



Pair of Red-crested Wood Partridges, commonly referred to as "Roul Roul", are primarily ground dwelling birds. Wood partridges breed readily in captivity and make a nice, colorful addition to a mixed species flight. Adult female at left.

## The Red-crested Wood Partridge

(*Rollulus roulroul*)

by Brad Hazelton, Keeper Two  
Fort Worth Zoo, Texas

The Red-crested Wood Partridge's popularity in captivity can be attributed to several qualities. The beautiful coloration of both sexes is one of these qualities. The males are a dark green, almost black, with a bright red crest, bare red skin around the eyes, and red legs. The male has a white patch of feathers just in front of his crest, high on his forehead, between his eyes. The female is different from most other Galliformes in that she is as equally attractive as the male. The female has a chestnut head and wings with a bright green back, breast, and tail. The female also has the bare red skin around the eyes and the bright red legs. Another attractive quality is a calm disposition, as they can quickly be persuaded to take meal-

worms or crickets out of the hand. If they do panic they will often fly up and land on any available human body part on which they can perch. One female in the Fort Worth Zoo collection has been seen, on a couple of occasions, going into the box and laying eggs while the keeper is cleaning the floor. Both of these qualities make them an attractive exhibit bird for both private and public facilities. The Fort Worth Zoo currently houses three pairs of Red-crested Wood Partridges, and two of the three pairs have produced chicks.

During the warmer part of the year the birds were kept in an outdoor exhibit that was about 20' x 20' with an 8' x 6' shelter attached. Due to the inconvenience of the shelter for

ground birds, and colder temperatures, they were moved into an inside off-exhibit holding area in late October. Pair A is kept in a 6' x 8' enclosure along with a pair of Lilac-breasted Rollers. Pair B is kept in a 3' x 8' enclosure with two Superb Starlings. Both enclosures are in a building kept between 55 and 70°F. Corn cob litter was placed on the floor and is cleaned three times a week.

Both pairs are fed a diet consisting of Bird of Prey, corn, raisins, soaked Hi-Pro dog chow, finch seed and insects such as giant mealworms and crickets. When insects are fed, the male calls the female over and offers her the insects, which she takes from his beak.

While outside, Pair A produced one clutch of eggs in which all but one was destroyed by the *Eclectus* they were housed with. Both pairs of partridges were observed nest building about 16 days after being moved inside. The first egg for Pair A was found two days later and the first egg for Pair B was found seven days later.

The best nest materials seem to be pine needles, hay, bald cypress leaves, grass, oak leaves, and often paper that they strip themselves. The males did the majority of the building on the nest, but the females help with the nest building duties when laying time approaches. The nest is a basic dome shape in the wild. The collected materials are placed at the nest site and the male pushes into or under them and continues throwing nest material up over his back to make a cup shape in the nest. It is not uncommon for them to destroy the nest several times before they lay.

Frequently the female may be seen sitting in the nest for several hours at a time in the days and hours prior to laying. Due to small indoor enclosures and the necessity of cleaning, a simple nest box was added to encourage them to nest. The boxes are 10" x 10" x 10" with the entrance side half open (5 x 10).

Pair A, the first pair to nest, refused to use the box and they removed the material to the far corner of the enclosure. The female laid three eggs, one about every other day. Parent reared birds were desired, but they would not set on the eggs. After about five days from the laying of the first egg, an egg disappeared from the nest. Although no fragments were ever found it was assumed that the nest had been robbed by either the

Lilac-breasted Rollers that they are housed with, or by mice. Since no signs of rodents have been found in this building it is suspected that the former is the culprit. To avoid further losses, all eggs were pulled for artificial incubation after this point.

Since these two birds were introduced to each other in the middle of July, the male had always been extremely aggressive towards the female. The male would feed and court the female, but at any other time the female was forced to stay in the nest or in a hide box that was provided. Since this male was so tedious at his work of courting, nest building, and defending the female, they were expected to be our best producers and parents. This pair had also laid while in the outside exhibit shortly after they were introduced. All of these eggs were destroyed by the Eclectus that they were housed with except for one which was pulled and artificially incubated. This egg was fertile and it matured normally up to the time of hatch when it died of unknown causes.

Pair A would not set on their eggs and they have, to this point, only produced two clutches of six eggs. Of

those six eggs, one was infertile, four were lost out of the nest, and one was successfully hatched to produce what is believed to be a female chick.

Pair B laid their first egg about five days after Pair A laid their first egg while indoors. Pair B was not expected to do as well because the male was not nearly as dominating as the first male and because this pair was content to use the nest box that was provided instead of going to the trouble of building their own nest.

Pair B produced three clutches with three eggs each at intervals of anywhere from three days to eight days. They produced a total of nine eggs with three being infertile, four hatching, and with two dying in the shell. About two weeks after the laying of the last egg by Pair B the nest boxes and nest material were pulled out of both enclosures with the hope that the reintroduction in the future would stimulate laying. After the boxes had been removed for two weeks, four weeks since the last egg, Pair B was seen several times to start building a nest out of paper that they stripped from underneath the food and water pans. About this time their day length was adjusted from 14

hours to 17 hours. The boxes were placed back in the enclosure with fresh nesting material and they immediately started to nest build in the box and the female has been seen setting in the box several times since its completion.

