

Journey to Central Australia in Search of the Night Parrot.

By F. LAWSON WHITLOCK, R.A.O.U., Tudor, *via* Albany, W.A.

INTRODUCTION.

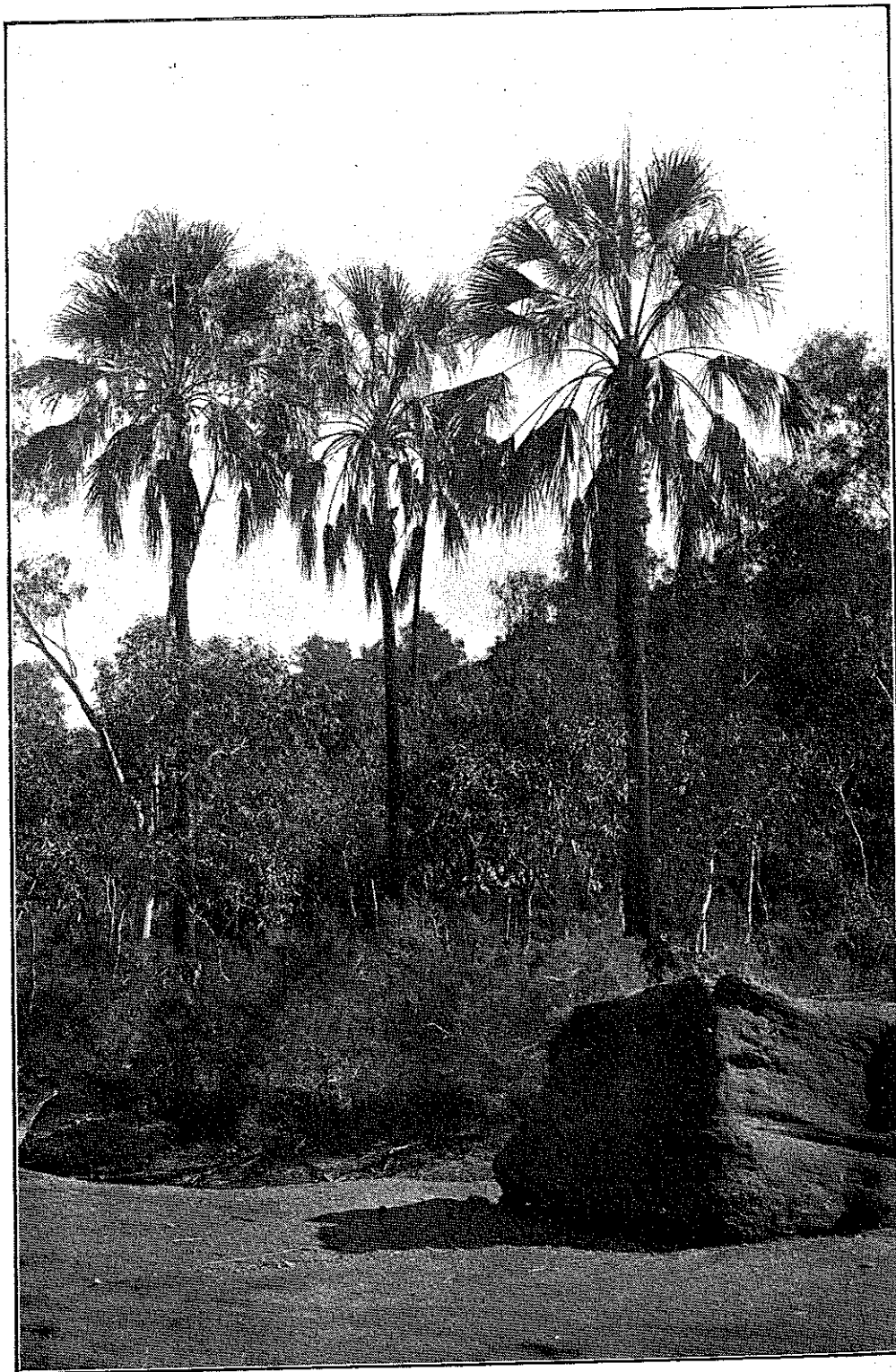
About the end of the year 1922, it chanced that Mr. Robert Buck, manager, of Henbury Station, on the Finke River, and Mr. Neil McGilp, R.A.O.U., of Adelaide, met in the train as fellow-travellers to Adelaide. Mr. McGilp questioned Mr. Buck as to the probability of the Night-Parrot being found in Central Australia. Mr. Buck recalled the fact that in moving cattle near the Palmer River, a Parrot, answering to Mr. McGilp's description, had been flushed from the Porcupine-grass. Realising that he could not conveniently spare the time to prosecute a search for the bird himself, Mr. McGilp passed on the information to Mr. H. L. White, of Belltrees, N.S.W., who has financed many expeditions in search of rare and new species of birds, and ornithological knowledge has been made richer thereby.

In February, 1923, Mr. White wrote to me asking if I would undertake the search for this elusive nocturnal Parrot.

I confess I hesitated somewhat, as I always consider it more or less of a gamble to explore these dry interior regions, where the chances for and against a favourable season lean to the adverse. But I realised that, if Mr. White was willing to risk the financial burden of the expedition, it was "up to me" to do my part. The undertaking proved the longest and most arduous I have undertaken on Mr. White's behalf.

I left home on March 6th, travelling over the transcontinental line to Adelaide, where I had hoped to meet Mr. McGilp. Unfortunately, he was not able to return from his station at Moolawatana in time. I reached Oodnadatta on 16th March. So well had Messrs. Fogarty and Co. arranged things for me that I was able to leave for the north three days later. They had engaged as driver Houssian Sureen, who, though bearing a foreign name, was Australian by birth and education. Houssian's wife also accompanied us for a time in the capacity of cook. Seven camels were engaged for riding, carrying stores and impedimenta. I was thus saved much worry and trouble, for which I feel grateful to Mr. F. Jones, of Fogarty and Co.

Much fiction has been written about the beautiful adaptation of camel to the desert, the ease with which it travels through sand, and its powers of abstention from water. The real facts are that a camel flounders through loose sand, and is impeded by it just as much as a horse is. Unless he is specially trained, a camel, given the opportunity, will drink every day, and if he goes without water in hot weather for more than two days he is in distress. I can heartily endorse all that Spencer and Gillen wrote in their work, "Across Australia," about the manners, or,



Young Palms, Palm Valley, Central Australia.

Photo. by F. L. Whitlock, R.A.O.U.

rather, want of manners on the part of a camel. Camels have no affection, or, to put the matter in the words of Houssian, my driver, "You cannot be kind to them." They have no gratitude, and when feeding on certain bushes smell abominably. A most disgusting habit they have when irritated or sullen is to blow the half-chewed cud all over one. When this happens the only thing to do is to change one's clothes at once. A camel that has been accustomed to work in a string becomes an obstinate animal when used as a riding camel. Step off the beaten track he will not, and will go straight forward, even with his head pulled round at right angles to his body. Such a beast was the one I rode, and in following bullock tracks through Mulga scrub, both I and my swag in front suffered accordingly. But to give the camel his due, he is a hardy beast, and immensely strong. He will live on scrub, and carry a big load where a horse would perish.

Our objective after leaving Oodnadatta was Henbury Station, on the Finke River, a distance of nearly 300 miles. We accomplished this without incident in twelve days and a half. A fair rain had fallen up country, and water was plentiful in many places. We carried two water-kegs, each of nearly twenty gallons' capacity. The country traversed has recently been described by Capt. S. A. White, in the account of his journey to Old Crown Station, on the Finke River (see *Emu*, XXI., p. 84).

With regard to bird life, the fact that struck me most was the presence of such large numbers of birds of prey; Whistling Eagles, Little Eagles, Brown Hawks, and Kites being abundant at all the larger water pools. This is in striking contrast to my experiences in the west, where the sight of three or four pairs of hawks in view at the same time was an unusual spectacle.

On arrival at Henbury, we received the kindest welcome from Mr. Robt. Buck, the manager. He had, however, disappointing news to impart, respecting the chances of finding the Night-parrot, where he had seen it a few months previously. The whole country-side had been swept bare by big bush fires, supposed to have been lighted out west by the wild blacks, who had been giving trouble in raiding and killing cattle wantonly along the Palmer River, near Tempe Downs, which adjoins Henbury Station. Mr. Buck advised me to try north of the James Ranges, where I should find the country less disturbed. So after enjoying his hospitality at Henbury for a couple of days, we set out again. This time our objective was the Hermannsburg Lutheran Mission Station, between sixty and seventy miles further up the Finke River. Mr. Buck also advised camping for a day or two at Boggy Pool, a large permanent water, about forty miles up the river, and at the foot of the James Ranges.* This pool was represented as the haunt of many aquatic birds. We reached the spot three days later, having in the meantime spent a

*Shown on the Horn Expedition map as the Kinchauff Range.

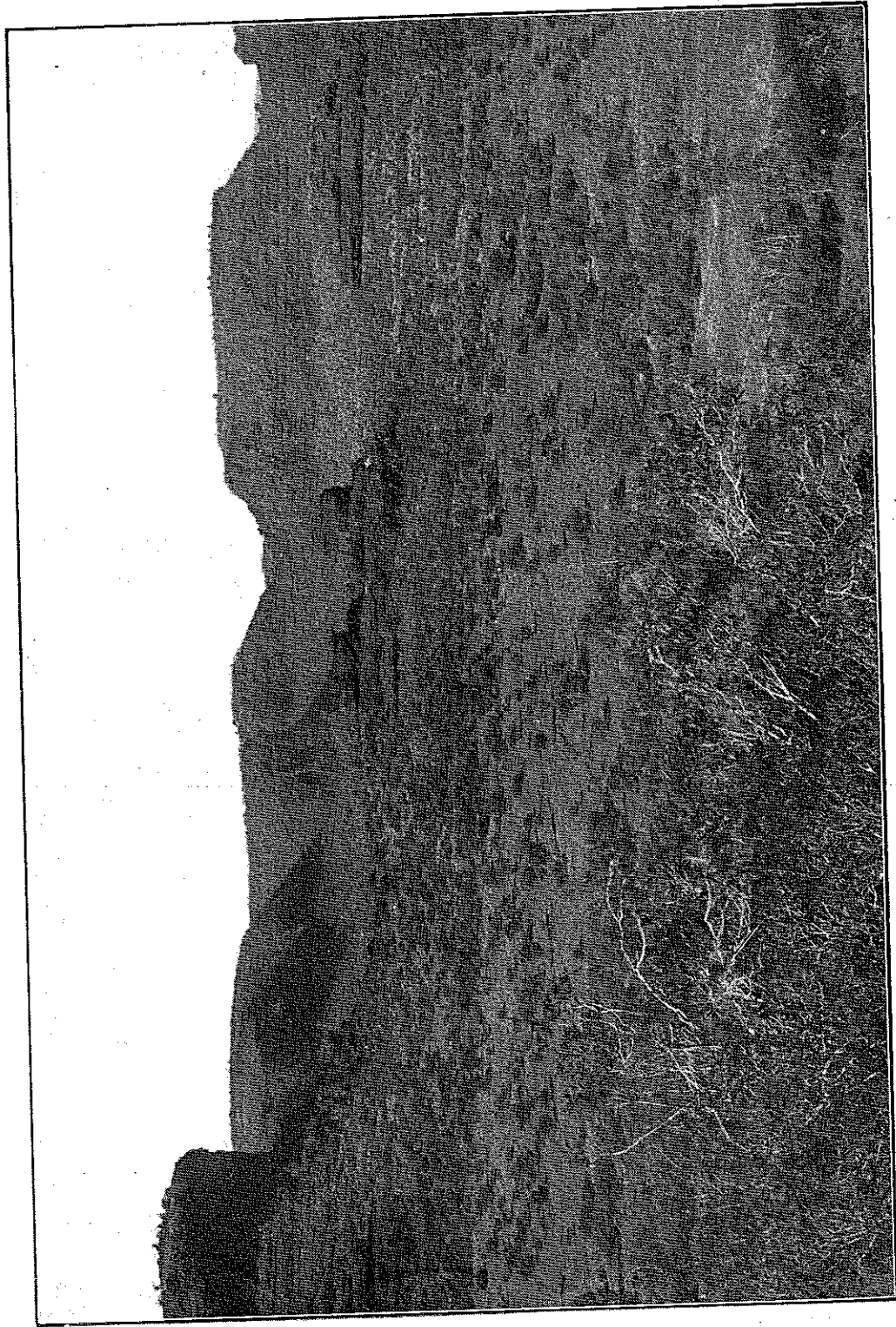
day at the "Running Water"—a series of large pools on the Finke.

I commenced collecting birds in earnest at Boggy Pool, with good results, but unfortunately succumbed to a sharp attack of dysentery. After I had suffered for a day or two, Houssian, who was alarmed at my condition, rode in to the Mission Station for medicine. He returned the same day with necessities, and a message from Mr. H. A. Heinrich, of the Mission, that he would be out on the following day with a buggy to bring me in to the homestead. In the meantime, I took a turn for the better, and when Mr. Heinrich arrived was on my feet again. It was deemed advisable, however, for me to go back with him, and take a few days' rest, and also to be put on invalid's diet for a short period. I reluctantly consented, being loth to leave a locality where Blue Wrens (*Maluri*—new to me), Bower-birds, and Grey Honeyeaters (*Lacustroica*) were present.

Thanks to Mr. Heinrich's care, I was soon ready for work again. During my convalescence, Mr. Heinrich had greatly aroused my interest by his photographs and descriptions of the Palm Valley, a locality some ten miles south of the Mission homestead. It was arranged that my next camp would be there. Houssian having come through with the camels, we moved down to the Palm Valley on April 30th, 1923.

I had read in the press accounts of a Palm Paddock, near Hermannsburg, but on arrival at our camping ground found this rather misleading. I had pictured a large paddock dotted all over with groups of palms and other tropical vegetation. In reality, the Palm Paddock is a vast amphitheatre, but by no means a level one, situated in the heart of the James Ranges. It is of many thousand acres in extent. The palms themselves are confined to a large creek at the foot of the ranges, forming the northern boundary of the amphitheatre. The main body of the palms occupies the creek for a distance of about two miles. Smaller groups are found in the Illamurta Creek, which joins the main creek, in the Palm Valley, about a mile from the junction of the latter with the Finke River. Another isolated colony of palms occupies the Glen of Palms, a small and very rocky creek, entering the river from the west, some five miles farther down the stream. Small groups and isolated palms are found right down the Finke as far as "Running Water."

These palms (*Livistona mariae*) are found nowhere else in Australia, and are no doubt survivors of a long past tropical flora. In part of their habitat, they are associated with numerous Cycads (*Encephalarctos macdonnelli*), which appear to grow out of the rocky walls of the neighbouring cliffs. The nearest ally of these palms is said to be the Queensland Cabbage Palm. I estimated the highest specimens at over one hundred feet. A fallen and decapitated trunk measured fifty-eight feet in length. To this might fairly be added another twenty feet to the tip of the



A General View, James' Ranges, Central Australia.

Photo. by F. L. Whitlock, R.A.O.U.

topmost frond. Apparently several of the group, of which it had once been a member, were much taller. Of palms of twenty feet and over there must have been five or six hundred in the main valley; whilst young trees, excluding seedlings, of which I found hundreds, would total over one thousand. I could not estimate the number in the Glen of Palms, as I did not fully explore the locality. At a guess, I should say there are nearly 200 palms of over twenty feet in height. The entrance to the glen is marked by a group of twenty-five palms growing in the bed of the Finke River. These beautiful palms and their picturesque surroundings form fitting homes for such interesting and lovely birds as the Guttated Bower-bird, Blue Wrens (*Maluri*), and Grass Wrens (*Amytornis*). It is to be hoped that ere long Palm Valley will be declared a National Park. Stock, fortunately, are doing no injury at present. Palm Paddock is set aside for horses.

