

# The Beak Speaks!

## The Green Aracari in Aviculture

by Jason Crean

**M**y love of aviculture started when I was very young and probably led to my love of biology. I have held a variety of species over time: psittacines, softbills and others. Of all the softbills with which I have worked in the past twenty years, my favorite is the focus of my aviary, the green aracari. I have been enthralled with the toucan species and its related taxa for many years and have found the green aracari (pronounced 'ah-rah-sorry') to be a wonderful specimen in so many ways: its relatively quiet demeanor, its playful attitude, and its fearlessness in most household situations. Keeping one as a pet, which I frequently use in education programs, has proved to be extremely rewarding as people who see her become instantly fascinated by her appearance and are surprised by her sociable personality. Basic husbandry for an individual aracari is not difficult as they eat a simple fruit mixture along with some low-iron pellets. Breeding has been a bit more of a challenge as they have different requirements than many parrot species. In this article, I will detail my personal experience including the feeding regimen, breeding requirements and basic breeding and husbandry tips that have worked for us after working with other breeders and avian veterinarians.

*Pteroglossus viridis* is the smallest species in Family Ramphastidae, averaging around 130g. In the wild, they occupy a range in the Northern part of South America that includes Brazil, Guyana and other nearby

areas that contain tropical forests. They can be gregarious, living in small groups outside of the breeding season. Green aracaris consume mainly fruit though protein intake in the form of insects and small vertebrates can increase during breeding season. Like most frugivores, they fill an important niche in their natural habitat by spreading seeds in their droppings after quickly digesting the various fruits they devour daily. It is unclear just how many different fruit trees these birds frequent but, with the diversity in these tropical forests, you can be sure the number is vast. It is also thought that these birds, like many arboreal primates, utilize a water source in the trees and not on the ground. Water is collected in the hollow notches in trees where groups of organic compounds seep into the water from the fallen leaves, tree bark and other plant components. These compounds, mainly tannins have been found to bind to dietary iron, disabling excess storage in the liver that causes hemochromatosis, a disorder to which Ramphastidae seem to possess a predisposition.

### Diet

In my dietary preparation, I include everything I have at my disposal. Living in the Midwest, the diversity of fruit available through the winter is small so adaptations must be made. We offer some fruits as a staple using mostly organic fruits that have been thoroughly washed. We

avoid citrus fruits because they are high in ascorbic acid (Vitamin C), which increases the uptake of iron. Our diet includes:

- Apples, organic and washed
- Pears, organic and washed
- Cantaloupe, organic when available and soaked in cleanser
- Honeydew, organic when available and washed
- Papaya, washed
- Blueberries, US Domestic only and soaked in cleanser
- Grapes, same as blueberries (avoid Chilean imports due to dangerous fungicides used)
- Plums, organic when available and soaked in cleanser
- Nectarines, organic when available and soaked in cleanser
- Peaches, organic when available and soaked in cleanser
- Carrots, washed and steamed or defrosted when frozen
- Figs, soaked in cleanser when in season
- Banana, organic
- Sweet potato, organic, peeled and steamed
- Squash varieties, organic and steamed
- Others including other berries and some fleshy fruits

Some fruits like blueberries are frozen when they are abundant and stored until winter when domestic produce is largely unavailable. In addition to the fruit above, greens are added twice weekly for enrichment purposes. We also sprinkle decaffeinated black tea every other day over the fruit mixture as well as some organic dried oregano, which has anti-fungal properties and seems to keep the fruit mixture fresh longer. We also add tea leaves to the drinking water and a drop or two of grapefruit seed extract which also seems to have some anti-fungal and anti-microbial properties; we have yet to encounter a single case of *Candida* in any of our birds to date and attribute this to these dietary supplements. I also add low-iron pellets to the diet, only soaking them when pairs are feeding chicks. There are a few brands of low-iron pellets available to the public but I do provide a low percentage of these as a part of the whole diet, usually less than 20%. We have also recently added coconut oil to the diet and have found plumage to be of a much higher quality with the addition of this source of Omega-3 fatty acids.

The difference between pet diets and breeding diets is subtle yet important. I have found that some birds like certain embellishments when feeding chicks that I do not offer to pet birds. Defrosted peas are a favorite of some

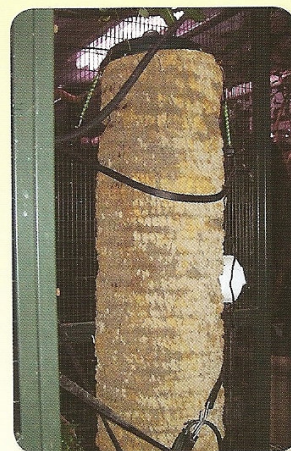


*Aracari chick.*  
Photos by Jason Crean.

breeding individuals and some like live food. Because my aviary is considered to be "indoors," insects are not freely available to my birds as they would be in an outdoor environment. Some of the birds like crickets where others expand their tastes to mealworms and waxworms. I have also tried an organic dry dog kibble that I soak overnight in the tea and, though they did feed it to their chicks, it did not seem necessary so it was discontinued. I do not mean to say that live food is mandatory for feeding chicks, as there have been clutches which have been successfully reared without it, but it does seem to provide a form of enrichment that encourages chick feeding. I feed pairs that are rearing chicks twice daily instead of the usual one feeding per day.

