

The Birds of Kallioota.

BY A. M. MORGAN.

Kallioota is a cattle depot belonging to the estate of the late Mr. W. T. Mortlock. By the courtesy of Mr. R. Smith, the general manager, my wife and myself were enabled to spend the month of August, 1912, in observing the birds there. The station is upon the alluvial plain situated between the Flinders Range and the south end of Lake Torrens. It is crossed from east to west by the Willochra Creek, a dry or salt watercourse in the summer, but at the time of our visit a flowing stream of fresh water. The plain is crossed at intervals by sandhills running roughly east and west; between the sandhills are saltbush and samphire flats. Along the creek and neighbouring flats, which are subject to floods, are many fine old red gums; elsewhere the sandhills are covered with wattle bush, myall, bullock bush, mulga (all species of acacia), and here and there pines and black oaks. 1912 was a splendid season, grass, annual saltbush, and wild spinach were growing luxuriantly, and the sandhills and flats were covered with flowers, mostly white and yellow everlasting. We were hospitably entertained at the head station by the manager and assistant manager, Messrs. Gilbert Smith and J. M. Merryfield, who did everything in their power to assist us in our pursuits.

The birds observed were:—

1. *Dromiceius novæ hollandiæ* (Emu). Fairly common in sandhill and scrubby country. One nest was found on August 17th. It was made of small dry sticks with which some of the emus' own feathers were mixed; it was situated within a ring formed by fallen trees. The eggs were seven in number, and varied in weight from $1\frac{3}{4}$ lb. to 1 lb. They were slightly incubated. The sitting bird was judged to be the male; the mate was feeding in the vicinity.

2. *Geopelia placida tranquilla* (Peaceful Dove). A single pair seen feeding on the ground.

3. *Ocyphaps lophotes* (Crested Bronzewing). Common. At the beginning of August they were in small flocks four to seven in number. About the middle of the month they began to separate into pairs. Four nests were found between August 25th and August 31st. The nests were all in thick bushes from seven feet to 3 feet 6 inches from the ground. They were very loosely constructed of a few small twigs, through which the eggs could be seen. They each contained two eggs.

4. *Microtribonyx ventralis whitei* (Eastern Black-tailed Native Hen). A single bird seen swimming in the creek. Not nesting.

5. *Poliiocephalus poliocephalus* (Hoary-headed Grebe). A few birds seen on dams. Not nesting.

6. *Lobibyx novæ hollandiæ* (Spur-winged Plover). A single pair seen. They behaved as though breeding, but the eggs were not found.

7. *Zonifer tricolor* (Black-breasted Plover). Fairly common on flats; probably breeding, but no eggs found.

8. *Elseya melanops* (Black-fronted Dottrel). A few pairs were running in the mud banks in the creek. Not yet breeding.

9. *Burhinus magirostris* (Stone Plover). Heard at night; not seen.

10. *Notophoxya novæ hollandiæ* (White-fronted Heron). Several pairs seen. A nest found in September by Mr. Merryfield in a large gum tree containing young birds.

11. *Anas superciliosi rogersi* (Black Duck). Small numbers on dams and waterholes; not nesting.

