. When returns from the mainland lights, more particularly those of the eastern coast of Australia, come to hand, fuller information will doubtless be available. But it will be a matter of years' observation before really definite conclusions can be drawn.

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### The South African Ornithologists' Union.

WITH reference to the formation of the South African Ornithologists' Union, Mr. A. Mattingley, hon. treasurer Aust. O.U., has received from Mr. Alwin Haagner, hon. secretary of the African Union, the following communication, the latter part of which is virtually the same as forwarded to some British publications:—“It is very good of you to take such a kindly interest in us, and I can assure you it is very greatly appreciated by us all. Your balance-sheet proves very interesting, and will no doubt be a guide to us in our initial efforts. Of course, printing out here (Transvaal) is much more expensive than in Australia; but we hope to have ours done

in England. At present we only number 52 members, but they are really all enthusiastic ornithologists, and the Union was only founded on 8th April this year. We hope to bring our first No. out with the beginning of the new year, when I trust we can effect an exchange, which would be of mutual interest and assistance. Our subscription is one guinea, which I am afraid is a little under what should have been the amount.

"Will you please tender our thanks to your Council for their kind assistance."

Every member of the Aust. O.U. must be glad that in South Africa an effort is being made to encourage the study and protection of birds, and wish the new society all the success it deserves.

In connection with the founding of the South African Ornithologists' Union the following appeared in *The Transvaal Leader*, 9/4/04:—

"A number of gentlemen met in the Normal School, Pretoria, in response to a circular letter issued by Mr. A. K. Haagner. The object was to form an Ornithological Union for South Africa, and the attendance, and number of letters received on the subject, proved that the time was a most opportune one.

"Mr. W. L. Sclater, M.A., F.Z.S., presided, and representatives from all the South African colonies were present. Mr. Sclater opened the proceedings by calling upon Mr. Haagner to read his report on what had been done. The report showed that 40 gentlemen interested in the subject had sent in their names. These were divided amongst the colonies as follows:—Transvaal, 21; Cape Colony, 12; Natal, 4; Orange River Colony, 2; Rhodesia, 1.

"Dr. Gunning, F.Z.S., proposed—'That an Ornithologists' Union for South Africa be formed, and that a committee be appointed to draw up rules and to inquire into and report upon the possibility of publishing a journal.' This was seconded by Mr. J. A. Bucknill, M.A., of Pretoria, and carried unanimously.

"The committee elected was as follows:—Mr. W. L. Sclater, M.A., F.Z.S. (Director South African Museum, Cape Town); Dr. J. W. B. Gunning, F.Z.S. (Director Transvaal Museum and Zoological Gardens, Pretoria); Mr. J. A. Bucknill, M.A., Pretoria; Mr. A. D. Millar, Durban; Mr. W. Macdonald (editor *Transvaal Agricultural Journal*), Pretoria; Mr. J. A. Alexander, F.R.S. Edin., Johannesburg; and Mr. A. K. Haagner, M.B.O.U., Modderfontein, hon. sec. *pro tem*. It was decided to leave the framing of rules and election of officers to a subsequent meeting.

"Mr. W. L. Sclater then read an interesting paper on the history of similar societies, and the early South African pioneers of ornithology.

"After a hearty vote of thanks to the chairman the meeting terminated."

## Stray Feathers.

HONEY-EATER NEW FOR QUEENSLAND.—I send a skin which answers well to Gould's description of the White-fronted Honey-eater (*Glycyphila albifrons*), but the total length measurements do not quite agree, my bird being so much bigger.—FRED. L. BERNEY. Richmond (N.Q.), 3/8/04.

\* \* \*

KOLORA (*viâ* TERANG) NOTES.—About the beginning of the year I saw a small flock of Cockatoo-Parrots (*Calopsittacus nova-hollandiæ*) here, which is very unusual. I have never seen them so far south before, though once or twice I have heard of them being in the district.

Large flocks of Crows (or Ravens) have been hard at work lately turning up the ground in search of grubs. I noticed that the White-eyed and the Hazel-eyed were in about equal numbers. Last spring one of our *employés* discovered a young albino Crow. It was being fed by its black parents when first seen. He tried to capture it alive, but, as it could fly well, he inadvertently killed it in the attempt. It is now stuffed and in a glass case. The colour of the feathers is a rather creamy white; the beak and legs are also white.—G. L. DENNIS. Eeyeuk, 6/7/04.

\* \* \*

CROSSBRED PARRAKEETS.—The following is a description of cross between Pale-headed Parrakeet (*Platycercus pallidiceps*) and Yellow-vented Parrakeet (*Psephotus xanthorrhous*) in the possession of Mr. V. Heinrichs, Murtoa:—Bill light pink; head yellow; cheeks blue, with a beautiful pinkish tinge; back and upper tail coverts dark green, four centre tail feathers being dark green, other tail feathers being dark blue with light tips; breast and under tail coverts red; humeral feathers dark red; primaries and secondaries blue; wing coverts brownish-olive. The feathers have a scaly appearance, particularly about the head and neck. There is also a beautiful pinkish tinge on the extreme edge of the back and neck feathers. The length of the birds is about 14 inches, and they are very plump, and very strong on the wing. They are very wild, and show no inclination to talk, although Mr. Heinrichs (who is a bird-fancier) has used different methods to induce them to do so. He reared three of them in 1898, two of which are still alive.—J. A. HILL. Kewell, 16/8/04.

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COOMOBOOLAROO (Q.) NOTES.—The great numbers of Cockatoo-Parrots which the drought drove here from the west, and which were breeding about here last winter, have quite disappeared. The pink-eyed Little Dove (*Geopelia cuneata*), which is a very rare visitor, was here in great numbers all last winter,

and nests and young birds were plentiful, but I have neither seen nor heard them for months, so conclude they have also gone west again. Another little bird that has been conspicuous by its absence since the return to good seasons is the Orange-backed Wren (*Malurus melanocephalus*). They were always fairly plentiful in the long grass, and we were seldom without a little flock of them in our garden. For some months past I have noticed that we never see them now, and I cannot recall having once seen any since the drought broke up. My brother has noticed the same thing, and has not seen any during the past two years. I have noticed the other kind, which we find in our scrub—*M. lamberti*, I think.

The Pallid Cuckoo, which either leaves us altogether in the winter, or else is so quiet that it is unnoticed, has been much in evidence all this winter, though I find in my notes for last winter that the first one was heard on 18th July. Fairy Martins (*L. arid*) seem to have been with us all the winter, and have been interesting themselves in some old nests under one of the verandahs, putting on spouts, &c., but so far, I believe, have not laid. We always have one or two pairs of the Barred-shouldered Dove (*G. humeralis*) in the garden, and one pair has brought out two clutches of young since the beginning of April last, and is now repairing the nest for a third attempt. Good luck to them! Last year the first Channel-billed Cuckoo (*Scythrops*) was heard on 6th September, and Dollar-Birds (*Eurystomus*) on 10th October.—CHAS. A. BARNARD. 10/8/04.

\* \* \*

FINCHES IN NORTHERN QUEENSLAND.—A short note on the Finches of this district I think will reply to your query *re Munia pectoralis* in July's (1904) *Emu*, on page 24. All the species given below I have shot or taken alive within 25 miles either side of Northern railway line from the Lower Burdekin River to Warrigul Creek, a distance of about 80 miles, and from 700 to 1,500 feet above sea-level, mostly ironbark and box country, with plenty of wattle (*acacia*).

Spotted-sided Finch (*Steganopleura guttata*).—A few always to be found on the Cape River.

Chestnut-eared Finch (*Taniopygia castanotis*).—Very common all over district.

Banded Finch (*Stictoptera bichenovii*).—In the gullies under the ranges; fairly common.

Chestnut-breasted Finch (*Munia castancithorax*).—Common in wet seasons.

White-breasted Finch (*M. pectoralis*).—Saw first specimen in 1899, taken on Campaspe River; got a nest 26th April, 1895, inside railway fence (homestead). Few to be seen here now. I have some alive in cage.

Plumhead Finch (*Aidemosyne modesta*).—Very common.

Red-browed Finch (*Egintha temporalis*).—I have brought this

handsome little bird from Cromarty, on the coast, and Sellheim on the Burdekin, but cannot get them to live long.

Black-throated Finch (*Poephila cincta*).—Common all over district. Have seen them catching and eating white ants (*termites*), the winged ones, any time after heavy rain. They seem to enjoy a feed of ants.

Gouldian Finch (*P. gouldiae*).—Common in the season, December to May. They breed here in holes in the various trees. They leave after the young ones are able to feed themselves. They seem to go northward.

Crimson Finch (*Neochmia phacton*).—Not common, though often to be seen in pandanus flats.—JOHN H. SMEDLEY.

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THE BIRDS OF WONGAN HILLS, W.A.—Referring to Mr. A. W. Milligan's "Trip to the Wongan Hills" (*Emu*, Part I., vol. iv.), the White-tailed Cockatoo (*Calyptorhynchus baudini*) occurs plentifully on the lower Murchison River, as mentioned in the opening remarks of "Birds Occurring in the Region of the North-West Cape" (*Emu*, part 1, vol. iii.), that is, 200 miles further north than the Wongan Hills, which locality Mr. Milligan gives as the northern limit of this species. I can confirm his remarks that further north of the Wongan Hills his east and west limits of many species will not apply, as *Glycyphila albifrons* and *Acanthiza uropygialis* occurred right down to the coast line at Point Cloates, which is nearly 200 miles further west than these hills. Mr. Milligan has apparently used the word "eastward" in mistake for "westward" where he remarks that the Darling Ranges form "an insuperable barrier to their *eastward* movements" (*i.e.*, his ultramontane species). A more probable theory is that the great difference in vegetation (affecting the food supply) between the east and west sides of the Darling Ranges makes these hills a natural boundary for many species, as there is nothing whatever in their formation to prevent birds of feeble wing power crossing them. Were the vegetation the same on both sides of these hills there would probably be no difference in the species of birds occurring east and west of them. In conclusion, referring to Mr. Milligan's description of the supposed new Kestrel (*Cerchneis unicolor*), a glance at a map of this State will show that it is misleading to speak of Yalgoo as being in the north-west, as it is only 300 miles north (by east) of Perth and is hardly even a central district, but naturally belongs more to the south-west. Kestrels were numerous from the Gascoyne River to the Ashburton River in the north-west, but although I am now unable to refer to the collection of skins made by me in that district, I am very positive that they were all referable to the common form (*C. cenchröides*), and in my long residence there no Kestrel was ever observed to attack poultry. Any information extending the range of the new species will be extremely interesting.—THOMAS CARTER. Perth, W.A., 30/7/04.

CLARKE ISLAND (BASS STRAIT) NOTES.—It is a serious fact, at least as far as those who make a living by them are concerned, that the Mutton-Bird (*Puffinus tenuirostris*) is getting visibly scarcer. Last season the catch was far less than usual, and this year only about half the number have been taken, and these much under the regular size and weight. The scarcity may possibly be accounted for by this—namely, in November and December, when the eggs were hatching, terrific downfalls of rain occurred, which filled up a great many of the holes with sand and water. As far as being thin and small, one can only conjecture that the food supply was not so plentiful as usual. The principal island (Chappell) has again been leased for grazing sheep, as it is contended that no damage is done if they are taken off shortly before the laying season. Granted that they are not so harmful as cattle, still they do not certainly improve matters, especially as the stock is never off to time.

The Cape Barren Goose (*Cereopsis*) has laid very early this year, as some eggs were taken in June, and were then found to be hard set. Their breeding season is somewhat hard to define, as one will also get fresh eggs in September. This is in itself somewhat of a protection to the bird.

The Wild Duck of any species is a *rara avis* this year, and one could spend a day amongst the numerous little lakes here and would then perhaps see only half a dozen.

The Brush Bronze-wing Pigeon (*Phaps elegans*), on the contrary, is very numerous, it being quite a common sight to see seven or eight together. Their invariable haunts are under the wild cherry (*Exocarpus*) bushes, where they feed largely on the old cherry-stones amongst the dead leaves at the foot of the tree.

Brown Quails (*Synæcus australis*) are also in force. It is curious to notice the difference between the birds that frequent the uplands and those that prefer the plains. The former will be large and strong on the wing, while the latter are often so feeble that they will only fly a few yards, and one can then often catch them. They are mostly very thin.

The Olive Thickhead (*Pachycephala olivacea*), which breeds largely here, is noticeably numerous, but the different species of Honey-eaters are scarce as yet. These, however, do not make themselves conspicuous until August and September, lying close during the winter months.

I have not seen a Black Crow-Shrike (*Strepera fuliginosa*) for months; generally these birds are a most constant companion, frequenting the sea-beach and feeding on the numberless sandhoppers that exist in the cast-up sea-weed.—J. D. MACLAINE.  
21/7/04.

\* \* \*

REMARKS ON CERTAIN MELITHREPTI.—About three years ago Mr. Fred. L. Berney forwarded from Homestead (North Queensland) a Honey-eater which I could not altogether recognize. He

kindly caused other specimens, taken by Mr. J. H. Smedley, to be forwarded later. Judging by this material (four skins) there appear grounds for making a new variety, if not subspecies.

The new bird most resembles *Melithreptus lætior*, from which it differs in its general darker tone of colouring and in the bare space round the eye being *greenish-blue* instead of *bright yellow* (Gould) or *greenish-yellow* (Hall-Rogers).\* It has been stated that *M. lætior* may be only a very fine example of *M. gularis*. *M. gularis* is a much heavier species, and otherwise quite distinct. It has been taken in Victoria, where *M. lætior* is never seen, and appears to be the mainland form of the still larger *M. validirostris* of Tasmania. Mr. A. J. North mentions that *M. lætior* is found in the Gulf district of Northern Queensland† and in the event of the "Check-List" Committee separating the Eastern from the Western and interior form I would suggest the name *Melithreptus carpentariana* for the North Queensland bird. Subjoined is its description:—

*Male*.—Head, nape, and ear coverts jet black; band round the nape of the neck pure white; upper surface from hind-neck to upper tail coverts greenish-yellow; wings dark brown or fuscous, the feathers narrowly margined with grey or light brown; tail dark brown, the feathers more or less margined with greenish-yellow; cheeks white; rest of under surface (including under wing coverts) buffy or ashy white, darkest on throat, and blending into a distinct blackish chin. Bill black; tarsi light-coloured or yellowish; bare space round the eye pale greenish-blue.

*Female*.—A little less inferior in colouring and size.

*Young*.—Upper surface, including the head (excepting the nape stripe, whitish), has a greyish-brown tinge, with the rump and upper tail coverts only yellowish; under surface darker, also greenish skin round the eye darker than in adults. Bill yellowish (like the feet) except the point of the upper mandible, which is blackish.

*Dimensions in inches*:—Male.—Total length, 5.75; culmen, .5; wing, 3.24; tail, 2.5; tarsus, .75. Female.—Total length, 5.5; culmen, .5; wing, 3.14; tail, 2.4; tarsus, .75. Young.—Total length, 5.0; culmen, .5; wing, 3.05; tail, 2.3; tarsus, .7.—A. J. CAMPBELL.

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SURVEY CAMP NOTES, 1903. — 14th July. — Betcherrygahs (*Melopsittacus undulatus*), Martins (*Artamus leucogaster*), and Peewees (*Grallina picata*) breeding on Clermont lagoon.

24th July. — Grey Flycatchers (*Myiagra albiscapa*) with young; Magpies (*Gymnorhina tibicen*), with nest, chasing all and sundry (Peak Downs).

18th August. — Cotherstone. — Channelbill (*Scythrops nova-*

\* *Emu*, vol. i., p. 101 (1902).

† *Proc. Roy. Soc. S.A.*, vol. xxii., p. 151 (1898).

*hollandiæ*) calling at night. Fire-tail Finches very numerous; also Quail, especially small Chestnut-throated ones (*Turnix pyrrhotorax*); large grey Stubble (*Coturnix pectoralis*), and Brown (*Synæcus australis*) scarcer. Eggs and young of small sort frequently seen.

25th August.—Blue Mountain Parrot (*Trichoglossus nova-hollandiæ*) is nesting.

26th August.—Young Yellow Robins (*Eopsaltria magnirostris*) fully fledged; Fork-tail Jays (Drongo-Shrike) just hatched; Sulphur-crested Cockatoos nesting.

28th August.—Caught young Squatter-Pigeon (*Gcophaps scripta*). Saw Sparrow (*Accipiter cirrhocephalus*) and Brown Hawks (*Hieracidea orientalis*) nesting.

29th August.—Caught young Pale-headed Parrakeet (*Platycercus pallidiceps*). Saw young Betcherrygahs.

30th August.—Tits (Yellow-rumped) (*Acanthiza chrysorrhoa*) left nest at camp.

1st September.—Black-faced Graucalus (*G. melanops*) with young in nest.

4th to 20th September.—Shepherd's Companion (*Rhipidura tricolor*) with nest about 6 feet from cook's fire, not a bit afraid and not minding smoke. Male and female relieved one another on nest at intervals. Cook reported that about 11 o'clock on 12th they made a great commotion, and, surmising that an egg had hatched, he looked and found it was so. Magpie (*Gymnorhina tibicen*) with nest chased us morning and evening for about a quarter mile, snapping its bill within a few feet of our heads.

Clermont.—16th October.—Wood-Swallows (*Artamus leucogaster*) with nest in back yard in Clermont.

18th October.—Channelbill (*Scythrops nova-hollandiæ*) heard at night.

14th October.—Numbers of Bee-eaters (*Merops ornatus*) (about 50) roosting in young Moreton Bay ash, disturbed by storm at sunset, flew to more rigid perch in a fig-tree.

Retro.—1st November.—Solitary Spine-tailed Swift over Retro, 2 p.m., flying south-east. No others seen.

4th November.—Four red-spotted eggs of small yellow-breasted, white-throated bird found in beautiful hanging nest.\*

6th November.—Four eggs of Black-faced Graucalus (*Graucalus melanops*)—three fresh, one partially incubated.

9th November.—Red-capped Robin (*Petroica goodenovi*) in garden. Bower-Birds (Spotted) (*Chlamydera maculata*) taking young mandarin oranges to bower; boundary rider reported finding bower strewn with these and the usual snail shells.

20th December.—Shot two Spotted Bower-Birds devouring the grapes.

27th December.—Peevees (*Grallina*) with young in the nest referred to in July.

\* ? White-throated Fly-eater (*Gerygone albigularis*).—EDS.



Clermont.—3rd January, 1904.—Bee-eaters feeding four young ones on my garden fence, Clermont.

Langton.—8th January.—Quail very numerous on volcanic downs, especially small chestnut-throated variety. Caught young ones.—J. B. C. FORD. Clermont (Q.), 15/1/04.

### From Magazines, &c.

At a meeting of the Linnean Society of N.S. Wales, held 27th April, 1904 (see Proc. Linn. Soc. N.S.W., vol. xxix., part 1, p. 130) Mr. A. J. North exhibited, amongst other interesting northern Finches, the rare *Munia flaviprymna* (Gould) and *Poephila atropygialis* (Diggles), recording that he considered *P. nigrotecta* (Hartert) is a synonym of the latter species—a conclusion previously pointed out in another work.\*

\* \* \*

Mr. G. A. Keartland is the proud possessor of the only known clutch (two eggs) of the scarce Guttated Bower-Bird (*Chlamydera guttata*). One egg was previously described by Mr. A. J. North. The description of the second, by the same author, has appeared in the "Records of the Australian Museum," vol. v., p. 131 (1904), together with an illustration (plate xvi.) of a nest, the usual flattish, twig-built structure characteristic of the genera. The nest was found during January, 1903, in a native orange tree (*Capparis*), and contained three young.

\* \* \*

Mr. J. C. GOUDIE contributes an agreeable article—"A Summer in South Gippsland"—to the *Victorian Naturalist* (August, 1904), wherein he records some of his pleasant reminiscences of forest-loving birds. On climbing a few feet to look into a Lyre-Bird's nest he was anticipated by meeting "eye to eye" a tiger snake gliding out instead of seeing the wonderful *Menura*. Mr. Goudie mentions having seen a small company of Ground-Wrens (*Hylacola cauta*). This bird has never been previously recorded so far east, it being a dweller of the Mallee and more western parts. However, Mr. Goudie hails from the Mallee himself, and with his good field experience he should be familiar with both the species named and its congener, *H. pyrrhopygia*.

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THE rediscovery of the Ewing Tit (*Acanthiza ewingi*), as recorded at the Hobart Session of the Aust. O.U.,† has raised considerable interest. According to the Proc. Linn. Soc. N.S. Wales, vol. xxix., part 1 (issued 10th August, 1904), p. 58, Mr. A. J. North exhibited at a meeting of the Society held 30th March, 1904, skins, nest, and eggs of *A. ewingi*, together with those of *Acanthornis magna*. The birds, it was stated, were received in the

\* Campbell, "Nests and Eggs," p. 496 (1900).

† *Emu*, vol. iii., pp. 159 and 162.

flesh by the Trustees of the Australian Museum two years previously. With regard to the Ewing Tit, had Mr. North critically examined the birds sooner, he would, no doubt, have anticipated the work of the Aust. O.U. at Hobart. Possibly the fact that he has been in ill-health for a long time, and has had to entrust much of his work to others, may account for the oversight.

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*Bulletin of the Philippine Museum* (No. 4, issued 15th May, 1904) contains a comprehensive paper by Mr. Richard C. M'Gregor on "The Birds of Calayan and Fuga, Babuyan Group." Mr. M'Gregor, who visited the islands, deals in a scientific style with a collection of over 1,000 skins, which was made on Calayan and Fuga, which belong to a group of small islands due north of Luzon. A few species from Luzon and other islands are also dealt with in their proper place.

The following species are described as new, viz.:—*Turnix worcesteri*, *Macropygia phœa*, *Otus cuycensis*, *Otus calayensis*, *Eudynamis frater*, *Zosterops flavissima*, *Hyloterpe fallax*: while 15 species are enumerated as new for the Philippines. The skins of *Turnix worcesteri* and *Hyloterpe fallax* are figured in accompanying photo-blocks. Strange to state, the type-specimen of the former (an adult female) was purchased in the Manila Market—date, 30th August, 1902.

\* \* \*

*The Avicultural Magazine*.—The July issue (vol. ii., No. 9) lacks the coloured plate which has been such a prominent feature of this publication of late, but as a well-subscribed-to fund has been initiated to continue the series it will not be long before these admirable pictures are continued. (In this connection the question arises, Is the mother-land once more taking a leaf from the book of her Austral daughter?) Save the continuation of the article on Bronze-wing Pigeons (noticed elsewhere) there is not much to interest Australian readers in the present issue. Some nest-boxes to encourage the breeding of birds are photographed, and call to mind some much rougher, and possibly equally effective, ones seen by the Melbourne members of the Aust. O.U. who visited Adelaide some two years ago, and had the opportunity of seeing what members of the Mellor family were doing for the native birds.

\* \* \*

*Bird-Lore*.—The Herring Gull forms the subject of an illustrated article in the May-June number (vol. vi., pp. 86-88). The writers describe the colonies of these birds on Lake Superior. Other articles in the magazine deal with "A Tamed Ruffed Grouse," "A Blue Jay Household," and "Tree-Swallows in a Bird-Box." In addition to the usual budget of news for American ornithologists there are two good coloured plates of members of the Warbler family. Yellow seems the pre-dominating colour in them all. Dealing with the necessity

for accuracy in all observations of bird life, Mrs. Mabel Osgood Wright (one of the editors of the "Audubon Societies' Section"), referring more particularly to "popular" writings on the subject, says:—"In all nature work, and especially in all investigations relating to birds and their protection, should the greatest accuracy be maintained." It is hardly possible to miss the point of this.

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*The Geelong Naturalist*.—Under the title "A Record Clutch of Emu Eggs" this magazine (pp. 25, 26) records an excursion by Messrs. G. Russell, H. Anderson, and Yuille, during which (the former records) they found an Emu's nest containing 19 eggs, and also a brood of young Emus feeding with the hen. "With some difficulty I caught one or two to bring with me to rear as pets, but they all died within a fortnight." In a subsequent paragraph, headed "Emu of Tasmania," the Rev. T. J. Ewing, F.L.S., &c., is quoted as having listed the Tasmanian Emu as of the same species as the mainland one (*Dromæus novæ-hollandiæ*). A record is given (quoted from *Launceston Advertiser*, 26/10/37) that importations of these birds had been made from Australia 70 years ago, and the sentence goes on to say—"If these birds were prolific (referring to two offered for sale by Mr. G. Fisher on same date) may be they were the original stock of most of those domesticated in Tasmania in 1852, when, as Ronald Gunn states, tame Emus of Australian breed were common in the island."

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IN the May issue of *The Avicultural Magazine* Mr. E. L. Bertling, head keeper of the Zoological Society's Gardens, contributes some notes on the nesting habits of the Brush-Turkey (*Catharturus lathamii*). Up to the time his paper was written no young had been hatched. The author is surprised "that many of the eggs do not get broken, considering the rough treatment they undergo by being stamped upon, as they are particularly thin-shelled;" but what has puzzled him most is the question "How does the male know the exact moment that the female is about to lay? for he opens the heap at the right moment. Is it purely instinct, or an absolute knowledge of the lapse of time?" "On the Difficulty of Sexing the Bichenov Finch" (*Stictoptera bichenovii*) is the title of a paper by Arthur G. Butler, Ph.D., who considers that "the true sexual differences" have yet to be discovered. Writing on a preference shown by Bower-Birds in captivity for blue, and recording an experiment he made at the Zoo with pieces of red, pink, and two shades of blue cloth, Mr. A. E. L. Bertling asks the interesting question—"Is there any connection between their preference for blue and the brilliant blue of their eyes, which is a colour seldom found in birds or mammals except as a sport or in a few domestic species?" Has the same preference for blue been observed amongst birds in a wild state?

WESTERN N.S. WALES IN 1859-60.—In the *Proceedings of the Royal Society of Queensland* (vol. xviii.), recently to hand, is a paper read before the society on 17th October, 1903, recording a trip which the author made from Sydney to what was then the "Never Never" of New South Wales—somewhere about Dubbo and Fort Bourke, as it was then known. Until the left bank of the Barwon River was reached, 20 days after the party had left Sydney, no bird-life save Budgerygars and Galas had been noted; but here reed-beds occurred—"which gave shelter to innumerable wild-fowl. . . . On the clear water hundreds of Ducks and other aquatic birds floated lazily. . . . Numbers of White Cockatoos screamed discordantly at us from the branches above our heads, and some of the Budgerygars and Galas, which were so numerous along our track through the dry country, were there to give us a welcome. Of Crows and Hawks we saw but few, but pretty Crested Pigeons were not uncommon. . . . the little 'Shepherd's Companions,' called Jerica-jerica by the blacks, were with us always."

[I was in the neighbourhood of Orange, a village (then) through which Mr. Norton passed, until 1863, and regret exceedingly that in the fertile tract surrounding that now prosperous town he had not time to observe the many birds. We schoolboys saw far more than he did.—H. K.]

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MELANISM AND ALBINISM IN BIRDS.—Dr. A. G. Butler, in continuing a study in the *Avicultural Magazine* (June, 1904, vol. iii., No. 8, p. 242), which was begun in the *Proc. Zool. Soc.*, pp. 282-287, deals with this most interesting problem. He had originally contended that there was strong evidence to show that the first bright colours produced were from blue to black, and from yellow to white, and that white indicated delicacy of constitution if acquired by reversion. In a later number of *The Zoologist* he contended that "albinism in birds is due to constitutional weakness," and in the article under notice he pursues the theme. Melanochroism in old age he is now convinced is the result of unusual constitutional vigour. The theory, so often held, that melanism is produced amongst birds by unsuitable food in captivity he does not favour, but says:—"If melanism were due to unnatural conditions apart from vigour of constitution, albinism might also be the result of artificial conditions apart from delicacy of constitution." Some of the arguments in support of his contention seem very feasible; but, after all, one feels that only the beginning of the problem has been attacked. Many instances of melanism and albinism are on record amongst our own birds—specimens of both phases exist amongst collections—and the matter is one on which so much further light is needed that it is to be hoped other observers will devote some time to the study.

SOME "AUDUBON" WORK.—One of the most praiseworthy features of the work of the Audubon Societies of U.S.A. is the constant endeavour they make to keep their aims before the public. During the last year or so no less than 10 "educational leaflets," one of them (No. 3) in duplicate, and two introductory pamphlets have been issued. These, though published one by one in *Bird-Lore*, are intended for use in schools, and are admirably adapted for the purpose. In the leaflets every possible detail of each bird is given, all its known habits as well, and the reasons why it should be protected. Eight of the leaflets are from the pen of Mr. W. Dutcher, whose name is recognized as that of an authority all over the world. One preparatory leaflet ("Ornithology in Schools") was written by Mr. Wilson Tout as a paper for the Nebraska O.U., and the first leaflet, on the Night-Hawk, is contributed by Mr. F. E. L. Beal, Economic Ornithologist to the U.S.A. Department of Agriculture. Most careful investigations have been made as to the food of each species figured and described, and though the results are presented in a statistical form, it is one which is readily "understood of the many." As Mr. Tout says, "the small boy is one of the chief offenders," and we here in Australasia should recognize the fact, and, in taking precautions against his inroads, emulate the good example set by our North American brethren.

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*The Ibis* for July (1904) contains an article "On the Birds Collected by Mr. Robert Hall, of Melbourne, on the Banks of the Lena River between Gikalowa and its Mouth," by Ernst Hartert, Ph.D., F.Z.S., with an introduction and field notes by Robert Hall, C.M.Z.S. Eighty-two species are catalogued, and three interesting nesting-places, *in situ*, from photographs, are given, but unfortunately the block depicting the nest of *Emberiza aureola* has been placed upside down.

In his preface Dr. Hartert states that "the collection made by Mr. Hall on the Lena is of great interest, as our knowledge of the details of distribution of birds in Siberia is very limited. It is interesting to note the forms of the Upper Lena differ in some cases from those of the lower portion of the river. Near Gikalowa forms inhabiting the Baikal district were found breeding, while the specimens from further north are referable to the North Siberian sub-species.

"The journey having been rapidly made, and the collections having been entirely formed along the river, Mr. Hall can only have obtained specimens of a portion of the birds that inhabit that district of Eastern Siberia, and this is hardly sufficient to give us an idea of the avifauna, except so far as it is exhibited in summer on the river bank. The skins are mostly much worn and badly prepared, so that some difficulty often presents itself in making out the sub-species in question. Never-

theless the collection increases our knowledge of Siberian ornithology considerably, and we are much indebted to Mr. Hall for his energetic enterprise in making it."

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IN the "Records of the Australian Museum," vol. v., p. 125 (1904), Mr. A. J. North describes a new Thickhead—*Pachycephala howensis*—from Lord Howe Island, which is closely allied to *P. gutturalis* of Australia. Mr. North also refers to a variety found in South Australia which he believes to be intermediate between *P. gutturalis* and *P. occidentalis*, and for which he proposes the name *P. meridionalis*. The new variety is like the Western bird—*P. occidentalis*—"but has the basal portion of the tail feathers of a slightly darker grey and the blackish-brown apical band darker and broader."

Is not this another case of hair-splitting as to nomenclature? Such widely different environments as those of the Western Australian Thickhead referred to and those of such a much more eastern and much more isolated species as the one recorded from Lord Howe Island—an ocean-surrounded habitat—are probably more than sufficient to account for greater differences in the plumage of any given species than those described. When an intermediate species is acknowledged, as by Mr. North in this case, are not the probabilities that this question should be answered in the affirmative all the greater? Differences in closely allied species (see Mr. A. W. Milligan's paper in this issue, page 48) are "not always constant or apparent," and there seems no doubt that mature and immature birds have been classed as different species. Mr. Milligan records "many variations in the colour of *P. occidentalis*, which have been more or less relied upon as distinguishing characteristics in allied members of the genus." Hence arises another question which must be considered—Are the specimens newly named a fair average of, say, a whole year's collection (which would include every phase of plumage) or are they (possibly it only) some which have been obtained during only one month in the year? It is questionable whether plumage phases have had due attention paid to them by collectors of Australian birds, and again more manifest that a great deal of revision on the part of the "Check-List" Committee of the Aust. O.U. will be required.

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THE STRAW-NECKED IBIS (*Carphibis spinicollis*).—A curious example of the economy of nature has been given in the Western District of late years, in connection with the grub pest. A small yellowish grub, about three-quarters of an inch long, began to play havoc with the pastures, revelling in the richer soils. This grub burrows just beneath the surface of the soil, and cuts off the stems of the grass, which then, of course, dry up, and are blown away. The grubs begin work in the early autumn, and keep on until the winter rains kill them off. Two years ago

the autumn was a very dry one, and little rain fell until June. The grubs did a lot of damage; but they were hardly at work before large flocks of the well-known Straw-necked Ibis came along, from the north, and commenced a strong attack on them. As the autumn wore on, the flocks increased both in number and size, until, in a single paddock, there would be some thousands of the birds at work. As the Ibis is a big bird, he consumes a huge quantity of grubs, and he seems to feed pretty well all day. At that time, driving anywhere along the roads through the grub-infested districts, huge flocks of Ibises could be seen covering two or three acres at a time—one solid regiment of birds, all diligently plunging their long bills into the soft earth. At sundown they furnished a very pretty spectacle as they flew, in immense flocks, up into the timbered country, where they roosted. The writer one evening counted seven huge flocks in the air at once. Although big and rather ungainly birds, the Ibises can fly splendidly, and when they get up from their feeding-grounds they rise several hundred feet into the air before they set out for their destination. They fly in long—and usually double—strings, shaped like a V, with the point in the direction they are flying. But the flocks are so huge and unwieldy that it is rarely that the V formation is properly kept. Sometimes there is an undulating single string stretching out for hundreds of yards. At first the grazier welcomed the Ibis, and guarded him almost as jealously as the ancient Egyptians used to protect their Sacred Ibis. But it was found that the birds tore the ground about so much searching for the grubs that it was doubtful whether the cure was not as bad as the disease. Last year the grubs were not so bad, and the rains came early, with the result that very few Ibises arrived, although there are still a few grubs about. Whether by some instinct the Ibises have got to know that there is nothing much for them down here, or whether, owing to better seasons, they have now good feeding grounds further north, is an open question. — "F.R." *The Australasian*, 6/8/04.

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THE BRUSH BRONZE-WING PIGEON. — Mr. D. Seth-Smith, F.Z.S., in notes on the habits in captivity of some specimens of these birds (*Avicultural Magazine*, May, 1904) gives what he calls "the miserable history of, possibly, the first young Brush Bronze-wing Pigeon hatched in England." Three birds were procured in January last, and placed in a warmed aviary. "High up in this aviary were some large bundles of brushwood, securely fastened to the walls and roof, and on these the Bronze-wings commenced to build a nest in earnest within two or three days of their arrival from a London dealer's shop. All three seemed to be building the nest together at first." One cock seeming the more favoured bird, the other was removed. "Nest-building now went on in earnest, the hen remaining aloft while the cock fetched twig after twig. I

noticed in this case a habit that I have before observed with some other doves—namely that, when building, the cock generally alights with a piece of twig on the back of the hen, the object being doubtless to avoid disarranging the nest. Having settled on her back he bends his head over hers, and she takes the twig and arranges it in its place while he descends for another." Ten days after their arrival the first egg of *Phaps elegans* was laid, the second next day, and on 9th February one young bird was hatched. On 22nd February, when the young bird was getting well fledged, the parents appeared anxious to nest again, and next day started another nest, still feeding the young bird. On 2nd March two eggs were in new nest, birds sitting. Next day the young one was on the ground "in a very bad way, and evidently starved." It died on 4th March. The second brood was only a partial success, and whilst they were still unable to feed themselves the parents were building hard at another nest, and the young birds were found with their crops empty. Three photo-prints of the nests are given. Continuing his remarks on *P. elegans* in the next issue of the above-named magazine (pp. 263-266, vol. ii., No. 9, July, 1904) the author records a successful hatching, and makes some remarks which are worth noting. On 3rd June "two remarkably strong birds left the nest, strong fliers," and the parent birds had another nest and were sitting well. "The nesting habits of *P. elegans* seem to be just the same as those of *P. chalcoptera*; the male appears to select the site for the nest, and having found what he considers a suitable site invites his mate to inspect it by his oft-repeated 'Hoop, hoop, hoop.'" Details of the structure of the nest are given, as well as of some curious habits of the birds whilst building. But what ought perhaps to more seriously engage the attention of Australian ornithologists is the following passage:—"It is extremely strange that so excellent an observer as Gould, who must have come across many of these birds, should state that 'the sexes differ so little in their plumage that dissection is requisite to distinguish them,' for not only is it perfectly easy to distinguish the sex of the adults at a glance, but the young when in the nest are distinguishable by the brighter and deeper tints of the young male." Has Mr. Seth-Smith realized the advantages he had over Gould? The latter saw them only in the wild state, when impossible to handle.

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*The Auk*.—In vol. xxi., No. 3, pp. 322-333, Mr. P. A. Taverner faces a difficult problem under the title "A Discussion on the Origin of Migration." He asks "Why should a bird leave a warm land of plenty to journey to a country but half recovered from the frozen embraces of an arctic climate?" Proceeding to mention a few of the many theories that have been put forward on the subject, he cites "the most important and the most generally received." Starting with one which supposes "that the northern nesting stations are safer than the tropical ones," Mr.



Taverner goes on, by what may be roughly called destructive analysis, to the Darwinian theory that the movement is due to "a natural desire of the individuals to disperse during the breeding season," which opinion he advances some logical arguments against. One fact deserving attention is thus stated:—"On the whole I doubt very much whether the bird population in the breeding season is any less per given unit of territory than at other times." Dr. A. R. Wallace's idea, propounded in "Island Life," that "the migrants are in search of soft-bodied insects suitable for nestlings," is next considered. In answer to this it is contended—"It may be objected that each species requires its own special food at the critical nesting period, which may not be obtainable everywhere. Now, if there is any truth in our present evolutionary theory, great changes in food habits must have occurred in all our species. . . . Food habits could never have originated migrations, though migration has had a great influence in modifying food habits. It must be remembered also that migration is a dangerous undertaking to a race. . . . The one cause that seems adequate is . . . the sufficiency of the food supply." As to Mr. J. A. Allen's suggestion that "migration is the only manner in which a zoological vacuum in a country whose life-supporting capacity is a regularly fluctuating quantity can be filled by non-hibernating animals," Mr. Taverner considers it correct, but points out that there are arguments against this also. The conclusion arrived at is:—"These migrations, in their earlier stages, must have originated in a conscious seeking for food. In course of time the movement became habitual, and generations of repetition rendered it instinctive." This forces us back on the theory of habit—one of those put forward by Captain Hutton and Mr. J. Drummond, in a work noticed elsewhere—and after all hardly solves the problem why such extremely long and rapid flights as are taken by some species during migration—from Siberia to New Zealand, perhaps beyond—should occur, or the virtually entire desertion by certain species of one hemisphere to proceed to another at a definite time; and hardly answers the question why birds go hence to arctic regions. It would be more applicable to such facts as are recorded in two other papers in the same issue of *The Auk* on migration, in one of which the effect of altitude is discussed by Mr. Wells W. Cooke, and in the other ("Spring Bird Migrations of 1903") it is admitted in the first sentence that "bird migration is a very elusive subject." The author of the latter paper draws attention to the "general relationship between weather and bird waves," but admits that "it is not true that birds travel *only* with the aid of favouring winds; nor when the weather gets warm enough to be grateful to their sensibilities." In a subsequent paper (p. 347) Mr. J. A. Allen, one of the editors, has some remarks worth the consideration of our nomenclature committee. The present number also includes the 13th supplement to the "A.O.U. Check-List."