## Housing

Housing is also different for breeding pairs versus pet birds. For pets, a parrot cage that is designed for a cockatoo or macaw is best. We add many perches and swings that enable them to hop back and forth. We provide large stainless dishes for bathing and drinking and dishes for fresh foods that can be easily washed nightly. Newspaper is a substrate that is easy to keep up and toys like large, hard plastic and acrylic toys that are sold for parrots are suitable as long as no components may be swallowed.



*Nest log.* Photos by Jason Crean.

Housing for my breeding pairs is different in that they are housed in a carefully designed four-season building. We designed a room that has screened vinyl windows around the perimeter and skylights to provide a great deal of natural light as well as fluorescent tubes to increase the photoperiod at certain times of year. The "aviarium," as we call it, has more of a passive ventilation system and no forced air. A solar-powered attic fan pulls air from the room during the day and warm air is trapped at night. The room is on a heated concrete foundation that radiates heat from below without drying out the aviary. A trench drain that reaches from one end to the other allows all fecal material and discarded food to be flushed simply and quickly. The walls are made of fiberglass reinforced panels (FRP) which are extremely durable and easy to clean. This paneling is also white and brightens the room even more due to the reflected light. Live plants are kept outside of each aracari flight but are plentiful around the outskirts, especially passion-flower vine that winds its way around the flights.

Each flight is approximately eight feet tall and eight feet long with a width of four feet. Most perches are brushed manzanita and grapevine trees that hang from the top of each flight, keeping the floor clear. All dishes are accessible from the outside of the flight to avoid aggression from nest-protective birds. Hand-reared birds make fine parents but are not afraid of humans like parent-reared birds so caution should be taken. Misters have been placed on each flight but are only used when temperatures are high during the summer. Aracarics love to bathe and enjoy the mist as well as bathing in their large water bowls.



*Aracari chicks. Photos by Jason Crean.*

### **Breeding**

Though our birds will breed year-round, we usually notice the males feeding the hens when courtship begins and will make a purring noise while offering food. They will also begin to tidy up their nest log by excavating layers to provide a somewhat bare surface. We mount four-foot long palm logs that are hollowed with an entrance hole about 8-10 inches from the top and are placed elevated so the entrance is as high as possible. We drill another hole into the bottom side where we place a PVC access port that we can simply unscrew to remove chicks. At the top of the log, in a hard plastic lid, we place a wireless camera to monitor hatching and chick progress. These cameras have "night vision" which gives us a very clear picture, day or night, of the eggs and chicks, as well as the frequency of hens incubating and feeding chicks.

Our pairs, without fail, lay 4 white eggs in a clutch over a few days. From our direct observations via our cameras, the hens sit fairly tight from the beginning with slightly less frequency closer to hatching. The male will typically sit just inside the nest entrance, clinging to the side through the night or will sit at the bottom along side the hen. We have also watched them take a hearty drink and then fly directly into the nest where they appear to be tucking some of this moisture beneath the eggs. After about sixteen days, the eggs begin to hatch in the order and frequency in which they were laid. As we have noticed, the chicks pip through the egg and as they emerge, the pair consumes the shell almost immediately. Typically, however, pairs usually do not raise all chicks from the clutch.

We have a unique opportunity in our aviary as we have a pair who successfully fosters. We provide wooden eggs similar in size to the natural eggs in the nest for three to five days and monitor the pairs to be sure they begin incubating. We then take two of the four eggs from the laying pair and switch them out with the fake eggs just before dusk. This pair has raised a number of offspring and has been more successful in chick rearing than the source pairs. All pairs raise chicks until they are two weeks old when we pull them for handrearing.

For the first few days, we usually offer some live food to increase chick survival. The pairs carry food, sometimes piece by piece, to feed to the chicks. We have seen that they will feed a host of foods to their chicks, including shreds of plants that they apparently can reach outside of the flight and consume! We know this as the chicks' feces reveal their last meal or two before they were pulled from the nest. As the chicks grow, they hold their heads up, wobbling back and forth while begging for food. The youngsters are pink and completely blind. Their beak is quite short and heads are flattened; these take shape as the chicks grow over the first couple of weeks. No down feathers emerge; only full feather shafts make their way out of the skin which looks rather uncomfortable!

