The behaviour of the White-backed Duck

A. CLARK

Introduction

These observations on the White-backed Duck *Thalassornis leuconotus* were undertaken to check and extend those which Johnsgard (1967) made on captive birds, because of the apparent lack of information on this species in the wild. They were made on ducks which were present for varying periods at three dams and one natural pan situated in the vicinity of the Witwatersrand, Transvaal, South Africa. The waters were relatively shallow, with maximum depths varying from two to six feet. Although sedges and other aquatic plants provided suitable nesting sites, no breeding took place during the period of observation, i.e. July 1968 to April 1969. The names of the various comfort movements described are taken from McKinney (1965) and for the movements associated with threat and copulation the names are taken from Johnsgard (1967).

Resting or sleeping

The birds rest or sleep on the water in groups, invariably with the beak tucked into the scapulars, the distances between individual birds varying from one foot to two yards. At such times the tail is inconspicuous but sometimes it is raised slightly off the water. At Spaarwater where the greater portion of the water surface was choked with mats of grass stalks and other aquatic plants, they preferred this area and were never seen very near the shore nor resting in open water. This seems to be the general pattern, but at Impala Park they had to move very close to the shore to get anchorage of this type and would sometimes sleep in open water where, like the Maccoa *Oxyura maccoa*, they would drift in the wind. Although Clancey (1967) states that Whiteback repair to dry land for rest, I would consider this exceptional for the study area.

Frequently a bird may be seen sleeping with one expanded webbed foot visible, sometimes with both feet sticking out on either side like fins, and this habit may explain their preference for the anchorage provided by stalks of aquatic plants.

During the daytime most birds sleep for three to four hours in the late morning with casual shorter spells at other times. The greater part of the day is spent sleeping, giving the impression that the birds are inactive. Although they are apparently sleeping, they push their heads up instantly when a Marsh Harrier *Circus ranivorus* flies near, or move away from an approaching Coot *Fulica cristata.* Maccoa, Southern Pochard *Netta erythrophthalma* and Red-billed Pintail *Anas erythroryncha* have also been seen amongst the White-backed Duck. Often when disturbed from their sleep the latter push their heads up and will often Wing-flap. The sequence, Nibbling - preen, Shake and Wing-flap is not unusual at this time and Leg-wave, Wing-and-leg-stretch and Head-scratch may also be seen.

The break up of sleeping parties takes place gradually. Single birds or small groups will leave and go on their way to feed. Flights just above the water surface for distances of ten feet to fifty yards are occasionally taken. There are often short swimming movements with little apparent purpose. These involve direction changes, movements away as though avoiding, movements towards as though asserting and much pausing with head partly raised and held stiffly.

Feeding

The White-backed Duck feeds by diving to the floor of the water and sifting food from the mud or debris resting there. Although Clancey states the birds dive with a leaping action and Johnsgard confirms this, all the Whiteback under observation made a smooth plunge like the Maccoa except that the birds made a splash dive when avoiding a Coot. The Fulvous Whistling Duck *Dendrocygna bicolor* lifts part or the whole of its body clear of the water when diving but may frequently feed by 'up-ending.' The Whiteback does not move far laterally under water when feeding. In water approximately one foot deep I have recorded 12-14 seconds under water and 4-6 seconds between dives above. At Spaarwater where the depth was two to three feet, time under water varied from 15-20 seconds, time on surface from 5-10 seconds. At Tweefontein Dam where the water had an estimated depth of six feet, I recorded 25-30 seconds under water and 7-12 seconds above. Feeding from the surface is unusual. The times under water agree closely with those given by Johnsgard but he gives a more extended period on the surface between dives.

Whilst on the surface between dives I have seen birds tread water, the feet

pushing water downwards, not backwards as when swimming. This behaviour is evidenced in the slight rocking movement of the body and the movement of the surrounding water. As a result of the treading action the body is lifted noticeably and the breast prominently displayed. The treading continues until the birds dive again and it is possible that they behave in this way when they are feeding in rather shallow water, the slight lift of the body facilitating the dive.

As the water level at Spaarwater dropped, the birds occasionally fed where the surface water was matted with grass. Here they had to struggle to surface properly and sometimes the head only came out. Before diving again they would lower the beak on to the breast. Occasionally when a bird surfaces it carries a string of weed in its beak which it makes no attempt to swallow. Sometimes the head is blackened by debris the bird has stirred up in feeding. At Spaarwater Coots frequently fed in the wake of a diving bird.

The main observed feeding times are from dawn to shortly after sunrise and in the late afternoon until sundown. At Spaarwater they mainly chose the areas where the surface water was free of vegetation and the birds joined together in groups of varying sizes. Once feeding commenced the birds continued steadily and some fed for 60-80 minutes without a break. Sometimes they would cease for a period and then continue feeding.