## Review.

### "THE ANIMALS OF NEW ZEALAND."

["The Animals of New Zealand: an Account of the Colony's Air-breathing Vertebrates." By Captain Hutton, F.R.S., President of the New Zealand Institute, and James Drummond. Christchurch, Wellington, and Dunedin, N.Z., Melbourne and London: Whitcombe and Tombs Limited. 1904. Pp. i.-xiv., 15-381.]

NEW Zealand has a fauna and flora so peculiarly its own that every attempt to solve the problems connected with either branch of the study must be welcomed by naturalists, ornithologists more particularly. Linked by many ties to the flora of the North-Eastern Australian coast and to New Guinea, by geological evidence as well, and sundered only (in the New Guinea portion of the belt to which it evidently belonged) by a narrow deep belt of sea (according to Dr. A. R. Wallace's physical map) from the Malay Archipelago, the question arises how it was that, as the authors of the present volume point out, up to the end of the Cretaceous age and well into the Tertiary, "so far as animal life was concerned, it [New Zealand] was the abomination of desolation, as the forests contained no birds, and the fern-lands no lizards except the Tuatara." Australia has evidences of many of the older forms of life—animals that have passed from northern zones (where most are now extinct) to this continent, that these bore probably so different a shape to what it does to-day. Did bird and animal life pass down to the mainland first, and, if it did, how account for the fact that so few forms passed over "the bridge" that linked it then to our mainland? *Moa* and our own form of *Dinornis* being closely allied, how does it come that the winged birds that did pass have so far differentiated from Australian species of the same families? And if some tentative speculations in Captain Hutton's paper on Cormorants have any validity (*vide The Emu*, vol. iii., part 1, pp. 1-8), and the theoretical opinion that these particular forms came by way of South America—and intermediate islands—is not the problem more involved than ever? That N.Z. birds should have more sombre clothing is hardly so remarkable, though Messrs. Hutton and Drummond specially call attention to it. There seems an unwritten law, in Austral-Malaysian regions, that the further north you go the brighter the birds' plumage becomes—and *vice versa*.

Of course, in the present handsomely got up work, one which is rather a popularly scientific than a scientifically popular book, the authors have not attempted to go into such abstruse questions. They have in preference confined themselves to matters which, while helpful to the naturalist, will be of value and great interest to the general public.

The section relating to *Aves* forms the greater portion of the book, and, as it is well illustrated and printed, may be cordially recommended to all. About 190 species, which is probably a full list of N.Z. birds (many Australian also), are described,

wanderers being omitted. Each bird has a fairly full description, both vernacular and scientific names being given. Scientists will probably regret the absence of references, but these would have unduly cumbered the book so far as general readers are concerned. At the conclusion of the birds there is a delightfully written article—"Vocal Characteristics of Some N.Z. Birds," taken from "Out in the Open," by the late Mr. T. H. Potts.

As to what happened during the Tertiary age the authors say :—

"Towards the end of the age in the world's history called the Cretaceous period New Zealand was a small group of islands with a very scanty fauna and flora; but later on, very early in the Tertiary era, it was gradually elevated until it attained almost continental dimensions, stretching away north through New Caledonia and Fiji, and joining the mainland at New Guinea. . . .

"Birds had only lately come into existence in the Northern Hemisphere, but, now that New Zealand was joined to the mainland, they moved south and colonized it. . . . Towards the close of the Eocene [period the northern land sank. New Zealand was then isolated, and it has remained so ever since. Yet it was visited every year by migratory birds from the North."

And so in the last respect it is to the present day. Among the most interesting portions of the book are those dealing with migration, confined not alone to the introduction, but occurring in the observations on the different species throughout the work.

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### Notes and Notices.

PAPERS RECEIVED.—From Dr. E. A. D'Ombrain, "Field Notes on Some Birds of the Casterton District (Victoria)." From Mr. Fred. Lawson, "A Visit to Rottneest Island" and "A Glance at the Birds of the Moore River (W.A.)"

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DR. A. B. MEYER, writing from Dresden, 8/8/04, desires to say, in reference to the doubt raised in the last issue of *The Emu* (p. 25) as to the eggs of the Kangaroo Island Emu being in that Museum, the "copyist" had made a mistake in the list by inadvertently writing *Dromæus ater* for *D. novæ-hollandiæ* when copying the names from the "British Museum Catalogue."

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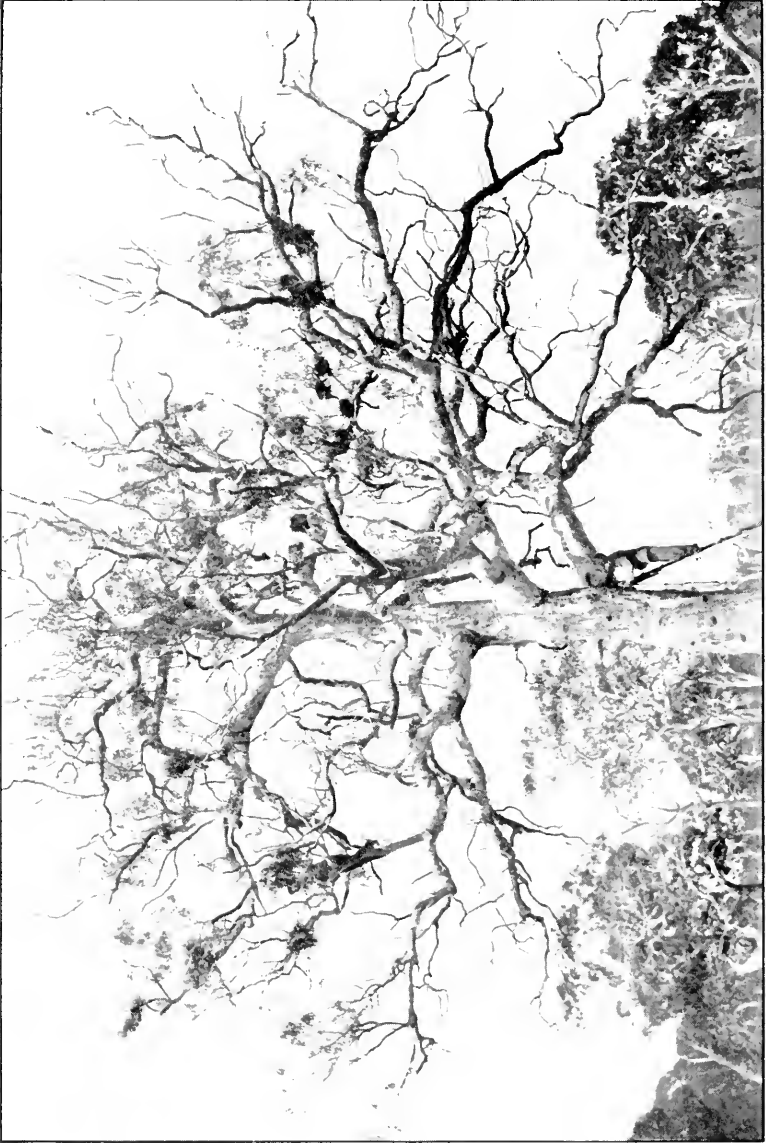
MEMBERS are again reminded that the fourth annual session of the Aust. O.U. will this year be held in Sydney on 28th, 29th, and 30th November. The Council will endeavour, on the occasion of its first *reunion* in such an (Australian) historical centre, to make the meetings a thorough success. Sydney is connected with days of Australian ornithology which are too apt to be forgotten—those when Cook and his collectors first landed (now recalled so vividly by the discovery of one of his cairns on the Queensland coast) and when many earlier observers whose names

have either been forgotten or grown famous sought out its treasures in bird-life. Gould, Swainson, and Lewin, Masters, Ramsay, Bennett, and other less known names—what suggestions they offer as the “bird” possibilities of a strip of coast whose flora is unique, whose bird-life has features, consequently, of its own. These facts alone should be an inspiration for a great gathering of present-day bird-lovers. In addition to the usual formal business, including the consideration of a “Check-List” of Australian birds, some most interesting papers will be read at the meetings, and Mr. Robert Hall, F.L.S., C.M.Z.S., hopes to deliver a highly popular lecture on his trip through Japan, Manchuria, and Siberia (regions possessing much interest at the present juncture). A “camp-out” should prove one of the most enjoyable features of the gathering.

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A NATIONAL PARK.—Scarcely any other civilized country under the face of the sun has done less in the way of preserving its original fauna and flora than Australia. We are really behind the English-speaking and even the Japanese race. New South Wales and New Zealand are the only honourable exceptions amongst our group. In the former a tolerable area of suitable land has been vested in trustees; in New Zealand several islands around the coast are so strictly protected that no one without a special “permit” may even land. Professor Baldwin Spencer and several others have continued an agitation which was commenced some years ago by the Field Naturalists' Club of Victoria, to have Wilson's Promontory—an area of land virtually of no use for anything else—proclaimed a permanent National Park, where the few species that remain of what in a few years will be obsolete (though really typical) may have room to exist for a few years longer. Had our politicians the real interests of the country at heart they would act as statesmen in America have done—have areas permanently reserved for bird and animal protection—not make a pretence of doing anything, as in the case of the Victorian “National Park” at Wilson's Promontory, or some others that could be named. One of the most suitable areas in Victoria was “proclaimed” in the same way as Wilson's Promontory has been up to the present. Result—an invasion of 10-acre men, who cut down, burned, destroyed all shelter for our fauna and avifauna—went even beyond legitimate rights to do so. A further result—they cannot even make a living from their “blocks,” hence want to pass on. Now the same nonsensical process is wanted to be applied to Wilson's Promontory. Why not take a lesson from the Yellowstone reserve in America, or even from those nearer home, the two National Parks in New South Wales? In both the latter cases fertile country has been conceded. In Victoria the “selecting demon” has his eye on every inch of land—worthless or not—which may be burned and “cleared.”





Red Gum Tree (*Eucalyptus rostrata*) containing Seven Species of Brooding Birds.

FROM A PHOTO, BY D. LE SOUEF.

# The Emu

Official Organ of the Australasian Ornithologists' Union.

"Birds of a feather."

VOL. IV.]

5TH JANUARY, 1905.

[PART 3.

## Australasian Ornithologists' Union.

### SYDNEY SESSION.

THE fourth annual session of the A.O.U., which was held at Sydney, although not attended well numerically, was a decided success. The following members took part in the meetings:—From South Australia—Mr. and Mrs. John Mellor and Mr. J. W. Mellor; from Tasmania—Colonel W. V. Legge; from Victoria—Mr. and Mrs. Clifford Coles and Messrs. D. Le Souëf, A. J. Campbell, R. Hall, and A. Mattingley; from New South Wales—Messrs. S. Le Souëf, E. H. Lane, P. Peir, and E. N. M'Kie.

On Monday, 28th November, members met in session at 8 p.m., in the Royal Society's House, Elizabeth-street, Colonel Legge being in the chair. Apologies for their unavoidable absence were read from Captain F. W. Hutton (president), Dr. Geo. Hurst (vice-president), and others. A very encouraging annual report and balance-sheet (published elsewhere) were read by the hon. secretary and hon. treasurer respectively. An interesting report on "Observations by Lighthouse-keepers" was also presented.

A very able address by the president, Captain F. W. Hutton, F.R.S., on the "Geographical Origin and Subsequent Development of the Land Birds of New Zealand," was then read by the hon. secretary.

It was resolved to alter rule 4 so as to increase the number of members of Council from four to six.

Many new members\* were elected, also the following office-bearers:—President—Captain F. W. Hutton, F.R.S. (N.Z.); vice-presidents—Drs. C. S. Ryan (V.), G. Hurst (N.S.W.); hon. treasurer—Mr. F. P. Godfrey (V.); hon. secretary—Mr. A. Mattingley (V.); hon. editors of *The Emu*—Messrs. A. J. Camp-

\* NEW MEMBERS:—*Victoria*.—Miss Howard, Miss E. J. Turner, Mr. F. P. Godfrey, Capt. Anderson, Admiral Bridges, George Robertson and Co. Ltd. *New Zealand*.—B. M. Moorhouse, E. Stead, T. Iredale, H. Guthrie-Smith. *Western Australia*.—E. A. Hassell. *Great Britain*.—H. Grönvold, W. H. Workman. *Philippine Islands*.—R. C. McGregor.

bell and H. Kendall ; members of Council—Colonel W. V. Legge, F.Z.S.(T.), Messrs. R. Hall, F.L.S.(V.), D. Le Souëf, C.M.Z.S.(V.), F. R. Godfrey, J. W. Mellor (S.A.), and A. W. Milligan (W.A.)

Prof. Robert Ridgway and Dr. J. A. Allen, both of U.S.A., and Count Salvadori (Italy) were elected honorary members.

It was decided that members desiring to show their connection with the Union when writing articles, &c., may use the abbreviation "A.O.U.," or for foreign correspondence "A.O.U. (Aust.)," after their names.

Mr. J. W. Mellor (of Adelaide) brought up the subject of the proposed introduction of "chicken cholera," or some "patent" disease, suggested by the Pasteur Institute for the destruction of the rabbit pest. In view of the dire effect upon native fauna, especially indigenous birds, such an introduction may cause, the Union placed on record its protest against the introduction into Australia of any "secret" or unknown disease, until its properties have been fully investigated by competent authorities.

It was resolved to hold the next annual meeting in Adelaide during October, 1905.

#### SECOND DAY.

On the afternoon of Tuesday, 29th, members attending the session were entertained at the Zoological Gardens by the Director, Mr. S. Le Souëf. A very pleasant and profitable hour or two were spent, and the visitors complimented the Director on the good appearance of the stock and gardens.

In the evening, at the Queen's Hall, Pitt-street, Mr. Robert Hall gave his popular lecture, entitled "A Naturalist's Tour through Japan, Corea, Manchuria, and Siberia," illustrated by over 100 photo-views, which was much appreciated by those privileged to hear it. Mr. J. H. Maiden, F.L.S., Director of the Botanical Gardens, occupied the chair, and at the conclusion of the lecture pronounced it to be one of the most unique and interesting he had ever listened to.

#### THIRD DAY.

In the morning, Wednesday, 30th, members finished their inspection of the bird-exhibits at the Australian Museum. The inspection was commenced on the afternoon of the first day, under the personal attention of the Curator, Mr. R. Etheridge, jun., F.G.S., who conducted the visitors from the taxidermists' workroom, where skins were being prepared, up to the splendid group collection of birds in the galleries. By the way a superb collection of Australasian ethnological specimens was critically examined. This day the bird skins, especially many interesting type-specimens, occupied the attention of the visitors, who by the direction of the Curator were placed under the sympathetic care of the veteran ornithologist and collector, Mr. J. A. Thorpe. The visitors were so pleased, as well as profited, by what they saw that a written vote of thanks was sent to the Curator.



The session was concluded in the evening at the Royal Society's Hall, Colonel Legge again occupying the chair. Papers by Colonel Legge on "A List of Birds Observed at the Great Lake (Tas.)," and a "Note on the Owlet Nightjar," and by Mr. A. G. Campbell on "Some Comparisons of Victorian and Tasmanian Birds" were read and keenly discussed.

Mr. A. J. Campbell exhibited excellent photographs of two old-time ornithologists—namely, John Gould, author of "The Birds of Australia," and (on behalf of Dr. Paul Leverkühn, Bulgaria) Dr. George Bennett, author of "Gatherings of a Naturalist in Australia."

The session closed with a hearty vote of thanks to the acting-president, Col. Legge.

#### OUTING TO THE NATIONAL PARK.

On the morning of Thursday, 1st December, some of the members visited the National Park of New South Wales for a few days, to study particularly its avifauna. The visitors were greatly enamoured with the beauty of the Park, which was made agreeably accessible to them by the courtesy of Mr. Frank Farnell, J.P., Chairman of the Trustees, who personally conducted the visitors by motor launch or by buggy to the places of greatest interest. On one occasion Mr. P. Peir, of Sydney, took charge of visiting members, conducting them to a little-known valley in the Park, where a number of birds were observed. [A more elaborate account of the outing to the National Park, by Mr. J. W. Mellor, together with a list of birds identified, will appear in the next issue of *The Emu*.]

#### FOURTH ANNUAL REPORT (1903-4).

During the past year steady progress has been made in the affairs of the A.O.U. The number of members is increasing, and the circulation of *The Emu*, the Union's official journal, extending.

Printed forms asking for information regarding the migration of birds have been sent to all the lighthouses in the Commonwealth, as well as those of New Zealand, and other countries north of Australia, and valuable information on this interesting subject is gradually being collected, but it will need some years of observations before positive statements can be made as to "fly-lines," &c.

Information is also being obtained regarding the nesting season of wildfowl, and efforts will be made to get the Game Laws of the various States more uniform, especially between New South Wales and Victoria, as at present they are at variance on several important points, to the detriment of the birds.

Some islands off Wilson's Promontory, Victoria, have been reserved as a breeding-place for sea birds, and we are glad that the Promontory will probably be permanently reserved as a National Park and breeding-place for our fast disappearing fauna.

FINANCIAL STATEMENT OF THE  
For Year ending

£	s.	d.	£	s.	d.	
39	3	6				Balance from last year.
						<i>Receipts by Hon. Treasurer.</i>
	66	16	0			Subscriptions, year current, 1904.
	13	1	0			" in advance, 1905.
	9	3	0			" in arrears, 1903.
						<i>Coloured Figure Fund.</i>
	4	2	8			Members' donations.
	0	2	0			Further receipts, Melbourne lecture.
	1	10	0			Refund on Coloured Plate, <i>Maluri</i> .
	2	4	0			Lecture at Hobart, as per contra.
		7	18	8		-----
		2	2	6		Incidental, Annual Congress, as per contra.
99	1	2				-----
						<i>Publishers' Receipts.</i>
	7	16	10			Sales <i>Emu</i> .
	3	0	0			Trade Advertisements.
	1	3	6			Binding members' copies.
	0	13	0			Trade discount.
12	13	4				-----



STATEMENT OF COLOURED  
CR.

## LECTURE

	£	s.	d.
By Sale of Tickets at Hobart .. .. .	2	4	0
„ Debit Balance .. .. .	1	5	0
	£3 9 0		
By Balance from last Statement .. .. .	10	17	8
„ Members' donations .. .. .	4	2	8
„ Refund on plate of <i>Maluri</i> .. .. .	1	10	0
„ Trade advertisements .. .. .	3	0	0
„ Further receipts, Melbourne lecture.. .. .	0	2	0
	£19 12 4		

## BALANCE-SHEET AT

## ASSETS.

	£	s.	d.
<i>Emu</i> journals in stock .. .. .	25	0	0
Library (Exchange) .. .. .	14	10	0
Illustration blocks .. .. .	5	0	0
Arrears of subscriptions estimated to realize .. .. .	24	0	0
Bank balance—			
Coloured Figure Fund .. .. .	6	3	11
General Fund .. .. .	6	2	5
	12 6 4		
	£80 16 4		

A.G.B.

A. H. E. MATTINGLEY, *Hon. Treasurer A.O.U.*  
30/6/04.

## FIGURE FUND, YEAR 1903-4.

DR.

## ACCOUNT.

							£	s.	d.
To Hire Royal Society's Rooms	..	..	..	..	..	..	1	0	0
„ Lanternist	..	..	..	..	..	..	1	0	0
„ Advertising	..	..	..	..	..	..	1	0	0
„ Printing Bills	..	..	..	..	..	..	0	9	0
							<hr/>		
							£3	9	0
							<hr/>		
To Lithographers—Plate of Honey-eaters	..	..	..	..	..	..	8	15	0
„ Postage and Exchange	..	..	..	..	..	..	0	5	5
„ Artist—Drawing	..	..	..	..	..	..	3	3	0
„ Debit balance, Hobart Lecture	..	..	..	..	..	..	1	5	0
„ Balance in hand	..	..	..	..	..	..	6	3	11
							<hr/>		
							£19	12	4
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## END OF JUNE, 1904.

## LIABILITIES.

							£	s.	d.
Subscriptions in advance—									
Received in year 1903	..	..	..	..	..	..	1	10	0
„ „ 1904	..	..	..	..	..	..	13	1	0
Outstanding accounts	..	..	..	..	..	..	4	0	4
Surplus	..	..	..	..	..	..	62	5	0
							<hr/>		
							£80	16	4
							<hr/>		

Examined and found correct.

FRED. P. GODFREY, }  
EDWD. D'OMBRAIN, } *Local Auditors.*

Through the representation of the Union the question of the existence of the Royal Company's Islands has been carefully looked into by the Admiralty in London. It has come to the conclusion that they do not exist, and they have consequently been expunged from the Admiralty chart.

We are glad that a South African Ornithologists' Union has been successfully inaugurated, and congratulations were sent from the Council of the A.O.U. wishing the new Union a successful and useful career.

A Tasmanian Field Naturalists' Club has also been started, with its headquarters at Hobart, and it is expected that it will induce some systematic work among the birds of that island.

Since the last annual meeting, Mr. Robert Hall, F.L.S., has safely returned after a successful but arduous journey through Japan, Corea, Manchuria, and Siberia. The collection of birdskins he and Mr. R. E. Trebilcock made, principally on the Lena River, were acquired by the Hon. Walter Rothschild for his Tring Museum, and the interesting ornithological results were published in *The Ibis* by Mr. E. Hartert.

Messrs. R. H. Porter and Co. have been appointed the London agents for the Union's publications.

One coloured plate was issued with vol. iii. of *The Emu*, and another is well advanced for vol. iv. The Council would be glad if members could send in in January any notes they may have made up to the end of the year, especially on the migration of birds in their district.

D. LE SOUËF, *Hon. Sec.*

#### REPORT ON THE LIGHTHOUSE SCHEDULES.

Since the last annual meeting notices have been printed and sent to the lighthouses in New South Wales, Victoria, South Australia, Western Australia, Queensland, Tasmania, New Guinea, British New Guinea, Fiji, British North Borneo, Hong Kong, New Caledonia, Java, and Japan, and the Marine Departments of the various States have lent their aid in kindly forwarding the reports, and also have returned several replies, as well as specimens. Many of the lighthouses of the latter countries are looked after by natives, and it is probable that very little information will be obtained from them, but possibly a few specimens may be obtained. So far, Goose Island, in Bass Strait, seems to be visited by far the larger number of migratory birds—as the light-housekeeper expressed it, "in swarms at certain times"—and there being no vegetation on the island worth mentioning, the birds are more easily observed. We expect to have a detailed list of birds passing there in September later on.

Cape Wickham, King Island, is also largely visited, generally in April and May, evidently by birds on their way north.

Kent Group also has visitors, principally Swifts, Cuckoo-

Shrikes, and Wood-Swallows, arriving from north end of September and passing north again end of June.

At present the information obtained from the few notices sent in is merely fragmentary, but enough has come to hand to show that in the course of a few years much valuable information on the migration of our birds will be secured, especially from lighthouses situated on islands. The Administrator of British New Guinea has kindly undertaken to preserve specimens of such birds that he considers migratory for their identification, together with dates as to their arrival, &c.

D. LE SOUËF, *Hon. Sec.*

## Presidential Address—Geographical Origin and Subsequent Development of the Land Birds of New Zealand.

BY CAPTAIN F. W. HUTTON, F.R.S.

I WISH to thank the members of the Australasian Ornithologists' Union for the honour they have done me in electing me president for the year. I regret much that distance and professional duties have prevented me from attending any of the meetings, but I have read the papers in *The Emu* with great satisfaction, and congratulate the editors on the able manner in which they have conducted the publication.

It was with great reluctance that I accepted the position, for I felt myself quite unequal to follow so eminent an ornithologist as Colonel Legge; and as I have no special knowledge of any section of Australian ornithology, I must, I am afraid, in this address, limit myself to a few remarks on the land birds of New Zealand.

The avifauna of New Zealand, although very limited in numbers, contains so many peculiar species that it has always been an object of much interest to ornithologists. Of the non-migratory land birds there are only 104 species, belonging to 60 genera and to 24 different families. Of these, 83 species (80 per cent.) and 28 genera (47 per cent.) are found nowhere else; while there are no less than five families (*Turnagridæ*, *Xenicidæ*, *Nestoridæ*, *Stringopidæ*, and *Apterygidæ*) which exclusively belong to New Zealand. This shows long isolation from the rest of the world, during which time the species which originally came to New Zealand have become much modified, while in some cases their relatives, left behind in the old habitations, are now extinct. Now, where were these ancient habitations?

By Dr. P. L. Sclater and Dr. A. R. Wallace New Zealand is considered to be a subdivision of the Australian region. But nearly one-half the genera of land birds show no connection with Australia; and the only birds which show a distinctly Australian facies are *Petræca*, *Pseudogerygone*, *Certhiparus*, the

three genera of *Meliphagidæ*, and perhaps *Cyanorhamphus*. There is, therefore, much to be said in favour of the opinion held by Professor Huxley and Professor A. Newton, that New Zealand should be kept as a distinct region.

There is a large body of evidence which goes to prove that New Zealand was at some former time, probably in the early Eocene period, connected by a land ridge with New Caledonia and New Guinea, and there is ample evidence to show that the Tasman Sea, which separates New Zealand from Australia, has been in existence during the whole of the Tertiary era. It seems evident that the ancestors of many of the New Zealand birds must have come along this land ridge from New Guinea. For example, *Creadion* and *Heteralocha* are Starlings allied to *Calornis* of India, the Malay Archipelago, New Guinea, and Northern Australia. *Turnagra* is a much modified Thrush, and its nearest ally is *Myliphoncus* of India and Java. *Sphenæacus* is found only in southern Africa, with a near ally in Madagascar. The *Acnicidæ* are related to the Pittas of India, the Malay Archipelago, New Guinea, and Northern Australia. *Hemiphaga* has its nearest relatives in *Carpophaga* of India, the Malay Archipelago, Polynesia, Northern Australia, and New Caledonia. *Nestor* is a remarkable form, connecting the Macaws of America with the true Parrots of Africa. But, as it formerly occurred in Norfolk Island, we may assume that it came to New Zealand from the north. *Ocydromus* also has a close ally in Lord Howe Island; and *Hymenolæmus* is related to *Salvadorina* of the Moluccas. And we have further evidence in the fact that at the present day our migratory land and shore birds still come to us from the north. Also *Glaucopsis*, *Urodynamis*, and *Apteryx* show no connection with the birds of Australia.

On the other hand we know that *Zosterops carulescens* crossed over the Tasman Sea in 1856, for it appeared first in the centre of New Zealand, and worked its way up north. And it is highly probable that *Hæmatopus unicolor*, *Spatula rhynchotis*, and the ancestors of *Casarca variegata* did the same at some earlier period, for they are not found in New Guinea nor in New Caledonia.

But in many cases it is difficult to decide from which direction the first birds came. For there are two possible explanations of the cause of the connection between Australian and New Zealand birds. The ancestors of the present species may either have crossed the Tasman Sea, and so have come to New Zealand from the west; or the relationship may be due to two branches of emigrants from New Guinea southwards, one of which passed into Australia, the other into New Zealand. In this category we have *Petrarca*, *Miro*, *Pseudogerygone*, *Rhipidura*, *Certhi-parus*, *Mohua*, *Pogonornis*, *Anthornis*, *Prosthemadera*, *Anthus*, *Haleyon*, *Ninox*, *Sceloglaux*, *Cyanorhamphus*, *Nesierax*, *Circus*, *Coturnix*, *Hypotænidia*, *Porzana*, *Porphyrio*, *Anas*, *Nettion*, and



*Nyroca*. Some of these may have crossed the Tasman Sea, but it is more probable that the ancestors of most of them came to New Zealand from New Caledonia.

Thus we see that there is good reason for thinking that a migration of land birds into New Zealand from the north took place in the Eocene period, for it is highly improbable that New Zealand was ever again connected with the mainland. In the Oligocene and Miocene periods New Zealand stood at a lower level than at present by some 3,000 feet; but in the older Pliocene it had a much greater extent, and included the Chatham and Auckland Islands, which were again separated from New Zealand in the Newer Pliocene.

Now, if we knew in detail the history of the origin of the land birds of New Zealand it would enable us to solve several interesting problems in the development of species. But as that is impossible we must do the best we can with the imperfect knowledge we have.

In the first place we learn something about the relative ages of certain groups; for all those groups which are fairly well represented in the fauna—such as the *Psittaci*, *Rallidæ*, *Ardeidæ*, *Limicolæ*, *Anatidæ*, and *Ratitæ*—must in all probability be old groups, unless they have crossed the Tasman Sea. The *Passeres* are also fairly well represented, and, as they are mostly forest birds and poor fliers, we may suppose that most of them came to New Zealand in the Eocene period. But the *Columbæ*, the *Gallinæ*, and the *Picariæ* are each represented by a single species only; and it is, therefore, presumable that they have a later origin than the former. Among the *Passeres* the absence of *Oriolidæ*, *Laniidæ*, *Dicæidæ*, *Hirundinidæ*, *Ploceidæ*, and others indicates that they are younger groups than the *Sturnidæ*, *Meliphagidæ*, *Muscicapidæ*, and *Pittidæ*. But this argument must be used with caution, because there may be other reasons for the absence of a group of birds from New Zealand than that it did not exist in the Eocene period.

Another subject of interest is the relative rate of change in different species. When we look at things on a large scale we find some regularity in this connection. For New Zealand (not including the outlying islands) has 85 species, of which 58, or 68 per cent., are endemic. The Chatham Islands have 25 non-migratory species, of which 10, or 40 per cent., are endemic; while the Auckland Islands have 14 species, of which 7, or 50 per cent., are endemic. So that New Zealand, which has been separated longer from the mainland than the outlying islands have been separated from New Zealand, has a larger percentage of endemic species. Also, neither the Chatham nor the Auckland Islands have any peculiar families. The Auckland Islands have one peculiar genus in *Nesonetta*; and the Chatham Islands have *Cabalus* and *Nesolimnas*, and formerly *Diophorapteryx* and *Palæolimnas*, all belonging to the *Rallidæ*.

But when we go into details we come across many anomalies. *Petroica* has varied between the two islands, but the South Island species (*P. macrocephala*) is unaltered in the Chatham Islands and Auckland Islands. *Sphenæacus* has changed in the South Island, where the two species live together, but *S. fulvus* is alone found on the Snares, while *S. rufescens* is confined to the Chatham Islands. *Anthornis* has changed in the Chatham Islands, but not in the Auckland Islands. On the other hand, *Prosthemadera* has not changed on any of the islands. *Ocydromus carli* remains the only species in the North Island, but in the South Island it has split up into three or four species. As might have been expected, no good fliers have representative species in the two islands of New Zealand, but *Anthornis*, *Anthus*, *Cyanorhamphus*, *Hemiphaga*, and *Thinornis* are represented by different species in some of the outlying islands. Also some badly flying species, such as *Sphenæacus*, *Pseudogerygone*, *Rhipidura*, *Acanthidositta*, and *Xenicus*, are identical on both islands of New Zealand. Again, some of the Rails, such as *Hypotaenidia philippinensis* and *Porzana tabuensis*, remain unchanged; while others, such as *Ocydromus* and the lately extinct Rails of the Chatham Islands, have varied greatly. Once more, while *Sphenæacus*, *Petroica*, *Pseudogerygone*, and *Rhipidura* have undergone only specific changes since their ancestors came to New Zealand, the New Zealand members of the *Paridæ* and the *Meliphagidæ* have changed considerably. But I have said enough to show that not only do different species vary at different rates, but that the same species varies at different rates in different places.

New Zealand is well placed for studying the effects of environment on variation, but it lands us only in puzzles. Certainly there is greater variety of conditions in the South than in the North Island, and the South Island has a larger number of species; but I find it impossible to connect the difference of conditions with any of the specific changes. Why, for instance, should the species of *Ocydromus* be darker in the neighbourhood of the West Coast sounds, and lighter in subalpine ranges? Why should *Sphenæacus* get paler in the south? Or what has the fawn-coloured breast of *Xenicus gilviventris* to do with living among rocks? But to take a special example. The green Parrakeets belonging to the genus *Cyanorhamphus*, although not confined to New Zealand, have their headquarters there. Now there are three species living together in the South Island, two on Antipodes, two on the Auckland Islands, and one each on the Chatham Islands and Macquarie Island. The Auckland Island birds have not varied in plumage from the original stock in New Zealand, although they must have been isolated for a long time, as the crest of the sternum has undergone a reduction in size. *C. unicolor*, on the Antipodes, has varied considerably, and *C. forbesi* and *C. erythrotis* but slightly; and it is impossible to connect these changes with the surrounding physical conditions.

But if we cannot claim these variations as due to the action of environment, neither can we claim them for natural selection. We can understand how natural selection may have strengthened the bill in *Turnagra* and elongated it in *Heteralocha*, but I can see no reason for believing that it has had a hand in bringing about any of the specific changes that I have mentioned. For natural selection can only affect changes that are useful to the animal, and it is impossible to think that the changes in plumage, or in the colour of the wattles, can have had any selective value. Most of the cases are evidently connected in some way with isolation, but there are exceptions as in *Sphenæacus*, *Rhipidura*, *Ocydromus*, and *Apteryx*.

The case of *Ocydromus* is especially interesting. Here we find *O. carli* in the North Island and in Stewart Island, but not in the South Island, which lies between them. Or if it occurs in the South Island it is so rare that I have never seen a specimen from there. In the South Island we have four other species, each of which is fairly well confined to a distinct habitat. *O. australis* inhabits the low lands all round the island; *O. hectori* is found on the hills, *O. brachypterus* in the West Coast sounds, and *O. finschi* in the neighbourhood of Lake Te Anau. *O. australis* is also found in Stewart Island, where it appears to interbreed with *O. carli*, if we may judge from the number of individuals that come from there which are intermediate in plumage between the two. And although hybrids are very rare in a natural state, I am inclined to think that *O. finschi* is a hybrid between *O. brachypterus* and *O. australis*.

Now, the only explanation of these phenomena appears to me to be the supposition that at one time *O. carli* spread over all three islands; that it remained unaltered in the North Island, while in the South it gave rise to *O. australis* and *O. brachypterus* and then disappeared; *O. hectori* being afterwards derived from *O. australis*. But why these differences should have arisen I cannot surmise.

Another very interesting case is *Cyanoramphus erythrotis*, which occurs at the Antipodes and at Macquarie Island. It differs from *C. novæ-zealandiæ* by its yellow tint. It is extremely improbable that the Parrakeets of Macquarie Island came from Antipodes, or *vice versâ*. The islands are further apart than either of them is from New Zealand; and both Campbell and Auckland Islands, on which the species is not found, lie close to the track. On the other hand *C. novæ-zealandiæ* is often affected by xanthochroism, due to the imperfection of the feathers, and is therefore tinted more or less with yellow. I have seen a specimen from Southland of a bright canary-yellow. From Antipodes Island I have also seen a yellow variety of *C. erythrotis*, which on being kept in confinement turned green, owing, no doubt, to the large supply of food inducing the green-making superstructure of the feathers to be developed.

Now it seems probable that *C. erythrotis* originated inde-

pendently in Antipodes and Macquarie Islands, from different flocks of *C. novæ-zealandiæ* from New Zealand. It is probable that the small number of individuals on each of the islands allowed the xanthochroism to obtain a permanent influence, which it could not do in New Zealand, on account of the large number of birds and the greater facilities for intercrossing. Thus we have a new species produced by the isolation of a few individuals. And we also have a case of the double origin of the same species. This last cannot occur often; but it shows that the great differences between the climates and vegetation of Antipodes and Macquarie Islands failed to produce any effect.

Another curious case is the interbreeding of two species of Fantails. That they are distinct species is proved by the fact that *Rhipidura flabellifera* is common in both islands, while *R. fuliginosa* is confined to the South Island. In the latter place an individual of one species is commonly seen courting one of the other species. But the most remarkable circumstance is that the young in these union nests never show their origin by their plumage. They are either *R. flabellifera* or else *R. fuliginosa*. Sometimes all are *R. flabellifera*, sometimes they are mixed; but *R. flabellifera* is generally the more numerous in a nest.

Again, New Zealand ornithologists have special advantages for studying the effects of the absence of enemies on development, the most important of which is degeneration in the powers of flight. Indeed, no part of the world offers so many examples of degeneration in the wings of birds as does New Zealand. There are strong-flying birds, such as *Nesierax novæ-zealandiæ*, *Nestor notabilis*, the Parrakeets, and Ducks; as well as a chain of more or less degenerate birds, passing through *Prothemadra*, *Turnagra*, *Glaucopis*, *Heteralocha*, and *Sphenæacus* to *Stringops*, *Ocydromus*, *Nesonetta*, and *Apteryx*, which cannot fly at all. And in these non-flying birds there are some with large wings, like *Stringops*; others with small wings, such as *Ocydromus* and *Apteryx*; and none at all in the extinct *Dinornithidæ*, in most of which even the shoulder-girdle had disappeared.

In some of the outlying islands the Snipes, Larks, and Parrakeets are but feeble flyers, although their relations in New Zealand fly well. So general an effect upon birds of so many different kinds must be due to some general cause, and we find it in the baneful effects of the want of competition.

The fact that on some of the outlying islands we find several birds with feebler powers of flight than their congeners in New Zealand, although they have no more enemies in New Zealand than on the islands, is very remarkable. We may accept natural selection as the cause of loss of powers of flight when that loss has been useful to the species; as in the case of Parrakeets and Larks on small islands much exposed to gales of wind, as the Antipodes. But this will not apply to the Ducks of the Auckland Islands, or to any of the birds on the main islands of New Zealand.

Who can doubt but that *Stringops* and *Ocydromus* would be benefited by being able to fly?

