

# Parent-rearing the Blue-throated Macaw

by Laney S. Rickman, Cuero, TX

## Does it Matter?

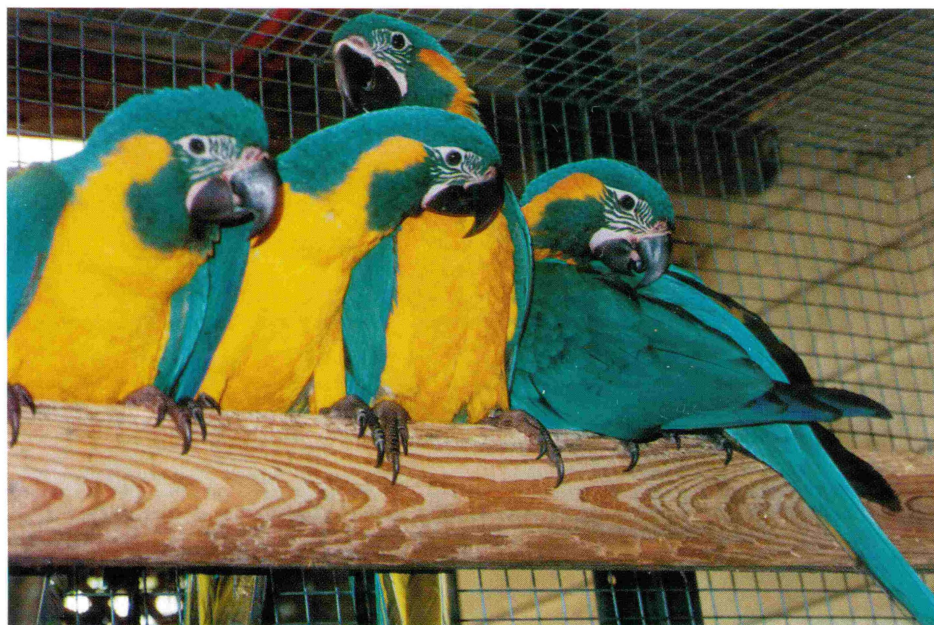
Many prominent aviculturists feel all domestic macaw breeding is solely a function of the pet market. Others believe they are making a distinct conservation effort to offset declining wild populations. As in all conflicting philosophies, there are key points of dissent. One of the latest conflicts concerns artificial incubation/hand rearing vs. parent rearing.

Simply put, this avicultural argument currently is being force-fed raw emotion. While anecdotal information abounds, there is no definitive body of work on the question—on either side.

At The Bird Endowment, a 501c(3)-pending organization specializing in breeding Blue-throated and Buffon's Macaws, we asked "Does it matter?" Our decision was not unlike an agnostic praying to God; "I don't know if there is a god, but just to be safe . . ."

With that thought, and many unanswered questions, we put our program on the altar of nature. We decided on natural parent-rearing with only life-saving human intervention (although there have been the inevitable departures). There may or may not be wild releases of captive-bred birds; day-one handfed domestics may or may not prove capable of continuing the species ad infinitum . . . "but just to be safe."

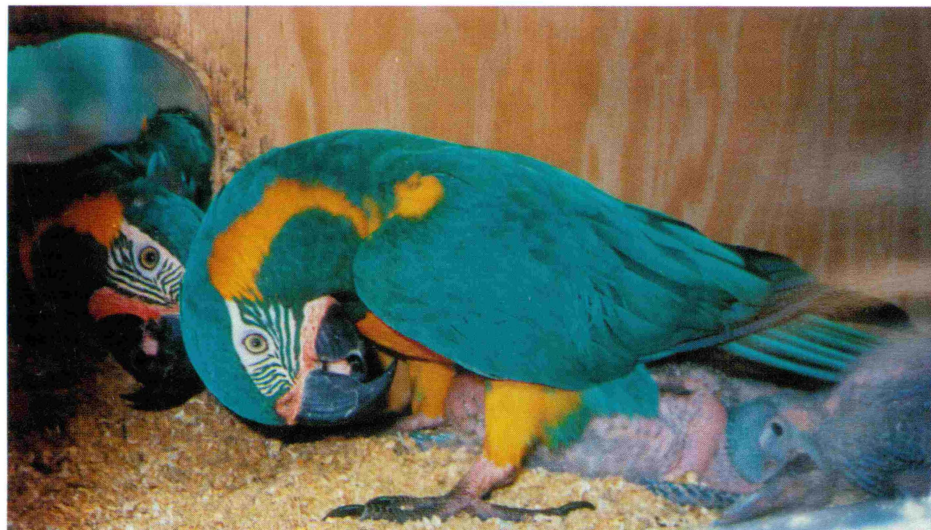
In our Blue-throated program, we have an established wild-caught pair



Our 1995 babies: 2 males and 2 females.