12. *Virago giberrifrons* (Grey Teal). Same as last species.
13. *Spatula rhynchotis* (Australian Shoveller). Same as above.
14. *Malacorhynchus membranaceus* (Pink-eared Duck). Same as above.
15. *Mesocarbo ater* (Little Black Cormorant). A few solitary birds seen flying up and down the creek.
16. *Circus assimilis* (Spotted Harrier). Fairly common. Generally hawking over the sandhills, sometimes in pairs, more often singly. A nest was found by Mr. Merryfield in a tall gum tree after our departure. It contained three white eggs.
17. *Circus approximans gouldi* (Swamp Hawk). A single individual seen on a saltbush plain.
18. *Uroætus audax* (Wedge-tailed Eagle). Fairly common. A nest found by a musterer on August 21st contained two half-grown young birds.
19. *Haliastur sphenurus* (Whistling Eagle). Common everywhere; many nests seen, mostly in inaccessible gums; five nests examined varied in height from 60 to 30 feet from the ground; each nest contained two fresh or slightly incubated eggs. The principal food of these birds is rabbits, skeletons of which and casts of their fur were found about every nest.
20. *Milvus korschun affinis* (Allied Kite). One or a pair were constantly hovering about the station house; not nesting.
21. *Falco hypoleucus* (Grey Falcon). A single bird seen in the pine scrub. Mr. Merryfield obtained a clutch of two eggs from a nest in a red gum after our departure.
22. *Rhynchodon perigrinus macropus* (Black-cheeked Falcon). A single bird seen.
23. *Hieracidea berigora* (Striped Brown Hawk). Common. All the birds seen were the light coloured form, except one, which, from its tameness, I took to be a young bird. Several birds were seen to leave nests, but no eggs were found. Mr. Merryfield found eggs in September.
24. *Cerchneis cenchroides* (Nankeen Kestrel). Common. Birds were seen to leave two hollows, but the birds had not laid by the end of August. Mr. Merryfield found several clutches later, both in hollow gums and in old crows' nests.

25. *Spiloglaur boobook marmorata* (Boobook Owl). Only one bird seen; often heard at night.

26. *Tyto alba delicatula* (Delicate Owl). Heard at night; not seen.

27. *Ducorpsius gymnopsis* (Bare-eyed Cockatoo). Common in the Eucalypti, where they were nesting. Nests all inaccessible.

28. *Eolophus roseicapillus* (Galah). Common. Nesting in the tall gums along the creek; three nests examined on September 1st. All contained young birds.

29. *Leptolophus auricomis* (Cockatoo Parrot). The first bird arrived on August 26th, and they soon became numerous. On September 1st they were busy cleaning out hollows, but had not yet laid.

30. *Barnardius barnardi* (Ring-neck Parrot). Very numerous in gums about the creek; not seen elsewhere. They bred freely in the hollow gums; all the clutches seen were five in number except one of four slightly incubated eggs. They were very tame, and fed close up to the house. Their principal food was the seeds of the "prickly Jack." On September 1st many of the nests contained young, and some pairs were still cleaning out hollows.

31. *Northelia haematogaster xanthorrhoea* (Yellow-vented Parrot). Common in the scrub, not seen in the gum country. Many nests, mostly in hollow pines, all contained young birds except one, which contained nine eggs, eight of them incubating and one infertile. All the nests were in the trunks of the trees, and the entrance within reach of the hand.

32. *Psephotus varius rosinae* (Many-coloured Parrot). Not common; a few pairs only were seen in the gum country. One clutch of five eggs was taken from a spout of a dead gum tree about 20 feet from the ground.

33. *Pardargus strigoides rossi* (Mallee Frogmouth). A single bird seen sitting upon two slightly incubated eggs on August 30th. The nest was in a black oak about 20 feet from the ground.

34. *Agotheles cristata* (Owlet Night Jar). Two birds were seen, each sitting upon three slightly incubated eggs. The first bird had to be taken from the nest by the hand; the second flew off as we approached the tree. In each case the nest was roughly built of Acacia leaves, and in the second case with a few pieces of grass added.

35. *Cyanalecyon pyrrhopygius* (Red-backed Kingfisher). The first bird arrived on August 28th, and began calling close to the house. The note is a mournful "chow" repeated about 24 times a minute. A few more arrived each day and were calling in the gum trees about the creek. Mr. Merryfield found a nest in the bank of the creek after we had left.

36. *Heteroscenes pallidus* (Pallid Cuckoo). First bird seen on August 13th, and they soon became numerous. No eggs found.

37. *Neochalcites basalis* (Narrow-billed Bronze Cuckoo). Common. Three eggs found, one each in nest of *Hallornis cyanotus*, *Ephthianura albifrons*, and *Malurus melanotus callainus*. The Cuckoo's egg was upon the side of the *Ephthianura* nest, and not with the other eggs. The egg found in the nest of *M. callainus* was not blown for 24 hours after taking; it proved to be unblowable, the embryo was still alive, though those in the *Malurus* eggs were quite dead. The zygodactylate foot of the young Cuckoo easily distinguished it from any other bird. This may be used as a means of identifying Cuckoo's eggs when they closely resemble those of their hosts.