I find that the pectoral muscles of *Prosthemadera* have remained unaltered in the Auckland Islands, while in the Parrakeets and the Larks they have been reduced. But the Auckland Islands are large and with plenty of shelter, and it is not easy to suppose that Parrakeets and Larks would be blown to sea from them, and it is quite impossible that the flightless Duck (*Nesonetta*) should be in any such danger; so that as the explanation of natural selection here fails us we may doubt its effects in other cases.

Also in New Zealand we cannot trace the action of natural selection in bringing about the degeneration of the wings in so many birds, some of which inhabit the forests and others the open country. It is in the absence of competition, combined with an abundant supply of food, and the consequent disuse of the wings, that we must look for the cause of the loss of their powers of flight.

An examination of the birds shows that in most cases the crest of the sternum diminishes first, then the wings are reduced in size—first the feathers, then the bones—until at last they disappear altogether. That is, the muscles get weak before they get smaller, while the wings remain large long after the muscles are too small to employ them efficiently. (See Appendix.)

How to account for this has always been a difficulty. It has been shown that panmixia, although allowing detrimental variations to exist, which could not be the case where competition is keen, cannot be a cause of progressive degeneration, for it has no directive power. It has also been suggested that natural selection, acting through the law of economic nutrition in periods of scarcity of food, would tend to the degeneration of an organ which was of little or no use. The useless organ, it is thought, would not require nourishment and would dwindle away, to the advantage of the rest of the animal. But for this explanation to hold good it has to be established that periods of semi-starvation actually occur, and that when they occur the useless organs suffer more than the other parts of the body. Let us see if the birds of New Zealand can throw any light on this matter.

First as to the periods of semi-starvation.—Among the Passerine birds there are in New Zealand four genera of *Muscicapidæ* (*Petræca*, *Miro*, *Pseudogerygone*, and *Rhipidura*), and three of *Xenicidæ* (*Acanthidositta*, *Xenicus*, and *Traversia*), which live chiefly on insects, and it seems almost certain that these birds must be pushed very hard for a living every winter. There are also nine genera of seed or grub eaters, and these can have no periodical famine time; for their food is abundant all through the year. But none of the insect-eating birds show deteriorated powers of flight, while among the others we have *Heteralocha*, which seldom attempts to fly; *Turnagra*, which cannot rise into

the air without making several preliminary hops; as well as *Glaucopis*, *Sphenacacus*, and *Prosthemadera*, all of which are feeble flyers. Also there is no reason for supposing that *Ocydromus*, *Stringops*, and *Apteryx* have any periodical periods of semi-starvation, for all of them are as fat in the winter as in the summer. Again, the Parrakeets of Antipodes and Auckland Islands are as large as and as well fed as those of New Zealand, although they have degenerated in the power of flight. And, lastly, as the Moas were vegetable feeders, their food must, in a climate like that of New Zealand, have been independent of the season of the year. Consequently the hypothesis of the necessity for periods of semi-starvation breaks down. Indeed, if a bird was perishing from starvation wings would be useful to enable it to search more ground and would be preserved by natural selection.

After this it seems hardly necessary to inquire whether the supposed law of compensation of growth is a true one. What evidence is there for supposing that in a time of semi-starvation an organ which is not used suffers more than one which is used? I cannot find that anyone has, as yet, tried to produce any evidence for or against it; it is always taken for granted. The only person who has discussed the subject at all is, so far as I know, the late Mr. Herbert Spencer. In the second edition of his "Principles of Biology" (vol. i., p. 328), he says that "it is a general law of nutrition that when there is a deficiency of food the non-essential organs suffer more than the essential ones, and the unlikeness of proportion hence arising constitute unlikeness of structure." But I cannot find that he gives any evidence for this so-called general law, and his only attempt to establish it is by a misleading analogy between a human society and a living organism; the labour and capital of the one being supposed to represent the food supply of the other. This is an argument which will not satisfy any scientific man.

The thyroid and thymus glands are considered to be of little or no use to the adult man. Do these glands suffer more than other organs in periods of semi-starvation? And in those tribes, like the Australian blacks, which inhabit desert regions, and are constantly suffering from want of food, have the glands with them degenerated more than in other tribes? This would be a test case, but I have never heard that the facts support the hypothesis.

The evidence from New Zealand is, therefore, to the effect that degeneration is not primarily due to natural selection either in the ordinary way or through a supposed law of compensation of growth. Nor can it be due to panmixia. The only explanation left is that degeneration is due to disuse-inheritance; and as these variations clearly come under the head of acquired characters, we seem to have in degradation a proof that these characters may sometimes be transmitted from one generation to another. Disuse we know to be a true cause of degeneration

in the individual—it is the only true cause that we know; and everyone will allow that it is the starting point, or originating cause, of degeneration. The difficulty is to explain how variations, in an organ, caused by disuse, become progressive. That is, how do they accumulate generation after generation until at last the whole organ disappears? Or in other words, how does disuse give rise to disuse-inheritance?

It has been suggested that disuse-inheritance is due to a reverse process of development—a going back through the process on which an organ was developed. This is, however, no explanation, even if it were a true account of the facts. But in the case of the wings of birds it is evidently incorrect; for if true the fingers of the wing would become free before the wing was much reduced; whereas we see in the Kiwi, and other struthious birds, that the fingers are lost without becoming free.

Let us try for another explanation. We know that habits are sometimes inherited. This must mean that some alterations in the structure of the brain in one individual are transmitted to its descendants. These inherited habits, when developed by natural selection, become instincts. This is the only possible explanation of the origin of instincts which are so strongly developed in birds. These instincts are due to unconscious memory, just as are the habits from which they spring. But it is difficult, if not impossible, to draw a line between acknowledged instincts and the development of the various tissues of the body. If breathing is an instinct, so also is the beating of the heart, so also is reproduction. And we cannot deny that the process of growth is also directed by instinct. For if reproduction is an instinct, then the production of two individuals from one is due to instinct; but if the two cells adhere together instead of forming two distinct individuals, we must allow that this is also an instinct. In fact, all cell division must be due to instinct—that is, to the autonomous working of unconscious memory. This is Professor Hering's theory of heredity being due to unconscious memory. The growth of one cell on another recalls some action that took place when two similar cells were similarly placed in a former generation. He says:—"When the first germ divided it bequeathed its properties to its descendants; the immediate descendants added new properties, and every new germ reproduced to a great extent the *modi operandi* of its ancestors. Each generation endows its germ with some small property which has been acquired during life, and this is added to the total legacy of the race. Thus every living being of the present day is the product of the unconscious memory of organized matter."

Now this theory also gives us an explanation of disuse-inheritance. For when an organ is not used the unconscious memories of the part are weakened, and in the next generation the organ is reproduced in a more feeble condition, until at last it is not reproduced at all, the memory of the operation having

been lost. The process is exactly the same as the gradual loss of an instinct from disuse; both are due to forgetfulness.\*

I have thus tried—very imperfectly, I am afraid—to give you some idea of the nature of the problems to which a study of the avifauna of New Zealand leads, and I think that you will all agree that, however imperfectly I may have explained them, they are of no little interest to biologists in general and to ornithologists in particular.

## APPENDIX.

## MEASUREMENTS IN MILLIMETRES.

	STERNUM.			Length of Wing.	Length of Tarsus.	
	Length.	Breadth at Last Rib.	Depth of Keel.			
<i>Prothemadera novæ-zealandiæ</i>	34.0	14.5	10.5	156	47	New Zealand
"    "	29.5	12.5	9.0	131	35	"    "
"    "	33.0	15.0	11.0	139	42	Auckland Islands
"    "	32.0	14.5	10.7	151	43	"    "
<i>Anthornis melanura</i>	... 21.0	9.0	7.0	86	28	New Zealand
"    "	... —	—	—	85	26	"    "
"    "	... 21.0	10.0	7.5	97	31	Auckland Islands
<i>Anthus novæ-zealandiæ</i>	... 25.0	12.0	7.5	95	25	New Zealand
"    "	... 22.0	11.0	8.0	—	—	Chatham Islands
<i>Anthus aucklandicus</i>	... 23.0	11.0	8.0	91	24	Auckland Islands
<i>Anthus steindacheri</i>	... 20.0	?	6.0	83	24	Antipodes Island
<i>Cyanorhamphus novæ-zealandiæ</i>	... 37.0	15.0	13.0	124	18	New Zealand
"    "	... 36.0	16.0	13.0	134	20	"    "
<i>Cyanorhamphus aucklandicus</i> ...	... 38.5	16.0	12.7	130	20	Auckland Islands
"    "	... 39.0	16.0	13.0	134	20	"    "
<i>Cyanorhamphus erythrotis</i>	... 38.0	18.5	12.0	132	23	Antipodes Island
"    "	... 36.0	17.0	11.0	127	18	"    "
<i>Cyanorhamphus auriceps</i>	... 32.5	15.0	11.0	106	18	New Zealand
"    "	... 28.5	13.0	10.0	116	21	"    "
<i>Cyanorhamphus ferbesi</i>	... —	—	—	126	18	Chatham Islands
<i>Cyanorhamphus unicolor</i>	... 38.5	18.0	12.0	145	28	Antipodes Island
<i>Nesonetta aucklandica</i>	... 50.0	24.0	10.0	141	32	Auckland Islands
<i>Merganser australis</i> ...	... 71.0	39.0	12.0	184	36	Auckland Islands

A SEA-BIRD ON LAND.—I saw a White-faced Storm-Petrel blown on shore by a gale of wind at Wellington, New Zealand, and it rolled over and over along a street until picked up, completely exhausted. Also saw a light brown Sandpiper, but could not distinguish the species, about half-way between Sydney and Wellington, N.Z.—LANCE LE SOUËF. Perth, W.A.

\* See *Nature*, 18th February, 1904, p. 366.



## List of Birds Observed at the Great Lake in the Month of March.

BY COL. W. V. LEGGE, F.Z.S., &c.

(Read before the A.O.U., Sydney Session, 30th November, 1904.)

THE Great Lake is the largest sheet of water in Tasmania, and likewise the most extensive for its elevation above sea level in Australasia. It is 28,000 acres in extent, and its altitude is 3,330 feet. The so-called Lake Plateau of Tasmania, when viewed in connection with its elevation above the sea, the large number of lakes, great and small, which are embedded among its hill ranges, and the noble tier of lofty basaltic buttresses which uphold it on the north-western side, can well be looked upon as one of the most remarkable features of the land area of Australasia. Its chief point of interest, particularly for the angler, is the lake under consideration. The usual route to this fisherman's paradise is by way of Bothwell, from the south; and by it the south-eastern side of the Plateau is negotiated by a gradually ascending road from the lowlands. Of late years, however, a much shorter and from a scenic point of view a better track has been opened up *via* the pretty township of Deloraine, from which a drive of 10 miles takes one to the foot of the lofty outlier of the Great Western Mountains known as Quamby Bluff. From thence a horse and cart track ascends the gorge of the Liffey River and traverses a fine belt of beech forest, in which a few species of hill birds, such as *Scricornis humilis*, *Acanthiza ewingi*, *Geocichla macrorhyncha*, *Collyriocincla rectirostris*, and *Strepera fuliginosa*, are to be noticed. The track, after winding upwards for nine miles, passes out to the summit of the range, reaching at the Pine Lake an altitude of 3,700 feet or thereabouts, and descends through the hills of the Plateau to the shores of the Great Lake, the distance being  $23\frac{3}{4}$  miles only from Deloraine. Until this new northern road was opened, mainly by the enterprise of some of the residents of this township, the upper end of the lake was practically unknown to all except the hill shepherds of the midland pastoralists, and thus, ornithologically, was a *terra incognita*. At the present time there are two fine sailing boats, owned by gentlemen of Deloraine, stationed at the north end, and until recently there was a police station contiguous to the tourists' hut, erected by the Improvement Association of Deloraine. The policeman's cottage has twice furnished the writer with comfortable quarters, and was at the time tenanted by a most observant and intelligent trooper, Mr. F. Archer, who was in every way a field naturalist, with a keen taste for botany and natural history. The assistance of such an ally in a remote spot such as this, was, as may be imagined, most useful, and much valuable information was gleaned from him during my trips.

The contour of the Great Lake is most singular, the character-

istic features of the coast line being a series of peninsulas, locally called "necks," which run east and west from both shores and thus divide the lake into three main portions, which are called by the shepherds and police in the district North Lake and South Lake as regards those points of the compass, while the middle division was named East Bay for definition purposes in my paper on the "Physiography of the Great Lake" read at the Science Congress at Dunedin last January.

The entire lake is remarkably shallow, and its floor extraordinarily level, the variation in the depth of the water, after the downward slope from the shore is passed, being not more than 1 to 2 feet in several miles, and in some localities only 6 inches to a foot in a mile. In many parts this level floor is covered with a remarkable weed of an erect, spinous, and bunchy character, which is torn up by the violent undertow of the waves in a gale of wind in such quantities that the rock-terraced shores are covered with it as marine coasts are with seaweed. How favourable to the habits of diving birds such conditions, when spreading over many thousands of acres of water, are can well be imagined.

The following enumeration deals chiefly with shore and water birds, as most of the time available for observation was passed on the lake during the course of sounding operations taken last year :—

PORPHYRIO MELANONOTUS. Blue Coot.

One example of this species was seen on Lake Elizabeth, which no doubt indicated the existence in concealment of not a few of its companions. This Coot probably frequents the Shannon Lagoon, near the outlet from the lake of the river of that name.

CHARADRIUS DOMINICUS. Lesser Golden Plover.

This species frequents the so-called Great Lake Plain, which is a rolling down more than a plain, and comprises a good many thousand acres of grass and low bush land, much of which is stony and affords a favourable haunt for this Asiatic visitor. Only a few birds were met with in March, 1902, during a two days' "reconnoitring" trip made to the lake by my son and myself. The Golden Plover is found more numerous on the open grassy country in the Midlands than elsewhere, and is nowhere a common bird in the island.

OCHTHODROMUS BICINCTUS. Double-banded Dottrel.

A flock of these birds were met with on the Great Lake Plain in March, 1902. They were in the immature stage, and much shier than usual. It was a surprise to find them at such an elevation.

GALLINAGO AUSTRALIS. Snipe.

One example of our Snipe was seen in Swan Bay, at the south of the lake, under singular conditions. It was feeding among the drift "lake weed" on the stony shore, and when roused by the approach of our boat flew a distance of about 150 yards and again settled on the weed like any ordinary Limicoline species. The Snipe is very abundant further eastward, among the lesser lakes, particularly round Lake Sorell and Woods

Lake, and no doubt affects the oozy marshes at the north and wet end of the lake, although we came across none during our shore excursions while gauging the inflow of the northern streams.

HYDROPROGNE CASPIA. Caspian Tern.

A single example of this cosmopolitan species was seen on the North Lake, March, 1902. It was flying at a considerable height above the water, with its bill pointed downwards in the normal manner. All over the old world where this fine bird is to be met with it is recognizable a long way off by its large bill pointed downwards during flight. It is to be seen all round the Tasmanian coasts, unsociable as usual, either alone or in pairs.

STERNA (sp.)

Two Terns were seen on the North Lake in March, 1902, but, though examined through the binoculars, could not be satisfactorily identified. They were probably *S. frontalis*.

LARUS NOVÆ-HOLLANDIÆ. Silver Gull.

This is perhaps the most interesting bird on the Great Lake, inasmuch as it may safely be regarded as to some extent a resident species, and therefore actually a *freshwater* bird. It used to breed on Garden Island, a small rocky islet, for the most part covered with vegetation. A number of old nests were seen in March, 1902, situated in the niches and hollows of the greenstone which crops up at the west end of the isle. In 1903 (March) no new nests were observed, and the inference is that since the erection of the police station and tourists' hut close by on the adjoining shore the birds have deserted this spot and probably now breed on Pine or Kangaroo Island. The stupid and senseless practice of firing the islands in the lake has destroyed the interesting alpine vegetation which formerly beautified them, and has no doubt tended to drive away the birds that bred there. At the time the writer visited the lake in both years these little Gulls were very plentiful, but, contrary to their normal habit on the sea coasts, were very shy. They were never observed to come within gunshot from the boat, the only time when any were seen close being one afternoon in a gale of wind, when a little party came "coasting" along the shore after the usual manner of Gulls in heavy weather. Mr. Archer informs me that when the lake is frozen over in its northern parts *L. novæ-hollandiæ* disappears in part, but that individuals frequent the partly frozen tributary creeks and so soon as a thaw sets in reappear on the lake. No doubt a good many of those normally frequenting the lake retire further down to the south, to the Ouse and Shannon Rivers, during frost, and some may go to neighbouring lakes (Arthur and Woods), which are at a considerably lower elevation.

PHALACROCORAX CARBO. Cormorant.

It was satisfactory to find this troublesome species rare. Only one or two individuals were observed, and their usual habitat must be the south end—Swan's Bay and adjacent waters, where the trout are abundant. Of late years there has been considerably less destruction of fish by this Cormorant; and it is almost certain that in the early nineties, when they were so destructive, their numbers were caused by an irruption of the species—that is, a heavy migration from Victoria. Rewards were then offered by the Fishery Commissioners, and large numbers destroyed as a consequence. Efforts have been made to discover the breeding

haunts of the Black Cormorant, with a view to destruction of their eggs and young, but they have been attended with but little success. It is known, however, now that the species breeds on the Lake Plateau at no great distance from the Great Lake. About 12 miles to the north-west of the upper end of the lake lies an upper step of the Plateau which, with grades and indentations into the hills to the westward, contains probably some 25,000 or more acres. The surface of this area is thickly strewn with one of the most remarkable groups of tarns and lakes in Australia, when we consider the great elevation—3,500 feet above the sea. Among these sheets of water, known vaguely as the "Nineteen Lagoons," and some of which are said to vary remarkably in level though contiguous to one another, are one or two largish lakes. To the westward of one of these lies Lake Ada—a small lake with a greenstone cliff at some distance from the shore, and on which the Black Cormorant has been found nesting in numbers. Some years ago a man, Mr. Archer informed me, swam out to the rock and destroyed numbers of eggs and young; and as the birds are said to resort to this spot every year, an occasional visit, so as not to make the birds forsake the site, might be of much use.

PODICIPES CRISTATUS. Tippet Grebe.

The Great Lake is the headquarters of this species in Tasmania. It is no doubt found all over the Plateau, in the smaller lakes and tarns, but in less numbers than here. It is a shy bird on this lake at all times, not allowing the near approach of a boat. After the manner of its smaller congeners, it not infrequently resorts to flight, and gets along just above the surface of the water at a good pace. The Grebes, like the Musk-Duck, reappear quickly on the lake after the spring thaw. In the lowlands it is by no means a common bird, but is met with unexpectedly in places where its presence is a surprise. It is occasionally seen in the littoral region of the east of Tasmania, affecting the tidal waters—for example, at George's Bay; and it is doubtless to be found in the coves and inlets of Macquarie Harbour. The extraordinary geographical distribution of this Grebe has probably come about owing to a wandering propensity which has forced it to move south-eastwards through Asia and by way of the Malay Archipelago to Australia. Its presence in New Zealand may be due to its having crossed Tasman's Sea—a not impossible feat; or, on the other hand, if Wallace's theory of a land connection between Eastern Australia and the former New Zealand area be the correct one, the solution of the problem is not difficult.

PODICIPES NESTOR. Hoary-headed Grebe.

This curiously-plumaged species inhabits this "paradise" of diving birds. I noticed several in a flock on North Lake, where the lake floor averages from 10 to 15 feet and is much covered with that curious weed, *Isoetes lacustris*. This Grebe is not so numerous as the next in the lowland waters of Tasmania, but it is met with occasionally in tidal estuaries, as well as on the smooth "reaches" of many rivers, especially those fringed with the common reed (*Arundo*). Mr. Campbell gives instances of this Grebe being found at sea. Some day, perhaps, it may make its way from North-Western Australia to some of the Austro-Malayan islands, and so extend its geographical distribution.

PODICIPES NOVÆ-HOLLANDIÆ. Black-throated Grebe.

The Dabchick is found sparingly on the lake. It is universally distributed throughout Tasmania, being met with in a variety of situations—rivers, lagoons, lakes, tarns, tidal waters—anywhere, in fact, where it

can procure its food and find the requisite shelter for its nest. In the rivers of the eastern and open country portion of the island its favourite resorts are the still, reed-fringed reaches which are their chief characteristic, and likewise the shallow brackish lagoons of the East Coast.

CHENOPIS ATRATA. Black Swan.

The Swan used to be numerous, more particularly at the south end, where the shallow, weedy waters, now the haunt of fishermen, used to furnish it with good feeding grounds. Its breeding grounds have evidently been invaded, with the inevitable result. Small parties of three to six were seen, chiefly in East Bay and South Lake; and a mob of about 17, containing one pure white bird, was observed on Lake Elizabeth, mentioned above, which is situated in Howell's Neck, half a mile from the shore of the Great Lake, and discharges into it, by a normally dry watercourse, in flood time. This small lake has reedy shores like an Indian jheel, and in all probability serves as a breeding haunt. Swans are now scarce in all the smaller bays and brackish lagoons on the east and north coasts. These haunts having been made untenable by settlement, the birds resort now in great numbers to Moulting Lagoon, north of Swansca. Here a big battue always takes place on the opening day of the season, and this shoot apparently does not tend to reduce the numbers, which *may* remain undiminished so long as the eggs and nests are not interfered with.

ANSERINÆ (species—*Anseranas semipalmata*?).

Several examples of a Goose, impossible to correctly identify, were seen on the northern bays of the lake. It was always shy, passing the boat at a long distance, either singly or in pairs, its conspicuous whitish, dark-patched plumage recalling that of the Pied Goose, were it not that it did not seem to contain enough black in it. The wariness of the wildfowl on the Great Lake is much against their scientific identification. It can only be ascribed, one would think, to the fact that boats are quite a modern innovation on the lake, and its winged denizens have not yet got accustomed to them. The flight of this Goose was low, near the water, and not particularly swift—just a steady, straight-on-end progress, typical of most members of the sub-family.

ANAS SUPERCILIOSA. Black Duck.

Large numbers of this fine bird frequent the lake, which is no doubt used as a diurnal resort and resting place by hundreds of birds from the maze of small lakes lying to the north-west and mentioned below. The Wild Duck, like its allies noticed here, has become very shy on the lake, scared, no doubt, by the sailing boats, a few of which have been installed recently on the upper and more remote portions of Tasmania's "alpine sea." Very little shooting takes place, the majority of the strangers visiting the locality being either tourists or keen anglers. The whereabouts of most Ducks on the lake, except the diving species, depends on the weather, as the surface of its shallow waters is so quickly and violently disturbed by the heavy prevalent westerly and north-westerly winds that the wildfowl resort to certain sheltered spots and bays, except when the lake is calm. The breeding season is no doubt late, as quite a young bird was procured in the second week in March.

NETTION CASTANEUM. Teal.

Small flocks of Teal consort with the Black Duck, and on one occasion during a strong nor'-wester a large mob was met with in one of the "Duck-shelters."

## SPATULA RHYNCHOTIS. Shoveller.

This swift-flying Duck was occasionally seen, usually singly or in pairs. It is nowhere a numerous species in Tasmania.

## STICTONETTA NEVOSA. Freckled Duck.

This Duck, scarce in this State, and a comparatively recent addition to our list of birds, was met with on two occasions in North Lake, once in company with some Blue-billed Ducks. Its first recorded occurrence in Tasmania was in the eighties, when a specimen was killed in the north of the island. It may have inhabited the Great Lake prior to that date, as no observations have until now been made there.

## NYROCA AUSTRALIS. White-eyed Duck.

This vigorous Duck is found in large numbers on the lake. When assembled for shelter as a component part of a large mob of Ducks it was noticed usually in distinct parties by itself, as evidenced by the white-marked wings when taking flight. It is one of the commonest Ducks at Bridgewater, on the Derwent, in the season, and falls more to the fowler's gun for the Hobart market than the Black Duck. It is quite probable that the eggs taken by Gould *did* belong to this species, as it breeds on the Derwent, about Bridgewater (Mr. Malcolm Harrison).

## ERISMATURA AUSTRALIS. Blue-billed Duck.

This remarkable Duck, which is extremely rare in the lowlands, and first recorded from Tasmania in 1802, was not uncommon on the Great Lake, which can be looked upon as its stronghold in this country. It was fond of taking shelter in little bays of the islands, sometimes sitting on the rocks, from which it would launch itself with a clumsy flight for a short distance, and then proceed further into the open water by diving. Five or six were seen in a flock occasionally. This Duck frequented the upper and more shallow portions of the lake, where its floor is much covered with the above-mentioned "lake weed" (*Isoetes lacustris*), and which seems to furnish a sub-aqueous feeding ground, and form the *raison d'être* of so many diving birds on the Great Lake.

## BIZIURA LOBATA, Gould. Musk-Duck.

From the last sentence in the above paragraph it would be inferred that the Musk-Duck is abundant on the Great Lake, which is the fact. Singly or in small flocks of three to five and seven, it may be seen in all the more shallow and sheltered waters of the lake, the more abundant in the northern portions. Mr. Archer tells me that so soon as the lake freezes over Musk-Ducks and Grebes disappear, and reappear immediately after the ice breaks up and the floes drift south. There are two hypotheses—either (1) these birds quit the lake for water at less elevation in the group to the eastward, to reach which high land has to be traversed; or (2) a portion of the great division—South Lake—does not freeze over, and becomes during periods of frost the resort of the fugitive waterfowl. As regards the species under consideration, it is satisfactory to see so many instances given in Mr. Campbell's work dealing with the questions of non-flight and flight. Additional evidence might be forthcoming from the numerous observers of this Duck, all of which tend to prove that *only* under certain, and as yet perhaps undetermined, physiological conditions the bird's instinct prompts it to fly. These may occur in connection with a propensity for nocturnal wandering, and also be forced upon it by the effect on its habitat of climatic changes. It is quite certain that, after the manner of many diving birds, no amount of

frightening or shooting will induce it to do more than flap along the water, when it does not resort to immersing itself to escape pursuit. The problem gains added interest from the freezing of the Great Lake, particularly as the smaller lakes in its vicinity to the north and north-west are frozen over harder than it. The Musk-Duck is to be found on all the brackish lagoons and inlets and also fresh waters at the back of dunes along the East Coast, being, of course, less numerous now than formerly in water near which settlement has occurred.

? Genus ? species.—An undetermined species, belonging, perhaps, to the sub-family *Erismaturinae*, is not uncommon on the shallower parts of the Great Lake—East Bay and North Lake—where food conditions are very favourable for diving birds. Its extreme shyness and extraordinary quickness in diving have probably prevented any specimens from being as yet procured. Unfortunately our boat nearly always came upon this bird when we were engaged in sounding operations, and it was consequently very difficult to get even the quickest glance at it with the binoculars. On one occasion an example came to the surface not far from the boat, and gave the opportunity for a hasty view through the “glass” before firing, with the usual fruitless result attending a shot at an expert “diver.” The bird is somewhat larger than a Black Coot (*Fulica*), and seemed to have a pointed bill, high at the base. The plumage is uniform dark brown or blackish, but the most interesting feature about the species is its short, stiff, and fan-shaped tail, carried erect and inclined forward over the back. This characteristic has given the bird the name of “Cocktail” among the few possessors of boats on the lake, who are the only folk who have probably ever seen it. It is not unreasonable to assume that it is possible for a new species to exist on this remote lake, round whose shores the only permanent inhabitants are the shepherds on the cattle and sheep runs. The northern divisions, too, were, as already mentioned, until the past six or eight years almost unknown, no boats being in existence there; and diving birds, therefore, frequenting the open water, would entirely escape discovery.

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## Some Comparisons of Victorian and Tasmanian Birds.

BY A. G. CAMPBELL, MELBOURNE.

(Read before the Aust. O.U., Sydney Congress, 30th November, 1904.)

TASMANIA possesses an avifauna of no small interest, inasmuch as it shows a distinct relation to that of the mainland of south-eastern Australia, although a strait of at least 100 miles in breadth now exists to prevent any connection or interchange between the two. At the same time are illustrated one or two general principles which obtain when animals or land birds are isolated from their parent stock on a smaller and more restricted area, or when they are forced, by reason of geological change, to a habitation to the southward or in higher latitude than that of their original domain.

It is admitted that Tasmania was once joined to Australia; and at no very distant period, geologically, after the existing

life forms had almost reached their present high state of evolution, the gradual separation occurred as a result of the never-ceasing erosive forces in nature. The islands and rocks, which now exist across Bass Strait, must be looked upon as the remains of this land connection, and not as stepping stones by means of which species have reached their Tasmanian habitat; for it is well known that the land forms never willingly cross the sea line, even though the adjacent islet be distant a few miles only; and further, it will be shown that small forms, when they do exist on these intermediate positions, are actually insular forms of Tasmania, presenting in a double degree the differences which the Tasmanian forms themselves present when compared with those of the mainland, and that they are not in any instance half-way or connecting links between the north and the south sides of Bass Strait.

Not the least surprising feature, however, among the Tasmanian birds is the absence of several species common on the mainland. In the open field the Magpie has its southern representative, but the equally typical Laughing Jackass (*Dacelo*) of the mainland, on the other hand, has not; in the forest the Thickhead has its insular form, but the Tree-creeper has not; while in the gully the Ground-Thrush is represented, but the common Yellow-breasted Shrike-Robin is not.

Further, in the Tasmanian gully the Coachwhip-Bird (*Psophodes*) and the Lyre-Bird (*Menura*), so characteristic of the gully in south-eastern Victoria, are entirely absent. This is the more striking as much of the vegetation is alike in both areas. The blue gum (*Eucalyptus globulus*) of Tasmania is similar to that found in parts of Victoria; the manna gum (*E. viminalis*), the peppermint gum (*E. amygdalina*), the tea-tree (*Leptospermum*), the musk tree (*Olearia*), the native hazel (*Pomaderris*), the wild currant (*Coprosma*), and the tree-fern (*Dicksonia*), all of which help to make up the scrub, small and great, are similar in both Tasmania and Victoria. When this is so, why should not all the species found in one area, or at least their representatives, be present in the other also?

The development of the Tasmanian carnivorous wolf may have helped in the extinction of such a form as the Lyre-Bird; but if that bird, and its companion the Coachwhip, ever did inhabit the southern gullies, their disappearance would more probably be due in the main to an alteration in the food supply. The gradual extinction of certain insect and mollusc life would naturally lead to the extinction of all birds living on such food, unless, of course, something remained to fill the gap. But there is no proof at all that either the Lyre-Bird or the Coachwhip-Bird ever existed in Tasmania.

To a Victorian naturalist the absence of these birds leaves a distinct blank in the scheme of things. Both are, to the mainland idea, as inseparable from musk and hazel trees as tree-ferns are from the watercourses they embower. Not only is most of



the scrub and forest similar on both mainland and island, but the general physical contour of Mt. Wellington and its surroundings, which will serve as a type of the whole of the southern area, is so like that of the Dandenong and Healesville Ranges that a picture of the true home of the Lyre-Bird would surely pass for a scene in Tasmania. The reason of this is deep-seated, the soil, the mother of all, inheriting its wonderful richness in both areas from similar igneous dacite rock.

In comparing, then, the birds of Tasmania with those of the parts of southern Victoria which are of similar geological and botanical, and, it may be said, climatic nature, we find absences on both sides, as well as inclusions in the mainland group, which tend to prove several interesting points.

Tasmania has 52 species of Passerine birds (to deal only with the order which shows the greatest variation), and of these one only—namely, *Acanthornis magna*—has no obvious progenitor on the mainland, and this bird is the more unique from the position it occupies as an apparent link between the genera *Acanthiza* and *Scricornis*. Nineteen other birds, however, as will be seen by the following table, which show more or less specific differences, are separated as distinct species to those of the mainland:—

COMPARATIVE TABLE OF THE ORDER PASSERES.

In South-Central and South-Eastern Victoria.	In Tasmania.
<i>Corone australis</i>	<i>Corone australis</i>
<i>Strepera graculina</i>	
<i>Strepera cuneicaudata</i>	
<i>Strepera fuliginosa</i>	<i>Strepera fuliginosa</i>
	<i>Strepera arguta</i>
<i>Corcorax melanorhamphus</i>	
<i>Oriolus viridis</i>	
<i>Grallina picata</i>	* <i>Grallina picata</i>
<i>Collyriocinclā harmonica</i>	
	<i>Collyriocinclā rectirostris</i>
<i>Graucalus melanops</i>	
<i>Graucalus parvirostris</i>	<i>Graucalus parvirostris</i>
<i>Edoliisoma tenuirostre</i>	
<i>Lalage tricolor</i>	* <i>Lalage tricolor</i>
<i>Micræca fascinans</i>	
<i>Petræca leggii</i>	<i>Petræca leggii</i>
<i>Petræca phœnicea</i>	<i>Petræca phœnicea</i>
<i>Petræca rhodinogastra</i>	<i>Petræca rhodinogastra</i>
<i>Petræca rosea</i>	
<i>Petræca bicolor</i>	
	<i>Petræca vittata</i>
<i>Malurus cyaneus</i>	

\* Recorded as accidental in Handbook A. A. A. S. Tas., 1902.





*Sisura*, *Ptilonorhynchus*, *Sphenura*, *Chthonicola*, *Pycnoptilus*, *Psophodes*, *Pomatorhinus*, *Cinclorhamphus*, *Xerophila*, *Falcunculus*, *Eopsaltria*, *Climacteris*, *Sittella*, *Meliphaga*, *Philemon*, *Dicaeum*, *Staganopleura*, *Aegintha*, *Mirafra*, and *Menura*; and of the order *Passeres* as a whole, only 52 species are found in Tasmania against 97 which now live under practically similar conditions on the mainland.

What does the absence in Tasmania of nearly half the forms of the sister region mean? Surely not that they are now extinct in the one area from some modification in their food supply, or from the strength of their natural enemies, but rather that they did not exist on the mainland at the time of Tasmania's disunion. Their evolution or their advent to the south-eastern point of Australia had not occurred when the sea first broke through and separated Tasmania to an independent existence.

The full quota of bird life in those early days was probably, in number of species, identical with the present tally, and this quota represented, at that time also, the bird life of what is now the Victorian area. Included among these original birds was also the Emu (*Dromæus*), which, however, was soon exterminated in Tasmania by the white man, owing to the limited open country to which it was restricted. Among the Tasmanian avifauna of to-day, however (although a few species may have immigrated at some intermediate period—*Zosterops* and *Artamus* are possible ones), there are none, excepting *Acanthornis*, that have not their relative species on the adjacent mainland, for from no other quarter has the Tasmanian bird-life been derived. Two species, however, may be considered somewhat obscure in origin—*Petroica vittata* and *Pardalotus quadragintus*. The former, though the sexes are alike in colour, is perhaps the insular form of *P. bicolor*, while the latter, through living exclusively in the tree-tops in colder parts, has become differentiated from *P. punctatus*.

It is, then, very interesting to note the digression of the insular form from the common stock. The separation imposed upon the species, in the first place, a more gloomy climate, with the result that every bird became darker in plumage to suit the tone of its surroundings; and, in the second place, with the harder and colder conditions, many species developed stronger and more robust constitutions. So marked have these changes been in some that new species were immediately made of them; but in others, where simply a change in tone or in size is noticed, there is no strong reason for assigning them positions other than as insular variations, especially as one or two others, now grouped as such by certain authorities, show just as much difference from the original stock as those separated as new species. A third section there is which shows only a trifling difference.

To the first axiom—the darker colouring of insular forms—there is no exception; but to the second—the larger size of in-

sular forms—two instances must be pointed out where the Tasmanian species, though certainly darker, is decidedly smaller than its mainland congener: these are *Gymnorhina* and *Acanthorhynchus*. Corroborative evidence, however, of the general axiom is found in birds from King Island—notably *Malurus elizabethæ*, *Acanthiza magnirostris*, and two *Melithrepti*—which, as sub-insular forms, are respectively larger and darker than the insular Tasmanian species they represent.

Of all genera, however, the one in which the greatest variation is shown is *Scricornis*. The specimens from Launceston, besides varying in colour, are much smaller than those from Hobart. King Island specimens show an affinity to the latter, but those from Kent Group are of two distinct strains. One, *S. gularis* (Legge\*), is so named on account of a triangular dark brown splash on the throat, which is not found on specimens from any other place; while the other type from the same locality, but presumably inhabiting more open sandy areas, is of a peculiar light brown colour, having a washed-out appearance. These sub-insular varieties certainly stand apart from *S. humilis* proper.

During the Hobart meetings of the Aust. O.U. some species of Tasmanian birds were procured, and in the table which follows their measurements are compared with those of the mainland forms, and this, together with commentary notes, will serve to show the differences, where they exist, between the two.

(NOTE.—All measurements are in inches, and of male birds only. \* Brit. Mus. Cat.; † Aust. Mus. Cat.; ‡ per favour Mr. F. M. Littler, F.E.S., Launceston).

Name.	Locality.	Total Length.	Culmen	Wing	Tail	Tarsus
<i>Strepera graculina</i>	.. Vic. ..	.. 18.75	2.25	10.9	8.3	2.15
„ <i>cuneicaudata</i>	.. Vic. ..	.. 21.5	2.65	10.75	8.75	2.55
„ <i>fuliginosa</i>	.. Tas. ..	..* 19.0	2.75	11.4	8.5	2.5
„ „	.. King Id.	.. 18.0	2.75	10.2	7.0	2.4
„ <i>arguta</i> ..	.. Tas. ..	..* 21.0	2.75	11.9	9.8	2.8
<i>Collyriocincla harmonica</i>	.. Vic. ..	.. 9.0	.77	5.0	4.3	.7
„ <i>rectirostris</i>	.. Tas. ..	.. 9.6	1.1	5.0	4.2	1.3
„ „	.. King Id.	.. 9.75	1.1	4.75	4.1	1.2
<i>Graucalus melanops</i>	.. Vic. ..	.. 12.5	.91	8.0	6.0	1.1
„ <i>parvirostris</i>	.. Vic. ..	.. 12.5	.78	7.5	5.2	1.1
„ „	.. Tas. ..	.. 12.0	.8	7.9	5.3	1.1
<i>Petroica leggii</i> ..	.. Vic. ..	.. 5.3	.38	3.1	2.2	.75
„ „	.. Tas. (female) ..	.. 5.1	.4	2.85	2.2	.75
„ <i>phænicca</i> ..	.. Vic. (in winter)	4.9	.32	3.12	2.1	.75
„ „	.. Nesting in Vic.	4.95	.38	3.1	2.05	.8
„ „	.. Tas. ..	..* 5.2	.32	3.0	2.0	.75
„ „	.. Tas. (in winter)	5.1	.36	3.1	2.1	.8
„ <i>rhodinogastra</i>	.. Vic. ..	.. 5.1	.36	2.75	2.2	.75
„ „	.. Tas. ..	.. 4.7	.35	2.65	2.1	.75
„ „	.. King Id.	.. 4.9	.35	2.6	2.0	.75
„ <i>vittata</i> ..	.. Tas. ..	.. 6.0	.5	3.65	2.9	1.0
„ „	.. King Id.	..* 6.0	.5	3.5	2.4	.95

\* *Victorian Naturalist*, vol. xiii., p. 84 (1896).

