

Preliminary observations on waterfowl of Western Madagascar

DAFILA SCOTT AND JOANNA LUBBOCK

Introduction

In early July 1973 we left England for Madagascar, an island more than twice the size of Great Britain, 250 miles off the S.E. coast of Africa.

Our aims were to make a general study of the waterfowl of the western region and in particular to look for the rare Bernier's Teal *Anas bernieri*, a small rusty brown duck related to the Grey Teal *A. gibberifrons* of Australia and the East Indies. It was first described by Hartlaub in 1860, and has been seen infrequently since. According to Milne-Edwards and Grandidier (1879–1881) it is found either along the great water courses or in the marshes and small morasses, usually in small groups. Rand (1936) spent 2 years on the island in the 1930s and failed to see the bird at all. However, Salvan (1970) reported considerable numbers of Bernier's Teal in the area of two remote lakes Bemamba and Masama in western Madagascar in July 1970.

Itinerary

On arrival in Tananarive, the capital, on 14 July, we were met by scientists from the French organization ORSTOM (Organisation pour la recherche scientifique et technologique outre mers) who assisted us with our plans throughout our stay and to whom we are most grateful.

On 27 July we flew west to Antsalova accompanied by Georges Randrianasolo, a zoologist from Orstom who acted as guide and interpreter. During a 4-day delay in Antsalova we found Pygmy Geese *Nettapus auritus* and White-faced Whistling Duck *Dendrocygna viduata* on a small lily pond.

Transport in this area was limited to ox-carts. Three days were spent at Ambondra, a marshy rice-growing area with lily ponds, 4 miles east of Lake Bemamba. The following 2 weeks were spent on the shores of the Lake itself. A shallow saline lake, it is situated 6 miles from the west coast of Madagascar and 12 miles S.E. of the Soahanina estuary. In July it was about 1½ miles long and ½ mile wide, interspersed with many clumps of tall reeds, but it is said to dry up during September and October prior to the rains which commence in November or December. To

the south and west it is bordered by dry scrub, to the east by dry deciduous forest and to the north by the rice fields of Befaroratse.

August 16 and 17 were spent 6 miles to the S.E. at Ambereny, staying with a French wood merchant, who took us to Lake Masama, which lies on calcareous rock and is very different in nature from Lake Bemamba. It is deep and wide with much less fluctuation of the water level. Its relatively steep shores are bordered immediately by palm trees and deciduous forest. No anatidae were seen here and the only common waterbirds were herons, taking advantage of the very abundant supply of *Tilapia*. We were also taken to Lake Andranolava, a lily covered lake ½ mile long just north of Masoarivo. Unfortunately it was not possible to visit the Soahanina estuary nor the marshy area described as Lake Soahanina on the map due to problems of transport and time.

Waterfowl sighted

Bernier's Teal *Anas bernieri*

Two pairs were sighted on a reconnaissance trip to the eastern shores of Lake Bemamba. The following day we moved camp to this area and spent 4 days there. We saw not more than ten pairs of Bernier's Teal, usually rather isolated, both from other pairs of their own species and from other waterfowl. Moving camp to the western shores of the lake, we found larger numbers of Bernier's Teal. At one place it was common to see up to thirty or forty in quite close proximity. The majority were paired and in the early mornings we frequently observed intense courtship activity, during which individual pairs would often be split. There was much aggression and short chasing flights were common, either between males or between females and even some between males and females. The females performed inciting displays in the manner of Grey Teal (see Johnsgard, 1965) and in both sexes there was much head bobbing with a circular motion. The most commonly observed courtship posture of males was an upright one with neck elongated and wings and tail slightly raised. Owing to the difficulty of following particular individuals during

these bouts of courtship activity and skirmishing and to the speed of the birds' movements no other displays were adequately described in the short time available.

It was on the western shores that we saw three instances of copulation, in the early morning when most of the birds were feeding. Two instances involved the same pair with an interval of half an hour. Precopulatory display was similar to that of the Chestnut Teal with the typical mutual head-bobbing. The female solicited copulation flattening herself on the water while the male swam round head-bobbing with raised head, wings and tail. After treading the male performed a 'Bridling' display followed immediately by a 'Down-up' in which the breast went under water and the tail was lifted high. He then in each case chased the female for several yards after which both birds bathed and preened. These observations suggest that the birds might breed from the middle of September onwards. Information from local people differed, some stated that the teal breed in November, others in April. It is possible that they breed twice a year, before and after the rains. We also learnt that the local people hunt the duck with dogs and take eggs from nests. The teal apparently will not return if driven from the nest. Information on clutch size varied drastically, from two to four eggs in one instance to eight to ten in another.

