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Rearing Sandhill Cranes at Lee Ridge Aviaries

by Walter B. Sturgeon, Jr.
Durham, New Hampshire

Raising young cranes is a particularly challenging and most rewarding avicultural experience. Great success has been achieved by many zoological institutions in the past 10 to 15 years in raising most of the world's fifteen crane species. However, most of these species have not been available to the private aviculturist, and only recently has he had the opportunity to contribute to the collective knowledge of this marvelous family of birds. We chose sandhill cranes as our first species because of their relative abundance in the wild and hardness in our cold and harsh climate. We also rationalized that working with a common species lessens the consequences of, or at least the guilt felt from, those fatal mistakes that invariably come during the learning process. Over the last eight years, Lee Ridge Aviaries has worked with fifty-nine young sandhill cranes. This includes 41 hatched from our own adult pairs and 18 collected from the wild. We have relied heavily on the experience of others in developing our techniques in incubating, hatching, rearing and disease control, and the references listed at the end of this article have been of particular value. We have improved upon and modified our techniques considerably over the years in an effort to lessen the labor intensity and minimize imprinting of the young birds on humans. This article describes our current process, which experience shows will continue to change. It also demonstrates what can be done by

the private aviculturist with limited resources and how he can contribute to crane conservation.

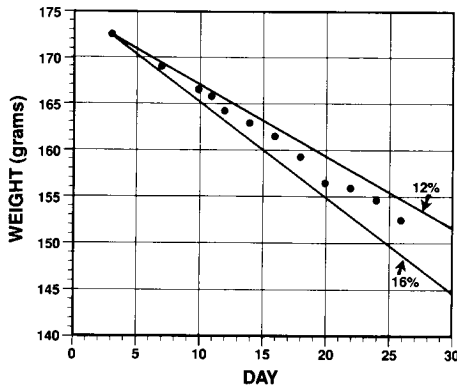
Incubation

Unless it is the first year a pair of birds has laid, we recycle our cranes at least once and sometimes twice during the season. We collect the early eggs as they are laid and let the birds incubate the last clutch. Most of our pairs lay two eggs in each clutch, but we do get the occasional one or three egg clutch. Eggs are laid two to three days apart. They are set in a forced air incubator at 99.5°F dry bulb and approximately 85°F wet bulb. They are hand turned four times a day, and the incubator and eggs are fumigated weekly. Eggs are moved to a hatcher on the 26th day and turning continues until the time of pipping. The hatcher is a forced air type set at 99°F dry bulb and 90°F wet bulb. Generally, peeps are heard on the 27th day and the eggs pip on the 28th day. Unlike many birds there is an unusually long interval, 36 to 48 hours, between pipping and hatching, and a certain amount of patience must be demonstrated. Eggs hatch on the 30th day.

Sandhill egg shells are too dense to candle so their progress is monitored in two different ways: weighing and floating. Eggs are weighed every other day, and fertile eggs that continue to develop should lose 12 to 16% of their original weight at a steady rate over the period of incubation. Figure 1 shows a typical egg

Figure 1

Egg weight loss curve showing approximately 14% loss during incubation period.



weight loss curve bounded by a 12% and a 16% line. This steady rate of weight loss is a positive indication of fertility, and it indicates that humidity is proper. As a second check for viable embryos, the eggs are floated in room temperature water on the 20th day, and they should show little jerky movements as they react to the cool water.

At Hatching

Newly hatched birds are left in the hatcher for 12 hours to thoroughly dry. When first removed from the hatcher, the chick is placed in a small brooder maintained at 95°F for another 24 hours. Food and water are withheld during this period to allow absorption of the excess fluids most noticeable under the skin of the legs and toes. Human contact is avoided, and each brooder is equipped with a mirror to minimize imprinting on humans and encourage imprinting on its own image. At the 36 hour mark, the birds are still wobbly but should be standing, very vocal and hungry. At this point the chicks are moved to a larger brooder with others of the same age and an equal number of turkey poults. The concept is to let the cranes take out their aggression on the turkeys. This aggression is normally directed at each other when group rearing is attempted, and it usually results in a scalped or dead chick in a matter of a few minutes. Group rearing is much less labor intensive and is the reason for making the effort. The turkey poults should be about a week older than the crane chicks. At this age they are a good deal more mobile than the crane chicks, and they are feeding well. The crane chicks very seldom catch them and they get a lot of exercise while

trying. Bronze or bourbon red poults, which are dark and most closely match the crane chick in color, seem to work the best.

