

## Some notes on the Paradise Shelduck

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In WILDFOWL 19, Dr. Kear, commenting on D. S. Wintle's article on Versicolor Teal, said that his 'observations show how much of scientific interest can be achieved by an aviculturist with even a small collection of wildfowl. We hope that others will be encouraged to study the behaviour of their birds in a similar way'. I was so very fortunate to be personally encouraged by Dr. Kear on her all too brief visit to my home in New Zealand in January 1969. I then determined to place on record my perhaps unique experience of the Paradise Shelduck *Casarca variegata*. As my 86th milestone is just around the corner, I thought I had better get on with the job.

My first aviary was a disused W.C. in the backyard of our Wellington home during the 1890's. It was not until I returned from the First World War and acquired a home of my own that I was able to ask the Department of Internal Affairs to arrange for the Southland Acclimatisation Society to send me half a dozen Paradise Ducks. When they arrived they were in full moult, showing not a single feather on their heads. On making enquiries about sexing I was informed by those who should have known better that it was impossible to sex the breed until after their first moult. In due course they all turned out to be males. They must have been adults too. This experience probably challenged me to get at the facts in my own way, as I did.

### Breeding

My experience with their nesting habits is limited to the mob which is centred on Rotomahana Lake near Rotorua where they assemble during December to go through their annual moult. They disperse over the pumice plateau as far north as Tokoroa, 34 miles away, at breeding time. Usually the parties to arrive comprise one female accompanied by several males. Within a few days just one pair remain—probably the lady of last year and her old mate, if he be still as fit as ever. Years of observation lead me to believe that all pairs of that clan commence laying on the same day. One pair which nested year after year in a rock cavity overlooking a stream quite close to a farm house always took their newly hatched brood to a nearby lagoon formed by damming the stream for the purpose of generating electric power. They were under constant observation. When the

chicks were able to fly the whole family departed—presumably to the tribal home at Rotomahana—before the adults started to moult.

On one occasion, when the clutch of eggs was still fresh, ten Indian Runner eggs were given the birds in exchange for their own. These were duly hatched and reared on the lagoon. About the end of November the adults, who apparently felt the urge to leave, spent days of anxious effort to teach their family to fly. In the end the parents left, leaving the near flightless Indian Runners on the lagoon.

The following year the pair returned to the same area but selected a new nesting site. The male died as a result of bashing into a farm wire fence, and the nest was destroyed. Within a short while the female made friends with a tame pinioned male in the farmer's garden and went to nest in another position. Someone robbed that nest and frightened the bird away. All that day she flew over the farmhouse shouting what were understood to be curses at a husband who had failed to warn her of the approach of strangers. She vanished for a day or two but returned with a new follower and is believed to have had a third nest that season, though I have no evidence one way or the other. This experience enhanced my scepticism for assertions that suchlike birds mate for life. It seems probable that the young female is first to lay claim to a nesting territory and that (as I have heard it said) she selects a mate from her retinue. Next season it is she who is first on the spot to lay claim to her established rights and, if he be there, it is her mate of last season who feels that the other males are intruders and acts accordingly.

Several old writers have asserted that both sexes share the duty of incubation. I have seen no evidence of this. Mid-afternoon the female comes off her eggs and flies to a favourite spot for a feed, a thorough bath and preen. On the way there she is joined by her mate who spends most of the day grazing on a high place overlooking the area of the nest. The pair then circle their territory a few times before the female drops down to the nest and the male returns to his observation post.

Our Paradise does not form crèches as the Common Shelduck *Tadorna tadorna* appears to do, but one experience of mine is worth relating here. A Muscovy

hatched out five or six Paradise eggs in a small chicken coop. When they were about three days old the chicks got out during the night or early morning. I found them accompanying a tame Paradise female who had never had a mate nor ever laid an egg. I promptly released the mother Muscovy but the ducklings stuck to the maiden lady who successfully reared the lot.

#### Development of sex differences

The adult male, when showing annoyance at some intruder, or even when greeting his keeper, holds his head close to the ground with bill horizontal, and rushes forward honking in a deep voice. The female, when calling, holds her head high and flicks her bill up at each call. The male ducklings, when only a few days old, adopt that 'hangdog' stance of their fathers when running about. I once sorted a dozen babies on that basis—giving six, believed to be males to one foster bantam and the remainder to another hen and kept the two lots apart. The result was 100% right.

Charles Darwin was very struck with the unique manner in which this bird completely reversed sexual colouration. First feathers appear alike in both male and female—mainly dark grey body with clear black head and neck. The males remain like that but some will have two or three small white feathers among the black on their heads, which used to be very misleading. The females, while still flightless, begin to change to their adult colours of warm brown with pure white head and neck. With some clutches the females show a slight tinge of brown on breast as soon as those feathers come out of the quills—age about five or six weeks. At seven or eight weeks old the female head, which was black at first, shows white feathers against the bill. Within a week this is a complete white band about  $\frac{3}{8}$ th of an inch wide and rings of white are beginning to show around the eyes. At two months the head is about 50% white and at six months the head and neck are completely white. Laidlay, who has bred these birds, tells us that the females eclipse to the extent of reverting to the grey body at moult. I have occasionally observed a tendency towards that behaviour.

#### Broken wing display

Dr. Kear, when walking along the margins of shallow water on which parents and ducklings were floating, witnessed the broken wing display by the male who came ashore and tried to lure her away landwards. She sought my opinion as to how that habit could be inherited in a land that never had endemic mammals. I have never experienced such a sight, probably because my approach to young broods has either been where the birds were near farmhouses and accustomed to human beings who took little notice of them, or along small stream beds running along narrow cuts through the pumice plateau so that any dry-land antics by the male would be out of my vision. There would be no point in the act if I were arriving by row boat. Other people such as Buller, Guthrie-Smith and Douglas have reported seeing the display performed on land, and Mr. Explorer Douglas' dogs seem to have been the cause of some 'predator distraction' behaviour. If the broken wing behaviour be an inherited characteristic it may be traceable to the extinct eagles which once inhabited this land. Dr. Kear is inclined to think the large extinct rail *Aptornis* might be responsible, but I feel that this bird wasn't large enough. Human beings have inhabited the land for nigh on 2,000 years, though few, if any, were in the mountainous parts of the south island which is the principal habitat of the Paradise. In any case, man is not fooled into thinking that the bird is really injured, he merely realises that it has young; so in relation to him, the display is more likely to have been a disadvantage and quickly eliminated. Wild pigs, which certainly might take young, have been here for less than 200 years. There is the possibility that Paradise learned the device from experience and that those of today have learned by precept. That would rule out heredity. When approaching a brood by boat the parents will yell an alarm and skitter along the water in order to induce the chicks to dive or hide in nearby water weeds—something they are constantly doing when harrier hawks, or even the predacious Black-backed Gulls, are about.

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*While WILDFOWL 20 was in press the Editors received the sad news that Mr. FitzGerald died on 4th August 1969.*