The eggs were incubated at a temp. of 99.5°F and a wet bulb reading of 87°. The incubation was between 20 and 21 days to pipping and another 12 to 24 hours until hatched. During hatching the wet bulb temp. was raised to 90°. From the 12 eggs laid while indoors, five were infertile, two died in the shell, and five hatched. Of the two eggs that died in the shell one was alive up until it was two days over due at which time it was opened. At the time of removal there were no signs of life and there was an obvious deformity of the head. The left eye had not yet formed and the entire upper left half of the skull appeared to be under developed. This caused the top half of the beak to point towards the left side of the body. If this chick had been able to pip and hatch it would not have been able to eat. The other chick died about half way through incubation and no cause was determined.



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Earlier research prior to the hatching of our chicks indicated that hand rearing without siblings was very difficult. However, raising a single chick never proved to be a problem, although they did seem to enjoy the company of other siblings. There were eight days between hatching the first chick and the second in which the first ate well and had very good weight gains. There was no significant aggression between chicks of different ages when they were introduced to each other. Any aggression was usually started by the younger chicks who did not enjoy the idea of sharing their food with their older siblings. In all of the attacks by the younger chicks, the older chicks were never seen to fight back. Usually they just acted uninterested.

We were informed by many of our fellow aviculturists that they could not be successfully hatched under bantam hens or with chicks to teach them how to eat. Supposedly, the partridge chicks look to the beak of the parent for food instead of on the ground like domestic chickens. In the past, the chicks have been known to starve to death because they follow the bantam hen around pecking at her beak instead of the floor. The chicks were observed to pick up food from the brooder floor at two or three days old but this was not frequent enough to sustain life by itself. When young chicks are put in the brooder together they stand facing each other and take turns pecking at each other's beaks. This is usually not a problem because they respond to a finger or forceps the same way. All chicks are removed from the incubator after they are sufficiently dried. Attempts are made to quickly imprint the chicks to our hand so they would know where to come for food.

The chicks are placed in a brooder box that is 18" wide by 30" long by 24" deep. They are very capable of flying within a week or so and they will need a screen to cover the top of the brooder. The brooder floor is covered with a green felt-type carpet that can be replaced, cleaned, and disinfected daily. The brooder has a hot spot under the heat lamp that is kept between 95 and 100°F.

Water is given as soon as the chicks are removed from the incubator. Standard poultry waterers are used with colored marbles placed in the trough to encourage the chicks to drink. The marbles also keep the

chicks from falling into the waterer and becoming chilled or drowning.

The chicks are usually fed their first food 12 to 24 hours after hatching. To encourage the chicks to start eating from the ground, hard boiled egg yolk was sprinkled on the floor, along with game bird starter crumbles. The chicks readily eat the egg yolk after they figure out how, but they will not eat the crumbles for several days. Along with this food, very small mealworms on the tips of fingers or in forceps were offered. As a precaution, the heads of the mealworms are crushed to reduce discomfort to the chicks. They learn to take the food and swallow it within several minutes. They are given four to eight mealworms four or five times a day for the first five days. After this point they are reduced to three times a day and small crickets are given as well. All live food is dipped in calcium carbonate.

When the chick is removed from the hatcher, it is weighed and a weight is taken every morning before feedings. Declines in weight can be expected for the first day or possibly two, and after every reduction in the number of feedings. If there is an extended period of weight loss, the number of feedings is increased and every effort is made to obtain a positive weight gain, however minimal it may be. After the first few days the weight gain should climb to between 10 and 20 percent per day. This will taper off as the chick gets older. The number of feedings can be reduced again at between 10 and 14 days.

About this time the chicks will stop eating the mealworms and start eating more crickets. Finch seed and chopped spinach are also introduced.

In two birds, at about seven days, the vents became stopped up with feces. This was pulled off and the bird was closely monitored to prevent blockage of the vent. If the problem persists, the down from around the vent is pulled out. It is believed that this problem could be caused by not enough liquids in the diet and this is why chopped spinach was added. Another small medical problem encountered was crooked toes. The first chick that hatched had two extremely crooked toes. These toes were splinted straight with a piece of tape on top of the foot and one underneath. This procedure is successfully used on cranes and it possibly would have worked in this

instance except for a lack of patience. The splint should be left on for at least five days for it to have time to work. The splint was removed after only three days and the results were not as good as they could have been had it been left on longer.

When the first chick was five days of age, the flight feathers were coming in but the tips were starting to turn out. It was suggested that this could possibly be angel wing, so the tips were taped up against the body in a more normal fashion. After a few days the tape was removed and the wings appeared normal. This condition had also been seen in Bobwhite Quail chicks, without any long term problems, so it was decided that when the second chick started to show the same signs, no corrective procedures would be attempted. Within a few days the chicks were back to normal with much less stress on them. Apparently, the flight feathers weigh enough that the weak wing tips cannot support their weight, due to the extremely high (20 percent) weight gains that were occasionally seen, or, it could be a natural growth pattern that occurs in the wild. Regardless of the reason, there were no long term effects that showed in the offspring. In the brooder box was placed a small perch which the chicks seemed to enjoy playing and perching on. This was done because the younger chicks would attempt to perch on the backs of the older chicks, much to the displeasure of the older chicks.

Detail is the most important aspect of handraising the Red-crested Wood Partridge. The amount of effort put into breeding and raising them will directly affect the number of offspring raised. The protocol at the Fort Worth Zoo was developed from crane, pheasant, and quail techniques as well as articles from other breeders who had raised the partridges. Trial and error was used to make further improvements, but care had to be taken not to make more than one change at a time. A change cannot be evaluated as good or bad if more than one change was made at once. The person who puts forth the extra effort to successfully raise the Red-crested Wood Partridge is rewarded with a great feeling of accomplishment.

Since the completion of this article in January there have been 20 more eggs laid. ●

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