The ducks chiefly fed in the early morning and evening, and the middle of the day was spent sleeping on mud banks. They always fed in shallow water or dabbled in the mud at the lake's edge. No upending or diving was observed. Nor were they observed to drink, and there was no evidence to suggest that they flew in search of fresh water during the night as do Australian Grey Teal living in saline habitats (Lavery, 1972). This suggests that they may have well-developed supra-orbital nasal glands for maintaining ionic balance. The flight is swift and low and the characteristic white-bordered speculum is conspicuous. The call is similar to the Whistling Duck but di- rather than trisyllabic.

We spent one week on the western side of the lake and during this time saw a maximum of sixty-one Bernier's Teal along the shore. It seems probable that there were no more than 120 birds on the whole lake and possibly less.

The amount of movement to and from the lake during July and August is probably slight. However, later in the year when the lake dries up the birds are thought to disperse either to the Soahanina estuary to the north, or to the remaining small freshwater pools and lakes in the forest and rice fields.

As there are no other large lakes in the vicinity except Masama, where no anatidae were seen, the population of Bernier's Teal at Lake Bemamba may be the largest for hundreds of miles.

Madagascar White-backed Duck *Thalassornis leuconotus insularis*

The Madagascar White-backed Duck is clearly different from the African White-backed Duck *T.l. leuconotus*, being smaller and darker than the latter. White-backed Duck were first sighted at Ambondra where we saw four on one pond and a family of five on another. We spent 3 days in this area and were able to watch the family. The young were accompanied by both parents at all times, and spent much of their time diving. One parent always kept watch on the surface. Occasionally the Whitebacks were displaced from their feeding area by a small group of Fulvous, but despite the difference in size the Whitebacks defended their young ferociously and succeeded in driving off the intruders. Typical aggressive postures of head lowering, stretching the neck along the surface, and making short rushes with open beak, were observed. When alarmed these ducks freeze and practically submerge making them very hard to detect. We estimated that the young could not have been more than 10 days old. There were no Whitebacks on Lake Bemamba, probably due to the absence of water lilies. We saw a large concentration of approximately eighty Whitebacks on Lake Andranolava, where we also saw three family groups of two, three and five young, during a short visit of 2 hours.

Observations on other waterfowl in the vicinity of Lake Bemamba

Pygmy Goose *Nettapus auritus*

This species is relatively common on lily-covered lakes. We estimated up to 300 to be present at Lake Andranolava. No courtship activity was observed at any time, and paired birds did not appear to be territorial. This was perhaps surprising in view of the possibility of them breeding prior to the rains, although a number of immatures were seen.

Fulvous Whistling Duck *Dendrocygna fulva*

White-faced Whistling Duck *Dendrocygna viduata*

Both Whistling Ducks were very abundant in most areas, especially on Lake Bemamba itself. A crude estimate of their numbers was 6,000 of each species. Courtship activity was not observed in either species although pairs of White-faced Whistling Duck were frequently seen mutually preening. A number of immatures were seen.

Red-billed Teal *Anas erythrorhyncha*

These were common in the area and we estimated 2,000 on Lake Bemamba. Courtship activity was observed on several occasions. We were shown a pair of hand-raised Redbills in Antsalova, which had apparently been caught as downy young in September/October 1972 at the beginning of the rainy season.

Hottentot Teal *Anas punctata*

These were much less common than the Redbills and we estimated there to be 500 on Lake Bemamba. Although no courtship activity was observed a large percentage of birds appeared to be paired. Except on Lake Bemamba they were seen infrequently.

Comb Duck *Sarkidiornis melanotos*

This species was quite common on Lake Bemamba and the numbers were estimated at 1,000. No courtship activity was observed, and the birds were never seen in large concentrations. In other areas they were seen in small numbers.

