

Breeding the Double Wattled Cassowary at Birdworld

The Double Wattled or Southern Cassowary (*Casuaris casuaris*) has a modest population in the UK, though this is not due to its unpopularity, but to its size and aggressive capability. It is however, better represented than its two smaller sibling species, the Single Wattled or Northern Cassowary (*C.unappendiculatus*) and the Dwarf or Bennett's Cassowary (*C.bennetti*). All three species occur predominantly on New Guinea, though the Double Wattled is the only one to occur on mainland Australia. *C.c.johnsonii* comes from north east Queensland (Cape York Peninsula) and is one of eight accepted subspecies, though the whole subject of Cassowary subspecies seems to be unresolved.

Populations in the wild are thought to be fairly steady although there has been a noticeable decline due to a reduction in areas of natural rain forest. Road casualties also take their toll on Cassowary numbers.

The male Cassowary at Birdworld has been with us since 1983, coming to us when he was a juvenile, the female arrived as a mature bird in 1993. The male had already been run with a female in 1988 who laid eggs for us though they were infertile, this female was lost in 1991. The coupling had given the male experience of other Cassowaries and it was hoped that when he was paired again we could attain success, the main problem now however was that female Cassowaries are few and far between and not often available.

With a reshuffle of the Cassowary stud book in 1993 a female was made available and on arrival was in quite good condition. The enclosure housing the birds is designed to allow a male and female to run separately out of season and together in season. Because of their aggressive nature it is not always possible to keep Cassowaries together all year round.

The diet given to the birds is roughly 1.5-2lbs each a day made up of 50% fruit and 50% cereal food containing pheasant pellet, flaked maize and zoo A pellets (1:2:2 parts respectively) and this is fed through hatches into night shelters so that there is no contact between keepers and the birds.

Two months after the female arrived the pair were put together to see if they reacted well. Up to this stage they had been able to see one another through wire and had exhibited no real animosity to each other. Indeed they got on better than was expected that is after a simple initial fracas, but the union was short lived as the male was tending to dominate both feeding sites and so the pair were once more separated which is the way they remained until the October. Once together again they took very little notice of each other and spent most of their time either apart or perhaps purposefully avoiding each other.

By Easter 1994 it was noticed that the female seemed more lethargic than she had normally been, the increasing numbers of people visiting the park was thought to have unsettled her and as a result she was feeding less. Second feeds were given to the pair each afternoon; these were in the form of two or three pounds of chopped fruit and half a dozen day old chicks. The male would not touch the chicks and so the female was able to take full advantage of these, but still had to compete for fruit.

As a result of these second feeds the female attained a better body condition and became more active, she was even spending time in the company of the male sitting together on sunny afternoons in a grassy clearing of the paddock, this was the first positive signs of interaction we had seen and by the beginning of May the first egg was picked up.

Six eggs were picked up in 1994, the first three at three day intervals, the fourth, seven days later, followed by a gap of five days and the final, three days later, all of these were taken for artificial incubation. In 1995 the female again laid six eggs, the first within two days of the same date in 1994, but this time there was four days between each egg, four eggs were taken for artificial incubation and two were left for the male to sit.

Since Cassowaries have been kept at Birdworld, 21 eggs have been artificially incubated, although before 1994 the eggs had always been infertile. The dimensions of these eggs were on average; length 113.27 mm, breadth 73.96 mm and weight 664 grams. All of the eggs as with other ratite species were incubated at a constant temperature of 36.1 degrees C though the humidity levels needed to obtain the correct weight loss were variable for each egg. The eggs were also turned five times a day by hand to ensure that vein growth within the egg was correct.

Very little change could be seen inside a fertile egg after about ten days as the embryo or veins obscured any light from a specially designed candling machine from getting through the dark shell and so it was only when a chick moved into the air space of the egg, possibly 48 hours before it was due to hatch, that we were able to tell if it was still alive. At this stage the eggs were put into a hatcher at the same temperature as the incubator, but they were not turned any more and the humidity was increased to saturation level, to soften the shell and membranes of the egg.

