

clutch at six months old. Broske says her captive-raised birds start breeding at about seven months of age. Incubation is around 21 days and young fledge at seven to eight weeks, becoming independent two to three weeks later.

Diet

Ben Cooper feeds keet and finch mixture supplemented with one tablespoon of soaked (not sprouted) millet. He also feeds CD mix (insectile).

Barbara Broske feeds keet and cockatiel mix as well as Vita-Finch and Vita-Canary. She supplements "a lot of green," however, states many of the *dark* greens are "strong" and the birds won't eat them. She also feeds sweet potato and high grade wheat bread put through a food processor. She says imported birds are finicky and are hard to feed supplements, however, the second generation are better feeders. She prefers Romaine, broccoli and carrot.

I concur with Broske on the difficulty of establishing supplemental food as a part of their diet. Mine prefer small seeds, including niger and I feed extra straight canary seed, and also spray millet. Fruit is seldom accepted, however some greens and vegetables are.

In Aviculture

The Madagascar Lovebird was one of the first lovebirds imported and, in the past, reached Europe in the thousands. Yet they still remain rare and are very difficult to establish. The late David West told me they will even die of fright in the net, and they should be moved in their nestboxes whenever possible.

The two excellent breeders acknowledged in this article are to be commended for their ongoing dedication to this species. There are few of the Madagascars left in the country, and members of the African Love Bird Society need to give immediate attention to ensure their survival and continued breeding to successive generations. ●

The Wright Roost

Jeri Wright
(206) 838-9802

NOW HAND-FEEDING
Hyacinths & other macaws, Cockatoos
Conures & Amazons
Domestic, Close-Banded
Roudybush Distributor



Breeding the Tui Parakeet

(*Brotogeris sanctithomae sanctithomae*)

by Robbie Harris
La Habra, California

The Tui Parakeet (*Brotogeris sanctithomae sanctithomae*) is part of the *Brotogeris* family. The Tui is a "cousin" to the ever popular Grey-cheeked Parakeet, as both are in the *Brotogeris* genus. The Tui is a small bird of seven inches in length, and built on the more slender side compared to its cousin. A nice different feature from the Grey-cheek is that the Tui Parakeets do not have a harsh loud voice. They have a voice like most *Brotogeris*, but just do not seem to use it as often. I would consider them quiet compared to the Grey-cheek.

The Tui is mainly shades of a bright green, with the breast, abdomen, under the wings and tail, lower back and tail coverts more of a yellowish green. The wing flights are bluish green, with the blue a bit brighter on the primary coverts. The most noticeable differences of the Tui Parakeets compared to other *Brotogeris* parakeets are the chestnut-colored beak and glowing golden colored iris. The head is the most striking feature of this little bird. Those golden eyes are really set off with the bright yellow forehead. To many people, the Tui Parakeet appears to be in color a mini version of the Yellow-crowned Amazon (*Amazona ochrocephala*). The Tui Parakeet inhabits areas over eastern Amazonas, Brazil, westward through southeastern Colombia and northeastern Peru to eastern Ecuador and northern Bolivia.

Over 10 years ago, I was fortunate enough to purchase a few of these beautiful birds. Once the birds were surgically sexed, I ended up with two pairs to work with, in high hopes of producing more of these beautiful birds. It took years to finally get a pair to settle in and produce successfully.

The two pairs were set up outdoors in wire cages, no added heat or cooling, for the weather here rarely drops below 40°F. Each pair was set up in an individual breeding cage. The cages measured 48" wide, 17" tall and 15"

deep. For perches I prefer to use natural tree branches. The branches used are from my own orchard of over 50 various fruiting trees grown on my property. I do not use insecticide so I can assume they are safe. The wooden nest boxes used measured 11" x 10" x 7" wide, having a round 2" diameter hole; these were offered to each pair. The nest boxes were lined in a dark cork, which was adhered to the inside with a non-toxic glue. To the bottom of the nest box three inches of pine shavings were added to use as a base. Photos and more details on nest box lining is described in my book "Grey-cheeked Parakeets and Other *Brotogeris*," T.F.H.