Greater Flamingo *Phoenicopterus ruber*

We estimated this species to number 1,500 on Lake Bemamba, but they were not seen elsewhere. No courtship activity was observed. At dawn they were observed fighting in from the north, possibly from the Soahanina estuary.

Lesser Flamingo *Phoeniconaias minor*

We estimated this species to number 1,500 on Lake Bemamba, but they were not seen elsewhere. Although juveniles were seen, we presumed them to be first-year birds. No courtship activity was observed.

Adaptation to captivity of the Madagascan White-backed Duck and the Pygmy Geese

During our final days in the west we stayed at the home of the French wood merchant at Ambereny. A local duck-catcher from Masoarivo brought four Pygmy Geese and two White-backed Duck, the latter having been conveyed on foot for 18 miles in a tiny basket. Unfortunately one male Pygmy Goose had died and the only female had a broken wing and was in very poor condition, and she died shortly after. We were therefore left with two male Pygmy Geese, one adult and one juvenile, and one pair of White-backed Duck.

We had not come prepared to keep birds in the bush. However, we were able to construct a small pen in the shower of our room, in which we placed stones and large water lily leaves, thus making a pond containing 4 inches of water. It was extremely hard to find food for the ducks as there were no lily lakes in the immediate vicinity, but eventually some seeding lily heads were found. These were cut up to release the seeds, and placed in the water. The following day the birds were put into a temporary travelling box and taken by lorry to Antsalova. The trip took us about 4 hours, and we were able to collect a fresh supply of lily heads en route, whilst the other occupants of the lorry shot a Comb Duck and a Fulvous Whistling Duck.

After spending the night in a small shed the birds were re-boxed and flown back to Tananarive. At the Orstom headquarters we were able to release the birds into a small aviary containing slow flowing shallow water. Here there was duck weed, lilies from the ornamental lakes, and commercial cage bird food was obtainable. We remained in Tananarive for 4 days and were worried about the sudden change in temperature from day temperatures of 90–100°F in the west, to 40–50°F in Tananarive. Although the birds spent much of their time huddled in the vegetation they adapted well. The White-backs seemed less shy than the Pygmy Geese and spent more time on the water. In fact considering the continual human proximity they settled quickly, despite the fact that they had to be caught up and boxed in order to be taken to obtain a veterinary certificate on one occasion.

A new travelling box was made and divided into two compartments, each containing food and water trays. The final stages of the journey involved the flight from Madagascar to Nairobi and from there direct to London, and on to Slimbridge; total time in transit

was approximately 18 hours. The birds are now doing well, and two females have been acquired to join the two male Pygmy Geese, thus making two pairs.

It is possible that the duck catcher could have caught Bernier's Teal, so that a breeding stock could be started at Slimbridge. However, we were not prepared to risk losing these rare birds, due to inadequate facilities and equipment, when numbers are so low in the wild.

Conclusions

Hopefully, it will be possible to return to this area to reassess the Bernier's Teal and other waterfowl populations, and to visit other areas in the western region.

Reassessment is warranted in the near future due to the recent and rapid decline of waterfowl numbers on Lake Bemamba. In the 1940s we were informed that 70% more birds were present. The reason for the decline is not clear although it may be due to lower lake levels or possibly to encroachment of rice cultivation. Hunting pressure does not appear to be great, although three instances of shooting were witnessed at the beginning of the legal hunting season which runs from 1 August to 1 October.

From these preliminary observations it appears that Lake Bemamba may be extremely important for waterfowl especially Bernier's Teal, and it would therefore be beneficial if this area became a reserve. Bernier's

Teal may not be in immediate danger of extinction but its status throughout the western region and the cause of its decline merits further study.

Acknowledgments

We would like to thank the following for their help in making our trip to Madagascar successful. Dr J. J. Petter of the Natural History Museum, Paris. A. D. Forbes-Watson Esq. of the National Museum, Nairobi, Kenya. Members of ORSTOM, particularly M. Peyrieras, M. Llinares, and of course Georges Randrianasolo. The Service des Eaux et Forêts in Tananarive. We are also extremely grateful for the aid of the Ernest Kleinwort Charitable Trust and the Henrietta Hutton Memorial Travel Award.