The scenery of the whole Palm Paddock is very picturesque. The surrounding hills are lofty and composed of a dark red sandstone, which has been weathered into fantastic shapes. In many places the cliffs are sheer precipices, without tree or vegetation; in others, huge portions have become isolated into turrets and pyramids, some of which stand sentinel-like in the midst of the amphitheatre. The surface of the ground is clothed with innumerable large bushes, with here and there a Bloodwood or other Eucalypt. On the more gently sloping cliffs are numerous native pines (*Callitris verrucosa*), wild fig-trees, and a beautiful species of *Tecoma*. The season of 1923 was a poor one for wild flowers and herbage, but a plant, locally called "the Wild Carrot," was abundant, and flowering freely near our camp. A species of wild tobacco, too, was plentiful in moist, shady places near the main creek. Mistletoes of several species abounded, and were much frequented by Mistletoe-birds and Honeyeaters of various kinds.

Whilst we were camped in the Palm Valley a good rain fell in May, and still better falls occurred in June. In the latter month, 285 points were registered at the Mission. This was very beneficial in providing an abundant supply of surface water, and in promoting the growth of trees and shrubs, but it unfortunately fell at a time of the year when it was of little use in producing the much-valued herbage. It, however, induced two local species of *Triodia* (Porcupine) to flower and seed abundantly. Throughout my stay in Central Australia the rainfall falsified all predictions.

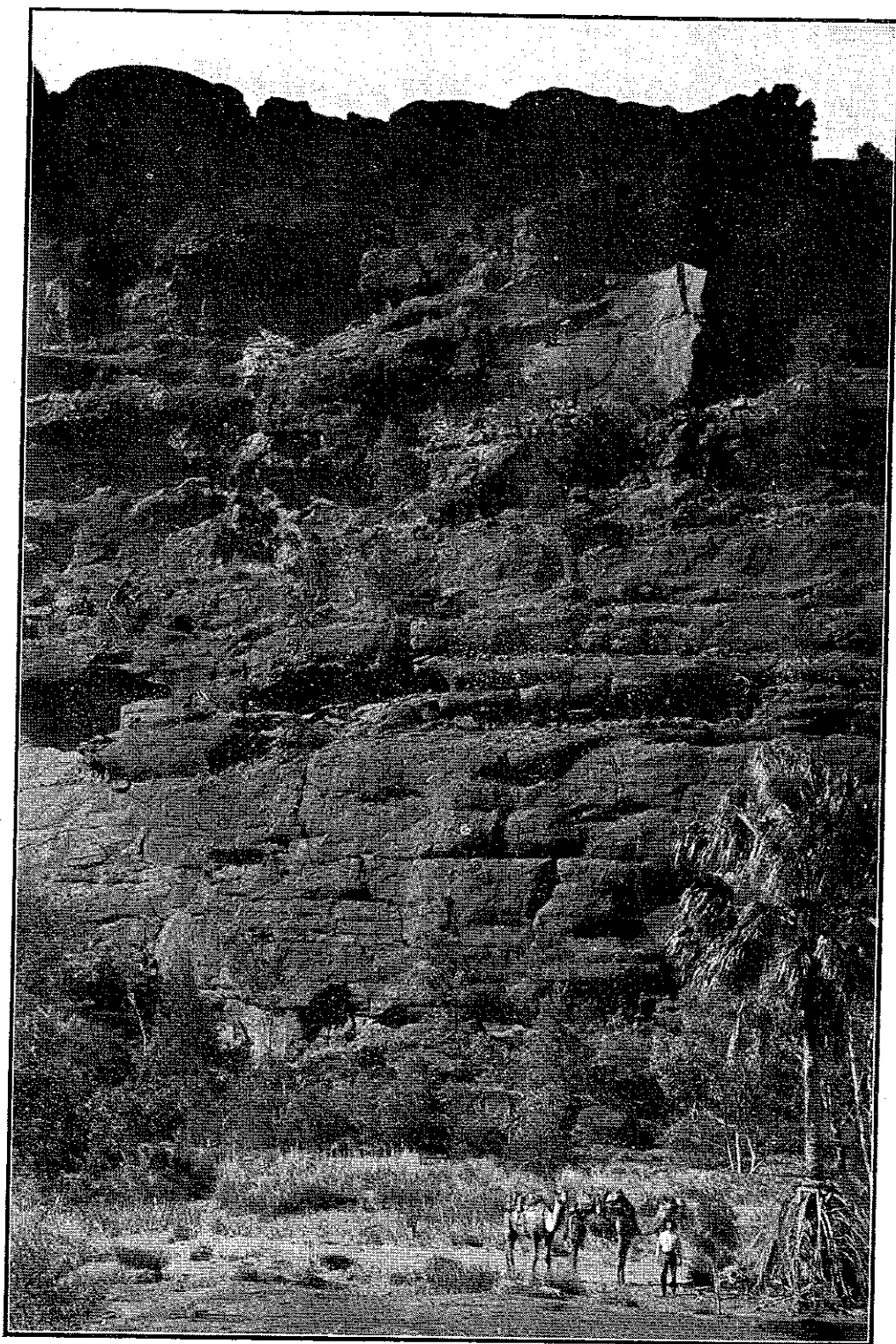
Having been cordially invited to make the Mission homestead my headquarters, I gladly accepted. The Finke mail, as it is called, comes in to Hermannsburg once a month, and it was a great convenience to receive and despatch letters on its arrival and departure. Using the Mission as a base, I made excursions to the east, amongst the big Mulga scrub and low hills covered

with *Triodia*, and also up the Ellery Creek into the heart of the adjacent Macdonnell Ranges. To the west, I camped several times at Coporyllia Spring, where pure water was in plentiful supply. Also I visited the Lilgera Spring, and camped for some little time at the series of springs in the Gilbert Creek. Further west, in company with Mr. Heinrich, I visited the Gosse Ranges, and from there travelled to Umbatcha Spring, in the centre of the great Missionary Plain. From the latter spring we rode to the Finke Gap, where the river passes through the southern chain of the Macdonnells, and the Horn Valley. I camped, too, at various places on the banks of the Finke River, between the Macdonnells and the Mission.

The Macdonnells run east and west, or nearly so, for 300 miles and comprise three parallel chains. The highest points visible were Mt. Sonder and Mt. Edwin Giles, roughly 4500 feet in elevation. The ranges, arising as they do from a tableland over 2000 feet in height, are not so imposing as their altitude would suggest. Parallel with the Macdonnells, the James, or Krichauff, Ranges run for about 200 miles; they are not very picturesque on their northern aspect, the highest point, the Hermannsburg, being a little over 3000 feet in elevation. Curiously enough the Finke River cuts through these ranges at the foot of the Hermannsburg, and, after a tortuous course of nearly forty miles, it clears them at the "Running Water." This portion of the Finke Valley presents some striking cliff scenery, and is well watered; the various pools being margined with reeds and well populated with a good variety of bird life. The Gosse Ranges are a small isolated group of rocky hills, some forty miles west of the Mission, and standing between the James and Macdonnell Ranges. One enters them through a narrow, winding gorge. They contain some fine rock-holes, with water, which rarely go dry. From the western end of the ranges, one looks over virgin country, with no evidence of civilisation, until one reaches the rabbit-proof fence in Western Australia.

The great Missionary Plain averages about fourteen miles in breadth, with a length of 300 miles. It is clothed with a great variety of vegetation. In places extensive Mulga scrubs, in others tracts of *Triodia*, and again sandy country, with grass-trees (*Xanthorrhæa*) and Desert Oak (*Casuarina Decaisneana*). I did much work on the Missionary Plain, and on the northern slopes of the James Ranges, with what success the following account will show. It was in these two localities I made special search for the lost Night-parrot (*Geopsittacus occidentalis*).

The climate of Central Australia is a fine, healthy one. The heat is not so great as in our north-west. For the last six years the highest temperature recorded has been only 108deg. in the shade. The periods of heat never last long. In the winter months the early mornings are sharp and bracing, with genial sunshine in the middle of the day. The rainfall recorded from



Rock Face, near first Palms, James' Ranges, Central Australia.

Photo by F. L. Whitlock, R.A.O.U.

1888 to 1915 averages 9.18 inches. I have chosen this period, as there was nothing abnormal throughout its duration. The wettest year was 1895, with a rainfall of 18.31 inches, and the driest 1915, with a fall of 2.24 inches. In a period of 42 years, the average fall at Alice Springs, 85 miles to the west, was 10.71 inches. The year 1879 recorded 27.21 inches. The wettest months in Central Australia are December, with an average of 1.37 inches; January, 1.45 inches; and February, 1.20 inches, respectively.

In March, 1921, a tremendous flood came down the Finke River, due to a cloud burst in the Macdonnell Ranges, and for some hours the Mission buildings were in danger, the flood waters washing away the soil close up to the foundations. As it was, several wells caved in, and the vegetable garden was completely obliterated. From June, 1920, to June, 1921, inclusive of both months, 31 inches of rain were recorded.

During my visit to Central Australia, 123 points of rain fell in May, and 285 points in June. After this a disappointing period of drought set in, which remained unbroken until a series of thunderstorms came along on October 29th and 30th—too late to have a beneficial influence on the breeding of local birds.

August was the coldest month, with many frosty mornings. On 7th ice formed on water left in a washing bowl to a thickness of three-quarters of an inch. We had fairly thick ice in the early hours up to 21st of the month. The last three days were marked by a period of bitterly cold winds from the south-east.

Central Australia has been visited by other naturalists. In May, 1894, the large and well-equipped Horn Expedition left Oodnadatta, and returned the following August. Mr. G. A. Keartland was the ornithologist accompanying the party. The season is reported as being "somewhat dry," and "rapid travelling" was the rule. This probably accounts for a number of species found by myself not being recorded. Seventy-eight species were secured, five being described by the late A. J. North as being new to science. A few more species are recorded as seen, but no specimens were collected. It was an agreeable coincidence to meet a member of the Horn Expedition in Central Australia, in the person of Sir Baldwin Spencer, who arrived at the Mission on May 26th, in company with Mr. Keith Ward, the geologist.

In 1913, Capt. S. A. White and Mrs. White visited the Macdonnell Ranges. An account of the trip was published in the *Journal of the Royal Society of South Australia*, vol. XXXVIII., 1914. I regret I was unable to refer to a copy of this publication. Captain White also paid a short trip to Old Crown Station on the Finke River in 1921. A list of birds observed was published in *The Emu* (vol. XXI., p. 84).

In the early pioneering days along the Finke River, the late

Constable E. C. Cowle collected a little around Illamurta Police Station, securing, amongst other things, the first authentic eggs of the Guttated Bower-bird.

The native names of birds given are in the Arunta dialect. The majority are taken from the list of totem names compiled by the late Rev. C. Strehlow. In some cases the spelling has been slightly altered to comply with English pronunciation. The scientific names and vernaculars are in accordance with the second edition of the Official Checklist.

BIRDS OBTAINED* OR OBSERVED.

Annotations [in brackets] by A. J. Campbell, C.M.B.O.U., Etc.

Dromaius novæ-hollandiæ. Emu (Ilia).—Very few seen. On the outward journey a small party observed in the sandhill country north of Macmillan's Plain. A few eggs were brought to the Mission by aborigines about the end of May. Tracks of Emus were occasionally seen in various places, and on the return journey a fine pair were running ahead of the camels when north of Wire Creek bore.

Leipoa ocellata. Gnow or Mallee-Fowl (Ngamara).—I did not meet with this bird myself, but Mr. Heinrich was informed that a nest with eggs had been found in June, a few miles from the Mission Station. It is well known to the aborigines.

Turnix sp. Quail.—An idea of the dry state of the country will be gathered from the fact that only two Quail were seen during the whole period I was in Central Australia. Both were of a small species of the size of *Turnix velox*, the Little Quail.

Geopelia cuneata. Diamond Dove (Ntapa).—Rather local, perhaps commonest in the Palm Valley, where it was breeding August and September. A pair were nesting in Miss Kunoth's aviary at Oodnadatta.

Phaps chalcoptera. Bronzewing.—A few found in the big Mulga scrub at the "Five Mile" Well, east of the Mission. On August 9th I found a nest on the horizontal limb of a big Mulga, containing a newly-hatched young bird and a second egg just chipping. A second nest with a pair of eggs was brought to the Mission a little later. A nest with eggs was also found in the Palm Valley.

Lophophaps plumifera leucogaster. Plumed Pigeon (Nturuta).—These pretty birds were common in the ranges at all the various pools and springs. In the Palm Valley and around Coporyllia they were numerous. The call note differs from that of the North-western species (*L. ferruginea*), and is not badly rendered by the Arunta name—"Nturuta." Nests were found amongst the *Triodia* growing on the lower hills of the ranges. They were poor affairs. Usually a little hollow was scratched, under the lee of a tuft of grass or *Triodia*; this was lined with short pieces of grass stems. In some cases the eggs lay on the bare ground, with a few stems surrounding them. In one instance I found a pair of well-grown young in the bed of the main creek in the Palm Valley. The nest was sheltered by a large stone. The breeding season is during the months of August and September.

Ocyphaps lophotes. Crested Pigeon (Palkara).—A fairly common bird in the Finke Valley, and generally found coming to water at all the permanent pools and springs. On 3rd July, Thomas—our guide—found a nest near camp in the Macdonnell Ranges, but unfortunately

*Indicated by a cross (†), total 179 specimens, donated by Mr. H. L. White to the National Museum, Melbourne.



Nest and Eggs of the Plumed Pigeon (*Lophophaps plumifera*) in Porcupine-grass

Photo. by F. L. Whitlock, R.A.O.U.

broke the eggs in coming home. Near Umbatcha Spring on August 1st. I found a nest with two newly-hatched young. This species was especially common around Umbatcha Spring, which is situated right in the centre of the great Missionary Plain.

Porzana plumbea. Spotless Crake.—I heard the well-known notes of this species issuing from a dense growth of reeds, lining a pool near the entrance to the Glen of Palms, in the Finke River.

Tribonyx ventralis. Black-tailed Native-hen (*Luka duradura*).—A few around the pools near Henbury Station, but not seen higher up the Finke.

Porphyrio melanotus. Black-backed Swamp-hen (Bald Coot).—Identified on a pool near the entrance to the Finke Valley in the James Ranges, and again amongst the reeds at the Hamilton bore stream.

Fulica atra. Coot.—Numerous on some of the Finke pools, especially at Boggy Pool.

Podiceps ruficollis. Little Grebe (*Terkateratera*).—Pairs were seen on a pool in the Ellery Creek, Macdonnell Ranges, and in one or two other places. At Hamilton bore stream I watched a half-grown young one diving for food.

Phalacrocorax carbo. Black Cormorant (*Nkebara*).—A numerous flock at Boggy Pool, and another at the Finke Gap in the Macdonnells. A third favourite haunt is a deep pool at the source of the Ellery Creek. High cliffs are present at each of these localities. I examined these cliffs carefully with the aid of a field-glass, but failed to find any traces of nests. Smaller parties and pairs were also seen on the Finke, and in the Palm Valley and again at the Hamilton bore stream.

Phalacrocorax ater. Little Black Cormorant.—Identified near pools in the Palm Valley and on the Upper Finke River.