"Legacy", age 70 days, peeks out of the nest box. She did not venture out for almost another month. Note the sliding lock-out door.



Our original wild-caught pair. The male looks into the nest hole while the female closely guards their first chicks.



and have put together domestic pairs of parent-raised female/incubated handfed male and partially parent-raised female/incubated handfed male. We will also establish a pairing of incubated handfed female/parent raised male. Once other wild-caught pairs are added, we intend to establish parent-raised pairs. All of these will be allowed the opportunity for parent-rearing as well as contributing to next-generation perpetuation of original pairing categories.

The program is designed to track results of these pairings for comparison to results provided by cooperating owners of incubated handfed pairs. Projected duration is open-ended.

Following are the results of the parent-rearing efforts of one wild caught pair of Blue-throated (Caninde) *Ara glaucogularis* Macaws.

The Blue-throateds were acquired in September, 1992, as a surgically sexed but unproven pair. Being wild-caught, they were of indeterminate age. For the previous three years they had been in a 3 x 3 x 5 ft. cage, the top of which was less than four feet from the ground. The cage was in an active pedestrian area. They were surrounded by, and could see, Hyacinths, Green-wingeds, cockatoos and other parrots. They were extremely nervous and high-strung. The male paced, upside down, in the top of the cage. From one end to the other and back. The female hung from the top like a bat. There was little association or recognition between the two.

### The Aviary

After a comprehensive vet check and quarantine period, we moved the Blue-throateds into an aviary of their own at our facility in Houston. Solid walls, half of the roof open to the elements. No pedestrian traffic except for the keeper. A larger cage (4 x 4 x 8 ft.), suspended four feet above ground to give them a superior position above the keeper. And, with some optimism, a nest box (¾ inch plywood, 16 in. deep, 17 in. high, 48 in. wide, with a centered entrance 3 in. from bottom and 4 in. in diameter).

In this more secure environment, they gradually calmed and began to use perches. They started preening

each other. Five months later they were observed sticking their heads into the nest box and coming out with beaks full of pine shavings. A month later they started enlarging the entrance hole. Then came courtship feeding and copulation. Next they were in the nestbox together and displaying aggression toward the keeper.

Nine months after acquiring the pair, the hen laid her first egg. Albeit, a perch drop that cracked up at landing. The next two eggs (both infertile) she delivered in the nest box and incubated until we pulled them 30 days later.

Eleven days later, she laid another clutch. Two hatched at 26 days, third was infertile. One was pulled in the seventh week due to an injury and the other was pulled in the eighth week as we prepared to move to rural acreage.

### The New Aviary

Design of the new Bird Endowment facility in the country had commenced prior to the success of the Blue-throated pair. The first new aviary is a hip-roof, steel frame building. Exterior walls and the lower six feet of roof on each side are covered with 1 in. x 1 in. 12 gauge welded wire. The center 16 feet of roof is metal. The lower wire portions are covered with removable rigid fiberglass. For winterizing, the north wall has a removable metal covering and the other walls have removable rigid translucent fiberglass sections. It is equipped with a vented greenhouse heater fueled with propane. A five-foot service aisle runs down the center for the length of the building.

Cages are backed to either side of the aisle with all food/water service and nestbox observation doors on aisle. New cage size for Blue-throateds is 4 x 4 x 9½ ft. Nest boxes sit inside the cage, completely surrounded by cage wire. Sliding lockout doors can block parent access to the nest box.

To approximate the successful Houston environment, the Blue-throated pair was placed in a corner cage. To the front and one side they can see the countryside. A solid privacy barrier was placed on the other side and a cloth curtain closes out the view across the aisle. Once again, they are visually isolated from other parrots. This

## First Phase of the Campaign for New Members Ends With Drawing for Leadbeater's Cockatoo

December 14, 1996

**D**elma Dickerson, of Phoenix, Arizona, was the lucky winner of the Leadbeater's Cockatoo.

The Leadbeater's (also called Major Mitchell's) Cockatoo was donated by Rick Jordan as an incentive for AFA members to enlist new members. Many thanks to Dickerson for her hard work bringing new members into the organization.

