

only conclude that fluid is obtained from other sources. Birds of prey, perhaps, find drink enough in the lizards and smaller birds which they capture. Honey-eaters and other nectar-sipping species may obtain what they require from the blossoms of the eucalypts. Doubtless, in other cases, the precipitation of dew during the cool nights may give a further supply. That moisture was not absent from the soil, in spite of no rain for some weeks, was shown by the fact that some freshly-expanded specimens of a long-stalked puff-ball (*Battarea*, sp.) were found growing in the sand. Probably heavy dews had brought them up.

A start was made next day for the railway station, the opportunity being taken of seeing another *Leipoa* mound which had been opened. The train was then entered at 10.20 a.m., and Murray Bridge reached about 4.30. A very pleasant impression, added to by the cool change, was left of this mallee country, and the locality was evidently one worthy of a more prolonged stay.

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### Notes on Some North Queensland Birds.

By (Dr.) W. MACGILLIVRAY, R.A.O.U., BROKEN HILL (N.S.W.)

LATE in 1909 Mr. W. M'Lennan went to North Queensland on my behalf to obtain specimens of the birds and their eggs, and to make notes on their nesting and other habits in that portion of country drained by the Cloncurry, Leichhardt, and Gregory Rivers, the western portion of that tract of land known to all Queenslanders and many others as "the Gulf country," and also at Cape York.

Although Mr. M'Lennan's journeyings have not resulted in the discovery of any very distinct new species, still they have been helpful to me in clearing up many doubtful points as to the identity, distribution, and habits of the various species inhabiting the Gulf country, Cape York, and the islands between Cape York and Raine Island.

After a brief visit to Cairns and the Upolu Bank and Oyster Cay, where he made acquaintance with nesting sea-birds, he went inland by train from Townsville to Cloncurry, arriving there early in January, when he found everything very dry, the wet season not having commenced as early as usual. Hearing that the country was in better condition, owing to early rains, and birds more plentiful, further down the Cloncurry River, he procured an outfit, and journeyed down the river, finally making a permanent camp at the Sedan Dip, about 10 miles north of Byromine Station and about 80 miles from the Cloncurry township.

The rainy season started in earnest soon after his arrival, all the lakes and swamps filling up rapidly, and the river running bank high. Vegetation grew rapidly and rankly along the river-flats and out on the downs. Many small birds nested, and on the

lakes and swamps the wildfowl were soon to be estimated in thousands. After over two months' stay he shifted his camp back to Byromine, and then on to Cloncurry, where he remained for some time, searching the creeks and stony ranges in the vicinity.

On the 5th June a start was made towards the Leichhardt River, the road at first passing through red sandy and stony country, where the timber consisted mainly of mountain gum and silver box; thence across black-soil plains, where gidgee grew in clumps, and bloodwood, river gum, and coolibah bordered the creeks. Birds were not very numerous along this track. Corella Creek was crossed on the following day, and at the crossing, where birds were numerous and water plentiful, a stay was made for the rest of the day.

On the 7th the journey was resumed, passing through gidgee, silver box, bloodwood, and plain country, then low rangy country, till Palm Creek was reached at mid-day, at the Quamby Hotel; thence on to Cattle Creek, 17 miles from the last camp, through hilly country.

On the 8th he went on to Granada Station, thence 12 miles to a creek in the heart of a thick gidgee scrub, passing through gidgee, silver box, and plain country before reaching it. Struthidea were met with here for the first time. Bower-Birds (*Chlamydera maculata*) were numerous in the gidgee.

Next day, the 9th, Donaldson Hotel and Post-Office was reached by mid-day, passing through silver box and turpentine-bush country, in which the Kearsland Honey-eater was noted. Thence to Caloola Station, on the Leichhardt River, passing through silver box and gidgee on the plains, mountain gum and spinifex on the hills, bloodwood and wattle (similar to Victorian black wattle), bauhinia, and silver box on the river-flats.

10th June.—A start was made down the river, passing through silver box, coolibah, bloodwood, river gum, and bauhinia, growing on the river-flats. *Dacelo leachi*, *Geopelia cuneata*, and *Ocyphaps* were numerous here.

11th June.—Another 14 miles down the river, when he decided to camp for two days. This stay was lengthened, however, by his horses having strayed. Birds were numerous here, feed and water plentiful. The river banks were thickly clothed with melaleuca, river gum, sandpaper and smooth-leaved figs. A Thrush (*Colluricincla*) was obtained here, which Mr. Mathews considers a sub-species of *C. brunnea*. The variation in this species from Cape York to the Territory seems to be at present rather confusing, and a larger series of specimens from all these regions will need to be examined before any certainty can be arrived at. *Ptilotis unicolor*, *Rhipidura albicauda*, *Myzomela pectoralis*, and *Poephila hecki* were met with for the first time. Other species noted were *Haliastur sphenurus*, *Lophoictinia isura*, *Gypoictinia melanosternon*, *Erythrotriorchis radiatus*, *Ninox ocellata*, *Philemon sordidus*, *Ptilotis flavescens*, *Stigmatops ocularis*, *Tæniopygia*

*castanotis*, *Dicaeum*, *Graucalus melanops*, *Artamus minor* and *melanops*, *Climacteris melanura*, *Neositta mortoni*, *Micraeca pallida*, *Pachycephala falcata*, *Dacelo leachi*, *Halcyon pyrrhopygius*, *Pardalotus rubricatus* and *uropygialis*, *Ocyphaps*, *Geopelia tranquilla*, *Calyptorhynchus macrorhynchus*, *Cacatua galerita*, *C. roseicapilla*, *C. gymnopsis*, *Melopsittacus undulatus*, *Ptilosclera versicolor*, *Calopsitta novæ-hollandiæ*, *Cheramæca leucosternum*, *Antigone australasiana*, *Choriotis australis*, *Xenorhynchus asiaticus*.

On the 19th a start was made, and Kamilaroy Station reached with one horse. A camp was made near here for 10 days. *Haliæetus leucogaster* and *Myiagra concinna* were met with for the first time.

On the 1st July, still down the Leichhardt, Lorraine Station was reached, and Augustus Downs on the 5th of the same month, where *Poephila personata* was met with. On this station were many lagoons, and wildfowl were abundant. A camp was made on a chain of lagoons 3 miles beyond the station. *Uroaëtus audax*, *Haliæetus leucogaster*, *Haliastur sphenurus*, *Lophoictinia isura*, *Hieracidea berigora* and *orientalis*, *Astur approximans*, *Gypoictinia melanosternon*, *Falco subniger*, *Erythrotriorchis radiatus*, *Cerchneis cenchroides*, *Ninox connivens*, *N. ocellata*, *Strix flammea*, *Podargus brachypterus*, *Corone australis*, *Corvus corone*, *Gymnorhina tibicen*, *Cracticus nigrigularis*, *Grallina picata*, *Graucalus melanops*, *Chlamydera maculata*, *Lalage tricolor*, *Climacteris melanura*, *Neositta mortoni*, *Dicaeum*, *Mirafra secunda* (?), *Cisticola*, *Pomatrhinus rubeculus*, *Struthidea*, *Turnix velox*, *Pachycephala falcata*, *Gerygone albigularis*, *Ptilotis unicolor*, *P. flavescens*, *Ocyphaps lophotes*, *Geopelia tranquilla*, *Stigmatops ocularis*, *Conopophila rufogularis*, *Tæniopygia castanotis*, *Stictoptera bichenovii*, *Neochmia phaeton*, *Munia pectoralis*, *Poephila personata*, *P. gouldi*, *P. hecki*, *Pardalotus rubricatus*, *P. uropygialis*, *Seisura inquieta*, *Micraeca pallida*, *Sauloprocta motacilloides*, *Myiagra concinna*, *Rhipidura dryas*, *Malurus assimilis*, *M. cruentatus*, *Calyptorhynchus macrorhynchus*, *Cacatua galerita*, *C. roseicapilla*, *C. gymnopsis*, *Ptistes erythropterus*, *Ptilosclera versicolor*, *Melopsittacus undulatus*, *Dendrocygna eytoni*, *Nyroca australis*, *Malacorhynchus membranaceus*, *Chlamydochen jubata*, *Plotus novæ-hollandiæ*, *Platibis flavipes*, *Platalea regia*, *Notophox pacifica* and *N. novæ-hollandiæ*, *Nycticorax caledonicus*, *Herodias timoriensis*, *Mesophox plumifera*.

This camp was struck on the 14th, when the track was retraced for 20 miles, in order to cross the Leichhardt. Next day a start was made on the Gregory River track, and a camp for the night made on a water-hole a mile long and from 30 to 100 yards in width. This water-hole was dotted with small islands, all being thickly clothed in tea-tree, while numbers of blue and white water-lilies grew along the edges. On one of the islands was a Cormorants' old rookery.

On the 17th the track led through heavy forest country all the way to Fiery Downs, a distance of about 20 miles. Next day the Gregory River was reached, after another 20 miles, through open

forest for the first few miles, then plain country for the rest of the way. The river here was a fine running stream 20 feet wide and 8 feet deep, with water as clear as crystal. Some of the holes along the river were a mile in length and 50 feet in depth. Pandanus and cabbage-tree palms grew at the water's edge, and the banks were clothed with river gum, coolibah, tea-tree, pear-tree, fig, and Leichhardt pine. *Pæcilodryas cerviniventris*, *Geopelia humeralis*, *Chlamydera nuchalis*, and *Alcyone pulchra* were recognized here.

The Gregory River was followed down to where it divides into two channels, about 28 miles from Burketown. These channels are known as the Gregory River proper and the Brook. Burketown was reached near the end of the month, and boat taken to Thursday Island, whence Mr. M'Lennan proceeded to Cape York, remaining at Somerset until joined by myself and Dr. Dobbyn, after our departure making his headquarters at Paira, the picturesque home of Mr. and Mrs. Bert Vidgen, whence he explored the country in all directions. In June and July, 1911, in company with Mr. Vidgen, he visited nearly all the country between Cape York and Raine Island and on to Bramble Cay, in Torres Strait.

**Dromaius novæ-hollandiæ.** Emu.—Noted on several occasions on the plains that border the Cloncurry River and elsewhere in the Gulf country, and also at Lockerbie, Cape York. Numerous near Batavia and Ducie Rivers.

**Megapodius tumulus.** Scrub-Fowl.—This species was frequently met with in the scrubs at Cape York. When disturbed they run off through the scrub and then fly on to a horizontal limb of some tree whence they can get a good view. They are seldom heard calling during the day, but keep it up all night, and seem to be largely nocturnal in their habits.

Their mounds are often very large. The first one examined, on the 23rd December, 1910, measured 20 feet across the base, 10 feet across the top, and was 15 feet in height; it contained eleven eggs. The birds early in the season scratch holes or pipes down into the mounds, which have become consolidated since the previous season; these pipes go down from 3 to 5 feet from the surface. As soon as the first rains come fresh mould is scratched into the holes.

In this particular mound two holes contained two eggs, near the bottom and within a few inches of one another. This mound, examined again on the 1st February, 1911, was found to contain six eggs and two young birds just making their way out of the mound; they were about 3 feet from the surface. Mr. M'Lennan remarks:—"I put one on the surface of the mound, and it flew away as soon as I took my hand off it. The other was converted into a skin. It had a thick layer of fat beneath the skin, no doubt to nourish it until it was able to find sufficient food for its needs." The irides were greyish-brown, bill light brown, legs a rich yellow washed with olive. In the adult the irides are rich brown, bill brown, legs rich orange-yellow. No definite arrangement is adhered to in the placing of the eggs in the mound. Never more than two birds were noted at any one mound. Old mounds were seen on all the scrub-covered islands in Torres Strait, but no birds.

Another mound, examined first on the 16th January, 1912,

measured 30 feet in diameter at the base, 15 feet across the top, and was 15 feet in height. The eggs, eight in number, were from 3 to 5 feet from the surface, one only in each pipe; two were placed vertically, the rest in a slanting position. This mound was again examined on the 27th February, 1912; it again contained eight eggs, and two birds were noted at the mound. On the 27th March, 1912, it had been built up again, but contained only one egg. Two distinct types of egg were obtained from this mound, as though laid by different birds. These birds feed mostly on insects and snails.

**Catheturus purpureicollis.** Barnard Brush-Turkey. — They are common in the Cape York scrubs, as are also their nesting-mounds. These mounds are very much preyed upon by wild pigs and "goannas," and great numbers of the eggs are in this way destroyed, imposing a serious check on the natural increase of the bird. The pig has been introduced by the white man, who is responsible for the disappearance of the natural enemies of the lizard—the black-fellow and the dingo.

Mr. M'Lennan states:—"Several birds lay in one mound. I have taken four distinct types of egg from the same mound. During the breeding season, which commences with the advent of the first rains, the wattle of the male becomes very much elongated; it almost touches the ground, being about 6 to 8 inches in length. I saw two males chasing a female at the beginning of the season in 1910, and have occasionally seen one male chasing another male, and when this occurs they appear to be quite blind with fury, and run into logs or the butts of trees. The call of the male is a loud grunting 'Oom,' and one can always call them up by imitating it. I have seen as many as seven feeding together before the breeding season. They roost at night high up in the trees, those chosen being often just outside the scrub or big trees in the scrub. They feed on the ground, in the scrub mostly, but often in the open forest or at the edge of the mangroves, sometimes feeding on fruit trees in scrub. The nesting-mound is more loosely built than that of the Megapode, and its temperature is regulated by heaping it up to keep the moisture in when the weather is dry, or scratching it off to within a few inches of the eggs when it is wet.

"6th March, 1912.—Dug out a mound near Lockerbie. It contained one young bird, not long hatched, as it had only worked up 3 inches from the shell. All the wing feathers were encased in sheaths, and the bird was very weak in the legs. I put it in a box when I reached the house, as I wanted to see how long it would take to get rid of the sheathing on the wings. When found in the mound it was in a circular chamber, and seemed to be resting in it, as the floor was padded down hard. It was about 2 feet from the surface, and would probably have remained there until it got rid of the sheathing from its feathers and got strong on its legs. The 2 feet of soil above it was quite loose.

"I had a look at the young Turkey as soon as I got up next morning; it was busily engaged in stripping the sheathing from its feathers. At 1 p.m. it had all the sheathing off and was quite strong on its legs, so I took it into the scrub and let it go; it ran a few feet, and then started to scratch and pick amongst the dead leaves and mould. When I moved it darted away, and was soon out of sight.

"The largest number of eggs found in one mound was on 23rd February, 1912; this, a large mound, 12 feet by 14 feet long and

2 feet 6 inches in height, contained nineteen eggs, four freshly broken shells, six shells that the young had been hatched from, and one rotten egg. A young bird not long out of the mound measured in the flesh  $6\frac{3}{4}$  inches from tip of bill to tip of tail,  $9\frac{1}{2}$  inches from bill to toes. The irides were light brown, bill black, legs dark olive-brown. The stomach contained small wild fruits."

**Synoicus cervinus.** Northern Brown Quail.—These Quails were met with in the Gulf country and at Cape York. There does not seem to be any marked difference between those from either of these two localities and birds in my aviary at Broken Hill. They land in numbers on Booby Island, in Torres Strait, in the spring, on their way over from Papua, and are often caught on the pearling vessels in the Strait.

**Turnix melanotus.** Red-backed Quail.—When burning off the coarse grass at Paira, Cape York, after dark, the fire disturbed two of these birds, and one was caught. ♀, length in flesh,  $5\frac{1}{2}$  inches; iris silvery-yellow; upper mandible blackish-brown; terminal half of lower mandible pale brown, basal half yellow; gape yellow; legs pale yellow. They are occasionally flushed in the open forest after the grass begins to grow on the burnt ground.

**Ptilinopus swainsoni.** Red-crowned Fruit-Pigeon.—Occasional at Cape York; one skin sent down.

**Ptilinopus ewingi.** Rose-crowned Fruit Pigeon.—Common at Cape York, frequenting the scrubs, open forest, and mangroves. In the mangroves it usually nests, choosing a horizontal fork 3 or 4 feet above high-water mark on which to place its frail, stick-built nest and single egg. In the male the irides are orange, bill pale green, legs pale green; and the stomach contents were usually wild fruits. The earliest nest noted was found on the 29th August, 1911, and the latest on 15th December. After Mr. M'Lennan left, during the summer of 1912-13, both these species were much more plentiful at Cape York.

**Lamprotreron superba.** Purple-crowned Fruit-Pigeon. — This beautiful Pigeon is fairly common at Cape York, and is nearly always found in the scrub, occasionally venturing out into the open forest, near the edge, and here it will sometimes nest, but more often in the scrub itself. The nest, a loosely-built structure of fine twigs, is usually placed low down in a horizontal fork. The bird is very shy, and soon gets out of one's sight in the thick scrub. It feeds on fruit, and its note consists of a succession of "Ooms," repeated slowly. The earliest nest was found on 5th November, and the latest on 2nd February.

**Megaloprepia assimilis.** Allied Fruit-Pigeon. — This fine and brilliantly-coloured Pigeon is a common object at Cape York, nesting in the scrub or in open forest at its edge. From its usual note it is locally known as the Bel-be-coo. The nest, a frail structure even to hold the single egg, is usually placed in a slender horizontal fork. The earliest nest noted was on 28th August, and the latest on 3rd February. The iris is orange, the bill pinkish-red tipped with yellowish-green, and legs pale olive-green.

**Myristicivora spilorrhoea.** Nutmeg-Pigeon.—This Pigeon is regarded all along the north-east coast of Northern Queensland as the principal game bird, and is very much esteemed as an article of diet. It is



consequently shot freely for the table, but, fortunately for the bird, the so-called sportsman who goes in for record bags has not extended his depredations to these parts as yet.

In the flesh an average bird measures 11 inches in length, the iris is dark brown, the bill yellow tinged with green, legs and feet pale greenish-blue. The stomach contents consist invariably of wild fruit, for which they have an immense capacity. The lower mandible is very distensible, and large sections of banana are easily swallowed. A young bird brought from Torres Strait by Dr. Dobbyn lived in Broken Hill for 10 months, and died only of neglect in its owner's absence from home. This bird's migration from Papua occurs in early spring. On the 16th August, 1911, Mr. M'Lennan saw two large flocks flying past Lockerbie and heading south-east, about sunset. On the 3rd September, 1911, these birds were flying south all day in large flocks.

The earliest nest recorded was found on the 4th September, and the latest on the 15th January.

**Lopholaimus minor.** Little Topknot-Pigeon.—On the 16th May, 1911, when camped 28 miles from Peak Point, and near the Jardine River, Mr. M'Lennan saw three of these Pigeons. Next day he saw a large flock of them, flying south. Mr. Vidgen, of Paira, a few days previously, saw two flocks flying overhead, coming from across the Strait and going south. He states that none had passed over for seven or eight years, and ten years again previously to that, so that we can regard the bird as only an occasional visitor from New Guinea. The colouring of the soft parts of two males are as follows:—Iris, outer circle crimson, front of inner circle brown, rest yellow; upper mandible fleshy-brown, lower mandible pinkish-red, legs reddish-brown.

**Geopelia humeralis.** Barred-shouldered Dove.—In the Gulf country this species was not noted until the Gregory River was reached, and became more numerous nearer the coast. It was a common bird at Cape York, feeding usually on the ground in the open pockets, and resorting to the mangroves for nesting purposes. It is also found on nearly all the islands off the coast. Nests were noted in January, February, May, September, October, and November.

**Geopelia tranquilla.** Ground-Dove.—Mr. M'Lennan found a nest at his first camp on the Cloncurry River on 8th February. They were plentiful along all the rivers running into the Gulf. Nests were noted on 1st March, 17th April, 10th June, 30th June, and 2nd July. At Cape York they were numerous during February, March, and April.

**Geopelia cuneata.** Diamond Dove.—Numerous along the Cloncurry and other rivers in the "Gulf." One nest was found, on 26th June, 1910, on the Leichhardt River, built in a bauhinia tree; it contained two young birds. Also noted at Cape York, but not numerous.

**Chalcophaps chrysochlora.** Little Green-Pigeon.—This bird was more plentiful at Cape York during 1912 than previously. It is a ground feeder on fallen fruits. In the flesh this species measures about 10 inches in length, the iris is dark brown, the bill pink with a bluish tinge at the base, legs reddish-pink with a whitish stripe down the back.