Crane chicks must be taught to eat. This is normally done by the parents who pick up bits of food such as seeds and insects and offer it to them. The chick takes it from the adult's bill. In the hand rearing situation, this task falls on the keeper, using red sticks, spoons or fingers and soaked dog food. The poults will take over the task of teaching the cranes to eat and drink. This relieves the keeper of time-consuming hand feeding and helps reduce the almost unavoidable imprinting on humans. The keeper must still observe the crane chicks on a frequent enough cycle to ensure they are following the poults' example and eating and drinking.

It should be mentioned that with only a small number of breeding pairs, it is often impossible to get crane chicks hatched at exactly the same time, so we have used a modified approach with some success. Introduction of the cranes to one another took place at day four or five instead of day two. At first each individual crane chick and a turkey poult are placed in a small brooder, approximately 12" x 24" x 12" high. Once food and water is provided and the crane is observed eating and drinking, they are moved to a larger brooder, 4' x 6' minimum for two chicks. The second chick with its turkey is introduced at the same time. The best we have been able to do without a disaster is to get birds together that hatch up to 36 hours apart.

The larger the brooder the better. It should have two heat lamps at opposite ends and multiple waterers and feeders. Suspend the lamps in such a way that they can be moved up and down to control the temperature at floor level. Temperature at first should be 90° to 95°F and can be reduced at about 5°F per week until the birds no longer use it. The brooders I observed at Patuxent were eight feet square, and they had successfully raised up to four chicks together with this arrangement. The chicks become less aggressive as they grow older, and by the time they are ready to fly, they can be left together as a flock even if raised separately.

Chick Rearing

Once the birds are eating and drinking, it is time to start concentrat-

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Sandhill crane chick at 12 hours post hatch — note swollen leg containing excess body fluid that should be absorbed prior to offering food and water.



Greater sandhill utilizing wading pool to cool off and maintain cleanliness.



Female greater sandhill feeding week old chick.

ing on raising them. Three management techniques are critically important for successfully rearing cranes:

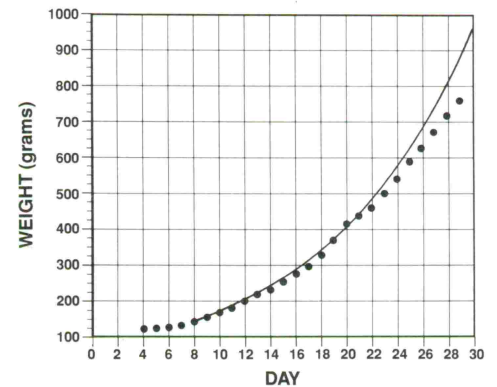
- Monitoring growth rate
- Supervising exercise periods
- Controlling disease

Cranes can put on weight very quickly, and without the right balance between food intake and exercise, leg problems will develop. Wild cranes are constantly on the move and eat continuously during daylight hours. The chick will grow from about 1/4 lb. at hatching to five or six pounds in 45 days. Unless reared by the adult pair, the necessary activity is impossible for the aviculturist to duplicate. The next best thing is to monitor and control the chicks' weight gain during this critical period.

Our cranes are weighed every evening and the data is plotted on a chart similar to Figure 2. It is much easier

Figure 2

Growth curve showing ideal weight gain.



to spot a problem when it is plotted rather than trying to analyze a long list of numbers. A daily weight increase of 9 to 10% for the first 45 days provides optimum growth with an absence of leg problems. If a bird shows more than a 10% gain over a two to three day period, then food should be reduced and exercise increased until the growth rate is slowed. We have had two bad experiences with greater sandhills which demonstrated how quickly the legs can get away from you. You must be continually vigilant for any sign of weak or crooked legs and take immediate action. The legs will either rotate to the side or bow, and by the time either condition is very noticeable, it might be too late. This all happens very quickly, in a day or two, and it is heart breaking when you have waited years to hatch your first crane and then end up euthanizing it.



One week old chicks in large brooder with turkey poult.



Young sandbills swimming in stock watering trough to supplement exercise.

Figure 2 demonstrates an ideal growth rate situation. The solid line is a 9% per day curve and closely approximates this bird's actual rate. What is most important is that every bird develops at a nice, steady rate. It might take some birds longer to reach full size, but from my observations, slower growing birds usually weigh as much or more in the end.

Exercise

During the first two months exercise is critical to proper development of the chick. The cranes are taken on walks around the property from the time they are four or five days old. We try to break the walks into at least



Older crane chick during daily weight check.