38. *Hylochelidon nigricans caleyi* (Tree Swallow). Not common. A few pairs nesting in hollow gums near the creek.

39. *Hirundo neoxena* (Welcome Swallow). Common. Nesting in sheds and down wells

40. *Lagenoplastes ariel* (Bottle Swallow). A colony of about 40 nests building on an overhanging bank of the creek. Mr. R. Smith informed me that these birds always build close to water in a dry season because the mud dries before they can get to the nests. For the same reason on bright days they build only in the morning and evening.

41. *Cheramacca leucosternum stonei* (Eastern Black-and-White Swallow). Common. Many old nests in the bank of the creek. Two were dug out on August 28th; one contained two fresh eggs, and the other three fresh eggs. No full clutches were taken. The first hole was one foot deep, and the second 1½ feet deep. In each case the nesting chamber took a turn to the right. The nests were made of dry grass and narrow gum leaves.

42. *Whiteornis goodenovi* (Red-capped Robin). The only Robin seen. They were very common, and were nesting freely. Thirteen nests were examined; 11 contained three eggs or three young birds each, one contained two nearly fresh

eggs, and one two half-grown young. The nest is built low down in the fork of a bush. It is made of dried grasses decorated outwardly with bits of lichen, and lined with rabbit fur, cow hair, and old cocoons. One nest measured, outside diameter, three inches; inside diameter, $1\frac{1}{2}$ inches; depth, $1\frac{1}{2}$ inches. The male keeps away from the nest while the female is sitting unless danger threatens, when he shows as much anxiety as the female. The female does all the nest building, all the sitting, and probably all the feeding of the young. The note of the male is a mixture of creak and croaks; the creak seems continuous with two croaks interpolated. The note of the female is a faint "chet." The male of one nesting pair had only a faint blush of red on the breast and none on the forehead when the nest started, but by the time the eggs were laid he had become sensibly redder without moulting.

43. *Smicronnis brevirostris viridescens*. A flock of four seen in a gum creek at the foot of the ranges.

44. *Rhipidura flabellifera whitei* (White-shafted Fantail). Saw only one flock of these birds. It occurred to me when too late to secure a specimen that they may have been *R. f. albicauda*, but they looked through the field glasses like the common species.

45. *Leucocirca tricolor* (Wagtail). Several pairs and single birds seen. They had not nested by September 1st.

46. *Coracina nova hollandiae melanops* (Black-faced Graucalus). Several small flocks seen up to seven in number; not nesting.

47. *Lalage tricolor* (White-shouldered Caterpillar Bird). Appeared on August 26th, and soon became numerous. They kept to the more thickly wooded country. Had not nested by September 1st.

48. *Morganornis superciliosus* (White-browed Babbler). Very common, nesting everywhere. Some pairs were feeding young on August 4th, and some were still building nests on September 1st. A pair built a nest in a low prickly shrub about 10 feet from the front door, and in spite of being tumbled over in the dark and having a basin of water thrown over them they hatched out three young, and were feeding them on September 1st. The young were fed upon caterpillars. All clutches examined were either three or four in number, mostly three.

49. *Calamanthus campestris* (Field Wren). Only a single pair seen. A bird shot for identification proved to be a young male. They were very shy.

50. *Cinctorhamphus cruralis* (Brown Song-lark). Very Common, nesting freely on the grass and saltbush flats. The first nest was found on August 24th. The nests were built in natural depressions in the ground. They were outwardly built of annual saltbush twigs, and were lined with green grass. The female does all the nest building and sitting. The male was not seen near a nest. Clutch, three or four.

51. *Ptenædus matheysi vigorsi* (Rufous Song-lark). Very common, kept to the thinly timbered country. A nest found by Mr. G. Smith on August 24th contained four fresh eggs.

52. *Ephthianura albifrons* (White-fronted Tin-tac). Very common both in saltbush and thinly timbered country. Breeding freely. The nests were made of thin saltbush twigs or grass, and lined with horsehair. One nest measured $1\frac{3}{4}$ inches in diameter and $1\frac{1}{2}$ inches deep. Clutch, three or four, mostly four.