All my birds that are set up in breeding cages are in a large wire enclosure. This wire building houses many pairs of birds which do not seem to be bothered by their close neighbors of different species. A few pairs of birds set up right next to the Tui Parakeets are Painted Conures, Pearly Conures, Peach-fronted Conures, Dusky Conures, Blue-crowned Conures, Senegal Parrots and Tovi Parakeets. The diet I provided for the Tui Parakeets is very similar to the diet I offer to most of my other parrots. This diet in detail can be found in either of my books, "Breeding Conures," T.F.H. or "Grey-cheeked Parakeets and Other *Brotogeris*," T.F.H. The Tui Parakeets have available to them at all times a variety of dry seeds including medium size gray sunflower seed, safflower seed and a parakeet mix containing 42% canary seed. Along with the dry seeds the birds are given a daily bowl of fresh cut up fruits, vegetables, sprouted seeds and greens. Corn on the cob and apple are their favorite foods which are always the first to be eaten.

At the end of May 1992, I found an egg buried in one of the nest boxes of Tui Parakeets. This egg was removed, the shell was slightly porous, but even though it appeared no good I still placed it in my incubator. This egg

did, indeed, show fertile within a few days, but "rang out" and died. (This term is what I use when an embryo starts to develop and instead of developing properly a blood ring develops around the inside of the egg.)

On June 3, two more eggs were found in the nest box. I candled them with my probe-lite egg candler, but they were too freshly laid and just candled out to be clear looking, but healthy, strong eggs. By June 7 (my birthday), my present was finding five eggs in the nest. This time when I candled them, three showed veins — they were, indeed, fertile. That was a great present for me after all my hard work and patience. In this clutch, a total of six eggs was laid, with five remaining in the box with the pair. The hen spent all day in the nest box alone incubating and tending to her clutch, while the male stood guard during the day just outside of the box. Every evening the male would retire inside the nest box with his mate for the night. On June 11, candling the clutch revealed three fertile eggs growing well, but one other appeared to have been fertile but died. The fifth egg appeared "clear." On June 17, I decided to candle the clutch again. Now there were four fertile eggs. The last egg laid on June 11 was fertile and now showing visible growth when candled.

I found that the incubation of the Tui Parakeets is done differently than that of most other Brotoogeris, at least with this pair. Most birds in the Brotoogeris family start their incubation close to the time the last egg is laid. So usually when I candle "their" eggs they would all seem to be at about the same stage of growth. With this procedure of incubation, chicks tend to all hatch at about the same time. Usually within two days all the eggs have hatched under the Brotoogeris parents. The Tui Parakeets started their incubation of their eggs when the first egg was laid.

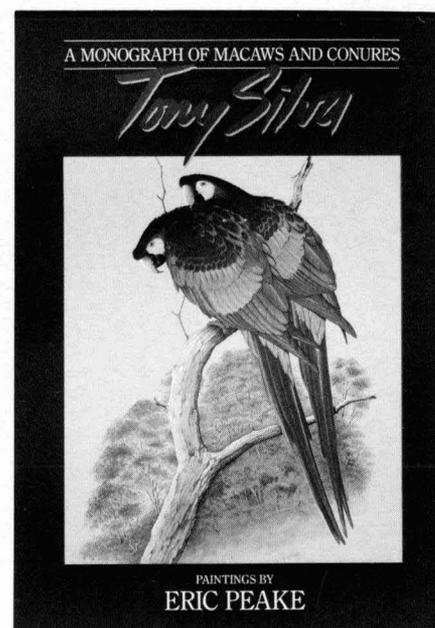
On June 22, at about 7 p.m. I did my last nest box check for the day. I discovered one Tui egg was opened, with a tiny beak protruding out. It appeared to have been opened by one of its parents, not by the trapped chick inside. Either the parents became eager and helpful, or they knew there was a problem and stepped in to help. Because it was so late in the evening, just before dark

and I could not do another nest box check until the next morning, I decided to remove this egg. The little white egg was placed in my incubator at 99.2°. I monitored the egg all evening, did very close egg candling, checking for what problem was occurring. I did not want to make a mistake with this egg (nor any other egg), but I took my time until I was sure. I think because this was my very first Tui Parakeet egg I was a bit more nervous and over cautious.

