

An Indoor Aviary for Lady Ross's Touracos

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In 1993 I had the opportunity to work as a volunteer zookeeper at the Sacramento Zoo in California. I started out in the bird department and the very first birds I worked with was a pair of Lady Ross's Touracos. To say the least, I was in awe of these beautiful birds! Of course, after my first day I went right home and described the touracos to my husband, who was equally interested in seeing these birds. So, the next day we took a trip to the zoo and we were both able to admire the beauty and personality of this particular avian species.

Over time, and as I became more of a fixture in the zoo's bird department, my husband and I pursued the idea of obtaining Lady Ross's Touracos (*Musophaga rossae*) for our own small avian collection. Our persistence eventually paid off in 1996 when we were able to acquire two female offspring of the original pair I had worked with at the Sacramento Zoo. Shortly thereafter we were able to add two male birds to our collection, both from the Chaffee Zoological Gardens in Fresno, California.

We set up the first pair, named Simpson and Simone, in a flight inside our home. The space was about 12 feet long x 4 feet wide x 10 feet high (3.5m x 1.25m x 3m). We tried to set up the second pair, Ricky and Rosie, in a similar flight but mate aggression on Rosie's part prevented them from ever living companionably together. For the first two years the pair did not exhibit any serious breeding behavior but by their third year the female began to lay fertile eggs and we began hand rearing chicks. As time went by, the parents became more and more capable and the last four clutches were totally parent raised.

By 2000 we were up to our limit in bird cages and flights. We had been considering building a new house for various reasons and the idea of constructing the "perfect" aviary really motivated us towards this goal. We owned an empty lot immediately adjacent to the property where our current home was located. Thus, in early 2001, we began construction of a new residence with a separate 1,000 square foot (93 sq. m) aviary room as part of the plan.

Our need to construct a completely indoor aviary was brought about by the unusual configuration of the land on which we live. Our house (both current and prior) is locat-

ed on the Sacramento River and is built up on poles or pilings. This is because in the winter the land frequently floods when the rain and snow cause the river to rise. On a typical flooding year we can have nearly nine feet (2.75 m) of water under the house, so it is impossible to construct anything at ground level for fear of flooding. Also, since the area we live in is fairly rural, we have to contend with a variety of wildlife including foxes, raccoons, opossums, squirrels, coyotes, deer and bears who take up residence on our property. These animals would certainly pose a risk to any birds in outdoor flights, giving us one more reason for wanting to keep our birds inside.

By the time we were ready to move all of our birds, we needed more flights than were in the original plan. Thus, we had to decrease the size of some of the flights to accommodate four additional cages for our birds. Right now in the main aviary we house a total of 15 Lady Ross's Touracos, one Green-crested Touraco (*T. Persa persa*), two Keel-billed Toucans (*Ramphastos sulphuratus*), and one Green Aracari (*Pteroglossus viridis*).

The new aviary is essentially one big room with an 18 foot high (5.5 m) ceiling, windows on the south, east and west sides, a linoleum floor, a central drain system where waste water flows into the septic tank and a central heat and air system just for the aviary. The construction is wood frame with sheetrock on the walls and ceiling. The floor is plywood subflooring with a painted-on water barrier over which the linoleum was glued down. The linoleum wraps up the walls about three feet (.9 m) on each side to make cleaning easier. We painted the walls above the linoleum with an industrial water repellent-type paint.

The individual flights were framed out of one inch square (2.54 cm) aluminum tubing. We attached 1" x 1/2" (2.54 cm x 1.27 cm) galvanized-after-weld 18 gauge wire to the aluminum tube frames using washers and screws. The doors into each flight were made using the same materials. We constructed a "safety porch" ("S" on floor plan illustration) down the center of the room and off of that is the access to 12 of the flights. At the east and west ends of the room we built two connecting flights (you have to walk through the first flight to enter the second one) with their own safety