Flight

The Whiteback seldom flies during the day and when it does, like the Maccoa, it has difficulty in getting airborne and paddles the surface for 10-20 yards before rising clear. For this reason it usually takes off into the wind and prefers windy days. Its wings beat steadily and it appears to have little manoeuvreability. It flies with legs to the rear protruding beyond the tail. Before landing, its legs are lowered and the webs of the feet fanned out, as if as air brakes, before being moved forward to take the impact of the water. Even so the bird usually ploughs into the water with its breast. I have not seen them come down on land.

To reach another bird, or to feed, some take short flights of ten yards just skimming the water or longer flights in a direct line at a height of approximately four feet. Protracted flights of a more formalised nature, by two or more birds, occur in the afternoon when they rouse themselves prior to feeding. These flights, which seem to have no other purpose than exercise, take place at from 5-30 feet and the birds keep over the water.

Two typical instances of pre-flight behaviour were recorded as follows: 'Six birds swam off in single file. After a short distance they mostly turned to face the wind with heads up. There was a pause and I saw one bird Shake and two Wing-flap. After another pause I saw one lateral Head-shake. There was another brief pause and they all flew off and did a figure-of-eight over the pan.' 'Two birds with heads up faced the wind. They turned and swam with the wind. After a short distance they turned to face the wind, hesitated and then swam again with the wind. They repeated this movement a third time before facing the wind to take off.'

It is evidently important for the Whiteback to have a good stretch of water in front before attempting to fly. I have seen a bird swim 100 yards with the wind to enable it to get into a position to take off into the wind. The Head-shake is not often used and when it is, is not necessarily repeated by other birds in the group. Pre-flight behaviour is mainly recognised by birds gathering, hesitating with their heads up and facing into the wind. Flight is not always simultaneous. Quite frequently after flight I have seen birds rest with beak in scapulars.

Voice

The main call of the Whiteback consists of a double note which sounds like 'Tit-weet,' reed-like, with the second longer note lower than the first. When on the water the bird puts its head right up to call. Single birds may call between dives, or during a pause in swimming or during a break from sleep, but occasionally others will join in. The call is sometimes given during a take-off, during flight or immediately after coming down on water. The double note is often repeated several times and I have heard one bird repeat the call at intervals over a period of 50 minutes when it seemed to have no signal value. It is also sometimes heard after disturbance occasioned by people or an aggressive approach of another bird. The 'Tit-weet' call carries well and can readily be heard at a distance of 100 yards or more. Johnsgard also records a 'conversational' or contact call consisting of three to five notes uttered on a rising series of soft whistles.

Comfort movements

The Swimming-shake or Shake begins with the wing feathers being slightly

raised and shuffled, followed by the head being lifted and the breast raised off the water to give a brief shake. In the final position the beak is often pointed upwards. There is no forward movement. The Swimming-shake may be seen during a break in sleep, following disturbance and during the bathing and preening periods which follow feeding. Sometimes the Tail-wag precedes the shuffling of the wing feathers but because of the short tail it is not easy to see. The Tail-wag may be performed on its own during preening or swimming. The lateral Head-shake may occur before or after flight but it can be seen also during preening periods.

The Wing-flap behaviour of the Whiteback differs little from the pattern common to dabbling ducks. The body is, however, often lifted clear of the water when the treading action of the feet can be seen. On these occasions the body is nearly erect and the flapping may be protracted for ten or more seconds. The movement may occur during a break in sleep when several birds will perform in succession. It also occurs after disturbance, after flight and during preening.

During sleep on the water the feet are usually hidden under the wings. Occasionally a foot will be brought out and waved before being returned to its resting place; this Foot-shake is also seen in the Maccoa Duck. In the Whiteback, however, the foot may be left exposed. Wing-and-leg-stretch behaviour may be seen during a break in sleep and also during preening. Scratching of the head or neck with the foot occurs mainly during preening periods.

Invariably after an extended feeding period the Whiteback bathes and preens often for 10-15 minutes at a time. Bathing begins by the bird dipping its head and withdrawing it quickly to throw water over the back. Shoulder-rubbing is often combined with bathing and performed when the head is thrown backwards. Then follows Wing-thrashing usually with both wings together. On one occasion only have I seen a bird do a partial somersault. I have not seen Dashing-and-diving. Preening and oiling follows bathing when much attention is given to the breast feathers, tail and underside of the wings. Shoulder-rubbing is frequently seen. During preening the bird may Head-shake, Shake, Wing-flap, Tail-wag, Scratch head or shake the wings. Wing-thrashing may also be seen. Nibbling-preening may occur at any time during the day and at Spaarwater the birds would get on to a Coot's platform and concentrate on cleaning their breast feathers.