Name.	Locality.	Total Length.	Culmen.	Wing.	Tail.	Tarsus.
<i>Malurus cyaneus</i> ..	Vic. ..	5.05	.3	2.0	2.22	1.85
" <i>gouldi</i> ..	Vic. ..	5.0	.32	2.1	2.3	.9
" ..	Tas. ..	5.3	.32	2.1	2.7	.9
" <i>elizabethæ</i> ..	King Id. ..	5.5	.35	2.1	2.5	1.0
<i>Rhipidura albiscapa</i> ..	Vic. ..	5.9	.28	3.0	3.6	.6
" <i>diemenensis</i> ..	Tas. ..	6.0	.3	2.9	3.55	.65
" ..	King Id. ..	5.7	.3	2.65	3.3	.65
<i>Myiagra rubecula</i> ..	Vic. ..	5.85	.42	3.1	2.85	.6
" <i>nitida</i> ..	Vic. ..	6.7	.55	3.5	3.15	.6
" ..	Tas. ..	6.3	.5	3.4	3.15	.6
<i>Acrocephalus australis</i> ..	Vic. ..	6.5	.6	2.9	2.65	1.0
" ..	Tas. ..	..	..	..	..	..
<i>Geocichla lunulata</i> ..	Vic. ..	10.5	1.1	5.5	4.5	1.3
" <i>macrorhyncha</i> ..	Tas. ..	10.3	1.2	5.3	4.5	1.4
<i>Stipiturus malachurus</i> ..	Vic. ..	7.0	.3	1.62	4.4	.7
" ..	Tas. ..	..	..	..	..	..
<i>Megalurus gramineus</i> ..	Vic. ..	5.75	.4	2.42	2.5	.8
" ..	Tas. ..	..	..	..	..	..
<i>Acanthiza pusilla</i> ..	Vic. ..	4.1	.3	2.1	1.75	.8
" <i>diemenensis</i> ..	Tas. ..	4.3	.4	2.18	1.8	.75
" <i>magnirostris</i> ..	King Id. ..	4.2	.5	2.03	1.6	.75
" <i>ewingi</i> ..	Hobart, Tas. ..	4.0	.32	2.15	1.8	.84
" ..	Launceston, Tas. ..	4.0	.3	1.98	1.8	.82
" ..	King Id. ..	4.1	.3	2.1	1.85	.8
" <i>chrysorrhœa</i> ..	Vic. ..	4.1	.35	2.3	1.5	.65
" ..	Tas. ..	3.9	.35	2.25	1.5	.75
<i>Scricornis osculans</i> ..	Vic. ..	4.55	.45	2.3	2.0	.8
" <i>humilis</i> ..	Launceston, Tas. ..	4.8	.5	2.2	1.85	.9
" ..	Hobart, Tas. ..	5.4	.5	2.5	2.3	1.0
" ..	King Id. ..	5.3	.5	2.4	2.0	.95
" <i>gularis</i> ..	Kent Group ..	5.1	.52	2.4	2.0	.95
" (light variety) ..	Kent Group ..	4.75	.45	2.2	1.8	.9
<i>Cinclosoma punctatum</i> ..	Vic. ..	10.5	.7	4.4	4.7	1.2
" ..	Tas. ..	† 9.25	.86	4.13	4.33	1.2
<i>Calamanthus fuliginosus</i> ..	Vic. ..	5.0	.4	2.3	2.0	.8
" ..	Tas. ..	5.15	.45	2.42	2.2	.9
<i>Ephthianura albifrons</i> ..	Vic. ..	4.6	.35	2.75	1.5	.75
" ..	King Id. ..	4.6	.35	2.7	1.5	.75
<i>Gymnorhina leuconota</i> ..	Vic. ..	15.5	2.1	11.0	5.9	2.4
" <i>hyperleuca</i> ..	Tas. ..	13.0	1.55	9.5	5.3	2.1
<i>Craicticus destructor</i> ..	Vic. ..	10.7	1.5	5.6	4.4	1.2
" <i>cincereus</i> ..	Tas. ..	* 10.0	1.45	5.5	4.6	1.24
<i>Pachycephala gutturalis</i> ..	Vic. ..	6.4	.5	4.0	3.2	.85
" <i>glaucura</i> ..	Tas. ..	6.7	.5	3.95	3.35	.9
" ..	Kent Group ..	6.7	.5	3.85	3.0	.85
" <i>olivacca</i> ..	Vic. ..	8.0	.7	3.8	3.6	1.15
" ..	Tas. ..	8.0	.7	3.85	3.7	1.15
" ..	King Id. ..	7.75	.65	3.8	3.5	1.1
<i>Acanthorhynchus tenuirostris</i> ..	Vic. ..	5.75	.9	2.75	2.55	.7
" <i>dubius</i> ..	Tas. ..	5.2	.8	2.5	2.25	.75
<i>Zosterops carnulescens</i> ..	Vic. ..	4.6	.33	2.4	1.75	.65
" ..	Tas. ..	† 4.44	.39	2.4	1.8	.62
<i>Melithreptus lunulatus</i> ..	Vic. ..	5.3	.48	2.9	2.3	.7
" <i>melanocephalus</i> ..	Tas. ..	5.4	.48	2.95	2.3	.75
" ..	King Id. ..	5.5	.49	3.06	2.4	.75

Name.	Locality.	Total Length.	Culmen.	Wing.	Tail.	Tarsus
<i>Melithreptus gularis</i>	.. Vic. ..	6.2	.51	3.5	2.6	.8
" <i>validirostris</i>	.. Tas. (female) ..	6.0	.6	3.1	2.52	.85
" "	.. King Id. ..	6.35	.72	3.25	2.75	.85
<i>Glycyphila fulvifrons</i>	.. Vic. ..	6.2	.8	3.25	2.6	.85
" "	.. Tas. ..	..	..	..	..	..
<i>Ptilotis leucotis</i>	.. Vic. ..	7.65	.5	3.85	3.7	1.0
" <i>flavigularis</i>	.. Tas. ..	7.6	.55	3.8	3.4	.9
" "	.. King Id. ..	7.8	.55	3.9	3.6	1.0
<i>Meliornis australasiana</i>	.. Vic. ..	6.3	.58	3.04	2.75	.7
" "	.. Tas. ..	.. † 6.18	.62	2.99	2.75	.78
" <i>novæ-hollandiæ</i>	.. Vic. ..	6.9	.72	3.0	2.95	.85
" "	.. Tas. ..	..	..	..	..	..
<i>Manorhina garrula</i>	.. Vic. ..	9.9	.85	5.2	4.8	1.2
" "	.. Tas. ..	10.0	1.0	5.75	5.1	1.85
<i>Acanthochæra carunculata</i>	.. Vic. ..	13.75	.95	5.8	6.2	1.4
" <i>inauris</i>	.. Tas. ..	..* 18.0	1.0	6.2	8.0	1.6
" <i>mellivora</i>	.. Vic. ..	10.75	1.0	4.6	5.2	1.0
" "	.. Tas. ..	12.3	1.1	5.6	6.5	1.2
<i>Pardalotus assimilis</i>	.. Vic. ..	4.1	.25	2.5	1.3	.78
" <i>affinis</i>	.. Vic. ..	3.9	.25	2.5	1.3	.8
" "	.. Tas. ..	4.0	.25	2.56	1.4	.78
" "	.. King Id. ..	4.35	.26	2.5	1.3	.8
" <i>punctatus</i>	.. Vic. ..	3.5	.21	2.28	1.2	.75
" "	.. Tas. ..	..	..	..	..	..
" <i>quadragintus</i>	.. Tas. ..	3.5	.2	2.25	1.2	.75
<i>Hirundo neoxena</i>	.. Vic. ..	6.1	.25	4.4	3.1	.38
" "	.. Tas. ..	.. † 5.11	.23	3.74	—	—
<i>Petrochelidon nigricans</i>	.. Vic. ..	5.05	.2	4.0	2.0	.4
" "	.. Tas. ..	.. † 5.19	.23	4.4	2.24	.39
<i>Anthus australis</i>	.. Vic. ..	5.95	.45	3.2	2.5	.95
" "	.. Tas. ..	.. † 6.41	.48	3.21	2.5	.96
<i>Artamus sordidus</i>	.. Vic. ..	6.8	.52	5.0	2.9	.65
" "	.. Tas. ..	6.75	.55	4.9	2.85	.7
<i>Zonæginthus bellus</i>	.. Vic. ..	4.6	.4	2.15	1.7	.65
" "	.. Tas. ..	..* 4.4	.45	2.2	1.7	.65
<i>Podargus strigoides</i>	.. Vic. ..	18.0	1.6	10.8	8.45	1.3
" "	.. Tas. ..	16.0	1.2	10.45	7.6	1.3
<i>Egotheles novæ-hollandiæ</i>	.. Vic. ..	8.5	.4	5.1	4.4	.9
" "	.. Tas. ..	.. † 8.03	.39	5.23	3.93	.98
<i>Alcyon azurea</i>	.. Vic. ..	6.3	1.5	3.0	1.4	.4
" <i>diemenensis</i>	.. Tas. ..	7.0	2.0	3.1	1.65	.4
<i>Halcyon sanctus</i>	.. Vic. ..	7.75	1.6	3.6	2.3	.5
" "	.. Tas. ..	..	..	..	..	..
<i>Calyptorhynchus funereus</i>	.. Vic. ..	..* 24.0	2.1	18.0	14.0	1.1
" <i>xanthonotus</i>	.. Tas. ..	..* 23.0	—	15.0	11.0	—
<i>Platycercus flaviventris</i>	.. Tas. ..	..* 14.5	—	7.4	7.0	.75
" "	.. King Id. ..	15.0	.76	7.3	8.4	.85
" " (immature)	.. Kent Group ..	13.0	.76	6.8	7.0	.85
" <i>eximius</i>	.. Vic. ..	13.3	.7	6.25	6.5	.8
" "	.. Tas. ..	.. † 12.5	.83	6.5	7.75	.82
<i>Neophema venusta</i>	.. Vic. ..	8.3	.46	4.5	4.75	.55
" "	.. Tas. ..	.. † 7.9	.43	4.3	4.72	.58
<i>Phaps chalcoptera</i>	.. Vic. ..	14.25	.8	8.25	4.5	1.0
" "	.. Tas. ..	.. † —	.7	7.48	5.23	.98
" <i>elegans</i>	.. Vic. ..	11.6	.65	6.3	4.0	1.1

Name.	Locality.	Total Length.	Culmen.	Wing	Tail.	Tarsus.
<i>Phaps elegans</i>	.. Tas. ..	..				
<i>Coturnix pectoralis</i>	.. Vic. ..	.. 6.75	.5	3.9	—	.9
” ”	.. Tas. ..	.. † —	.43	4.09	1.49	.94
<i>Synæcus australis</i> ..	.. Vic. ..	.. 6.5	.5	3.5	—	.87
” <i>dicmenensis</i>	.. Tas. (Gould) ..	.. 8.5	.75	4.5	—	1.12
<i>Turnix varia</i> ..	.. Vic. ..	.. 7.5	.5	4.4	2.0	1.02
” ”	.. Tas. ..	.. † —	.51	3.66	—	1.0

## COMMENTS.

*Strepera* (Crow-Shrikes).—If the measurements quoted for *S. arguta* are not above the average, then that species has the distinction of being the largest of its genus. The Tasmanian form of *S. fuliginosa*, from the measurements given, shows a wing longer by 1.2 inches than the King Island specimen; the former may have been confused with *S. arguta*, or it may be a grade between one species and the other.

*Collyriocincla rectirostris* (Whistling Shrike-Thrush).—The King Island bird is smaller in the wing and with more slender tarsus than the Tasmanian. The young and the female birds of this species are easily distinguished from those of the mainland form by having a boldly striped breast and a distinct reddish-brown eyebrow.

*Graucalus parvirostris* (Small-billed Cuckoo-Shrike).—Near the sea coast in Victoria, especially during winter, small flocks of *Graucali*, which compare favourably with the Tasmanian bird, can be seen. This is the first record of this species being found on the mainland.

*Petrarca phanicea* (Flame-breasted Robin).—Great numbers of these birds are recorded in Cape Otway district and also in the Alpine areas of Victoria, but whether they alone are the birds which appear in all the low-lying country during winter is not yet satisfactorily determined. Does the species entirely leave Tasmania in the winter months? (In July, 1904, two specimens in the flesh were forwarded from Hobart by Mr. R. Reid, who states that in that locality the species is as plentiful in winter as in summer.)

*Petrarca rhodinogastra* (Pink-breasted Robin).—The Tasmanian specimen has a richer breast and more white on the forehead than the bird shot on the mainland, while the rich pink colour is intensified still more in the King Island form.

*Petrarca vittata* (Dusky Robin).—It is remarkable that this species, so common in Tasmania and all the larger islands in Bass Strait—being, in fact, the only land bird recorded from some of them—has not yet been found in Victoria.

*Malurus gouldi* (Long-tailed Wren).—It is evident, from a number of skins collected in Victoria, that the Tasmanian form, with its dusky underparts and touches of light blue on the chest, is found on the mainland. Several shades are observable in the mantle blue; occasionally one is found darker even than the



insular specimen. The measurements given for Tasmania were taken from birds shot at Hobart. The Launceston type is smaller in all but the bill: total length, 5.1; bill, .38; wing, 2.1; tail, 2.5; tarsus, .9. The typical *M. cyaneus*, found to the north of the Dividing Range in Victoria, is invariably white on the under parts and with light brown primaries, while *M. elizabethæ*, the other extreme, from King Island, is distinguished by the richness of its colouring, and by the Prussian blue on the outer edges of black primaries.

*Rhipidura diemenensis* (Dusky Fantail).—The King Island specimens, though smaller, show no difference in plumage to the Tasmanian; and further, on the mainland, in southern Victoria, birds can be found quite as dusky and with as little white on the tail as the insular forms. The patches of white possibly vary with age, but in a general way the mainland bird shows larger markings on the tail feathers. The fledgling of *R. diemenensis* is dark brown suffused with reddish-brown; eyebrows, edges of secondaries, and wing coverts light brown; outer tail feathers tipped grey, abdomen light fawn.

*Myiagra nitida* (Satin Flycatcher).—The Tasmanian bird is slightly the smaller, and is without the narrow white edgings on both outer and inner webs of two outermost tail feathers, and also to outer webs of secondary wing feathers, which are noticeable on the mainland. If this species be truly migratory, making its way in winter northward, as is supposed, with its fellows on the Australian continent, why is there this difference?

*Geocichla macrorhyncha* (Large-billed Ground-Thrush).—Besides possessing a large bill and a stronger tarsus, this species is much darker in plumage than the mainland form. A young bird, presumably three months old, measured only 1.06 in. in the bill and 1.3 in the tarsus.

*Acanthiza diemenensis* (Tasmanian Tit or Browntail).—Besides a larger bill and shorter tarsus, this species is in colour of mantle more brown than olive, when compared with *A. pusilla*, and the female is always the lighter of the sexes. Differences, however, occur in birds from different parts of Tasmania, viz.:—

	Total length.	Bill.	Wing.	Tail.	Tarsus.
Hobart ..	.. 4.3	.4	2.18	1.8	.75
Bagdad ..	.. 3.95	.4	2.1	1.7	.75
Launceston ..	.. 3.9	.35	2.0	1.5	.75 (black legs)

In *A. magnirostris* from King Island, the light edgings to the primaries, and also the semicircular marks on each of the forehead feathers, are much less distinct than in other species, while in the young bird the bill is slightly shorter, the mantle is darker brown, and the throat marks more obscure than in the parent.

*Acanthiza ewingi* (Ewing Tit).—This bird, which was reinstated as a good species during the Hobart session of the Aust. O.U. (1903), is locally known as the "Creek Tit," because of living mostly in the tea-tree (*Leptospermum*) and wild currant (*Coprosma*)

bordering the creeks, in contrast to *A. diemenensis*, the "Forest Tit," which inhabits mostly the gum-tree areas. Gould, who first described the species, wrote that it was a slenderer bird than *A. diemenensis*, with more brown at base of primaries. A more complete description may be welcomed:—General colour above brownish-olive, passing into rufous on rump; forehead rufous, with very faint black edging to each feather; spurious wing and primaries nearly black, the outer webs of Nos. 3 to 7 for the basal third rufous; the bases of secondaries rufous, then black for half an inch, then olive on outer web; chest and throat with indistinct grey-black edgings to feathers; abdomen white; flanks dark olive; tail brownish-olive, with all but centre ones showing wide sub-terminal band nearly black and tips dark grey; legs and bill brownish-black; basal half of lower mandible white; irides light red. The King Island bird shows the prominent black and rufous wing-patches a lighter tint.

*Acanthiza chrysorrhoa* (Yellow-rumped Tit).—The general colour of the mantle in the Tasmanian bird is lighter, particularly on the back and the primaries, the feathers of the throat, lores, and eyebrow, while the tarsus is longer by .1 inch than the mainland form.

*Acanthornis magna* (Scrub-Tit).—The present name of this bird, as further evidence is collected, appears to be more fitting than either *Acanthiza* (Gld.) or *Scricornis* (Brit. Mus.), for, although there is a leaning toward the latter, it is, in its structure and economy, a link between the two. A description and measurements of birds from Mt. Wellington, Tasmania, are as follow:—

	Total length.	Bill.	Wing.	Tail.	Tarsus.
Male ..	.. 4.4	.5	2.1	1.8	.85
Female ..	.. 4.35	.48	2.1	1.8	.85
Young male ..	.. 4.3	.42	2.05	1.75	.8

Crown of head, lower back, rump, flanks, and under tail coverts deep brownish-olive; upper back olive; lores white, extending into a stripe over the eye, which is also encircled on the lids with a zone of small white feathers; ear coverts and cheeks slate-black in male, but greyer in female; wing black, five primaries narrowly edged on terminal half of outer web with white; tips of five secondaries and five greater wing coverts boldly edged with semicircular patches of same colour, which is easily detected on the bird in nature; throat white (in female tinged with yellow), passing into pale yellow on abdomen; a line of white extends from gape partly under the ears; tail blackish-brown, outer webs brownish-olive, subterminal black band, tips deep slate passing into narrow white edge, especially on outer feathers; bill blackish, base of lower mandible pale yellow; legs brownish in male, much lighter in female; irides light yellow. The female is the browner of the two sexes, while the young is duller in all its markings than either, and is distinguished by having a patch only of dull yellow on each side of the chest, the centre of abdomen being white.

The main characteristics of this unique species are worthy of review. Though often seen on the ground among fallen scrub, like the *Scricornis*, it seems equally at home in the tops of the musk and hazel trees, and, like an *Acanthiza*, it frequently fastens for a moment or two on the side of a tree-trunk to survey an intruder. It has a merry song, quite unlike any other of its bush mates, and when seen is easily identified by the prominent white wing markings and white throat. The nest is a round, bulky structure, very like that of a *Scricornis*, plentifully built of fern-down and green moss, placed 5 or 6 feet high, sometimes in a large fork of a tree hidden in a gully, sometimes in the bushy top of a wild currant (*Coprosma*) bush, but more often in the cluster of dead fronds hanging from a tree-fern. The eggs, though large, are distinctly of the *Acanthiza* type (white ground with reddish spots), and help materially to place the owner in the peculiar position it occupies between two well-known genera.

*Scricornes* (Scrub-Wrens).—Several phases exist in Tasmania and the adjacent islands of this genus, which are sufficiently distinct from one another to be made sub-species. The specimens of *S. humilis* from Mt. Wellington are the largest and darkest of all; those from Launceston are different in size and in colour; the mantle, instead of being dark olive, is tinged with rufous; the head and the outer edges of the primaries are of a much lighter tint, and the tail is brownish-olive instead of deep brown. The legs are black, and not dark brown, while the dark sub-terminal band on the tail is pronounced in the northern variety, but very obscure in the southern. The sexes are distinguished in each case by the lores being black in the male and slate-coloured in the female. On King Island the bird more closely resembles *S. humilis*, but, besides being lighter in general colour and with no prominent dark centres to the chest feathers, it has distinct subterminal tail markings, and, further, the dusky under tail coverts are tipped with dull yellow, a point characteristic of *S. osculans* of the mainland, but not noticed in *S. humilis* proper. The young is of a deep rich brown colour. But it is with the *Scricornes* from Kent Group, the nearest of Tasmanian islands to the mainland, that the greatest difference is shown. There are distinctly two strains, the larger, *S. gularis* (Legge), having a longer bill and shorter wings than *S. humilis*; general colour greyish-olive; throat feathers brownish-black, a few only showing lighter edges; under tail coverts edged with dull yellow; tail minus any dark subterminal band. The smaller specimens are of a peculiar washed-out appearance, the mantle being rust-coloured on scapularies, back, and rump, with a lighter head, minus any prominent markings; white edgings to greater wing coverts very faint; under tail coverts and flanks brownish-fawn; tail uniform. Several specimens obtained are presumably adult birds, so the existence of two phases in one area must be due to their living in different surroundings.

*Calamanthus fuliginosus* (Striated Field-Wren).—The Tas-

manian bird is somewhat larger than the mainland, and in both cases the female is the lesser of the two sexes by .2 inches in the wing, and instead of having the ground colour of the striped throat white like the male, it is of the same dull yellow as the remainder of the under surface. Seeing that in the Australian Museum "Special Catalogue" (Part IV., 1904, p. 355) it is deemed fit to separate the mainland form under the title of *C. albiloris*, n. sp., it is doubtless worth noticing that the specimens from which these measurements are taken are practically identical except in size, that from Tasmania having the lores white and not dusky brown, and that from the mainland white also. The same mark, however, in the female bird is dusky.

(A few years ago a "select committee" consisting of Col. Legge, Mr. A. J. Campbell, and the writer looked into the *Calamanthi*, with the finding that there was apparently no appreciable difference, except in size, between the Tasmanian and Victorian birds.)

*Gymnorhina hyperleuca* (Lesser White-backed Magpie).—Besides being considerably smaller than the Magpie of the mainland, some difference is shown between specimens from the north and the south of Tasmania.

	Total length.	Bill.	Wing.	Tail.	Tarsus.
Launceston ..	13.0	1.55	9.5	5.3	2.1
Bagdad .. ..	13.5	1.76	9.25	5.5	2.1

*Cracticus cinereus* (Grey Butcher-Bird).—Another smaller instead of larger insular form.

*Pachycephala glaucura* (Grey-tailed Thickhead).—The difference between this and the mainland species lies in the colour of the tail, the former being slate-grey throughout, while in the latter all but the two outer feathers are, excepting the basal portion and the tip, jet black. The female of *P. gutturalis* has the tail tinged with olive.

*Pachycephala olivacea* (Olive Thickhead).—It is worthy of note that the King Island specimens are smaller than those of either Tasmania or Victoria. The female of this species differs in plumage from the male, having a browner mantle and a dingier breast and throat. The young male, as is the case with the preceding species, resembles the female for a season or two.

*Acanthorhynchus tenuirostris* (?) (Spinebill).—The Tasmanian form of this Honey-eater was named by Gould *A. dubius*, being smaller, shorter in the bill, but withal noticeably darker than *A. tenuirostris*. If such as the Magpie and the Browntail remain separate, this should be treated as a distinct species also. The female of *A. dubius* is duller in plumage than the male, and the bill shorter by .1 inch.

An interesting experiment was tried with a fledgling which lived for four weeks in captivity. When taken it had just left the nest, and was barely able to fly. Its plumage was simply

dark grey above and dull brown below, with a light-coloured bill .6 inch in length. Just before its death, which unfortunately occurred through improper feeding, a light-coloured patch was beginning to show at the top of the throat, as well as the black crescent across the chest, and the brighter markings on the back and head. The eye remained brown.

*Melithreptus validirostris* (Strong-billed Honey-eater).—The King Island specimen, as a sub-insular form, is noticeably the larger, particularly in the bill, which is .75 inch in length against .6 in the female Tasmanian bird; however, the sexes differ slightly in the measurements of the bill. In the young bird of this species the mantle is tinged with greenish-olive; the cheeks, lunar mark behind the head from eye to eye, and the centre of abdomen are light yellow, and the bill, cere, and legs are straw-yellow in colour, the black head, ear coverts, and throat remaining prominent. In the adult the cere is of a sea-green colour.

*Melithreptus melanocephalus* (Black-capped Honey-eater).—The King Island bird, again, is larger than the Tasmanian. The back and head of the young bird are brownish. Only about the throat and cheeks is there any appearance of the black, which in the adult envelops the head as a hood; bill brownish, cere yellow, becoming on maturity light green above and deep blue below.

*Ptilotis flavigularis* (Yellow-throated Honey-eater).—This, the only Tasmanian representative of the genus, appears to be the insular form of *P. leucotis* (White-eared Honey-eater). A comparison of specimens from King Island and Tasmania shows a heavier tarsus from the former locality.

*Manorhina garrula* (Noisy Miner).—The Tasmanian bird is distinctly larger and darker than the mainland, with darker cere, bill, and legs, and no prominent white tips to primaries.

*Acanthochæra inauris* (Yellow Wattle-Bird).—Apart from the larger build and bolder markings, the possession of yellow wattles, an inch in length, makes this bird specifically different from *A. carunculata* of the mainland, which has red wattles .4 inch long.

*Acanthochæra mellivora* (Brush Wattle-Bird).—In size the Tasmanian specimen is much larger than the mainland, the mantle has a greenish tinge, and in the centre of the abdomen is a distinct wash of yellow, which, apart from the two large Wattle-Birds, is not found in any specimens of the genus from other localities.

*Pardalotus affinis* (Yellow-tipped Pardalote).—Specimens of this species, which is distinguished from *P. assimilis* by the speculum of the wing being yellow instead of red, have been shot in southern Victoria, but none of the red-speculum birds have been recorded from Tasmania. The outer web of the third, and sometimes the fourth, primary is white; and on this point can the two southern varieties be distinguished from the true *P. striatus* of northern Victoria, which has the white edging on five primaries?

*Artamus sordidus* (Wood-Swallow).—More difference than might be expected exists between the Tasmanian and the mainland birds. Both the bill and the tarsus of the former are longer slightly, while the outer web of the fourth primary, which in the mainland specimen is, together with the second and third, broadly marked with white, is only slightly edged. The white markings on the tips of the tail feathers are smaller in size, but these possibly, and maybe the markings on the primaries as well, vary with the age of the specimen.

There yet remain several species of which measurements should be sought, and comparisons made with their congeners across the Strait, for with the material available for this article the whole field could not be traversed. Again, further data may throw more light on the instances already cited, as reliance cannot always be placed on the evidence of one or two skins from one quarter. Whole series are required of specimens, not only from the different districts of Tasmania, but also from the several parts of Victoria, or Australia even, where the genus or species is found, before the facts, either for or against new and separate species, can be definitely stated.

## Field Notes on Some Birds of the Casterton District (Victoria).

BY (DR.) E. A. D'OMBRAIN.

THE following notes, compiled from observations by Mr. W. McLennan and myself, may prove interesting to ornithologists. Any notes concerning the habits of birds must at least be of some value, by reason of the light they throw on the inner life of our avifauna.

The district is a very large one, watered by the two rivers, the Glenelg and the Wannon, which unite to form a fine stream close to the town of Casterton, whence it takes a very circuitous course south, to open into the ocean at Nelson, on the southern coast.

Amongst the birds to which these notes refer are:—

MAGPIE (*Gymnorhina leuconota*).—On a table-land about 3 miles from Casterton, a pure albino has been caught, having just left the nest, on two occasions in different seasons, 1902 and 1903. The question arises—Is not each bird from the same parent or parents? I intend keeping a watch for another this season. The captives are still alive, and are pure albinos, with pink eyes and pale legs and bill, in which is a warm tinge.\*

\* [This suggests a question as to the presence or absence of colour. Though neither black nor white can in any sense of the term be called a colour, yet there are phases in the infinitude of gradations between these extremes which may be so called. Black and white are virtually the positive and the negative in a field where light is absorbed or reflected. The intermediate angles of reflection, absorption, or distortion give all the rest. From the author's point of view some problems are, perhaps, more

WHISTLING EAGLE (*Haliastur sphenurus*).—These birds invariably return to their old site, commencing repairing the old nest in July. 12/7/03.—Pair seen with nest in tree. Two months later (10/9/03) bird flushed off the nest. It contained two eggs. Nest was 2 ft. 6 in. across, and had been used for several seasons.

SWAMP-HAWK OR HARRIER (*Circus gouldi*).—Very plentiful, often breeding in the middle of a crop. Commence breeding in September. Clutch generally three, occasionally five. In season 1899 five eggs were taken by myself from a large isolated clump of rushes in a swamp. The young are most vicious. They will eat anything. Of two I had last season, the female killed her brother and gorged herself with his body. They have regular "stand-up" fights, striking out fiercely with their sharp talons.

BROWN HAWK (*Hieracidea orientalis*).—Five nests were found during September, 1903, all in red gum trees (*E. rostrata*). Clutch three in every case. 17/9/03.—The sitting bird was captured on the nest, which contained three eggs. From this nest a clutch of four Raven's eggs was taken later.

GOSHAWK (*Astur approximans*).—My note about this Hawk is made from two young ones which I had in captivity. I was trying to train them for hawking, but found them too wild to stand having the hood on. When chained near each other they fought continually, and at last the female, getting her chain loose, attacked her mate, and killed and ate him. Like the rest of their genus, they spend a lot of their time watching their prey to find the most favourable moment for striking. Pieces of food thrown in the air to them were always caught in the talons before they reached the ground. The iris of the eye in the young is at first merely a pale whitish colour, which gradually deepens to a bright lemon-yellow as they mature.

KESTREL (*Cerchneis cenchroides*).—Although supposed to be almost an insectivorous bird, in captivity the Kestrel will eat any sort of meat, from cold mutton to young chickens. One I had last year was a year old. He had lost one leg and it was amusing to see him "stumping" about the yard. He was very quick in his actions, and loved coming in to the kitchen fire. He killed and ate a young Oriole (*Mimeta viridis*) I was rearing,

worthy of study—namely, as to whether parents which have once produced albinos repeat the same process season after season; whether albinos perpetuate their characteristics; and whether the albino stage of plumage is a permanent one, or "subsides" (to use a popular word) into the ordinary markings. What evidence is to hand is unsatisfactory, and it is to be hoped that Dr. D'Ombrein may be placed in a position to find some solution of the difficulty. As one road towards its solution may be suggested not only a microscopical examination of feather vanes, but of the minute scales which are their accompaniment. The determination of their angles and corresponding colours would prove a valuable preliminary to any such study. The probabilities are that some fault in the spermatozoids, or a malformation in the womb of the mother, produce these abnormal phases and positions of the scales.—H. K.]

and on one occasion when a fowl strayed into the yard where the Kestrel was kept (with cut wing) he fastened his talons into the hen's back. The hen simply raced round in fright till the little savage was dislodged. The Hawk is still alive. These little Hawks generally breed in October and November here; clutch generally four, but frequently five.

28/10/03.—Nest in hole in red gum tree. Clutch of four eggs taken. On 8/11/03 there was another egg laid by this pair in another hole. On 1st December the birds had changed to another nesting-hole, where they laid five eggs.

MASKED OWL (*Strix nova-hollandia*).—This district is a good one for Owls, of which there are five species.

I have, in a previous number of *The Emu*,\* recorded the finding of the nesting-hole of the fine Masked Owl, and was enabled to furnish the dimensions of the egg from the remnants (about three-fourths of the shell) found in the nest, which contained a fledged young one. These Owls play great havoc with the rabbits caught in the traps set by the rabbiters. It was by this means that a good live specimen was caught, and given to me. The trap was "muffled," and a freshly-killed rabbit placed near it. In a few minutes the Owl flew down from a fence post, where he had been watching the proceedings, and walked into the trap, and was promptly secured. The nest-hole, and indeed any hole used for camping in, of both this and the Lesser Masked Owl, has always a great quantity of bones of rabbits and birds in it, and the ground at the foot of the tree is always dotted about with castings, or "pellets," of the undigested parts of their food. I have also seen the bones of the lesser flying squirrel (*Phalanger*) in the hollow. Many declare that the Masked Owl attacks very young lambs, but this is scarcely proven. The bird I had alive measured 3 ft. 8 in. from tip to tip of wings, had enormous talons, and when standing upright measured about 24 in. It is my custom, usually, to photograph any live specimens, but I regret to say that in this instance I omitted to do so, but at once chloroformed the bird and skinned it. The colouring of the plumage is very beautiful. All the back of head, wings, and tail much resemble in colour the fur of a tortoiseshell cat. The breast is snow-white, but sparingly spotted with black, the spots not large, and situated at the end, or tip, of the shaft of the feather. The bill is of horn colour for about a third of the distance from the tip, shading gradually to a purple colour at the base. The facial disc is composed of fine, stiff silvery feathers, which broaden at the tips, giving them an oar shape, some having a warm wash of purplish hue, deepening round the eyes, which are liquid or inky blue-black. This hue gives the disc a general purple appearance. The edge of the disc appears to be composed of two circles, the inner one containing mostly pure white, while the outer shades from fawn

\* Vol. ii., p. 184.



to umber at the tip of each feather. The umber is most marked in the lower half of the circle in the upright position, the upper showing more fawn colour. I have gone into some detail with regard to this, as it shows a decided difference from the face of the Chestnut-faced Owl, as will be seen later. Of the breast and side feathers, those that have the black spots on them have also a black streak down the shaft, uniting with the spot. The third primary is the longest feather in the wing.

These Owls, in conjunction with some other species of their kind, have a marked peculiarity—*i.e.*, the outer barbs of the first true primary and of the first false primary feathers have no barbules, and are turned the wrong way, like the feathers of a French "frizzy" fowl. As I have watched Owls entering the holes in the trees, I remarked that they always fly to the hole, then settle on the edge of it, and at once turn round and go tail first into the interior of the hollow branch or hole of the tree. In performing this movement, it is very likely that the outer barbs acquire the turned appearance from being rubbed the wrong way. This is, of course, only a theory, and I intend to ascertain if the young possess the peculiarity of turned feathers or not. The talons, toes, and legs are very powerful, the toes having a covering of stiff bristles, and the lower legs soft silky ones. These Owls hunt in pairs, one keeping close to the ground, evidently beating, whilst the other flies overhead ready to swoop. They frequently follow one for quite a long distance, evidently on the look-out for any prey that one may start. These birds are best seen at full moon, but are very shy during the early quarter, seeming to gradually grow accustomed to the increasing light, when they are easily seen.

The bird that flies close to the ground keeps up a sort of hissing noise, and is answered by the higher-flying bird in a chattering voice. When pairing is over the birds do not frequent their usual hunting grounds, but retire to the vicinity of their nesting-hole.

Much of the above information of their habits has been gathered from the Messrs. Dancocks, who are very keen observers, and whose home is in the midst of the haunts of these birds.

LESSER MASKED OWL (*Strix delicatula*).—This beautiful bird is commonly called a "White" Owl, merely because of its much lighter coloured plumage, which contrasts with that of the darker Boobook, the comparison being made the easier because in many localities it is almost as plentiful as the Boobook. In this district it is quite as common as the Boobook, and in the year 1902, when the stock were starving in northern parts of Victoria and the great drought was still raging in the other States, these birds were exceptionally plentiful here. Yet, despite the fact that all this Western District was bountifully supplied with feed for stock, the Delicate Owls were found dying and dead in numbers, and this fact I mentioned in my monthly health report to the Shire Council of Glenelg. I take the following from the report :

—"With regard to the birds mentioned it may not be altogether out of place to mention in a report of this nature (as showing the presence of disease amongst all vertebrates) that no fewer than 13 specimens of the Lesser Masked Owl have been brought under my notice, having been picked up dead or dying, some in pairs, others singly. On examination, their bodies were wasted and starved in appearance."

Their habits are much the same as the whole class of Owls, and the only other note I have about them is that they lay as many as three eggs, and they will take the carcass of a small rabbit to a hole in a tree and will feed on it there during daylight, as has been proved by the appearance of the recently torn flesh of a rabbit found in the "camp" just vacated by the bird. Last season I had three "in the down," taken from a nest. They were "leggy" balls of down with the facial disc showing plainly. Evidently these feathers are the first to make their appearance. I photographed these and also an adult bird with the wings spread in flight, the bird being tethered. One of the young ones, when fledged, recently scored first prize in a suburban show, and is now "at home" in the Melbourne Zoological Gardens. They make a hissing sound when angry, and are very "snappy." The eyes deepened in colour as the bird grew, till they were inky-black.

CHESTNUT-FACED OWL (*Strix nova-hollandica*, sub-sp. *castanops*).—This is supposed to be a doubtful species, but I feel pretty confident that the specimen of Owl which I have got in this district is a quite distinct bird from *S. nova-hollandica*. In this specimen the facial disc is entirely different in colour from that of the Masked Owl, having no purple hue about the face, and the circumference of the disc is a pure chestnut; also there is no ring of dark feathers on the disc at all. The under surface of the whole bird is uniformly pure white—neither streaks nor spots on the feathers—and the general colouring of the whole of the upper surface is much lighter and has much more chestnut, in blotches, on it. Finally, the whole appearance is at a glance different from that of the Masked Owl, and on close inspection is markedly so. My specimen was shot in a tree along with a Delicate Owl. They were "hooting," and thus drew attention to their presence. It was a male bird, and measured from tip to tip of wings 40 inches. One wing was 17 inches, and total length of bird  $14\frac{1}{2}$  inches. I intend having the specimen fully identified, if possible.

WINKING OWL (*Ninox conniveus*).—I know very little about the habits of this Owl, though the species is fairly plentiful here. Probably their general grey colour saves them from detection. These birds are frequently caught by the legs in rabbit traps. I have had two live specimens so taken. One had a dislocated "knee," which I reduced. On two subsequent occasions it was re-dislocated and reduced, till finally it became so thickened and

deformed I decided to kill the bird. For this purpose I gave it three doses at different times of prussic acid on meat. Result, *nil*. Then I gave it arsenic twice, and still the bird lived, until finally I chloroformed it and skinned it. It had grown quite tame. The irides are a beautiful bright yellow, and eyes brighter and larger than the Boobook's, and constantly "winking" (conjuring), hence the specific name. The legs are short, thick, and powerful. The note or cry of this Owl is exactly like that of the Boobook.