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Avian Resources, San Dimas, CA
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Bird Crazy, Inc, San Diego, CA
Bird Daddy Georgia Exotics, Marietta, GA www.birddaddy.com
Bird Hobbyist, Walberg, TX
Bird Shop, The, Sacramento, CA birdshopsacto@earthlink.net
Bird Toys Etc, Wake Forest, NC www.birdtoysetc.com
Bird Zone, Pineville, NC birdzone@mindspring.com
Birdlady's Babes, Atascadero, CA birdlady@calinet.com
Birds Of A Feather, Hershey, PA
Birds Of Paradise, Spring, TX
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Brinsea Products Inc, Titusville, FL www.brinsea.com
Canopy Scientific, Acworth, GA
Cele Birds, Manor, TX celebids@aol.com
China Prairie Company, Redway, CA
Corners Limited Inc, Kalamazoo, MI
Crystal Parrot #2090, Southampton, MA www.crystalparrot.com
Cuttlebone Plus, San Marcos, CA cuttleboneplus@earthlink.net
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Expandable Habitats, Rockton, IL
Fallon Featherwing Farm, Fallon, NY
Faunalink Foundation, Plant City, FL www.faunalink.org
Feathered Follies Inc, Lafayette, CA www.feathered_follies.com
Featherlust Farm, Old Saybrook, CT featherlust@snet.net
Feathers, Marlboro, MA www.feathersbirdstore.com
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Franz Daniel Library, Dickerson Park Zoo, Springfield, MO
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Fur And Feather Ranch, Pismo Bench, CA
G & S Aviaries, Fort Meyers, FL
Great Companions Bird Supplies, Warren, MN
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Hill Country Aviaries, LLC, Dripping Springs, TX
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Magnolia Bird Farm, Anaheim, CA
Natl Agricultural Library, Beltsville, MD www.swetsblackwell.com
NC Zoological Park Library, Asheboro, NC
Nestbox Creations, Sparks, NV nora@sdi.net
North State Animal & Bird Hospital, Jackson, MS
Old World Aviaries, Austin, TX www.oldworldaviaries.com
Omar's Exotic Birds, Lake Forest, CA
Owen Feather Co, Tumacacori, AZ
Parrot Mountain & Garden, Pigeon Forge, TN
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Parrot Perch Aviaries, Las Vegas, NV parrotperc@aol.com
Parrots Of The World, Rockville Centre, NY
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Queen's Pride Aviary, Kendalia, TX pionus@gvtc.com
R & M Aviaries, Hunlock Creek, PA
Rain Forest Exotics Inc, Conroe, TX www.rainforestexotics.com
Rolf C Hagen (USA) Corp, Mansfield, MA
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Sugarcreek Bird Farm Inc, Bellbrook, OH
Tangy Design, San Jose, CA www.tangydesign.com
The Bird Shoppe, Fairfield, OH
The Birdbrain, Carbondale, CO
The Gabriel Foundation, Carbondale, CO
The Higgins Group Corp., Miami, FL www.higginsgrp.com
Thermaland Aviary, King Hill, ID thermaland@direcway.com
Walnut Creek Service, Walnut Creek, CA
Walt Disney Animal Kingdom-Library, Lake Buena Vista, FL
Web Ranch, Mooreland, OK webbranch@pldi.cet
Wings N' Whiskers, Valrico, FL www.wingsnwhiskers.com
Woody's Bird Farm, Dover, PA
Wyld's Wingdom, Inc, Norfolk, VA www.wingdom.com
ZuPreem, Mission, KS www.zupreem.com

porch. The original concept of having the flights 14 feet (4.27 m) long gave way to the need for the four additional flight cages at the east/west ends of the aviary. However, because of this late change we decided to increase the height of all of the flights to 12 feet (3.66 m). This turned out to be a great idea since all the birds are happy with the additional height which gives them the ability to perch high above anyone who comes into the aviary – adding to their feeling of safety and security.

For the top of the flights we chose a black plastic netting with 1/2" x 1/2" (1.27 cm x 1.27 cm) squares. We also used the washer/screw method to fasten this fabric across the top of all of the flights. The plastic has a bit more give to it than the wire used on the sides of the flights and we chose this product based on its flexibility (to reduce the risk of injury if birds flew into it), cost, visibility, and ease of installation.