Phalacrocorax fuscescens.—White-breasted Cormorant (*Liljana*).—Frequently seen on the Finke and also in the Palm Valley.

Anhinga novae-hollandiae. Australian Darter (*Tantana*).—Pairs seen in several places along the Finke, notably at Boggy Pool. Another pair observed at the Hamilton bore stream. Their clattering notes were heard.

Pelecanus conspicillatus. Pelican.—A flock of about thirty seen at various times near the Mission. A smaller flock also noted at Boggy Pool. A few observed again near Henbury Station. At Hamilton bore stream, the remains of two Pelicans were found lying on the bank.

†*Erythrogonys cinctus*. Red-kneed Dotterel.—Met with at a long pool on the Finke River, and also at the pools formed by the Gilbert Springs. Pairs were about to breed when I left the latter locality.

Zonifer tricolor. Banded (Black-breasted) Plover.—Heard at night only on one or two occasions on the journey up.

Charadrius melanops. Black-fronted Dotterel.—Common at all pools along the Finke, and also in the Palm Valley. Several nests containing three eggs were found. On 26th September I found an egg laid in a slight cavity of the sandstone rock, in the Palm Valley Creek. Next day, about 3 p.m., a second egg was laid. The two following days no further egg was laid, but the female was not sitting. I do not know when the clutch was completed, as I shifted camp.

Actitis hypoleucos. Common Sandpiper.—A single individual at Gilbert Spring, last week in August. I did not shoot it, as I am very familiar with this species, and have found numbers of its nests in the north of England. It comes as far south as Wilson's Inlet, my home, near Albany, Western Australia.

Glottis nebularius. Greenshank.—A single example seen and watched at Boggy Pool, on the Finke.

†*Rhyacophilus glareolus*. Wood-sandpiper.—On August 25th an immature specimen was shot at a large pool on the Finke, near the foothills of the Macdonnell Ranges. [An extremely interesting find. There are only a few recorded instances of this northern bird occurring in Australia.]

†*Pisobia acuminata*. Sharp-tailed Stint.—An immature example shot at a pool in the Palm Valley, and another from a party of seven at Boggy Pool. Three or four more were at the Hamilton bore stream, 75 miles north of Oodnadatta.

Burhinus magnirostris. Southern Stone-plover (Tineljara).—Heard calling at nights at all our camps on the outward journey, and also seldom absent from the many localities visited during the expedition. Hitherto I had never seen a flock of this species, but at the Palm Valley a low-rounded hill, covered with large Mulga and other bushes, was a favourite camping place. On one occasion a party of about twenty arose from this hill, but I noticed they split up into pairs as they flew away. Eggs were found in the Palm Valley and near the Mission. The breeding season commences in August, and lasts till October. Not more than two eggs were found.

Eupodotis australis. Australian Bustard or Plain Turkey (Itoa).—A few seen during the outward journey, notably in crossing Macmillan's Plain, but owing to the dry conditions nowhere plentiful this season. Near the Mission I met an aborigine carrying two fine ones which he had killed a short distance away. They were excellent eating when served at the Mission table. Mr. Heinrich gave me an egg taken in the neighbourhood some years previously.

Threskiornis spinicollis. Straw-necked Ibis.—One or two seen around pools in the Upper Finke, and again in the Palm Valley.

Platalea regia. Royal Spoonbill (Rata rata).—A single and very tame individual was seen in the Palm Valley. A second one at Boggy Pool.

Egretta intermedia = *plumifera*. Plumed Egret (Eroamba).—Occasional small parties of this beautiful bird were seen on the pools of the Upper Finke.

Notophoyx novæ-hollandiæ. White-faced Heron (Ntjuara).—Equally numerous with the last.

Notophoyx pacifica. White-necked Heron (Ibara).—Pairs in many places on the Finke. The plumage of the upper parts seemed to vary between a slate-colour and black. Two nests that had been recently occupied at the western end of the Palm Valley may have belonged to this species. They were in small trees growing on the sides of a steep cliff.

Dupetor flavicollis. Black Bittern.—Only seen near pools in the Finke Valley where it traversed the James Ranges. A pair was standing near an empty nest in a Eucalypt, adjacent to Boggy Pool. I saw nothing of the Nankeen Night-heron, which other ornithologists had noted in Central Australia.

Chenopsis atrata. Black Swan.—A stray bird seen on the big pool at the Finke Gap, north of the Horn Valley. Mr. F. Raggatt also saw this bird, and regarded its occurrence as a rarity in the neighbourhood. Mr. Raggatt has resided at the Finke Gap for many years.

Tadorna tadornoides. Chestnut-breasted Shelduck (Mountain Duck).—A party of seven was seen at Boggy Pool.

Anas superciliosa. Black Duck.—Small flocks seen at nearly all pools, in company with Grey Teal.

Virago gibberifrons. Grey Teal.—During the present season this was by far the commonest Duck observed in Central Australia. It was met with on all pools, also at the Gilbert and Coporyllia Springs, and again on all waterholes in the Palm Valley. I think members of the Duck family breed in Central Australia after floods

or during the summer rains. I dissected any shot for food, and none showed signs of breeding. Flocks had not broken up, and Ducks in pairs were notably absent.

Malacorhynchus membranaceus. Pink-eared Duck.—A few small parties seen, notably at Boggy Pool.

Calyptrorhynchus banksi stellatus. Red-tailed Cockatoo (Iranda).—More of this species of Cockatoo were seen on the outward journey than in the country explored. We camped on Macmillan's Plain, both going and coming, and fairly large parties of Red-tailed Cockatoos passed over at sunrise and sunset. A few pairs were breeding a long way up the Ellery Creek, in the Macdonnell Ranges. On July 9th I saw an old bird emerge from a hole in a big Eucalypt as I was riding on my camel. Investigation revealed a single young bird a day or two old. On 16th July I found another nest-hole, and Thomas—our guide—climbed up and secured the one egg it contained. A few pairs were reported up the Sandy Creek, which falls into the Finke at the Mission, but there was no water up the creek at which we could camp.

Circus assimilis. Spotted Harrier (Etaturra).—An uncommon bird, but clearly identified on several occasions; notably at Boggy Pool, on the Finke River, where it emerges from the James Ranges. One of the last clutches of eggs brought in by the aborigines was a set of four, referable to this species. They were heavily incubated, and taken from a nest low down in a eucalypt. The native who gave me them told me that Etaturra hunts for the eggs of the Emu, which it breaks in order to feed upon the contents. On inquiry, this information was confirmed by other natives.*

†*Astur fasciatus*. Goshawk (Indola).—There were two species of Goshawks around the James Ranges and in the Upper Valley of the Finke. But this, the larger one, was much less frequently seen than a second and smaller species. Both were breeding in September and October, which is rather later, generally speaking, than the nesting period of other hawks. The present species preferred to nest in the trees growing along the tributary creeks of the Finke. Several nests containing eggs were found. The nests were fairly large, built of small sticks, and neatly lined with green leaves.

[Only one skin of a Hawk, that of a female Goshawk, was procured during the expedition. The general upper surface is light drab, or drab, and the under surface wood brown (barred), as against upper surface dark drab grey, or fuscous, and under surface dark fawn colour of a typical female from New South Wales. Respective dimensions (which vary little), in millimetres, are—

(a) Length 508, culmen 25, wing 315, tail 225, tarsus 82.

(b) Length 520, culmen 25, wing 305, tail 230, tarsus 72.

Similarly coloured skins (of females) in the H. L. White collections are from the following localities, viz.:—

Tarana, N.S.W.; wing, 313 mm.

Borrooloola, N.T.; wing, 287 mm.

King River, N.T.; wing, 280 mm.

Naretha, W.A.; wing, 305 mm.

The Central Australian specimen might be referred to G. M. Mathews' *A. f. didimus* (A.A.R., I., p. 33), of which the bare type description is:—"Differs from *A. f. fasciatus* in its smaller size; wing, 236 mm." (Judging by the small wing, the specimen was possibly a male.) As a northern or geographical race, this seems feasible, until one finds in the same collection from Napier Broome Bay, far North-western Australia, a female specimen as dark as any typical bird from New South Wales, almost black on the head and broad brown-barred beneath; wing, 280 mm.]

*This habit has also been attributed to the Black-breasted Buzzard (*Gypoictinia melanosterna*).

Astur cruentus. Lesser Goshawk (*Indola*).—This second species of Goshawk was the commoner of the two. Nowhere was it more common than near the junction of the Palm Valley Creek with the Finke River. The birds were generally seen hunting about the sandstone cliffs and slopes in the more open parts of the valley. It was easy to identify them by their flight and general appearance, which differs considerably from that of true Falcons or Kites. The male bird looked quite a little fellow; hardly bigger than a female Sparrowhawk (*Accipiter cirrhocephalus*). The long tail of the female made her appear much larger than she actually was. Several nests were found. In each case they were built on horizontal limbs of eucalypts, the foundation being laid on an outward fork. They were difficult of access, and in two cases the eggs were obtained only by tilting the nest with a long stick, and by catching the eggs one by one in a hat below. This is a risky business, and one egg was irretrievably ruined in consequence. The eggs are conspicuously smaller than those of the common Goshawk, and are somewhat pointed at the smaller end. A pair only, as a rule, was found; but one nest contained three eggs. One of the latest nests found on the expedition was a nest of this species. It was found on 28th October, a few miles south of Horseshoe Bend, on the Finke River. I was riding the leading camel. In passing a small bloodwood eucalypt I observed a hawk fly out on the far side. It looked like a male Goshawk. Houssian climbed to the nest, which was barely fifteen feet from the ground. It contained two fresh eggs, one boldly marked, the other quite plain.

[A second variety of Goshawk in the Macdonnells is interesting. However, from a cabinet point of view, and the examination of a large series of skins, one thing is fairly certain: There is but one species of *Astur fasciatus* frequenting Australia and Tasmania.]

Accipiter cirrhocephalus. Collared Sparrowhawk.—Distinctly rare, and only identified with certainty on one or two occasions. On the return journey we camped for one night by the Stevenson Creek. A pair of these little hawks were roosting in a tree on the other side of the creek.

Uroaetus audax. Wedge-tailed Eagle (*Eritcha*).—This Eagle was met with throughout the expedition. Usually seen singly, but occasionally three were in sight at the same time. On the desolate tracts of gibber country, it was most frequent; it was also not uncommon amongst the foothills of the James and Macdonnell Ranges. On August 3rd, 1923, in the latter locality, a new nest was found, placed about twenty feet from the ground in a solitary beefwood tree. It was the usual platform of sticks, abundantly lined with sprays of eucalyptus leaves. It contained one very handsome fresh egg. The female could be seen on the wing, about five hundred yards away. Whilst Mr. Heinrich, Thomas and I were at the tree she ventured no nearer. Three weeks later I visited the nest again, and a second egg, a little incubated, was in the nest. This egg was in great contrast to the first, the markings, though plentiful, being of a very pale grey. A few days later Thomas, who had been hunting Euros in another part of the foothills, reported a nest with three young birds about a fortnight old. A third nest was found in the James Ranges, near the beautiful Palm Valley, by another aborigine. It contained two heavily-incubated eggs.

Hieraetus morphnoides. Little Eagle (*Eritchailala*).—Much less common than the Whistling Eagle. This is curious; as on the rivers of North-west Australia, it is the Little Eagle that predominates. Pairs were seen in many places, notably near the Finke Gorge, where it cuts through the southernmost chain of the Macdonnells. Nests with eggs were found, always near large creeks or the Finke River.

Haliastur sphenurus. Whistling Eagle (Irkalentcha).—This was, perhaps, the commonest bird of prey observed throughout the expedition. It was met with from Oodnadatta outwards right up to the Macdonnell, and westwards to the Gosse Ranges. It was most numerous along the Ellery Creek, a large tributary of the Finke, rising in the heart of the above ranges. Some idea of its abundance may be gathered, when I state that no less than thirty-eight were counted flying above the carcass of a recently deceased bullock. This was during the breeding season. This species must, to some extent, be nocturnal. Dingoes in the ranges were very plentiful, and a nuisance at night, howling around the camp, disturbing us and a dog we had with us. I got Houssian to procure a little poison, and one or two baits were put near the camp, but not until nearly all daylight had disappeared. The baits that had not been eaten were picked up again at daybreak to prevent Crows or other birds getting hold of them. Nevertheless, I was very sorry to find several dead Whistling Eagles during the following days. Any dogs that were poisoned were promptly burned. This Eagle is a useful bird, as it preys largely upon rabbits, which are only too plentiful in Central Australia. The nesting season commences in June. On 16th July a nest containing three eggs was seen in a large eucalypt on the banks of Ellery Creek. A little later a nest containing young birds was examined.

The Whistling Eagle has the peculiar habit of carrying the dried skins of rabbits, on which it has been preying, to the nest. The female broods on these. Thomas climbed up to several nests, which contained only skins, though the female was observed brooding before he ascended the tree. Whilst he was at these nests both parents flew around uttering anxious cries. Intervals of several days elapse between the laying of the eggs. On the return journey nests were observed along the Finke River with fully fledged young sitting in them. This species seems to favour the neighbourhood of isolated pools of water.

Milvus migrans. Black (Fork-tailed) Kite (Inkulkna).—Next to the Whistling Eagle, this was the commonest bird of prey seen during the expedition. The morning after arriving at Oodnadatta revealed Kites wheeling about over the township and surrounding country. On the journey up country water was fairly plentiful, and at all pools birds of prey were present, Kites generally predominating. In all parts of Western Australia I have visited they are rare. At first I was much puzzled to distinguish the Square-tailed Kite from the present species, as I had no book of reference with me. At rest, the tail of this Kite is deeply forked. On the wing, the half-expanded tail is slightly forked, whilst the fully expanded tail is square, except the central feathers, which then appear to be slightly the longest. During my convalescence at the Mission Station, it was one of my pleasures to walk up and down under the verandah and watch the Kites. Usually, there were from ten to twenty birds wheeling about, not thirty feet above the Mission buildings, and a favourite little gum tree often contained nine or ten birds at rest in its branches. The little aboriginal boys tormented these Kites by throwing up pebbles, upon which the birds, taking them for food, swooped down. When a bird was killed and cut up on the bench at the meat-house, the Kites disputed with the Crows for the fragments remaining. After a time I was able to distinguish an occasional Square-tailed Kite amongst the commoner species. I take this opportunity to point out the lack of a good portable manual of Australian birds, written by a field naturalist, from a field naturalist's point of view, giving the general appearance of large species as seen on the wing from

below. It is usually the underparts of large birds that are visible to the field observer. Mathews and Iredale's fine Manual is both too valuable, and too bulky, to be carried about. One wants a small "handy" book, that one can stuff into a collecting bag. Here is a chance for a competent man with leisure to confer a lasting blessing on the Australian field naturalist. Having never seen a Kite's nest, I was naturally anxious to find one, but several of the most intelligent aborigines assured me that the "Inkulna" did not breed in the Mission country. This proved to be correct. At the middle of August we were camped at the Gilbert Springs, some 24 miles west of the Mission. We arrived on the evening of 26th August. Whilst having tea a party of seventeen Kites flew to the westward; they were travelling at a height of about 1000 feet. On returning to the Mission, 13th September, not a Kite was to be seen. In the meantime, we had camped at Coporyllia Spring, and also by the Finke River. The same state of things prevailed at both localities. A little later on, when re-visiting the Palm Valley, Kites were also absent. The only evidence that I gathered as to Kites occasionally breeding in the Mission country was that of a pair of finely speckled eggs of a bird of prey, brought to the Mission by an aborigine in the month of October. He said they were eggs of the Inkulna. Unfortunately, they were useless as specimens. They much resembled a certain variety of the eggs of the European Black Kite (*Milvus ater*). On the return journey, when travelling by the Finke, near Horseshoe Bend and Old Crown Stations, Kites were observed sitting by nests in eucalypts on several occasions. These nests appeared to contain young.