BOOBOOK OWL (*Ninox boobook*).—I have little to note about this Owl. Mr. M'Lennan found five nests last year, two of which had clutches of three. This was in October and November. An interesting fact in connection with one nest (which had three young ones) is that in the same hollow of the branch, about 3 feet away, was a brood of three young Laughing Jackasses (Brown Kingfishers). What with the Jackass family being fed by day, and the Owl family by night, things must have been rather busy in that hollow. I recently sent a young Boobook Owl to my father, who put it in a rat-infested cellar in the city. The bird is free to fly about the large cellar, and since his advent not a rat has been heard of. Perhaps the Public Health authorities might here find a remedy for plague-infected rats.

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## A Visit to Rottnest Island, W.A.

BY F. LAWSON, PERTH.

ROTTNEST Island lies some 14 miles west-north-west of the port of Fremantle. It is only of small extent, being about 7 miles in length, and about 2 miles in breadth at its widest part. It is the most northern portion of a limestone ridge, running in a south-easterly direction towards the mainland. Other parts of this ridge form the islands of Karnac, Garden Island, and a few smaller rocks of no importance. The south-western side of Rottnest is for the most part a much-eroded line of cliffs, with an occasional small stretch of sandy beach.

The interior part of the island is clothed with very dense acacia scrubs, and, were it not for "rides" having been cut as means of communication, would be quite impenetrable without the most severe exertion. Except at the settlement on the eastern shores, trees are quite absent, and the majority of those found there have been artificially introduced. An important feature, from an ornithological point of view, is a series of large salt lakes or lagoons. In the hot weather these evaporate to a large extent, and become for the time being mud flats, forming favourite feeding grounds for numerous Waders.

There are few species of animals on the island; some of these, even, are introduced. But *Macropus brachyurus*, or short-tailed wallaby, is very common in the acacia scrubs.

Rottnest is reserved as a summer residence for the State Governor of Western Australia, and for a native penal settlement, so that it is very little disturbed by the presence of man.

I spent a full fortnight on the island, during which I devoted the whole time to an examination of the bird life. Breeding operations were in progress with several species, but I was too late for the nests of the Passerine birds.

*HIERACIDEA BERIGORA* (Striped Brown Hawk).—I several times encountered this species, but hardly think there were more than a pair or two on the island. On one occasion I surprised an individual engaged in plundering the bait from a crayfish basket. I also saw a pair attack and successfully carry off from the centre of the largest lagoon a wounded Banded Stilt.

*CERCHNEIS CENCHROIDES* (Kestrel).—A few pairs on the island, probably breeding in the cliffs.

*PANDION LEUCOCEPHALUS* (Osprey).—I had the good fortune to examine and photograph two cyries of this fine species—one with eggs, the other with a nearly full-grown nestling. In each case the nesting sites were turret-like spurs in the limestone cliffs, where the latter were at their greatest elevation. Neither was really difficult of access, though the rocks had weathered away into very rough and jagged prominences, rendering them very far from pleasant country to scramble over. The nests were large but rather shallow structures of short branches, lumps of wood, pieces of reed, and other flotsam to be found on the beach, with an interior lining of seaweed, sponges, straw bottle-covers, and a few reed-like plants of a smaller kind. The first nest contained three handsome eggs, hardly distinguishable from those of the Holarctic *P. haliaetus*. In the case of the second nest the parent birds were hovering overhead, within easy shot, whilst I was taking a photograph of their home and offspring. Near at hand, on a spur projecting further out into the ocean, were the remains of an old nest, perhaps that of the previous year.

*CORVUS CORONOIDES* (Crow).—A few occasionally seen, probably visitors from the mainland. I shot one at dusk, unintentionally, being deceived in the semi-darkness. I saw no signs of the Raven, a species one might expect to find in such a locality.

*PETROICA GOODENOVII* (Red-capped Robin).—It is a remarkable fact that the Robin breeding on Rottnest should be this species, which is almost unknown within a very wide radius on the adjacent mainland. It seems fairly plentiful, but the song and call note struck me as being feeble in comparison with those of birds on the Murchison goldfield and interior in general. I saw no signs of *P. campbelli* on Rottnest.

*SERICORNIS MACULATA* (Spotted Scrub-Wren).—I encountered a few family parties in the thick acacia scrub. It was very difficult to procure specimens for identification.

*EPHITHIANURA ALBIFRONS* (White-fronted Chat).—One or two seen near the salt lagoons.

*PACHYCEPHALA OCCIDENTALIS* (Western Thickhead).—Not uncommon in the acacia scrubs. From the appearance of several I dissected, I have no doubt that males pair before they have fully attained the brilliant yellow under parts.\*

\* See *P. gutturalis*, "Nests and Eggs" (Campbell), p. 320.—EDS.

*PACHYCEPHALA RUFIVENTRIS* (Rufous-breasted Thickhead).—Occurring in similar localities but less common than the last named.

*ZOSTEROPS GOULDI* (Green-backed White-eye).—The commonest bird on the island.

*PTILOTIIS SONORA* (Singing Honey-eater).—Not uncommon in the acacia scrubs. Birds of this species inhabiting Rottnest are certainly much darker on the breast and under parts, and have the dusky stripes better defined than examples from the interior of the mainland.

*HIRUNDO NEOXENA* (House Swallow).—This was the only representative of the Hirundinidæ I found on the island. It was fairly common, and, in addition to breeding in outhouses and similar situations, was nesting in cavernous hollows in the limestone cliffs.

*ANTHUS AUSTRALIS* (Pipit).—Fairly common, and breeding on the shores of the lagoons.

*CUCULUS PALLIDUS* (Pallid Cuckoo).—Sparingly met with on the island.

*NEOPHEMA PETROPHILA* (Rock-Parrakeet).—This pretty little species is fairly common, but seems to favour the western side of the island, where it breeds on several small islets, and occasionally on the most precipitous slopes of the mainland cliffs. For a nesting site it takes advantage of any natural hollow in the limestone rock. I examined half a dozen or more nests. All of these were on the summits or slopes of islets, not in the face of the cliffs. The favourite situation appeared to be under a large slab of rock overhung by a profuse growth of vegetation (*Mesembryanthemum*). In one instance I found young in down in a slight hollow in the sandy soil, simply concealed by vegetation, and without other shelter. The eggs vary from four to six; they are inclined to be spherical, and of the usual white colour. When a nest is being examined the old birds fly round with great rapidity, or perch on a neighbouring rock, whence they exhibit great anxiety. Young in first plumage lack the blue forehead band. In traversing the island I often disturbed pairs or small parties of this Parrakeet, generally in the more open parts. Their chief food seems to be small round seeds, but I could not identify of what species of plant.

*HÆMATOPUS UNICOLOR* (Sooty Oyster-catcher).—I encountered a few examples of this species at the western extremity of the island, but saw little evidence of their breeding. The deep red beak and legs are very conspicuous in flight.

*ÆGIALITIS RUFICAPILLA* (Red-capped Dottrel).—Very common both on the beach and the margins of the lagoons. I caught one example in down, but the breeding season was for the most part over.

*ÆGIALITIS CUCULLATA* (Hooded Dottrel).—I only observed a few examples in company with other Waders round the lagoons.

*CLADORHYNCHUS AUSTRALIS* (Banded Stilt, "Rottnest Snipe").—Towards the close of my stay this species was beginning to arrive. A flock of 70 or 80 took up their quarters on the largest of the salt lagoons. The majority appeared to be adult birds. They were very wary, and on being disturbed flew to the centre of the lagoon, where they floated lightly on the water till the danger had passed.

*ARENARIA INTERPRES* (Turn-stone).—A few in company with other Waders.

*LIMONITES RUFICOLLIS* (Little or Red-necked Stint).—The commonest

Waders on the island. They were very numerous and tame round the lagoons. Adults and birds of the year were equally common.

*HETEROPYGLIA ACUMINATA* (Sharp-tailed Stint, Siberian Pectoral Sandpiper).—Less common than the last-named species, but still fairly plentiful, both as regards adults and birds of the year.

*ANCYLOCHILUS SUBARQUATUS* (Curlew Stint or Sandpiper).—A few individuals in company with other Waders, but far from common.

*STERNA BERGII* (Crested Tern).—Fairly common. I encountered one very large flock, all of which appeared to be adults. I visited one reputed breeding ground, but saw no traces of nests. Probably this species breeds later in the year.

*STERNA NEREIS* (White-faced Ternlet).—Only one or two individuals seen.

*LARUS NOVE-HOLLANDIÆ* (Silver Gull).—This was the common Gull on the island. Nearly all I saw were adults. On one little islet I found half a dozen empty nests, and one half-grown young one crouching in the vegetation growing in the clefts of the rocks.

*PHALACROCORAX HYPOLEUCUS* (Pied Cormorant).—Pretty common. I often disturbed pairs or odd birds from hollows in the cliffs, but could find no nests. They are reported to breed on some of the islets between Rottnest and Garden Islands.

*ANAS SUPERCILIOSA* (Wild Duck).—I saw very few Ducks indeed during my visit; but on one occasion encountered a small flock or family, apparently of the above species, on one of the lagoons.

*PUFFINUS* (? sp.) (Petrel).—At the west end of the island I was shown a small series of burrows said to be tenanted by Mutton-Birds. In the excavated sand at the entrance to most of the burrows the print of the webbed feet was plainly visible. Attempts to dig out the egg or young with the aid of a piece of wood proved futile, the burrows extending too far. I planned a second visit, this time armed with a spade, but owing to an accident in connection with our horse and buggy the second attempt was likewise a failure, so that the species remains undetermined\*.

Of course, the foregoing list does not pretend to be anything like a complete catalogue of the avifauna of the island. It would be remarkable if many of the rarer Waders are not occasional visitors. The same remarks apply still more forcibly to the Cormorants and sea birds in general. Only a resident observer could tabulate a complete list.

## A Glance at the Birds of the Moore River (W.A.)

BY F. LAWSON, PERTH.

TOWARDS the end of October, 1903, I found myself at Mogumber, a station on the Midland Railway, about 60 miles north of Perth.

I here expected to meet my companions on a projected trip to the Wongan Hills. Some delay, however, occurred in their

\*The species is, no doubt, the Wedge-tailed Petrel (*P. sphenurus*).—see Campbell, "Nests and Eggs," p. 877.—EDS.

arrival, and in the interim I turned my attention to the avifauna of the Moore River, the east branch of which flows immediately past Mogumber.

On the return of the expedition to the latter place, about a month later, I was again detained, for a fortnight or thereabouts, and I took advantage of the opportunity to carry my investigations to a point some 20 miles further down the river.

As our track to the Wongan Hills practically followed the eastern branch to its sources, some few miles beyond the settlement of New Norcia, I had thus an opportunity of exploring about 40 miles of the course of the stream, a distance comprising about two-thirds of its total length.

Roughly speaking, the Moore flows in a tortuous course from north-east to south-west. About four miles west of Mogumber it receives the north branch, which flows from the direction its name implies. Some 12 miles from its mouth it is joined by the Gin-Gin Brook. These are the only tributaries of any importance. During the rainy season some of the lower reaches of the river expand into small lakes. The upper portions of the Moore call for little comment. The volume of the stream is at all times very moderate, and its valley of no great width. Generally speaking, it is well timbered, and, where not cultivated and cleared, well clothed with scrub and herbaceous plants. Westward of Mogumber, however, in the lower portions, the valley deepens and contracts, and the flow is much augmented, and permanent, until some 20 miles away the valley becomes a veritable gorge, with cliffs exceeding 150 feet in height. For the most part the surrounding country is a succession of sand plains; but at intervals oases of stunted banksia, casuarina, and other trees are encountered. At some few localities, the soil is richer, and the valley expands into small alluvial flats. Here several species of eucalyptus are found, and grow to a large size. In the spring of the year the whole district is clothed with a brilliant and varied flora.

*HIERACIDEA BERIGORA* (Striped Brown Hawk).—Not infrequent. More often observed flying over the sand plains than anywhere else.

*CERCHNEIS CENCHROIDES* (Kestrel).—Far from common. According to my observations this is a rock-loving rather than a forest species.

*ACCIPITER CIRRIHOCEPHALUS* (Sparrow-Hawk).—Frequently seen. A pair had a nest close to Mogumber railway station, but I could not find the exact locality.

*NINOX BOOBOOK* (Boobook Owl).—The familiar call often heard at night near Mogumber.\*

*CORVUS CORONOIDES* (Crow).—Pairs and family parties pretty frequent.

*GRALLINA PICATA* (Magpie-Lark).—Distinctly rare; and only seen on the upper portions of the river, near to and beyond New Norcia.

\* The "familiar call" cannot always be attributed to the Boobook Owl, because other Owls emit similar sounds. See Dr. E. A. D'Ombain's paper in this issue.—EDS.

COLLYRIOCINCLA RUFIVENTRIS (Buff-bellied Shrike-Thrush).—Frequent on the upper portions of the river, but naturally absent in the region of the extensive sand-plains.

PTEROPODOCYS PHASIANELLA (Ground Cuckoo-Shrike).—Observed at Mogumber, but distinctly uncommon.

GRAUCALUS MELANOPS (Black-faced Cuckoo-Shrike).—Fairly common in suitable country.

MICRÆCA ASSIMILIS (Lesser Brown Flycatcher).—Fairly common all along the course of the river. A nest found with three fresh eggs on the limb of a dead bush, about six miles east of Mogumber.

PETRÆCA GOODENOVII (Red-capped Robin).—This beautiful species only met with at the sources of the river. Even there it appeared to be extremely local. A nest found containing three eggs. I quite expected to meet with it again on the sand plains west of Mogumber, but the only Robin I encountered was the next species, which occurred in the oases of banksia and other trees. It is a curious fact that *P. goodenovii* should breed commonly on Rottneest Island, but at present is not known to occur in the intervening country between the latter locality and the Upper Moore River.

PETRÆCA CAMPBELLI (Western Scarlet-breasted Robin).—Fairly common near Mogumber, and as far down the river as I explored. I found it nesting in the banksias quite 15 feet from the ground. It is a much more silent species than *P. goodenovii*.

SERICORNIS BREVIROSTRIS (Short-billed Tree-Tit).—Common amongst the various eucalypts.

PSEUDOGERYGONE CULICIVORA (Southern Fly-cater).—Fairly distributed throughout the course of the river.

MALURUS LEUCOPTERUS (White-winged Wren).—This species occurs, very sparingly and locally, on the sand plains west of Mogumber, where the latter are clothed with patches of rather thicker vegetation than the general rule. Probably this is the extent of its range westward. The further south and the nearer the coast one proceeds the rarer does this species become. Its headquarters in Western Australia are probably the Murchison, Peak Hill, and Gascoyne goldfields.

MALURUS SPLENDENS (Banded Wren).—Apparently absent from the upper Moore River, but moderately common round Mogumber and lower down the valley. I found it breeding in several places.

RHIPIDURA TRICOLOR (Black-and-white Fantail).—Scattered pairs encountered both up and down the river.

SISURA INQUIETA (Restless Flycatcher).—Rather more common and equally well distributed with the last species.

ACANTHIZA APICALIS (Broad-tailed Tit).—Only met with near the source of the river.

ACANTHIZA INORNATA (Plain-coloured Tit).—Fairly common near Mogumber, and met with at intervals further west.

ACANTHIZA CHRYSORRHOA (Yellow-rumped Tit).—Much more common around Mogumber and the lower portions of the river than near the source.

CINCLORHAMPHUS RUFESCENS (Brown Song-Lark).—Only encountered once; this was near a small lake at the head of the river.



EPHTHIANURA TRICOLOR (Tri-coloured Bush-Chat).—A few pairs met with on the sand plains west of Mogumber; they were all adults; probably returning migrants.

GYMNORHINA LEUCONOTA\* (White-backed Magpie).—Pretty common from Mogumber to New Norcia; but to the westward rather rare. At the former locality I saw several nests.

CRATICUS DESTRUCTOR (?) (Butcher-Bird).—I observed pairs of *Cracticus* in many places up and down the river. I think they were referable to this species, but am not absolutely certain.

PACHYCEPHALUS OCCIDENTALIS.—Found in the thicker scrubs, but far from plentiful.

CLIMACTERIS RUFa (Rufous Tree-creeper).—Not uncommon amongst the eucalypts.

SITTELLA PILEATA (Black-capped Tree-runner).—Little parties often seen, both up and down the river.

MYZOMELA NIGRA (Black Honey-eater).—A few met with in open country sparsely clothed with dwarfed banksias, not far from the junction of the north branch of the river.

ACANTHORHYNCHUS SUPERCILIOSUS (White-browed Spinebill).—As far as I could see, this beautiful species was absent from the immediate neighbourhood of Mogumber and the country to the east. I first encountered it 10 miles down the river, and more commonly still further to the west. It seemed partial to the oases of banksia and the scrub verging on the sand plains.

ZOSTEROPS GOULDI (Green-backed White-eye).—Common, and breeding throughout the course of the river.

GLYCYPHILA FULVIFRONS (Fulvous-breasted Honey-eater).—A few pairs on the slopes of a range of hills to the north of Mogumber. To my surprise it was absent from the sand plains.

GLYCYPHILA OCULARIS (Brown Honey-eater).—Common in all suitable localities.

MANORHINA OBSCURA (Dusky Miner).—A few parties met with near Mogumber.

ACANTHOCLERA CARUNCULATA (Red Wattle-Bird).—Pretty common, both up and down the river.

PARDALOTUS ORNATUS (Red-tipped Pardalote).—Common amongst the eucalypts.

HIRUNDO NEOXENA.—A few pairs generally met with around homesteads. I was told of colonies of either this species or *Petrochelidon ariel* breeding in the culverts of the railway line some few miles away.

PETROCHELIDON NIGRICANS (Tree-Martin).—Common, and breeding in many places amongst the white gums.

PETROCHELIDON ARIEL (Fairly Martin).—I did not actually see this species, but photographed a group of nests in a recess of a limestone cliff, about three miles west of Mogumber. They were probably nests of the previous year.

ANTHUS AUSTRALIS (Pipit).—Not uncommon on the sand plains and in open country.

\* ? *G. dorsalis*. — Eds.

ARTAMUS CINEREUS (Grey-breasted Wood-Swallow).—Wood-Swallows were not common, but I think the few I saw belonged to this species.

MIRAFRA HORSFIELDI (Bush-Lark).—A few pairs met with on the sand plains some twelve miles west of Mogumber.

PODARGUS STRIGOIDES (Frogmouth).—A nest containing young found near the source of the river. It was in the fork of a limb some 15 or 20 feet from the ground.

MEROPS ORNATUS (Bee-eater).—Not uncommon to the west and near Mogumber. The native name is "Berrin-berrin."

HALCYON SANCTUS (Sacred Kingfisher).—Common, and breeding, especially near Mogumber.

CUCULUS PALLIDUS (Pallid Cuckoo).—A few observed, or heard, up and down the river.

CALYPTORHYNCHUS BAUDINI (White-tailed Cockatoo).—Pretty common, and very noisy. I met with flocks every day. There were many young birds amongst them. At a station some fifteen miles west of Mogumber three nesting-places were pointed out to me. In each case a hollow limb of a gum tree was utilized, at heights of from 20 to 40 feet. They were inaccessible without a lot of trouble, in the absence of a rope ladder. Probably they contained eggs of a second brood, as the females flew out of the nest-hole in two instances.

LICMETIS PASTINATOR (Western Long-billed Cockatoo).—At Mogumber I saw an individual in captivity that had been obtained some 30 miles or so further north. I was told by an old resident that formerly this species was not uncommon in the neighbourhood.

BARNARDIUS SEMITORQUATUS (Yellow-collared Parrakeet).—Pretty common, and breeding amongst the eucalypts.

PHAPS ELEGANS (Brush Bronze-wing).—At Mogumber I saw the survivor of a pair in captivity. This was formerly a common species, but its disappearance is attributed by residents to the number of domestic cats now running wild in the bush.

RALLIDÆ (Rails).—Near Mogumber are several swamps, and some five miles south is Lake Wannamool, a large and reedy area of water. In the breeding season these swamps contain a lot of water and vegetation, and are frequented by a number of aquatic birds. I was, however, in default of shooting, not able to identify the majority of them.

FULICA AUSTRALIS (Coot).—A pair on a pool at the sources of the river.

BURHINUS GRALLARIUS (Stone-Plover).—Heard at night. This species used to breed commonly, and still does so to a smaller extent, at Bindoon, some 14 miles to the south of Mogumber.

EUPODOTIS AUSTRALIS (Wild Turkey or Bustard).—Occasionally seen.

ZONIFER TRICOLOR (Black-breasted Plover).—Near New Norcia I observed several Plovers on a large cultivated paddock. They appeared to be of this species.

NOTOPHOYX NOVE-HOLLANDIÆ (White-fronted Heron).—Not uncommon near the Moore River and neighbouring swamps; breeding in several places. I climbed one tree containing several nests. The most accessible one contained the unusual number of eight eggs. Four, however, clearly belonged to a different parent, who may have perished accidentally or otherwise.

*BOTAURUS PÆCILOPTILUS* (Bittern).—Pairs were inhabiting the swamps to the north of Mogumber, where their curious notes might be heard any day.

*PODICIPES POLIOCEPHALUS* (Hoary-headed Grebe).—Observed on a pool at the sources of the river and also near Mogumber.

*CHENOPIS ATRATA* (Black Swan).—This species frequents Lake Wannamool, where it is said to breed. It is also met with at Bindoon.

*ANAS SUPERCILIOSA* (Wild Duck).—A few on the lower reaches of the river west of Mogumber, and a nest found at one of the swamps the day I left the district.

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## Description of the Eggs of *Ptilotis fasciogularis*.

BY A. J. CAMPBELL.

MR. E. M. Cornwall, Cairns, has kindly sent a set of two eggs of the abovementioned Honey-eater for examination and description. He took them on Dunk Island, 16th October, 1898. No doubt he would have sent them earlier, but was always hopeful of obtaining a duplicate set. However, his specimens now become the types.

The eggs may be described as elongated or pointed ovals in shape; texture of shell fine; surface slightly glossy, and colour light buff or pale fleshy tint, with a slight cap or darker wash of the same colour on the larger end. Dimensions in inches—(1) 1.0 x .65 inch; (2) .98 x .65 inch.

Except for their more pointed smaller ends and larger size, these eggs closely resemble the type of the well-known eggs of the Singing Honey-eater (*P. sonora*).

Mr. Cornwall mentions the nest as being the usual deep, cup-shaped structure, and that it was suspended in a small mangrove growing within high water mark.

The fine Fasciated Honey-eater can be easily identified from its congeners by the distinct bars of yellow and brown which transversely mark the throat and fore-neck. As far as is yet known, it frequents the mangrove belts of the Queensland coast and islands contiguous thereto; in fact, it is sometimes locally called the "Island" Honey-eater. Mr. Cornwall recently noticed the birds on Franklin Islands, near Cairns, while in 1885, during an excursion made by Mr. A. W. Milligan and myself to the Lower Fitzroy, we found Fasciated Honey-eaters there. Judging by their pleasant notes the birds were exceedingly merry, but extremely shy. We obtained skins for our collection, which were exhibited at the Field Naturalists' Club, but no eggs were found.

## Stray Feathers.

A FAVOURITE "ROOKERY."—The photograph (Plate IX.) depicts a large red gum tree growing in a small dam in the Western District of Victoria. At the time of my visit the following birds were nesting in it, viz. :—The Whistling Eagle (*Haliaeetus sphenurus*), Black Cormorant (*Phalacrocorax carbo*), Little Black Cormorant (*P. sulcirostris*), Little Cormorant (*P. melanoleucus*), White Ibis (*Ibis molucca*), Yellow-billed Spoonbill (*Platibis flavipes*), and White-necked Heron (*Notophoxyx pacifica*). The birds seemed quite contented in company, but when they left their nests a pair of Ravens (*Corone australis*) would quickly come and commence eating the eggs, but they had a decided preference for Herons' and Spoonbills' eggs, always taking them before those of the Cormorants.—D. LE SOUËF.

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BLACK *v.* RUFIOUS BUTCHER-BIRDS.—Mr. E. M. Cornwall (Cairns), writing under date 8th November, 1904, states :—" I am sending by this mail some photographs (Plates VII.-VIII.) which may prove of interest, and which I think will go a long way towards settling the Black *versus* Brown Butcher-Bird controversy. I have the young birds at home ; they are doing well, and I hope to rear them, and send them along to the Melbourne Zoological Gardens.

"The nest is most charmingly situated amongst a luxuriant growth of the pretty little button-plant—some people call it an orchid ; I don't know whether it is or not. Close to the nest grows a sturdy little plant of an orchid (*Dendrobium undulatum*). On the other branch, just above the right shoulder of the figure, may be seen several plants of another pretty orchid (*Aria fitzalleni*), whilst on the lowest fork, near the bottom of the picture, there is still another orchid, ' *Cymbidium*.' There were three young ones (two black and one brown) in the nest, but one of the black fell out just before the photo. was taken. The two parent birds were both black."

Again, under date 1st December, Mr. Cornwall writes :—" I do not know that I can add anything to what was said last year when I found three nests each containing three young birds, in two of which one was brown and two black, and in the other two brown and one black. The three which I photographed I still have alive, and they are doing well, and I also have another young brown one which a young friend of mine brought me. When he captured it it had left the nest, and was in company of two black ones. I found three other nests with young ones this year ; one had three and the others two each, but all were black. In every case the two parent birds were black.

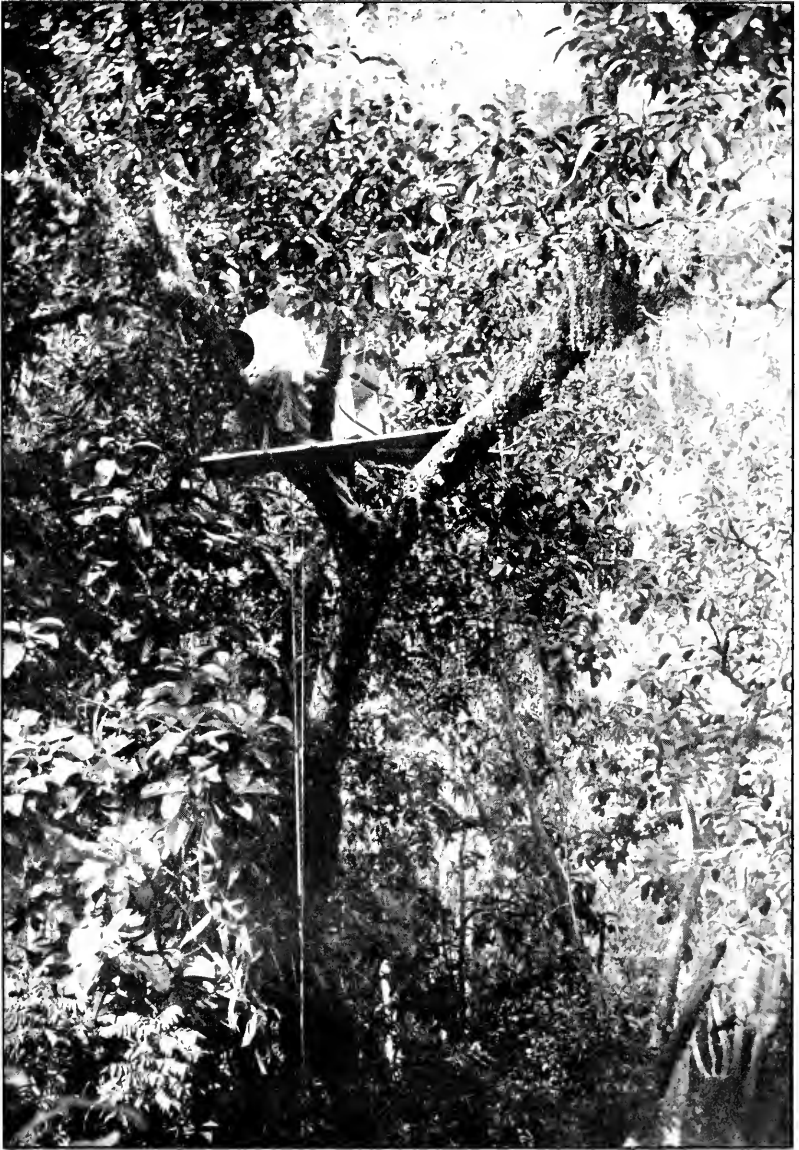
"To my mind it is conclusively proved that the black and brown birds are identical, and all we have to settle now is whether the young brown is the male or female, and at what age they



Nest of Black Butcher-Bird, with Young—one black and one brown.

FROM A PHOTO. BY E. M. CORNWALL.





Photographing the Nest (*in situ*) of the Black Butcher-Bird (*Cracticus quoyi*).

FROM A PHOTO. BY E. M. CORNWALL.





assume the black plumage. After watching the young birds in captivity, it would not surprise me to find that the brown birds are males, for they seem to be hardier and to feather quicker than the black ones. Then, again, we very often note the young brown one warbling very quietly to itself, but have not noticed the black ones doing it."

[Accompanying the beautiful photographs of the nests of Black Butcher-Birds, Mr. Cornwall sent a picture of the nest of the Helmeted Friar-Bird (*Philemon buceroides*). The nest was built in a tree near the main street of Cairns, and was constructed of a great quantity of twine of many kinds, besides braid, tape, wool, cotton, silk, wadding, &c., &c.—EDS.]

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### From Magazines, &c.

*The Journal of Agriculture* (Victoria) continues to give coloured plates of useful insectivorous birds. Part 10 (November) contains an excellent drawing of the familiar Yellow-rumped Tit (*Acanthiza chrysorrhoa*) by Mr. C. C. Brittlebank. The accompanying letterpress is by Mr. C. French, F.L.S., F.E.S.

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OUR member, Mr. James R. M'Clymont, M.A., has contributed some "Notes on a Few Birds, Chiefly Migratory and Nomadic, Observed in the Vicinity of Hobart" to *The Zoologist* (15th August, 1904). The Pallid Cuckoo (*Cuculus pallidus*), together with some of its foster parents; the Spine-tailed Swift (*Chaturax caudacuta*), and the Swift-Lorikeet (*Nanodes discolor*) are those chiefly mentioned, with interesting and original field notes. With regard to the Swifts, Mr. M'Clymont suggests that the use of the spines on the tail-tips is to enable the bird to cling to "some perpendicular surface of great hardness, such as of a precipitous cliff."

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*Genera Avium*.—A specimen sheet of the letterpress of this work, embracing eight pages, has been received. To say that the forthcoming book is to be illustrated by drawings by M. Keulemans is sufficient to give it authoritative standing, but when it is borne in mind that Mr. P. Wytzman is editor, and that amongst the contributors are numbered such men of standing in avicultural science as Mr. Ernst Hartert, of the Zoological Museum, Tring, no further recommendation is necessary. Passeres: Fam. Eurylæmidæ form the subject of the specimen sheet. The descriptions are clearly and concisely given (in English), and all information is brought up to date. The issue of the book is limited to 300 copies, and the price will be based on a charge of 2d. per page of letterpress, 1s. 3d. for each plain plate, and 2s. 6d. for each coloured one.

**EULACESTOMA NIGROPECTUS.**—This bird, first obtained by Captain Armit and Mr. Guise during an expedition up Mount Maneao, in February, 1895 (virtually what was then called, owing to the enterprise of some Melbourne newspaper proprietors, *The Argus* expedition), has a coloured plate by Keulemans devoted to it in the July number of *The Ibis*. Dr. Sclater says that the description given in the article is "fairly accurate" of the male of the pair which now figure in the Tring Museum. The specimens figured were obtained by Mr. A. S. Meek on the Aroa River, British New Guinea, on 31/5/03. Other specimens had been recorded. As the Australian Shrike-Tit, according to Dr. Bowdler Sharpe, of the British Museum, belongs to the "sub-family Pachycephalinae of the family Laniidae, that bird, which is arranged by Dr. Sharpe in the same sub-family, is probably one of its nearest allies."

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**WINTER WHITENING OF PLUMAGE OR FUR.**—Whilst naturalists are agreed as to the protection afforded by a white covering—colouration, as some people incorrectly have it—of birds and animals in the winter, it has remained for Captain G. E. H. Barrett-Hamilton (Proc. Roy. Irish Acad., xxiv., 1903, pp. 313, 314), to suggest how large a part fat may play in alteration of pigment cells. To use the words of *The Ibis*, he "considers that the temporary cessation of metabolism of fat and absence of pigment may be parts of the same process; whilst animals are, as a rule, lightest in colour where the accumulation of fat is greatest." The theory is rather a startling one, and is worth further study. There is much to be said for and against it—against seems to preponderate, more particularly when one remembers that according to some highly accredited scientists the feather cells after full development are really dead.

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*The Ibis.*—The July number (8th series, vol. iv., No. 15) opens with an admirable coloured plate by J. G. Keulemans of some birds from Cape Colony. In the article which accompanies this Dr. R. Bowdler Sharpe, LL.D., &c., continues his description of birds from Deelfontein, Cape Colony, and so far has described 123 species. Some valuable observations, supported by statistics, as to the "Decrease in the Weight of Eggs as Incubation Advances" are contributed by Mr. Hugh S. Gladstone, M.A., F.Z.S., &c. Amongst the miscellaneous matter in the volume is mentioned the fact that Dr. Finsch, who has done valuable ornithological work, has resigned his appointment at the Leyden Museum, to take charge of the ethnographical branch of the Museum of Brunswick. Signor T. Salvadori, in this issue, questions the nomenclature of Messrs. Hartert and Rothschild of a bird from New Guinea which they called *Eafa maculata*. His impression is that it belongs to the *Dicaeida*.

WEKAS BREEDING IN CAPTIVITY.—Mention is made in *The Avicultural Magazine* (September, 1904) of a paper by Mr. Blaauw, which he read before the last Zoological Congress in Berlin, on the subject of rearing the Weka Rails (*Ocydromus australis*) of New Zealand, at Gooilust, Holland. A pair of Wekas was kept for some years in the park in an enclosure with growing plants. In the spring of 1900 the birds made a large nest of all kinds of vegetation under a beech, and both birds sat in turns on a clutch of three eggs. After 28 days two young were hatched. They were an almost uniform chocolate-brown colour, with black eyes and bill and reddish legs and feet. The first day they remained in the nest, but on the second day they began to follow their parents, who diligently fed the chicks on all kinds of worms and insects. In seven weeks the young were fully feathered and resembled the adults, but the black marks of the plumage were less clearly defined, and the general colour was darker.

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*Bird-Lore*.—The July-August number continues the series of admirable coloured plates of the Warbler family. The species delineated are all extra-Australasian, hence have hardly any claim on us at all. The photographs of Red-eyed Vireos accompanying the first article have an interest of their own. Some were taken just after sundown—in one plate five and in another 20 minutes' exposure being given. As might be expected, the automatic movements of a living body (when asleep) affect the definition of the plate. Mr. Francis H. Herrick, who supplies both plates and article, has some valuable notes on the genus. A very readable article on "Lake Erie Terns" lacks the precise definition of species which should always accompany bird papers. Otherwise, both it and the illustrations are good—though the photo. of the flight of Terns is not to be compared with those of some of other sea-birds obtained by members of the Aust. O.U. A summary of bird laws in Japan must be reserved for future notice. The usual Audubon Societies' notes and leaflets accompany this issue, and prove how zealous bird-lovers in America are as to preservation of species.

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CHARACTER OF BIRDS' WINGS.—Dr. A. G. Butler reports in the *Avicultural Magazine* (vol. ii., No. 11, pp. 319, 320) a suggestion he had before made. This is that "every Museum should make a collection of the expanded wings of all birds; not only to enable the systematic ornithologist to see, at a glance, all sexual characters and all important generic differences which an open wing brings to light, but to enable him to describe his birds correctly. . . . I am quite sure," (he says) "if they will do this, that many unsuspected characters of importance will be brought to light. . . . I am equally certain that it will enable them to

distinguish with ease the sexes of many species which have hitherto been doubtfully, or even incorrectly, determined by collectors and taxidermists." The suggestion seems well worth adopting. For an exemplification of what such a mode of examining the wings really means one has only to refer to *The Ibis* (July, 1903, pp. 446-451), where extended wings of male and female Lapwings are figured and fully described. Mr. F. W. Frohawk, M.B.O.U., F.E.S., in this article, says:—"During flight the sexes may easily be distinguished by the great difference of wing formation," and a glance at the illustrations given shows marked differences.

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THE INTERNATIONAL CATALOGUE OF SCIENTIFIC LITERATURE.—An undertaking which shows how, on proper occasion, scientists can work together is presented by this work. No part of it has yet been forwarded for review, hence it is necessary to fall back on information gathered from other sources. *The Auk* (vol. xxi., 1904, pp. 494-501) contains a good summary of what has been done and is doing in the matter. There it is explained that "the supreme control of the Catalogue is vested in an international convention, which is to meet in London in 1905, 1910, and every tenth year afterwards, to reconsider, and, if necessary, to revise the regulations for carrying out the work of the catalogue, &c." The materials are to be furnished by regional bureaux, which already number 30. Volume X of the series is devoted to ornithology, and embraces "New Genera and Species," "Geographical Distribution," &c. Structure, development, physiology, ethnology, variation, and ætiology, geographical distribution, and "taxonomy and systematic" are the headings under which presently available information is ranged. A hasty glance through one or two of the numbers shows that it is a work which every naturalist would be the better for possessing.

\* \* \*

"TASMANIA, Ornithologically Considered," is the title of an article by Mr. Frank M. Littler, F.E.S., contributed to *The Zoologist* (September, 1904). The article, which is based on the writer's own field observations, written in a pleasant and popular style, deals with the more common bush birds, while at the end is a systematic list of all the known Tasmanian birds. Mr. Littler is inclined to the opinion that, as the knowledge of the Australian ornithology extends, *Malurus cyanus*, *M. gouldi*, and *M. elizabethæ* will be grouped under one specific name. If so, then the same rule will apply to a dozen other Australian genera. Another of Mr. Littler's notes states:—"In no list can I find mention of any member of the family *Certhiidae* being found in Tasmania. I have met with both the White-throated Tree-creeper (*Climacteris leucophæa*) and the Brown Tree-creeper (*C. scandens*) in some of the heavily timbered forests in the

north-eastern portion of the island—forests consisting mainly of big timber.” Mr. Littler would promote the interests of the ornithology of his island were he to, say on his next holidays, procure these birds for complete identification. The pleasure of such a trip would be enhanced by the anticipation that the reputed Tree-creepers may be new to science, if not sub-specific to the mainland forms quoted by him.