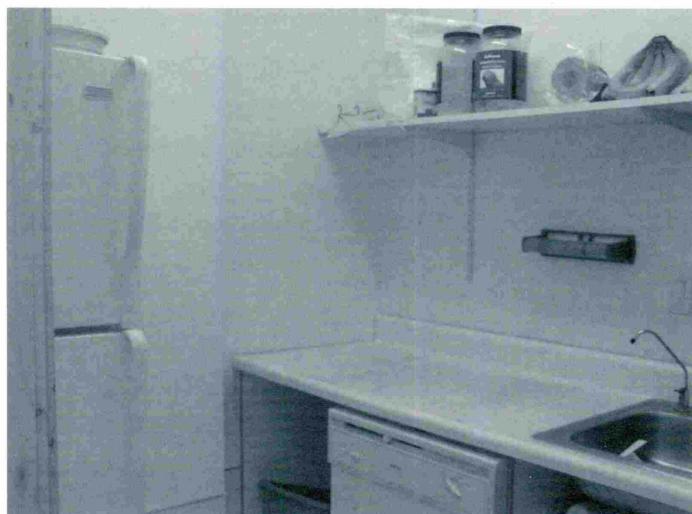
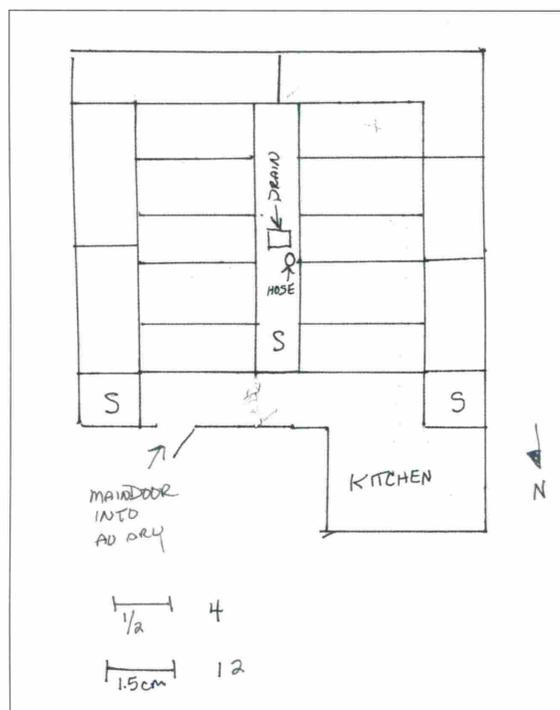
The aviary has six fluorescent light fixtures, with two 8-foot (2.44 m) long bulbs in each, mounted on the ceiling, plus a single fluorescent fixture in the kitchen area. Additionally, we installed eight incandescent fixtures, each with a 100 watt bulb, all controlled by a dimmer switch, for a night light. Since the area where we live is somewhat rural we have an ongoing problem with power outages. Shortly after we moved in we experienced multiple nights of the power going on and off and/or low voltage – causing the night lights in the aviary to flash on and off. This caused a great deal of panic in the birds and we needed to come up with a solution for the problem. Therefore, after the fact, we added three 12-volt fluorescent light fixtures spaced above the central safety porch area. These are connected to back up batteries located in our garage which are, in turn, connected to a sensor plugged into the household current. If the main power goes off or the voltage drops, the batteries take over and power the emergency lights. This eliminates the flashing and also eliminates us having to get up in the middle of the night to calm the birds and provide an alternative light source.

The aviary has its own heat and air conditioning unit with four elevated floor vents in four of the flights plus a return air located beside the kitchen. We have a fairly unique heating/cooling system for our house which is water based. We have a well and the heat pumps use water as a temperature exchange system to heat or cool the air. Since groundwater is pretty consistent at 60° F. (15° C.) the exchanger in the heat/air units work on a passive system for creating the temperature changes in the air used to warm up or cool down the aviary.

The windows on the east and south side of the aviary are fixed (non-operating) but allow in quite a bit of light during the day. On the west side of the building are six operating windows which we can open to allow in unrestricted

natural sunlight for the birds. The downside of this system became apparent this past year with the threat of mosquito born West Nile Virus in California. We were afraid to open the windows for fear of letting in mosquitoes who might bite our birds. Our plan is to put screens over the windows so they can be opened in the good weather for both air circulation and sunlight purposes.