Author with group of fledged greater sandbills.

two periods, with each chick getting a total of four hours per day. Some will not move about without prodding and will just drop to the ground in the sun. They must be pushed to get their required exercise. During this period the more active birds will be constantly looking for insects and seeds, which are a valuable supplement to their prepared diet. Young cranes fight aggressively, especially over food, but we found that chasing each other around is good exercise and rarely leads to a problem if supervision is close at hand. The more young cranes you can handle at a time, the more effective this technique becomes. It also helps to imprint them on their own kind and speeds up the process of getting them socially adjusted to a group pen arrangement. We also keep a shallow wading pool in the outside area which they use frequently and thoroughly enjoy. This is important for cleanliness of the birds and helps to keep them cool on hot summer days.

We also swim the chicks as a supplement to their outdoor exercise periods. Wild crane chicks are good swimmers and often hide in vegetation almost totally submerged. We use a cattle watering trough filled to the point that the birds cannot see over the top. The water in this arrangement ends up approximately 18 inches deep. This depth of the water is sufficient to allow use of the tank until the birds are 4 to 5 weeks old and able to stand on the tank bottom. The birds are lifted into the tank, one or two at a time, and allowed to swim until they are very wet and on the verge of sinking. They never do seem to get waterproof during these periods and would usually be ready to come out after 10 to 15 minutes. They could easily drown, so it is necessary to have someone with them at all times.

Each bird is wrapped in a towel for a brief period between the tank and their brooder to remove the excess water. A heat lamp should be available in case the young birds get chilled. We start birds in the pool at three days of age, and the idea is to exercise them, not to chill them. It does not work for all young birds, and it is important to recognize those that are overstressed by the process and not continue to submit them to it. Swimming should be considered an addition to outside exercise and not a replacement for it. We do it twice a day and feel that they are getting the

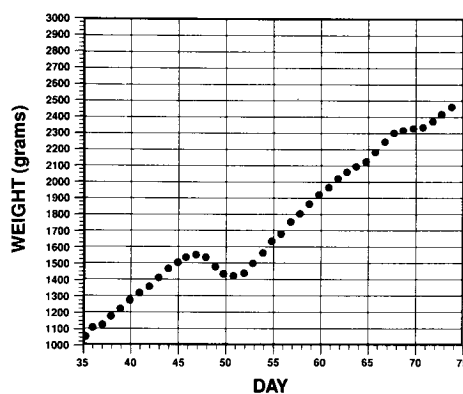
equivalent of one hour's exercise during each pool period.

Disease Control

Disease control is extremely important in rearing young cranes, and you must know those of major concern in your area. In our cranes, most illness results from internal parasites, primarily gapeworms and coccidia. We can now successfully deal with both but constant monitoring is necessary. Weighing the birds daily provides the all important warning of disease. Figure 3 shows the

Figure 3

Growth curve showing crane that developed coccidiosis at 45 days and subsequent recovery after treatment.



weight chart of a bird with a moderate case of coccidiosis. We did not know by the chart what the problem was, but we knew to start looking. We take a fecal sample on the second day that a bird shows no gain, hoping to determine the problem therefrom, and start treatment as soon as possible. The most important thing to understand is that during this period the bird will generally give no indication that it is sick. At the point when you notice that a bird has stopped eating or its wings begin to droop, it is probably too late. If a bird is lost, be sure to get as complete a post mortem examination as possible to ensure that the loss becomes a learning experience. We recognized early that our area is infested with gapeworms, which have the earthworm as their intermediate host. It is impossible to prevent crane chicks from consuming earthworms, so we have developed a routine deworming program which we use until the birds are 90 days old. The point here is to find out what your problems are, find a way to monitor them, and learn to treat them.

Conclusion

Rearing crane chicks continues to

be a big challenge at Lee Ridge Aviaries. We continue to improve our techniques and reduce the time involved per chick. Monitoring growth rates on a daily basis and maintaining less than 10 percent per day weight gain is most important. You must develop the proper balance between food consumption and exercise. The use of turkey poulters has eliminated hand feeding and helped reduce aggression in group rearing situations. Elimination of hand feeding, and group rearing has reduced the incidence of imprinting on humans. Disease control has significantly reduced chick mortality and resulted in stronger, healthier fledglings. Raising crane chicks is still far from an exact science, so you should expect your best efforts to lead to some failures.

Lee Ridge Aviaries hopes to have four pairs of greater sandhills in production this year including a pair that will represent a second generation of breeders. We are still working toward our goal of establishing breeding pairs of sandhills that can be used as foster parents for other, rarer crane species. Surplus offspring are being made available to other aviculturists. We are striving to serve as a model facility for the private breeder and to share our successes and failures with all those interested in these beautiful birds.