By 11:39 p.m., I felt strongly that this chick was trapped inside the egg and would not be able to free itself on its own. I also felt it was the proper time for the chick to hatch. I then proceeded to remove the chick from the shell (as described in my books). There was no blood, and as I wet him down with a warm damp cotton swab, he helped push himself out. I carefully chipped away at the shell. Within minutes he was out. My first Tui chick had hatched, alive and well. There had been problems inside the egg shell, as there was a build up of a thick green and light-green slime, possibly droppings passed by the chick along with other matter. The chick was bathed and cleaned and placed inside my warm and ready homemade brooder. This tiny all pink chick weighed 1.8 grams and had a long off-white down on its back. I fed the chick every two hours all night long. At first I was undecided as to either handraise this chick from day one, or let the parents raise it. I handrear hundreds of chicks from day one each year, but I felt that I would like to see this chick get its first start from the parents if at all possible. I was also curious to see if the pair even wanted their chick back and if they would make good parents.

The very next morning the tiny chick was placed back in the nest with its Tui parents. I inspected the nest in about an hour to find the chick warm and already well fed by its parents. The hen appeared quite happy and content to have her chick back.

On June 26, early morning nest box inspection showed me a repeat of the first egg problem. Chick number two was ready to come out of its shell but he, too, was stuck inside. The parents again tried to open the egg to free their trapped chick. I removed this egg as well, and placed the egg inside my incubator, knowing and prepared for what I had to do to save this chick,



A monumental effort to bring together in one book the most complete and up to date information ever assembled on these magnificent birds. Whether parrot breeder, biologist, ornithologist this new book is an absolute must!

A Monograph of Macaws & Conures brings together a team of truly committed professionals. Tony Silva author of A Monograph of Endangered Parrots, Eric Peake internationally acclaimed wildlife artist and Silvio Mattacchione the Canadian Publisher who has brought some of the finest new parrot books to market.

The book is comprised of a text totalling almost 500,000 words plus 40 new images commissioned especially for this book. World wide circulation is limited strictly to 2,000 subscribers copies numbered, and 50 numbered and signed Remarqué Editions. Destined to quickly become a collectors item.

PRICE: Subscribers Edition \$175.00 U.S. plus \$15.00 U.S. postage and handling. (only 2,000 copies available) Remarqué Edition \$2,500.00 U.S. per copy plus \$120.00 U.S. Courier costs within USA and Canada (only 50 copies available).
M/C, VISA, postal money order accepted.

TOLL FREE 1-800-779-4163



Published by:
SILVIO MATTACCHIONE & CO.,
1793 ROSEBANK RD.
PICKERING, ONT., CANADA
L1V 1P5
TEL: (905) 831-1373
FAX (905) 831-3734

* Canadian price is \$276.50 including 7% GST.



Even at three to four weeks of age, the distinctive yellow feathers show up on the crown of the Tui Parakeet.

too. This chick had a few more problems than the first one. It could possibly be in some danger if it remained even the slightest bit too long trapped inside the egg. But, by 2 p.m. I removed the chick safely out of the egg. This chick had a foul odor from the slime build-up inside the egg. I washed and cleaned the chick and placed it back in the incubator to

warm up and dry. At 4:30 p.m., the 2.1 gram chick was replaced back in the nest with its parents, unfed by me. Within an hour I inspected the nest box and found the chicks doing well; both were fed.