Of the eggs incubated only one for each year hatched successfully, leading to one hand reared bird in 1994 and one parent reared in 1995.

The first Cassowary to be hatched at Birdworld came on the 10th of July 1994 after 50 days of incubation and once dry, was removed from the hatcher and taken into our rearing room. The initial enclosure was 4' square with a 60 watt heat bulb suspended in one corner. The ambient temperature for the room is generally 21-25 degrees C so it was fairly easy to keep a temperature of 35 degrees C underneath the bulb.

A shallow bowl of water was put out for the first 24 hours, but understandably, the chick was not overly active. The following morning, with all being well, a dish of small cubed fruit and halved pinkie mice was offered. To encourage feeding, individual items were offered with tweezers to the chick who took the food confidently. These offerings were made about ten times a day for the first three days after which the precocious young Cassowary took to feeding by itself, though she still readily took food from fingers and tweezers until she was a year old.

At a month old the chick was eating about a pound of food in two meals each day, mainly fruit and soaked Crane pellets, with chopped pieces of day old chick and meal worms.

Because of leg problems which we have encountered in the past with ratites this chick was exercised extensively. As she followed people well it was not a problem to find time for this, as she could be walked around the park (before and after closing as she wasn't choosy who she followed) during the day she was allowed the run of a rearing paddock, which was 30' long and 8' wide. Initially we tried to mix her with Greater Rhea chicks (*Rhea americana*) of a similar age for company and walking stimulation, but when first introduced the Cassowary simply ran into the Rheas, knocked them over and continued to kick them. Astonished at the directed aggression exhibited at this early stage, it was deemed safer to house the Cassowary separately and we began to realise the problem of housing her as she grew.

Cassie, as she was perhaps predictably named, was moved to a larger paddock in November 1994, and had closer contact with visitors coming in to the park which she seemed to revel in. Her daily food intake was now similar to that of her parents by this stage, plus an additional two or three whole day old chicks which were always relished above the other food items, the conversion rate however of this quantity of food into body size appeared negligible, primarily because of her intolerance to being handled which meant we were unable to keep a record of her weight.

Up to a year of age Cassie was really quite playful, she was regularly showered during the hot summer of 1995 and became increasingly excitable when there was a quantity of water around. She would also spend variable periods each day kicking at the base of a willow tree in her paddock, whether this was for reasons of aggression or simply exercise we cannot be sure though she appeared content in her continual activities. Less and less time was given to her at this stage because of the future potential risks posed by 125lb Cassowary with no fear of people.

Of the eggs produced in 1995, those taken for artificial incubation were unfortunately unsuccessful and although both eggs left with the male hatched, he for some reason took exception to the last hatchling and killed it. The single chick left with the male hatched after 57 days of incubation and stayed unfed for two days until the second chick met its fate, there after the cock Cassowary took his new ward out of the night shelter where he had incubated. To encourage the male to feed to chick, pinkie mice and meal worms were fed three times a day, fortunately the cock would answer to a whistle and so it was easy to see just what the chick was being fed (for the most part). The bowl of feed normally put out for the male was changed slightly; the zoo A pellets were replaced with crane pellets and

the fruit was chopped smaller so the chick had no chance of trying to consume food items which were too large to swallow.

To feed the chick, the cock bird would pick up a food item and drop it in front of the chick, followed by a short burst of beak clapping to gain the chick's attention and direct it to the food. Once the chick understood what happened at feeding times, it would feed well independently, taking food only occasionally from its father though the cock bird would continually offer food indicating that it was simply progressive habitual behaviour. Even at the time of writing, with the chick being five and a half months old, the cock bird will still clap his beak to encourage the chick to feed, even though the chick can compete almost equally with the adult. In cold weather however the young Cassowary still shows its' age by trying to brood under the male who remains vigilant and tolerant, though we are not sure how much longer this will continue for.

There would appear to be enough space for home bred Cassowaries to be successfully placed in the UK and although a number have been bred and reared in the past, production seems to have almost stagnated. We look forward to continual good results for 1996 and trust that breeding from other collections can begin to help make new pairs to continue the species in captivity.

Paul Wexler.

Rearing Manager/Park Overseer