53. *Parephthianura tricolor* (Red-fronted Tin-tac). Only two pairs seen in the saltbush. A nest found on August 30th contained three hard-set eggs. The nest was built in a saltbush, about six inches from the ground, of withered flower stems, lined with horsehair and a few pieces of rabbit fur. The opening measured $2\frac{1}{4}$ inches x 2 inches, and was $1\frac{1}{4}$ inches deep.

54. *Aurephthianura aurifrons* (Orange-tinted Tin-tac). Common in the saltbush, not seen elsewhere. All nests found were in saltbush from six to eight inches from the ground. Nest like that of *E. albifrons*. Clutch, three. These birds bob the tail up and down like a pipit while walking.

55. *Acanthiza uropygialis augusta* (Chestnut-rumped Tit). Common in the scrub country. Seventeen nests were found, all built in hollows from a few inches to five feet from the ground. In each case the entrance of the nest was built up flush with the opening of the hollow; if the opening be too large it is filled up with nesting material. Both birds assist in the building. Clutch, three or four, mostly four.

56. *Geobasilens chrysorrhous addendus* (Yellow-rumped Tit—Tomtit). Not common; several nests seen all built under hawks' or crows' nests. One examined on August 30th was built under a crow's nest containing five half-grown young.

The clutch was three slightly incubated eggs. There was no top story to this nest.

57. *Malurus melanotus callainus* (Turquoise Wren). Common in sandhill country. Five nests were found, one of which contained an egg of the Narrow-billed Cuckoo.

58. *Hallornis cyanotis* (White-winged Wren). Very common in the saltbush. Eight nests were found either in salt or blue bushes. Clutch, three or four.

59. *Leggeornis lamberti assimilis* (Purple-backed Wren). Fairly common on sandhills and thick scrubby country. All nests found were built on the ground, in thick bushes, or tops of fallen trees. Clutch, two, three, or four.

60. *Austrartamus melanops* (Black-faced Wood Swallow). On August 4th these birds were in small flocks of five to eight, but towards the end of the month they had separated into pairs, and had commenced building. A great many nests were found, the first on August 23rd, and daily afterwards. A favourite site was the centre of a mistletoe, but nests were also found in hollow stumps and in the tops of low shrubs. The nest is built of fine twigs and lined with fine rootlets and grasses. Only one egg was seen on August 30th.

61. *Colluricincla rufiventris whitei* (Buff-bellied Shrike-thrush). A few pairs seen along the creek and in the timber; not nesting.

62. *Grallina cyanoleuca* (Murray Magpie). Common along the creek. Breeding in the big gums overhanging the stream.

63. *Gymnorhina hypoleuca leuconota*. Common in the gum country where they were nesting.

64. *Bulestes torquatus ethelæ* (Butcher Bird). Not common. Only two pairs seen, but others were heard. A nest was found on August 30th in a black oak about 25 feet from the ground. It contained four slightly incubated eggs. The male betrayed the situation of this nest by flying out and fiercely attacking a *Pordargus* which we had driven from its nest.

65. *Lewinornis rufiventris inornatus* (Rufous-breasted Thick-head). A solitary male collected.

66. *Gilbertornis rufogularis gilberti* (Red-throated Thick-head). A solitary female collected.

67. *Oreoica cristata clelandi* (Crested Bell-bird). Not common. More often heard than seen. One nest found contain-

ing two fresh eggs. The nest was, as usual, ornamented with live caterpillars.

68. *Aphelocephala leucopsis* (White Face). The commonest bird in the district. They were breeding everywhere. Three pairs were building under the ridge capping of the house, and two pairs in the thatch of a shed. Other breeding places were thorn bushes, old babblers' nests, and between a gatepost and the hanging style of the gate; but the great majority of the nests were in hollow trees. The nests are made of dried grasses and herbage, and are lined with feathers and rabbits' fur. One nest was lined entirely with emu feathers. Clutches, three or four. I watched one pair feeding their young; they brought only green caterpillars at the rate of one each every five minutes.