There were two more fertile eggs left in the nest. I personally did not like the way the last chicks were developing inside the eggs. Upon candling, one looked as if it just died in the shell. The other looked as if it was developing too slowly. I removed the slow growing live egg and placed it under one of my domestically reared pairs of Cobalt-winged Parakeets (*Brotogeris cyanoptera*). This pair had eggs of their own which were soon to hatch, making their eggs and the Tui egg almost at the same stage in growth. Knowing how rare Tui Parakeets are, I felt safer with this tame pair of Cobalt-wings raising the last chick. This pair are excellent foster parents to other *Brotogeris* chicks.

June 28, Sunday morning, 4:45 a.m. we were hit with a large earthquake, followed by another quake at 7:55 a.m. The Tui Parakeets remained in their nest box and took care of their two chicks. All my birds seemed a bit shaken up, but fine. I had immediately gone through my buildings that were equipped with emergency lighting, for it was still dark at that time. I do feel that walking through and talking to my birds helps calm them down after an earthquake. Only one pair of Blue-

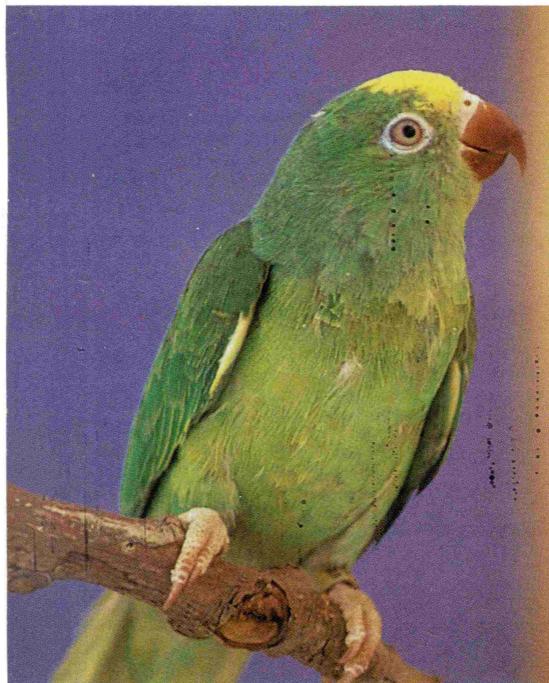
crowned Conures would not return to their three very young chicks, so I removed them for handrearing. The Cobalt-wings remained on their clutch just fine.

On June 29, the third Tui chick hatched under the Cobalt-winged Parakeets. No assistance was needed. This little guy did it all on his own. The Cobalt-wings proved to be great foster parents as usual. The next day, the Cobalt-wings hatched out their first chick in their clutch. They took great care of their own chicks along with their foster chick, the Tui Parakeet.

On July 1, I noticed that the smaller of the two chicks under the Tui appeared to be a bit "dry" with skin starting to flake. This chick was slowly dehydrating, and, if not removed, would die within days. I decided to remove these two chicks and start handrearing them. By July 6, all three Tui chicks were in the house being handreared on my formula, which can be found in either of my books. The chicks grew so fast and did fine on my formula. They had good body weight and excellent feather. By July 15, the three chicks weighed 28 grams, 25.6 grams and 24.3 grams.

At the end of July, I noticed a swelling in the lower abdomen on the second chick. The chick was rushed to Dr. Max Weiss, my avian vet. A full examination proved that the chick was born with a malfunctioning liver. Fluid was being developed and seeping into the body cavity of this chick. Dr. Weiss kept the chick overnight and removed the excess fluid from its body. The next day when I went to pick up the Tui chick, he informed me that there was little or no hope for the liver to repair itself. I still wanted to try to see if I could keep him alive. The body continued to slowly fill with fluid and each night I would remove the excess fluid to make the chick more comfortable. This was done with a sterilized needle and syringe. There were times when I could remove 3 cc of fluid and there even seemed to be a bit more left inside. He ate well and even grew, but on August 11 he died. His beautiful little feathered body is going to be donated to the L.A. museum.