The drawing was conducted in conjunction with the Annual Christmas Dinner and awards Banquet of the Arizona Avicultural Society. Many thanks to AAS for sharing time for this AFA function. Carol Inderridien officiated at the drawing and Bernard Roer did the honors of pulling out the winning ticket. Dickerson - according to reliable witnesses - was absolutely thrilled about winning the bird and couldn't believe her good luck. ●



Bernard Roer has just pulled out the ticket that won the Leadbeater Cockatoo. Carol Inderridien, of the AFA Business Office, holds the ticket aloft.

Photo by Jim Hawley



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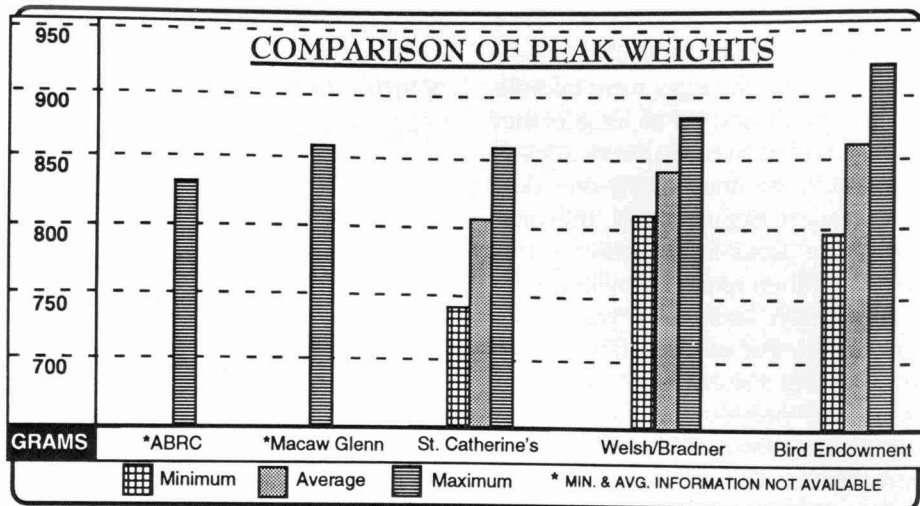
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\* Position open: contact regional vice president if interested.

\*\* indicates 2 year term has been fulfilled. If no new interested party comes forward and indicates a desire to serve, incumbent remains in position.

For information about contacting any of these member clubs, please call that club's state coordinator.



Graph no. 1

arrangement has been successful, also.

### Observations on Breeding

In our location at approximately Longitude 97 degrees and Latitude 29 degrees, there is no discernable breeding season with the subject pair of Blue-throated Macaws. They have had fertile eggs in each season of the year. (Normal clutch size is three eggs. Most often, only two eggs are fertile. Of three two-egg clutches, only one clutch had fertile eggs.)

Because the hen is not a tight brooder (she leaves the nestbox anytime the cage is approached by keeper), two winter (1994 & 1995) clutches have been lost to egg chill despite maintaining a minimum aviary temperature of 65 degrees. These two disasters were almost enough to chill our enthusiasm for parent-rearing with this pair.

Instead, a strategy was developed with the intent of altering the 1996 winter egg cycle. The situation was late May, 1995, two new chicks in the

box. Same as May of 1994, when we left one chick with the parents until early December. Then the parents had recycled in early January. This is what we didn't want to happen again. Our new plan was that we would pull the May 1995 chicks at banding. The hope was that the pair would then recycle and hatch in October, prior to cold weather. These anticipated chicks would stay with the parents until the end of cold weather. The May chicks were pulled on schedule (early July), but the parents didn't stick to our game plan. They recycled in 26 days, way ahead of projection. In the middle of August, there were two new chicks.

Past experience indicated that the mother would become aggressive in the sixth month of parent-rearing, wanting the chicks to leave the cage. We opted to pull these chicks and hope for a recycle that would hatch by mid-November, prior to cold weather. We pulled in early September.

At this point, the birds completely ignored the strategic planning. They

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failed to recycle in October. They skipped November. Finally laid in December, but the eggs were infertile. We let them brood for as long as they would, hoping to delay the next cycle until warm weather. Thirty-one days after the last egg was laid, the birds threw one from the nestbox. Other eggs were then removed by keeper.