Lophoictinia isura. Square-tailed Kite.—A few pairs identified during my researches on the Upper Finke River, and also on the return journey. No nests were found. On our outward journey birds of prey were very numerous around a pool of water at Charlotte Waters. A Seagull was reported to be there. I think it was more likely that it was a Letter-winged Kite (*Elanus scriptus*). There was no time to investigate.

Gypoictinia melanosterna. Black-breasted Buzzard.—Only one pair was identified with absolute certainty. The birds were flying overhead at a fair height near the Mission.

Ieracidea berigora. Brown Hawk (Ilkalancho).—This noisy falcon is a common species in Central Australia, and at our various camps a pair or two were always about. I saw only the pale form; never the heavily marked dark-breasted variety. It was the first hawk abroad at daybreak, and the last to return to roost at night; and it never failed to let its arrival or departure be known. At our camp at Coporyllia Spring, a pair had a nest in a tall eucalypt. I think at one time this nest was the property of a pair of Crows, which were nesting in a neighbouring tree. Incubation was proceeding, and both male and female were observed to brood the eggs. The roosting tree was about one hundred and fifty yards away. This pair seemed to have a series of calls, which they understood. When the male returned to the roosting tree, he uttered a call to the female; she thereupon slipped off the nest. If he brought home food, she shared it. If he came empty, off she flew to hunt for herself; the male in the meantime taking her place on the nest. A number of nests were found; sometimes the eggs were laid in old Crows' or Babbler's nests—the latter being altered to suit the requirements of the hawks. Others again were noted in the hollows of big river gums (*Eucalyptus rostrata*). Several clutches of eggs were brought in to the mission station by the aborigines. The eggs varied considerably in shape, size, and markings. In Palm Valley, Thomas, our guide, robbed a Crows'

nest near the camp. A pair of *Ilkalanha* came along, and seized the empty nest. An egg was laid, but the Crows, in revenge, broke the egg during the absence of the Hawks.

Cerchneis cenchroides. Nankeen Kestrel.—Not a common bird, but more frequently seen flying over the desolate gibber country. A few pairs were also seen by the Finke River, near the Mission. I wished to obtain a specimen for comparison with western examples, but could never get within shot. Eggs were brought in to the Mission by an aborigine; they had been taken from a hollow tree.

Falco longipennis. Little Falcon.—Uncommon, but occasionally seen. At the end of September we were camped at the western end of the Palm Valley, not far from a camp of myall blacks of the Loritcha tribe. Thomas, our guide, could speak the Loritcha dialect, and he got some of the men to hunt for "kwada" (eggs) in exchange for tea and sugar. Amongst other things brought in was a set of three smallish Falcon's eggs, taken from an open nest. Though I cannot be absolutely certain, I think these were referable to the Little Falcon. Captain S. A. White reports the Grey Falcon seen in Central Australia. I was not fortunate enough to meet with this species during the expedition. I have seen it in North-western Australia.

†*Ninox boobook*. Boobook Owl (*Arkularkua*).—Heard at all our camps; sometimes very close at hand. On moonlight nights I tried to get a view of the calling birds, but they were too wary. Whilst watching Bower-birds, Houssian observed an Owl sitting in a wild fig tree growing on the side of a cliff. It was a non-breeding male, and a much darker plumaged bird than those I obtained on the Fortescue River last year. The latter are probably referable to the sub-species, *N. b. ocellata*.

[The nearest to this specimen (male) are those from Groote Island and Borroloola—*N. b. mixta* Mathews.]

Tyto alba. Barn Owl.—Heard at night at our Finke River camps, and at Coporyllia Spring. A nesting place of this Owl was known to the aborigines, near the Mission. An egg was found in the cavity, but it proved to be a last season's egg. On being exposed to the hot sunlight, it promptly exploded, and those standing near were badly "gassed."

Kakatoe leadbeateri. Pink Cockatoo (Major Mitchell). (*Nkuna*).—Distinctly rare this season. A pair or two seen in travelling down the Finke between Henbury and Horseshoe Bend.

Eolophus roseicapilla. Galah, Rose-breasted Cockatoo (*Ilentcha*).—Commoner south of the Finke this season than further up country. At Oodnadatta a large flock came night and morning to feed in the horse-yards near the hotel. None known to breed near the Mission this season.

Licmetis sanguinea. Little Corella, Bare-eyed Cockatoo (*Ankatnara*).—Only a pair or two seen in the same locality as the foregoing. Mr. Heinrich thinks the sulphur-crested species occasionally visits the country, but it is not included in the Rev. C. Strehlow's list of totem birds.

Leptolophus hollandicus (= *Calopsittacus novæ-hollandiæ*). Cockatoo-Parrot (*Rulkara*).—A few pairs seen both on the outward and homeward journey, but none was around the James Ranges or great Missionary Plain. It seems to be governed by the state of the season in selecting its breeding grounds.

Polytelis alexandræ. Princess Parrot (*Ileltara*).—I did not see this Parrot in its wild state, but there was a beautiful female in captivity at the Mission Station. At Oodnadatta, at the home of Miss Kunoth, I saw a handsome pair, the survivors of six. They were accommodated in a large aviary in company with Doves and other Parrots. The present season they had bred. Four eggs were

laid, and two young were hatched. When I saw the latter they were about to acquire their first plumage; the flight feathers being well grown. Prior to this, in past seasons, when the party numbered six, eggs had been laid, but, squabbles ensuing, the eggs were generally broken. A hollow limb had been placed in the aviary for their accommodation, and the surviving pair, having exclusive possession, had successfully brought out two young ones. Miss Kunoth is at considerable trouble in gathering natural food—berries and seeds of local plants—and to this I think she owes her success in inducing birds to breed in her aviary. In the wild state Mr. Robert Buck, of Henbury, told me that about ten years ago they bred near the station in hundreds. At one time he had nearly fifty young in hand. At daybreak those that could not fly were put outside the cage, and the free birds came and fed them. He considered another visitation was about due. This year Mr. Crombie, who was working at Mr. Giles's station, north of the Macdonnell Ranges, wrote informing me of the presence of a few pairs on a creek traversing the run. I was tempted; but to reach the locality a detour of sixty miles had to be made. Owing to the big flood of 1921, the pass through the ranges at the Finke Gap had become impassable to camels. In all, the journey would have run to about 150 miles. To have accomplished this meant abandoning other things already marked down. The day I left the Mission for the last time word came in that a pair had been seen on the Ellery Creek about ten miles away.

Barnardius zonarius occidentalis. (Ulbatcha).—Common wherever there were Eucalypts, especially by the Finke River and the larger creeks. It was breeding in August. A nest was found in a hollow limb September 12th; the eggs were just chipping. Another clutch of heavily incubated eggs was brought in to the Mission Station about the same time.

Psephotus varius. Varied Parrot (Rulga Rulga).—Not nearly so common as the last, but frequently seen in Mulga country. In Central Australia, one of its names is "Mulga Parrot." At the Mission were three females and a male in a large cage. They thrived well, but made no attempt to breed. In all cases I found the male bird had yellow humeral patches, and the underparts deeply coloured with orange, whilst the female had dull red humeral patches, and no orange on the under parts. This parrot runs nimbly over the ground.

Melopsittacus undulatus. Budgerygah (Shell Parrot).—Small parties seen in many places throughout the expedition, but none was breeding.

Geopsittacus occidentalis. Night-Parrot (Tnokkapaltara).—This bird, the main objective of the expedition, proved to be a very elusive species. Though I was unsuccessful in obtaining a specimen, it may be as well to put on record what I learned about it. The first person I met who claimed any knowledge of the bird was Mr. A. Elliott, of Horseshoe Bend. Twenty years ago he occasionally saw a specimen when riding through the porcupine (*Tridonia*) after cattle. It was known as the "Solitaire," never more than one being flushed at a time. After flying a short distance, sometimes almost shuffling along for a few yards, the flushed bird hastened to enter the shelter of the porcupine again. The notes were unknown to Mr. Elliott, and he had never known the nest to be found. Mr. Alan Breaden, of Idracowra, confirmed what Mr. Elliott told me. He, too, had not met with any specimens for a very long time, though years ago he thought it nothing worthy of note to flush one from the porcupine occasionally. Both these persons are old residents on the Finke River, and very experienced bushmen. On the other hand, Mr. Robt. Buck of Henbury, recently

met with a single example, when moving cattle not far from the Palmer River, but, until his conversation with Mr. Neil McGilp, already mentioned, he had thought no more of the matter. Some of the older aborigines around Henbury Station knew of the bird, but could give no advice as to how it could be secured. After I arrived at the Mission Station I began instituting inquiries as to the presence of the bird thereabouts. A clue was at length found in a recently published account of the folk-lore of the Arunta tribe, by the late Rev. C. Strehlow, who spent the best twenty-eight years of his life at Hermannsburg. Amongst the list of birds adopted by the aborigines as totems was the name "Nacht-lichter papagei," which obviously referred to a Night-parrot and not to the various Nightjars which are separately included in the list as well. The native name, Tnokkapaltara, was added in the margin. With the help of this name as an identification, Mr. H. A. Heinrich, who speaks the Arunta dialect fluently, was able to make inquiries of the older and better educated natives, some of whom can read and write in their own language. The Night-parrot was known without a doubt, and, though not often seen nowadays, instances of its recent occurrence were remembered. The head stockman, Mr. C. Paschke, had a few months previously, when driving a mob of cattle over a stony rise, clothed with porcupine, flushed a single bird, but not being specially interested in bird-life, he took but little interest in the circumstance. Some of the aboriginal stockmen recalled flushing an example of the Tnokkapaltara near Mount Waber, a locality some eighteen miles west of the Mission, not so very long ago. Mr. Heinrich himself afterwards remembered the fact of seeing a Parrot with a peculiar flight being driven from its hiding-place by an advancing bush-fire. In further conversation with the natives he learned that the birds tunnelled under the big clumps of *Triodia* where they made lairs, in which they roosted during the day. Further, that the birds were poor fliers in daylight, and could be run down and caught if once driven into the open. When hard pressed, if any porcupine clump was near, and big enough to afford refuge, they dived headlong into the heart of it. The sequel to all this was as follows:—On July 23rd I was camped at Coporyllia Spring, five or six miles west of the Mission. About sunset two small boys came in with a note from Mr. Heinrich, requesting me to come at once, as he had important news to tell me respecting the Night-parrot. I had had a big day, but after tea walked to the Mission by moonlight. It appears that some young boys and girls playing about in the *Triodia*, less than a mile from the Mission, had in a spirit of mischief set fire to the porcupine. During the conflagration a Parrot had been driven out and chased into an isolated clump, when it was again driven out, caught, cooked and eaten. Most unfortunately it was cooked without being plucked. These facts did not come to Mr. Heinrich's knowledge until several days later, but he was at once conducted to the spot by some of the boys who did the mischief. Other adult natives who knew the habits of the Night-parrot accompanied him, and a search was made for the mate of the victim. Tunnels were found with the print of what looked like birds' feet leading into them. These Mr. Heinrich smoothed out, and at once sent me word to come in. Next morning, after my arrival, he and I and some natives went out. The tunnels were shown to me, and there were certainly fresh bird tracks at the entrance. The natives with us were armed with strong "yam sticks," and with these they uprooted and overturned the *Triodia*. In one case we found a small lair, not unlike the nest of the Western Ground Parrot (*Pezoporus wallicus flaviventris*). We searched high and low, and the natives vigorously prodded the adjacent *Triodia* with sticks. We even went so far as to set fire

to a small tract of *Triodia*, but all without success. We could find no mate. I firmly believe the bird exists in small numbers, especially in country not stocked with cattle or horses. It is evidently a shy and solitary species, which resents being disturbed. A number of Loritcha men came to the Mission at the end of June. Their country lies to the west. They were real wild blacks, who had never seen a white man before. Two were persuaded to remain at the Mission. Some of the Mission blacks understood the Loritcha dialect, and questioned them. They knew the Tnokkapaltara, and pointed west when asked where it occurred. At present I think the best chance to get the bird would be to ride with the stockmen when moving mobs of cattle, or to be present when tracts of porcupine are being burnt off. The Horn Expedition undoubtedly secured very tangible evidence of the occurrence of the Night-Parrot near Alice Springs thirty years ago. At that time it appears to have been by no means rare. Perhaps the increase of dingoes, due to the abundance of rabbits, may have had something to do with its present scarcity.

[Whatever may be said to the contrary, cats (domestic gone wild) are accountable for the disappearance of this rare species in some quarters. I am informed by Mr. Alfred Walker that when he was managing Innamincka Cattle Station on Cooper's Creek the Parrots were there in the "eighties." The birds disappeared after an invasion of cats which came from New South Wales. He recollects the last Night-parrot he saw was in 1885. Strange to say, in turn, an epidemic broke out among the cats, which fared badly. More about Cats! G. A. Keartland wrote ("Horn Expedition—Aves," p. 110):—"In one of the operator's rooms (telegraph station) several picture frames were covered with wings and tails of the Porcupine Parrot (*Geopsittacus occidentalis*) which had been caught by a cat last summer." The coloured plate (No. 40) is taken from a drawing by Neville W. Cayley from specimens in the Australian Museum, Sydney, collected in the Gawler Ranges, S.A., probably by the late F. W. Andrews.]

Podargus strigoides. Tawny Frogmouth (Renga).—The moaning notes of the Frogmouth were often heard at our various camps. On moonlight nights I several times tried to secure a specimen, but never had a chance. None was seen at rest in daylight. A nest containing two typical eggs was brought into the Mission by a lubra.

†*Ægotheles cristata*. Owlet Nightjar (Urturta).—Fairly distributed over the country where Eucalypts were plentiful; very often heard calling at night, and occasionally in the day time.

Halcyon pyrrhopygius. Red-backed Kingfisher (Palkanga).—Pairs seen in many places, but no attempt was made to locate nests. No doubt the species bred. In the Palm Valley a pair lived near my camp. On one occasion I noticed the female fly into an adjacent Gum-tree. She was gripping a lizard in her bill. The lizard was longer than herself. I was interested to see how it was to be disposed of. After being beaten against the limb on which she was sitting, it was swallowed, with many contortions, head foremost. When no more could be got down, about three inches of the victim's tail protruded from the Kingfisher's bill.

Merops ornatus. Bee-eater or Rainbow-bird.—A migratory species, none appearing till late in August. In September and October it became very common, and was breeding in many places by the Finke and in the Palm Valley. At Boggy waterhole I found myself camped almost on top of a nesting tunnel. The entrance was in a little creek, within five feet of where I was quietly skinning birds. The owners went in and out, regardless of my presence.

Eurostopodus guttatus. Spotted Nightjar (Coota Coota).—Heard calling at night in the Palm Valley, and also at several of our camps overlooking the great Missionary Plain. At Coporyllia I flushed one from the *Triodia*, but it flew into a deep ravine and I could not find it again. An egg was found under the shelter of a large bush at the western end of the Palm Valley, and another on the low hills near the Hermannsburg. Both were found early in October, and were quite fresh. Mr. Raggatt, of Glen Helen Station, north of the Mission, told me he had often flushed this bird, and seen its egg when riding around his run. The notes heard at night were certainly of a remarkable character, and were only equalled in peculiarity by those of the Swamp Coucal.