69. *Sphenostoma cristatum pallidum* (Pale Wedgebill). I was surprised to find this bird so far south. I believe Leigh's Creek is the previously recorded southern limit. They were in pairs, and fairly numerous where there were clumps of thorn bush (a prickly shrub like African boxthorn, very difficult and painful to penetrate). The male sits out on a dry twig in the open and utters his song, which is like "chip cheer chiroo," the first two notes subdued and audible for about 40 or 50 yards, the final note very loud and shrill, and audible for a quarter of a mile or more. The female answers from the bushes with an occasional "chirrup." When the eggs are all laid the male becomes much more silent, only uttering his note occasionally. They are very local. A pair near the house never strayed more than 200 yards from the clump of thorn bushes where they eventually nested. The first nest was found by Mr. Merryfield in an "old man" saltbush. It contained three fresh eggs. One nest was built in the knob of a mistletoe about nine feet from the ground, and three other nests were in thorn bushes, all within reach of the hand. Clutch, two or three. The nest is built of fine dry twigs and smoothly lined with fine dried grasses. The opening measures five inches in diameter, and is $1\frac{1}{4}$ inches deep.

70. *Neositta pileata tenuirostris* (Slender-billed Tree Runner). A flock of four birds seen; not nesting.

71. *Climacteris erythroptis superciliosa* (White-browed Tree Creeper). Not common; only four pairs seen. An uncompleted nest was found on August 9th at the bottom of a hollow branch.

72. *Austrodicæum hirundinaceum* (Mistletoe Bird). A few pairs and solitary birds seen.

73. *Pardalotinus striatus subaffinis* (Striped Diamond Bird). Common in gum country; not seen elsewhere. Most of the nests were placed in very small holes in thick limbs of gum trees. A pair was found digging out a hole in the bank of the creek on August 11th; three slightly incubated eggs were taken from it on August 22nd. The tunnel was 18 inches long and the nest chamber five inches in diameter. The cup-shaped nest completely filled the chamber; the nest measured 3 inches x $2\frac{1}{4}$ inches in diameter x $1\frac{1}{2}$ inches deep. It was built of dry grasses and a few shreds of bark. The bird was captured on the nest, identified and released.

74. *Pardalotus punctatus xanthopygus* (Yellow-rumped Diamond Bird). Heard in gums, but no specimen secured.

75. *Glyciphila albifrons incerta* (White-fronted Honey-eater). Very common at the beginning of August, when they were feeding on the flowers of the thorn bush. About the middle of the month they all left without nesting.

76. *Meliphaga sonora* (Singing Honey-eater). Very common in scrub and thorn bush; not seen in gum trees. Nests were found in thorn bush, in myall, and in mistletoe. One nest found building was constructed entirely of green convolvulus runners.

77. *Ptilotula penicillata rosinae* (White-plumed Honey-eater—Greenie). Common in the gums. An albinó specimen was secured.

78. *Coleia carunculata tregellasi* (Wattle Bird). A single pair seen at foot of the ranges.

79. *Acanthagenys rufogularis cygnus* (Spiny-cheeked Honey-eater). Fairly common in scrub country; no nests found.

80. *Anthus australis adelaidensis* (Pipit—Ground Lark). Very common; nests found daily. Clutch, three or four, usually three.

81. *Taniopygia castanotis* (Zebra Finch). A few small flocks seen; not breeding, but were using old nests as roosting places.

82. *Corvus coronoides perplexus* (Raven). Very common; many nests found. Clutch, three to five.

83. *Phaps chalcoptera* (Bronze-wing Pigeon). Uncommon. A nest was found in a myall at the foot of the ranges containing two fresh eggs.

(After our departure Mr. Merryfield identified two other birds.)

84. *Cosmærops ornatus* (The Bee-eater). Found breeding in the side of a sandhill.

85. *Campbellornis personatus mumba* (Masked Wood-Swallow). A nest found on top of a dog-proof fence.

The scientific names are from Mr. G. M. Mathews' latest list of Australian birds for the sake of convenience, although the writer does not agree with many of his subspecific and generic separations.