**Phaps chalcoptera.** Bronze winged Pigeon.—One of these birds

was shot at Peak Point, the Cape York telegraph station, on 21st February, 1912, the only time that the species was noted.

**Histriophaps histrionica.** Flock-Pigeon.—Only a few small flocks were noted during Mr M'Lennan's travels in the Gulf country. In early days, as I myself witnessed, they occurred here in countless thousands, feeding on the Mitchell grass downs during the day and coming in to water in the evening in an unbroken succession of immense flocks. They breed on the ground, so that the stocking of the country with herds of cattle and sheep has seriously interfered with their nesting operations and feeding habits.

**Ocyphaps lophotes.** Crested Pigeon.—Common throughout the Gulf country, but not seen at Cape York.

**Hypotaenidia philippensis.** Pectoral Rail.—None noted in Gulf country, but numerous on islands in Torres Strait and all the way to Raine Island. Here they caused Mr. M'Lennan some annoyance by frequenting the caves resorted to by the Tropic-Birds for nesting purposes and dashing out in his face when he was crawling in. Not seen on the mainland.

**Rallina tricolor.** Red-necked Rail.—The first bird was noted early in January, 1911. On the 21st January another was seen, with young ones not more than a week old; these were covered with black down. They were noted again at the beginning of the following wet season, on 11th December, 1911. After this they could be heard calling almost every night, the call being a loud, shrill "Kare, kare, kare," many times and rapidly repeated, and sometimes a short, sharp "Tock, tock, tock," which would be kept up for half an hour at a time. They always frequented the scrubs, whether along the creeks or on the ridges. Mr. Vidgen's little boy found a nest in the scrub not far from the house, and watched the birds come to it; he took Mr. M'Lennan to see it. The nest was simply a depression in the dead leaves at the foot of a tree, and contained three white eggs; it was left until the 9th March, when the eggs were found to have been taken, probably by a "goanna." Charlie, a South Sea Islander working for Mr. Jardine, found another nest, near Somerset, containing four white eggs. He did not take them, and when it was visited ten days later the nest contained only one egg. This he brought to Mr. M'Lennan; it had a half-developed chick in it. Although a thorough search was made of a patch of scrub near the house in which five or six could be heard calling every night, they were seldom seen during the daytime, and no more nests were found. Their calling was last noted early in April, 1912.

The colouring of the soft parts in specimens obtained was as follows:—Iris orange-scarlet, bill light green, legs dark olive. The stomach contents were usually the remains of land-snails. Another nest, containing five fresh eggs, was found by Mr. Vidgen's boy during the past season.

**Poliolimnas leucophrys.** White-browed Crake.—One was flushed from a clump of rushes in a tea-tree swamp behind Charo mangroves; it flew to the top of a tea-tree, and was secured as a specimen. ♀, length in flesh 7 inches, irides dark scarlet, eyelids scarlet, bill dull olive-yellow. Stomach contained beetles and other insect remains.

**Amaurornis rufierissa.** Rufous-tailed Rail.—First seen when in company with Mr. Barnard, in 1910. Not noted in numbers at Cape



York until 21st January, 1912, when one was heard calling in the rubber garden at Paira, and afterwards seen. Two days later several were heard at Lockerbie. After this they were heard almost nightly, their calling being kept up until about 7 a.m., when it ceased, to recommence after sundown. All search for a nest proved unsuccessful until the end of March. The birds usually frequented long grass 3 to 5 feet in height, very dense, with reeds 7 to 9 feet and pandanus up to 15 feet, all growing together, so that searching was a very difficult matter. One bird was located in a small paddock where wild mint grew thickly and to 6 feet in height, and on the 1st April, 1912, Mr. M'Lennan made a thorough search of this. His note is as follows:—"I went down to the Bull Paddock, to where I heard the Moor-Hens calling last night, and began my search. To start with, I parted a strip 25 to 30 feet long and about 10 feet from where the bird was calling, and worked to and fro along the line till a patch of about 30 by 30 feet had been completed. After a rest the search was recommenced, and the nest found; it contained three fresh eggs. No birds had been seen, so I cut a narrow track from the nest to a spot about 12 feet away, and sat there and waited for the bird to return. I waited for nearly five hours, but no bird returned, though I heard the call once about 20 feet away. After this I went away, and paid three surprise visits to the nest, but did not see the bird. I returned at sundown and sat in the old spot, and had not been there long when I heard the birds calling about 50 yards away; they appeared to be heading for the nest. Soon I saw the tips of the mint shaking near the nest, and at last the bird hopped on to it."

The nest was 4 inches from the ground, placed amongst stalks of wild mint 3 feet high; it was roughly constructed of pieces of dry and green mint and dry twigs of *syndratura*, the twigs and pieces of mint being about 4 inches long. It was 9 inches across by 5 inches in depth externally; egg chamber,  $4\frac{1}{2}$  inches in diameter by  $2\frac{1}{2}$  inches deep. The eggs measured, in millimetres,  $35 \times 25$ ,  $35 \times 25$ ,  $38 \times 25$ , and were of a white ground colour spotted with dull red and purplish markings. Such eggs have been sent for many years past from various parts of the Cape York Peninsula as the eggs of the Red-necked Rail.

An average male bird measured in the flesh 11 inches from tip of bill to tail, and  $15\frac{1}{2}$  inches to tip of toes. Irides rich brown; bill green, with base of culmen orange-yellow; legs olive-yellow. Stomach contents, portions of beetles and greenstuff. A female measured from bill to tail  $9\frac{3}{4}$  inches, from bill to toes  $13\frac{3}{4}$  inches; irides rich brown; upper mandible olive-brown, base of culmen tinged with orange, cutting edge from nostrils to gape yellowish-green; lower mandible, terminal half olive-brown merging into yellowish-olive. Stomach contents, grass seeds and beetle remains.

***Tribonyx ventralis*.** Black-tailed Native-Hen.—Plentiful on the rivers and swamps of "Gulf," but not noted at Cape York.

***Porphyrio melanonotus*.** Bald-Coot.—Many seen in Gulf country, and also at Cape York.

***Fulica australis*.** Coot.—Common on the waters of the Gulf country.

***Podiceps poliocephalus*.** Hoary-headed Grebe.—Noted occasionally at Cape York, and numerous in the Gulf waters.

***Puffinus spheurnus*.** Wedge-tailed Petrel.—This species, which I

found in its burrows on Raine Island in October, Mr. M'Lennan also found at home in its burrows when at Raine Island in July, 1911. He obtained several skins, and noted that each burrow contained two birds. He visited the burrows after dark, and waited for some time, and saw only one bird leave, but could hear mournful calling in all directions. A male and female in each burrow.

♀, ovary normal; length,  $16\frac{3}{4}$  inches; iris dark brown; horny tip of bill dark brown, nostrils dark brown, rest of bill brownish-grey; legs and feet fleshy-white with brown markings. Stomach empty.

♂, testes enlarged; length,  $16\frac{3}{4}$  inches; iris and other parts coloured as in female. Stomach contained green slime.

**Hydrochelidon fluviatilis.** Marsh Tern.—A small flock noted at Sedan, on the Cloncurry River, on 12th February, 1910, and numbers over a big lake in the same locality on 1st March, 1910. They were again seen over the Big Dalgonally Lake, at Byromine, on the same river, on the 4th of April. At Cape York they were hovering over Lake Sanamere, 3 miles from the Jardine River. Mr. M'Lennan remarks that this lake has more than its share of crocodiles, and that no living thing swims on its surface.

**Gelochelidon macrotarsa.** Gull-billed Tern.—On 12th February, 1910, Mr. M'Lennan notes:—"A few Gull-billed Terns passed up the river to-day." Another flock was seen flying south on the 13th. A pair was flying over the Big Dalgonally Lake on the 31st March, 1910. Not noted at Cape York.

**Sterna gracilis.** Graceful Tern.—This beautiful Tern nests annually on the top of Bushy Island, Torres Strait, in October. It was seen on the Macarthur Islands. Hundreds of dead and dried bodies of this species, all young birds, were found on a vegetated sand-bank off the Coburn Reef on 17th July, 1911, possibly killed by the hurricane which visited the coast of Queensland some months previously, as I have a note from Mr. Olive, of Cooktown, that thousands of dead Terns and other sea-birds were to be found along the beach between that town and Port Douglas after that hurricane.

On an exposed coral ridge off Cairncross Island an old nesting-place was found, and a few of the birds were seen hovering over the reef.

**Sterna media.** Lesser Crested Tern.—Upon visiting the Upolu Bank, Cairns, on 19th November, 1909, Mr. M'Lennan found the whole surface covered with this species, in company with *Anous stolidus*, all starting to prepare their nests. On the 14th December, 1909, a small colony was found tending young on Oyster Cay, Cairns. All eggs had hatched. There were three other species nesting on the same islet—*A. stolidus*, *Sterna cristata*, and *Onychoprion fuliginosa*. Not noted on any of the islands near Cape York.

**Sterna cristata.** Crested Tern.—On visiting Oyster Cay, Cairns, on the 14th December, 1909, three colonies were found, all sitting on eggs. On 11th November, 1910, this species was breeding freely on Mid Rock, Torres Strait. At Raine Island, on 9th July, 1911, a small colony was found in the centre of the island. The Gulls had been levying a heavy toll on them. On 27th July, 1911, great numbers were noted on Bramble Cay, but no young or eggs, although a few birds were flying about with fish in their bills. They have a long, sweeping action of the wings, and often go up in company in a spiral flight, and the higher they go the larger they

appear to be, and when descending they sweep down, passing and repassing one another on the way.

***Sterna melanauchen.*** Black-naped Tern.—A common bird on the reefs and islands about Cape York. It nests in October and November on Bushy Island, Torres Strait, and also in lesser numbers on Kypenny Island, 2 miles from Somerset. Also noted, but not breeding, in July, 1911, on the Macarthur and Bird Islands.

***Onychoprion anæstheta.*** Bridled Tern.—This graceful species is often seen in the vicinity of Torres Strait. It breeds under the shelving rocks of Bushy Island, fresh eggs being found early in October and November. On Channel Rock, Torres Strait, this was the only species found breeding, fully fledged young being noted on the 10th November.

***Onychoprion fuliginosa.*** Sooty Tern.—Found nesting in numbers on Oyster Cay, Cairns, on 14th December, 1909. At Raine Island, in July, 1911, they were nesting in tens of thousands all over the island. On the 27th July, 1911, great numbers were also noted on Bramble Cay, and two small colonies of fledged young. To show the variation in size, before skinning one bird measured in length  $15\frac{1}{2}$  inches and the other 17 inches; both were males.

***Anous stolidus.*** Noddy.—Several flocks seen on the Bird Islands in July, 1911, and in the same month they were nesting all over Raine Island. An old nesting-site was found on a sand-bank 6 miles east of the Bird Islands. At Bramble Cay they were also very numerous.

***Anous leucocapillus.*** White-capped Noddy.—There is a nesting-place of this Tern on an island near Darnley Island, in Torres Strait, the nests being placed on the trees. This was described to Mr. McLennan, but not visited by him. A dead specimen was found on the Bird Islands.

***Larus novæ-hollandiæ.*** Silver Gull.—This Gull is a common object on all the northern islands. A few were found nesting on Tuesday Rock, Torres Strait, on 21st June, 1911. On the Macarthur Islands a few were breeding on 1st July, 1911. On the Bird Islands, on the same date, a small colony was found breeding. Most of the nests contained young about 14 days old. On the return journey, 17 days later, fresh nests were found on the Bird Islands, on a small grassy patch. Old nests from which the young had gone were noted on a small rocky islet near Peak Point.

***Hæmatopus longirostris.*** Pied Oyster-catcher.—This species is tolerably common on the islands near Cape York. Two nests were found on an exposed coral ridge of the Macarthur Islands on the 18th July, 1911; another on the 19th on the second island of the Hannibal group—this was also on a coral ridge, amongst stunted trees; and again one similarly situated on Cairncross Island.

***Hæmatopus fuliginosus.*** Black Oyster-catcher.—The Black Oyster-catcher is also common on these islands. Noted on Bushy, Cairncross, the Hannibals, Macarthur, and Bird Islands. On one of the Bird Islands a nest was found amongst a dense bushy growth on a coral ridge, and one on a second island of the same group. On the second island of the Hannibals a nest was placed amongst a thick growth of stunted trees on a coral ridge, and again on the second island of the Cairncross group.

**Erythrogonyx cinetus.** Red-kneed Dottrel.—Found at Sedan, on the Cloncurry River, frequenting the shores of a swamp.

**Lobivanellus personatus.** Masked Plover.—Very common throughout the Gulf country, on the swampy areas. Also noted on a swamp at Peak Point, Cape York. Their habits are much the same as those of the southern species.

**Charadrius fulvus.** Lesser Golden Plover.—A common bird along the Cape York Peninsula in the summer months, both on the islands and mainland, frequenting mud-flats, swamps, and open grassy spaces.

**Ochthodromus geoffroyi.** Large Sand-Dottrel.—At Cape York specimens were obtained at Paira beach on 21st March, 1911, and at Charo beach on 14th January, 1911. They were feeding in large numbers on the crabs and shell-fish with which such places abound. The soft parts were alike in colouring in the two sexes—irides rich dark brown, bill slaty, legs pale yellowish-brown, feet black.

**Ægialitis ruficapilla.** Red-capped Dottrel.—Noted at Cape York and Cape Grenville, on sea beach.

**Ægialitis nigrirostris.** Black-fronted Dottrel.—Several noted on bed of Cloncurry River and on the Leichhardt.

**Himantopus leucocephalus.** White-headed Stilt.—This Stilt was fairly numerous in the Gulf country, frequenting the shores of lakes and swamps.

**Numenius cyanopus.** Curlew.—On the 30th June, 1911, Mr. M'Lennan found this bird numerous on Bushy Island, near Cairncross, and throughout the summer months it is a common object on all the mud-flats and tidal beaches.

**Numenius uropygialis.** Whimbrel.—Noted in company with the Curlew on Bushy Island on 30th June, and common throughout the summer.

**Mesoscolopax minutus.** Little Whimbrel.—Seen at Cape York on several occasions, feeding on the beaches and mud-flats, in company with other waders.

**Limosa uropygialis.** Barred-rumped Godwit.—Specimens of this wanderer were secured on Charo beach and also noted on the swamp at Peak Point, in the summer.

**Totanus (Heteractitis) brevipes.** Grey-rumped Sandpiper.—Two skins of this species were obtained at Cape York. ♂, length  $9\frac{5}{8}$  inches; iris dark brown; bill, terminal half blackish-brown, basal half pale olive; legs yellow with greenish tinge. ♀, length  $9\frac{1}{2}$  inches; soft parts as in male.

**Glottis nebularius.** Greenshank.—Noted on several occasions in summer months at Cape York. In a typical specimen the soft parts were as follows:—♀, length from tip of bill to tail, 13 inches, to toes  $15\frac{1}{4}$  inches; irides brown; bill, terminal half black, basal half pale slate.

**Pisobia acuminata.** Sharp-tailed Stint.—Many seen during the summer on the swamps and lakes of the Gulf country.

**Glareola grallaria.** Pratincole.—Noted on 24th December, 1909, near Hughenden, on the Flinders River, and also in the Cloncurry River district, near the town, on 21st April, 1910.

***Edicnemus grallarius.*** Southern Stone-Curlew.—Common in the Gulf country, and heard and seen occasionally at Cape York. On one moonlight night at Lockerbie three were calling and dancing a few feet away from the door of the hut. While the loud, shrill, and sustained call was being uttered the wings were outspread, the birds faced each other and kept up a rapid stamping of the feet.

***Esacus magnirostris.*** Long-billed Stone-Curlew.—One or more specimens found on most of the islands visited between Cape York and Raine Island. On 18th July a nest was found on one of the Macarthur Islands; it was a mere depression in sand on a coral ridge amongst a dense growth of bushes; it contained one egg. The birds are very shy, and seldom admit of a close approach, even on the most unfrequented islands.

***Choriotis (Eupodotis) australis.*** Bustard (Wild Turkey).—Tolerably plentiful throughout the Gulf country, flocks of from 5 to 50 being frequently seen. They also occur on the Cape York Peninsula, having been noted in numbers, and an egg obtained, during the past season, near the Batavia River, by Mr Wheatley, of Peak Point.

***Antigone australasiana.*** Crane (Native Companion).—These fine birds were noted on several occasions in the Gulf country, one nest being found with fresh eggs on 26th March, 1910. Only one was seen at Cape York, but on the way from Croydon to Cairns Mr. M'Lennan counted over 200 of these graceful birds on a swamp near the coach route, and a little later—it was towards evening—this number would have been considerably augmented, as the birds kept flying in from all quarters in flocks of from seven to eight or more. He estimated that by nightfall there would probably be over a thousand birds on the swamp.

***Ibis molucca.*** White Ibis.—Found both on the Gulf waters and at Cape York.

***Carpodacus spinicollis.*** Straw-necked Ibis.—A few seen early in September, 1911, at Gheedinia Lagoon, Cape York.

***Plegadis falcinellus.*** Glossy Ibis.—Numerous on the swamps along the Cloncurry River during February, March, and April, 1910.

***Platalea regia.*** Black-billed Spoonbill.—On the Cloncurry River early in February, 1910, a large flock of these birds was seen. There were also many on the swamps and lakes at Sedan, on the same river. Later, large flocks were noted in the same locality, and later again, in July, 1910, on the Leichhardt River. They were also seen on the lagoons at Cape York.

***Platibis flavipes.*** Yellow-billed Spoonbill.—Several met with on the Leichhardt River, and a nest containing two small young birds was found early in July, 1910. They were noted on several occasions at Cape York.

***Xenorhynchus asiaticus.*** Black-necked Stork (Jabiru).—These birds were seen on several occasions on the different rivers of the Gulf of Carpentaria, and on the Leichhardt River, 25 miles beyond Caloola Station, a nest was found on the 16th June, 1910, in a large gum about 200 yards from the bank. Mr. M'Lennan states:—"The nest, which was about 55 feet from the ground in a big river gum, was loosely built of sticks and twigs, lined with tufts of grass and the paper-like bark of the tea-tree. It was about 5 feet across by 3 feet in depth, and contained one young bird, which was about 3 feet 6 inches

high when standing, and had a spread of wing of nearly 5 feet. The wing and tail feathers were grey and white, breast well feathered and white; back well feathered, greyish-brown in colour; neck covered with greyish-brown down: bill blackish, irides brown, legs and feet faint greyish-pink. The young bird was annoyed at being disturbed, and made a loud clacking noise with its bill, occasionally emitting a deep guttural grunt and making vicious drives at me, none of which reached me, as I had previously tried the power of its bill on a stick, and did not like the impression it made."

This species was occasionally seen at Cape York.

**Ardea sumatrana.** Great-billed Heron. — First noted at Cape Grenville, flying over the mangroves, on 4th July, 1911. Another specimen was seen several times on Charo beach or flying towards Charo Swamp, in February, 1912. On 28th February, 1912, Mr. M'Lennan writes:—"Went to Charo Bay and rowed up channel or creek in mangroves. Found a nest of *Ardea sumatrana*, with a fully fledged young one sitting on a limb close by. I climbed to the nest to get a closer look at both it and the young bird. The latter calmly walked out to the end of the limb, and stood watching me, and did not show any sign of fear. Height, about 3 feet; irides silvery-cream colour, bill dull leaden-blue, legs dull leaden-blue with patches of creamy-yellow: head, neck, and under surface rufous-brown, under tail coverts and flanks of a lighter shade; back, wing coverts, and upper tail coverts dark brown with a rich rufous-brown edging to each feather; primaries and rectrices dark slate.

The nest was placed in a horizontal fork of a mangrove overhanging the channel, 2 feet from the surface of the water. It was composed of dead mangrove sticks and twigs, and measured over all 3 feet long, 2 feet 6 inches wide, and 1 foot thick in the centre. A pair of fresh eggs was taken from this nest in the past season by Mr. Vidgen's son.

**Herodias syrmatorphorus (timoriensis).** Egret. — Frequently observed, both in the Gulf country and at Cape York.

**Notophoxyx novæ-hollandiæ.** White-fronted Heron. — Commonly met with on all the waters of the Gulf. Found nesting in March, 1910, out from the Cloncurry River, on the trees fringing several billabongs on the plains. Seen on several occasions at Cape York.