Cuculus pallidus. Pallid Cuckoo.—An uncommon bird. A pair or two were seen during the breeding season around Gilbert Springs. It also occurred very sparingly in the Palm Valley.

Mesocalius osculans. Black-eared Cuckoo.—Seen and heard only in the Palm Valley.

Chalcococcyx basalis. Narrow-billed Bronze-Cuckoo.—Cuckoos of any kind were rare this season in Central Australia. This was perhaps due to the dry conditions prevailing. The present species is the only one of which I have direct evidence of breeding. A nest of the White-winged Wren (*Malurus cyanotus* = *leuconotus*) was found containing four eggs, one of which was that of a Bronze-Cuckoo. In pulling to pieces a last season's nest of an Emu-wren, a Cuckoo's egg was found, intact, in the lining.

Hirundo neoxena. Welcome Swallow (Ninjarkua).—A rare bird in Central Australia. Perhaps this was due to the dry season, and was thus exceptional. None was seen until our arrival at Hamilton bore on the return journey.

Cheramœca leucosternum. White-backed Swallow.—A common bird by the Finke and the larger creeks, where pools of water existed. It was present in the Palm Valley too, nesting in the banks of small creeks joining the main one.

Hylochelidon nigricans. Tree-martin.—Occasionally seen flying over pools in the Upper Finke River; somewhat a rare bird.

Hylochelidon ariel. Fairy Martin.—Breeding colonies were noted amongst the cliffs of the Palm Valley. Old birds were feeding young during the middle of October.

†*Petroica goodenovii*. Red-capped Robin.—Pairs were scattered all over the Mulga country. No doubt, they were breeding, but only one nest was observed; it contained a single egg.

[Male more red on crown and throat than is typical. Female is very distinctive with a flushed crown and breast not usually seen in that sex.]

†*Melanodryas cucullata*. Hooded Robin.—In the winter months this species was common, but apparently a good number of the local birds left for the south on the advent of spring. Several nests were observed, but only two eggs were obtained, and these met with an accident.

Rhipidura leucophrys. Black and White Fantail (Titgiritgira).—This remarkable bird, which seems able to adapt itself to all conditions of climate and surroundings in Australia, was found everywhere. It was breeding in August and September. In the Palm Valley a pair hatched out a brood within a few feet of my tent door. Any Crow or Hawk venturing near was at once buffeted and chased away, the Fantails always hovering just above the intruder. The young left the nest in about twelve days. I saw nothing of the *Rhipidura albicauda* of the Horn Expedition, though I was constantly on the look-out for it.

†*Pachycephala rufiventris*. Rufous-breasted Whistler.—This well-known species was confined to tea-tree thickets or to tracts of

dense Mulga scrub. Its joyous song was heard in many places, notably at Coporyllia Spring, and in the Palm Valley. Only one nest was found. Males in immature plumage were heard singing as freely as adult birds. Many males were watched at close quarters with the aid of a field-glass. None was found in a similar plumage to a certain pair obtained on the Nullarbor Plain two years ago. I am of opinion there is something to be cleared up concerning the Rufous Whistler. It is possible there are two closely allied species whose ranges overlap.

†*Colluricincla rufiventris*. Rufous Shrike-thrush.—A fairly common bird, favouring country where there were thickets of tea-tree scrub, at the mouths of rocky gorges. No nests were observed.

Grallina cyanoleuca. Magpie-lark, Mud-lark (*Pattantdiatcha*).—A common bird wherever pools of water were to be found. Even in Oodnadatta it was present. A pair resided in the Eucalypts surrounding Mr. F. Jones's house. They reared two broods during the present season. At Blood's Creek we camped for one night beside a nice pool of water. There was a flock of over twenty of these birds there. Nests were observed along the Finke and in the Palm Valley.

†*Oreoica gutturalis*. Crested Bellbird (*Kunbalunkala*).—Fairly common wherever trees or large bushes afforded it sufficient shelter. It was numerous amongst the large Witchity bushes in the Palm Valley. Several nests were found. Two were placed very low in tea-tree scrub in the bed of a large creek.

Pteropodocys maxima. Ground Cuckoo-Shrike.—Rather rare. A pair were probably breeding in a large tract of river gums near the fifteen-mile stockyard north of the Mission. Pairs were noted at intervals after leaving Henbury on the homeward journey, but once out of the Finke River valley no more were seen or heard.

Graucalus novæ-hollandiæ. Black-faced Cuckoo-Shrike.—A widely distributed bird in timbered country, but favouring rivers and creeks well lined with eucalypts. Only one nest was seen. It was placed as usual in a fork near the end of a horizontal branch of a gum tree.

Campophaga tricolor. White-shouldered Caterpillar-eater.—A few seen on the Great Missionary Plain, and also in the Palm Valley. The males were not so full of song, as is generally the case in the West. No nests were seen.

Cinclosoma castanonotum. Chestnut-backed Ground-bird.—This species is said to have been obtained by the Horn Expedition near Deering Creek, and a second one seen near Hermannsburg. The latter record may be correct. The country is now too dry.

†*Cinclosoma cinnamomeum*. Cinnamon Ground-bird.—On the outward journey I rode the rear-most camel of the string, and no doubt missed seeing a few birds in consequence. It could not be helped, as I did not know which track to follow, as bullock tracks leading in all directions were frequent. On the return journey I took the lead. It was not till we were a few miles south of Horseshoe Bend that I noted the Cinnamon Ground-bird. There was a party of seven or eight just where the country opened out into a stony plain. Houssian jumped down and gave chase. He secured two, both birds of the year. Further on, other chances presented themselves, and two adult males were procured just north of the Stevenson Creek. The last party was seen a few miles north of Oodnadatta. With this species there seems to be a tendency to unite families into small parties when the breeding season is over; a habit I have not observed with other members of the genus.

†*Pomatostomus rubeculus*. Red-breasted Babbler (*Toagata*).—Chiefly confined to the neighbourhood of rivers and creeks, where it builds its bulky nest in the Eucalypts. It was common throughout

the expedition, especially near the Finke River. Nests were noted thirty feet from the ground. As a rule three or four nests were in the same tree. Eggs were obtained.

†*Pomatostomus superciliosus*. White-browed Babbler. — Seen throughout the expedition right up to the great Missionary Plain, but gradually thinning out in numbers the further north we got. Nests with eggs were found.

†*Epthianura tricolor*. Crimson Chat. — Seen as a migrant in various places, notably in company with Masked Wood-Swallows. Houssian who went to Alice Springs for stores, reported a number seen in some saltbush country. No nests were observed.

Ashbyia lovensis. Gibber-bird. — Seen only in the desolate gibber country. The second day out from Oodnadatta on 20th March a pair were observed building a nest between two stones. Nothing more was seen of the species until the return journey, when one was seen near Wire Creek Bore, and others again nearer Oodnadatta.

†*Acanthiza pyrrhopygia consobrina*. Pale Thornbill. — Thinly distributed through Mulga country. I first met with this species near Boggy Pool on the Finke River, but as no serious attempt at collecting had been made previously, no doubt its range extends much further south. Nests were found on the great Missionary Plain. The eggs in one nest were spotless. [*A. pyrrhopygia consobrina* is darker on flanks and under tail-coverts than typical.]

†*Acanthiza uropygialis*. Chestnut-tailed Thornbill. — Rather a scarce bird, but found along with *A. apicalis* in Mulga (Acacia) country on the Missionary Plain and around Boggy Pool on the Finke. Eggs were found in a cavity of a dead trunk, but they were on the point of hatching. [*A. u. condora* is the lightest or pallid race of this species in the interior.]

†*Acanthiza robustirostris*. Thick-billed Thornbill. — At the Five Mile well, amongst the big Mulgas, were found several species of *Acanthiza*. Breeding operations were just commencing when I visited the locality for the last time. Amongst other specimens collected was one with dark upper tail coverts and a very faintly striated head. I made a note of the fact on the label attached to the skin; but at the time it did not occur to me that I had met my old Lake Austin friend in Central Australia, the striations on the head being so undefined. I have to thank Mr. A. J. Campbell for identifying this little bird, whose range is now considerably extended. ["Adult female. Taken near Hermannsburg Range, 9/8/23; irides buff; bill and legs black." Captain S. A. White and Mr. G. M. Mathews have both renamed this bird from the Everard Ranges. But there appears little or no difference in it, compared with type-locality specimens.]

†*Geobasileus chrysorrhus*. Yellow-tailed Thornbill. — First met with at Boggy Pool on the Finke, but parties were seen on the return journey much farther south. I was at once struck with the brightness of the coloration of these Central Australian specimens, in comparison with Western examples. In view of this fact, A. W. Milligan seems justified in making a sub-species of the latter, which he named. Typical nests were found in the Palm Valley, usually suspended from the pendulous branches of Bloodwood Eucalypts, but occasionally from bunches of Mistletoe. [A fine series; probably *G. c. ferdinandi*, Mathews, Bull., Brit. Orn. Club, XVIII., p. 90.]

†*Smicrornis flavescens*. Yellow Weebill (Tree-tit). — A common little bird in the Mallee, and amongst the Eucalypts along the rivers and creeks. Several nests were found, but only one egg was obtained.

†*Gerygone culicivora*. Southern Warbler (Flyeater). — First met with at Boggy Pool, but others seen on the Missionary Plain and in the Palm Valley during May. When the breeding season arrived, these little birds seemed to be absent. Perhaps Central Aus-

tralia is their winter quarters. [A good series. Specimens have less white on tail and smaller wings than some western birds; irides pale, not bright red. The species was first collected in Western Australia, the types of *Psilopus culicivorus*, Gould, being in the Academy of Natural Science of Philadelphia (*vide Austral Avian Record*, I., p. 156). The central birds range in tone of general upper surface, from drab to buffy brown. Those in the latter (darker) colour are probably immature.]

†*Acrocephalus australis*. Australian Reed-Warbler.—A few were seen and heard in the reedy margins of the Finke River, where it cuts through the James Ranges. The first bird was heard singing in a small patch of reeds growing around a pool in the Palm Valley. After leaving the latter locality we followed the Finke down until we cut the main camel track above Boggy Pool. Wherever there were pools of water margined by tall reeds, there I heard the Reed-Warblers singing. We camped two days at Boggy Pool to investigate. After a hard morning's work in the water and reeds, we secured two males. Houssian also found an empty nest; but I could not be sure whether it had contained young or not. This was on 21st October, and very late for the nesting of Passerine birds. Owing to the wind and the height of the reeds, which exceeded ten feet, and were very dense, we could do no more. At the Hamilton Bore, seventy-five miles north of Oodnadatta, Reed-Warblers were singing in cover growing in the large overflow pool. One was taken. [Three males, wing average of the species—70 mm., but specimens are much lighter than typical from either east or west, the general upper surface being Saccardo's umber, not raw umber, as in the others.]

Megalurus gramineus. Little Grass-bird.—Whilst hunting the Reed-Warblers I observed a small bird creeping about the foot of the reeds near the water's edge. I called to Houssian, who was further in the water than I was, to shoot at it. He was lucky enough to make a successful shot, and after a swim retrieved the bird. It proved to be a heavily marked "*Megalurus*." A second bird was seen, but not secured. At one reedbed I heard feeble notes like those I became familiar with on the Fortescue River last year. I suspected the presence of a Fantail Warbler (*Cisticola*). I exhausted every artifice to make them show up, but without success. There was too much wind blowing.

Cinclorhamphus mathewsi. Rufous Song-Lark.—A rare bird. One or two heard singing near our camp in the Palm Valley, in the months of September and October.

†*Eremiornis carteri*. Spinifex or Desert-bird.—The occurrence of this species in Central Australia, hitherto supposed to be strictly confined to the north-west of the continent, was one of the surprises of the expedition. I first suspected its presence when hunting for Emu-wrens near the entrance to the Glen of Palms. I had followed up a creek where the *Triodia* was growing thickly in large clumps, when I was startled by thinking I heard the well-known call-note. It was not repeated, however, but I did get a glimpse of a brown bird dropping down into the *Triodia* in a suspicious manner. After this I was on the *qui vive*. A few days later, on our return to the Palm Valley, as I was investigating the summit of a hill, thickly covered with *Triodia*, I thought I heard the note again, but at some distance away. I followed up the clue without success. If the Spinifex-bird was there, it had evidently not yet begun to call. This was in the month of May and June. It was not till I camped at Coporyllia Spring a little later on that I cleared the matter up. I was hunting the *Triodia* for traces of the Night-parrot, when I again heard the call-note, this time unmistakable. I cautiously walked to the spot from which the sound appeared to



Nest of Thick-billed Grass-wren in Cane-grass.

Photo. by F. Lawson Whitlock, R.A.O.U.

come, and imitating certain other notes of the species, tempted the bird to show itself. It was a true example of *Eremiornis carteri*—an adult bird. A younger bird was afterwards secured. Occasionally a glimpse was caught of other individuals, but the species was evidently very local and present only in small numbers. During a journey in company with Mr. Heinrich, of the Mission, examples were seen between the Gilbert Springs and Gosse Ranges, over thirty miles west of the Mission. In the early part of September, whilst hunting for nests of Grass-wrens in the blue porcupine (*Triodia irritans*), near Coporyllia Spring, I surprised a pair. I made four attempts to locate the nest, but am inclined to think they had young in the porcupine. Last of all, during my final visit to the Palm Valley in October, I had followed a deep creek, where the Soft *Triodia* was fully six feet in height to the top of the flower stalks, when I heard two *Spinifex*-birds calling continually. There had been a little rain the previous night. I saw both these birds distinctly, but had brought no gun with me, as I had much rough climbing to do that particular morning. This was the last encounter I had with the *Spinifex*-bird in Central Australia.

[This is another "locality record." There is a good and serviceable series of the *Spinifex* or Desert-bird in the "H. L. White Collection," from North-west Australia, including Barrow Island and now from Central Australia, the last specimen having been taken earlier in the season in fine feather. The type of *Eremiornis carteri* was procured 1250 miles westward in the same latitude (Point Cloates), while the nearest previous record was Mt. Huxley, Kimberley, about 650 miles to the north-west from the Macdonnells, which is probably the eastern limit of the species. Specimens from the near North-west (Point Cloates) and far North-west (Kimberley), according to Herbert (*Nov. Zool. XII.*, p. 226) "agree perfectly." One of the peculiarities of modern work is that any person may name a specimen sub-specifically, whether it be a sub-species or not, just because it is from a new locality.]