\* \* \*

THE BRUSH TURKEY.—Continuing his notes on this bird having bred at the London Zoo, Mr. Bertling records that, “being somewhat doubtful as to the cock’s parental diligence,” he opened the mound to see how matters stood (*Avicultural Magazine*, August, 1904, p. 294 *et seq.*) The eggs were placed, as recorded by other observers, larger end uppermost. He found, after a few minutes’ search, “a pretty chick, which winked and blinked on having the bright sunshine suddenly turned on to it.” After describing the colouration Mr. Bertling goes on to say something as to the habits of the young birds, noticing that they have the same digging propensity as the adults, and that “their pugnacity was evinced at an early stage.” After waiting a fortnight, and no further young appearing, the “mound” was stripped, with most unsatisfactory results. From Mr. Bertling’s investigations he concludes “that the young ones do not chip round the upper part of the egg when emerging . . . but appear to give a violent wriggle and shatter the whole shell, although they still remain encased in the inner membrane, which is not torn open for some hours afterwards.” The cock bird behaved peculiarly when a dead chick was in the mound, and the description of his ways and some other phases of Brush Turkey life will furnish matter worth studying.

\* \* \*

KING OR LEAST SWAMP QUAIL.—*The Avicultural Magazine* (September, 1904) contains an interesting article by Mr. D. Seth-Smith, F.Z.S., on “Painted Quails” (*Excalfactoria*), which he has kept and bred successfully in captivity in England. The dark Australian form (*E. lineata*) has been separated as a sub-species only from the Asiatic form (*E. chinensis*). Mr. Seth-Smith is of opinion that the sub-specific separation is possibly correct, because hybrids of the two species are perfectly fertile. There is a marked difference between the young in down of the two varieties. The predominating colour of young of the typical *E. chinensis* is very dark brown. On the back are two very distinct stripes of sandy-buff, running from nape to tail. The head is sandy-buff, with two distinct stripes of very dark brown; throat pale yellow, and under parts yellowish. In *E. lineata* there can just be traced the buffish lines, which, however, are entirely absent on the back, which is wholly blackish. The throat is yellow, as in *E. chinensis*, but the under

parts are considerably darker in the Australian bird. Mr. Seth-Smith says :—"The point which I think is worth especial notice in this connection is the difference which exists in the colour of the newly-hatched young of *E. chinensis* and *E. lineata*." It was observed that the male *E. lineata* showed no parental affection towards the chicks, whereas the males of *E. chinensis* brood their offspring to the same extent as the females. *E. lineata*, as a rule, had three nests a year, and one pair hatched four broods in 1900. Young birds of this species can run at once, and resemble animated fluffy balls, about one inch in length. It is noted that the two forms interbreed freely, and newly-hatched chicks are intermediate between the two. The hybrids are perfectly fertile. The article under notice is accompanied by a good illustration from a drawing by Mr. H. Grönvold of "Newly-hatched Painted Quails."

\* \* \*

BIRDS ON MARCUS ISLAND.—"A Monograph of Marcus Island," being an interesting account of its physical features and geology, with descriptions of the flora and fauna of a mid-ocean islet, by Mr. Wm. Alanson Bryan, B.Sc., has been issued in pamphlet form "From the Occasional Papers of the Bernice Pauahi Bishop Museum (Honolulu), vol. ii., No. 1, 1903." The island, which is an ancient triangular-shaped atoll with an estimated area of 740 acres, between 60 and 70 feet above sea level in its highest part, and densely scrubbed, is situated in the North Pacific, 4,500 miles west by south from San Francisco, or about 1,200 south-east of Yokohama. For a time it was disputed territory between the Governments of the United States and Japan, but by amicable agreement it was left to America. The Japanese used it as a "birding" station, the Americans for its guano deposits.

The pages of the pamphlet devoted to "Aves" are particularly interesting to Australians, 10 or 12 familiar sea birds or Waders being mentioned, the field notes on the Sooty Tern (*Sterna fuliginosa*), Noddy (*Anous stolidus*), Red-tailed Tropic-Bird (*Phaeton rubricauda*), and Frigate-Bird (*Fregata aquila*) being specially entertaining. The pleasant reading of the pages is interrupted by a doleful note of a by-gone bird colony. In referring to a fine Albatross (*Diomedea immutabilis*) Mr. Bryan states :—"The story of the Marcus Island colony of Goonies (Albatrosses) is one of death and extermination. In the beginning of the operations of the Japanese company on the island Goonies were fairly abundant. Not being able to find guano by their crude methods, they developed a scheme whereby they were able to make a marketable commodity by killing the birds and boiling them down in great kettles. The resultant, consisting of the flesh, bones, and viscera, was barrelled and shipped to Japan, where it was used as a fertilizer. The long wing feathers of all the birds were pulled out and carefully

preserved to be shipped to America and Europe and sold as 'Eagle feathers,' which were in great demand for trimming on ladies' hats. The feathers from the breast were plucked off and sold by the pound. A profitable business was thus developed, with the deplorable result that within six years the entire colony of these splendid birds has been exterminated."

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### Review.

THE Australian Museum Special Catalogue (No. 1), "Nests and Eggs," by Alfred J. North, C.M.Z.S., &c., &c., has reached its fourth part, which deals with the genus *Malurus* and the families *Turdidæ*, *Sylviidæ*, and *Timeliidæ*, including in all 80 species.

Probably the unfortunate ill-health of the author may have somewhat delayed the publication of the present part, which concludes vol. i. of the work. (It is to be regretted that, in consequence of the inadequacy of funds, Mr. R. Etheridge, jun., the Curator, has announced it will be some time before a further instalment can be issued.)

The work continues its high standard of excellence as regards both typography and plates. The sketches of the birds by the late Mr. N. Cayley are noticeably artistic. The letterpress indicates not only much original work, but patient research among the literature and the collections of others. The pages (311-316) referring to the cave-dwelling Rock-Warbler (*Origma rubricata*), mostly from Mr. North's personal observations, are exceedingly interesting, and their value is enhanced by plates of "Nesting Haunts of the Rock-Warbler" and "Nest of Rock-Warbler (in *situ*)" from photos. taken by the author himself.

Notwithstanding all this excellence, as an up-to-date reference the work is faulty. Reading between the lines one cannot fail to notice how skilfully the author has avoided references to the useful labours of certain contemporary authors. If, as a "Special Catalogue," the data of many species are not up to date, the value of the work in this aspect must suffer severely.

To begin with the beautiful genus *Malurus*—it does not signify whether we call these charming little birds Superb Warblers or Wrens. Australians—students or tyros—will read their histories with genuine delight. The author, with his intense love for "priority," goes back to 1782, and states that *M. cyaneus* (Ellis), a specific name hitherto (for more than half a century) attributed to the familiar Blue Wren of the mainland, must now be restricted to the Tasmanian species, while the former is to be known as *M. superbus* of Shaw, 1790. But, as the author of the "Special Catalogue" is such a "stickler" for priority it is all the more incomprehensible why he has ignored the following references to other *Maluri*, and has suppressed all more recent knowledge of a large and distinct Blue Wren (*M. elizabethæ*) from King

Island, Bass Strait, figured in a coloured plate (No. X.) of *The Emu*, vol. ii. (1902-3), which species was previously described in *The Ibis*, p. 10 (1901). Against the name *M. leucopterus* (White-winged Wren) the author has placed a query, and states :— "The accompanying remarks apply to the birds figured and described by Gould in his folio edition of 'The Birds of Australia,' vol. iii., part 25. With that writer, however, I agree in questioning very much the propriety of referring them to the *Malurus leucopterus* of Quoy and Gaimard." Would it have not been well to refer to the specimens of black *Malurus* with white wings in the Western Australian Museum, one of which was figured in *The Emu*, vol. i., plate vi. (1901-2), together with a copy of the drawing by Quoy and Gaimard of *M. leucopterus*. Mr. North, without committing himself, could have ventured an opinion whether he thought it was a rediscovery of Quoy and Gaimard's species or a new bird, *M. edouardi*, as described in the *Victorian Naturalist*, p. 203 (1901). Had Mr. North already not drawn attention to it (*vide Rec. Aust. Mus.*, vol. iv., pp. 209, 210)? If, as he has stated in the paper cited, the black and white birds are the real *leucopterus* (Q. and Gaim.), the blue and white bird should have been called *cyanotis* (Gould). In a coloured plate (X.) in *The Emu*, vol. ii., was figured for the first time a species of Mr. North's own creation, *M. assimilis*, and yet, although he has given references for all plates of the other *Maluri* mentioned by him he has not noticed the plate of *M. assimilis*. Is this because there appears on the same plate two other new *Maluri*, the work of a contemporary? No less an authority than Dr. Bowdler Sharpe considers *M. elizabethæ* (Campbell) and *M. whitei* (Campbell) to be good species (*vide Emu*, vol. ii., p. 230). Regarding the rare *M. pulcherrimus*, notwithstanding there have been three mounted and "exhibited in the bird galleries (of the Australian Museum) in the main hall for the past thirty years" (p. 224), the author dismisses the beautiful species with very brief remarks. It seems unfair that he should not have, even if only by way of addendum, quoted the honorary ornithologist to the Western Australian Museum, Mr. A. W. Milligan's, more recent interesting, if not critical, notes as given in *The Emu*, vol. iii., pp. 14, 15 (1903), where also appears a fine photo.-plate (No. III.), depicting the country frequented by these birds.

In the Proc. of the Roy. Soc. S.A., vol. xxii., p. 176 (1898), Mr. G. A. Keartland mentions finding the Emu-Wren in North-West Australia. Mr. North does not give that locality as a habitat of *Stipiturus malachurus*. Probably he considers that the species seen by Mr. Keartland must have been the Rufous-crowned Emu-Wren (*S. ruficeps*, Campbell), belonging to that district, which was figured in *The Ibis*, plate vii. (1899), but which has been ignored by the author of the "Special Catalogue." But the excuse for the omission may be that its "nest and eggs" have not yet been discovered; nor have the nest and eggs of Mr.



North's Desert-Bird (*Eremiornis carteri*) "a beautiful coloured plate" of which also appeared in *The Ibis*, part xiv. (1902), from the same locality, and mentioned at length in Mr. North's work.

The chapter on the curious Bristle-Birds (*Sphenuræ*) is very interesting. But there is no mention of Mr. Milligan's *S. littoralis*, discovered by himself in South-Western Australia, and described in *The Emu*, vol. i., p. 67 (1902). This new species has been recognized by the British Museum (see Sharpe's "Hand-List of Birds," but not by the Australian Museum.

The remarks on the various tiny Tits (*Acanthizæ*), or Thornbills, as they are termed, are very complete so far as they go. While for *A. ewingi* the author furnishes his own reference (Proc. Linn. Soc. N.S.W., 30th March, 1904) for the reinstatement of this long-lost species, he omits to refer to previous information regarding the reinstatement of the Tit by Colonel Legge (see "Some Rectification in Tasmanian Ornithology," *Emu*, vol. iii., p. 179, 7th January, 1904), not to mention the "Proceedings of the Australasian Ornithologists' Union" in session at Hobart, November, 1903, when specimens of *A. ewingi*, in the flesh, were laid on the table for examination (*Emu*, vol. iii., p. 159).

Mr. North mentions having received *A. ewingi* in the flesh from Tasmania in March, 1902. Why he withheld this interesting information for two years, and till after the Hobart session of the Aust. O.U., is not explained. *Re* the extension of locality to Western Australia of *A. tenuirostris*, first chronicled by Mr. A. W. Milligan in *The Emu*, vol. iii., p. 68 (1903), instead of quoting this direct record Mr. North quotes second-hand part of a letter from Mr. A. Zietz (Adelaide Museum), who, writing to Mr. North, states:—"I have received here for examination from the Perth Museum an adult male of *A. tenuirostris*." When taking leave of the Acanthizas, on page 289, Mr. North rightly deprecates "encumbering the ornithological literature of many species with useless synonyms, which are neither flattering to the describers of them nor of interest to the student or general reader." But here is a genuine bit of "hair-splitting" by the author of the "Special Catalogue" himself. He proposes names for two new species on very doubtful grounds—viz., *A. zietzi* and *A. mastersi*; while he has missed three new species proposed by other authors—viz., *A. maguirostris*, Campbell (*Emu*, vol. ii., p. 202, April, 1903); *A. robustirostris*, Milligan (*cf.* vol. iii., p. 71, July, 1903); and *A. pallida*, Milligan (*cf.* vol. iii., p. 112, October, 1903).

It is difficult to find acceptable distinctive vernacular names for some of Australia's peculiar birds. There is some objection to the term "Thornbill" being applied to the Acanthizas, as the former is already applied in America to a number of Humming-Birds. "Squeaker," which is a vernacular for the Leaden Crow-Shrike (*Strepera*) in Western Australia, has been substituted for *Xerophila*, while "Spinetail" for the *Orthonyx* may be confused with "Spinetail" for the Swift (*Chaetura*).

Mr. North's "distributions" have been exceedingly carefully recorded, but he has inadvertently omitted Western Australia from the range of so common a bird as *Megalurus gramineus* (Grass-Bird), and New South Wales from the range of *Calamanthus albiloris (fuliginosus)*.\* He has, however, endeavoured to appropriate priority of *Sericornis magnirostris* (Large-billed Scrub-Wren) for Victoria (compare Campbell's "Nests and Eggs," p. 247, 1900). Although *Pomatorhinus ruficeps* (Chestnut-crowned Chatterer) is found in North-Western Victoria, it has never been found south of "The Divide," as Mr. G. A. Kearland's field note indicates. *P. superciliosus* is evidently the species intended. Mr. Kearland, to whom Mr. North must be greatly indebted, has contributed quite a fund of field observations to the "Special Catalogue." Here is a very graphic, if not exciting, one on page 328, which might be entitled "Egg-collecting Under Difficulties." Writing about the Cinnamon-coloured Ground-Thrush (*Cinclosoma cinnamomeum*) of the great interior, Mr. Kearland states:—

"During the journey of the Calvert Exploring Expedition in Western Australia, I took my first clutch of these eggs, under rather peculiar circumstances. I was staying behind collecting, when Mr. C. F. Wells called out that he had discovered a nest of this Ground-Thrush containing two eggs. He offered to mind my camel whilst I waited for the return of the bird. My camel became restive, and Mr. Wells called me to 'Come on.' I secured the eggs; but the nest, which was simply a few acacia leaves placed in a slight depression under a low bush, fell to pieces on being lifted. I wrapped one egg in my handkerchief, and had placed it in the quart-pot on my saddle, when 'Warrior' (the camel) tried to get away. I mounted with the egg in one hand, my gun in the other, and the reins in my teeth. The camel bolted after the caravan, which was about a mile away on the opposite side of a boggy clay-pan. Instead of following the track, he tried a short cut, with the result that he floundered through the mud, and nearly lost his rider, but on nearing the team he became steady, and the eggs were safely packed."

## Notes and Notices.

ANENT "Lighthouses and Bird Observations," and continuing Mr. Superintendent Johnston's reminiscences (from page 64) on King Island, he writes:—"A few years ago numbers of 'Grey Duck' visited us, appearing the end of December and leaving again in March. A peculiarity about these Ducks was that when shot at in the small lagoons they never rose, but fluttered ashore and took to the scrub, consequently a good dog scored against the gun. Early in January 12 of these Duck struck the Cape Wickham lantern as one bird. The keeper on watch got 8 on the balcony and 4 more were picked up at the base of the tower in the morning. Of late years they have been very scarce."

\* Rec. Aust. Mus., vol. iii., p. 14 (1897).

TASMANIAN FIELD NATURALISTS' CLUB.—Lovers of nature and field students will hail with satisfaction the formation of a Field Naturalists' Association at Hobart. In all Australia where could be found a better and more beautiful collecting and observing ground than the environments of Mt. Wellington? The objects of the Club are the encouragement of the study of nature, and the collection, preservation, and systematic classification of specimens, to be promoted by periodical meetings and excursions, the formation of a library, and the publication of papers and proceedings when deemed advisable. The office-bearers for the year are :—Chairman, Dr. Gerald Smith; vice-chairman, Mr. Samuel Clemes; secretary and treasurer, Mr. E. A. Elliott; committee: Messrs. E. S. Anthony, A. Conlon, M. W. Harrison, A. M. Lee, A. Morton, and J. E. Smith.

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### Bird Preservation in New Zealand.

AT the Sydney session of the A.O.U. Colonel Legge referred to the interest taken by members of the Union in bird preservation, and spoke of the lamentable extinction of interesting birds in New Zealand, such as the *Notornis*, the Quail (*Coturnix novæ-zealandicæ*), the Macquarie Island Rail, one of the *Cyanorhamphus* genus of Parrakeets, &c., &c.

He alluded to the praiseworthy efforts of the New Zealand Government to preserve other interesting endemic forms, such as *Apteryx*, *Ocydromus*, &c., in the "bird sanctuaries" of Resolution Island and Little Barrier Island.

The subject of the further preservation of these restricted New Zealand forms was dealt with by the Committee of the Biological Section, A.A.A.S., under Colonel Legge's presidency, and as the result he took the opportunity, when in Wellington, of officially addressing Sir Joseph Ward, in whose department the subject of bird preservation is dealt with, on the preservation of the very interesting "Flightless Rail" of the Chatham Islands (*Cobalus modestus*), which has become almost extinct from several causes—clearing of low scrub, destruction of the rough pasturage by sheep, and finally by the ruthless onslaught of the fast-

disappearing species by a collector, on behalf, it is reported, of the Tring Museum, when about 20 specimens were captured.

Colonel Legge's communication, written as president of the Biological Section, A.A.A.S., was favourably received, and he has recently received a courteous letter of thanks from the Government of New Zealand for having called attention to the matter, with a copy of the *Gazette* containing a notice proclaiming the species as absolutely protected, and instructing the magistrate to use every effort to preserve the Rail in future.

The only doubt is whether the bird is not already extinct. If so, this will be another lamentable disappearance of a specialized New Zealand form, which is all the more regrettable inasmuch as this Rail formed an interesting link between the New Zealand and Lord Howe Island avifauna, and an interesting testimony to the former land-connection, in past geological times, between the two localities.

# The Emu

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"Birds of a feather."

VOL. IV.]

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[PART 4.

## Notes on a Trip to the Yandanooka District, Western Australia.

BY ALEX. WM. MILLIGAN.

MY annual holiday last springtime (September, 1904) was spent in the above district, in company with Dr. Alex. Morrison, the Western Australian Government Botanist, and Mr. C. P. Conigrave, of the Western Australian Museum, Perth.

Our first camp was pitched on the Yandanooka sheep station, the property of Mr. S. J. Phillips, formerly member in the local State Parliament for the Irwin electorate. After remaining there ten days we struck camp and went to Ebano, an outlying sheep station also belonging to the gentleman named, and situate some 16 miles inland. From there Mr. Conigrave made an arduous journey on foot to Cadgee Cadgee sheep station, some 46 miles farther inland, and penetrated what is known as the "mulga" country.

Yandanooka is a siding on the Midland railway line, and is distant from Perth about 260 miles northward.

The main object of our trip was to endeavour to ascertain the southern and western limits of northern species, the northern limits of southern species, and the distribution of species generally.

The Museum collectors had already run east to west lines from Pindar (some 80 miles north of Yandanooka) to Wurarga, Day Dawn, and farther eastward. The year before we had cut a line from Mogumber to the Wongan Hills, 50 miles inland and eastward; and I had in earlier years cut various lines, between the Darling Ranges and the western coast, from Perth to Cape Mentelle, some 200 miles south of the former. I had also cut an east and west line from Lake Yanchep, some 35 miles north of Perth.

In the present trip Mr. Phillips and his station manager, Mr. Herbert J. Lee Steere, helped us considerably with their valuable local knowledge, and also placed at our disposal one of the station teams to take us and our impedimenta from camp to camp, and above all they evinced a lively interest in our labours; for all which we must record our grateful acknowledgments.

The country from Yandanooka to Ebano is what is known as "jam" (*Acacia acuminata*) and "York gum" (*Eucalyptus loxophleba*), interspersed with scrubs of "prickly reminder" (a species

of *Hakea* having leaves up to 3 inches long, shaped and pointed like porcupine quills, and growing at all angles) and also high-growing, weeping prickly mimosa bushes. The formation of the country is a depressed area of very rich red clay soil cut out of the high, extensive sand plains. Bird-life was plentiful everywhere, particularly the smaller Passerines, owing, undoubtedly, to the excellent protection and security afforded by the "prickly reminder" and mimosa scrubs. In them the birds, nests, and young were at all times absolutely safe from their natural enemies, Hawks, Crows, and Butcher-Birds, for they could not possibly follow their quarry there. These bushes, however, are not regarded favourably by sheep-farmers, as they destroy the fibre of the wool of the sheep as they pass by and under them. Obviously, an accompaniment to the progress of settlement will inevitably be the decimation of smaller birds. The object of our trip was successfully accomplished, but the results can only be generalized. Many species were found to be common in all three places—that is to say, the Wongan Hills proper, Yandanooka-Ebano, and Pindar-Day Dawn. Others, again, were present at the first and second, the first and third, and, again, the second and third. Some were peculiar only to one or other of such districts. Even to tabulate the results would occupy more space in this journal than I could reasonably expect to have allowed. They, therefore, must be reserved for a special work on distribution.

Briefly stated, we were able to fix (tentatively, of course) the southern limit of *Ptilotis carteri*, *Xerophila castaneiventris*, *Malurus assimilis*, *Sphenostoma cristatum*, *Taniopygia castanotis*, and *Calopsittacus novaehollandiae*, and the northern limit of *Ptilotis ornata*. Such forms as *Ephthianura tricolor* and *E. aurifrons*, *Acanthiza robustirostris*, *A. tenuirostris*, *Amytis gigadura*, *Calamanthus campestris*, *Manorhina (Myzantha) lulea*, *Climacteris superciliosa*, and *Cinclosoma cinnamomeum*, which were found at Pindar-Day Dawn (80 miles north), were not present at Yandanooka or at the Wongan Hills. On the other hand, such forms as *Licmetis pastinator*, *Calyptorhynchus stellatus*, *Calopsittacus novaehollandiae*, and *Ptilotis carteri*, found at Yandanooka-Ebano, were not found at either Pindar-Day Dawn (northward) or at the Wongan Hills (southward). Again, *Malurus pulcherrimus*, *Cinclosoma castanonotum*, *Drymaedus pallidus*, *Hylacola cauta*, and *Calamanthus montanellus*, found at the Wongan Hills proper, were not found at either Yandanooka-Ebano or at Pindar-Day Dawn. *Acanthiza uropygialis*, *A. pallida*, *Malurus leucopterus*, *Glycyphila albifrons*, and many other species, were common at all three places. *Ptilotis plumula* was found at Wurarga, near Day Dawn, and at Cadgee Cadgee, but that may be accounted for by the fact that each place is in the "mulga" belt. *Mesocallius palliolatus* was found at Day Dawn and also at the Wongan Hills proper, but, strange to say, not in the intermediate Yandanooka district. At Yandanooka-Ebano *Malurus assimilis*, *M. splendens*, and *M. leucopterus* were found, the first-mentioned two occupying the same feeding-grounds.

The foregoing notes are not intended by any means to represent every species worthy of reference upon the lines indicated.

The following field notes on the rarer or less known forms secured during the trip may prove interesting :—

*Ptilotis carteri* (Campbell).—These birds were invariably found in the “York gum” belts, both at Yandanooka and Ebano. In habit and disposition they are restless and pugnacious, chasing each other from tree to tree in noisy quarrel. They have a habit similar to that of *Ptilotis ornata* (which they resemble in their notes and general characteristics) of rising frequently into the air from the top of a tree, uttering a distinct note. We secured a series of some 12 skins, and in every one (except a fledgling) the *black auricular line and yellow throat and chest striations* (distinguishing marks already recorded by me\*) were always present and conspicuous. Lately I have had the opportunity of comparing the above with two skins of *Ptilotis leilavalensis* (North), from the Carpentaria district, kindly lent by Dr. W. M’Gillivray, and in neither of these skins do the black line and striations appear. The white plumes in the latter, also, are less strongly developed. I have therefore not the slightest hesitation in pronouncing the two species distinct. Fortunately, when I was making the comparison, Mr. Tom Carter, formerly of Point Cloates, was on a visit to Perth, and he, after making a critical examination of the skins of both species, expressed himself as entirely in accord with my pronouncement. Certainly, the general pattern of the plumage of the two species is very similar, but the same remarks apply with equal force to *Ptilotis plumula*, which appears to be an inland representative of *Ptilotis carteri*. Convert the yellow plumes of *Ptilotis plumula* into white, and you have *P. carteri*. I cannot admit *P. penicillata* as being as near an ally to *P. carteri* or to *P. leilavalensis* as is either *P. plumula* or *P. flavescens*.

*Oreoica cristata* (Lewin).—This species was very common everywhere, and I was fortunate in finding two nests containing eggs. One nest was placed in the fork of a large prickly mimosa bush about 2 feet above the ground; the other in a “prickly reminder” bush, at about the same height. The occupant of each nest sat very closely, and did not seem disposed to move on my near approach. Each nest abounded with black hairy caterpillars—a circumstance which has already been observed and recorded by field naturalists in regard to the species. The presence of such life has not hitherto been satisfactorily accounted for, and the suggestion that the caterpillars are placed there by one of the pair as food supplies for the sitting bird has been rejected. I am unable to concur in the rejection. The fact of each bird sitting so closely led me to the conclusion that they could not be there for any purpose other than food. However, subsequently I shot one of the species (not one of the nesting birds) and had the contents of its stomach preserved for examination on my return. Such examination, with the aid of a strong magnifying glass, revealed the presence

\* *Emu*, vol. iv, p. 51.

of scores of the hairs of the caterpillars, together with the segments of their bodies and softer inner parts.

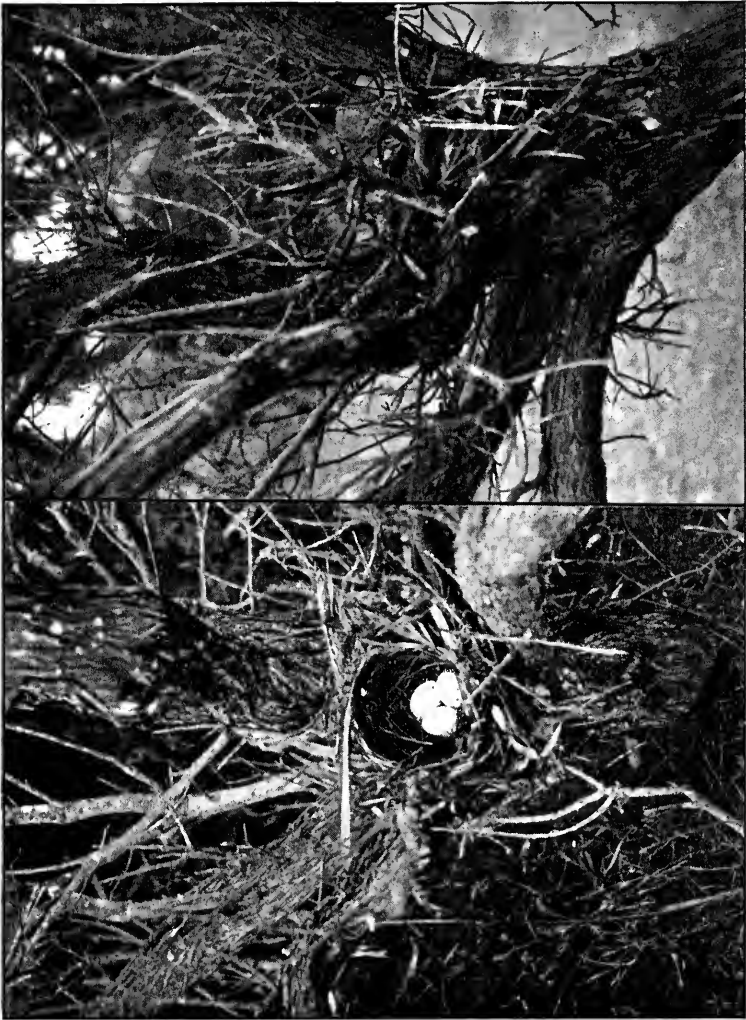
The rich and varied notes of the species are well known to every Australian bushman, as also are its extraordinary ventriloquial powers. The several combinations of notes I fix as seven. Some combinations are inimitable, or at least have not an equivalent in the English language. Some, however, have an equivalent, perhaps fanciful. Three of these I translate as follows:—One, "Billy Pope," thrice repeated; another, "Honour the Pope," oft repeated; and a third, "Where's Subiaco?" These birds, together with their compeers in song, *Sphenostoma cristatum*, *Cracticus nigrigularis*, *Collyriocincla rufiventris*, and *Pachycephala falcata* (which were invariably found in association), made the scrub-lands ring again with their melody. The aborigines call the bird "Bääcka Bääcka," evidently in imitation of one of their combinations of notes.

*Sphenostoma cristatum* (Gould).—These singular birds were also very numerous in the "prickly reminder" scrubs, probably owing to the security afforded by them. Many writers have spoken of the species as being extremely shy and difficult of approach, but that was not my experience. Their marvellously developed ventriloquial powers certainly make the birds difficult to locate, but when once located they are easy to approach. I could have shot a score without any trouble. They are able to throw their voices at least three hundred yards in any direction. Their notes are four, given with a clear, ringing, bell-like sound. When two or three sing in concert all other bird-notes are overpowered. Locally they are called (onomatopœically) "Jimmy Linthorne" (the name of a local celebrity), and by others the "Bell-Bird." I much prefer, as a vernacular name, the one suggested by Dr. Morrison, of our party—namely, the "Chimes-Bird"—as it is particularly appropriate. I examined the contents of the stomach of one bird; they included the remains of a grasshopper and the seeds of various plants, which I have not yet had identified. The native name is "Geetårdo."

*Xerophila castaneiventris* (Milligan).—I was, indeed, pleased to meet with this new species. The birds were in great numbers. They associate in small companies, and for the most part keep to the prickly bushes before mentioned. They appear to feed on the ground under these bushes, and when alarmed rise into them. They are very sprightly in their movements, and their song is composed of two or three plaintive but musical notes. Their loosely constructed nests are built in the prickly bushes. The plumage of one bird that I shot was wholly tinged with warm chestnut.

*Cracticus nigrigularis* (Gould).—This handsome Butcher-Bird was numerous in the "red" lands, but principally in the beautiful white-limbed "flooded gums" (*Eucalyptus rostrata*). His notes suggest the vastness of the Australian bush and continent. At dawn his clear cornet-like notes ring out far above the great chorus of bird-song. They are various, and some impossible of transla-





Nest of Bell-Bird (*Oreoica cristata*) in Prickly Mimos.  
(Top View.)  
(Side View.)







Native Climbing Flooded Gum for Nest of Black-throated Butcher-Bird  
(*Cracticus nigrigularis*).

FROM A PHOTO, BY C. P. CONIGRAVE.

tion, but his dawn notes resemble the following:—"Toll-de-lol-fah" (the last note long drawn out and of liquid sweetness); then twice and quickly repeated in a lower key—"You chatterbox;" then in a higher key and with very full, rounded notes, and twice repeated—"Sweet after forty." So charmed was I with the song and appearance of these birds that I determined to secure one to take home with me. Through the kind offices of Mr. Lee Steere, I eventually managed to get one from one of the station hands, and my captive has furnished me with many opportunities of study. The diet I give him is principally that of meat, but he has a distinct liking for oatmeal or pollard paste, and a still greater one for grapes. For the latter he will leave his meat food at once. The meat when offered is invariably seized with the bill and if small is threshed on the spell and then run through the mandibles. If large, it is similarly seized, and with surprising quickness is tucked under one foot and torn to pieces, after the manner of some birds of prey. The bird is a very small eater—*Gymnorhina dorsalis* will, as I have tested, eat four times as much at one meal. After satiety, a "larder" is made of any surplus meat in a convenient corner of the cage. Probably the fact of the slender appetite of these birds, in combination with a difficulty in obtaining regular supplies when wanted, has led to the natural habit of the Butcher-Birds in making their "larders." My captive began to moult in the middle of January last (he is a one-year-old bird) but up to the present (the middle of February) the moult is not completed. The breast feathers have changed from a discoloured white to pure white; the brown gorget on the chest shows a black area on its lower margin; the brown feathers of the sides of the head and face are being supplanted by black ones; the mantle and neck feathers have changed from brown to black, but these latter, in turn, are changing to white, the white colour beginning on the outer margins of the feathers. Being anxious to ascertain whether these birds had the sense of smell developed as regards their food, I made and repeated the following test:—Approaching with an empty hand concealed behind my back, the bird was indifferent to my approach. Returning inside the house and coming back with my hand similarly concealed, but containing meat, the bird at once fluttered its wings and uttered its baby cry for food. Why should the members of the genus *Gymnorhina* be ambulators and the members of the genus *Cracticus* be hoppers? Has the continuous search for food of the former on the ground brought about, by degrees, ambulation?

These birds build their nests in the flooded gums. One pair, on Ebano camp, had their nest in one of these trees and brought out their young, three in number. The photograph (Plate X.) shows a native climbing the tree for the nest. The aboriginal name is "Cudgeégo."

*Pachycephala falcata* (Gould).—I am in doubt whether I am correct in identifying this species as the above, for the same reason that I am in doubt whether it is really separable from *P. rufiventris*.

Gould's grounds of distinction between the adult males of the two species were that the ear coverts, lores, and the region around the eyes of *P. falcata* were grey or ashy-grey instead of black as in *P. rufiventris*. But these distinguishing marks are not constant, and are found in both species. I secured two adult males at Ebano, one having those parts black, and the other having them grey, but in all other respects identical. Then, again, I looked at two adult male skins obtained by Dr. House in the far north, in the Kimberley expedition, one of which possessed these parts black and the other grey. Comparing skins from Perth, Yandanooka, and the Kimberley district, there is not any difference in any one form except that the Kimberley birds are not so flaky and loose in the plumage as the southern ones. The difference between the female birds from the same localities is that in the northern species the longitudinal brown streaks of the breast are much more narrow; but this, again, is variable, for I have handled a skin obtained at Moore River, about 100 miles north of Perth, where these lines in the female were very much more narrow than in the birds at Yandanooka, 160 miles farther north.

Individuals of the species were very numerous at Yandanooka-Ebano, their melodious voices filling the scrub-lands. They have one distinctive call, which they frequently use in the middle day. It resembles the sound of the word "Joey," and is repeated in a high, penetrating tone fully twenty times without taking breath.

*Barnardius zonarius* (Shaw); *Psephotus multicolor* (Temm.)—When at Ebano the native cattle-minder brought in four young birds of the latter species just ready to fly, and on our return journey from Ebano to Yandanooka we harried a nest of the former species and obtained four young ones in the same condition. One only of the Grass-Parrakeets lived (a male bird), and I have him in captivity, and I have also one of the Yellow-collared Parrakeets. My object in mentioning these species is not on account of their rarity, but of the plumage phases of the young. Each bird has proved to be a most lovable and docile pet. The tail of each began to grow most rapidly in length—quite an inch per week until the normal length was attained. The moult began simultaneously in each bird, about ten weeks after leaving the nest. In the Grass-Parrakeet the brownish feathers of the back have changed into a dark grass-green; the thighs have become vermilion; the frontal band and shoulder-patch changed from light yellow to a deep orange-yellow; and the porphyry-coloured patch on the back of the head has become a deep maroon. In the Collared Parrakeet the abdomen was almost yellow, but this has now changed to pale green, leaving a yellow band between the abdomen and the breast. The smoke-coloured head has changed to dull black, and the forehead shows here and there a brick-red spot. In the adult bird it is said there is not any frontal red band as in *B. semitorquatus*. Perhaps the red spots referred to may afterwards disappear, and may only be evidences of the original type. In feeding my captive (*B. zonarius*) holds his food between the hallux and first toe, these

being held uppermost in position. Either foot is used, but the right one usually. The amount of water that he drinks is remarkable. The tender branches of a young red gum (*Eucalyptus*) are considered a tit-bit by him, and the young leaves, the bark, and young sapwood are all eagerly devoured. The Grass-Parrakeet is not such an adept in holding his food. His is seized, in the first place, by all the claws of the left foot, and then placed and held against one of the cage wires. He drinks very little. The native name of the Grass-Parrakeet is "Choogin," and that of the Collared Parrakeet "Peel-baal."

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## Australasian Ornithologists' Union.

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### EXCURSION TO N.S.W. NATIONAL PARK.

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BY J. W. MELLOR, A.O.U.

UPON the completion of the general business of the fourth Congress of the Union, held in Sydney, those members whose business permitted proceeded by train to the National Park, situated about 20 miles south of Sydney, which from its varied and lovely scenery presents a picturesque spot for those requiring a quiet rest after the toil and bustle of a city life.

The wild and rocky nature of the ground within the Park boundaries, with its deep ravines and inaccessible heights, its rivers and dense foliage of original sub-tropical scrub, makes it an ideal spot for all kinds of bird-life, and it is pleasing to relate that all fauna and flora are rigorously protected, so that a visit to this paradise is a fine opportunity for taking observations in ornithology. The limit of the Park is extensive, comprising as it does 36,300 acres, with a sea frontage to the South Pacific Ocean, and numerous inlets and bays, forming the home of waterfowl, and breeding-grounds for a large variety of fish. The work of the excursion was facilitated in every way by the energetic and courteous chairman of Trustees, Mr. Frank Farnell, who did all in his power to assist the members in making their observations. The inlets on the lower reaches of the Port Hacking River were explored by the naturalists in company with Mr. Farnell, who conveyed them into the nooks and crannies of the watercourse in the Trustees' oil launch *Kiwi*, and further hospitably entertained them at lunch at the Park select abode, "Warumbul." A second day's outing was hospitably provided to the upper regions of the Park, when the visitors were driven by conveyance along the road and track that skirt the freshwater portions of the Port Hacking River. Here the scenery is dense and charming in the folds of virgin scrub. Giant turpentine and other trees tower aloft to the height of 200 feet, and the cabbage palm in its luxuriance tries to race for supremacy, while beneath, the soft-wood trees and fruit-yielding shrubs, entwined with the cables of the "supplejack," make the

place quite dark and damp—an ideal spot for the land-leech and snails. Here the Lyre-Bird (*Menura superba*) was observed in its natural state, but, with its characteristic shyness, would disappear into the rocky ravines, not far distant, on the slightest noise. In these sylvan retreats the Regent-Bird (*Sericulus melinus*) also makes its abode, while Fruit-Pigeons feed on the berries and palm seeds. The loud, harsh call of the Pied Crow-Shrike (*Strepera graculina*) could be heard, as the parent bird called its young, which were just on the wing, to a safer locality on the rocky hillside. There, too, the White-shafted Fantail (*Rhipidura albiscapa*) and the Black-faced Flycatcher (*Monarcha melanopsis*) flitted beneath the cool shade of the scrub trees, and several species of the Tit family (*Acanthiza*) hopped from twig to twig in search of their insect food, while on the ground more than one variety of the Scrub-Wrens (*Scirornes*) made their way through the tangled undergrowth, picking up their food at the roots of the shrubs and in the stunted grass.