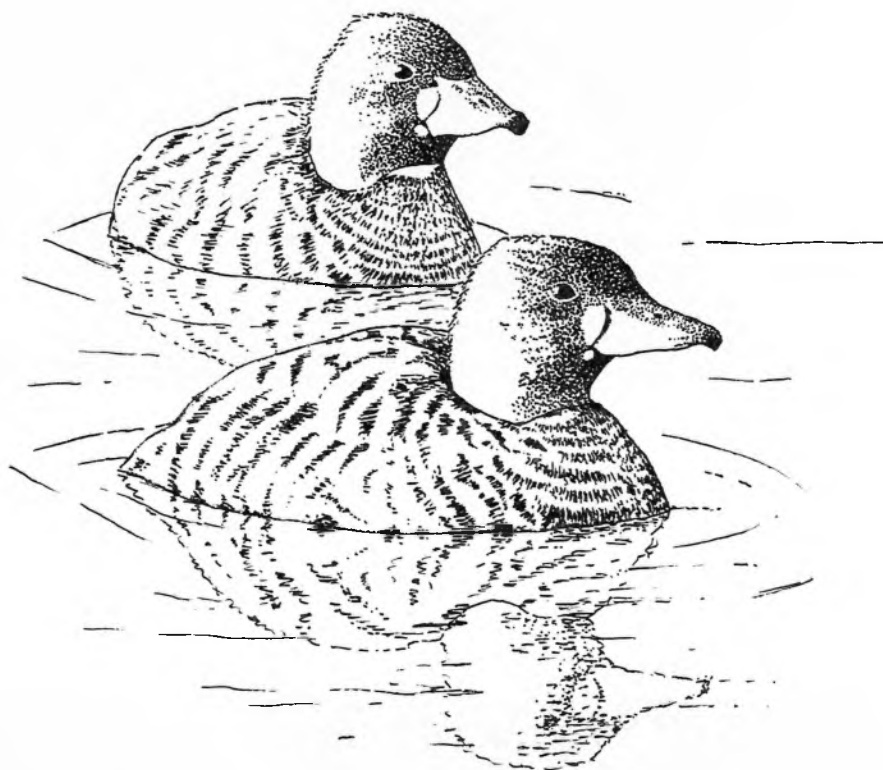
Summary

A reconnaissance was made to Madagascar to study waterfowl, particularly the rare Bernier's Teal *Anas bernieri* in the vicinity of the shallow saline Lake Bemamba. The habitat and behaviour of the teal and also of the Madagascar White-backed Duck *Thalassornis leuconotus insularis* are described. Estimates of numbers are given for other waterfowl, and a list of all birds seen. Two Madagascar White-backed Ducks and two Pygmy Geese *Nettion auritus* were brought into captivity. Waterfowl in the area have declined in numbers and Bernier's Teal may perhaps be in danger of extinction. Lake Bemamba merits the formation of a reserve.

References

- Delacour, J. 1956. *Waterfowl of the World*. Country Life, London.
- Johnsgard, P. 1965. *Handbook of Waterfowl Behaviour*. Constable, London.
- Lavery, H. J. 1972. The Grey Teal at saline drought-refuges in north Queensland. *Wildfowl*, 23: 56-63.
- Milne Edwards, A. & Grandidier, A. 1879-1881. Histoire physique. Naturelle et Politique de Madagascar. Vols. 12-15: *Histoire naturelle des oiseaux*. Imprimerie Nationale, Paris.
- Milon, P., Petter, J. J. & Randrianasolo, G. 1973. *Faune de Madagascar 35: Oiseaux*. Institut Scientifique de Madagascar. Tananarive.
- Rand, A. L. 1936. The distribution and habits of Madagascar birds. *Bull. Amer. Mus. Nat. Hist.* 72: 143-499.
- Salvan, J. 1970. Remarques sur l'évolution de l'avifaune Malgache depuis 1945. *Alauda*, 38: 191-203.

Miss Dafila Scott and Mrs Joanna Lubbock, The Wildfowl Trust, Slimbridge, Gloucester GL2 7BT, England.





Philippa Scott

Above: Andaman Teal *Anas gibberifrons albigularis*. Three pairs arrived in 1973, a new form for Slimbridge. They are markedly different from other Grey Teal races.

Below. Young female Coscoroba Swan *Coscoroba coscoroba*, reared at Slimbridge in 1973, the first for nineteen years.

Philippa Scott