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1989 Watchbird Photo Contest Winners

On Thursday afternoon, August 10, a panel of four judges narrowed down the winners from the many on display at the recent Phoenix AFA convention. Judges were: M. Jean Hessler, CA; Dale R. Thompson, CA; Chuck Saffell, FL; and Elaine Hutchings, AZ. Barbara Koffron of Phoenix, was the chair of the photo contest committee and took care of placing winner's ribbon rosettes on the chosen photos on display. In future issues of *Watchbird* we will try to show you these winning photos on our front and back covers and as illustrations for articles. Congratulations to all the winners listed below.

Color Print Category

- 1st place — James Dollins, Merritt Island, Florida, *Double Yellow-beaded Amazon*
 2nd place — Bonnie Zimmerman, Sunland, California, *Mitred Conure*
 3rd place — Frizbee Allen, Tempe, Arizona, *Lilac Crowned Amazon*
 Honorable Mentions:
 Nancy Neil, New York, New York
Severe Macaws "Buddies"
 John Goss, Boynton Beach, Florida
Three Baby African Greys
 Eric Peake, Flint, North Wales, U.K.
Scarlet Macaw, "Scarlet O'Hara"

Black and White Category

- Honorable Mention:
 Denise Kennedy, Saugus, California
Medium Sulphur Crested Cockatoo, "Scratch Here"

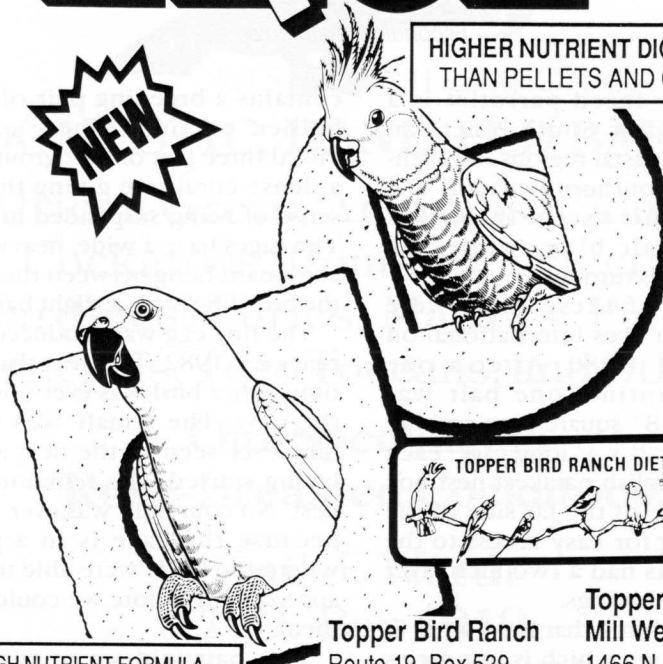
Transparencies

- 1st place — Michael Mace, Escondido, California, *Lilac-breasted Roller*
 2nd place — James Dollins, Merritt Island, Florida, *Double Yellow-beaded Amazon, "Pepper"*
 3rd place — Colleen Summerfield, Monterey Park, California, *Eastern Bustard*
 Honorable Mentions:
 Michael Mace, Escondido, California
Wrinkled Hornbill, male
 Michael Mace, Escondido, California
Pyrrhura m. souancei (conure)
 Rosemary Gnam, Ridgewood, New York, *Amazona babamensis*
 Patty Heibel, Cape Elizabeth, Maine
Sulphur-crested Cockatoo, "Charlie"

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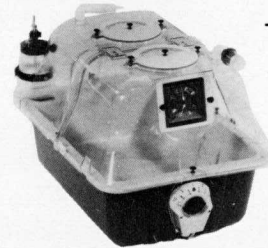
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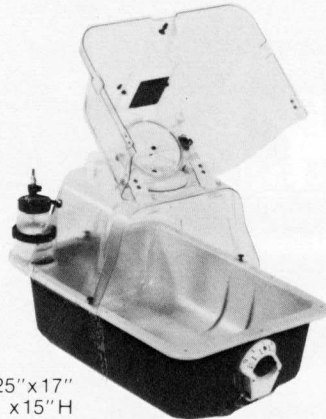
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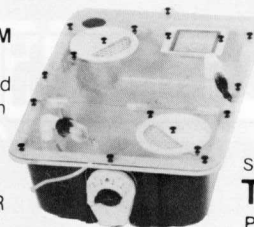


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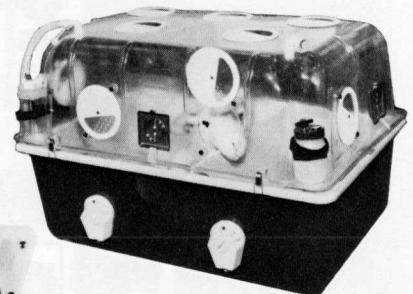
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