A pleasing and somewhat peculiar note to be heard was that of the Coachwhip-Bird (*Psophodes crepitans*), whose liquid call resembles the swish and loud crack of a whip, and might easily startle a stranger in the wilds, far away in the bush, and convince him that a human being was near at hand. But we could not stay in the locality for any length of time, as the return journey to our headquarters before dark was imperative, owing to the rough nature of the track at this end of the Park, which is not yet properly formed.

Audley was our general quarters within the Park, and being in a good central position, every point of the compass could be reached within a comparatively short time.

Excursions on foot were frequently made to explore the different situations, as it is surprising how local some species of birds are. The flowering of certain trees would attract honey-eating birds, and also insectivorous species, as insects would also be there, so that it would be easy to miss some if a vigilant and constant eye were not kept on all sides. The call of the "Crow" here seemed extremely mournful and humanlike, and as a pair were rearing their family not far distant from our abode, we were able to note them often, and came to the conclusion from observation that they were the Raven (*Corone australis*). In the rocky sides of the gullies the Rock-Warbler (*Origma rubricata*) was often seen, hopping over the huge boulders in its usual restless manner, while on the heath ground the solitary call of the Tawny-fronted Honey-eater (*Glycyphila fulvifrons*) could be heard, as it perched on a dry twig. Along the river the Satin Bower-Bird (*Ptilonorhynchus violaceus*) was making its well-known call, which resembles in the morning the words "Too hot, too hot, too hot," and in the evening "Water, water, water," and its call is a sure sign that water is near at hand. Up the rivers, too, the Kingfishers dart to and fro, the Blue Kingfisher (*Aleyone azurea*) catching one's eye like a vivid flash of brightness as it speeds arrow-like over the surface of the



water. The Sacred Kingfisher (*Halcyon sanctus*) and the Forest Kingfisher (*H. macleayi*) frequented the timbered country near the streams, where they were carrying out their breeding operations, the white ant heaps, far up in the trees, being the ideal place wherein to bore their tunnel and lay their eggs. The Yellow-breasted Robins (*Eopsaltria australis*) were fairly common, and one was observed feeding a young Pallid Cuckoo (*Cuculus pallidus*). The loud note of the Butcher-Bird (*Cracticus destructor*) was often heard, and the hearty laugh of the Laughing Jackass (*Dacelo gigas*) resounded in the woods and ravines. The melodious note of the Grey Shrike-Thrush (*Collyriocincla harmonica*) was as refreshing as ever on a damp, dewy morning, and the habit of its next of kin, the Rufous-breasted Thickhead (*Pachycephala rufiventris*) of repeating its loud and frightened call upon the report of thunder or other loud noise was the same as in more southern limits.

A pleasing sight on the river reaches was the presence of numbers of Black Swan (*Chenopsis atrata*). Black Duck (*Anas superciliosa*) were also quite tame, and fully appreciated the strict protective laws enforced within the Park, and one would often flush them in some small grassy creek or brook when coming suddenly upon them, but their flight would be but a short distance.

On the bank of the stream many iguanas were seen, and a battle royal was witnessed one day between one of these and a pair of Laughing Jackasses. The lizard had taken refuge up a large, smooth tree, when we heard the sudden whirr of wings and saw a pair of Jackasses swoop down and peck at the reptile's head. At the same time the birds uttered wild laughing cries, as if to frighten the intruder, who turned tail and came down the trunk of the tree at the double, but not before several more attacks had been levelled at it on its way down to *terra firma*. It chose to face man rather than the birds, which most likely had their nest at no very distant point.

On the lower reaches the Pied Cormorants (*Phalacrocorax hypoleucus*) were seen, and the Silver Gull (*Larus nova-hollandiae*) graced the salt spray; while from a neighbouring dry tree, close to the water's edge, the White-fronted Heron (*Notophya nova-hollandiae*) could be seen watching for its food.

One hundred and sixty acres in the Park have been fenced off, and fallow and red deer placed in the enclosure. These have multiplied considerably of late in their semi-wild state. The native wallaby are also preserved in their homes, and have become so tame that they will come in numbers in the evening close to the keepers' houses to get scraps and feed, a sight that is extremely quaint and pleasing to lovers of nature.

It would occupy too much space to record here all the species of birds we saw and the notes taken upon them, as such a wealth of vegetation naturally increases the numbers, and the interesting points relative to them, so that the appended list of 55 names must suffice to show just what was observed in a comparatively

small area, and within the space of only three or four days (a couple of weeks would certainly double the number), and speaks volumes for the labours of the energetic chairman and his co-workers, and it is to be hoped that the liberality of the Government will not be withdrawn from voting a fair amount towards the maintenance of such a land of bliss for our native fauna and flora, and a pleasant, enjoyable, and healthy holiday resort for thousands of people.

Here follows list of birds observed, the numbers being according to Gould's "Handbook":—

- 1 Wedge-tailed Eagle (*Aquila audax*).
- 53 Welcome Swallow (*Hirundo neoxena*).
- 60 Laughing Jackass (*Dacelo gigas*).
- 63 Sacred Kingfisher (*Halcyon sanctus*).
- 66 Forest Kingfisher (*Halcyon macleayi*).
- 69 Blue Kingfisher (*Alcyon azurea*).
- 88 Pied Crow-Shrike (*Strepera graculina*).
- 92 Black-backed Magpie (*Gymnorhina tibicen*).
- 99 Butcher-Bird (*Cracticus destructor*).
- 102 Magpie-Lark (*Grallina picata*).
- 103 Black-faced Cuckoo-Shrike (*Graucalus melanops*).
- 113 White-throated Thickhead (*Pachycephala gutturalis*).
- 116 Rufous-breasted Thickhead (*Pachycephala rufiventris*).
- 123 Grey Shrike-Thrush (*Collyriocinclia harmonica*).
- 129 Yellow-bellied Shrike-Tit (*Falconculus frontatus*).
- 134 White-shafted Fantail (*Rhipidura albiscapa*).
- 136 Rufous-fronted Fantail (*Rhipidura rufifrons*).
- 139 Black and White Fantail (*Sauoloprocta tricolor*).
- 144 Leaden Flycatcher (*Myiagra rubecula*).
- 149 Brown Flycatcher (*Micræca fascians*).
- 152 Black-faced Flycatcher (*Monarcha melanopsis*).
- 175 Yellow-breasted Robin (*Eopsaltria australis*).
- 179 Lyre-Bird (*Menura superba*).
- 182 Coachwhip-Bird (*Psophodes crepitans*).
- 191A Variegated Wren (*Malurus lamberti*).
- 213 Yellow-throated Scrub-Wren (*Sericornis citreogularis*).
- 216 White-browed Scrub-Wren (*Sericornis frontalis*).
- 220 Brown Tit (*Acanthiza pusilla*).
- 226 Yellow-breasted Tit (*Acanthiza nana*).
- 227 Striped Tit (*Acanthiza lineata*).
- 229 Yellow-rumped Tit (*Acanthiza chrysorrhoa*).
- 236 Rock-Warbler (*Origma rubricata*).
- 253 Red-browed Finch (*Egitha temporalis*).
- 257 Spotted-sided Finch (*Staganopleura guttata*).
- 276 Satin Bower-Bird (*Ptilonorhynchus violaceus*).
- 290 Raven (*Corone australis*).
- 301 Tawny-fronted Honey-eater (*Glycyphila fulvifrons*).
- 306 Yellow-eared Honey-eater (*Ptilotis lewini*).
- 320 Yellow-faced Honey-eater (*Ptilotis chrysops*).
- 332 Brush Wattle-Bird (*Acanthochara mellivora*).
- 339 Spinebill (*Acanthorhynchus tenuirostris*).
- 348A Brown-headed Honey-eater (*Melithreptus brevirostris*).
- 349 Red-eyed Honey-eater (*Melithreptus lunulatus*).
- 360 Silver-eye (*Zosterops carulescens*).
- 371 White-throated Tree-creeper (*Climacteris leucophaea*).

- 378 Pallid Cuckoo (*Cuculus pallidus*).  
380 Square-tailed Cuckoo (*Cacomantis variolosus*).  
459 Little Green Pigeon (*Chalcophaps chrysochlora*).  
462 Bronze-wing Pigeon (*Phaps chalcoptera*).  
548 White-fronted Heron (*Notophoxyx novæ-hollandiæ*).  
570 Land Rail (*Hypotaenidia philippinensis*).  
577 Black Swan (*Chenopsis atrata*).  
585 Black Duck (*Anas superciliosa*).  
597 Silver Gull (*Larus novæ-hollandiæ*).  
653 Pied Cormorant (*Phalacrocorax hypoleucus*).

A further excursion was taken during the same session of this Congress to the Tuggerah Lakes district, situated half-way between Sydney and Newcastle, when a large number of birds were identified and many interesting notes taken. The account of this excursion will appear in the next issue of *The Emu*.

## Field Notes on Some Birds of the Casterton District (Victoria).

BY (DR.) E. A. D'OMBRAIN.

### PART II.

TAWNY FROGMOUTH (*Podargus strigoides*).—The nest of this bird was discovered on eight occasions during 1903. The only noticeable facts about them were that in one instance the nest was in a "spout" of the tree and contained the unusual clutch of three eggs.\* Time of season, August to November.

BROWN KINGFISHER, OR LAUGHING JACKASS (*Dacelo gigas*).—Birds and nests very numerous. The only note of interest is that these birds play great havoc with poultry chicks. An acquaintance of mine wondered what was taking his brood of chickens, set a watch, and found a pair of Laughing Jackasses helping themselves. They had taken all but four out of fourteen chicks.

HOARY-HEADED GREBE (*Podiceps poliocephalus*).—My friend Mr. W. M'Lennan watched a pair building in a reedy dam. Both birds assisted in the building. The nest site was in the reeds, about 5 yards from the end of the dam. The structure was of brown weeds growing in the water near the edge. The birds dived for the weeds, and on reappearing dived again, and came to the surface near the nest. Not much time was spent in placing the weed on the nest, and the birds then dived off the nest. Date, 8/11/03. On 10/11/03 nest completed, but no sign of birds anywhere about, nor on 19/11/03. The question as to the flight of these birds is sometimes raised. Mr. M'Lennan, on the same dam, in March, 1904, saw one of these Grebes, and sat down to observe it. It was very inquisitive, and swam within a few yards of him, making a chirping noise. On throwing a piece of earth

\* Instances of three eggs to a clutch are recorded in "Nests and Eggs" (Campbell), p. 540.—EDS.

at it the bird rose out of the water and flew about 80 yards, alighting in the water. On throwing at it once more it again flew, and then tried diving, as if it had decided to trust no more to its small wings.

FLYCATCHERS—BLACK-AND-WHITE (*Rhipidura tricolor*), RESTLESS (*Sisura inquieta*), and BROWN (*Micræca fascians*).—Has any naturalist ever noticed that these birds are as capable of infinite change of mind as the ladies? That they do alter their intentions very frequently the following notes will show:—

9th September, 1903.—Pair of Black-and-White Fantails seen building. Six days later the birds had pulled the nest to pieces, but had not selected a site for new nest apparently. Later the nest was found with three eggs in it.

10th September, 1903.—Pair of Restless Flycatchers seen building. On 27th nest appeared to have been finished and deserted, for the birds were building again in another tree. This nest was now about half-built. On 9th October there was no sign of the second nest. On 23rd October the nest was found a third time, with three eggs in it. It was in the same tree as the one that contained the second attempt.

October, 1903.—Restless Flycatchers seen building. On next visit (17th October), first nest pulled to pieces and another built. Bird sitting on the nest.

30th September, 1903.—Restless Flycatcher starting to build in tea-tree. 10th October, nest destroyed, and birds building in a red gum tree.

Brown Flycatcher.—27/9/03.—Birds still adding cobweb to the nest, which contained two eggs advanced in incubation.

The above-mentioned nests were not in the haunts of those who would interfere with them; consequently the birds either were dissatisfied with their surroundings or are, as I said, fond of change.

Whilst on the subject of nest-building it may be of interest to record the following fact about a Crow (or Raven) whilst building. The bird was observed collecting twigs for the structure. It was noticed that although dead wood was plentiful upon the ground the Crow would have none of it, but was busy breaking off the ends of the smaller branches of a dead tree. During the work it came upon some which it could not manage to snap off with its beak. Crows are proverbially knowing, and this one was no exception, for, finding the twig too tough for its bill, the bird deliberately got out on the extreme end of the twig and swayed up and down till it broke off.

BLACK DUCK (*Anas superciliosa*).—The difficulty of fixing a close season for game is made apparent by the following dates of breeding:—6th September, 1903.—Two broods seen. One about four or five days old; the other nearly fully fledged. 11th September.—Nest with three eggs. 4th October.—Two nests, one with thirteen eggs, other eleven. 25th January, 1904.—Brood of nine ducklings about two weeks old.

To show with what ease the young Black Ducks can reach the water without their parents' aid, on 25th September, 1903, a nest was discovered in a hole in a tree. Height of hole was about 20 feet; tree in a creek. On climbing up seven young ones and two eggs were seen; one young bird, taking fright, jumped out of the nest into the water. The remaining six "stampeded" and "followed their leader," and reached the water apparently none the worse for their hasty descent.

MUSK-DUCK (*Biziura lobata*).—On a dam Mr. M'Lennan saw what was to him a peculiar-looking Duck. The bird fluttered along the surface of the water for about 20 yards, then rose up, and was making off, when he shot it. On picking it up it turned out to be a Musk-Duck. It is seldom these birds are seen in actual flight.

LESSER MASKED OWL (*Strix delicatula*).—Since my last notes on this bird appeared\* Mr. M'Lennan found a nest of the species in a curious way. He flushed a bird from a dead tree. This bird flew at once to a hole in a green tree close by. In the hole were four fresh eggs, which he collected for his cabinet. Exactly a month later he revisited the tree, when an Owl flew out of the hole. Again climbing the tree he found another clutch of four eggs, which he left to incubate. In a full three weeks' time he inspected the hole to see if the young were ready for my camera, when to his astonishment there were now five eggs in the hollow! The bird had flown off, and we think that either the four eggs proved non-fertile and the bird had commenced another clutch or else had laid another egg, completing a clutch of five, soon after the visit to the hole.

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## Birds of the Upper Yarra.

BY A. G. CAMPBELL, MELBOURNE.

In the list which is given hereafter are tabulated only those birds which were identified during a ten days' trip early in the month of December, but as this list includes doubtless all the regular inhabitants, it will prove useful for reference.

In the mountainous and heavily-timbered regions about the head waters of the Yarra birds are not in abundance—in fact, it seems to hold good that the heavier the timber the scarcer the bird-life, and there are tracts that are practically forest solitudes. As one proceeds up the valley from Contention Creek, the last tributary of any importance, birds such as *Gymnorhina* and the *Strepera*, which love the more open country, where the river flats and gently sloping hillsides abound with food, are left behind, and the feathered inhabitants, without such common birds among them, are then less noticeable. *Graucalus*, *Malurus*, *Rhipidura tricolor*, *Ptilonorhynchus*, *Cracticus*, *Pachycephala rufiventris*, *Acanthochæra*, the *Artami*, *Ægialtha*, *Dacelo*, and *Ægialitis* are also left behind, and as the ranges narrow in and become still more pre-

\* *Emu*, vol. iv., p. 127.

cipitous the *Calyptorhynchus* and *Cacatua* disappear, but their relatives *Callocephalon* and *Platyercus* remain in evidence, until finally, when the stream becomes a mountain torrent in its far-up reaches, one is introduced to new genera like *Menura*, *Pycnoptilus*, *Petraca*, *Geocichla*, and species such as *Rhipidura rufifrons*, *Eopsaltria australis*, *Pachycephala olivacea*, and *Ptilotis lewini*, all distinctive of fern-clad country.

Birds, however, of any species are in numbers few and far between—in fact, when scrambling along with the din of rushing water constantly in one's ears, one would be inclined to say there were no birds, but sit quietly for a while and the eye will pick out a *Scricornis* here and an *Acanthiza* there. Rarely can the ear, the naturalist's keen guide, be of much assistance. The *Menura victoria* is perhaps the commonest bird in these parts, judging by the number of fresh dancing mounds which are met with; so late in the year, though several males were heard, the whistling is not so frequent and persistent as in the nesting time.

Pushing still further on, the traveller leaves the rocky cascades of the gold-bearing silurian country, and emerges, at about 2,500 feet, on to gently undulating granite tracts, which are characterized by slowly moving, oozy streams in the depressions and forests of beech or *Fagus* trees clothing the ridges. In these forests, with little fallen timber and the ground clothed with *Lomaria* ferns, so totally unlike the gum or *Eucalyptus* forests, the bird-life is scant in the extreme, and the absence of the noise of rushing water makes them park-like solitudes indeed. Only here and there will a bird be noted, and in the list those seen in this country are specially marked. The presence of *Climacteris leucophaea*, *Apros-nictus cyanopygius*, and *Platyercus elegans* is accounted for by the presence of single grand specimens of eucalypts towering in odd places among the beech, just as, on the other hand, the beech trees creep down the valley along the riverside. It was in beech country that a pleasing incident occurred with the Lyre-Birds. We listened to a young male trying his vocal powers with, presumably, his parent, both birds making the silence re-echo with their loud, full-throated calls.

The only Coachwhip-Bird (*Psophodes crepilans*) noted was in the beech forest.

In parts of these uplands occur large patches of woollybutt eucalypts, tall and straight, and the only bird that seemed to inhabit them was a small alpine variety of *Ptilotis leucotis*. On account of the tallness of the trees we were unfortunately unable to shoot a bird for complete identification. It can hardly be expected that a species frequenting tall timber in forest country, at an altitude of 3,000 feet above sea level, can be exactly the same as the lowland bird, which is almost a desert species in some localities.

A record must here be made of a new foster-parent of *Cacomantis variolosus*—namely, *Petraca rhodinogastra* (Pink-breasted Robin),

in a nest of which a large young Cuckoo was discovered. *Petræca phænicea* is, in all probability, another foster-parent, though not yet authenticated. This species was observed on the more open rocky northern slopes of the ranges, which, on account of harder natural conditions, are clothed with messmate and stringybark eucalypts, and not with the blackbutt and woollybutt of the richer areas. In similar country, too, was the piping call of the Wonga-Wonga Pigeon noted.

*Collyriocinclæ*, *Sericornis*, *Acanthorhynchus*, *Zosterops*, and *Meliornis* were, as might be expected, the ubiquitous species, being noted in all classes of country through which we passed.

## LIST OF SPECIES IDENTIFIED.

Those marked \* noted in the beech country.

<i>Ninox boobook</i>	..	..	Boobook Owl.
<i>Strepera graculina</i>	..	..	Pied Crow-Shrike.
" <i>cuneicaudata</i>	..	..	Grey Crow-Shrike.
<i>Grallina picata</i>	..	..	Magpie-Lark.
* <i>Collyriocinclæ harmonica</i>	..	..	Grey Shrike-Thrush.
<i>Graucalus melanops</i>	..	..	Black-faced Cuckoo-Shrike.
<i>Edolisoma tenuirostre</i>	..	..	Caterpillar-eater.
<i>Petræca phænicea</i>	..	..	Flame-breasted Robin.
*    " <i>rhodinogastra</i>	..	..	Pink-breasted Robin.
*    " <i>rosea</i>	..	..	Rose-breasted Robin.
<i>Malurus cyaneus</i>	..	..	Blue Wren.
<i>Rhipidura albiscapa</i>	..	..	White-shafted Fantail.
*    " <i>rufifrons</i>	..	..	Rufous Fantail.
" <i>tricolor</i>	..	..	Black and White Fantail.
<i>Myiagra nitida</i>	..	..	Satin Flycatcher.
* <i>Geocichla lunulata</i>	..	..	Ground-Thrush.
<i>Ptilonorhynchus violaceus</i>	..	..	Satin Bower-Bird.
<i>Acanthiza nana</i>	..	..	Little Tit.
" <i>pusilla</i>	..	..	Brown Tit.
" <i>lineata</i>	..	..	Striated Tit.
* <i>Sericornis frontalis</i>	..	..	White-browed Scrub-Wren.
* <i>Pycnoptilus floccosus</i>	..	..	Pilot-Bird.
* <i>Psophodes crepitans</i>	..	..	Coachwhip-Bird.
<i>Gymnorhina leuconota</i>	..	..	White-backed Magpie.
<i>Cracticus destructor</i>	..	..	Butcher-Bird.
<i>Falcunculus frontatus</i>	..	..	Shrike-Tit.
* <i>Eopsaltria australis</i>	..	..	Yellow-breasted Robin.
* <i>Pachycephala gutturalis</i>	..	..	White-throated Thickhead.
" <i>rufiventris</i>	..	..	Rufous-breasted Thickhead.
" <i>olivacea</i>	..	..	Olive Thickhead.
* <i>Climacteris leucophæa</i>	..	..	White-throated Tree-creeper.
* <i>Acanthorhynchus tenuirostris</i>	..	..	Spinebill.
* <i>Zosterops cærulescens</i>	..	..	White-eye.
<i>Melithreptus lunulatus</i>	..	..	White-naped Honey-eater.
<i>Ptilotis lewini</i>	..	..	Yellow-eared Honey-eater.
*    " <i>leucotis</i>	..	..	White-eared Honey-eater.
* <i>Meliornis australasiana</i>	..	..	Crescent Honey-eater.
<i>Acanthochæra carunculata</i>	..	..	Wattle-Bird.
<i>Dicæum hirundinaceum</i>	..	..	Mistletoe-Bird.
<i>Pardalotus assimilis</i>	..	..	Allied Pardalote.

* <i>Pardalotus punctatus</i> ..	..	Spotted Pardalote.
<i>Hirundo neoxena</i> ..	..	Swallow.
<i>Artamus superciliosus</i> ..	..	White-browed Wood-Swallow.
„ <i>sordidus</i> ..	..	Wood-Swallow.
<i>Egitha temporalis</i> ..	..	Red-browed Finch.
* <i>Menura victoriae</i> ..	..	Lyre-Bird.
<i>Dacelo gigas</i> ..	..	Laughing Jackass.
<i>Cuculus pallidus</i> ..	..	Pallid Cuckoo.
* <i>Cacomantis flabelliformis</i> ..	..	Fan-tailed Cuckoo.
* „ <i>variolosus</i> ..	..	Square-tailed Cuckoo.
* <i>Chalcococcyx basalis</i> ..	..	Narrow-billed Cuckoo.
* „ <i>plagusus</i> ..	..	Bronze Cuckoo.
<i>Calyptorhynchus lunereus</i> ..	..	Black Cockatoo.
<i>Callocephalon galeatum</i> ..	..	Gang Gang Cockatoo.
<i>Cacatua galerita</i> ..	..	White Cockatoo.
* <i>Aprosmictus cyanopygius</i> ..	..	King Lory.
* <i>Platycercus elegans</i> ..	..	Crimson Parrakeet.
<i>Leucosarcia pictata</i> ..	..	Wonga-Wonga Pigeon.
<i>Ægialitis melanops</i> ..	..	Black-fronted Dottrel.

## The Kagu of New Caledonia.

BY A. J. CAMPBELL, COL. MEM. B.O.U.

UPON the French occupying New Caledonia in 1852 this unique and most interesting bird was discovered. It is known to the natives as the Kagu, but it was not scientifically described and named *Rhinochetus jubatus* by Jules Verreaux and Des Murs (*Revue Zoologique*, p. 439) till 1860, when the first specimen was brought to the Colonial Exhibition, Paris.

The Kagu possesses a marked Ralline appearance, but in the systematic list its place is after the Rails, in the order Alektorides. Although it stands alone, its nearest ally has proved to be the Sun-Bittern (*Eurypyga*) of South America.

The bird, which is about 2 feet in length, is about the size of a domestic fowl, with longish legs. The plumage may be described as greyish or of a light slate colour, especially on the head and under parts, the back, &c., being darker, while the wings and tail are obscurely barred. Legs and bill are yellowish or reddish orange. The eyes are reddish, being bloodshot-like. The longest plumes of the crest measure 4 or 5 inches.

At Mosmans, at the private residence of Mr. H. E. Finckh (jeweller and optician, 300 George-street), while attending the recent Sydney Session of the A.O.U., I was extremely fortunate in seeing some of the interesting Kagus thriving in captivity—for they appear hardy creatures. The poses of the Kagus, either at rest or agitated, are extremely fascinating. Walking leisurely about the aviary with spasmodic Rail-like action of the tail and head, they occasionally strike a graceful attitude while bending over foot or leg, after the fashion of Plovers, &c. But when excited they stand straight, with erected crest, semi-expanded wings, and drooping tail (see illustration). In this attitude they





The Kagu (*Rhinochelus jubatus*).



bounce proudly at any intruder. When in a playful mood they throw about with their bills small sticks and stones. The birds call to each other, usually about daybreak, in loud, piercing, yelp-like notes, continued for some time, which can be heard a mile away.

Mr. Finckh was favoured in getting a pair of his Kagus to breed. They commenced nesting in a hollow on the ground in a secluded part of the aviary, into which they threw a few coarse sticks and leaves for a day or two. When the egg was laid more sticks were placed about it. The male sits continuously on the single egg, but his mate may relieve him occasionally, possibly at night. The birds defend their nest vigorously. Mr. Finckh reckoned his birds were about seven years old when they commenced to lay. It was observed that the egg was laid fourteen days after "mating," and that incubation lasted five weeks. The following data, by courteous permission, are taken from Mr. Finckh's records relating to one pair of birds:—1902.—Three eggs were laid; first on the 6th April, last the 3rd October. 1903.—Four eggs were laid; first on the 16th April, last on 16th November. 1904.—Egg laid 14th April, which disappeared in a mysterious manner; a second egg was laid 23rd June, but it was not fertile. A third egg, which was deposited on 15th September, was placed in an incubator. A small spot was noticed in the egg on the tenth day, and it chipped on the 19th October. The chick has hatched on the 21st October, but it appeared slightly prematurely born, and died on the 24th. A fourth egg laid this season on the 4th October was also being artificially hatched when incubation ceased after the twentieth day. By these data it will be observed that if the egg is taken, or anything happens to it, the birds lay again. But, probably, in a state of freedom the birds would only lay once or hatch one young a season.

The egg is a stout ellipse in shape; surface slightly glossy; shell comparatively fine; stony-grey in colour, moderately marked with spots and blotches of umber and dull grey, the latter colour underlying the surface of the shell. Except for its fine texture and elliptical shape the Kagu's egg might be taken for that of a Gull. Dimensions in inches,  $2\frac{1}{2}$  by 2 inches.

Two eggs presented by Mr. Finckh to the Australian Museum were described and figured in the *Records* of that institution—*vide* vol. iv., part No. 7 (1902).

I had frequent opportunities of seeing the birds fed, chiefly on finely-cut beefsteak, of which a pound weight did not seem to go far with them. They disdain meat that is at all stale. I saw them taking large centipedes, 5 inches long, which were thrown to them. The bird picked up the squirming insect, which was passed by a nibbling action quickly through the bill crosswise and back a couple of times until it was pulped, then swallowed. When these birds fight they peck at each other's legs. Their moult occurs about midsummer.

In their native island-home Kagus live in pairs about the marshes

in the scrub, feeding upon worms, slugs, beetles, frogs, &c. On account of their restricted habitat it is predicted that the species will early become exterminated. Indeed, in Layard's time, 30 years ago, it had already disappeared from the neighbourhood of the more settled parts. Can some measures not be devised to save this singular bird from becoming, like the Dodo, extinct?

### Stray Feathers.

MELBOURNE ZOO NOTES.—Saw flock of about three hundred Straw-necked Ibis flying high in irregular lines over Melbourne from west to east on 13th December.

Have hatched and reared at Zoo this season White-bellied Plumed Pigeon (*Lophophaps leucogaster*), Partridge-Bronzewing (*Geophaps scripta*), and many Stubble Quail (*Coturnix pectoralis*).—D. LE SOUËF.

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BIRD-NAMES OF ABORIGINES.—A pleasing feature of the National Park, Sydney, is the fact that most of the creeks are named after the aboriginal names of birds, such as "Mullion" Brook, meaning Eagle; "Wurrul" Brook, meaning Bee-eater; "Burowa," the Bustard; "Karoga," White Crane; "Gorra Worra," Laughing Jackass; "Buralga," Native Companion; "Kobardo," Parrot; "Birumba," Plover; "Dirijiri," Wagtail; "Murrindum," Quail; "Dumbal," Crow; "Tamur," Bronzewinged Pigeon; "Burunda," Swan; "Karani," Duck; and "Palona," Hawk.—A. H. M.

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LITTLE NIGHTJAR (*Egotheles nova-hollandica*).—These little birds appear to vary much in plumage. I have taken a detailed description of one shot near this station. Although the Nightjar sleeps all day, it constantly wakes and calls from out the hollow limb it which it roosts, "Chirk, chirk, chirk," and goes to sleep again. I have heard them at this often and often, but never knew what to put it down to until to-day, when, locating the sound in a dead tree, I frightened out the bird. I hear a cry at night that I put down to this bird, but it is then short and abrupt—"Che'ok" or "Che'oak"—and uttered disconnectedly. The day call is just as I have written it.—FREDK. L. BERNEY. Wyangarie (N.Q.), 15/1/05.

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HYPOTENIDIA PHILIPPINENSIS.—The Pectoral Rail has bred in our garden, but I have not had the luck to see the little ones. Some young pigs also spoiled one or two clutches, or we might have had quite a number about. These birds have been very fearless with us, and it was quite the usual thing a month ago to hear a bird "grunting" at you from underneath a shrub not more than 8 or 10 feet from where you stood, and often even much

less than that, and with quiet movements you could often get sight of them. Then if anyone did any digging, or cut some grass, a few minutes after leaving you could see two or three birds prospecting for the insects disturbed, and this would occur sometimes with the person still within a few feet of the place.—ALFRED COMPTON. Stonyfell (S.A.), 24/11/04.

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YELLOW-EARED HONEY-EATER.—A small party of three spent a Sunday about the middle of November, 1904, at Ferntree Gully. While partaking of our luncheon in a quiet spot in the heart of the Gully, we were much interested by the fearless actions of a bird, which we identified as the Yellow-eared Honey-eater (*Ptilotis lewini*). One of our party was eating a sardine sandwich, when the bird alighted on a small stick lying on the ground, and partook of the sandwich readily out of his hand, and then flew off with its mouth full, probably to feed a young family. This performance was repeated several times, the bird returning to where our things were spread each time. It not only relished sardine sandwich, but showed a decided liking for jam-roll and scone, and finished up with banana. The most amusing part was that the bird was not at all alarmed by our presence, as we were freely discussing its markings and to what species it belonged all the time it was filling its mouth.—FRED. P. GODFREY. 23rd February, 1905.

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ALBINISM—RHIPIDURA TRICOLOR.—My attention was recently drawn, by Mr. Frank Leake, of this city, law student, to the existence of a pure white individual of the Black-and-White Fantail which frequented the livery stables attached to the United Service Hotel, and situate in the very heart of the city. A close inspection proved the bird to be wholly white in plumage, and to have *black* eyes and very pale brown legs, feet, and bill. The man in charge of the stables said the bird was about a month old, and that the two normal-coloured birds which accompanied it were the parent birds. The members of the family were wholly indifferent to our near approach and presence, and went on capturing insects on or about the legs and hoofs of the stalled horses. Of what great value these birds are to live stock! How could the larvæ of the bot-fly, or the fly itself, flourish where these invaluable searchers exist!—ALEX. WM. MILLIGAN. Perth, Western Australia, 22/2/05.

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WESTERN NOTES.—When at Mundaring recently, about 30 miles from Perth, I saw some children who had just been attacked by Eagles when out in the bush by themselves. They said that the Eagles were very fierce, and it was only by throwing stones and sticks at them that they kept them back, but as it was they were swooping within a few feet of them. There were seven Eagles altogether. Three or four would attack in front, the others from the rear while the children were beating off the front ones.

A surveyor friend of mine told me that while out surveying near Perth he found a nest of a Fawn-breasted Kingfisher with big young ones in that had been attacked by termites, or white ants. The young birds were just alive, and were coated with mud by the termites, and the entrance to the nest blocked up, and their mouths also closed with mud by the insects.

There is a pretty little Black-and-White Fantail (*Rhipidura tricolor*) which had a nest in an old garden by the river and in her nest were two young ones, but one was the ordinary colour and the other pure white.—LANCE LE SOUËF. South Perth (W.A.)

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YELLOW-THROATED HONEY-EATERS.—The cool, showery season which has been experienced this summer in our Island-State appears to favour not only a rank growth of vegetation, but also a somewhat abnormal production of bird-life. When Mr. H. C. Thompson and myself went on a little exploring trip the other day to the banks of a river, we were struck with the great numbers of Yellow-throated Honey-eaters (*Ptilotis flavigularis*) which haunted the tea-tree scrub near the stream. It was an ideal spot for birds, masses of tea-tree, prickly wattle, and above these white gums, affording splendid cover for various species. There was a fair number of "New Hollands," and a Spinebill or two, but the Yellow-throats were in such preponderance as quite to overshadow all others. Every bush, almost, into which we looked contained some of these fine birds, and the air was melodious with their notes. Their tameness was remarkable; in one instance our eyes were close to an individual comfortably ensconced in a bush, the bird sitting quietly there as if not at all objecting to a close examination. May this Eden long remain unmolested!—H. STUART DOVE. W. Devonport (Tas.), 11/2/05.

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BIRD-VISITORS TO THE BOTANIC GARDENS, MELBOURNE.—In cleaning away water weeds it has been found necessary to partly drain the lake in the Gardens, and it is surprising how quickly native birds have discovered the food exposed upon the mudbanks and along the margin, and come in some numbers to feed, with but little concern, within a few yards of onlookers. No less than 15 species were noted just a week after the draining commenced. The Bald-Coot (*Porphyrio melanonotus*), the Coot (*Fulica australis*), of which there were a great number of young ones, the Rail (*Hypotaenidia philippinensis*), the Little Crake (*Porzana palustris*), the Magpie-Lark (*Grallina picata*), the Reed-Warbler (*Acrocephalus australis*), and the Little Grass-Bird (*Megalurus gramineus*) are probably always present in the reeds and rushes; but such as the White-necked Heron (*Ardea pacifica*), the White-fronted Heron (*Ardea nova-hollandiæ*), the Little Cormorant (*Phalacrocorax melanoleucus*), the Black Duck (*Anas superciliosus*), the White-eyed Duck (*Nyroca australis*), the Teal (*Nettion castaneum*), the Bush-Chat

(*Ephthianura albifrons*), and the Black-fronted Dottrel (*Egialitis nigrifrons*) are undoubtedly the visitors.—A. G. CAMPBELL. Melbourne.

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CENTRAL QUEENSLAND NOTES.—Since the breaking up of the drought there has been a wonderful change noticeable in the activities of birds of all kinds. It has been most observable among those which claim the attention of sportsmen. Ducks, which were dried out, have been returning to their former breeding haunts, and have been making up for former idleness by rearing several broods in the season. Quails have been even more procreative and industrious. Grass is luxuriant, and seeds and water are abundant. The Mopoke is now to be heard at night, and the Laughing Jackass at the "scaigh o' day." Finches were so numerous and so easily caught that boys could not resist the temptation to trap them, and a member of the Wild Birds Protection Association had to call the attention of the police to the violation of the law which was going on. Swifts, which visit us in showery weather at midsummer, were seen high up over Rockhampton this week. Among our migratory visitors before the drought smote the district was the Pied Crow-Shrike (*Strepera graculina*). It came and remained with us during the winter months. In the winters of 1903 and 1904 it was conspicuous by its absence. Localities where it was a cheerful and welcome visitant knew it not. A visit from it in the coming winter is anticipated.—M.A.O.U. Rockhampton, 25th January, 1905.

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MUSK LORIKEET.—On 9th October, 1904, in the Bacchus Marsh district, I chopped out a nest of the Musk Lorikeet (*Glossopsittacus concinnus*), which, much to my disappointment, contained a young bird. Having enlarged the nesting-hole to such an extent with a tomahawk, I decided to take the bird, which had only a few feathers. For the first few days after being brought to Melbourne it was fed on honey diluted in water, injected down its throat with a small glass syringe. The little thing soon learnt to feed itself from a small saucer, and was no trouble to rear. Nothing delights it more than to be handled and played with; its antics on the swing are most amusing. It is now in full plumage, the rusty marking just appearing on the nape and back. Occasionally it says a few words, learnt from a Rosella Parrakeet whose cage hangs near. The breeding season in Victoria appears to be far advanced in October, as two or three nests found by our party on the same occasion contained fairly well grown young, always two in number. These birds were very numerous in the district, and were in company with *G. pusillus*. Lately they are very numerous round Melbourne, having been seen in the parks, gardens, &c., feeding from the flowering gums. The favourite nest-site seems to be about 18 inches from the opening down the main trunk of a green tree in open forest. The birds quickly betray their

nest by harsh screeching, and only have to be watched for a few minutes in order to detect the nest.—FRED. P. GODFREY. 23rd February, 1905.

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WHY DOES THE YOUNG CUCKOO EJECT ITS FOSTER-BRETHREN?—In observing a young Cuckoo ejecting the young of its foster-parents—a small Wren—from the nest, the question arose in my mind which factor is it that operates and causes the young Cuckoo to commit wholesale murder at this early stage of its existence, when but a few hours old. Instinct or reason seemed to be impossible with a bird as yet unfledged and capable only of certain muscular actions. Was it possible that such a young mite should instinctively know at this stage of its life-history that the nest was too small to hold all the nestlings later on when they grew older and larger? I could not conceive of such a theory being possible. The Cuckoo did not seemingly endeavour to kill its nest companions, but sought only to rid itself from the irritation inflicted by contact with them. The probable solution of the problem is that the factor operating is mainly—possibly wholly—attributable to an involuntary muscular action caused by the sensitive action of the nerves of the skin, which nature has endowed the young Cuckoo with for such purposes. Wriggling in the nest, more particularly with its head, neck, and wings—the freest and most active portions of the nestling—the skin of these parts is brought into contact with the heated surface of its puny neighbour's body; then local irritation causes muscular movement of the head and neck to take place to free this portion of the body from the irritating proximity of the object which causes the irritation. The endeavour to free the head and neck portion, and the concavity of the nest, brings the obnoxious occupant on to the Cuckoo's back, which part likewise receives the irritating stimulus, causing the final ejection of the young Wren by a backward movement. In the human body involuntary actions of the muscles are commonly prevalent, owing to some form of local irritation. The cause of these muscular actions cannot be either reason or instinct.—A. H. E. MATTINGLEY.