**Notophoxyx pacifica.** White-necked Heron. — Noted on several occasions in the Gulf country and at Cape York.

**Notophoxyx flavirostris.** Pied Egret. — This bird was first met with, and a specimen secured, on Gheedinia Lagoon, Cape York, on 14th November, 1911. It proved to be a female. In February, 1912, four were seen in the middle of a shallow salt-water swamp between Peak Point and Cape York. One fine male, in full breeding plumage, was secured. All efforts to find their nesting-place in the miles of mangrove and tea-tree swamp were, however, fruitless, though they must have been nesting somewhere in the neighbourhood.

**Garzetta nigripes.** — Noted on the Leichhardt River.

**Demigretta sacra.** Reef-Heron. — The Reef-Heron nests near Somerset, on Kypenny Rock and Bushy Island. On 27th February, 1911, Mr. M'Lennan flushed a white bird from a nest on Bushy Island, with a grey bird close to the nest. On 1st March, 1911, in company with Mr. Chum Jardine, he visited Kypenny and found seven nests of the Reef-Heron containing either eggs or young birds. He had



previously visited this rock in October and found several pairs nesting then. A nest containing two young birds was found on Cairncross Island on 30th June, and dozens of old nests. On the Hannibal Islands on 1st July, 1911, dozens of old nests were seen, and the birds were in hundreds—nearly all white birds, only a few odd grey ones amongst them. On the Macarthur Islands, on 30th July, 1911, a Reef-Heron's nest containing two young was found in some bushes on a coral ridge, and another containing two hard-set eggs.

Only one Reef-Heron was seen on Raine Island.

**Nycticorax caledonicus.** Nankeen Night-Heron.—Numerous along the Cloncurry and Leichhardt Rivers, flocks of from 15 to 20 or more being frequently flushed from the tea-tree. On the Macarthur Islands, near Cape York, several were noted, and there were many on Raine Island. On the 15th July, 1911, Mr. M'Lennan notes, when camped on Raine Island:—"Two young Nankeen Herons strolled round to the camp to-day, and made themselves quite at home. They could not fly, and the down was adhering to their feathers, so they must have been bred on the island. I did not notice any nests."

These birds were numerous on Cairncross Island. At Gheedinia Lagoon, Cape York, several immature birds were seen. They were also noted on the Norman River.

**Butorides stagnatilis.** Little Mangrove-Bittern.—One nest was found on Kypenny in October. On the Bird Islands these Bitterns were numerous on the 2nd July, 1911, and many of last season's nests were observed. There were also many of these birds at Cape Grenville. One nest was found on the Bird Islands on the 18th July, 1911, containing two addled eggs.

**Dupetor gouldi.** Yellow-necked Mangrove-Bittern.—This Bittern is often met with in the swamps at Cape York, where it breeds in the mangroves. The nest is usually a rough platform of sticks about 9 inches in diameter and about  $1\frac{1}{2}$  inches thick, placed in a horizontal fork of a mangrove.

On the 29th February, 1911, Mr. M'Lennan writes:—"I went over to the tea-tree and mangrove swamp behind Mud Bay, and found another Bittern's (*D. gouldi*) nest. The nest was built in a mangrove overhanging the creek and about 15 feet from the water. When I was climbing to the nest I put my hand on a carpet snake about 8 feet long; it was coiled up in a fork of the tree. I suppose it was waiting till night to grab the bird on its eggs." In an adult male taken on the 18th February, 1911, the soft parts are as follows:—Irides silvery-brown, bill blackish-brown, legs dark olive-brown. Stomach contained fish and portions of crayfish; two of the fish were 5 inches in length.

**Chenopsis atrata.** Black Swan.—Two were noted on the Big Dalgonally Lake at Byromine, on the Cloncurry River. These birds are rarities in the Gulf country.

**Anseranas melanoleuca.** Pied Goose.—In March and April, 1910, Mr. M'Lennan found many of these birds on the lakes on Sedan and Byromine, on the Cloncurry River, where they were nesting on the lignum. The nests contained from six to eleven eggs. A large flock was also met with on a chain of lagoons near the Leichhardt River.

**Nettapus pulchellus.** Green Pigmy-Goose.—This beautiful little Goose was found breeding at Byromine, one nesting hollow containing as many as eleven eggs. The birds were also noted at Cape York.

**Chlamydochen jubata.** Maned Goose (Wood-Duck).—Plentiful on the waters of the Gulf, and nesting in March, 1910, at the end of the wet season.

**Dendrocygna arcuata.** Whistling-Duck.—Numerous at Sedan and Byromine. On the 30th March, 1910, "a Whistling-Duck with seven small young ones was noted on one of the Byromine lakes."

**Dendrocygna eytoni.** Plumed Whistling-Duck.—Great numbers were observed on all the lakes and swamps about the Cloncurry River, flocks of 200 or 300 being common. They nest out on the plain, in the grass, 3 or 4 miles from water, laying as many as ten or eleven eggs. Also noted at Cape York.

**Tadorna rufigerum.** White-headed Shieldrake.—Only one seen, and that on the beach, Charo Bay, Cape York.

**Anas superciliosa.** Black Duck.—This species was met with in great numbers at Byromine and Sedan, on the Cloncurry River, where the birds were nesting freely in the hollows of the trees in and about the lakes. One nest was found in the grass at the foot of a tree. The nests contained from eight to ten eggs. At the end of March, when they were found, most of them contained hard-set eggs. This Duck was also common at Cape York, where conditions favoured their habits.

**Nettion gibberifrons.** Grey Teal.—This Duck was very numerous on the lakes at Sedan and Byromine, and nesting freely in the hollow trees. The nests contained from five to twelve eggs, the average clutch being seven or eight. Eggs were nearly all hard-set at the end of March, 1910.

**Malacorhynchus membranaceus.** Pink-eared Duck.—Found in great numbers on the Cloncurry River lakes and swamps, and were nesting at the end of March.

**Nyroca australis.** White-eyed Duck.—Numerous on the waters of the Gulf of Carpentaria. They were nesting in the hollow trees round the lakes at Byromine. They were also met with all the way down the Leichhardt River.

**Phalacrocorax carbo.** Black Cormorant.—At Sedan, on the Cloncurry River, a flock of this species was noted on a billabong.

**Phalacrocorax sulcirostris.** Little Black Cormorant.—At Byromine this species was nesting on the gutta-percha trees in the Big Dalgonally Lake, in company with *P. melanoleucus* and *Plotus novæ-hollandiæ*. One tree contained 13 nests, another 27. The clutches varied from three to six eggs, and many nests contained young birds. The species was also seen on the Leichhardt.

**Phalacrocorax melanoleucus.** Little Pied Cormorant.—Writing from Byromine, Mr. M'Lennan notes on 29th March, 1910:—"Rode to a small lake across the river, about 3 miles from the station. Found a Black-and-White Cormorants' rookery of 66 nests, built in four trees out in the lake, with clutches of three, four, and five eggs or young in each nest." On 31st March, 1910:—"Rode to the top end of the Big Dalgonally Lake. Black-and-White Cormorants were nesting in some gutta-percha trees in the lake. One tree contained four nests, another six, a third seventeen Cormorants' and three Darters' nests, a fourth three Cormorants' and one Darter's, a fifth thirty-nine nests."

On the 15th July, 1910, writing from beyond the Leichhardt River,

he notes :—" After leaving the Leichhardt I camped at a little water-hole about 7 miles from the river, on the Gregory track. It was about a mile long and from 30 to 100 yards wide, dotted with small islands thickly covered with tea-tree. There were numbers of blue and white water-lilies growing about the edge of the water-hole. After lunch I went for a walk round the water-hole, and saw an old Cormorants' rookery (*P. melanoleucus*) in the tea-tree on an island. I counted 30 nests." This species was also noted at Cape York.

**Plotus novæ-hollandiæ.** Darter.—Found breeding in company with *P. sulcirostris* and *P. melanoleucus* at Byromine. No. 1 tree contained one Darter's nest, containing four eggs ; No. 2 tree, one containing four eggs ; No. 3 tree, three nests, two with four young and one with five ; No. 4 tree, one nest with four eggs ; No. 5 tree, four nests, all with young birds. Noted the old birds disgorging food into the mouths of the young. This species was also found at Cape York.

**Sula cyanops.** Masked Gannet.—At the time of Mr. M'Lennan's visit to Raine Island, on 10th July, 1911, a few of these Gannets had selected nesting-sites, but none had laid. One egg was laid before he left on the 15th July.

**Sula piscatrix.** Red-legged Gannet.—Mr. M'Lennan found, on the 10th July, 1911, several nests with one egg in each and a few with one young bird. Great numbers of the birds were building.

**Sula fusca (sula).** Brown Gannet (Booby).—Mr. M'Lennan visited Raine Island early in July, 1911, and found this Gannet scattered all over the island, but only eight nests contained two eggs each, several contained one egg, and there were no young birds. Evidently the birds had only started nesting.

On 27th July, 1911, he visited Bramble Cay, of which visit he writes as follows :—" When at Darnley Island we heard that the natives and South Sea Islanders from there and from Murray Island were in the habit of paying weekly visits to Bramble Cay for the purpose of getting eggs and birds for food during the breeding season, and that they brought them away in boat-loads ; also that a cutter had set out for Raine Island about the same time as ourselves, but had to put back on account of bad weather, and that three boats had just left Murray Island for Raine Island. At Bramble Cay I found only two nests of the Brown Gannet containing two eggs, and three containing one egg, five nests with one young bird in each, and dozens of nests from which eggs had been taken. I also saw a great pile of skins near a heap of ashes, where the blacks had been having a feast."

**Tachypetes (Fregata) ariel.** Lesser Frigate-Bird.—Mr. M'Lennan noted six of these birds at Cape Grenville. They headed out to sea when they reached the Cape. At Raine Island, on the 9th July, 1911, he notes :—" Several colonies of Frigate-Birds were seen near the beacon. Went and had a look at the Frigate-Bird colonies. They were eight in number, of from three to thirty nests. I counted 150 nests altogether, several of which contained one egg each ; two of these were on the point of hatching. The rest of the nests contained one young bird each, in all stages of plumage, from a couple of days old to birds ready to fly. On the 27th July two birds only were noted at Bramble Cay."

**Phaëthon rubricauda.** Red-tailed Tropic-Bird.—When Dr. Dobbryn and I paid our very brief visit to Raine Island, in October, 1910, we must have overlooked the caves in which these birds are in the habit of nesting. Mr. M'Lennan's notes are as follows :—

9th July, 1911.—“Had a look for Tropic-Birds under the ledges of rock, and found three nests. The first contained a half-grown young bird, the second one egg, the nest being a shallow depression in the sand 4 feet under the rock; the third contained one small young bird not long hatched.”

10th July, 1911.—“Examined all the holes and caves round the edge of the island. The first containing a Tropic-Bird's nest with one egg was at the back of a fair-sized cave, 20 feet long, 12 feet broad, and 4 feet high. The opening of the cave was 9 feet across by 18 inches high. Another nest under a small ledge of rock contained one small young bird. Did not find any more. Crawling into the caves was not exactly a pleasant game. The air in some of them was very foul, and a match would only just burn in it, and as a rule one or two Pectoral Rails would be found in each. As I crawled into them the Rails would make a dash out, and two of them gave me such a start by striking me in the face that I tried to stick my head through the several feet of coral rock that formed the roof of the cave. Found another nest in a cave in the centre of the island. The bird was sitting on it, but had not yet laid. This bird deserted the nest without laying.

15th July, 1911.—“Went round the caves again, and found another Tropic-Bird's nest containing an egg. Saw one of these birds flying round the island; it had two long tail feathers. When on the ground these birds cannot walk—they can only shuffle along. When on the wing the feet are kept out at a slight angle from the body with fully outspread webs, and are very conspicuous.”

27th July, 1911.—“No Tropic-Birds at Bramble Cay.”

**Pelecanus conspicillatus.** Pelican.—Noted in fair numbers throughout the Gulf country, many of the water-holes and lakes containing flocks of twenty or more. All these rivers abound with fish, so that they are always assured of a good supply of food. They were frequently seen on Channel Rock, in Torres Strait. A large flock was also noticed on the swamp between Cripple Creek and Georgetown, where the Native Companions were congregating.

**Circus gouldi.** Allied Swamp-Hawk.—Noted at Peak Point, at Lockerbie, and at Bramble Cay.

**Astur cinereus.** Grey Goshawk. **Astur novæ-hollandiæ.** White Goshawk.—Mr. M'Lennan agrees with Mr. Harry Barnard in regarding the Grey and the White Goshawks as phases of the one species.\* He found it, however, very difficult to gain information as to the mating of birds of the two colours and the resultant effect on the young. Like *Astur fasciatus*, the male bird is rarely seen anywhere near the nest. Many hours were spent waiting and watching for the appearance of the male bird, and, although fourteen nests containing either young or eggs came under observation, the male was seen only once. Eight of the females were grey birds, and six white. Where the male and female were seen both were grey. Only one nest contained a young bird; it was nearly fully fledged, and was grey, the parent being also grey.

These birds began to build or repair old nests early in August, but no eggs were laid until October, the earliest record being on the 5th of that month. Nesting finished at the end of November, the only two records in December being of hard-set eggs or fully fledged

\* See *Emu*, vol. x., p. 247.

young. One autumn nest was found to contain eggs, on the 17th April. Most of the nests were placed in a horizontal fork of a Moreton Bay ash, this tree being resorted to in the case of twelve out of the fourteen records, the other two nests being in melaleucas; the average height at which they were placed was 60 feet. Many of the nests, well out on horizontal limbs, could only be reached by means of a scoop on a long rod. I cannot do better than quote Mr. M'Lennan's note to illustrate some of the difficulties a climber has to contend with who seeks to investigate the nesting of this bird:—"In a pocket off Peak Point track I found a White Goshawk's nest 60 feet up in a big Moreton Bay ash; it contained two hard-set eggs. I had a terrible time climbing this tree. It was a hard tree to climb, and when I got 30 feet up I struck myriads of small yellow ants; they got all over me—in my eyes, ears, and nose—and bit savagely, so that you can imagine what it was to go the other 30 feet and back again before getting any relief. One nest was placed in a tree in which a colony of *Calornis* had nested. During the nesting season of the Goshawk the adult young of the *Calornis* form their principal article of food, and it is probable that the nesting of the Hawk is timed to that of this Starling."

**Astur approximans.** Goshawk.—Noted on the Cloncurry and Leichhardt Rivers. At Cape York, on 11th August, 1911, when the long grass was being burned off from several of the open pockets, some Australian Goshawks and Brown Hawks were attracted to whatever might be disturbed by the fire. On 1st November, 1911, one of these birds was flushed from her nest containing two eggs. This nest was placed 70 feet up, on a horizontal limb of a Moreton Bay ash, and on his way home Mr. M'Lennan flushed another Australian Goshawk from its nest 40 feet up in a Moreton Bay ash; it contained a young bird just hatched and two chipping eggs. The eggs were very small for this bird.

**Accipiter torquatus.** Collared Sparrow-Hawk.—Seen several times on Cloncurry and Leichhardt Rivers. At Cape York, on 24th November, 1910, a nest of this species was found, containing three fully fledged young birds, in a Moreton Bay ash. The birds were not at all common.

**Erythrotriorehis radiatus.** Red Goshawk.—Noted on many occasions at both Sedan and Byromine. One that was shot for a specimen was eating a Galah at the time. This species also came under notice on the Leichhardt and Gregory Rivers.

**Uroaetus audax.** Wedge-tailed Eagle (Eagle-Hawk).—Common in the Gulf country. At Lorraine, on the Leichhardt River, Mr. M'Lennan "saw a Nankeen Heron that he had previously disturbed coming down the river at full speed with a Wedge-tailed Eagle in pursuit. The Eagle stooped when opposite him, but missed the Heron, which took refuge in the tea-tree."

At Cape York this Eagle was noted on two occasions.

**Haliaetus leucogaster.** White-bellied Sea-Eagle.—Mr. M'Lennan first met with this species at Sedan, on the Cloncurry River, early in March, and afterwards at Byromine. When camped on the Leichhardt River he made the following note:—"Heard a strange bird calling as soon as I woke, so I got the gun and proceeded to investigate, but did not succeed in locating the bird. Returned to camp, had breakfast, and then went down the river. After a while I left the

water's edge and started back through the timber, and about 100 yards from the edge of the water I heard the same call, and followed up the sound. I soon located the bird, a White-bellied Sea-Eagle, sitting beside its nest in a large river gum. It flew off as I approached, and the male flew from a tree near by. Later in the day I climbed to the nest; it contained one hard-set egg. The nest was very large, and had evidently been used and added to for several years, measuring 6 feet in depth by 8 feet in diameter; egg cavity, 2 feet across by 6 inches deep. The nest was composed of sticks and lined with green leaves, and placed in a fork at about 50 feet from the ground."

Another nest, found on the Macarthur Islands on the 2nd July, 1911, was in a mangrove at a height of 14 feet. This nest measured 9 feet by 6 feet in width, 6 feet deep, with an egg chamber 1 foot across by 9 inches deep. Other nests, mostly containing young, were found on Cairncross, Bushy, and the Bird Islands early in July. There were also several nesting-places on the mainland at Cape York.

**Haliastur leucosternus.** White-headed Sea-Eagle. — This species was observed near Burketown and on the Norman River, in the Gulf country, but seldom at Cape York.

**Haliastur spheurnus.** Whistling-Eagle. — Tolerably common on the Gulf rivers. It was nesting in March at Sedan, and several nests were found containing eggs, in July, along the Leichhardt River. Common at Cape York.

**Milvus affinis.** Allied Kite. — This species, so common in western New South Wales, is replaced in the Gulf country by the Square-tailed Kite. Only a few Allied Kites were noted by Mr. M'Lennan in the Gulf country, and an occasional one at Cape York.

**Lophoietinia isura.** Square-tailed Kite. — Quite the most plentiful of the Hawk tribe throughout the Gulf country, where dozens may be seen in the air at a time. They nest on the smaller coolibah creeks on the downs country, and seldom on the main rivers. On 23rd March, 1910, Mr. M'Lennan visited one of these creeks, and made the following note:—"Went to a water-hole about 8 miles from camp. Found four Kites' nests containing two eggs each, one with one egg, and one ready for eggs. Two old nests were also found, under one of which were seven lizards' eggs. These nests were at an average height of 12 feet from the ground."

**Gypoietinia melanosternon.** Black-breasted Buzzard. — From the notes made by Mr. M'Lennan, the Gulf country seems to be the headquarters of this fine species. He found them along all the Gulf rivers, and more than once noted as many as five females in the air at the same time. Several old nests were found in late summer and autumn, but were used only as roosting and feeding platforms. The birds evidently nest at the same time as in western New South Wales, as early in July on the Leichhardt River a bird was flushed from a nest which was newly lined with green leaves. They were noted on several occasions at Lockerbie and Paira, at Cape York.

**Elanus axillaris.** Black-shouldered Kite. — Several seen at the Brook, about 20 miles inland from Burketown.

**Falco melanogenys.** Black-cheeked Falcon. — Noted only once, on the Corella River, 25 miles west from Cloncurry.

**Falco hypoleucus.** Grey Falcon. — This fine Falcon was noted on all the Gulf rivers.



**Falco subniger.** Black Falcon. — Noted frequently in the Gulf country. 14th March, 1910. — "Saw a pair of Black Falcons examining old nests in the coolibah trees on a channel of the Gilliat, probably intending to use one of them. The birds were in splendid plumage, but too wary to admit of a close inspection." Several other pairs were seen on the Leichhardt and Gregory Rivers, but the spring is probably their nesting time.

**Falco lunulatus.** Little Falcon. — Writing from Sedan, Mr. M'Lennan sent the following notes:—24th February, 1910. — "Saw a Little Falcon trying to catch dragon-flies at the swamp. Sometimes it caught them, but more frequently missed."

31st March, 1910. — "When returning from the Big Dalgonally Lake to Byromine a Little Falcon accompanied me for some distance, catching the grasshoppers as they rose from under my horse's feet. It was very quiet, and would let me approach to within a few feet of it when perched on a tree."

4th April, 1910. — "A pair of Little Falcons at the Big Dalgonally Lake have taken possession of an old Whistling-Eagle's nest at the edge of the lake, and will probably breed there later on."

Also noted at Cape York.

