

a motley array of ornaments including most of the red materials, red wool, glass, plastic cord, scraps of cloth, plastic bottle top, and part of a narrow red leather belt. Whilst the red ornaments are relegated to a secondary place, they do not appear to be rejected, being ranged close to the side for its whole length, and sometimes rearranged. Pieces of plastic cord have been draped about the outer twigs, and sometimes a few bits of red appear in front of the bower. Since my first visit new treasures have been added. The pieces of cloth are mostly dressmaking scraps; on my last visit several snippings of a new shade of red had appeared.

Once the middle of the bowers was strewn with small silvery leaves which have since shrivelled and have not been renewed. Some hardened skins of small custard apples are among the outer decorations. An eaten-out fruit hardens to a shell, black outside and rust-coloured within. I am somewhat puzzled by the presence of several pieces of horse-dung in the space beside the bower. These unlikely ornaments must have been carried fairly recently to their present position. It is possible that they have been thrown in by humans, and placed on one side by the bird, but general appearances do not suggest any such interference.

Notes on the Blue-billed Ducks at Lake Wendouree, Ballarat

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This species (*Oxyura australis*) has been present on Lake Wendouree in varying numbers during the season 1952-1953. In October 1952, eighteen mature birds were present, increasing to twenty-seven (23 mature and 4 immature) in December. A recent census of bird life on the lake revealed only nine mature birds and these were all wild and difficult to approach. The breeding season extended from November 1952 until early February 1953. Three clutches were noted and kept under close observation.

Clutch A. This clutch comprised four young and was first observed, when only a few days old, on December 1, 1952. The locality was in the south-west corner of the lake, known as the Convent Corner, and the area comprises a small lagoon connected to the lake proper by a culvert. The young grew quickly and after six weeks were almost as large as the female parent bird. In mid-January they left the breeding area and moved out into the open water.

Clutch B. This clutch comprised seven young and was first observed on January 7, 1953, in the same area as clutch A, when only about two days old. The parent bird

was very tame, and the whole family could be observed in shallow water only a few feet from the observer.

This clutch was closely observed until February 3. After that date no trace of them was found on any part of the lake. The young at that stage would be four and a half weeks old and some doubt exists as to their being able to fly at that stage.

Large water rats were observed in the breeding area at this time and could have been responsible for the family moving from the area. Vandalism at this period was causing much destruction to breeding birds and could have been another reason for their disappearance.

Owing to the tameness of the birds, and the rarity of the species in captivity, a collector would have had little trouble in netting them.

Clutch C. First observed on January 29, 1953, approximately two days old, and comprised two young in the same breeding area.

On February 7, no trace of the parent bird could be found and four young, approximately two weeks old, were observed feeding on their own. This was most unusual, as on all previous occasions the young remained with the parent bird until at least six weeks old.

There is no doubt that an upset of some kind had occurred in the breeding area as after February 7 no trace of any young could be found and mature birds were most difficult to approach.

Other observations made are summarized as follows:

Male Birds. On no occasion has a male bird been observed with any clutch of young.

Feeding. The young are expert divers from the time they leave the nest and are self fed. On no occasion has the parent bird been seen to feed the young as is the case with the other stiff-tailed duck species.

Display. The unusual display of the male towards the female was observed on seven occasions on the following dates: December 1 (twice), January 22 (twice), February 3 (once), March 21 (twice).

Copulation. Observed once only—on March 21, 1953—near the breeding area. It was anticipated that further breeding would take place but no further clutches were noted. (During the season 1951/1952 a clutch was hatched out in April 1952).

Nests. The only nest under observation was situated on a small island off the west shore. It was situated on the ground under a New Zealand flax plant, and consisted of a few light sticks with a little down. It was first noticed in mid-February and contained four eggs. The eggs were very similar in colour and texture to the Musk Duck eggs but much smaller. Two days after being first observed the

nest was deserted and empty and was not again used. Vandals were seen with the eggs and during the season were responsible for robbing many other nests, the Black Swan being the main sufferer. (Of twenty known Swan breeding pairs, only four were permitted to rear their young). No nests were observed in the Convent Corner as it consists of deep water and thick reed beds.

Voice. No voice or call was noted.

Flight. Noted only on February 14, when five birds took flight on three occasions when disturbed by a rowing boat. Their flight was surprisingly fast.

Method of Display. Male usually in open water and female close by on the edge of reeds. Leading up to each display, the male carried out a series of brisk preening motions, which commenced with a sharp splash backwards by a kicking motion of both feet. The breast feathers were then vigorously preened for about twenty seconds, whilst the body was held erect, almost out of the water. Then followed a sharp jerking up and down of the head with the beak held firmly towards the breast. This action was repeated five or six times, finishing up with a shallow dive, the whole of this taking approximately 30 seconds. Preening was repeated four or five times, at one or two minute intervals, before the actual display took place.

For the actual display, the male usually faced the female, jerking the head sharply up and down five or six times, followed by a short dive. After repeating this at about one minute intervals, the body is suddenly straightened out, the tail feathers erect (revealing white under tail coverts). The bird then goes through a series of sharp bumping up and down movements, simultaneously dipping the head in and out of the water. Finally, with the head and the tail completely submerged and the back arched upwards, a quick movement backwards is taken for several feet. The bird then resumes a normal posture and swims towards the female, dipping its head in and out of the water several times.

The whole action of preening and display would take several minutes and would not be repeated by the same bird under an interval of approximately twenty minutes.

At no time during the display was copulation noticed. The method of copulation may be described as follows: The female was closely pursued by the male at high speed for some distance, completely under water, both birds occasionally surfacing and fighting. Copulation finally took place with the female completely submerged and the male partly submerged. Male and female then separated in opposite directions and carried out a lengthy preening of the whole body, in no way similar to the preening action leading up to the display.