Seven days later, there was a new egg in box. For all the planning, we were back in a situation almost identical to the previous January's disappointments. Two of the three eggs were fertile. The temperatures were really cold outside. We decided to apply the principles of artificial incubation without removing the eggs from the nestbox in the aviary. In addition to the building heater, we placed two electric space heaters about 18 inches from the end of the nestbox. One blowing on the end, the other under the box. Through experimentation we were able to position a brooder thermometer on the outside in a position that gave the correct temperature reading for inside the box. We adjusted the heaters day and night to keep the ambient temperature warm enough (above 75 degrees) to sustain the eggs when the hen left the nest. Doing this during near record winter cold meant setting all-time record utilities bills. But we successfully hatched the two fertile eggs.

We then attempted to keep the ambient temperature around the nestbox at recommended artificial brooding levels. If it hadn't been cold outside, there surely would have been a meltdown of the electric meter from spinning so fast. Anyway, one chick survived (the second lived less than 24 hours due to anemia) and is being parent-reared. With luck, forget planning, we may yet beat the winter egg problem as related to parent-rearing. And then again?

### **Key Factors in the Parenting Partnership**

Cage bird parent-rearing is a partnership effort pairing the keeper with the parents. The keeper monitors nestbox chicks twice daily (A.M. and P.M.). This makes a parent lockout door essential, to protect the chicks as much as the keeper. This became apparent

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with this pair's first clutch during the seventh week. During a box inspection, the mother got past a large plumber's plunger that had previously been used successfully to keep the parents out. In attempting to attack the keeper, she instead got a chick. Five to six blood feathers were ripped from the chick's wing. The chick was pulled for treatment and observation and healed nicely with no after effects, but was handfed and not returned to the nest. The parent lock out now used at The Bird Endowment consists of a large (16 in. x 16 in.) piece of plywood with one inch rounded corners and a handle that will fit through the 1 x 1 in. wire. This is placed inside the wire cage which contains the nestbox, between the box front and the cage wire. It can then be slid horizontally into position across the entrance hole and held in place with a spring clamp, leaving the keeper free to inspect the chicks. And the chicks safe from accidents.

About every 14 days, the parents are locked out of the box and the chicks removed and taken to another area for weighing. This facilitates growth comparison to our own age/weight tables. At about three weeks of age, the chicks are also closed banded (No. 16 AFA custom code), blood is taken for DNA sexing, and a cloacal swab is made and cultured for potential health problems. The chicks are then returned to the box and the lock out door is opened allowing the parents back in the nest. Since they have not been in the nest box while the chicks were gone, they have not missed them. We have experienced no unusual parental behavior using this procedure.

Another integral part of our parent-keeper partnership is feeding. We closely observe what the parents are selecting from the food offered to

them. Although offered a broad daily selection, this pair hardly eats soft foods themselves. However, they do when feeding babies. They vary their selections, apparently according to what they need to feed the chicks. Young babies are fed lots and lots of corn. Then they start selecting ZuPreem monkey chow, crumbled wheat bread, nuts and seeds. The key is to continuously offer a wide variety and let them select. On occasion they will eat banana, raw beet with stems, yellow squash (only when sliced lengthwise to expose the soft seeds), grapes, and thawed frozen mixed vegetables. Quality powdered vitamin and mineral supplements are added to the soft foods. Fresh soft food is provided each morning and evening.

A quality seed mix including lots of sunflower and peanuts is always available. Another bowl contains a large quantity of mixed nuts. Attention is paid to what disappears and that is then provided in abundance. Some days they may eat 25-30 almonds, then they'll switch and consume only walnuts for a while, etc. The nuts and seeds are replenished each afternoon.

### **Growth and Development Analysis of Parent-fed Chicks**

With each new clutch, the parents have become better feeders. Over successive clutches, the parents have expanded their food selections. During this learning period, for parents and keeper, the offspring progressively have achieved higher peak weights. The objective is not to raise abnormal "couch potato" birds. Unlike day-one hand-feeding, it is impossible for the keeper to influence the amount and timing of food given to chicks. Bottom-line results are dictated by the parental capability. Comparing their parent feeding efforts to available published hand-feeding data shows exceptional results.

Of the Bird Endowment survey group in the chart, four chicks were pulled at three weeks (in the effort to adjust the egg cycle) and hand-fed to weaning. Four chicks reached peak-weight in the nestbox.