**Hieracidea berigora.** Brown Hawk. — Seen on many occasions in the Gulf country and at Cape York, where the following note was made:—11th August, 1911. — "When burning off all the pockets the fires attracted a number of Brown Hawks and Australian Goshawks."

**Hieracidea occidentalis.** Striped Brown Hawk. — Noted at Corella Creek and on the Leichhardt.

10th July, 1910. — "On the Leichhardt River, 2 miles from Augustus Downs, shot a light brown Hawk. Saw a pair of these birds in a tree with a nest in it just ready for eggs."

7th July, 1910. — "On Leichhardt River saw a Black Falcon fly into a tree with a nest in it. Watched it for some time, but it did not go to the nest, so left it till later."

"Went down creek to where I had seen the Black Falcon. Flushed a bird from the nest, and climbed to it; it contained two eggs. I did not take them. A pair of Black Falcons was flying round the tree while I was at the nest."

11th July, 1910. — "Went down to creek where I had seen the Black Falcons about a nest. Flushed a light brown Hawk from the nest, which still contained two eggs."

**Cerchneis cenchroides.** Nankeen Kestrel. — A common species throughout the Gulf, and occasional at Cape York.

**Pandion leucocephalus.** White-headed Osprey (Fish-Hawk). — A nest found on the Hannibal Islands on the 1st July, 1911, contained three eggs. The bird was flushed from the nest, which was 40 feet from the ground in a horizontal fork of a large leafless tree. The nest, which was composed of sticks, seaweed, and pieces of pumice, measured 3 feet across by 2 feet deep, with an egg chamber 1 foot across by 6 inches deep.

On the Macarthur Islands another nest was found on the same date, containing a fully fledged young bird. This nest was on a small mangrove, 6 feet from the ground; it was 4 feet in diameter and 3 feet deep, composed of sticks, coral, pumice, and seaweed. Another nest, on the Bird Islands, found on the 2nd July, was built on a small

mangrove on the reef, and was unoccupied. On another island of this group a nest contained a fully fledged young bird. This nest was in a mangrove at about 15 feet from the ground, and composed of the same materials, 3 feet across by 2 feet deep. Two old nests were within a few hundred yards of this, one of which looked as though it was being prepared for nesting by another pair of birds. On the return journey, 17th July, this nest was still unoccupied, but another further along the reef was found to contain a fully fledged young bird. On visiting the Macarthur Islands two pairs were found building—one pair, the parents of the young bird noted on the 1st, in a small mangrove about 100 yards from the old nest; the second pair on a peculiarly shaped log that had been washed ashore. This nest was about half-built.

Visiting Cairncross Island on the 20th July, an Osprey's nest containing one small young bird was found on a mangrove growing on a long coral ridge amongst a dense growth of stunted trees. A pair of these birds was often seen about Cape York. The colouring of the soft parts in a fully fledged young bird was as follows:—Iris yellow; bill black, cere pale greenish-blue; legs greenish-white. The stomach contained fish. A female measured 18 inches in the flesh.

**Ninox ocellata.** Marbled Owl.—Mr. M'Lennan heard the note of this species when on his way down the Cloncurry River, and afterwards found it to be quite common on all the creeks and rivers that he visited in the Gulf country. The note is much the same as that of *N. boobook* of more southern latitudes. The specimens obtained averaged from 12 to 12 $\frac{3}{4}$  inches in length; irides yellow, bill blackish-brown. The stomach contained mostly beetles and grasshoppers. They are spring breeders.

**Ninox macgillivrayi.\*** Macgillivray Owl.—A smaller and lighter Owl was obtained at Cape York, mostly at from 22 to 28 miles down the telegraph line and on the Jardine River. The note of this species is much softer than that of either *N. boobook* or *N. ocellata*. Its habits are in all respects similar: Iris yellow; bill horn colour, tip black; feet pale bluish-slate. The stomach contained large brown beetles in one specimen, and in another were found the bones and fur of a small rat.

**Ninox connivens.** Winking Owl.—This bird was heard calling by Mr. M'Lennan at his first camp on the Cloncurry River, and was afterwards found to be numerous throughout the Gulf country. At Sedan, on 22nd February, 1910, he imitated the call, when the bird flew to a tree at the back of his camp, and was shot and skinned. The call of this bird sounded like "Hoo, wuk, wuk," uttered in a fairly low key. The iris was yellow; bill black, cere greenish-yellow; feet light orange. The stomach contained grasshoppers and beetles.

On the 9th March a pair was shot and skinned. The female measured 16 inches and the male 17 inches. The stomach contents were the same as in previous specimen. Seven worm-like parasites were found under the skin between the eyes, each measuring 2 $\frac{1}{4}$  inches x  $\frac{1}{32}$  inch.

When camped on the Leichhardt, 14 miles from Caloola Station, Mr. M'Lennan made the following note:—"13th June, 1910.—Heard

\*Vide Mathews, *Austral Avian Record*, vol. i., p. 194.

a most peculiar call about 11 p.m. in the timber about 200 yards from the camp, so strolled out to investigate, and found it was uttered by a bird perched on a dry tree. It proved to be a Winking Owl. The call, as near as I can give it, was 'Karr, karr, karr, karr, koowook.' The stomach contained a half-digested bat and some grasshoppers."

"14th June, 1910.—Heard call like that of a Wood-Duck again last night; located the bird, and found it to be a Winking Owl."

"29th June, 1910.—On Leichhardt River, 20 miles beyond Augustus Downs, heard Winking Owls calling through the night. At dusk the call is "Hoo, wuk, wuk," and later on through the night "Karr, karr," and another call, "Chirr, chirr," in a very high key. They were heard for the last time where the Gregory divides into two channels, about 20 miles from Burketown. Skins of this bird were submitted to Mr. North, of the Australian Museum, who pronounced them to be indistinguishable from specimens of *N. connivens* obtained in New South Wales. Mr. Mathews considers them to be identical with the Northern Territory birds.

The breeding season is in the spring months.

**Ninox peninsularis.** Cape York Owl.—This species is very distinct, being shorter and darker in colour than the preceding. When camped in the scrub at Cape York Mr. M'Lennan made the following note:—20th December, 1910.—"*Ninox peninsularis* came along again to-night, and when I imitated its call it became wild and flew at me several times, coming to within 18 inches of my head. This occurred on several nights. The call was a repeated 'Kow, kow.' This assumed quite a comical aspect when the bird, perched on the ridge of my tent, looked down at me with an angry expression and uttered the word 'Kow.'"

The first nest containing eggs was found on the 6th August, 1911, at Lockerbie. From then the nesting season extended until the end of September. In this time fifteen nests were examined, containing either eggs or young. These nests were in large, open hollows, usually in big tea-trees (*Melaleuca*) at an average height of about 40 feet from the ground. The hollows averaged in depth about 2 feet, and were of an average diameter of about a foot. Many were bedded with a good layer of finely-chipped rotten wood. The mate of the sitting bird was usually found roosting in the branches of the same tree, or one near by. The clutch consisted of two eggs—in one instance only were three young birds found in a hollow. These were at different stages of growth. The youngest seemed to be about four days old, the next six, and the oldest about eight. The oldest one had a few feathers showing, eyes widely open; bill black, cere yellowish-green; legs and feet greenish-white. The smallest was covered with white down and had its eyes only slightly open. The bottom of this hollow was covered with the remains of Fruit-Pigeons. One hollow found in possession of a pair of Owls had evidently been the subject of a dispute, as it contained a broken egg of the Owl and a broken egg-shell of a Little White Cockatoo. Mr. M'Lennan had previously seen the Little White Cockatoos about the hollow, but the Owls were the ultimate possessors. That they were able to dispossess more formidable antagonists was shown in one case where their eggs were found in the freshly-lined hollow of *Microglossus aterrimus*. On two occasions Little White Cockatoos had their nesting-hollow in the same tree as a pair of Owls.

The soft parts of this Owl are as follows :—Cere greenish, bill horn colour, feet yellow.

***Strix delicatula*.** Delicate Owl.—Frequently met with on the Gulf rivers and creeks, and also on one occasion at Cape York.

***Trichoglossus septentrionalis*.** Northern Blue-bellied Lorikeet.—The only pair of "Blue Mountains" noted in the Gulf flew past the Brook Hotel, 20 miles from Burketown. At Cape York they were very numerous in all the open pockets, feeding on the blossoming eucalypts and other trees, and nesting freely in the spring in the hollows of tea-tree, Moreton Bay ash, or bloodwood, usually at a height of about 50 feet. Nesting operations commenced in August and continued until January. A single nest was, however, found in April. The invariable clutch was two. Thirty nests were examined by Mr. M'Lennan containing either young in all stages or eggs.

***Ptilosclera versicolor*.** Varied Lorikeet.—Noted at Sedan, in flocks, feeding on the flowering box, in February, 1910, and later in the flowering tea-tree along the river at Byromine. Later again, in March, April, May, and June, they were noted through to the Leichhardt, where they were very numerous on the river-flats, which are covered with bloodwood, wattles similar to the Victorian black wattle, silver box, and bauhinia. They are probably spring breeders, as no nests were found in these months.

***Cyclopsitta maccoyi*.** Blue-faced Lorileet.—When camped a few miles from the Jardine River, on the Cape York Peninsula, a pair of small Lorikeets was noted feeding high up in a flowering bloodwood near the camp. One was shot, but fell into some tea-tree brush and could not be found. Mr. M'Lennan is sure that they were of this species.

***Microglossus aterrimus*.** Palm-Cockatoo.—This fine Cockatoo is a common object in the scrubs and open pockets on the upper end of the Cape York Peninsula. In the 1911 season Mr. M'Lennan inspected numerous nesting-hollows, seventeen of which contained either the single egg laid by the Cockatoo or a young bird. A large hollow is required by the bird, consequently a big tree or dead stump is usually chosen to nest in. The hollows were at an average height of 35 feet from the ground, and were of an average depth of 4 feet, with an internal diameter at the nest and at the mouth of the hollow of from 10 inches to 2 feet. Usually, however, the entrance is smaller than the bottom of the hollow. The egg is always placed on a bed of splintered twigs; these are carried to the nest in long pieces, and there splintered by the bird. This bedding may be several feet in thickness in some hollows and only a few inches in others. It serves to keep the nest clean, the excreta, which is very oily, and the scaling of the feathers filtering through.

The eggs vary a good deal in size and shape, the largest specimen measuring  $2\frac{1}{8}$  inches  $\times$   $1\frac{1}{8}$  inches, an average of ten being  $1\frac{7}{8}$  inches  $\times$   $1\frac{1}{8}$  inches. A rounded specimen measured  $1\frac{3}{4}$  inches  $\times$   $1\frac{1}{2}$  inches; this was also the smallest.

Nests were found containing eggs and young birds as early as the 6th and 8th of August respectively, and the last on the 22nd of January; August, September, October, and November being the principal nesting months, so that most of the young are reared before the commencement of the wet season. One nest visited on the 8th August, 1911, contained a newly hatched young bird. This was

again inspected on the 1st September, when it was found to be about half-grown, with all its feathers encased in sheaths from 1 to 2 inches in length, giving it the appearance of a porcupine. This young bird was taken from the nest on the 18th September, 1911. The feathers were then just breaking out of their sheaths, half of them being clear; cheeks white, with a faint yellowish tint. On the 1st October the feathers were almost free of sheathing, of a beautiful glossy black, breast and abdomen barred, and cheeks beginning to assume a pinkish tinge.

Another young bird was first found in its hollow on the 13th August, 1911; it was then about 10 days old. On the 2nd of September it was a little larger than the other bird when inspected on the 1st, and the feathers were a little longer, but still encased in sheaths. This bird was taken from the nest on the 1st October, when it was nearly fully fledged, and in Mr. M'Lennan's opinion would have left the nest in about another 10 or 12 days. The feathers were black, without gloss; lower breast barred with yellowish; abdomen and a few feathers under the wing barred with narrow bars of sulphur-yellow, two or three bars to each feather; cheeks pinkish-red; upper mandible, basal half blackish-brown, terminal half whitish; lower mandible whitish, with brown streaks at the base; legs and feet greyish-black. Both birds did well on crushed boiled maize. These two birds were reared until May on crushed corn and wheat, when they took it whole; they were very fond of peanuts. They were sent away to Sydney in perfect health, and arrived safely, but one sickened and died not long after its arrival; the other is still alive and well, in the possession of Dr. D'Ombraïn, who has made many interesting notes on the manners of his pet.

On several occasions parties of from five to seven of these birds were noted at play in a big tea or other tree in an open pocket, going through a whole series of evolutions and antics. Sometimes a pair would take up a position on a spout, and the others would all try to displace them by flying at them from all sides, and this would often be kept up for more than half an hour.

In the open forest these birds were found to feed principally upon the very hard nut or stone of the nonda plum or weeba-tree, and in the scrub on another very hard nut which had no local name.

**Calyptorhynchus macrorhynchus.** Great-billed Cockatoo.—A black Cockatoo frequently noted on the Gulf rivers seems to be referable to this species. The iris is dark brown, bill dull leaden colour, legs black. The gizzard contained seeds.

**Cacatua queenslandica.** Little White Cockatoo.—This bird was also fairly common on the Gulf rivers. One nest was examined on the Leichhardt River on 18th June, 1910, and found to contain two newly-hatched young. At Cape York this species is also common, nesting in the early spring months in trees growing in the open pockets. The earliest record of a nest containing eggs was on the 9th August, 1911. This nest was in a hollow in a Moreton Bay ash in which a pair of Owls (*N. peninsularis*) had reared a brood in the previous season. In all, about thirty nests were noted in August and the early part of September. One note, made on the 7th September, 1911, gives an idea of the difficulties the birds have to contend with in rearing their young:—"Had a look at nest of White Cockatoo that contained one egg on 27th August. The egg was still there, so also was an 8-foot carpet snake. The Cockatoo

was inside the snake. The tree, a Moreton Bay ash, was 2 feet 6 inches in diameter, and the hollow about 30 feet from the ground."

This bird, unlike its southern variation, does not feed on the ground, and is never seen in flocks.

**Cacatua sanguinea.** Blood-stained Cockatoo.—This Cockatoo, which is generally regarded now as synonymous with *C. gymnopsis*, is a common bird in the Gulf country, and was noted frequently on the Cloncurry, Leichhardt, and Gregory Rivers. Several nesting-hollows were examined in February and March, 1910, containing either eggs or young birds. At Sedan, on the Cloncurry, each nest contained either two eggs or young.

At Normanton these birds were seen in large flocks in the winter.

**Cacatua roseicapilla.** Rose-breasted Cockatoo (Galah).—Common throughout the Gulf country, nests being found in February, March, and April.

**Calopsitta novæ-hollandiæ.** Cockatoo-Parrot.—Noted in February and March on the Cloncurry River. On the Leichhardt River, in June, they were very numerous, large flocks coming to water in company with *Melopsittacus undulatus*.

**Ptistes erythropterus.** Red-winged Parrot.—Many of these birds seen on the Cloncurry and Leichhardt Rivers, and also at Cape York.

**Platycercus cyanogenys.** Blue-cheeked Parrot.—Mr. M'Lennan made his first acquaintance with this species at Lockerbie, Cape York, when in company with Mr. Barnard, in January, 1911. He afterwards found them to be more plentiful on the Jardine River, where several specimens were obtained. One nest, found in May, contained newly-hatched young birds. From anatomical appearances of specimens obtained in March, this would be the usual nesting season for this bird. Like the other broad-tail Parrakeets, it is a seed-eater, and its habits are much the same as those of the more southern members of the genus. The colouring of the soft parts is as follows:—Irides brown, bill bluish-white, legs dark grey.

**Platycercus browni.** Sooty Parrot.—When at Burketown, on the Gulf of Carpentaria, Mr. M'Lennan examined a pair of caged Parrakeets which answered in general to this species, but differed in having a broad red band across the chest. They were young birds, and the owner affirmed that in the adult birds the band was much brighter. They came from the Northern Territory, Queensland border.

**Barnardius macgillivrayi.** Cloncurry Parrot.—This species, well named the Cloncurry Parrot, ranges to the south and west of that town, being numerous on the Diamantina River, getting fewer in numbers to the north of Cloncurry. Going down the river, it was not found after 36 miles had been covered. It was noted on Corella Creek, about 28 miles west of Cloncurry, and again on the Leichhardt, Caloola Station being its northern limit on that river. It was not met with on the lower part of the Gregory, but would probably be found on the head waters of this fine perennial stream. The manager of Caloola Station, Mr. Macpherson, who had one of these birds in a cage, told Mr. M'Lennan that he obtained it on the Diamantina seven years previously.

Irides dark reddish-brown, bill bluish-white, legs lead colour. The crop usually contained grass-seed, and the gizzard grass-seed and



gravel (ironstone in the vicinity of Cloncurry). They are spring breeders.

**Melopsittacus undulatus.** Warbling Grass-Parrot (Betcherrygah).—Seen at Sedan, on the Cloncurry River, in February and March, flying north. In June they were breeding freely along the Leichhardt River. It is interesting to find from my Broken Hill notes that these birds were seen flying north about a month earlier than the date of Mr. M'Lennan's note at Sedan. Do these birds, after rearing their young, fly to North Queensland to breed again in June? They usually put in an appearance again in western New South Wales in September, and start nesting operations towards the end of that month.

**Podargus papuensis.** Papuan Frogmouth.—Fairly common at Cape York, where it is met with both in open forest and scrub. When in the latter it usually roosts low down. It utters a weird and ghostly "laugh"—a rapid "Hoo-hoo-hoo"—at times. It also has a call like *P. strigoides*, a series of "Ooms" repeated for half an hour at a time and at night. Nesting starts in October and continues until January. Only one egg is laid, and there are great variations in size and shape.

On one occasion, when he was climbing to a nest containing a young bird, the parent birds kept flying round and snapping their bills within a few feet of Mr. M'Lennan's head, and one kept uttering the laughing note previously heard at night.

Irides orange, bill yellowish-olive, legs olive-yellow. Stomach contents usually beetles.

In September numbers of these birds were seen flying over Thursday Island, making for the mainland.

**Podargus brachypterus.** Short-winged Frogmouth.—Several skins of a small Podargus were sent from the Gulf country by Mr. M'Lennan. They were referred to this species by Mr. A. J. North, to whom they were submitted. This species ranges over the whole of central, western, and north-western Australia, Northern Territory, and western and north-western Queensland.

Irides are yellow, bill and legs light olive-brown. Stomach contained beetles and grasshoppers.

Mr. M'Lennan heard a call which he attributed to this bird; it was like "Koo loo, koo loo," repeated from twelve to twenty times in succession.

**Podargus phalaenoides.** Freckled Frogmouth.—Skins of a small Podargus from the Jardine River, Cape York Peninsula, collected in open forest, were submitted to Mr. North, who is of opinion that they closely approach Gould's description of this species. Gould's specimens came from North-West Australia.

Irides, outer circle golden-brown, inner orange-yellow; bill dark brown; legs pale olive. Stomach contained beetles.

They were found frequenting the open forest country. Mr. Wheatley found several nests containing each a pair of eggs in the open country bordering the Batavia and Ducie Rivers during the past season.

**Podargus marmoratus.** Marbled Frogmouth.—This small Podargus frequents the scrubs, where it has ample opportunity for concealment, consequently it appears to be a rarer bird than it really is. It is doubtful whether its nest and egg or eggs have yet been obtained.

Irides yellow, bill pale yellowish-green, legs pale yellow. Stomach contents usually beetles. Total length in flesh, 15 inches.

Mr. Wheatley obtained nests of this *Podargus* in the scrub country bordering the Ducie River; each nest contained three eggs.

***Ægotheles novæ-hollandiæ.*** Owlet Nightjar.—Flushed from their roosting hollows on several occasions in the Gulf country—one grey and the others showing a general rufous colouring, such a variation as also occurs in *Podargus papuensis* and *P. marmoratus*.

***Eurystomus pacificus.*** Australian Roller.—Dollar-Birds were plentiful both in the Gulf country, in February and March, 1910, and at Cape York, in March, 1912.

***Alcyon pulchra.*** Purple Kingfisher.—First met with on the Gregory River, where a specimen (a male) was secured in July.

Irides dark brown, bill black with cream-coloured tip, legs scarlet. Stomach contents, small fish.

Other specimens were obtained on the creeks at Cape York.

