



The Red-wattled Lapwing is a member of the plover group of birds. They do well in mixed exhibit aviaries. They have been quite prolific at the Miami Metrozoo.

Artificial Incubation and Hand-rearing of Red Wattled Lapwings

by Ron Johnson, Curator of Birds
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In 1987, the staff at Miami Metrozoo artificially incubated six Red-wattled Lapwing (*Vanellus indicus*) eggs representing two clutches from the same pair. Five of the six eggs were hatched and successfully reared, which was a captive first breeding for this species in the United States. Since then, a total of 23 lapwings have been raised.

Red-wattled Lapwing eggs average 42.7 x 30.85 mm in size (26 eggs) and are light brown colored, splotched with a darker brown. The eggs are typically oval shaped, round on one end and pointed on the other. We do not have any fresh weights on these eggs as the adults were allowed to complete a clutch before the eggs were pulled for incubation. The clutch varied between three and four eggs.

All eggs were incubated in a Humidaire model #20 self-turning

table top incubator. The eggs were incubated at 99.5°F and started in a medium humidity at 82°F wet bulb. Experience has shown that a higher humidity is required, therefore eggs are incubated in a wetter incubator (90°F wet bulb). All eggs are weighed three times per week and graphed to lose 15% of initial weight. It should be noted that because of the shape of the lapwing eggs, the fresh weight formula ($W = Kw \times LB$) with the standard weight coefficient does not work.* Fresh weights of the lapwing eggs will be needed in order to calculate the proper kw factor. Twenty-three of 26 lapwing eggs have hatched and two eggs were inadvertently broken during incubation. The incubation period is 29 days and the average hatching weight is 14.7 grams.

The lapwing chicks are started in a metal brooder measuring 12.5'' x

13.5'' maintaining a 90°F temperature. In 1987 the chicks were started on a diet of gamebird starter offered both dry and moistened, chopped spinach, white mealworms and hard-boiled egg. Yeast was sprinkled over these foods which was presented in shallow dishes. Water, with a vitamin supplement and an antibiotic were offered in a standard chick waterer. Chicks were initially stimulated to eat and drink with a red spoon, but were eating on their own by the end of their first day. Moistened starter is discontinued at five days. The lapwings will usually lose weight up to the third day and then gain between nine and ten percent of their weight per day. Fledging is at about 30 days of age.

As the birds grow they are moved to a larger brooder (22.5'' x 48'' x 16'') that is divided into two halves. By two weeks of age the birds are transferred to a flight cage in the brooder measuring 4' x 8'7'' x 7'9'' with a pool. The water depth in the pool can be varied from a few inches to two feet and has a gradual slope from the front.

Development of the chicks in 1987 was normal except that four birds from the second clutch incurred a metabolic feather problem. Zinc was added to the diet in an effort to control this situation. Subsequent molts in those birds did not show the problem, but it again showed up in 1988 in a few individuals. In 1989 we changed the diet to the following: one part ground horse meat and two parts smelt (bones and head removed) blending the two together. Combine 1/4 cup shrimp meal, 1/4 cup dog food, 1/4 cup trout chow (blend it into a meal); then add 1/4 cup game bird starter, and a pinch of oyster shell powder. The grain mix is added to fish/meat mixture so that it crumbles. Hard-boiled egg and mealworms are placed on top of this diet. The water is supplemented with Nekton-S and Nekton-Bio. This new diet is higher in animal proteins and trace elements. Ten lapwings were raised in 1989 with the new diet and no feather problems have occurred.

Red-wattled Lapwings, like many in the plover group, have proven to be prolific and easy birds to rear. They exhibit well, getting along with other species in a free-flight enclosure.

*Hoyt, Donald F., 1979. Practical methods of estimating volume and fresh weight of bird eggs. Auk 96: pp. 73-77. ●

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