†*Amytornis modesta*. Thick-billed Grass-Wren.—This is another Grass-Wren that has recently been recognised as worthy of full specific rank. As far as my memory goes, it is in life a more robust and thick-set species than *A. textilis*, to which, however, it is closely related. In Central Australia its neighbour and congener, *A. purnelli*, can at once be distinguished from it by its much more slender bill, by the more rufous coloration of the upper parts, and generally lighter build. I never found the two species living in the same area. When I made its acquaintance near the Hermannsburg Mission, I provisionally called it the Cane Grass-Wren, from the nature of the cover forming its favourite haunts. It is not, however, confined to the Cane Grass (*Spinifex paradoxus*), but I found it in small numbers some five or six miles east of the Mission, in undulatory country clothed with soft spinifex (*Triodia pungens*) and a little Mallee. Here it was more difficult to watch, and I rarely saw it except when it was feeding on the margins of the *Triodia*. About three miles north of the Mission, the Finke divides into two channels; these unite again at the Mission itself. The intervening country forms a long narrow flat, abundantly clothed with flourishing clumps of Cane Grass, with a few much-eaten salt-bushes, bearing a pink berry. At flood time this flat is much scoured by the waters of the Finke. Each clump of Cane Grass thus forms a little islet raised above the surrounding sand. It is in this country that the present species finds a home, and builds its nest. My first encounter with it was on returning from Coporyllia Spring. I could see the birds hopping at great speed from cover to cover when riding through its haunts on a camel. Houssian jumped down, and after some trouble obtained a pair. I

was at once struck by the stout conical bill and general thick-set appearance of these birds. This was in striking contrast to the same features in the case of *A. purnelli*. There was not the slightest doubt that the two species were quite distinct. I paid several visits to this big flat, and saw much of the Grass-Wrens. They were shy if followed too persistently, but were rather inquisitive. I drove pairs on several occasions to the shelter of masses of flood debris, and by patiently standing quite still some fifteen yards away was rewarded by both birds hopping into full view to take a peep at me. On one occasion a female bird hopped to the top of a fairly large Acacia bush, from which it eventually flew to the ground. I may here state that *A. modesta* takes more readily to the wing than any other member of the genus with which I am acquainted. I found this Grass-Wren a silent species. This is a general characteristic of the *A. textilis* group. The only note I know is a high-pitched alarm note, which Houssian aptly described as similar to the sound emitted by a bicycle pump when inflating a tyre. The breeding season commences early in August, odd pairs perhaps building before the end of July. I was passing through the haunt on August 18th, when I observed a Grass-Wren slip out of a clump of Cane Grass about forty yards away. I walked over to the spot, and in a few minutes found a fully-domed nest containing three fresh eggs. Further search revealed a second nest with three young birds a week or so old. This was a half-domed nest. I lifted one young bird out. It uttered its high-pitched alarm note, and the female came hopping up almost to my feet. The plumage of this nestling was not advanced enough to merit description. When I visited the nest again the three young had departed. At intervals during August and September I was able to make a thorough search of the whole flat, and found a number of occupied nests and still more old nests of previous seasons. They were of three types, viz., fully-domed, half-domed, and cup-shaped; the half-domed were the most numerous. All were placed low down, some were resting on the sand forming the little hillocks on which the Cane Grass was growing. Others were raised a few inches in the dense growths of Cane Grass. Not infrequently I found both new and old nests in the saltbushes which were much eaten down by the Mission cattle. As an exception, I found a fully domed nest in a dense prickly bush. This nest contained four eggs, but they were obviously the production of two females. One pair was stale. Another nest was cleverly concealed in a mass of flood debris, and would have easily escaped observation had not the female flown off. It contained two young birds. Some nests were easily seen. A cup-shaped nest in a straggling saltbush had no concealment whatever, the eggs being plainly visible. The female is a close sitter. I could walk very quietly in the sandy ground, and on one occasion so startled a sitting bird that she damaged one of her eggs in her haste to leave her nest and get down an adjacent rabbit hole. The domed nests were rather loosely made, outwardly of Cane Grass stems, but lined with finer grasses. The half-domed nests, too, were rather loose; but neatly lined with fine grasses and occasionally a little fur. One cup-shaped nest contained a few parrot feathers. The eggs varied in number. Three was the largest clutch, but two eggs was the more general rule. One or two nests contained but one young bird. In character the eggs were less blotchy than those of *A. textilis gigantura*, which I have found on the East Murchison, and also than eggs of *A. textilis*, judging from the fragments of eggs found in nests on Peron Peninsula (W.A.). The food of the Thick-billed Grass-Wren is chiefly of a vegetable character; small berries and fairly large seeds being eaten, but it also feeds on small beetles and other insect life. In the report of



The half-domed Nest of the Dark Grass-wren in Porcupine-grass

Photo by F. L. Whitlock, R A.O.U.

the Horn Expedition, the Striated Grass-Wren (*A. striata*) was reported as common near Hermannsburg, and *A. textilis* as common near Stokes' Pass. I think a transposition of notes has here crept in, as the birds we now distinguish as *A. purnelli* and *A. modesta* are in a reversed position as regards these localities. In view of Gould's description of *A. striata*, the late Mr. A. J. North would not be likely to have made the mistake of calling *A. modesta* *A. striata* nor *A. purnelli*, with its rufous mantle, *A. textilis*. The name *striata*, though appropriate enough when bestowed on a Grass-Wren, has proved an unfortunate selection. Striations are common to the whole genus, and form a striking feature in the plumage of its members. The name is not distinctive enough, and has led to frequent mistakes in identification. In both *A. modesta* and *A. purnelli*, the rule that females should be distinguished by rufous flanks is followed. Unfortunately, I did not see nestlings sufficiently advanced in plumage to be able to describe them, but I have little doubt they will be found to resemble the female in this respect; the rufous coloration, however, being of a much duller tint. The last individuals of the present species, seen during the expedition, were observed near "Old Crown" Station on the Finke River, on the return journey, at the end of October. [There are coloured figures in *The Emu* (vol. xx., pl. 20) of *Amytornis textilis* from Shark Bay, W.A., type locality. In the letterpress connected therewith (p. 190), Mr. H. L. White asks the interesting question—"What bird is figured by Gould in his plate (No. 28, Birds of Australia, vol. iii.), as *textilis*? Mr. White now answers the question himself through the material his collector, Mr. Whitlock, has procured. The material consists of a fine series of *A. modesta*, North, which perfectly agrees with Gould's plate. Examples of similar birds from the interior of New South Wales are also referable to *A. modesta*, and, as Gould's examples came from that province, there can be little doubt that his *textilis* is North's *modesta*, which differs specifically from the true *textilis* of Quoy and Gaimard in having *no streaks on the lower back or on the under surface*. Under these circumstances it would appear that G. M. Mathews' *A. inexpectata*, as a species, falls to the ground, notwithstanding he has so materially aided to unravel a most difficult genus. Specimens of *A. modesta*, North, both from New South Wales and Central Australia, were obligingly lent for examination by the Australian Museum, Sydney.]

†*Amytornis purnelli*. Dark Grass-Wren.—This Grass-Wren, first described as a sub-species of *A. textilis*, came under my notice in the beautiful Palm Valley. Whilst I was busy with the camera at the entrance of a narrow ravine, I handed the .410 bore to Houssian. He was watching some Bower-birds hopping about the branches of a wild fig-tree growing near the summit of the cliff. Hearing a rustling in some scrub close at hand, his attention was attracted by the sight of a Wren-like bird. He fired at it on chance, and after some trouble found the bird amongst the dead herbage at the foot of the scrub. On my return he handed it to me, informing me that another bird like it was hidden amongst the rocks just ahead. At first glance I thought I was looking at a variety of the Striated Grass-Wren (*A. striata*), and I could see it differed from a typical Rufous Grass-Wren (*A. whitei*) in being much less rufous, but at the same time its affinity did not appear to be with any known member of the *A. textilis* group. Though I searched for some time I did not see the second bird. It was reasonable to suppose, however, that other pairs lived in similar surroundings. This proved to be the case, for at a certain spot on the Finke River, where there were high cliffs, much encumbered by fallen rocks, and clothed with clumps of *Triodia*, several other specimens were observed. Though

the haunts of the present species are similar to those of *A. whitei*, [The Horn expedition obtained a specimen of *A. whitei* (= *rufa*), at Haast's Bluff, north of James' Range. The specimen is in the National Museum, Melbourne, A.J.C.] I soon noticed one striking difference in the habits of the two species. *A. purnelli* lacks the sweet rippling song of *A. whitei*. True, the former twitters in an excited manner when disturbed, but the notes are high-pitched, and I found them difficult to detect when uttered at any distance. Houssian, however, who possessed acute powers of hearing, could locate the birds on the far side of a large creek at a distance of thirty yards, where we were camped in the Macdonnell Ranges. In this absence of song the nearer relationship of *A. purnelli* to species of the *A. textilis* group was apparent. The character of the nest and eggs, however, showed this relationship still more plainly. I was inclined to expect eggs of a type intermediate between those of *A. striata* and *A. textilis*, laid in a nest like that built by the former. In neither respect were my expectations realised. For, of a number of nests found, all were semi-domed, the entrance being larger and lower down than in typical nests of *A. whitei* or again in those of *A. oweni* (Mathews), found by myself in 1908 on the East Murchison (W.A.). The eggs were, generally speaking, smaller than those of its near neighbour, *A. modesta*, which is the representative of the *A. textilis* group in Central Australia; but in coloration and character of the markings they were very like eggs of the latter. I never found *A. purnelli* away from the rocky gorges of the ranges or from their steep stony slopes. All the nests found were either in clumps of *Triodia* or in dead bushes surrounded by growths of this prickly grass. None was at a greater height than eighteen inches, and as a rule they were fairly well concealed. One containing a single newly-hatched young bird was found only by flushing the female from the nest a second time, so cunningly was it concealed. A nest, however, of the previous season, belonging possibly to the same pairs of birds, was visible at a distance of twenty yards, to anyone looking for it and possessed of sharp eyes. Several nests were found on the summits of the lower hills, but the favourite place was the rocky sides of a gorge or ravine, clothed with clumps of *Triodia*. The female, once incubation is commenced, is a close sitter, and only dashes off the nest when danger is imminent. In the case of a nest photographed, the flower stems of the *Triodia* bush in which it was built had to be broken away to get a clear view, and the nest itself opened out a little to render the eggs visible. The breeding season commences about three weeks later than that of its neighbour—*A. modesta*. The first nest, with two slightly incubated eggs, was found September 3rd. Others with fresh eggs or young were found during this month. Nest-building, therefore, commences about the middle of August. Young were on the wing in October, or rather out of the nest, for this Grass-Wren does but little flying; not from want of ability, but rather from lack of desire. The food of *A. purnelli* is largely of a vegetable nature. One specimen taken in the Macdonnell Ranges had been feeding on the fruit of the wild fig; but the stomachs of others contained grit, remains of very small beetles and seeds of various unidentified plants. [Mr. Whitlock secured a fine series of this and the preceding species, most carefully prepared and sexed; indeed, the same applies to all specimens collected during the expedition.]

Amytornis goyderi. Goyder Grass-Wren.—I regret I cannot give any precise information about this little-known species. None but the types has been procured.* These were obtained on the Macumba River many years ago. The Macumba River extends to

**Vide Emu ante*, p. 81.

within a few miles of the north of Oodnadatta. The camel track north crosses the river. On November 5th we were travelling over the run, some forty miles from Oodnadatta, on the return journey. Conditions were bad. A remarkably cold wind was blowing half a gale in our faces, and the air was full of particles of flying dust. In passing over the slope of a low hill clothed with saltbush, and isolated masses of low dead scrub, I observed two Grass-Wrens. I immediately called a halt, and both Houssian and I jumped down and gave chase. The birds were very wild, and owing to the wind and dust we soon lost sight of them without getting the chance of a shot. We could not camp, as there was no camel feed, and they were in need of water. The night before we had been smothered with dust, and could hardly eat any food in consequence. Under the circumstances I had reluctantly to give the order to move on. I cannot say with any certainty at all to what species of Grass-Wren this pair should be referred, but no others had been seen since leaving the Finke.

†*Stipiturus ruficeps*. Rufous-crowned Emu-wren. — On paying a visit to the Glen of Palms in the Finke River, in company with Mr. M. Kleinig, of the Mission, he and I, taking our cameras with us, went up the gorge, and left Houssian at the entrance to keep his eye on the camels. I handed the .22 bore gun and ammunition to him. Hearing a twittering in the *Triodia* clothing the hillside, he investigated the origin of the sounds. He was successful in locating the songster, and shot a male Emu-wren. On our return from the interior of the Glen of Palms, he handed the bird to me. I was delighted to recognise the lesser Emu-wren. I at once went up the hillside myself, which was an ideal spot, being clothed with numerous clumps of Soft *Triodia* (*T. pungens*), amongst which small shrubs were growing. I failed, however, to get a second specimen. Afterwards the species was found in several other localities of a similar character; and at Coporyllia Spring it was also found in the blue porcupine (*Triodia irritans*). Nests were found near the Mission, and also in the Finke Valley, where it cuts through the James Ranges, but only two contained eggs—a pair in each case. The nests were placed amongst the flower stalks springing from the summit of a clump of *Triodia*; but in one instance the walls were woven around some twigs of a dead shrub. Unlike nests of *Maluri*, few spiders' webs were used to bind the structure together, which was cunningly woven of the finest grasses.

[Some years ago the late Dr. Angove, of Adelaide, possessed a single specimen of *Stipiturus ruficeps* from Central Australia, and on that evidence the locality was recorded in the R.A.O.U. Check-list. By the fine series of specimens obtained by Mr. Whitlock, it is interesting to have Central Australia as a habitat of the species confirmed.]

†*Malurus callainus*. Turquoise Wren (Ljirraljirra).—The Horn Expedition did not find this species in Central Australia, but the report refers to the Black-backed Wren (*M. melanotus*). I believe the late A. J. North is responsible for the identification of the birds collected by the expedition. I had no experience previously with either species, but I have the authority of Mr. A. J. Campbell for the identification of the *Maluri* collected on the expedition and have full confidence in his judgment. I was greatly struck by the appearance of this bird. It certainly equals, if it does not even surpass in beauty and brilliance of plumage the Splendid Wren (*M. splendens*), of the West. In Central Australia its haunts are tracts of big Mulga (*Acacia aneura*) and other scrubs, where the tree-like bushes grow fairly close together. Over such country it is found in thinly scattered parties. In the Palm Valley, it was

found near our various camps. For some reason or other, the *Maluri* in Central Australia are late in assuming nuptial plumage, and with one exception males were not observed in full livery before August. In corresponding latitudes in the West I have seen males in full plumage regularly in May. These remarks apply equally to the next species, *M. cyanotus* (= *leuconotus*). Parties of *M. callainus* were at once distinguishable from other *Maluri*, by the bright blue tint of their tails, and the blue margins of the flight feathers. The tail, too, appeared to be both broader and shorter in proportion to the body. I was very anxious to find nests of this *Malurus*, but it was not until my second visit to the Palm Valley that I was successful. On 25th September, I located the first nest, which was placed very low down, and without any attempt at concealment, near the trunk of a dead tree-like bush. The nest was supported by a piece of half-detached bark. I had observed a pair of *M. callainus* near the spot for several days. The nest contained one egg. Returning to the spot a few days later, I found the nest disturbed, and a second egg laid on a thick horizontal branch nearby. Another nest was found in a prickly Hakea bush (*Hakea terminalis*). It was about five feet from the ground, and was just completed. Two eggs were eventually laid, but, to my great regret, on visiting the nest the following day, I found it had been destroyed, possibly by a Crow or a lizard. A third nest was in a remarkable situation. I had followed up a pair of *M. callainus* feeding in a little creek amongst the big Witchity bushes, but eventually lost sight of them. In passing a prickly Hakea a bird flew from the nest of a *Taeniopygia castanotis* (Chestnut-eared Finch). As it disappeared into a neighbouring bush, it struck me as being un-finch-like in flight. I sat down. Presently a lovely male *M. callainus* appeared, hopping about within a few feet of where I sat. Soon afterwards his mate arrived, and after some hesitation hopped from branch to branch of the Hakea, and finally disappeared into the Finch's nest. Further examination revealed the fact that the Finch's nest had been relined throughout with fine grasses and fur, and thus adapted as a breeding place for the *Malurus*. The nest contained two typical eggs. It was placed about six feet from the ground. There were other Finch nests in the same bush. I noticed that fully adult females of this species lack the conspicuous blue margins to the wing feathers possessed by younger birds.