On 17th February, 1911, the following note was made:—"Went to big swamp behind Charo mangroves, and searched through it. Flushed a Kingfisher (*A. pulchra*) from its nest in a mass of earth adhering to the roots of a fallen tea-tree near the edge of the swamp; it contained five fresh eggs. The tunnel was 6 inches long, oval in shape,  $1\frac{3}{4}$  inches across by  $1\frac{1}{4}$  deep; egg chamber 5 inches across by 4 in depth."

After this they were found to be fairly plentiful along the fresh-water creeks, and several old nesting-places were noted.

***Alcyon pusilla.*** Little Kingfisher.—This little bird is found in the mangrove swamps along the coast, frequenting the creeks that run through them; and as these swamps are also the haunt of the crocodile (*C. porosus*), a search for nests, often wading waist-deep in water, is no sinecure. Two nests were found by Mr. M'Lennan, both in February, 1911, an account of which has already appeared in *The Emu*.\* Each contained a full clutch of five fresh eggs. The total length of the bird in the flesh is  $4\frac{3}{4}$  inches; irides brown, bill black, legs blackish-brown. Stomach contents, small fish.

The call is a faint whistle.

***Syma flavirostris.*** Yellow-billed Kingfisher.—Mr. M'Lennan's first note on this bird was made on 2nd December, 1910:—"Noted *Syma flavirostris* for the first time; it is a beautiful bird. Saw another later in the day, and heard it calling; it has a mournful call, very difficult to locate. The nest is usually in a termites' nest in a tree in scrub or in open forest just at the edge of the scrub. They call only in the breeding season, and the call is almost continual when there is a nest. They resent any interference with or examination of a nest, and usually abandon one that has been examined."

Another note, made on 10th January, 1912:—"Flushed a *Syma flavirostris* from its hollow in a termites' nest 25 feet from the ground at the edge of the scrub; it contained three hard-set eggs. The birds attacked me when I was taking the eggs, and struck my hand four times, once drawing blood." Several nests were found containing young birds, but never more than three young or eggs in any nest.

In the flesh the adult bird measures  $7\frac{1}{2}$  inches; irides brown, bill yellow with the terminal half of the culmen brownish-black, legs yellow. Stomach usually contained small lizards and beetles.

**Dacelo minor.** Lesser Brown Kingfisher.—This smaller "Laughing Jackass" was found by Mr. M'Lennan to be fairly common on the Jardine River, frequenting the tall messmate and bloodwood forest. It has much the same habits as the better-known *D. gigas*. The note is similar, but not so loud. The birds' old hollows were noted in the termites' nests in trees at a height of from 10 to 30 feet from the ground. From a number of post-mortem examinations principal food seemed to consist of beetles and grasshoppers. The iris is greyish-brown, upper mandible black, lower dirty white with sides of base brown, legs pale olive. Mr. Wheatley found this species nesting in termites' nests high up in the trees near the Batavia River; each nest contained four eggs.

**Dacelo leachi.** Leach Kingfisher.—Fairly common on the Cloncurry, and numerous on the Leichhardt. At Cape York they were also common, frequenting and nesting in the trees in open forest. For nesting purposes they usually choose a hollow spout, whereas *D. minor* usually burrows into a termites' nest in a tree; on one occasion, however, Mr. M'Lennan found a nesting-hole of *D. leachi* in a termites' nest. At Cape York most of the nests found contained only two eggs or one young bird. No doubt the extreme and unusual dryness of the season accounted for the small clutches, as I have noted the same to occur in Victoria in respect to *D. gigas*.

**Haleyon macleayi.** Forest Kingfisher.—Noted all the way down the Cloncurry River.

At Cape York they were numerous in the open forest all the year round, nesting in termites' nests on the trees at an average height of from 30 to 40 feet. The usual nesting time is from October until the end of the year. A full clutch consists of five eggs, though a smaller number is often found. At Lockerbie, when he was examining a nest containing four heavily incubated eggs, the bird attacked Mr. M'Lennan savagely.

**Haleyon pyrrhopygius.** Red-backed Kingfisher.—Found both at Cloncurry and at Sedan. At the latter place the following note was made, 21st February, 1910:—"Found Red-backed Kingfisher's nest with three eggs, and another containing five young birds. The latter looked like little porcupines, all the feathers being encased in sheaths. Body feathers about  $\frac{1}{2}$  inch long, primaries 2 inches, rectrices  $1\frac{1}{2}$  inches. I got one of them out and was going to kill it for a skin, but it commenced to bite my thumb and try to swallow it, and it looked so fearless that I had to put it back in the nest."

They were common also on the Leichhardt River.

**Haleyon sanetus.** Sacred Kingfisher.—Mr. M'Lennan did not come across this species in the Gulf country, though I had previously obtained skins from Cloncurry. At Cape York Mr. M'Lennan first noted them as numerous in the mangroves on 19th March, 1911. Of three specimens obtained, all proved to be young birds. They were also numerous on the Hannibal, Macarthur, and Bird Islands in June and July, 1911, and again in the Mud Bay mangroves in February and March.

**Haleyon sordidus.** Mangrove Kingfisher.—This fine species, the largest of the smaller Kingfishers, is migratory. Appearing first at Cape York in September, it soon becomes quite numerous in the mangroves, where it is always to be found, and never in open forest or scrub. It feeds upon the smaller crustaceans, such as crabs, cray-

fish, or shrimps. Its note is similar to that of *H. sanctus*, but much louder. The length in the flesh of an adult male is 10 inches, of a female  $9\frac{3}{4}$  inches; irides brown, bill black, legs dark lead colour. No nests were found.

**Tanysiptera sylvia.** White-tailed Kingfisher.—This species puts in its first appearance at the end of October or beginning of November, at or just before the commencement of the wet season, and soon starts nesting operations. For this purpose a low termites' nest on the ground, in the scrub, is chosen, and a hole, with nesting chamber at the end, drilled into it. Occasionally a termites' nest in a tree is utilized, up to a height of 10 feet. The termites' nest chosen is always an inhabited one, never a dead mound. During the nesting season this bird's trilling call may be heard all day long in the scrubs, from which it rarely emerges. The clutch of eggs is invariably three.

**Merops ornatus.** Bee-eater.—Mr. M'Lennan's notes on the movements of this bird are interesting when taken in connection with mine at Broken Hill. He writes. (13th February, 1910):—"At Sedan a large flock of Bee-eaters passed over the camp at dusk, going north." My note on 24th January, 1910, at Broken Hill, is:—"Several flocks of Bee-eaters passing over the town, going north. Many young birds, still being fed by their parents, were with the flocks." This migration occurs at about this time every year. It would appear that they go on to the Malay Archipelago and New Guinea, where they were noted by the B.O.U. expedition as being numerous after the month of April, though not met with previous to that date. It seems, however, that a few winter in North Queensland, as Mr. M'Lennan noted them at Caloola, beyond the Leichhardt, in June, and obtained specimens further down the same river on 1st July. He also saw them at Cape Grenville in July of the following year. At Cape York they congregated in great numbers on 11th February, 1912, and then, gathering together, resumed their northward flight across the Strait.

**Eurostopodus albogularis.** White-throated Nightjar.—Noted in the ranges about Cloncurry, where it was fairly common. Also seen at Paira, Cape York, and at Cape Grenville.

**Caprimulgus macrurus.** Large-tailed Nightjar.—Met with at Lockerbie, where it frequented some patches of black tea-tree scrub along the coast between the true scrub and the mangroves. One nest was obtained at Paira, in September, by Mr. Vidgen's boy.

**Cypselus pacificus.** White-rumped Swift.—Mr. M'Lennan made notes at Sedan on 11th February, 1910, that probably applied to this bird:—"Saw a large flight of Swifts passing over the tent at 7 p.m., flying north. Could not identify them, as it was too dark."

14th February, 1910.—"Another flight of Swifts passed over, going north, at dusk."

8th April, 1910.—"Saw some Swifts flying south-west this afternoon—Australian Swifts, I think they were, as I distinctly saw the white rump. One of the men on the station told me that they usually put in an appearance after a steady fall of rain."

At Cape York the earliest note is 5th November, 1911:—"Australian Swifts noted flying south."

16th November, 1911.—"Lockerbie. Australian Swifts flying south to-day."

26th December, 1911.—“Saw a great flock of Swifts circling over the house a little before sundown.”

4th March, 1912.—“Paira. A large flock of Australian Swifts noted flying in a southerly direction.”

31st March, 1912.—“Lockerbie. A large flock of Australian Swifts hawking over the forest country all day.”

17th April, 1912.—“Lockerbie. A few Australian Swifts hawking over open forest country near the house at sunset.”

**Cuculus optatus.** Australian Cuckoo.—This Cuckoo was on several occasions noted at Cape York in the summer months. It was never there in numbers; it was exceedingly shy, and so difficult of approach that no specimens were obtained.”

**Cuculus pallidus.** Pallid Cuckoo.—A young fully fledged specimen was obtained at Sedan on 15th February, 1910. It was being fed by a pair of Red-throated Honey-eaters (*Conopophila rufogularis*). The colouring of the soft parts in this young bird was:—Irides light stone colour, legs and feet leaden. Stomach contents, large grasshoppers and portions of beetles.

On the 16th February another young bird was seen being fed by a pair of Yellow-throated Miners (*M. flavigula*); it was a much older bird than the first, but the colouring of the soft parts was the same.

It is interesting to note that both the small Red-throated Honey-eater and the larger Miner fed these young Cuckoos on the usual food of the Cuckoo family, and not on their own. Even the larger foster-parents rarely eat such large insects.

This species was not noted at Cape York, though common in the Gulf.

**Cacomantis variolosus.** Square-tailed Cuckoo.—The Square-tailed Cuckoo, or a smaller variation of it, was common at Cape York, frequenting the swamps and open pockets, and being rarely met with in the scrubs. The tea-tree swamps behind the mangroves are resorted to by the small Honey-eater, *Glyciphila modesta*, for breeding purposes. In numbers of their nests Mr. M'Lennan found one or more eggs of a Cuckoo—pure white, sparingly spotted with fine specks of brown, very like yet distinguishable in shape and lustre from the eggs of the Honey-eater. Such an egg has been attributed to *Cacomantis castaneiventris*, a bird never seen out of the scrub and never by any chance in the mangrove or tea-tree swamps, where these eggs were found. On this evidence it is fair to assume that the eggs found in the nests of *Glyciphila modesta* are those of this smaller form of *C. variolosus*. This type of egg was also found in a nest of *Ptilotis analoga*, in scrub, and also in a nest of *Malurus amabilis*. At the Jardine River a young Cuckoo was obtained as a specimen which, though differing remarkably from the adult bird, was probably the young of *C. variolosus*. It was being fed by a pair of *Glyciphila modesta*, and was taken in tea-tree country. On one occasion two of these Honey-eaters were noticed chasing a Square-tailed Cuckoo out of a swamp where they had their nest. Although these Cuckoos were so numerous, no eggs were found which bore the least resemblance to the eggs of the Square-tailed Cuckoo of more southern latitudes.

A male of this northern form measures in the flesh  $8\frac{3}{4}$  inches; irides reddish-brown, eyelids pale greenish-grey; upper mandible blackish-brown, lower a shade lighter; legs pale olive, soles of feet yellow. Stomach contents, hairy caterpillars, beetles, and other insects.

**Cacomantis castaneiventris.** Chestnut-breasted Cuckoo.—This bird finds its living in the thick tropical scrubs of the Peninsula, and was not seen out of them, and never in the mangroves or tea-tree swamps. It is a beautiful bird, with its glossy dark slaty-blue upper surface, rich chestnut under-parts, and bright yellow eyelids. It feeds on beetles and other insects. Its nesting habits require further elucidation. Mr. M'Lennan is certain that the eggs found in the nests of *Glyciphila modesta* are not those of this Cuckoo. The only Cuckoo eggs, apart from those of *C. russata*, found in the scrub were those found in the nests of *Ptilotis analoga* and *Malurus amabilis*, and they are indistinguishable from those found in the nests of *Glyciphila modesta*, and *Cacomantis variolosus* is occasionally found in the scrub.

An average adult male measures in the flesh  $8\frac{1}{4}$  inches to  $8\frac{3}{4}$  inches; irides, inner circle brown, outer yellow; eyelids bright yellow; bill black, basal half of lower mandible yellowish-brown; legs and feet bright yellow.

**Chalcococcyx basalis.** Narrow-billed Bronze-Cuckoo.—From Sedan Mr. M'Lennan sent a clutch of eggs of *Malurus assimilis* containing an egg of this Cuckoo. I had previously to his visit obtained a skin from the Cloncurry district.

**Chalcococcyx plagusus.** Bronze-Cuckoo.—In April, 1911, Mr. M'Lennan obtained two skins of this bird on the Jardine River, Cape York. The birds were not numerous, and those obtained were both females. Irides greyish-brown, eyelids pale green, bill black, legs dark or blackish-green. Stomach contents, caterpillars.

**Chalcococcyx russata.** Rufous-throated Bronze-Cuckoo.—This, the most numerous of the small Cuckoos at Cape York, is easily recognized in the flesh by its bright scarlet irides and eyelids. It frequents for the most part the open forest and mangroves, though occasionally met with in the scrub. It was also noted on Bushy Island, near Cairncross Island, and on the Sir Charles Hardy group, in June and July, and was prevalent throughout the summer and autumn on the mainland. The usual foster-parents are the Gerygones, *G. personata* and *G. magnirostris*. On one occasion Mr. M'Lennan saw one of these Cuckoos following a pair of *G. magnirostris* in the mangroves, where the latter species usually nests. This attention was resented by the Gerygones, who, after repeated assaults on the Cuckoo, succeeded in driving it away.

In an adult male the soft parts are:—Irides scarlet, eyelids bright scarlet, bill brownish-black, legs dark olive-brown. In a less mature bird the irides were pinkish-brown.

Any eggs of a dark chocolate colour taken from nests of *Gerygone personata* or *G. magnirostris* are sure to be those of this bird:

**Eudynamis cyanocephala.** Koel.—First met with on the Cloncurry River early in February. One young bird which was being fed by a pair of Yellow-throated Miners, and was obtained for a specimen, was, in its barred plumage, even more beautiful than the adult of either sex. In this bird the irides were light stone colour, feet and legs lead colour. Stomach contents, grasshoppers and beetles.

In a young male about to assume the adult plumage the irides were orange; upper mandible pale brownish-horn, lower pale greenish-horn; legs greenish-slate. In an adult male—irides ruby-scarlet, bare skin round eye black, bill pale green, legs greenish-lead. Stomach



contents, wild fruits. In an adult female—irides ruby-red; bill pale olive-green, base of culmen blackish; legs dark olive-green. Stomach also contained wild fruits.

**Seythrops novæ-hollandiæ.** Channelbill.—These birds, known in the Gulf country as Storm-Birds, on account of their first appearing with the thunderstorms which usher in the wet season, were common during the summer months. On 8th February, 1910, Mr. M'Lennan noted eight in one tree. On 12th March, 1910, he made the following note:—"Struck a channel of the Gilliat River, and found a Short-billed Crow's (*C. bennetti*) nest containing five young Channelbills almost ready to leave the nest. I took two for specimens. They were all in series—there seemed to be about two days between each of them, and one would be led to believe that the eggs had been laid by the same bird." As two young Channelbills have often been seen by several reliable observers being fed by Crows or other foster-parents, it seems certain that they do not eject one another from the nest. At the same time it is equally certain that they eject the progeny of their foster-parents. How is it that such nestlings are able to distinguish between their own kith and kin and those of the foster-parent, especially, as seems to have been the case with the five young Cuckoos, where they were hatched out in succession? Unfortunately, as darkness overtook Mr. M'Lennan on this occasion before he could regain his camp, and he had to spend the night under a tree, the steamy weather spoiled the skins, but a description was made of one, a male:—"Head fawn colour; back, tail, and wing coverts mottled fawn, grey, and brown; tail and wing feathers barred; under surface dirty white. Irides brown, bill reddish-brown. No trace of a channel on the bill. Legs lead colour. Stomach contents, caterpillars, beetles, and grasshoppers."

Another Crow's nest contained one young Channelbill, and a third an egg of the Channelbill with one of the Crow.

The loud, screeching call of this species could be heard at any hour of the day or night.

At Cape York they were seen only occasionally.

**Pitta simillima.** Lesser Pitta.—This smaller northern form is fairly common in the Cape York scrubs from July until the end of March. They nest in the wet season, from December until March, building a domed nest, usually on the ground at the base of a tree or by a fallen log. The nest is generally constructed of twigs and lined with leaves and fine fibres. Three eggs are the usual clutch. In the nesting season their call is frequently heard; it consists of a three-note whistle, and another sharp "Keow" repeated at intervals. They will always answer their call if imitated, and come to one. They may often be seen sitting in trees and calling. They spend a good portion of their time on the ground, where they find their usual food, which consists of beetles and other insects. When building they usually find their material on the ground, and have been seen hopping along to the nest with leaves.

Colouring of soft parts:—In adult male—irides brown, bill black, legs fleshy-straw colour. Length in flesh, from tip of bill to tip of tail, 7 inches; to the toes, 9 inches.

Not noted in vicinity of Batavia and Ducie Rivers.

**Pitta mackloti.** Blue-breasted Pitta.—Found during summer months only at Cape York, when they are common.

The note is a mournful whistle of two notes. The birds will always answer a call, and may often be seen sitting in a tree and calling.

The nest is usually placed on a stump or in a mass of vines at from 2 to 8 feet from the ground. It is domed, composed of twigs and leaves, and lined with fine black, hair-like vegetable fibres.

An adult male measures in the flesh, from tip of bill to tip of tail,  $7\frac{1}{4}$  inches; to toes,  $8\frac{3}{4}$  inches. Irides dark brown, bill black, legs fleshy-slate. Stomach contents, beetles.

Common in Batavia and Ducie River scrubs.

**Hirundo neoxena.** Welcome Swallow.—Noted both at Cape York and in the Gulf country.

**Cheramœca leucosternum.** White-backed Swallow.—Found at Sedan in March, and on the Leichhardt River in June.

**Petrochelidon nigricans.** Tree-Martin.—Observed occasionally at Cape York and in the Gulf country, not nesting at any time.

**Petrochelidon ariel.** Fairy Martin.—Frequently noted in Gulf country. On a creek off the Leichhardt River, 2 miles from Augustus Downs, a large colony of Fairy Martins was engaged in nesting operations under an overhanging rock on the side of the creek. The Leichhardt at this point flows over a bed of rock, and is bare of timber.

**Micrœca pallida.** Pale Flycatcher.—Numerous all the way down the Cloncurry River, in the trees round the lakes and in those lining subsidiary channels. They were also numerous on both the Leichhardt and Gregory Rivers, even as far as Burketown. Not seen at Cape York, where the following species takes its place.

**Micrœca flavigaster.** Yellow-breasted Flycatcher.—Fairly common at Cape York, frequenting open forest country all the year round, where its tiny nest, containing one egg, is placed on some high horizontal branch. Its habits in general are similar to those of the southern members of the genus. During the nesting season, which extends from July until the end of the year, the male may often be heard whistling in the topmost branches of the forest trees.

**Melanodryas bicolor.** Hooded Robin.—A form intermediate between this and *M. picata* is fairly common in the Gulf country, where it was several times noted on the Cloncurry, Corella, and Leichhardt Rivers, frequenting either box or gidgee country.

**Smicrornis flavesens.** Yellow-tinted Tree-Tit.—Common in the Gulf country, where it frequents the box flats, finding a living in the leaves of low box trees. Nests were found in February, March, and April, commonly placed at the end of a drooping branch. The birds usually went about in small flocks of five to six. On the Leichhardt, where conditions were so favourable to bird life, these birds were especially numerous.

**Gerygone albogularis.** White-throated Fly-eater.—Noted first about 25 miles from Cairns, in the scrub. At Sedan they were numerous, especially in the gidgee. Also seen on the Leichhardt and Gregory Rivers. Iris dark orange or orange-scarlet; bill, feet, and legs black. This species was also heard on the Jardine River.

**Gerygone magnirostris.** Large-billed Fly-eater.—First observed at Cape York, where they find a living all the year round in the mangroves, feeding amongst the leaves. They nest in these trees, and

the nest is usually placed in close proximity to that of a large hornet which builds a comb nest. Nests were found from September until March, and to obtain them it is usually necessary to row round the coast and up the channels in the mangrove swamps. This bird is a common foster-parent of the Cuckoo (*C. russata*).