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A PENGUIN AT PLAY.—On a recent afternoon, when the sea was smooth and the warmth of the sun tempered by a delightful breeze, Mr. H. C. Thompson (a member of the A.O.U. who is at present on a visit to Devonport) and myself took a walk along the training-wall which bounds the east side of the Mersey River at the mouth, and is said to be  $\frac{3}{4}$  mile in length. We sat on huge blocks of basalt at the extremity of the wall, gazing on the waters of Bass Strait, when our attention was attracted by what at first we took to be a peculiar fish, swimming rapidly beneath the surface of the clear water. In a few seconds we could see that it was a Little Penguin, cleaving its way through the water in that rapid fashion for which its wedge-shape so well befits it. Presently the bird poked its head and part of the neck above the surface, took an instantaneous survey, went again below, and swam on into a sheltered basin



under the lee of the wall, making towards the beach. We could trace it for a long way by its habit of frequently poking its head above the surface, apparently to ascertain whether it was holding a correct course. Presently it came again into the waters near the extremity of the wall, and we were then witnesses to an extremely pretty spectacle. The bird lay upon the surface of the summer sea, only a short distance away, preening its feathers and rolling about, apparently enjoying life to the utmost. Sometimes it would float upon its back, when the pure white plumage of the breast and throat shone out in the sunlight in a very pleasing manner. Then it would twist its head round about until the throat looked like a broad white stripe down the back of the neck; after which it would set to work again preening its breast. For quite a long while did we watch this thing of beauty floating away to the eastward on the bosom of the tide, until lost to sight; surely in itself a sufficient answer to that much-vexed question "Is life worth living?"—H. STUART DOVE. W. Devonport (Tas.), 11/2/05.

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NOTE ON *ÆGOTHELES NOVE-HOLLANDIÆ*, Lath.—An interesting fact in the economy of this pretty Nightjar was brought to my notice one evening in the autumn of last year. When stepping on the decking of a viaduct 80 yards long, which crosses a marsh on this estate, I became aware of some object which precipitated itself from the low kerb at the side of the roadway on to the planks in front of me. As it was quite dusk, for the moment the object seemed at first glance to be a young rabbit; but in another second, from the fluttering which characterized its movements, it could be plainly seen that it was a bird. On my springing forward to catch it, it fluttered along in front of me so quickly that capture was impossible, and so the chase continued, first to one side of the roadway then the other, until the end of the viaduct was reached, where the decking was about 2 inches above the gravel approach, that having been worn down by traffic. Here there was just light enough to see the bird launch itself into the air and glide away with the characteristic flight of the *Caprimulgidae*.

This incident shows that this species cannot, like some other short-legged, long-winged birds, rise from a perfectly flat surface. Frequent observations of members of this crepuscular family in England and the East have shown me that as a rule Nightjars, when alighting on the ground, choose a stone, clod, little bank, stick, or other diminutive eminence from which they can launch themselves. I have, however, seen the sturdy *C. atripennis* in Ceylon often alight on a bare sandy track or hard road and rise from such a position with ease. In the present instance flight, no doubt, caused the little *Ægotheles* to launch itself from the kerb log (6 inches high) beneath the hand-rails on to the roadway, for the opposite hand-rails furnished it with a ready perch if so desired. The wing in this species is particularly long in proportion to the weak and diminutive leg, which accounts for its inability to rise from a perfectly flat surface.—W. V. LEGGE. Cullenswood (Tas.)

CLERMONT (Q.) NOTES.—Quails have been very plentiful throughout the year, and bred continuously till June. We then had no rain until the end of November, when I noticed the birds in pairs and heard a difference in the call when coming to water in the evening. Now the first of the young birds are appearing. The Brown birds (*Synucus australis*) were, I think, the most numerous, and kept near the watercourses. The grey Stubble birds (*Coturnix pectoralis*) were also plentiful, and kept to the high open downs; while the large three-toed Painted Quail (*Turnix varia*) frequented the scrubs and cane-grass flats. The last-mentioned are splendid fliers, and I think the best shooting, as they swerve round a tree or bush in very disconcerting fashion. The Little Quail (*Turnix velox*) is still to be found, but is not nearly so plentiful as before the large birds came. Surveying over the downs after the dry weather had thinned the grass revealed an astonishing number of old nests and egg-shells, and also the fact that a large percentage of eggs are not hatched.

Swifts appeared in great numbers on four occasions between 25th and 30th November, and on each occasion heralded a storm. I shot one, and found it to be the White-rumped variety (*Micropus*) with a spread of wing of  $18\frac{3}{4}$  inches; beak to tip of tail,  $7\frac{3}{4}$  inches.

Wild Turkeys or Bustards are getting plentiful, and bred in November. Most birds waited for the rain, but Pigeons seem to have laid pretty well the year through. Laughing Jackasses and Butcher-Birds are still very scarce, although the bush is teeming with mice and locusts. Asiatic Dottrels revisited their favourite ridge on Langton, and Little Whimbrel, Greenshanks, and Pratincoles were reported to me. A handsome white Hawk (probably *Elanus axillaris*) with black shoulders is fairly common, and lives on mice, Quails, and locusts. The Cockatoo-Parrots seem to have left again, but "Betcherrygahs" (Warbling Grass-Parrakeets) are very common, and hundreds are now in captivity, the boys round the townships making quite a lot of pocket money out of them.—  
F. B. CAMPBELL FORD. 7/1905.

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CLARKE ISLAND (BASS STRAIT) NOTES.—It is surprising how some birds of the same species differ in their respective nesting habits as regards time. On one of the islands here, where I was weather-bound for a week, I had the opportunity of noting this with respect to the Cape Barren Goose (*Cercopsis*). Within a few hundred yards of one another I found two clutches of young, one of them comprising three well-grown birds just able to fly a little. The birds of the other clutch, on the contrary, were only a few days old. Proceeding a little further, I discovered another nest with four fresh eggs, and still further another nest just built. The Black Swan is the same to a less extent, as I have seen cygnets in a half-fledged state, and within a few yards of them a clutch of perfectly fresh eggs.

The Teal, Black Duck, Musk-Duck, &c., are hardly to be seen

here at all this year, owing, I think, to the lack of winter rains. One clutch of Duck's eggs was found in a creek close to the homestead, and in due time four young ones were brought out. Needless to say there were not molested.

The Brown Hawk is very rare this season. The Brown Quail is just commencing to lay, and one will often start a pair getting their simple though cosy nest ready.

I saw a most interesting case of devotion on the part of a Black Crow-Shrike (*Strepera fuliginosa*). A pair built a nest in some trees close to the house, and when the young were hatched I used to watch, with great interest, the parents feeding them. They both objected to my surveillance very much, and used to fly to and fro past me, almost striking me with their wings, and uttering loud cries. One day, slightly annoyed at their clamour, I seized a small stick and struck at one as it passed. Unfortunately, I struck it on the pinion and it fell, unable to fly, to the ground, and ran quickly away. I was very sorry for this, both on account of the poor bird, and also for the young, fearing that the other parent, when it discovered the loss of its mate, would probably desert them. But not so. Next day I saw the one bird feeding its family, and it continued to do so until they were fledged. After the birds had flown, happening to go into the heart of the scrub, I saw two Black Crow-Shrikes perched on a bough. I startled them, and they both flew a short distance. One of them was the bird that I had hurt, as I noticed that the pinion was injured, but it had so far recovered that it was fairly strong on the wing. I presume that the bird had both procured food for its young and also for its suffering partner.

The Brush Bronze-wing (*Phaps elegans*) is very plentiful, and if caught will get very tame.

The Pacific Gull and Sooty and Pied Oyster-catchers are nesting in fair numbers round the coast.—J. D. MACLAINE. 5/11/04.

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BIRDS OBSERVED AND BIRD-SKINS EXAMINED IN 1903 AND 1904 NEAR HOBART.—Long-tailed Blue Wren (*Malurus gouldi*).—9th March, 1903.—Two male Blue Wrens in a transitional stage of plumage are seen. They take flight and maintain a fight on the wing. A few light-blue feathers are visible below the eyes and a few black feathers on the upper part of the breast. Black feathers are continuous on the hind-neck and form a half-ring.

Lesser White-backed Magpie (*Gymnorhina hyperleuca*).—2nd January, 1903.—I have had an opportunity of examining the skin of a young male *Gymnorhina hyperleuca* about three months old. The general colour of the back is ashy-grey, like that of the adult female, but a few of the feathers on the back have brownish tips; the wing coverts are black and white; the two outer tail feathers are also parti-coloured, the outer webs being black and the inner webs white, except the distal third of each feather, which has both webs black. The lower wing coverts next the body are silky white; those farthest from the body are black, as also are the

axillaries. Some of the latter have obscure sub-terminal bars. Bill lead-coloured; iris hazel; feet black. Wing, 9.4 inches; bill, 1.48 inches.

6th January.—Have examined another skin of a young male of the same species—a skin of a younger bird than that of the previous one. The lower wing coverts have not appeared; it may have been hatched six or seven weeks ago. It differs from the skin already described inasmuch as the feathers on the back are ashy-grey, with buffy-brown tips and subterminal brownish bars, and that the wing coverts are, with few exceptions, white, not parti-coloured. The tail feathers are white with a black sagittate mark near the tip of all except the two outer feathers. The arrow-head points towards the body. The two outer tail feathers are black, except a portion of the inner web, which is white. Bill slate-coloured, darker at the tip than at the base; the mandible very slightly notched; length, 1.46 inches. Iris and feet as in previous example. Wing, 7.6 inches.

Spine-billed Honey-eater (*Acanthoryhynchus tenuirostris*).—29th January.—A family of these Honey-eaters frequents the garden and visits a large fuchsia assiduously. One of them killed proves to be a young bird in immature plumage. It differs from the adult in being without the crescentic mark on the chest; the throat and chin are uniformly sandy-grey; the rest of the under surface is orange-brown; head and back olive-brown; upper surface of wings glossy greyish-black (plumbaginous), under surface of wings grey; tail feathers, ten in number, black, except three, which are white for about the half or one-third of their length reckoned from the tip. Iris brown tinged with red; tarsus lead-coloured; upper mandible brown, lower mandible yellow. Wing, 2.25 inches; bill, 0.64 inch. The long diameter of two eggs of this bird measures 0.78 inch and the short diameter 0.55 inch.

Crescent Honey-eater (*Meliornis australasiana*).—An immature male shot on the 26th December, 1903, has the under surface dusky, and is without the crescentic mark of the adult male. The quill feathers and tail feathers have the outer webs bordered with olive-yellow. Length, 5.4 inches; wing, 2.6 inches; culmen, 0.5 inch.

Welcome Swallow (*Hirundo neoxena*).—A young Swallow was being fed by its parent on the 11th of February, 1904; it received food whilst on the ground, and was also fed whilst flying. On the 5th of September one Swallow was seen.

Fire-tailed Finch (*Zonæginthus bellus* (?)).—A most singular Weaver Finch was shot by Mr. A. R. Reid on the 1st of January, 1904. It resembles *Z. bellus*, but the tips of the upper tail coverts are rusty-orange, and one of the tail feathers is bordered with rusty-orange. The bill is orange-red, the feet light brown. The vermicular markings are distributed over the whole of the back and of the under surface, and are narrower than the vermicular markings on normal examples of *Z. bellus*. Culmen, 0.44 inch; length, 4.4 inches; tarsus, 0.62 inch.

Pallid Cuckoo (*Cuculus pallidus*).—9th March, 1903.—A young

Pallid Cuckoo obtained, in which the plumage is much diversified. White predominates in its plumage, in many places tinged with buff and brown, resembling the colour of sealskin. Brown and white intermingle on the head; the feathers of the mantle are brown with buff tips; the body feathers on the back are white with brown centres; the upper tail coverts are brown with whitish edges, lanceolate in shape and ornamental in character, the ends of the barbs being unconnected; the tail feathers are sooty-brown and deeply toothed with whitish. The throat is like the head; towards the lower part of the under surface the brown gradually disappears, and on the abdomen all the feathers are white; primaries dark brown, toothed with white on the outer webs, and having buff spots on the margins of the inner webs; secondaries similar to primaries but without buff spots; wing coverts brown, or brown with buffy tips; lower surface of wings and tail grey, toothed with white, except the lower wing coverts, which are grey with wavy brown markings; axillaries white, tinged with buff; iris brown; feet horn-coloured; bill yellowish-brown. Wing, 6.9 inches; bill, 1 inch; tarsus, 0.8 inch.

Tern (*Sterna bergii* (?)).—A young Tern was brought to my residence on the 21st of March, 1904. As the bill was yellow and the iris black and the tarsi and webs of the feet wholly black, I assumed it to be an example of *Sterna bergii*, Licht. (*Thalasseus poliocercus*, Gld.) It was in the pied plumage of the young of that species. Back and wings mottled with sooty-brown and white; all the under surface white; head black, and the feathers of the head slightly elongated; nape white. It lived on the premises until the 5th of August, but never attained the use of its wings in flight.

Little Cormorant (*Phalacrocorax melanoleucus*).—This is the least shy of the Cormorants which frequent the Derwent, and permits one to approach within about fifty yards. A specimen received on the 18th July, 1904, had the culmen brownish-black and the remainder of the bill yellow; feet black.

Little Penguin (*Eudyptula minor*).—3rd November, 1903.—Three Little Penguin's eggs from Bruni Island measure in inches as follows:—(1) 2.25 and 1.60; (2) 2.26 and 1.64; (3) 2.25 and 1.65. Another egg of this Penguin measures 2.36 inches long and 1.70 inches broad. A partially incubated egg of medium size weighs about 2 ozs.—JAMES R. McClymont, M.A. Sandy Bay.

### From Magazines, &c.

YELLOW-RUMPED FINCH.—“A specimen of the extremely rare *Munia flaviprymna*, Gould, from North-Western Australia, probably the first living specimen ever brought to Europe, was exhibited at the Crystal Palace Show, 25th, 26th, and 27th October. The judge, taking it for a hybrid, awarded it only a second prize, the first going to a specimen of the familiar *Zonogastis melba*.”—*Avicultural Magazine* (Nov., 1904), p. 53.

FROM the preface to vol. viii. of *The Zoologist* we note :—  
“*The Zoologist* increases its circulation in our Greater Britain,  
and colonial naturalists make use of its pages. Mr. Littler’s memoir  
on the birds of Tasmania affords an object lesson.”

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*The Geelong Naturalist*, September, 1904, contains “District  
Bird Notes,” by C.F.B., which comprise brief field observations  
on the Spotless Crake (*Porzana tabuensis*), Boobook Owl (*Ninox  
boobook*), Flame-breasted Robin (*Petræca phœnicea*), &c.

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*The Ibis* for October, 1904, published a letter from Sir  
Walter L. Buller on the subject of the foster-parents of the New  
Zealand Long-tailed Cuckoo (*Urodynamis*). The writer considers  
that of the ten native and one introduced species given by Dr.  
Fulton, the evidence for five at least is not satisfactory.

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RED-FACED OR RED-TAILED FINCH.—In *The Avicultural Magazine*  
(January, 1905) the Rev. C. D. Farrar has contributed an article  
entitled “The Breeding of the ‘Ruficauda’” in which a number  
of interesting facts are recorded in humorously penned passages,  
with homely illustrations. How often the collector has experienced  
the reverend gentleman’s quotation—“The enjoyment is the  
pursuit, and this ceases when our hand closes down on the prize.”

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THE RED-WINGED LORY.—In the February (1905) issue of *The  
Victorian Naturalist* Mr. G. A. Keartland contributes an interesting  
note on a pair of Red-winged Lories (*Ptilotes erythropterus*) which  
he had in captivity for a year. On the 30th and 31st October the  
female laid eggs on the floor of the cage, which were transferred to  
a small box, where the bird continued to sit, and where, on the  
2nd and 3rd of November, she laid two more eggs. After a fortnight  
two of the clutch, which contained embryos, were unfortunately  
broken, and the remaining two were not fertile. During the  
fourteen days the female was noticed to leave her nest three times  
only. While incubating she was fed by the male. The Lories  
were received from Mrs. Chas. Clarke, Mary Vale Station, Queens-  
land, who, writing to Mr. Keartland, states that she liberated a  
pair of Red-winged Lories in her garden. The Parrots stayed near  
the house, and reared four young ones in a hollow tree near. The  
birds came regularly to the verandah to be fed, and, when the  
young ones could fly the whole family often came “walking down  
the hall like pet chickens.”

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*Bird-Lore*.—The Sept.-Oct. number has a further set of coloured  
illustrations of Warblers; notes and photos. on “A Woodcock at  
Home”; an interesting article on “October Bird Music”; a

biography of a Crow, under the title of "King Cole"; the usual notes on the proceedings of Audubon Societies and their valuable work; Educational Leaflet No. 11, dealing with the Screech Owl (by Mr. William Dutcher), &c. That the President of the United States takes a warm interest in our work is shown by the following passages from a letter to the editor of *Bird-Lore*:—"I would like to see all harmless wild things, but especially all birds, protected in every way. I do not understand how any man or woman who really loves Nature can fail to try to exert all influence in support of such objects as those of the Audubon Society. . . . Half, and more than half, of the beauty of the woods and fields is gone when they lose the harmless wild things. . . . As for the birds, which are the especial objects of the preservation of your society, we should keep them as we do trees."

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"SOME NEW FACTS ABOUT THE MIGRATION OF BIRDS" is the title of an article in a year-book issued by the Department of Agriculture, U.S.A., and written by Mr. Wells W. Cooke, assistant, Biological Survey. A reprint has been forwarded by the department. Mr. Cooke deals with the subject in a masterful way, holding that as to causes of migration the broad statement can be made that the beginnings of migration ages ago were intimately connected with periodic changes in the food supply, but this motive is at present so intermingled with others unknown, or but imperfectly known, that migration movements seem now to bear little relation to the abundance or absence of food. How do birds find their way, casualties during migration, its distance and routes, the question whether birds are exhausted after a long flight, and whether variations of temperature affect their movements, and the speed maintained during the passage from one zone to another, are dealt with. Unfortunately, so far as Australian observers are concerned, nearly all the birds dealt with are American species, but as the same problems exist almost all over the world, it is to be hoped that some day, partly by aid of the schedules which the Aust. O.U. has issued in connection with the matter, a similarly valuable brochure may issue from this side of the world. Two valuable maps are given—one as to route, the other showing speed of flight.

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MODERN EGG-COLLECTING.—This subject has been attracting some attention in the pages of recent numbers of *The Zoologist*. The November (1904) issue has some hints from the pen of Mr. J. H. Salter, of the University College, Aberystwyth, which might be pondered over by even Australian collectors. After stating something of the ruin which the modern system of egg-collecting is bringing to the rarer native species in Britain, he writes:—"Posterity will probably condemn altogether the practice of making private collections of eggs, especially those in which it is sought to illustrate every possible variety of colouration by means of a large

series of clutches of the eggs of each species, however rare it may be. Many are induced to collect eggs by the same impulse which prompts others to amass old china or *bric-a-brac*, but with the difference that the harm which they do is irreparable. Their selfish greed and love of acquisition are seriously impoverishing the British fauna. Unfortunately the high prices obtained for well-authenticated clutches at recent sales encourage the unscrupulous collector to pay a high figure in the belief that the value of his eggs will increase with the growing scarcity of the bird which laid them, and that consequently his collection can at any time be disposed of at a profit if brought under the hammer. As illustrating the persecution to which our rarer birds are exposed, it may be mentioned that in a certain district in mid-Wales there are seven pairs of Ravens. They have not been allowed this year to bring off a single young bird. The Buzzards have fared very little better, while, needless to say, the Kites, now reduced to a miserable remnant of three or four pairs, have once more been plundered. The writer would ask others to join him in strongly appealing to all true naturalists to refrain from acquiring British-taken eggs of any species which is within measurable distance of extinction in these islands."

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In *The Ibis* for October, 1904 (vol. iv., No. 16, p. 672) there appears a note from Mr. A. J. North on the nomenclature of the Blue Wrens of Tasmania and South-Eastern Australia respectively. In 1901 Mr. North discovered that the bird to which Ellis in 1777 first gave the name *Motacilla cyanea* came from Brunni Island, Tasmania (then supposed to be part of Australia). The name *Malurus cyaneus* would therefore, said Mr. North (*vide Proc. Linn. Soc. N.S.W.*, vol. xxvi., part 2, p. 632) have to stand for the Tasmanian species, and that of *Malurus superbus* (Shaw) for its ally of the mainland. From the note under review it appears that Mr. North has now had access to further authorities, with the result that he finds that Shaw's bird, called by him *superbus*, came from Tasmania too. It would seem, therefore, that in the early days of Australian ornithology the Blue Wren of South-East Australia had no name at all, and that it has been simply masquerading in borrowed *noms-de-plume* ever since. Mr. North thinks it is not too late to rectify the omission, and accordingly proposes the specific name *australis* for the continental bird, leaving *cyaneus* for the island form. Now, the first and chief objection to this is that the Blue Wren of South-East Australia has been from the days of Gould onwards catalogued by the British Museum and known to collectors generally as *Malurus cyaneus*. Has not Gould's beautiful plate in his immortal "Birds of Australia," portraying life-size figures true to colour, stood for more than half a century over the title "*Malurus cyaneus*"? This long usage has given the name a prescriptive right to retention which overrides all purely historical considerations. To change it now would only be to produce that confusion which it should be the very object of



scientific nomenclature to avoid. In the second place, even granted the necessity for a change, the specific name *australis* is surely much too wide and colourless for the case in question. There are at least fourteen species of *Maluri* inhabiting Australia—why should one of these have appropriated to it a name that is equally applicable to all? It was reasonable enough for the first naturalist explorers to label a species *novæ-hollandiæ* or *australis*, though perhaps they rather overdid it; they had at least the excuse that they did not know of the existence of other Australian species belonging to the same genera—a plea we nowadays cannot put forward. No doubt it is not always possible to denote the specific characters clearly and exactly by the specific name; but such should be the object aimed at, and for that reason the name *australis* should be confined to species which have no congeners in Australia. Mr. North's researches are of considerable historical interest, but no adequate reason has been shown why the existing names—that is to say, *Malurus cyaneus* for the South-east Australian bird, and *M. gouldi* for the Tasmanian—should not continue to be used as heretofore. However, this is a matter for the Check-List Committee to consider.

### About Members.

MR. F. M. Littler, F.E.S. (Launceston), has left by the *Persic* for England. He has gone on a six months' trip, chiefly on business, but hopes to have time for the pleasure and profit of making the acquaintance of many ornithological brethren in the "old land."

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ON the retirement of Mr. D. Le Souëf, C.M.Z.S., &c., from the hon. secretaryship of the A.O.U., the following letter was addressed to him by his successor, Mr. A. Mattingley:—

"On the occasion of your retirement from the position of honorary secretary of the Australasian Ornithologists' Union, the Council unanimously desire to convey to you their mark of the esteem in which they hold you personally, and also to indicate the appreciation with which they regard your labours as the first honorary secretary of the A.O.U.

"The present successful position of the Union is largely due to the indefatigable efforts maintained by you since its inception. The tact, attention, and considerate manner with which you have treated everything and everybody has endeared you to your Council colleagues, with whom you have worked so harmoniously.

"The Australasian Ornithologists' Union is indeed under a deep debt of gratitude to you for the able manner in which you have carried out the onerous duties pertaining to the honorary secretaryship during the first three years of its existence, while ornithological science at large has been advanced. Hoping that you may long remain one of the 'Birds of a feather.'"

## Review.

### "CATALOGUE OF CANADIAN BIRDS."

THIS reference work has reached its third and concluding part. The original intention in preparing the "Catalogue" was to complete the work in two parts, but the large amount of valuable information which became available by the time Part II. was completed rendered a third part necessary.

Part III. deals with the Sparrows, Swallows, Vireos, Warblers, Wrens, Titmice, and Thrushes, including the order Passeres after the Icteridæ. The species are numbered consecutively, the vernacular name coming first, in bold type, followed by the technical designation and authority. Then follow succinct accounts of habits and range, and reference to Museum specimens, concluding with "Breeding Notes" when procurable.

The work is issued by the Geological Survey Department of Canada, under the direction of Dr. Robt. Bell, F.R.S., and is compiled by Mr. John Macoun, M.A., F.R.S.C., who cheerfully acknowledges information and assistance so freely given by quite a host of correspondents throughout the great Dominion. To Miss Marie Stewart fell the somewhat dry work of compiling the useful index, embracing the three parts, while the printing of the whole is well executed by S. E. Dawson, Ottawa, "Printer to the King's Most Excellent Majesty."

When will the Commonwealth of Australia issue such a useful work of reference, or is such a national duty to be relegated to private enterprise?

## The Crested Pigeon (*Ocyphaps lophotes*) in Captivity.

BY (MRS.) MARY G. ROBERTS, HOBART.

HAVING been asked to write some notes for *The Emu* on the little Crested Pigeon (*Ocyphaps lophotes*) and the common Bronze-wing (*Phaps chalcoptera*) in my aviaries, I sit down to make the attempt, with the hope that I may be able to prove a few interesting facts, to those who, like myself, take great interest in aviculture. The two species have been in adjoining aviaries, only separated by a wire partition; thus I have had the opportunity of watching closely their nesting operations from the latter part of August until the present time (about six months); the work has been to me a source of unlimited pleasure, although I have to record one or two disappointments which have occurred. Referring more particularly to the Crested Pigeons, they were the first, at about the end of August, to show indications of nesting; and to those who have not had opportunities of watching them, I may say that this species is unmistakably more excitable and nervous than the Bronze-wing, hence greater difficulties present themselves in observing their

movements in captivity. They are not easily frightened from the nest by other birds flying about them, there having been all along several others in the aviary, besides a pair of Silver Pheasants; but from the time the eggs were laid, upon my approaching the door, a note of alarm was always sounded by the sitting bird, although I was then quite 16 feet away—a small cry, a sort of fretful “Wee wee.” As time went on they seemed to become less uneasy, and more silent, until the young emerged from the egg, when the cry was resumed.

When the male bird is paying his addresses to his love he is to be seen to the greatest advantage; he has a way of bowing or curtsying to her, each time making a sound similar to “Woof, woof,” and at the same time spreading out his tail into a fan, the wings on either side forming smaller ones, and on which can then be seen four or five feathers forming two rows of jewel-like spots, the outer having green, the inner purple, marks, reminding one of emeralds and amethysts—a sight beautiful to behold, but too transitory. The first young one appeared about the 15th of September; the other egg, although chipped, did not hatch. An incident occurred in connection with this little bird. When it was a few days old, fearing the parents might be disturbed by their companions, I carefully, but unwisely as it proved, fastened a bag across their corner, giving them only a small space to pass to and fro. When evening came the sitting bird left the nest as usual, but evidently the other one, which should have taken up the duty, was either frightened or unable to find the way in, for on visiting the aviary at 9 p.m. I discovered the baby bird forsaken, cold, and weak. I immediately brought it to the house, warmed and fed it, and took care of it for the night. Next morning about 10 a.m., upon going for a small box to keep it in, the thought occurred to me that I might see what the parents would do, so I entered the aviary, placed it on the nest, and retired outside to await results. The attention of the mother was at once attracted by its presence, and without much delay she evidently recognized it, and I soon had the satisfaction of seeing her nestling down on it once more, and was able confidently to leave it in her care. The little bird having been successfully reared, by the 15th October the parents were building again, and laid this time in a nest built about a yard from the door and barely that distance from the path that everyone passed along. Unfortunately, some alterations had to be made to the front of the aviary—palings removed, and wire-netting substituted—with the result that the sitting birds were frightened from the nest, almost on the eve of hatching, viz., the 29th of the month.

They shortly began to build again for the third time, in the same position as the first nest, on a small platform of twigs, in a V-shaped corner of the aviary. I kept no record of the date of laying, but the first squab hatched out on or about 4th of December; both young birds were observed out of the nest on the 20th of the month. One matter that struck me as remarkable was the almost complete

plumage the birds had at that time, excepting the shortness of the tail; another was that I never saw the parents feeding them after they left the nest, although I was constantly passing and re-passing the aviary; I think they must do so, unless they mature more quickly than the Bronze-wing does. In February they began to nest for the fourth time, and on the 14th were sitting on two eggs, in the same obscure corner; but misfortune was to overtake them again, in a somewhat similar way to that which befel their second effort. The grounds were about to be opened to the public again, for the benefit of a charity, and it was necessary that this aviary should be turfed, the only one in which the natural grass had disappeared; while this was being done, the bird got frightened by the constant intrusion, flew excitedly from her nest, and eventually deserted it on the 22nd of the month.

I bewailed the loss very much, and concluded the end of the season had arrived, but not so; in a few days I noticed the male bird curtsying and cooing to his mate, and nesting preparations being made for the fifth time, by the 2nd of March they had settled down to work again, and are sitting steadily enough at present.

I have not been able to supply any data as to the length of time each bird sits, or at what hours they exchange places. The sexes being so exactly alike in marking, I have found it difficult to tell which one was on the nest.

### The Coloured Plate (XIII.)

*Mirafra woodwardi* (Rufous Bush-Lark) was discovered by Mr. John T. Tunney, the collector for the Western Australian Museum, Perth, on the red sand tracts near Onslow in North-West Australia, although, according to Dr. P. L. Selater, F.R.S., one specimen was received by the British Museum from the Gould collection, and registered as *M. horsfieldi*. Mr. Tom Carter, lately of Point Cloates, in his article entitled "Birds Occurring in the Region of the North-West Cape,"\* stated that his attention was first drawn to these birds on the 30th October, 1900, when they were seen dusting themselves in the red sand. Mr. Carter further states that the birds are tame in habit, and were only seen on the inland red sand plains, and that they sit close in the grass, but occasionally perch in the bushes.

The bird was described by Mr. Alex. Wm. Milligan,† the Honorary Ornithologist to the Western Australian Museum, Perth, and named in honour of Mr. B. H. Woodward, F.G.S., C.M.Z.S., the Director of the same institution.

Mr. Robert Hall, F.L.S., C.M.Z.S., described the nest and eggs of the species in the *Vict. Nat.*, xviii., page 80.

*Amytis housei* (Black Grass-Wren) was discovered by Dr. F. M. House in North-West Kimberley in the year 1901.‡ That gentleman,

\* *Emu*, vol. iii., p. 95.

† *Vict. Nat.*, vol. xviii., p. 25.

‡ Appendix F., "Report on Exploration of North-West Kimberley" (*Emu*, vol. i., p. 114).





in his field observations, remarked that the bird was first observed running over piled-up masses of red and black sandstone, with which the colouring of its plumage harmonized so perfectly that it might easily pass unnoticed. The bird was named by Mr. A. W. Milligan after Dr. House, who acted as naturalist to the North-West Exploration Expedition, led by Mr. F. S. Brockman. The nest and eggs are undescribed.

*Xerophila castaneiventris* (Chestnut-bellied Whiteface).—This species was also first discovered by Mr. J. T. Tunney at Pindar, in the Murchison district of Western Australia, but as he obtained only one skin, and that a bad one, it could not be declared a new species until further skins were obtained. These were eventually secured for the Western Australian Museum by Mr. Frederick Lawson, in the district named. The birds associate in small companies, and prefer the red soils. They are ground feeders. The bird was named and described by Mr. A. W. Milligan\* and the eggs by Mr. A. J. Campbell, C.M.B.O.U.†

### Obituary.

THE news of the death of Mr. Harry E. Hill, at Kalgoorlie, W.A., on 28th February last, from typhoid fever, has been received with the deepest regret by his friends in Victoria. Mr. Hill was a valued member of the A.O.U. He acted for several years as honorary curator of the Gordon College Museum, and in that capacity did excellent work in classifying the museum specimens for the first time upon a scientific basis. He was editor of *The Geelong Naturalist*, and later of *The Wombat*, and by his field notes published from time to time in *The Emu* and in the journals named he contributed much to our knowledge of the birds of the Geelong district and the Eastern Otway. He continued his ornithological work in Western Australia, and only a few weeks before he died he wrote to the editors to say that he hoped soon to be able to send over full field notes on the birds of Kalgoorlie. Mr. Hill was a man of a quiet disposition, who never sought popularity, but whose friendship was all the more valued by those who knew him best. As an ornithologist he was a painstaking and enthusiastic worker, one who put the science he loved foremost and himself last. The cause of ornithology can ill afford his loss.

### Corrections.

VOL. IV., p. 45.—Under heading Fairy Martin, 5th line—Transpose the months September and August, so as to read "from middle of August to early in September."

VOL. IV., p. 46.—Under heading Coucal, "east of Townsville" should read "west of Townsville."

\**Emu*, vol. iii., p. 70.

† *Emu*, vol. iii., p. 120.

## Fourth International Ornithological Congress.

THIS Congress, which is to be held in London during June, promises to exceed all former ones in importance.

The Congress is under the patronage of H.R.H. the Prince of Wales, and will be presided over by Dr. R. Bowdler Sharpe. Besides a Home Committee composed of eminent ornithologists, there is an influential General Committee representing all the more important countries of the world, Australia and New Zealand being represented by Sir Walter Buller, Messrs. Alfred J. North, Chas. W. De Vis, and Dudley Le Souëf. Capt. F. W. Hutton and Mr. Frank Littler, who will be in England when the session is sitting, will be the official deputies of the Australasian Ornithologists' Union. The business of the Congress will be divided into the following sections:—(1) Systematic Ornithology, Geographical Distribution, Anatomy, and Palæontology; (2) Migration; (3) Biology, Nidification, Oology; (4) Economic Ornithology and Bird Protection; (5) Aviculture; and, as is the custom on a smaller scale in the Antipodes, the session terminates with an excursion to a "rookery" of sea-birds—Flamborough Head, Yorkshire.

The subscription for members is £1, which also entitles members to a copy of the published proceedings of the Congress. Circulars, &c., may be had on application to the editors of *The Emu*.

## New Nature Study Societies.

A MEETING of persons interested in the formation of a Field Naturalists' Club at Cairns (Queensland) was held in the School of Arts on the evening of 12th March. A Club was formed, with the following office-bearers:—President, Mr. E. M. Cornwell; vice-president, Mr. J. G. Fearnley; secretary, Mr. E. Allen; committee, Messrs. D. Dean, J. Hyland, F. Barrett, Ingram, Anderson, and Burnett.

At the invitation of Mr. C. L. Barrett a number of gentlemen interested in field ornithology met at his residence, "Craigielea," Brighton Beach (Victoria), on the evening of 12th April.

On the proposition of the host, Mr. A. J. Campbell was voted to the chair.

After discussion, it was resolved:—

To form an association of field ornithologists, limited to 25 members for the present).

That the association be called the "Bird Observers' Club."

That Mr. F. P. Godfrey be elected hon. secretary.

That the subscription be 2s. 6d. per annum.

That the Club meet once a month, at some member's residence or other place to be named at the previous meeting.

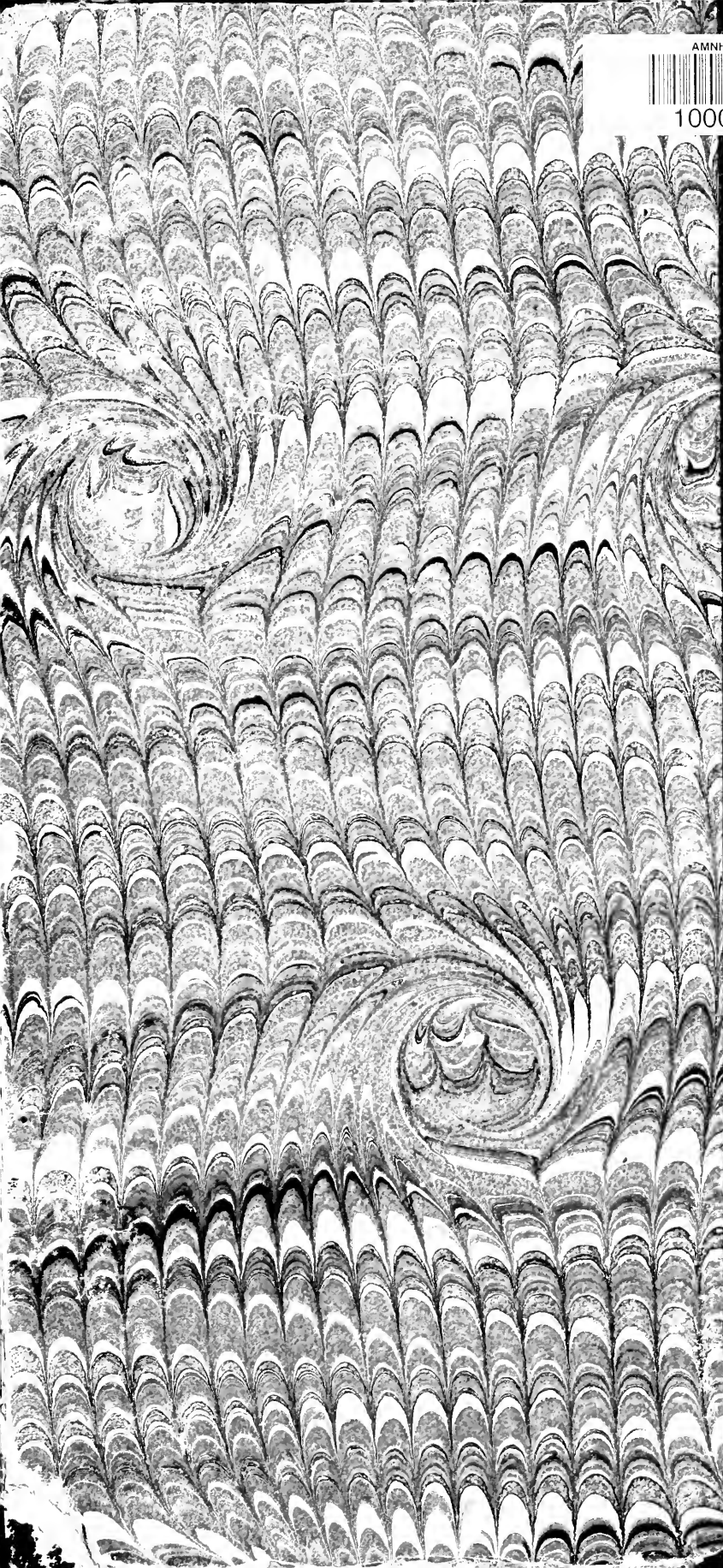
The following were elected original members:—Messrs. Donald Macdonald (*The Argus*), A. J. Campbell, Col. Mem. B.O.U., A. G. Campbell, C. L. Barrett, F. E. Howe, A. H. E. Mattingley, A. J. Kershaw, F.E.S., D. Le Souëf, C.M.Z.S., C. F. Belcher, M.A., LL.B., F. P. Godfrey, R. P. Godfrey, C. P. Kinane, H. Kendall, Robt. Hall, F.L.S., and E. Brooke Nicholls.











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