The two remaining healthy chicks were now placed in a weaning cage. They would pick and eat seeds, mainly parakeet mix at first and fruits



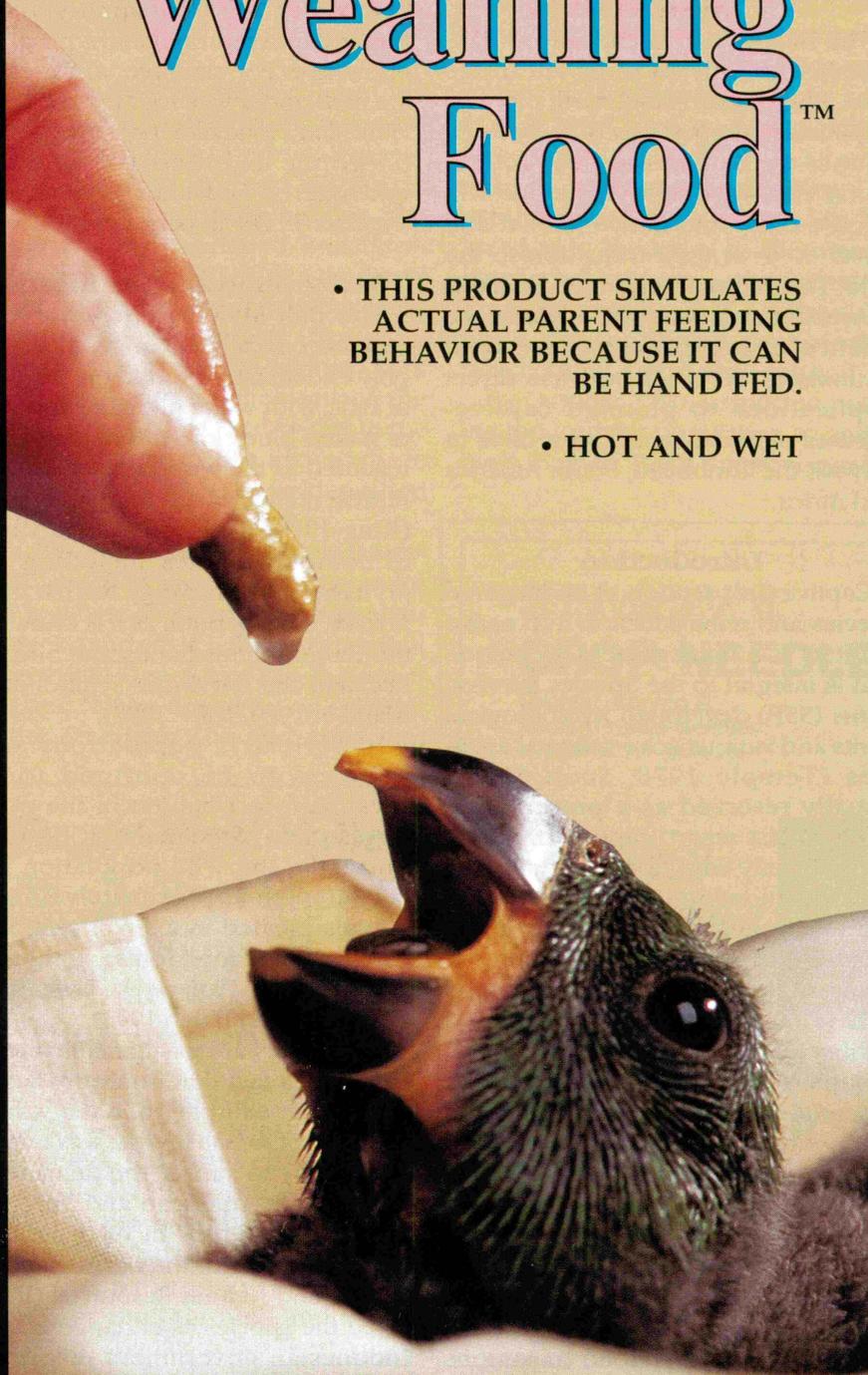
The Tui parakeet (*Brotogeris s. sanctithomae*) is one of the rare *Brotogeris* found in captivity. As an adult, this bird appears as a miniature Yellow-crowned Amazon. Its golden eyes are enhanced by its yellow crown.