The nests are usually constructed of fine, soft rootlets, and lined with feathers. "Crossed a small creek in mangroves and found a nest of *G. magnirostris* containing one egg of the owner and one of Cuckoo. Had to wade out into the creek a few yards to get the nest. When I was putting the eggs into my bag a crocodile a few yards down the creek emitted a roar."

**Gerygone personata.** Black-throated Fly-eater.—Also met with at Cape York, where it frequents the tropical scrub, and is rarely seen in the mangroves. Usually found feeding in company with *Piezorhynchus albiventris*, *Machærorhynchus flaviventer*, *Arses lorealis*, *Malurus amabilis*, *Sericornis minimus*, and *Rhipidura dryas*. The nest is usually placed near the papery nest of a small yellow hornet or wasp, sometimes near that of the large hornet, and occasionally away from any hornet's nest.

The young birds have four peculiar head-plumes, which they have the power of erecting and quivering vigorously. When one looks into a nest these head-plumes are put into motion by the birds, and remind one of a number of caterpillars waving about. The gape of the young is a rich yellow colour.

The Cuckoo *Chalcococcyx russata* also makes use of this species as a foster-parent.

Nests were found from September to May, and, as usual with this genus, contained two eggs.

This note was made from observations taken in a dry season. During the past season, 1912-13, three-egg clutches were more often found.

**Heteromyias cinereifrons.** Ashy-fronted Robin.—Only noted at Atherton, in November, 1909, when it was nesting.

**Pœcilodryas cerviniventris.** Buff-sided Shrike-Robin.—First met with when the Gregory River was reached. This, then, is its eastern limit. It usually feeds on the ground, in the short grass, and when disturbed makes for the pandanus growing along the river-banks, where it is usually to be found at other times, and in which it doubtless nests. The call of this bird is a piping whistle repeated four times very loudly; it is something like the call-note of a *Platycercus*. Irides brown, bill black, legs brownish-black.

**Pœcilodryas superciliosa.** White-browed Shrike-Robin.—Only one bird seen, and secured for identification. It proved to be an immature female, and was obtained at the Jardine River. "A sprightly little bird. When on a limb, erects its tail and droops its wings after the manner of the Fantails. Feeds on small beetles and other insects. Irides dark brown, bill black, legs fleshy-brown."

**Pœcilodryas pulverulentus.** White-tailed Shrike-Robin.—Observed first at Cape York. It is a denizen of the mangroves, and is locally known as the Mangrove Robin—an excellent and distinctive vernacular name for it. It may be seen in fair numbers by anyone who has the hardihood to search amongst the mangroves and the patience to watch and wait for it when its call is heard. This, a short, low whistle, is frequently heard in the breeding season, and if

imitated will bring the bird to you. The female does most of the nest-building, the male usually feeding close by. The nests are placed in a dead or living fork of a mangrove at from 8 to 14 feet from the water, and are made to assimilate in colour and character of exterior to the limb they are on, so that they are very difficult to detect. When flushed from the nest the female drops low down, flies right away, and does not return for some considerable time. The eggs, two in number, vary considerably in colouration, the ground colour in some being a light green and in others a dark olive-green.

**Pœcillodryas albigularis.** White-throated Shrike-Robin.—Not a common species at Cape York, only one pair being noted, in a big patch of scrub about  $4\frac{1}{2}$  miles from Lockerbie. This pair frequented the same locality for three months before nesting. They are very quiet birds, and only once in the three months did Mr. M'Lennan hear their call, which was a short, harsh "Chee-chee-chee." "When I was watching them they would often fly to within a few feet of where I was sitting and cling motionless to the side of a tree, a habit identical with that of the Yellow-breasted Shrike-Robin of Victoria. The nest was placed in a lawyer vine, about 10 feet from the ground, and contained two eggs. I sat down some distance away and waited for the birds to return. After waiting for about half an hour I saw one of the birds fly to a tree about 10 feet from the nest. It sat there for about ten minutes, then flew to within a couple of feet of the nest. As soon as I moved it dropped from the nest and fluttered away through the undergrowth."

Measurements of soft parts in a female specimen:—Length,  $4\frac{1}{2}$  inches; irides greyish-brown; bill black, base of lower mandible transparent white; legs pale yellow. Stomach contents, small beetles and other insects.

**Mattingleya inornata.** Plain-coloured Shrike-Robin.—Under this heading we must now put a bird which was originally described as an *Eopsaltria* by Dr. Ramsay in the "Proceedings of the Zoological Society of London," 1874, p. 604. The type is in the Australian Museum, the habitat being given as the scrubs to the north of the Endeavour River, but the locality on the label of the type is Cardwell. The former locality is more likely to be the correct one, as the bird is fairly common in the Cape York scrubs, and even more so on the Pascoe River. I had it pointed out to me by Mr. M'Lennan in the scrub at Somerset in 1910, where we watched and listened to it for some time. According to Mr. M'Lennan, it is never to be seen near the ground, always finding its living amongst the tangle of vegetation up in the scrub trees, and in this situation it was that we saw it disporting itself. It has a Robin-like note and all the ways of this group, and not in the least resembles any of the *Pachycephalinae*, under which group it has been placed by Dr. Hartert, who has described it as *Pachycephala peninsulæ*. Mr. Mathews created a new genus for it in *Mattingleya* and as it is obviously neither a *Pachycephala* nor an *Eopsaltria* it will have to take its place under this new genus.\* However, I must disagree with Mr. Mathews in still calling it a Thickhead. Its nest and eggs, when found, will help towards settling the points in dispute. Eggs have been sent down from Cape York as those of *P. peninsulæ*; these are, however, in most instances doubtless those of *P. falcata*, the only Thickhead in that region.

\* Vide Matthews, *Austral Avian Record*, vol. ii., p. 11.

**Rhipidura albiscapa.** White-shafted Fantail.—First met with in April at the Jardine River, Cape York, where a few were seen, and on the 5th of May, 1912, one was seen near Peak Point. Very rare.

**Rhipidura albicauda.** White-tailed Fantail.—Noted in the Gulf country, on the Leichhardt River, where specimens were secured. Irides brown, bill and legs black.

Another specimen was secured on the Gregory River.

**Rhipidura dryas** (?). Wood-Fantail.—First observed on the Gregory River at first camp, and thence all the way down. Irides brown, bill brownish-black, legs dark slaty-brown.

This bird occurs at Cape York in fair numbers, but does not breed, leaving by the end of November or beginning of December, to re-appear in February, staying two months, and disappearing in April. This applies to the seasons 1911 and 1912. This species is more probably *R. rufifrons*, *R. dryas* not appearing east of the Gulf.

**Rhipidura isura.** Northern Fantail.—Numerous on the Gregory River all the way down to Burketown, this fine, large Fantail does not occur at Cape York, and probably not on the eastern coast at all. During the two years that Mr. M'Lennan was at Cape York he saw no sign of it.

♂, irides brown, bill and legs black.

**Rhipidura motacilloides.** Black-and-White Fantail. — Numerous throughout the Gulf country, but only once noted at Cape York.

**Seisura inquieta.** Restless Flycatcher.—A Restless Flycatcher found throughout the Gulf country is intermediate between this species and *S. nana*. It was numerous on the Leichhardt and Gregory Rivers. In the male the irides are dark brown, bill and legs black, the female differing only in the colouring of the lower mandible, which is leaden.

**Myiagra conceinna.** Blue Flycatcher.—Two specimens were secured on the Leichhardt River, where they were feeding about the tea-tree. They were not very plentiful.

At Cape York this bird, which has been separated by Mr. Mathews as *M. yorki*, is a common species all the year round, breeding in the open forest, mostly on the bloodwoods, and also in the mangroves, in the summer months.

"Flushed *Dacelo leachi* from hollow in a bloodwood. A Blue Flycatcher had its nest in the same tree; it contained the usual clutch of three eggs. The bird sat on the nest till I touched her."

**Myiagra latirostris.** Broad-billed Flycatcher.—Found always in the mangroves at Cape York, where they find an abundance of insect life amongst the leaves. They usually place their nest on a dead twig about 2 feet above high-water mark over a channel in the mangroves. When building one of the birds was always near the nest. The male would sit in some chosen position, calling all the time that the female was away gathering material. When she returned he would flit away on the same quest.

**Machærirhynchus flaviventer.** Boat-billed Flycatcher. — Always found in the scrub, where it finds its living amongst the leaves and branchlets from within 2 feet of the ground to the tops of the scrub trees, snapping up the insects which cling to the leaves. Whilst building the male is constantly calling, at the same time lending aid in the construction of the nest. Although the male

whistles when searching for food, a more persistent whistling is usually an indication that a nest is being built. They nest during the wet months of the year, from November until March, and usually lay two eggs.

**Arses lorealis.** Frill-necked Flycatcher.—Found at Cape York. It seems to search the stems of vines and trunks of trees for its insect food, hopping up round a big tree trunk and searching the crevices in the bark. The nest, thin and net-like, is usually suspended by the rim from two vines or from a loop of vine, and placed at from 8 to 20 feet from the ground. It is a bird of the scrub, and nests in the wet months. In a male the irides are brown, bare skin round eye bright blue, bill horn colour, legs dark leaden.

**Piezorhynchus nitidus.** Shining Flycatcher.—Mostly found in mangroves and tea-tree swamps, only occasionally in the scrub. It has a very pretty whistling call, and will always come when the note is imitated. Finds its food usually amongst the roots and lower branches of the mangroves. The stomach contents of those examined consisted of beetles and other insects.

The nest is usually built in an upright fork of mangrove or tea-tree, usually about 3 feet from the water. The male bird shares in the task of incubating the eggs. They nest in the summer months. In a male the irides are dark brown, bill leaden-blue with tip and cutting edges black, legs black.

**Monarcha albiventer.** White-bellied Flycatcher.—This northern form of *P. gouldi* is fairly common at Cape York in a good season. It is always found in the scrub, feeding from low down to the upper branches of the vegetation. It also nests in the wet months of the summer. In a dry season, like that of 1911-12, very few nest. Iris dark brown, bill horn colour, legs dark leaden-blue.

**Monarcha leucotis.** White-eared Flycatcher.—Only one of these birds was seen during Mr. M'Lennan's stay at Cape York. ♂, length  $5\frac{3}{4}$  inches; iris dark brown; upper mandible black; lower mandible, tip black and the rest bluish-white; legs greyish-black. This is no doubt its northern limit.

**Monarcha carinata.** Black-faced Flycatcher.—A number of these Flycatchers arrived at Cape York in February, 1911. They seemed to come from the south, stayed for about two months, and then disappeared, so that they can be regarded only as visitors to this region. ♂, irides brown, bill horn colour, legs horn colour. Stomach contents, insects.

**Monarcha canescens.** Pearly Flycatcher.—Only one noted at Cape York during Mr. M'Lennan's stay there. ♀, irides dark brown; bill horn colour, black tip; lower mandible dark horn colour; legs horn colour. Stomach contents, insects. This is probably a Papuan bird, only occasionally visiting Cape York.

**Pteropodocys phasianella.** Ground Cuckoo-Shrike.—Very plentiful throughout the Gulf country, where in parties of from three to six they may often be seen feeding on the ground. The flight is undulating, like that of *Graucalus melanops*. One nest only was found, near the Cloncurry River; it was placed in a horizontal fork of a gidgee at about 14 feet from the ground, and contained three young birds.

**Graucalus melanops.** Black-faced Cuckoo-Shrike. — Numerous



throughout the Gulf country, and during the winter months only at Cape York, where they assemble in large flocks prior to their departure. After September only an occasional bird is noted.

**Graucalus hypoleucus.** White-bellied Cuckoo-Shrike.—Seen only at Cape York, where they were most numerous down towards the Jardine River, and were present all the year round. They nest in the early summer months, in open forest. Iris brown, bill and legs black. Stomach contents, large winged insects and caterpillars.

**Edoliisoma jardinii.** Great Caterpillar-eater.—Frequents the open forest country at Cape York, where it is fairly common.

**Campephaga humeralis.** White-shouldered Caterpillar-eater.—Common in the Gulf country, but only occasional at Cape York.

**Campephaga leucomela.** Pied Caterpillar-eater.—Fairly numerous all the year round at Cape York, in the scrub, open forest, and mangroves. One nest was found, early in February, built on the topmost branch of a mangrove at 50 feet from the ground. The nest is a very small structure, hardly more than sufficing to hold the single egg.

**Drymodes superciliaris.** Eastern Scrub-Robin.—Fairly numerous in the scrub at Cape York, where its note, a long-drawn-out whistle, may often be heard in the breeding season. It finds its living on the ground, where it hops about quietly, turning over leaves and other *débris* in search of hidden insect life. When they are nesting the male will at once put in an appearance when its call is imitated, and becomes very excited. The female does all the nest-building and alone engages in the task of incubating the eggs.

22nd December, 1910.—“Watched a pair of Scrub-Robins for some time engaged in building a nest; it was about half-built. The female selects a leaf and then hops along to the nest. Male follows her about, but does not do any work. It is a difficult job watching these birds, as one cannot see far through the undergrowth, and you have to get down on your hands and knees and crawl about after them.”

28th December, 1910.—“Went out to Scrub-Robin's nest previously noted building. It came on to rain heavily after I had got some distance from the camp, and made things pretty miserable. The nest contained two eggs. It was built in the side of a small hollow in the ground, composed outwardly of a thick wall of twigs, some of which were  $\frac{3}{8}$ -inch thick and from 3 to 8 inches in length, and lined with dead leaves and fine fibres. Egg chamber  $3\frac{1}{2}$  inches deep and 3 inches in diameter. Whole nest was 9 inches across and  $4\frac{1}{2}$  inches high on one side and 3 inches on the other.”

♂, iris brown, bill black, legs fleshy-straw colour. Stomach contents, beetles.

**Pomatorhinus intermedius** (Mathews).—A form intermediate between *P. rubeculus* and *P. temporalis*, with a leaning towards the former, is found in the Gulf country in fair numbers, and, according to Mr. Mathews, is identical with the Northern Territory bird to which he has given the above sub-specific title.\* It usually lays two eggs.

Length of adult male, 10 inches; irides light stone, bill and legs

\*Mathews, “Reference-list,” p. 335.

black. In the various stomachs examined were beetles, spiders, grasshoppers, and chrysalides.

The Cape York bird, which Mr. M'Lennan found to be fairly common in the vicinity of the Jardine River, more nearly approaches *P. temporalis* in type. On one of its old nests was a nest containing eggs of *Entomyza harterti*, a form which differs only slightly from *E. cyanotis*.

**Cinclorhamphus rufescens.** Rufous Song-Lark.—This species was on several occasions noted in the Gulf country, but was never very numerous.

**Ephthianura crocea.** Yellow-breasted Bush-Chat.—When camped at Sedan Mr. M'Lennan procured a specimen of this species. Only a few pairs were noted. ♂, length  $4\frac{1}{2}$  inches; irides rich cream colour, bill black, legs dark brown. Stomach contents, small insects and caterpillars.

**Aerocephalus australis.** Australian Reed-Warbler —Noted at Sedan, in the lignum, on Dalgonally Lake.

**Cisticola alexandriæ.\***—Mr. Mathews informs me that the Cape York bird is the same as that described by him from the Northern Territory. It certainly is very different from the southern bird. It is common both in the Gulf country and at Cape York, but absent from the latter locality in the winter.

**Megalurus gramineus.** Little Grass-Bird.—Observed at Sedan.

**Megalurus galactotes.** Tawny Grass-Bird.—Noted first on the Leichhardt, 2 miles beyond Augustus Downs, in the cane-grass growing along the side of a water-hole. Mr. M'Lennan states that he "sat for some time listening to their delightful song, with its rich and varied notes." ♂, irides brown; bill, upper mandible brown, lower dirty white; legs very pale brown. Stomach contained small insects and beetles.

**Acanthiza chrysorrhoa.** Yellow-tailed Tit-Warbler. —Frequent throughout the Gulf country. Many nests noted, at the end of drooping gum branchlets.

**Serieornis minimus.** Little Scrub-Wren.—Numerous in the Cape York scrubs, where they fossick for food amongst the dead leaves and *débris* on the ground or amongst the masses of fallen vines and trees. They are easily approached. Average length of male, about  $4\frac{1}{2}$  inches; irides deep orange-scarlet; upper mandible pale brown, lower brownish-white. Stomach contents, insects.

**Malurus cyanotus.** White-winged Wren-Warbler.—Mr. M'Lennan came across a few of these very small Wren-Warblers when camped at Sedan. They were found amongst the lignum bordering a water-channel at some distance from the camp. They were very shy birds and only a pair was secured for skins.

♂, irides brown, bill black, legs blackish-brown. ♀, irides brown, bill and legs brown. Stomach contents in both, small insects.

**Malurus assimilis.** Purple-backed Wren-Warbler.—This Wren-Warbler was found to be fairly common throughout the Gulf country. On the 28th of March a nest was found in rather an unusual position for this bird, being placed amongst the leaves of a tea-tree at about

\* Mathews, "Reference-list," p. 343.

5 feet from the ground. It was composed outwardly of fine bark, strips of grass, and skeleton leaves, and lined with fine rootlets and horsehair. It contained three eggs, one of which was a Cuckoo's (*Chalcococcyx basalis*.) In Western New South Wales this species builds on or very close to the ground. Mr. M'Lennan found it frequenting the tea-tree along all the rivers from the Cloncurry to the Brook, near Burketown.

**Malurus amabilis.** Lovely Wren-Warbler.—This species represents the Chestnut-shouldered group at Cape York. The female, being blue, differs markedly from the females of the other *Maluri*. It frequents the scrubs, where it is quite common, and is rarely seen out of them, and then only when crossing from one patch of scrub to another. The largest flock noted consisted of one fully plumaged and two immature males and four females. In the breeding season three birds—a male and two females—and occasionally only the pair, were met with. Their call note is very feeble, and can only be heard a few feet away. The nest is usually placed in a small, thorny bush within a foot of the ground, and one found on the 7th March contained a Cuckoo's egg similar to those found in the nests of *Glyciphila modesta*. Nesting takes place during the wet season.

♂, irides black, bill black, legs bluish-white. Stomach contents, insects. Total length,  $4\frac{3}{4}$  inches.

**Malurus coronatus.** Purple-crowned Wren-Warbler.—Mr. M'Lennan first met with this fine, large *Malurus* on the Leichhardt River, 25 miles beyond Caloola Station, where it inhabited the cane-grass growing near the water's edge. This river may be regarded as marking its eastern range. It was common in the cane-grass and pandanus along the Gregory River. Its call note is very loud, and like that of *Sericornis frontalis* of southern parts. When he was standing still this bird came within 4 feet of Mr. M'Lennan, and showed no sign of fear.

♂, irides brown, bill black, legs light slate.

**Malurus cruentatus.** Red-backed Wren-Warbler.—Mr. M'Lennan obtained his first nest of this species at Cairns on the 1st December, 1909, where he found the birds rather plentiful. He next met with them at Sedan on 20th February, 1910, in a long Mitchell and cane-grass swamp. A male was secured in brown plumage with a crimson dorsal patch. These birds probably assume their full breeding dress in the spring, rear a brood, lose their livery, and then, with the revival of all vegetable and insect life which follows the summer rains, breed again in their ordinary brown dress. This male was found to have enlarged sexual organs. Irides blackish, bill dark brown, legs reddish-brown.

The accompanying females were found to be tending a young bird that had only recently left the nest. Another pair was found building a nest, which was afterwards deserted.

At Byromine, on the 10th April, Mr. M'Lennan was rather puzzled with these birds when he found them mated and nesting with both male and female alike in plain brown plumage. He found two nests containing eggs and secured the pair of birds from the second one. Both were brown.

♂ had one abnormally enlarged testicle. Irides brown, bill brown, legs brown. ♀, irides brown, bill and legs light brown. Stomach contents in both, small grasshoppers and other insects.

Another pair was found building, and specimens were secured: The breeding male was also in plain brown dress.