For the entire chart group, feeding days to peak weight varied greatly, from high of 70 days at ABRC and



Macaw Glenn to St. Catherine's low of 35-39 days. Welsh/Bradner peaked at 54-59 days, which was close to the Bird Endowment results. The Bird Endowment chicks (3 females, 1 male) that peaked in the nestbox did so in 52 (795g), 54 (814g), 56 (868g), and 56 (863g) days; those that were hand-weaned (2 females, 2 males) peaked in 44 (918g), 48 (854g), 50 (857g), and 51 (922g) days.

Fledging also came earlier for the Bird Endowment chicks that were hand-finished vs. nestbox fledging. The hand-finished chicks fledged at 73 to 81 days. Nestbox fledge was 98 days. Fledging information was not available from other breeders.

The father was the primary teacher for the nestbox fledgling. By day 99 he was on the perch next to the fledgling showing her how to open nuts. Pre-cracked nuts were never placed in the cage. She, the fledgling, was opening and eating nuts by day 103. For chicks that were not parent-fledged, and including two day-one hand-fed chicks from another breeder, it was necessary to pre-crack nuts for as long as 200-plus days.

Three days after fledging, she took her first bath; was observed sitting on a perch exposed to the elements during rain. She was soaked and licking rain drops off the top cage wire. The parents did not bathe. Therefore, they presumably did not initiate or encourage her behavior. During the sixth month, the mother started nipping at the toes of fledgling to induce her to move away from the father. This parent behavior became progressively more aggressive until the fledgling was removed from the parents' cage. The nipping became, and remains today, part of the fledgling's repertoire in dealing with her mate.

### Human Imprinting vs.

### Parent Imprinting

All Bird Endowment chicks were parent imprinted. Excessive human contact was generally avoided. Compared with two comparable-age artificially incubated/hand-fed Blue-throated chicks, parent imprinted/hand weaned chicks were as accepting of humans as the day-one hand-feds.

Subjectively observed, parent-imprinted chicks would be as acceptable as human imprinted chicks for developing into human companions. Nestbox weaned is less accepting of human contact, but not as aggressive as wild-caught parents. Once mated, all have been treated as breeders and have responded likewise to human intrusion in their territory.

### Conclusion

For a program where definitive answers may be another decade away, this parent-rearing project to date should still demand some consideration on the question of total hand-rearing.


Data indicate strongly that babies spending at least the first three weeks being fed by parents average a higher peak weight than artificially incubated/handfed babies of the same species. The question this presents is: Will the on-average lighter-weight, hand-fed babies beget birds that are also smaller? If so, are we down-sizing the species by total handfeeding?

Fledging age for a parent-reared chick was 23 percent greater (98 days vs. 76 days) than the average for The Bird Endowment's handweaned babies. Why would the nest fledgling take more time? Do the other birds develop faster or did they miss out on

some important developmental stage because of the handfeeding portion of their life?

Certain behavior patterns are learned from parents, i.e. nutcracking and toe nipping. This presents the question: What other behavior is learned inside the nestbox from parents? Will the lack of this learned behavior impact the future breeder potential of totally handfed chicks?

Of course, there are no definitive answers to those questions right now. Only results that should raise eyebrows. And these are not the only questions in the total hand-rearing vs. parent-rearing argument, especially as related to parrot species that are critically endangered in the wild. These questions and others may never be completely answered. And if they are, it may be years from now.

"... but just to be safe," The Bird Endowment shall continue diligent observation, thorough record keeping, and a commitment to our parent rearing program. 

### References

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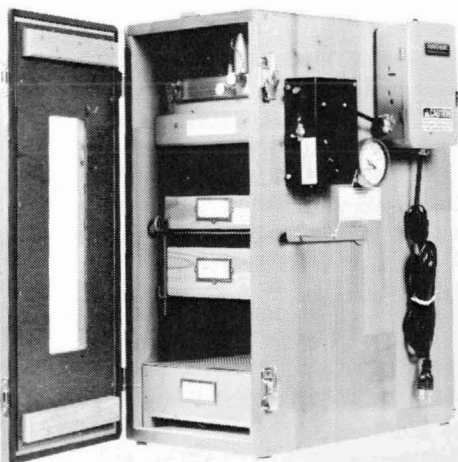
### Graph no. 1

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From the AFA Annual Conference Proceedings, 1996

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