

in Australia and of such a number of birds of each species—for one bird can respond more intelligently than another of the same species—open most interesting prospects for careful observers. It may be true that the phenomena of bird behaviour will refuse “to yield up their inward nature to our comprehension,” that the inherent organization of bird and man make it impossible for us to “explain” anything with certitude, and that our “conclusions” may even be quite wrong. The fact remains, however, that we cannot be other than what we are and that there is perennial interest and pleasure in observing and theorizing about the mysteries of animal life.

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Notes on the Red-backed Kingfisher

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Here at Murphy's Creek, south-eastern Queensland, we are visited annually by Red-backed Kingfishers (*Halcyon pyrrhopygius*), in limited numbers. Only from two to three pairs breed in the vicinity of my house, but at Lockyer, three miles to the south-east, another pair, sometimes two, are found nesting in the creek banks during the spring and summer months. This nesting season (1934-35) the birds did not return to breed as usual. One bird returned, on August 28, to its old nesting place, but as no mate arrived the bird did not stay long. It moved about a good deal, coming back to the nesting bank at intervals and calling in a peculiar way. Instead of the usual single note, often repeated, this bird used a double note, the two notes being given sharply instead of leisurely as is the usual method. The bird seemed to be very restless and disappeared on October 8.

Each year one bird arrives a week or more before any others and calls continually from early morning until late in the evening. When a mate arrives the calls are heard at intervals only and tunnelling commences soon after the appearance of the second bird. Often an old nest is chosen and the birds take a considerable time in cleaning it out and putting it in a suitable condition. No lining is used in the nesting chamber.

During the 1933-34 season, the pair of birds, of which I have kept a nesting record, failed to rear a brood. The first nest was robbed of its young, the second of its eggs.

A third attempt to breed was marred by wet weather, water having entered the nest through a crack in the ground. This last nest was an unusual one, as a second tunnel had been made from the first nesting chamber. Further details of the nest will be given at the end of these notes.

My first record of the nesting of the Red-backed Kingfisher commenced with the arrival of the birds in August, 1930. On August 28 the first bird for the season was observed. On September 14 a second bird appeared and tunnelling started soon afterwards in a spur of a bank which had been a breeding place for the birds for some years. On October 7 I found that the birds were brooding and on December 1 three young left the nest. I found on December 30 that another set of eggs had been laid in the same nest. The young of the first brood were fed by one of the birds while the other bird was brooding. This second clutch of eggs hatched on January 22, 1931, and a month later the young left the nest. By that time the first brood had learned to fend for themselves and both the adult birds gave their attention to the second brood.

When the young birds were being fed in the nest, swarms of red mound ants were in attendance daily at the tunnel's entrance, but the ants did not trouble the young birds in any way and the parents showed no concern at their presence. The ants' business seemed to be the cleaning up of the excreta which fouled the entrance to the tunnel.

In 1931 my records show that September 4 was the date of the first bird's arrival for that year and its mate came a week later. Work started at once on the cleaning out of a last year's nest, but before the work had been completed that portion of bank broke away during heavy rain. A few days later the birds started another tunnel in what remained of the bank. The nest was completed and eggs laid by November 2. After the eggs had hatched and the young birds were well grown the nest was scratched out from above by a fox and the young birds were eaten. This tunnel was 12 inches long to the nesting chamber and 8 inches below the surface of the ground. The birds at once moved to a high bank near by and started a new tunnel. This nest was 2 feet below the surface and 5 feet from the ground below at the base of the bank. The tunnel when completed was 6 inches in length to the chamber. The nest was completed by December 26. On January 11, 1932, I could see by the light of a reflector that the nest contained five eggs in a chamber about 4 by 4 inches in size. On January 22, I found that four eggs had hatched, and the fifth egg hatched the following day. Two of the young birds died when a week old and were removed from the nest by the parents. The other three vacated the nest on February 22.

In 1932, the first bird was seen back at the nesting place

on September 5, but its mate did not come until September 28. Nesting started immediately in the same high bank as that used for the second nest of the previous year, but much nearer to the surface than the last year's nest had been. I was unable to watch this new nest closely for some time, but on December 19 I inspected it and found three well-grown young birds about ready to leave. A swarm of sugar ants was at the entrance cleaning the nest. On December 20, early in the morning, a dingo was seen near the nesting place and when I went to see how my birds were, I found a hole scratched into the nesting chamber from above and the young birds gone. From the time this nest was robbed only one adult bird was seen. It remained about the place until April 3, 1933. Evidently one parent had been captured in the nest with the young.

August 31, 1933, saw the arrival of the first bird for the spring of that year. It was heard calling at the old nesting site at 10 a.m. It was joined by a mate on September 23. The birds did not settle down for some time and moved about the district a good deal. On October 2 I found that the birds had started in their usual nesting bank. After a day's work had been done they moved to an old nest nearby and spent forty-one days cleaning it out and laying their clutch of eggs. Brooding started on November 12. On November 25 a bird was caught at the nest and examined but returned to the eggs soon after it had been released. I did not notice on which day the eggs were hatched, but on December 13 I found that two young birds had been pulled from the nest and were dead on the ground below. There were then no other birds in the nest, so if there had been more than the two occupants the others must have been carried off by the nest robber. On December 20 a new nest was started and by January 6 the birds were brooding. On January 19, 1934, I found that the eggs had been taken. Six days later the birds were seen cleaning out a Pardalote's old nest. They enlarged the nesting chamber, and later I thought they had started brooding. At that time heavy rain set in. I saw a very wet bird leave the nest one day, whence it fluttered to the ground and remained for a few minutes to shake the wet from its wings. Thinking that the eggs, if any, would be spoiled by the wet, I decided to collect them, but when the nest was opened up I found it empty. A second tunnel, seven inches in length had been made from the first nesting chamber and at the end of the tunnel another chamber had been started. It was there that the bird had been working when it had got so soaked with water. A crack from the ground above had allowed the water to trickle into the tunnel and nesting chamber and they were in a very soaked condition. No further attempt was made to nest after this nest had been opened. The birds departed a few days later.