They were again noted at Cloncurry and on the Leichhardt, where they were very plentiful, and all brown, in June. Writing from Augustus Downs, on the Leichhardt, under date 4th July, Mr. M'Lennan states:—"One thing noticed regarding these birds is that the three lots that I found breeding were three pairs only—not a male and two or three females as with other species; but now I am finding them in small flocks." Until after this date Mr. M'Lennan was of opinion that the plain brown Wren-Warblers were a species apart from any other, in which the males were always brown. However, he changed his opinion at this camp, where he found these Wrens in large flocks, as many as 30 in some of them. From one of these flocks he shot two specimens, one of which had a few crimson feathers on the back and a few black ones round the eyes and on the head, showing that the birds were *M. cruentatus* changing their winter plumage for the early spring breeding.

♂, testes normal; irides brown, bill light brown, legs pale brown.

On 20th July, on the Gregory River, another male with changing plumage was shot. ♂, testes normal, iris brown, bill black, legs brownish-flesh colour.

They were last seen near Burketown on the 25th July, still in flocks.

At Cape York this species frequents the open pockets, and is never found in the scrub. Specimens were secured in January.

I have compared fully plumaged males from Cairns, Cape York, and the Gulf country, and can find little, if any, difference.

**Artamus leucogaster.** White-rumped Wood-Swallow.—Noted at Green Island and on a nest in a tree in the main street, Cairns, on 18th November, 1909; at Sedan in February, 1910, and frequently at Cape York. One nested in an old nest of *Chlamydera cerviniventris*, another in a cleft of a dead mangrove.

**Artamus superciliosus.** White-browed Wood-Swallow.—Only once seen—in the Gulf country, on the Gregory River, in July.

**Artamus personatus.** Masked Wood-Swallow.—First noted in the Gulf on 8th June, when on the Leichhardt road: On the 12th June a large flock passed the camp at sundown, flying north. Again seen on the Gregory River on 22nd July, 1910.

Great numbers of this migratory species appeared in western New South Wales early in August, 1910, and continued to arrive until well on into September. Very few, however, remained to nest.

**Artamus melanops.** Black-faced Wood-Swallow.—Frequently noted throughout the Gulf country. This species is not migratory.

**Artamus minor.** Little Wood-Swallow.—Fairly common throughout the Gulf country.

**Colluricincla brunnea.** Brown Shrike-Thrush.—Mr. M'Lennan collected two specimens in the Gulf country, both of which Mr. Mathews refers to this species. They differ very considerably from one another, and until a larger series of skins is examined and more observations made in a state of nature I would not consider the matter settled. Mr. North also refers both these to *C. brunnea*. They are fairly common in the Gulf country, where conditions favour their habits.

At Cape York there is one large *Colluricincla* and one small. The latter is easily placed as *C. rufigaster*. The former is in dispute.

Mr. North refers it also to *C. brunnea*, and states that it does not agree with the type of *C. superciliosa*, Masters, the latter bird having a broad white eyebrow and being very distinct from my specimens. Mr. Mathews refers my Cape York specimens to *C. superciliosa*. If that be correct, then the type skin must be abnormal, as my skins do not show any white eyebrow, or, at any rate, no very distinct one; and, again, the female of *C. brunnea* is supposed to have a white eyebrow. Mr. M'Lennan met with only the one species at Cape York in the course of two years, and it is not likely that he could overlook so conspicuous a bird if any other such existed there. Skins were obtained at Paira, Peak Point, and on the Jardine River, all of the same species, and several nests were found containing either young birds or eggs.

***Colluricincla rufigaster*.** Rufous Shrike-Thrush.—Common in the scrubs at Cape York, where its nests are frequently found.

***Grallina picata*.** Pied Grallina (Magpie-Lark).—Common throughout the Gulf country, but only occasional at Cape York.

***Gymnorhina tibicen*.** Black-backed Magpie.—Common in the Gulf country. Not noted at Cape York. This Gulf bird is smaller than southern birds, and has been separated by Mr. Mathews under the sub-specific name *terra-regina* ("Reference-list," p. 372).

***Cracticus quoyi*.** Black Butcher-Bird.—Common at Cape York, where their association with the Manucode, first noted by Mr. H. Barnard, has been amply confirmed by Mr. M'Lennan, as will be seen in the notes on the latter bird. Towards one another the attitude of these species seems to be one of armed neutrality, the Manucode finding a certain amount of protection from being in the neighbourhood of so warlike a bird, but at the same time keeping a watchful eye upon its own eggs or callow young when the ally is near.

***Cracticus nigrogularis*.** Black-throated Butcher-Bird.—Common throughout the Gulf country. A fawn-coloured bird was frequently noted, probably one of the plumage changes towards maturity:

♂, irides brown, bill black at tip and rest horn colour, legs horn colour. Stomach contents, beetles and grasshoppers. ♂, juvenile, irides light brown, bill blackish, legs greenish-horn colour.

***Cracticus mentalis*.** Black-backed Butcher-Bird.—Mr. M'Lennan found this small Butcher-Bird very numerous at Cape York between the 16-mile point on the telegraph line and the Jardine River, where several old nests were noted. Several nests were obtained by Mr. Wheatley on the Batavia.

♂, irides dark brown; bill, basal half light horn colour, rest black; legs greyish-black. ♀, irides dark brown; bill, basal half light horn colour, rest black; legs slaty colour. Stomach contents in both, beetles. Length in flesh, 9 $\frac{7}{8}$  inches.

***Pachycephala melanura*.** Black-tailed Whistler.—When Mr. M'Lennan was on Cairncross Island, in July, 1911, he observed a yellow-breasted Whistler, which was probably this species.

***Pachycephala falcata*.** Northern Whistler.—Common throughout the Gulf country and also at Cape York.

***Neositta mortoni*.** Morton Tree-runner.—This is the common Sittella throughout the Gulf country, and will probably be found to be identical with *N. magnirostris* of Ingram, described from a cattle

station a little westward of the Gulf country. Two sets of eggs were taken by my nephew prior to Mr. M'Lennan's visit.

♂, irides yellow, bill yellow with black tip, legs yellow. Stomach contents, small beetles and other insects. ♀, similar in all respects to the male. ♂, juvenile, irides yellow; bill brown at tip, yellow at base; legs yellow.

**Neositta striata.** Striated Tree-runner.—This is the Cape York bird. It is more frequent down the telegraph line from the 16-mile point to the Jardine River, in the tall bloodwood and stringy-bark forest.

5th March, 1911.—“♂, testes enlarged, irides yellow; bill yellow, tip black; legs yellow. Stomach contents, small beetles and other insects.”

2nd May, 1911.—“♀, ovary and oviduct much enlarged; irides and eyelids bright yellow; bill yellow, tip black; legs bright sulphur-yellow.”

**Climacteris melanura.** Black-tailed Tree-creeper.—Numerous throughout the Gulf country, especially on river-flats of the Leichhardt, which are clothed in bloodwood, wattle, baubinia, and silver box. A spring breeder.

♂, irides dark brown, bill and legs blackish-brown. Stomach contents, small beetles, ants, and other insects.

**Zosterops albiventris.** Pale-bellied White-eye.—A pair of these birds was secured on Cairncross Island. They were numerous there, and also on Wednesday Island, York Island, Darnley, and other of the Torres Strait islands. “When at anchor off York Island the singing of these birds seemed to come from some hundreds of throats.”

♂, testes normal; length,  $4\frac{1}{4}$  inches; iris silvery-brown; upper mandible black, tip of lower mandible black, rest greyish-black; legs bluish-grey. Stomach contents, fruit juices and insects.

**Zosterops gulliveri.** Golden White-eye.—Numerous in the mangroves along the Norman River. One pair was obtained on the Leichhardt River, and another pair near Burketown.

♂, testes normal; irides yellowish-brown; bill, upper mandible brown, lower mandible horn colour; legs dark slate. Stomach contents, small insects.

Differs but little from *Z. lutea*.

**Dieæum hirundinaceum.** Mistletoe-Bird.—Common in the Gulf country and at Cape York.

**Pardalotus rubricatus.** Red-browed Pardalote.—Numerous throughout the Gulf country, and on the Jardine River, on the Cape York Peninsula.

When camped at Sedan several banks where they nested in company with *P. uropygialis* were examined. One contained five burrows of *P. rubricatus* and seven of *P. uropygialis*, another five of *P. uropygialis* and three of *P. rubricatus*. Still another contained 26 burrows, 18 being those of *P. uropygialis* and eight of *P. rubricatus*. The birds were at these burrows on the 10th February, but no completed clutches were found until the 25th March. On the Leichhardt a Red-browed Pardalote was flushed from its burrow, containing a nearly completed nest, on the 16th June. Both this species and *P. uropygialis* from the Gulf country are paler in colour than those from the Jardine River.



**Pardalotus uropygialis.** Chestnut-rumped Pardalote.—Numerous in the Gulf country and at the Jardine River.

**Cyrtostomus frenatus.** Sun-Bird.—Very plentiful at Cape York.

**Melithreptus albogularis.** White-throated Honey-eater.—First met with in the Gulf country at the Lorraine camp, on the Leichhardt River, on 3rd July, 1910. The call was a single piping whistle like that of a Tree-creeper.

♂, testes enlarged; irides reddish-brown; bare skin over the eye white, with a faint greenish tinge; bill black; legs olive-brown. Stomach contents, small insects.

This bird was again found at Cape York, but Mr. M'Lennan is of opinion that the bird from this locality shows points of difference. The note is different. Noted at Paira, Jardine River, and at Cape Grenville. Two skins were obtained at Paira, both females.

♀, ovary normal; irides orange-scarlet, eyelids white, bill black, legs fleshy-brown. Stomach contents, honey and small insects.

**Melithreptus lætior.** Golden-backed Honey-eater.—First observed in the Gulf country, at Sedan, where specimens were secured on 23rd October.

♂, testes enlarged; irides brown; skin round the eye bright green, with a tinge of yellow; bill black; legs brownish-yellow. Stomach contents, portions of flowers.

On the 25th of the same month this species was noted feeding fully fledged young. They were plentiful at this camp and at Cloncurry, where they were seen again feeding young birds on the 30th April.

In another specimen, secured on the Leichhardt River, the soft parts were as follows:—♂, testes enlarged; irides dark brown, naked skin above eye greenish-yellow, bill brownish-black; legs pale yellowish brown, feet lighter. Stomach contents, honey and insects.

On the 23rd July, on the Gregory River, about 20 miles from Burketown, this bird was found building, the nest being half-finished, placed in thick foliage at the end of a horizontal branch of a bloodwood, and about 15 feet from the ground. It appeared to be built of fine shreds of bark bound together with spider web and cocoons, and was suspended by the rim.

**Myzomela sanguinolenta.** Sanguineous Honey-eater.—At Cairns, on the 17th November, 1909, they were numerous in the mangroves.

**Myzomela erythrocephala.** Red-headed Honey-eater.—Noted at Cape York—very few in 1910-11, but became numerous afterwards. They also frequent the mangroves. In a male taken in March, which appears to be the breeding time, the soft parts are:—♂, testes enlarged; length,  $4\frac{7}{8}$  inches; irides brown, bill black, legs dark slate. Stomach contents, honey and small insects.

**Myzomela nigra.** Black Honey-eater.—One specimen was obtained at Sedan. I had previously obtained skins from the neighbourhood of Cloncurry.

**Myzomela pectoralis.** Banded Honey-eater.—First met with on the Leichhardt River, 25 miles beyond Caloola Station, where a number were feeding in a patch of bloodwood. Three specimens were obtained on 16th June, 1910.

♂, testes enlarged; irides dark brown, bill black, legs dark slate. Stomach contents, honey, insects, and portions of bloodwood flowers

♂, juvenile, bill dark brown, gape bright yellow, otherwise similar to the adult.

They were also noted at Cape York, on the Jardine River, and near Paira. In the latter locality they were feeding on the blossoms of the black tea-tree. One specimen was obtained here on 27th March, 1912.

♂, testes enlarged; length,  $4\frac{7}{8}$  inches; irides reddish-brown, bill and legs black. Stomach contents, honey and portions of flowers.

**Myzomela obscura.** Dusky Honey-eater.—First seen in numbers at Cairns, and later on at Cape York, where they were very plentiful in the mangroves, scrub, and forest. These birds vary a good deal in size. One nest was found, on 14th May, 1912, containing two hard-set eggs.

♂, testes enlarged; irides brown, bill black, legs slate colour. Stomach contents, insects. Obtained 23rd February, 1911.

♀, ovary normal; iris light brown, bill brownish-black, legs lead colour. Stomach contents, honey and small insects. Obtained on 27th December, 1910.

**Glyciphila fasciata.** White-breasted Honey-eater.—Met with only on the Gregory River, at the Brook Hotel, 20 miles from Burketown, where they were found feeding in the blossoming tea-tree.

♂, testes small; irides light stone colour, bill brown, legs pale fleshy-brown.

Not seen at Cape York.

**Glyciphila modesta.** Brown-backed Honey-eater.—A common Honey-eater at Cape York, where it is mostly found in the mangrove and tea-tree swamps, and in these it breeds freely from November until April. It is also of interest as it is usually the chosen foster-parent of a Cuckoo, presumably the local variety of the Brush-Cuckoo. The Cuckoo eggs found in this Honey-eater's nest are unlike those of the Brush-Cuckoo from southern Australia, and are like those described as the eggs of the Chestnut-breasted Cuckoo. The Chestnut-breasted Cuckoo is, however, an inhabitant of the tropical scrub, and not of the mangrove or tea-tree swamps, where this Honey-eater nests. In these swamps, however, the Brush-Cuckoo is fairly common, and no Cuckoo egg other than the one described has been found there that could be attributed to this Cuckoo.

Many nests of this Honey-eater were obtained containing a Cuckoo's egg, with either one or two eggs of the parent bird. Some contained two Cuckoo eggs; others were deserted nests containing a single Cuckoo egg. In one old nest a dead and decomposed young Cuckoo was found, too far gone to be recognizable. In one nest were found two not long hatched young birds, one of which was a Cuckoo. This nest Mr. M'Lennan was unable to visit again until after the young one had flown. In another nest, in which a brood had been reared, were the feathers of a young Cuckoo. These were gathered, but were lost in a subsequent scramble through scrub.

On one occasion a pair of *G. modesta* was seen chasing a Brush-Cuckoo out of the swamp.

From all this evidence one would naturally come to the conclusion that the Cuckoo eggs found in the nests of *G. modesta* were those of the Brush-Cuckoo, but it cannot be conclusively proved until the hatching of a young bird from one of the eggs is watched and its various stages of development noted.

**Conopophila rufogularis.** Rufous-breasted Honey-eater. — Very common in the Gulf country, frequenting the tea-tree, and building in the prickly acacia bushes at a few feet from the ground. Also very common on the box flats at the Sedan camp. Many nests were found here, in various stages of construction or containing eggs or young birds, during February and March. One pair was noted feeding a young Pallid Cuckoo. The female alone engages in the task of nest-building, the male accompanying her to and from the nest.

♀, ovary normal; irides olive, bill brownish-black, legs slate. Stomach contents, honey and small insects. 3rd July, 1910, on the Leichhardt.

**Ptilotis notata.** Yellow-spotted Honey-eater. — At Cape York this Honey-eater was numerous in the scrubs, but only occasional in the open forest or mangroves. It nests in the summer months, the nest being placed low down, and usually containing two eggs. One nest found in the scrub on the 7th February, 1911, contained two eggs of this Honey-eater and one Cuckoo egg similar to those found in the nests of *Glyciphila modesta*.

♀, ovary normal; irides dark grey, bill brownish-black, naked patch of skin at gape bright yellow, legs dark leaden-grey. Stomach contents, stems and seeds of berries.

**Ptilotis gracilis.** Lesser Yellow-spotted Honey-eater. — This small Honey-eater was plentiful at Cape York in the open forest, but only occasional in the scrub.

21st March, 1911. — ♂, testes normal; irides greyish-brown; upper mandible black, lower brownish-black, gape yellow; legs light slate. Stomach contents, small berries.

**Ptilotis sonora.** Singing Honey-eater. — Numerous in the Gulf country between the Leichhardt and Gregory Rivers.

29th June, 1910. — ♂, testes normal; irides brown, bill black, legs blackish. Stomach contents, insects.

**Ptilotis versicolor.** Varied Honey-eater. — This fine large Honey-eater, which bears a superficial resemblance to the Singing Honey-eater, inhabits the mangroves at Cape York, where its tuneful voice is frequently heard in the breeding season. They were plentiful during the season 1910–11, but hardly any were present in 1911–12. In the latter season, however, they were found to be plentiful in the mangroves along the south bank of the Escape River, in the mangroves on Bushy Island, near Cairncross Island, where a fully fledged young one was seen on 30th June, 1911, and on the Hannibal Islands. A fresh nest was found in the Macarthur Island mangroves, and the birds were plentiful on the Bird Islands. At Cape Grenville a nest was found in a small mangrove on 5th July, 1911, containing two half-fledged young birds, and not far away was a half-built nest of the same bird. Later on, on 17th July, a nest with two young birds almost ready to leave it was found on the second of the Bird Islands.

**Ptilotis keartlandi.** Keartland Honey-eater. — First noted on the 21st April, 1910, on a turpentine and spinifex ridge at Courtenay's Creek, 3 miles from Cloncurry, and afterwards found to be very numerous in this class of country. Also frequently met with at Donaldson, on the Leichhardt, on stony ridges clothed in stunted trees and shrubs.

**Ptilotis flavescens.** Yellow-tinted Honey-eater. — Common in the Gulf country, but not seen at Cape York. One pair was found

building a nest at Sedan, on the Cloncurry, on 8th March, 1910, but deserted it after completion. Another nest, containing small young birds, was found at Byromine on the 9th April; one on the Gregory River road, on the 17th July, containing one egg; and a fourth building near Burketown on the 23rd July.

Male, taken on 21st February—irides dark brown, bill blackish-brown, legs olive-brown. Stomach contents, bronze-green ants and small beetles.

**Ptilotis flava.** Yellow Honey-eater.—First noted at the Jardine River, Cape York, where they were common in the open forest and along the river and where their bold, loud, and clear whistling note was constantly heard.

♂, iris greyish-brown; upper mandible brownish-black, lower mandible dark brown; legs yellowish-olive. Stomach contents, honey and insects.

**Ptilotis leilavalensis.** Pallid Honey-eater.—Numerous throughout the Gulf country in eucalypts and tea-tree. One nest was found, containing eggs, on the 18th March. In habits they resemble closely *P. penicillata* of southern latitudes.

**Ptilotis unicolor.** White-gaped Honey-eater.—These fine, large Honey-eaters were first met with on the Leichhardt River beyond Caloola Station; thence onward to Burketown they became more numerous. They are very noisy birds, with a loud whistling note, and were never met with away from the tea-tree which borders the rivers.

♂, taken on 12th June—irides greyish-brown, bill black, naked patch of skin at base of upper mandible bright sulphur-yellow, legs dark slate. Stomach contained skins and seeds of the wild grape, portions of mistletoe flowers, and ladybird beetles. The female resembled the male in these particulars.

**Trichodere cockerelli.** Cockerell Honey-eater.—Mr. M'Lennan found this very beautiful Honey-eater to be fairly plentiful in the neighbourhood of the Jardine River, Cape York Peninsula, in March, April, and May, 1911. In December they were in numbers in the black tea-tree country between Paira and Peak Point, but disappeared within a month. In their habits they closely resemble the members of the genus *Glyciphila*, and their call is almost indistinguishable from that of *Stigmatops ocellaris*.

On the 24th April, 1911, one of these birds was found building its nest in the fork of a small tea-tree 2 feet from the ground at the edge of a swamp, the nest being composed of fine rootlets bound together with spiders' webs.

The first clutch of eggs was found on the 9th of May, 1911, the nest being 2 feet from the ground in a small tea-tree. Four old nests were found in the vicinity, and one containing two half-fledged young birds, in similar bushes, all at about 2 feet from the ground.

On the 10th May, 1911, another nest was found, again in a small tea-tree bush at about 18 inches from the ground. An old nest was near by in another bush. On the 15th a nest was found containing two young birds, and another pair of young birds that had just left the nest was seen, and one obtained for a skin.

In an adult male taken on the 12th March the soft parts were as follows:—♂, irides reddish-brown, bill black, naked skin at gape dark greenish-blue, legs dark slate. Stomach contents, honey and small

insects. ♀, juvenile, irides brown, bill black, naked skin at gape pale greenish-blue, legs slate. Stomach contents, honey only (26th April, 1911). ♀, fledgeling, taken on 15th May, 1911—irides brown; bill, upper mandible dark brown, lower light brown, gape yellow; legs lead colour. Stomach contents, insects.