[Some ornithologists contend that *M. callainus* and *M. melanotus* are sub-specific varieties of each other. In *M. callainus* the forehead and crown are light cerulean or light methyl blue, many tones lighter than the throat and foreneck, which are a purplish ultramarine or "smalt" blue. In *M. melanotus*, both regions (forehead and crown and throat and foreneck) are invariably the same colour, i.e., the dark (smalt) blue. This test is always true, therefore the two birds may be consistently separated.]

†*Malurus cyanotus* (= *leuconotus*). White-winged Wren.—This Wren was found on the Finke flats, and also amongst the *Triodia* growing on the slopes, and in the little valleys of the James Ranges. But the favourite haunt was in the occasional large areas of Cane-grass (*Spinifex paradoxus*), interspersed with salt bushes. A few miles north of the Mission the Finke River divides into two channels, which unite again just south of the homestead. The intervening flat was the favourite haunt of the present species, and also of the Thick-billed Grass-wren (*Amytornis modestus*). It was thickly clothed with innumerable clumps of Cane-grass, which is not much eaten by stock, when other herbage is present. In hunting for nests of the Grass-wren, I found a few nests of *M. cyanotus*. Some were in the Cane-grass, but the majority were in the remains of Salt-bushes. These Salt-bushes were much eaten

down by the station milking cows, but for all that these little *Maluri* preferred to build their nests amongst what was left than in the denser cover of the Cane-grass. One or two nests were in consequence almost resting on the ground. I found no difference in the material of the nest from that used by this species in Western Australia. This *Malurus* is one of the most widely distributed of the family, and naturally presents some variations in its plumage. I obtained one or two males for comparative purposes, and was interested to find the blue feathers of the back distinctly streaked with white. On carefully examining these individual feathers, I found the basal half was blue and the tip white. This is the nearest approach to a White-backed *Malurus* that I have met with.

†*Malurus assimilis*. Purple-backed Wren.—This was a fairly common species in suitable haunts. It favoured tea-tree thickets in particular, but was often seen amongst tracts of Porcupine-grass, where small bushes were growing. In such surroundings it was even to be found on the tops of the lower hills of the James Ranges. A number of nests was found, but in every case they contained two young birds a day or two old. The nests were most frequently found amongst the flower stems, springing from the top of a clump of Porcupine-grass (*Triodia*).

Artamus personatus. Masked Wood-Swallow.—During the last week of August large numbers of these birds were met with at the foot of the Macdonnell Ranges. They were on migration, and were accompanied as usual by a few Crimson Chats (*Epthianura tricolor*).

†*Artamus cinereus*. Black-faced Wood-Swallow.—This was the local and resident species of Wood-Swallow observed throughout the expedition. It was met with in all suitable haunts, and nests with the usual pretty eggs were found near the Mission. On the return journey, in passing through scrub country, several late nests were observed from which the sitting bird slipped off.

Artamus minor. Little Wood-Swallow.—Seen in the Palm Valley and near cliffs on the north side of the James Ranges. None was observed much before September, showing that in Central Australia the species is migratory. In the Palm Valley, in October, there was much chasing about, but I do not think nesting operations had commenced.

Aphelocephala castaneiventris. Western Whiteface.—Chiefly confined to the large tracts of Mulga and Witchity bushes. Nowhere very common. The aborigines brought in one or two eggs to the Mission. The nests were made in cavities of small dead tree-like bushes, and were masses of rabbit fur. I failed to find the Black-banded Whiteface (*A. nigricincta*) of the Horn Expedition. [Slightly paler on the flanks than typical *A. castaneiventris*. The R.A.O.U. check-list recognises *A. leucopsis* and *A. castaneiventris* as separate species, chiefly on the following grounds:—*A. leucopsis* has the upper surface olive brown; flanks same tone and breast with dull cross-marks on feathers. *A. castaneiventris* has upper surface buffy brown, especially crown and tail-coverts; flanks distinctly tawny and with cross-marks on breast feathers absent. If the above key be applied to the Central Australian bird (there are four specimens), it falls under *castaneiventris* with the earlier of Mathews' two subspecific names, *A. l. pallida*.]

†*Sphenostoma cristatum*. Wedgebill (Tchutalpa).—A very local species, favouring the neighbourhood of groups of Corkwood trees. There was a colony at the long water hole, Ellery Creek, and another on the west side of the Finke River, near the fifteen mile stockyard. Odd pairs were found in the Palm Valley. On the return journey, the well-known notes were occasionally heard. A local name for this species was "Wheelbarrow-bird," its notes

being supposed to resemble the squeaking of an ungreased wheel.

†*Neositta pileata*. Black-capped Sittella (Tree Runner).—Only one small party seen. This was at Coporyllia Spring. One was shot. Several of the flight feathers had the orange band replaced partly by white.

†*Climacteris superciliosa*. White-browed Tree-creeper.—First met with on the Missionary Plain, afterwards seen in the big Mulga tracts east of the Homestead and on the road to Alice Springs. A pair shot for comparison with western examples. One difference I noticed in the female was that the rufous stripe over the eye was shorter and less distinct. On the other hand, the white eye-stripe in the male was very clear and distinct.

†*Dicaeum hirundinaceum*. Mistletoe-bird.—Found commonly wherever mistletoe was plentiful, notably in the Palm Valley. In May it was still in moult. Two of its beautiful nests were found. One in a pretty *Hakea* bush (*Hakea leucoptera*) growing on the top of the lowest ranges. It contained young birds.

†*Pardalotus ornatus*. Red-tipped Pardalote.—Not a common bird, but present amongst the Eucalypts by the Finke River and larger creeks.

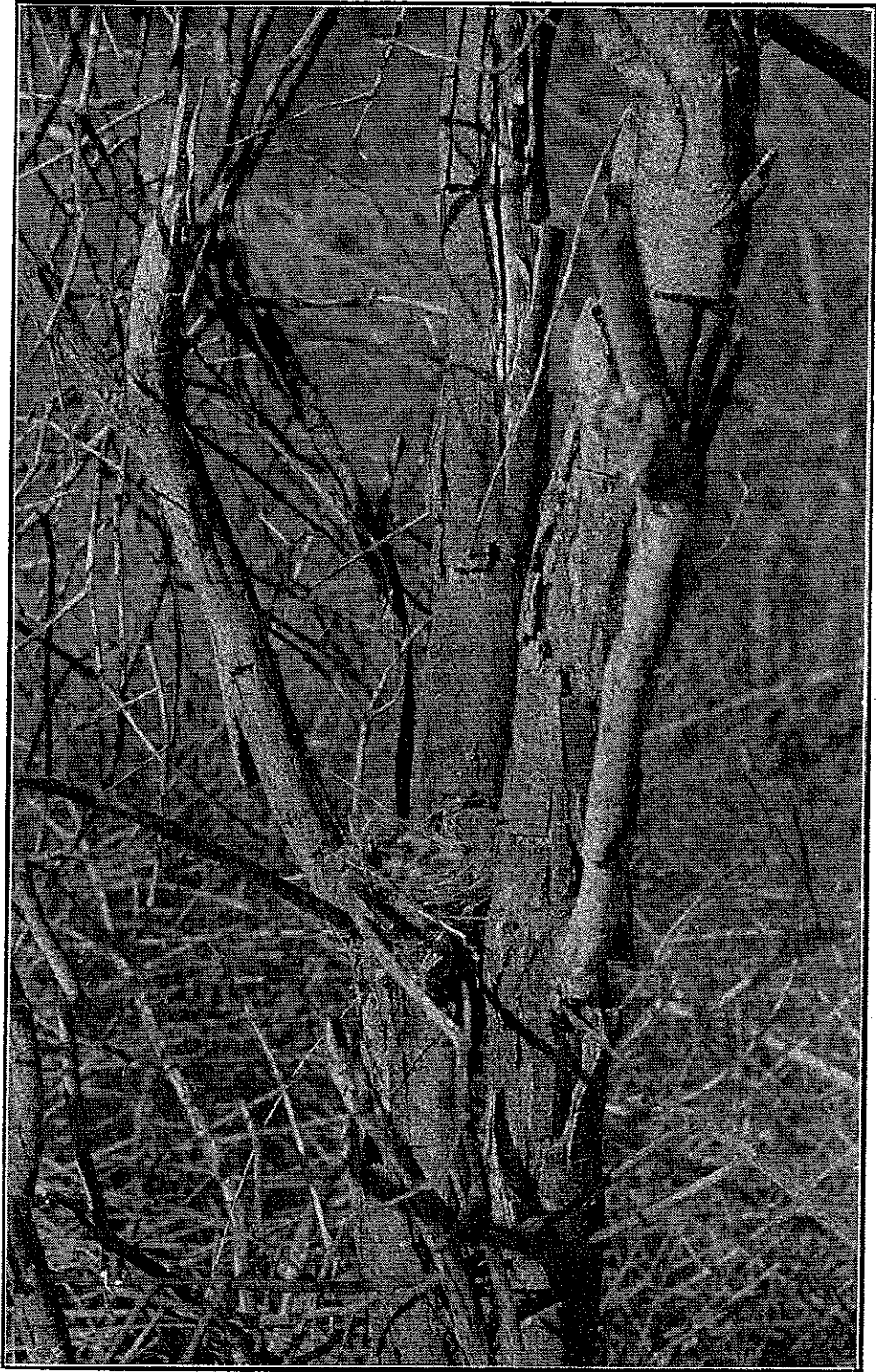
†*Pardalotus rubricatus*. Red-browed Pardalote (Narangawonna).—This pretty little bird was common by the Finke and larger creeks, in whose earthy banks it drove its wonderful tunnels. Nests containing eggs were found. [Referable to *P. r. pallidus*. See coloured figure, *Emu*, XXI., pl. 1.]

†*Melithreptus laetior*. Golden-backed Honeyeater.—A few parties were seen here and there along the Finke River and some of the larger creeks. In the Palm Valley two families lived near our camp, and I watched them carefully in the hopes of getting a nest. There was the usual fussing about, accompanied by the loud ringing notes, but no signs of building. In the end, I sacrificed a female. On dissection I found the breeding organs dormant. I am thus confirmed in my opinion that this honeyeater breeds usually after, or during, the summer rains.

†*Myzomela nigra*. Black Honeyeater. — This little Honeyeater seems to be a scarce bird in Central Australia. A few pairs haunted the northern slopes of the James Ranges. I found two nests, each containing two young. I obtained a good negative of one nest.

Glyciphila albifrons. White-fronted Honeyeater.—One or two observed in the Palm Valley during September.

Lacustroica whitei. Grey Honeyeater.—I discovered this bird in the neighbourhood of Lake Austin, W.A., in 1903, but the species was not described or named until after my expedition on behalf of Mr. H. L. White to Lake Way, when I secured other specimens which, together with their tongues, nest and eggs, were sent to the late A. J. North, who then was able to determine the relationship of this obscure little bird to other Australian birds. Since then nothing more was heard of it until Mr. J. W. Mellor, of Adelaide, procured, in 1920, a single specimen near the mouth of the Murchison River in W.A. On our way up country we camped for a few days at Boggy Pool in the Finke River. While I was busy one day preparing specimens, Houssian took the .22 bore to try his luck. He came back with a Warbler (*Gerygone* or Fly-eater), an *Acanthiza* and a Grey Honeyeater. It was certainly a surprise, as other experienced field naturalists had been through the country previously without finding it. Unfortunately, I was taken ill a day or two later, and was laid up for seven or eight days. However, later on, when camped some five miles east of the Mission, I met the species again. I was hunting in a tract of big Mulga and Witchity bushes, when I heard the well remembered notes. I secured several more fine



Nest and Young of the Black Honeyeater (*Myzomela nigra*).

Photo. by F. L. Whitlock, R.A.O.U.

specimens. No doubt I should have found nests, but was not again in the same neighbourhood during the breeding season. These birds were consorting with Thornbills (*Acanthizae*) in the same way as I had observed them doing in Western Australia. It is now apparent that the species has a very extensive range. I fully recognise Mr. North's difficulty in choosing a name for this soberly clad and unobtrusive species. But *Lacustroica*—a "Lake dweller"—is not in the least appropriate. It has no predilection for lakes or even pools. No doubt, the name was suggested by the localities in which the types were procured. But both these lakes are, as a rule, dry, and the bird is not found within miles of their margins. Some of the specimens submitted to Mr. North were obtained twenty miles from Lake Way. A Latin or Greek name, signifying a Mulga or Scrub dweller, would have been more appropriate, and not misleading as to its haunts. After further observation I can find nothing in its habits confirming Mr. North's opinion that its nearest ally is probably *Myzomela*. In this respect it more resembles a Silvereye (*Zosterops*). [Upper plumage not drab like western specimens, but more hair brown. Difference possibly accounted for by new plumage (date 10/4/23) as against colour of western birds taken 10th and 11th months. Same wing, 61 mm.]

Stigmatops indistincta = *Glyciphila ocellaris*. Brown Honeyeater.—Very common amongst teatree scrub, especially in the Palm Valley. It was in full song, but the only evidence I discovered of its breeding was a fully-fledged nestling. I think this bird, too, in Central Australia, is a summer breeder.

†*Meliphaga virescens*. Singing Honeyeater.—A common bird wherever there was sufficient cover and food to support its existence. It was plentiful on the great Missionary Plain, and also in the Palm Valley. A number of typical nests was observed.

†*Meliphaga plumula*. Yellow-fronted Honeyeater.—Only seen around the Gilbert Springs, some twenty-two miles west of the Mission. It was not breeding in the month of August, though some of its congeners were doing so. Several specimens were secured for identification purposes.

†*Meliphaga keartlandi*. Grey-headed Honeyeater.—Once the James Ranges were reached, this species became very common. It occurred in the Macdonnells too, and was frequent in the isolated Gosse Ranges. A few nests were found. I failed to hear several peculiar notes uttered by this species during the breeding season in the North-western districts of Australia.

Meliphaga penicillata (= *Ptilotis leilavalensis*). Lesser White-plumed Honeyeater.—Mr. A. J. Campbell is responsible for the identification of this very common Honeyeater. I took it to be *P. penicillata*, but I am content to leave the matter in his hands, as he has both the experience and facilities for reference and comparison close at hand. Nests were found in a variety of situations. Like *M. p. carteri* in the West, this bird loves the neighbourhood of water. The aborigines group all numbers of the genus *Meliphaga* (*Ptilotis*) together as "Inbinba."

Myzantha flavigula. Yellow-throated Miner (*Penpira penpira*).—Somewhat local, but common enough where it occurred. It was numerous around Henbury and at the Mission, where it nested during August and September. I saw some beautifully-made nests, the inner cup of the nest being lined with horsehair, with almost geometrical precision.

†*Acanthagenys rufogularis*. Spiny-cheeked Honeyeater (*Aritgalit-gala*).—Central Australia is evidently the winter quarters of this species. In the Palm Valley in May and June it was extremely numerous amongst the abundant flowering Mistletoe. In September,

despite there being no lack of Mistletoe, all but a few odd birds had departed. No breeding pairs were found during the expedition.