### **Handrearing & Pet Quality Birds**

Handrearing is a time-consuming process and not as easy as handraising parrots. Since these birds do not have a crop that can be filled, one must observe the amount of food intake needed to maintain



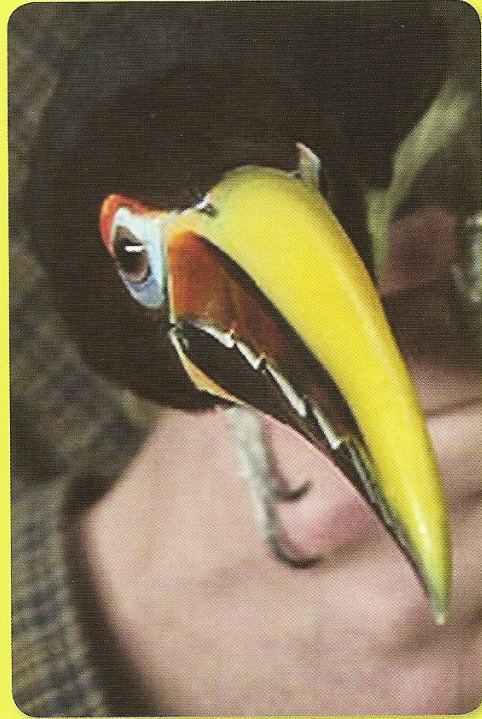
*Aracari chicks. Photos by Jason Crean.*

healthy chick weight. We usually offer 1cc of formula per 10g of body weight though younger chicks may take more and older chicks may take less. This seems to enable chicks to put on a few grams of weight per day. The formula consists of 50% neonate chick formula and 50% organic baby food that consists of blueberry and apple. Within the first twenty-four hours, chicks will readily consume handfeedings every 1.5 to 2 hours from morning until night, usually sleeping 6-8 hours without the need of a feeding.

We offer 1-2cc of food at a time until the mass of food can be seen traveling down the esophagus on the right side of the neck. We also add one drop of GSE every other feeding to preserve good gut flora and prevent infections like Candida. We also soak our syringes in a solution of GSE and use it to clean the beaks of our messy eaters. Chicks are kept in a brooder set at 90 degrees when pulled from the nest and is gradually lowered as they feather out. We also keep a soaked sponge in the brooder to retain a good humidity level.

When chicks start perching and manipulating objects with their beaks, we offer soaked pellets and diced fruit. They will play with their food for some time before actually learning to throw it back and swallow it but, with a beak of this size, the learning curve is clearly understandable! Over a couple of weeks, they learn to eat on their own, decrease their formula intake and fully wean between eight and ten weeks of age. At this time, their weight can decrease greatly and then, once fully eating the adult diet, their weight will bounce back up.

We have thoroughly enjoyed our success in breeding this species and look forward to sharing this love with others further. We talk with people who have received handfed birds from us and the positive response has been outstanding. They have discovered the special qualities mentioned above in their own birds that have become part of their families. Keeping this species in aviculture is a necessity and hopefully more aviculturists will take on the challenge of breeding this rewarding species. 🌱



*"Cricket." Photo by Jason Crean.*

## References

Becker, K.S. The Importance of Tea in Avian Diets. Lecture: The Avicultural Society of Chicagoland. Available online: [www.tasc-chicago.org](http://www.tasc-chicago.org)

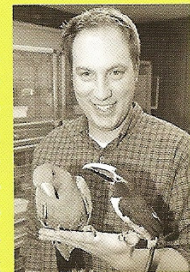
Lindholm, III, J. The Aracaris. Paper presented: AFA National Convention. August, 2006.

Nashville Zoo. Ramphastidae. Available online: [www.nashvillezoo.org/piciformes/ramphastidae.htm](http://www.nashvillezoo.org/piciformes/ramphastidae.htm)

Seibels, R. & Vince, M. Toucan Husbandry Manual. AZA Piciformes Taxon Advisory Group. April, 2001.

## Author Biography

Jason Crean holds two degrees in Biology, a Master's Degree in Education, and a graduate certificate in Zoo & Aquarium Science. In addition to teaching biology and animal science at the high school and college level, he aids in research and service work in the Genetics Lab at Chicago's Brookfield Zoo where



he also teaches graduate courses in their Education Department. He also acts as an Avian Consultant to zoos and other institutions in the care, breeding, and propagation of avian species. He is the President of the Avicultural Society of Chicagoland and on the Boards of the American Federation of Aviculture and National Finch and Softbill Society. He is a breeder of softbills, specializing in aracaris and mousebirds.



*Photo by Jason Crean.*