**Xanthotis filigera.** Streak-naped Honey-eater.—Very common at Cape York, in scrub, open forest, and mangroves. They are silent birds, mainly insectivorous in their diet, and may often be seen searching the dead leaves on trees for insects. The first nest was found in course of construction in the mangroves at Paira on the 7th January, 1911; two eggs were afterwards laid. This nest was 10 feet from the ground, suspended by the rim from a horizontal fork of a small, bushy mangrove. It was composed outwardly of broad strips of melaleuca and swamp mahogany bark, lined with a few fine rootlets and fine strips of bark, and very compactly built, the sides being  $\frac{1}{2}$ -inch in thickness, the bottom  $\frac{3}{4}$ -inch. Another nest, containing eggs, was found on the 2nd February. This was 30 feet up in a bushy tree in the scrub. A third nest, found on the 12th February, was also about 30 feet up in a bushy scrub tree, and contained two half-fledged young. A fourth, found on the 11th April, contained one hard-set egg; this nest was 50 feet up in a bushy scrub tree.

♀, length in flesh,  $7\frac{3}{4}$  inches; irides brown, bill black, legs leaden-blue. Stomach contents, insect remains.

**Myzantha flavigula.** Yellow-throated Miner.—Numerous in the Gulf country, where they were nesting in and after the wet season. Noted as a foster-parent of the Koel.

**Entomyza harterti.** Northern Blue-faced Honey-eater.—Numerous from 16 miles on Cape York telegraph line to the Jardine River, and at Lockerbie when the tea-tree is in bloom. This bird very closely resembles *E. cyanotis*, *E. albipennis* not being found on the Cape York Peninsula. Only one nest was found, near the Jardine River, in an old Babbler's nest; it contained two eggs only.

♀, irides silvery-cream colour; bare skin above eye pale greenish-blue, below the eye deep sky-blue; bill black, base of bill pale greenish-blue; legs pale slate. Stomach contents, honey and insects.

**Tropidorhynchus argenteiceps.** Silvery-crowned Friar-Bird.—At Cape York these birds were only noted on the western side of the Peninsula, where they were numerous in 1911 in the messmate and bloodwood forest country. The nest is usually placed high in one of these trees, and is a pendant one, somewhat smaller than that of the Helmeted Friar-Bird. Usual clutch, two.

♂, irides light brown, bare skin of head black, legs slaty-blue. Stomach contents, honey and insects.

**Tropidorhynchus buceroides.** Helmeted Friar-Bird.—Numerous all the year round in the forest country at Cape York, where they nest in the Moreton Bay ash trees in company with *Sphecotheres*, *Drongo*, and *Aplonis*, laying three to four eggs.

♀, iris dark orange, bill and naked skin of head black, legs dark leaden-grey.

**Philemon sordidus.** Little Friar-Bird.—Common in Gulf country and at Cape York in the more open country. One nest found on the Cloncurry River contained young birds in February; another, which had two eggs in it, was vigorously defended by the parent birds when Mr. M'Lennan attempted to examine it.

Colouring of soft parts in a Gulf specimen, 21st February, 1910—♂, irides brown, bare skin round eye greenish-lead colour, bill dark brown, legs lead colour. Stomach contents, seeds and small insects. In a Cape York bird these more nearly approached *P. citreogularis*.

♀, irides greyish-brown, bill black, bare skin of head dull leaden-blue, legs dark slate. Stomach contents, beetles and other insects. Taken on 6th December, 1910, at Paira.

**Anthus australis.** Australian Pipit (Ground-Lark).—Not noted at Cape York, but common throughout the Gulf country.

**Mirafra secunda.** Lesser Bush-Lark.—Mr. M'Lennan first met with this bird at Sedan in February, 1910. He notes:—"It has a louder and more varied song than *M. horsfieldi*, and it is a pleasure to listen to it." They were evidently breeding, as he saw them carrying building material, and dissection of specimens confirmed this opinion. Although he spent many hours on several occasions in searching for the nest, he did not succeed in finding it. They were very numerous in some places on plains or grassy flats.

♂, irides light stone colour; bill brown on top, cream-coloured underneath. Stomach contents, grasshoppers and beetles. Taken at Sedan, on Cloncurry, 19th February, 1910.

♀, irides olive-brown; bill brown, upper mandible brownish-flesh colour; legs pale straw colour. Stomach contents, seeds.

A pair of eggs sent me some years ago bore a general resemblance to those of *M. horsfieldi*—had the same gloss, but were larger by about 2 mm. in both diameters.

**Tæniopygia castanotis.** Chestnut-eared Finch.—Very common throughout the Gulf country, but not seen at Cape York.

**Stictoptera bichenovii.** Banded Finch.—Many of these birds in the Gulf country. Several nests were found in and after the wet season, the usual clutch being four to six. The nests on the Cloncurry River were usually composed of fine rootlets and placed in the tea-tree.

At Augustus Downs, on the Leichhardt, they were building in the cane-grass. Here they were nesting freely in June. On the Gregory River they were still nesting in July.

**Munia castaneothorax.** Chestnut-breasted Finch.—Found only at Cape York, where they nest in the long grass growing on the small rocky islets near the mainland, seldom being found to nest on the mainland itself. On one small islet about a mile from Peak Point the nests were placed at from 6 inches to 2 feet from the ground. The growing grass is woven to form the outside of the nest, which is then lined with fine grass. Several nests just commenced showed the outer fabric only, and were green. Clutches of from four to seven eggs were found.

♂, irides brown, bill horn colour, legs dark slate. Stomach contents, grass seeds (17th February, 1911).

**Munia pectoralis.** White-breasted Finch.—First noted at Sedan, but found to be more plentiful near the ranges. They were also met with on the Leichhardt and Gregory Rivers.

♂, irides brown, bill horn colour, legs straw colour. Stomach contents, seeds.

**Ægitha minor.** Lesser Red-browed Finch.—This very distinct sub-specific form was met with only at Cape Grenville, where the birds were found nesting in July, 1911. One nest containing five eggs was found in a creeper-covered shrub growing on a sandy rise between



the beach and the mangroves; another, containing young birds, was placed in a small mangrove on the beach and at about 2 feet above high-water mark; and a third half-built one close by in another mangrove. One specimen was secured.

♀, length,  $3\frac{1}{8}$  inches; iris reddish-orange; upper mandible crimson, culmen dark brown; lower mandible, tip and cutting edge crimson, the rest black; legs pale straw. Stomach contents, grass seeds.

**Poephila hecki.** Red-billed Grass-Finch.—Met with for the first time on the Leichhardt, 25 miles beyond Caloola Station, where a pair was found in attendance upon a nest containing four young birds, on 16th June, 1910. This nest was placed in a horizontal bushy limb of a bauhinia, 15 feet from the ground, and was composed of fine grass, lined with a few Galah feathers; it was 6 inches in depth and 8 inches long on the outside, 4 inches by 5 inches on the inside. The young were covered with pin feathers and grey down. Bill blackish, irides grey.

Adult ♂, irides dark orange, bill orange-scarlet, legs and feet bright red. Crop and gizzard contained grass seeds.

These birds became numerous as the Gregory River was approached, where several nests were found in small bauhinia trees at about 5 to 7 feet from the ground. On the Gregory River itself several nests were found in the pandanus; none contained more than four eggs.

**Poephila personata.** Masked Grass-Finch.—First noted on the Leichhardt River, 2 miles beyond Augustus Downs. On the Gregory River they were numerous.

♂, irides ruby-red, bill yellow, legs bright red. Stomach contents, grass seeds. ♀ similar.

**Poephila gouldiæ.** Gouldian Grass-Finch.—First observed on the Leichhardt River, 2 miles beyond Augustus Downs. Seven miles from the Leichhardt, on the Gregory River track, they came to a water-hole at night in numbers.

**Neochmia phaeton.** Crimson Finch.—Noted throughout the Gulf country, being more numerous along the Leichhardt and Gregory than in the vicinity of Cloncurry. Along those rivers it was found frequenting the cane-grass and pandanus, and many nests were found. They were bulky structures, composed of grass and lined with feathers.

♂, irides golden-brown, bill crimson, legs dark straw colour, Stomach contents, seeds. ♀, juvenile, irides grey, bill blackish, legs straw colour. Adult female similar to male.

**Oriolus affinis.** Northern Oriole.—Numerous on the Gregory River, but not so common in other parts of the Gulf country. Frequent at Cape York, where it was found in the open forest country. Its note differs considerably from that of its southern congener.

♂, irides light orange, bill brown, legs slate. Stomach contained beetles and other insects (Leichhardt River, 15th June, 1910).

♂, irides orange-red, bill blackish-brown, legs light slate. Stomach contents, caterpillars (Jardine River, 28th April, 1911).

**Oriolus flavicinctus.** Yellow Oriole.—A very common bird at Cape York, frequenting scrubs and mangroves, but preferring to nest in the open pockets, where it usually selects a small tree, the nest being generally placed at a height of from 5 to 20 feet from the ground. It also nests in the mangroves just above high-water mark, and

occasionally in the scrub. The nest is a pensile structure of bark, and as a rule one long streamer of bark of from 1 to 2 feet in length hangs from it. Nests were found from November to February. Two eggs form a clutch.

**Sphecotheres flaviventris.** Yellow-bellied Fig-Bird.—One of the commonest of birds at Cape York, where it nests high up, usually in a Moreton Bay ash, in company with the Helmeted Friar-Bird, Drongo, and *Calornis (Aplonis)*.

**Chiblia bracteata.** Spangled Drongo.—Found all the year round at Cape York, but not so numerous in the winter. They nest in company with other birds, in the open forest usually, but sometimes in the scrub.

**Aplonis metallica.** Shining Starling.—Numerous at Cape York from August until March. They usually come early in August, and soon take possession of their nesting-trees.

♂, irides scarlet, bill and legs black. Stomach contents, wild fruits.

**Chlamydera maculata.** Spotted Bower-Bird.—Met with at Sedan. Mr. M'Lennan's note, made on 24th February, 1910, reads:—"Saw a bird in a thick bush. Could not get a clear look at it, so shot it; it proved to be a Bower-Bird. Its mate flew from a tree close by, and started to mimic all the birds of the district—Miner, Friar-Bird, Whistler, Magpie, Butcher-Bird, Red-throated Honey-eater—and ended with a marvellous imitation of a cat in a rage."

When at Cattle Creek, 50 miles west from Cloncurry, this note was made:—"While fixing up the horses I heard a Bower-Bird mimicking the following birds:—Black Cockatoo, Whistling-Eagle, Brown Hawk, Kite, Butcher-Bird, Black-faced Cuckoo-Shrike, Whistler, and Restless Flycatcher—all imitated to perfection; in fact, I was trying to locate the three first-named birds when I saw the Bower-Bird." They were numerous round this camp.

**Chlamydera nuchalis.** Great Bower-Bird.—Seen on the Gregory River and at the Brook Hotel, 20 miles from Burketown. They are considered to be a nuisance in the hotel garden, destroying the fruit, especially the grapes.

♂, irides brown, bill blackish-brown, legs olive. Stomach contained seeds and portions of green vegetable matter (wild figs).

**Chlamydera orientalis.** Queensland Bower-Bird.—Numerous at Lockerbie in 1910, but fewer in 1911. Their bowers are decorated with the shells of land-snails.

♂, length  $13\frac{1}{2}$  inches; irides brown, bill blackish-brown; legs olive-green, feet a darker shade. Stomach contents, wild fruits.

**Chlamydera cerviniventris.** Fawn-breasted Bower-Bird.—Fairly common at Cape York, but unevenly distributed. They were met with at Paira, Peak Point, and Somerset, on the Jardine River and Escape River, and at Cape Grenville. Many nests were found, but only one contained the much-coveted eggs. Seven bowers were noted at Cape York. Some had a platform of sticks in front of the bower, and one had a square platform, also of sticks, about 6 feet from the bower, raised  $1\frac{1}{2}$  inches from the ground. The only decorations about these bowers were bunches of green berries—no shells, flowers, or leaves were noted. Berries were on all the bowers, and on the platforms in front. One bower was below high-water mark, in the mangroves, and was flooded by the high tide every fortnight.

There was a shelly beach 3 yards away, but shells were never used for decoration, though so near at hand—always some kind of berry. When playing about the bowers the birds make a rustling noise with the throat.

♂, irides brown, bill black, legs greenish-olive. Stomach contents, berries. Jardine River (12th March, 1911). ♀, irides greyish-brown, bill black, legs slate colour. Stomach contents, seeds and skins of wild fruits and berries.

**Ptiloris alberti.** Albert Rifle-Bird.—This bird, although fairly common still in the Cape York scrubs, has suffered a great diminution in numbers; mainly through the depredations of scientific collectors. One man alone obtained over 70 skins. It is difficult to imagine why any museum or investigator should require so large a number. The number of skins taken for scientific purposes should be limited, and the large areas of scrub on this Peninsula should be made a sanctuary for the birds, else in a few years they will be a thing of the past, as well as many other rare and interesting species.

They keep to the scrub, where their ordinary call, two sharp whistles, is often heard. During the nesting season this call alters to three sharp whistles and a long, sonorous one to finish up with. They feed mostly on wild fruits of various kinds.

**Phonygama gouldi.** Trumpet-Bird (Manucode).—A fair number of these birds is to be found in the scrubs at Cape York. They seem to arrive early in August, and take their departure at the end of March, or early in April, when they gather together in flocks. Building as they do a frail nest high up in a scrub tree, it is a difficult matter to locate one through the tangle of vegetation overhead. The first nest found by Mr. M'Lennan proved rather a difficult proposition. After watching a pair for some time, on the 24th November, 1910, the male bird was seen to chase other birds from a certain tree, which was watched, when one of the birds returned to it with building material. The nest was soon located, at a height of about 90 feet from the ground. The bird was sitting on the nest on the 2nd December, and on the 5th the tree was climbed during a thunderstorm. "I thought my last hour had come. The limb I was on swayed 7 or 8 feet when the wind caught it; one flash of lightning rattled my nerves—it seemed so close; rain started to pelt down when I was descending the tree, and continued for the rest of the day. The nest contained two eggs."

Another nest, found on the 6th December, 1910, was 50 feet up at the top of a bushy tree; it contained a fully fledged young bird, which flew off and came to the ground. This young bird Mr. M'Lennan succeeded in rearing for several months, when it died. A third nest was found on the 2nd February, 1911, at the top of a tall, thin sapling, 60 feet from the ground; it contained two hard-set eggs.

After this, acting on Mr. Barnard's note that this bird's nest is usually in the vicinity of the nest of *Cracticus rufescens (quoyi)*, Mr. M'Lennan was more successful.

On the 16th November, 1911, at Lockerbie, the following note was made:—"Searched through the scrub near the house, as I had frequently heard a Butcher-Bird calling there. I soon discovered its nest in a large fork of a leafless scrub tree; it contained four very pretty eggs. I had almost made up my mind to take them when I heard a Manucode call close by, so I came down and investigated. I soon located the nest in a bushy tree 50 yards from the Butcher-

Bird's nest. It appeared to be just ready for eggs, the Manucode sitting in a tree close by. On the 28th I went to the nest again. The bird was sitting, but flew off. As I approached the nest, one of the Butcher-Birds flew into a tree close by and the Manucode attacked it and drove it away, then returned to the nest and stayed there till I climbed to within a few feet of it. The nest was about 40 feet from the ground, and contained two eggs. On the 18th November, in a small blind pocket at the foot of the big hill, a Manucode was flushed from its nest in a big fig-tree at the edge of the scrub. This nest, which contained two eggs, was 70 feet from the ground. Heard a Butcher-Bird calling, and found its nest, containing three eggs, in a bushy tree 30 yards from the Manucode's. Crossed the hill to Tiera Pocket. Flushed a Butcher Bird from its nest in a big fig-tree at the edge of the scrub, but did not examine it. Heard a Manucode calling close by, but it was too late to search for its nest."

4th December, 1911.—"Went to Tiera Pocket, to Butcher-Bird's nest, and had another search for Manucode's nest, which I found in the bushy top of a small-leaved tree in thick scrub about 60 yards from the Butcher-Bird's; it contained two young birds just hatched. The nest was 40 feet from the ground. The Butcher-Bird's nest also contained small young birds."

21st November, 1911.—"Found a Butcher-Bird's nest containing small young birds in a big bloodwood. Had a search for Manucode's nest, and found one in some vines in a bushy tree at the edge of the scrub; it contained two eggs, and was 25 feet up and 40 yards from the Butcher-Bird's nest."

28th November, 1911.—"Went out along Gheedinia track. Heard a Manucode calling near Butcher-Bird's nest that I had found on the 14th November, and, after watching for some time, saw one of these birds fly into a rubber-tree about 50 yards from the Butcher-Bird's nest. In a few minutes its mate flew into the same tree with some building material. They were just starting a nest. I watched them for about half an hour, and twice in that period the male bird flew into the scrub and returned with a vine tendril and added it to the nest. The rest of the time he spent in an adjoining tree, uttering his peculiar call and preening his feathers. The female was exceedingly busy gathering her nesting material—aerial rootlets from the tree in which she was building—occasionally uttering a harsh croak in answer to her mate's more melodious call. This nest was afterwards deserted or removed.

The last nest of the season was found on the 4th December in the bushy top of a small-leaved tree in thick scrub about 60 yards from a Butcher-Bird's nest; it contained two newly-hatched young. The Butcher-Bird's nest also contained small young.

**Corvus coronoides.** Crow:—Noted occasionally in the Gulf country.

**Corvus bennetti.** Short-billed Crow.—This species predominates throughout the Gulf country, and is the usual foster-parent of the Channelbill. On a channel of the Gilliat River, near Sedan, 23 nests were found one morning containing either young Crows, young Channelbills, or Crows' eggs. The trees of other creeks on the plain were resorted to in the same way. This was in March, at the end of the wet season.

**Corvus australis.** Raven.—Frequently noted in the Gulf country. Two nests were found on the Leichhardt River in July, one partly constructed and the other containing fully fledged young.

**Struthidea cinerea.** Grey Jumper (Apostle-Bird).—First met with near Granada, on the Leichhardt River, where a flock of about 30 was disturbed and a specimen obtained. They were common thence onwards.

♀, irides brown, with yellow outer ring; bill and legs black. Gizzard contained grasshoppers, seeds, and coarse sand. A number of parasites were found under the skin of the head and neck.

## Descriptions of Two New Eggs.

BY HENRY L. WHITE, R.A.O.U. Belltrees (N.S.W.)

**Neositta leucoptera**, Gould (*subleucoptera*, Mathews).

*Type*.—Eggs two in number, roundish in shape, somewhat pointed towards one end; surface smooth and slightly glossy. Ground colour a very delicate greyish-white, over which are well-scattered blotches and spots of slaty-lilac and light and dark umber.

Dimensions in inches:—(a)  $0.64 \times 0.49$ ; (b)  $0.64 \times 0.48$ .

Birds, together with the eggs, were collected for me by Mr. H. G. Barnard, on the Macarthur River, Northern Territory, on 22nd September, 1913.

*Co-type*.—Eggs two in number, rather roundish-oval in shape, but decidedly more pointed at the one end than in the case of the type specimens. The markings are more confluent, and confined chiefly to the larger apex of each egg, where they form a well-defined zone.

Dimensions in inches:—(a)  $0.67 \times 0.50$ ; (b)  $0.66 \times 0.50$ .

Taken in same locality by Mr. H. G. Barnard, on 14th October, 1913. The nests were beautifully finished, cup-shaped, and composed of pieces of bark and cobweb neatly woven into the forks of Coolibah saplings, and placed about 10 feet up from the ground.

**Pezoporus flaviventris**, North.

*Type*.—Eggs three in number, roundish in shape, surface of shell very fine and smooth and possessing very little gloss. Colour pure white.

Dimensions in inches:—(a)  $1.06 \times 0.87$ ; (b)  $1.05 \times 0.88$ ; (c)  $1.08 \times 0.87$ .

Collected by Mr. F. Lawson Whitlock, at Wilson's Inlet, South-West Australia, on 20th November, 1913. Nest consisted of a hollow under the lee of a prickly shrub, growing on a low ridge in a huge flat. Female flushed from nest. Eggs fresh.

Broinowski's "**Birds of Australia.**"—This work, complete, in parts, unbound, price £5. Apply Editors, *The Emu*.