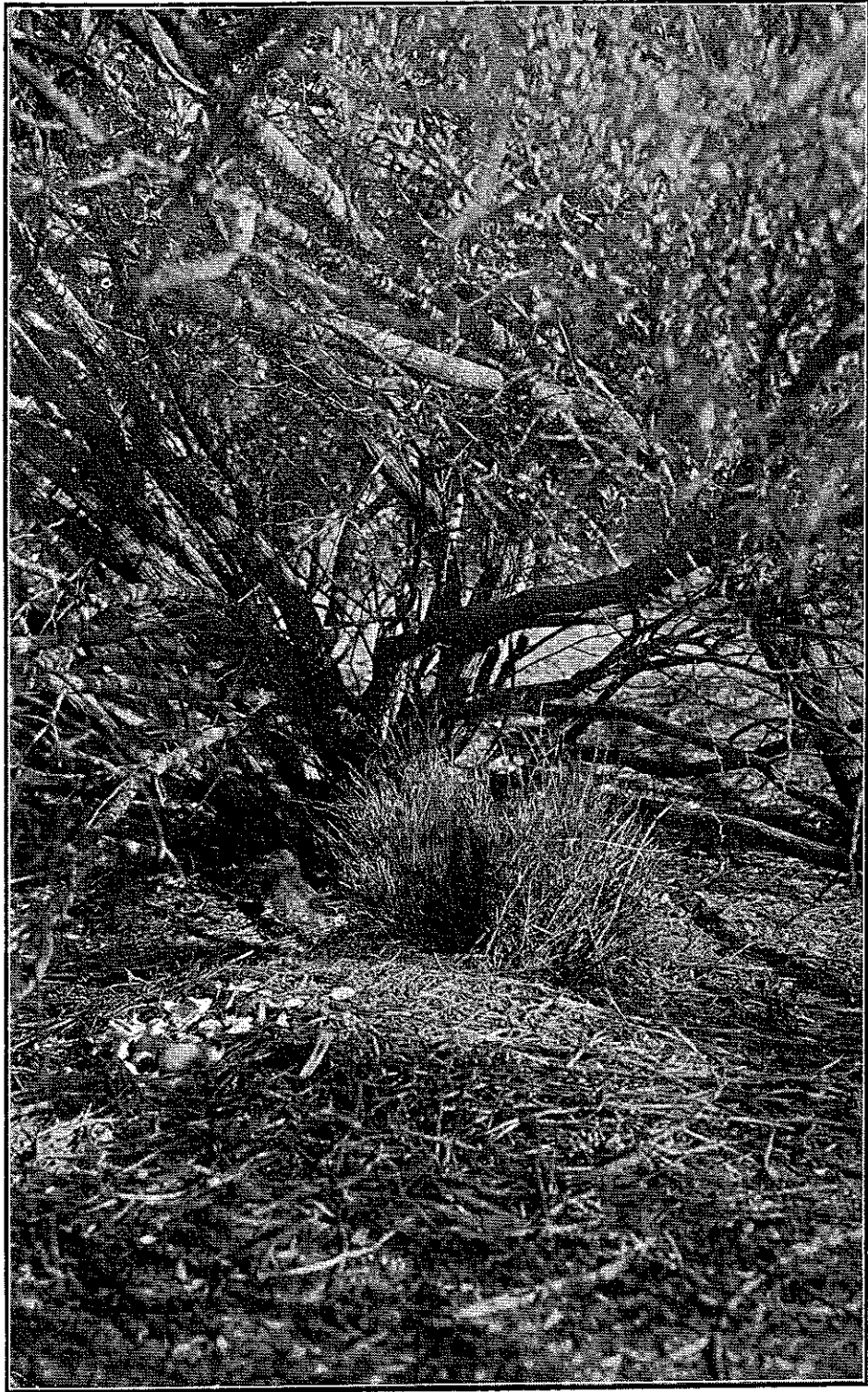
Anthus australis. Pipit (*Tchilpara tchilpara*).—Scattered pairs seen all over the country explored, but nowhere really plentiful. A nest with eggs was found near the Mission Station. I saw nothing of a *Calamanthus*. In referring to *C. isabellinus* in the Horn Report, North states that specimens were procured near Blood's Creek and Abmingha Creek, and then gives the habitat as the Missionary Plain, which is over 200 miles further north. I intended camping at Abmingha on our return journey, but on arriving there found the creek quite dry.

Mirafra secunda (?). Bush-lark (*Tchitalaparincha*).—One or two recognised by their peculiar flight, but no specimens were obtained.

Emblema picta. Painted Finch.—Rather a rare bird this present season. Pairs were noted occasionally on the north side of the James Ranges and also in the Macdonnells. In the Palm Valley a pair were seen feeding young ones, fully fledged in September.

Tæniopygia castanotis. Chestnut-eared Finch (*Naenka*).—Abundant everywhere near water, and breeding throughout the period I spent in Central Australia. The favourite nesting place was the large prickly *Hakea* bushes (*H. terminalis*). Some bushes contained as many as twelve nests. As an exceptional nesting place, one pair occupied a cavity in a post-and-rail fence, in the Palm Valley.

Chlamydera guttata. Western Guttated Bower-bird (*Karka*).—Our camp at Boggy Pool on the Finke was a few miles from the old Illamurta Police Station, associated with the name of the late Constable E. C. Cowle, who obtained the first authentic eggs of this species. It was here that I met with the first Bower-bird in Central Australia. Knowing I was in a favourable locality, I kept a sharp look out, not only with eyes, but with ears too (if the latter is possible). I was soon rewarded by hearing the well-known notes in a tree not far from my tent door. I directed Houssian's attention to the sound, and he carefully stalked the bird. It was a fine adult male, not quite over its moult, but in good plumage nevertheless. I was at once struck with its richer coloration, in comparison with birds from the interior of Western Australia. The underparts especially were of a much brighter yellow tint, whilst the lilac feathers surrounding the brilliant pink of the nape actually shaded into a clear distinct blue. Unfortunately, my illness supervened soon after I had skinned this bird, and I saw no more Bower-birds until I visited the Palm Valley in May. On arrival at the Palms it was not long before a playground was found a little more than half-a-mile from camp. It was situated under a large Witchity bush on the eastern side. This playground had an appearance of newness about it, being smaller and less substantial than usual. The materials used in construction were, however, the same as those employed in the West, and the inner lining was the stems of *Triodia* seed sprays. The playthings were much the same as I found in the Hammersley Ranges the preceding season. At one end of the platform flat pieces of white or grey limestone, at the other end bones of rabbits, rock wallabies and Euros. In the archway itself were prickly green seed vessels of a plant belonging to the castor oil family, also seed pods of an *Acacia*, and green galls from some other bush in the neighbourhood. There was a strong party of birds attached to this playground; often five birds were in the sheltering bush, whilst others could be heard in a teatree thicket near at hand. The performance was of the usual character, an excited bird with puffed out feathers at either end of the inverted arch, apparently disputing over the seed-vessels and other objects lying between. Most perfect imitations of the notes and calls of other birds were uttered at the same time. I photographed this bower. To do so



Male Bower-bird at Playground.

Bower decorated with Kangaroo bones and nuts of a Cycad.

Photo by F. L. Whitlock, R.A.O.U.

I had to chop out an intervening branch, which obstructed the view. This did not interfere in the least with the playground itself, yet the birds resented the matter. Revisiting the place eight days later in company with Mr. Kleinig, of the Mission Station, I was astonished to find the whole structure had been removed to the western side of the bush, where an older playground had formerly existed. Had I known what was going on, I should have been greatly interested in watching the process of removal and reconstruction. I missed a splendid chance. A little later another playground was found to the east of our camp. Like the first one, this, too, was constructed under a very large and half dead Witchity bush. It was a substantial affair, and some of the bones were large and heavy for so small a bird to carry to the playground. As in the other case, the flat stones were at one end, and the fragments of bones, seed-vessels, etc., were at the other. Green galls chiefly occupied the centre of the inverted arch. Five birds were attached to this playground—two fine old pairs and a younger unmated male. I photographed this playground too. To get a good view was easy, and I had to break off only one or two small twigs. This did not seem to disturb the owners. Yet a month later they removed everything to the further side of the bush. I was most careful not to disturb them, and forbade a shot to be fired near the spot. I can only conjecture that Bower-birds take a pleasure in erecting these playgrounds, and in collecting the objects they contain. Bower-birds were seen in the Macdonnell Ranges at our camp at the Ellery Creek, also at the Gilbert Spring and at Coporyllia, both on the north side of the James Ranges. Near our camp at the western end of the Palm Valley they were frequent, too, in the numerous wild fig-trees, but, though the tops of the adjacent hills were searched, no further playgrounds were seen. The food of these Central Australian Bower-birds appears to be a mixture of vegetable and insect life. The stomachs of one or two dissected showed plentiful remains of small beetles, seeds and the fruit of the wild-fig, intermingled with grit. One of the chief objects of my second visit to the Palm Valley in September was to secure a nest and eggs of this Bower-bird. By the end of that month all the small birds intending to breed seem to have accomplished their task, and were feeding young in the nest, or the young were already on the wing. Since the end of the preceding June not a drop of rain had fallen, and herbage was very scarce, leading in turn to a scarcity of insect life. About the end of the month I commenced a systematic search for a nest, accompanied by watching the birds at the playground during every spare moment. In this I was assisted by Houssian. About the middle of October we moved camp to within fifty yards of the eastern playground, choosing a pitch within hearing, but out of sight of the birds. No signs of a nest or nest building had up to then been observed. I concentrated all my efforts on the birds at this playground, watching and searching all the big Mulga and Witchity bushes, as well as the wild fig and *Callitris* pine trees both in the valley and on the neighbouring hill-tops. All was in vain. The birds were too much at the playground to be nesting. I was reluctantly forced to the conclusion that until a heavy fall of rain occurred, followed by a revival of insect life, the birds would not breed. I could have confirmed this by shooting a female, but was loth to do so. After watching Bower-birds at their playgrounds day after day, they become very familiar, and one comes to look upon them as pets. The last week in October we left the Palm Valley and travelled down the Finke in the hopes of better luck at Boggy Pool, where the Bower-birds were first met with. But in the meantime a thunderstorm with enough rain to fill small rock holes had passed over that locality, and on camping there we found no birds came to

the Pool to drink. At Oodnadatta, Miss Kunoth, who owns a commodious aviary, had a pair of Bower-birds in captivity with other species for nearly two years, when they unfortunately came to an untimely end. Had they been isolated, better results might have been attained. [Fine series. Specimens a trifle more yellowish on under surface than those from Murchison and the Hammersley Range, W.A.]

Corvus cecilæ. Australian Crow (Ngapa).—Very common, and rather unpopular on account of its predaceous habits. At the Mission Station Crows contended with the Kites for the scraps whenever a beast was cut up at the meat house. The Kites did not always have the best of the encounter. On leaving camp in the morning everything eatable had to be carefully covered up, especially such a commodity as flour. Crows commenced to breed in July, and continued to do so until the end of September or a little later. Thomas, our aboriginal guide, robbed a few nests, and I was interested to find that in nearly all cases the eggs were spotless, being much like large models of eggs of the European Starling. Some were, however, very finely and sparingly speckled. Only two eggs approached the boldly marked eggs of Crows from more southern latitudes. Nests were invariably placed in fairly tall Eucalypts, and were substantial structures of dry twigs, neatly finished off inside with fine grasses and strips of bark.

†*Cracticus nigrogularis.* Pied (Black-throated) Butcher-bird (Urbura).—A fairly common and generally distributed bird, becoming less numerous south of the Finke River. Its notes generally were amongst the first to herald the break of day. Nests were found near the Mission.

†*Cracticus torquatus.* Grey Butcher-bird. — Met with only near Boggy Waterhole, on the Finke River, and during our first camp in the Palm Valley in May last. On our second visit, in September, to the latter locality, the birds had disappeared. But on the return journey, as we were passing through a thicket of Mulga bushes near Boggy Waterhole, a male was heard calling. No nest was found.

Gymnorhina tibicen. Black-backed Magpie (Urara).—Rather an uncommon bird in all parts I visited. It was first identified at Goyder Creek on the outward journey. Pairs were also seen around Idracowra and Henbury Stations, where they were protected. Near the Mission there were two pairs, and at the fifteen-mile stockyard, further up the Finke River, I saw another pair. No nests were seen, but a very small boy brought me a single egg. I think it was a stray egg laid on the ground, as this boy and his companions were far too small to climb the slippery river gums in search of nests.

CONCLUSION.

We commenced the return journey on October 20th, when we made farewell to the Palm Valley. Conditions were very dry. Thunderstorms on three consecutive days hardly resulted in twenty points of rain. We spent two days at Boggy Pool and also two days at Henbury. The further south we travelled the drier the country became. Conditions at times were trying. Strong winds, accompanied by clouds of dust, made camel-riding anything but pleasant. After leaving the Finke, near New Crown Station, feed became scarce, but the water difficulty was relieved for a time by a thunderstorm, accompanied by a fair fall of rain, on 30th of the month. From Charlotte Waters to Oodnadatta dry conditions prevailed again, and at times it was difficult to get the camels along except at a very slow pace. Our last camp was at Swallow Creek. We got an early start the following morning, and I was not sorry when the township came in sight.

It was the end of a most interesting trip, and I met with much kindness and hospitality from all with whom I came in contact. I am greatly indebted to all at the Hermannsburg Mission Station for the welcome I always received at their hands and for the interest they took in the expedition. I am especially indebted to Mr. H. A. Heinrich for his care of me during my illness, and my quick recovery was largely due to his unremitting attentions.

I am also indebted to Mr. Robert Buck for the kindest hospitality and best advice. Mr. Alan Breadon, of Idracowra, and Mr. A. Elliott, of Horseshoe Bend, also did all in their power to assist me in the quest for the Night-Parrot. Neither must I forget Mr. F. Jones, of Messrs. Fogarty and Co., both for the great interest he took in the expedition and for the efficient services he rendered. Houssian Sureen proved a valuable and reliable servant, and though engaged only to look after the camels and their loading, soon took an interest in the objective of the expedition. After a little instruction, he was able to discriminate between common and strange birds, and often brought in valuable specimens. He was a good shot, and possessed of acute powers of hearing—a great advantage when hunting secretive birds.

I arrived home on November 24th, after an absence of over eight months, during which I had travelled more than 5500 miles by rail, and over a thousand miles by camel; what I did on foot would be difficult to estimate.

[Again ornithology is deeply indebted to the public-spirited enterprise of Mr. White in sending Mr. F. L. Whitlock for a season to the far interior field and also to Mr. Whitlock for so ably carrying out his part of the expedition, notwithstanding a serious attack of illness. This last expedition links up the earlier important work of the Horn Expedition (1894), to which Mr. G. A. Keartland was ornithologist collector, and later (1914) that accomplished by Captain and Mrs. S. A. White—all private enterprises! However, we should not forget Captain Barclay's expedition in 1911, which was equipped by the Commonwealth Government, when Mr. G. F. Hill, as naturalist, obtained valuable material and records.* Nevertheless, the vast interior is still, in an ornithological sense, practically "To let." All work at present accomplished points to a region of more than passing interest, because it has been shown to contain many zoological remainders of the most ancient part of the Continent. Detailed research of these remainders has yet to be worked out.]

Occurrences of the Ringed Dotterel in Australia.—Recently I had occasion to arrange some data on the *Charadriidæ*, and find one interesting item worth ventilating, namely, a second occurrence of the Ringed Dotterel (*Charadrius hiaticulus*, Linnæus) in Australia. According to Bulletin XVIII. (29/10/22) of the British Ornithologists' Club, Mr. Gregory M. Mathews exhibited, amongst other specimens on loan from the National Museum, Melbourne, a skin of "*Charadrius hiaticulus*, from New South Wales." The specimen in question was from the "H. L. White Collection," and was collected by the late Mr. Robert Grant, at Long Bay, 30/8/1908. The first recorded instance—"an undoubted Australian specimen"—is given by Gould ("Handbook Birds of Australia," Vol. II., p. 231). That bird was killed at Port Stephens.—A. J. CAMPBELL, F.A.O.U.

**Emu*, XII., pp. 238 and 274.