Threat

Threat display seems to take place mostly after pair formation. When swimming one member of a pair will drive away another bird. The following patterns have been observed: (1) One bird would swim towards another with its head on its shoulders and the other bird would retreat sometimes by diving. At times the bird approached would not retreat but pushed its head up and slightly backwards in the Head-back posture. The approaching bird would do the same and the two birds would pause for a few seconds side by side often looking in opposite directions. Occasionally they would remain in this rather statuesque position for more than a minute. (2) One bird would take a flight of 3-4 yards towards another, often paddling all the way. The other would dive in retreat or push its head up and the two would adopt the side by side head-up position. (3) The aggressive bird would swim quickly with beak open and attempt to grab the other bird which would retreat quickly. (4) One bird would swim towards another with head forward. The other bird would go to meet the threat and as they reached each other they would rear up with head high on extended neck and breast off water. There would be no contact but they would pass over each other's shoulders and resume their normal swimming posture. I have seen the aggressed bird dive after such an encounter.

Pair formation

The following incident, which I believe to be typical of paired birds, was recorded in the late afternoon. 'Two birds swam forward, side by side, with heads partly up and held stiffly. One bird, which I think was the drake, seemed bigger than the other and its breast was more prominent. The smaller bird dived and swam underwater. The other bird swam to join it as it surfaced. The smaller bird dipped its beak as if to feed from the surface. The other did the same and again both immersed their beaks. Both birds then swam off in a dignified way with head erect and joined other birds to feed.' On another occasion the birds swam round in a circle about 5 feet diameter, dipping their beaks frequently. I have seen no especial male courtship display.

Copulation

Copulation was seen at Spaarwater, a natural pan, on three occasions in August between 16.20 hrs. and 17.10 hrs. and followed feeding. The number of birds present on the pan varied from 20 to 24 and threat action was most frequently seen at this time. If other birds were near the pair they were threatened and moved away. On two occasions the pairs involved swam away side by side with heads up and breasts slightly raised for a short distance when Bill-dipping commenced. The female commenced first on one of these occasions. Bill-dipping during which the head is almost completely immersed, was repeated once on one occasion and twice on another, by both birds. On the third occasion copulation was preceded by the birds swimming round in a circle with head and neck on water, and body low. Immediately following Bill-dipping behaviour the female swam low in the water with head forward. On one occasion she swam thus round the male. Copulation followed with some splashing caused by the beating of the male's wings.

Only two post-copulation displays were seen, one display being interrupted by a Coot. On these occasions both birds performed the Step-dance, treading water with bodies erect and one wing fully displayed. Observation was made at a distance but it would appear that the wing away from the other bird was raised. On one occasion, whilst treading water, the male bowed forward three times, almost touching the water with his beak. The female may have done this also. In one case both birds remained motionless with heads up for ten seconds following treading. Then the female was seen to Wing-flap and Preen. Eventually they swam away side by side with heads erect. These observations confirm those on post-copulatory behaviour made on captive birds at Slimbridge by Johnsgard. In one apparently unsuccessful copulation sequence he recorded Bill-dipping by the male only, so further observations are necessary to confirm that both birds perform in this way in typical pre-copulatory behaviour. Once I saw the female Whiteback Bill-dip twice and stay prone soliciting copulation but the male nearby remained with his head up.

Johnsgard indicates a relationship of the White-backed Duck to the whistling ducks. I have seen the complete copulation behaviour in the Fulvous Whistling Duck once only. Only the male dipped his beak several times without completely immersing his head. Meanwhile the female remained with head up on extended neck and moved as though to hinder the male so that his dips alternated from one side of her to the other. I have seen similar behaviour in the White-faced Whistling Duck *Dendrocygna viduata* but copulation did not follow.

At the time of these observations the pan was not more than two feet deep at any point and the incidents took place more than forty yards from the shore. It would seem that the conditions were suitable for breeding but it was the dry season and the pan level was dropping. During September the numbers present dropped steadily and by the middle of October, when the water was not more than nine inches deep, the Whiteback had all left.

Summary

The habits and behaviour, characteristic of the White-backed Duck *Thalassornis leuconotus*, are described including features associated with resting, feeding, flight, the voice and comfort movements. Types of threat display are described as well as limited observations on copulation.

References

CLANCEY, P. A. 1967. *The Game Birds of Southern Africa.* Cape Town: Purnell.

JOHNSGARD, P. A. 1967. Observations on the behaviour and relationships of the White-backed Duck and Stiff-tailed Ducks. *Wildfowl Trust Ann. Rep.* 18 : 98-107.

MCKINNEY, F. 1965. The comfort movements of Anatidae. *Behaviour* 25 : 120-220.

A. Clark, 22 Ronketti Circle, Petersfield, Springs, Transvaal, South Africa.