As stated above, the floor of the aviary is heavy-duty linoleum which wraps up the walls on all four sides. We have a central drain and a hose bib so that we can hose down the floors and clean the flights of dropped fruit and



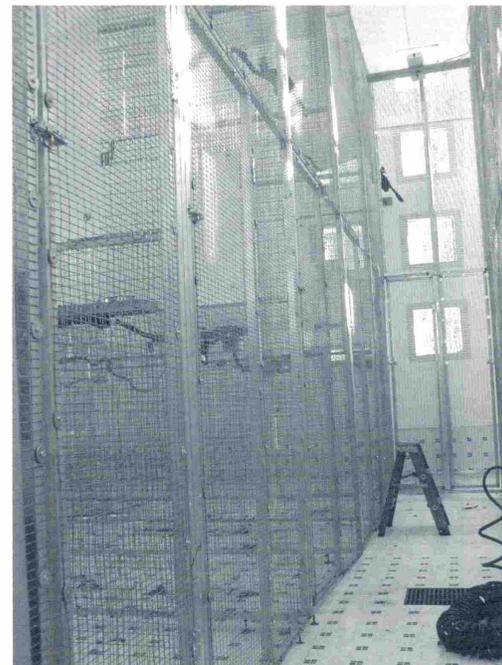
Food preparation area. Standard-sized refrigerator, dishwasher, garbage disposal, and storage space.

bird droppings. There is a small slant to the floor so that the water will run towards the central drain but if we were to build the aviary over again we would put in a more dramatic slope since now we have to use a squeegee to move the water and detritus towards the drain.

All of the perches are manzanita of varying diameters. Each flight has at least five perches with two being approximately 9 feet (2.75 m) off the

ground. Each flight has two food bowls and one water bowl. We have also mounted some "privacy panels" between many of the flights at the point where the food bowls are hung to avoid fighting between neighboring birds.

The kitchen contains a full-sized refrigerator, a dishwasher, and a large sink. With so many frugivorous birds we go through quite a bit of fresh and frozen fruit each week and being able to



Safety area looking south. Twelve flights are accessed from this area. The hose is for washing down the floor. Central drain can be seen midway down the aisle.

Pacific Parrotlets:

Pastel	Isabel	Fallow	Blue	Lutino
Yellow	Pastelblue	Fallowblue	Isabelblue	Albino
White	Lucida	Dark Green	Splits & Double Splits	

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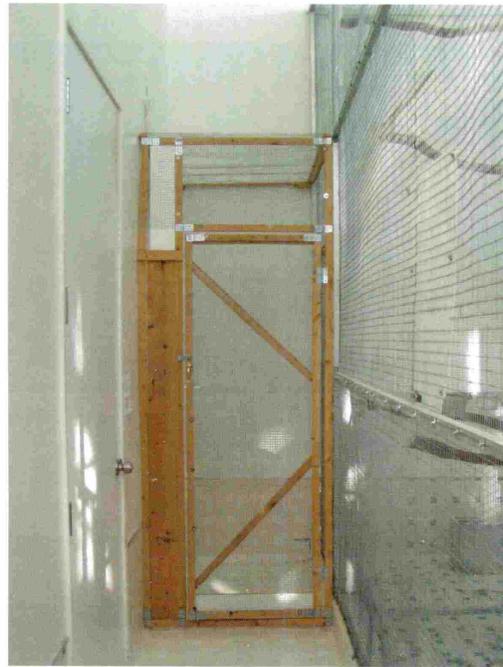
store and prepare the food right next to where the birds live is a wonderful convenience. As you can see from the photograph we haven't yet put on the cupboard doors but we'll get around to that sometime!

Overall, we are really happy with the way the aviary has turned out and we believe that the birds like their home as well. If we place a few of our toucanos with other breeding facilities in 2004 we should have enough room to enlarge some of the flights and bring in two birds that are currently housed elsewhere on our property. I certainly have to give my husband, Doug Cummings, most of the credit for the design and construction of the aviary.

His many hours of thought and trial and error design resulted in a very functional setup for our birds. We are now trying to figure out how we can expand our facility to house some hornbills. ❖



Same view as photo at left but a different angle showing individual flight doors to the left.



Looking east from the center of the aviary access walkway. The safety porches depicted protect birds in two flights on the east end of the building

Inside the flight of the touraco pair. This shows the aluminum square tubing construction and plastic corner assembly devices. It also shows one of the 16 two-foot by two-foot windows on the east side of the aviary.



Touraco nestbox



Photos by Georgann B. Johnston

Exterior view of the house showing the aviary to the left of the garage. Notice the steel poles below that support the house. The Sacramento River is in the background. The river has risen to nine feet under the house proper in times of heavy rain.