REVOLUTIONARY
NEW TECHNIQUE

Scenic Hand Weaning Food™

- THIS PRODUCT SIMULATES ACTUAL PARENT FEEDING BEHAVIOR BECAUSE IT CAN BE HAND FED.

- HOT AND WET



Now there is a revolutionary new hand weaning technique that provides a safe and smooth transition between syringe feeding and adult foods.

Parent birds hold pieces of food in their beaks to teach fledglings to eat. Use of this all new **Hand Weaning Food™** from Marion Zoological allows humans the privilege of doing the same thing while teaching young parrots important eating skills not possible with syringes or spoons.

Scenic Hand Weaning Food™ simulates hot and wet regurgitated food, but maintains its firm shape while being hand fed to the young fledgling.

Baby birds quickly associate your loving human hands with nurturing and sustenance and as the providers of affection, love and care.

Healthy life giving eating habits begin BEFORE chicks are weaned !

Help your young parrot develop the physical coordination necessary to successfully manipulate adult food.

This creative food is **NUTRITIONALLY COMPLETE AND BALANCED** and is available in both a cereal and a fruit base.

Now it is finally possible to introduce and imprint your new fledgling to a superior and all natural food while you enjoy the pleasures of bonding and socialization not possible with any other technique.

Information on Scenic Hand Weaning Food™ and Abundance Weaning™ can be obtained from the company.



MARION ZOOLOGICAL INC., 13700 B WATER TOWER CIRCLE,
PLYMOUTH, MN 55441 800-327-7974

Hand Weaning Food is a registered trademark of Marion Zoological Inc.
Abundance Weaning is a registered trademark of Santa Barbara Bird Farm.

Post-release Behavior and Movements of the Bali Mynah

(*Leucopsar rothschildi*)

by Mark S. Collins and Thomas B. Smith, Ph.D.
Department of Biology, San Francisco State University

and vegetables, apple being their favorite. They would see me feeding the other chicks in the nursery, and beg and scream for their share. The chicks just love their Trix breakfast cereal. I think this is because of the different shapes and colors they now come in, and this seems to amuse the chicks. By August 30, they were both weaned and eating on their own.

The two baby feathered Tui Parakeets look just like the adults, except for the juvenile eye coloring. At first their iris color was dark, but at 12 weeks of age their iris lightened up to a yellowish-gray color. It still will be a while until they obtain their bright golden colored eyes. Presently the adult pair is showing no interest in returning to nest. Many *Brotogeris* only produce a single clutch a year. I am very pleased and happy with the twosome from this season, and I have high hopes for producing more!

On February 11, 1993 I had the two young Tui Parakeet chicks surgically sexed. The two ended up to be a pair, a male and a female. This has worked out quite well as I had an extra male. The young hen and the older male have now been set up for breeding. I am sure she is too young to produce this year, but at least they get along very well. They seem to really like one another. Maybe next year this pair will produce chicks. I do know that Grey-cheeked Parakeets that are also from the *Brotogeris* family have produced eggs and chicks for me at nine months of age. So anything is still possible. ●

Editor's Note: The Bali Mynah release project was funded in part by AFA with a major portion donated by an AFA member club, West Valley Bird Society of Southern California.

Abstract

The Bali Mynah is critically endangered, with only 34 birds left in the wild. Without supplementing the wild population, the species is likely to go extinct on Bali in the near future. Using captive Bali Mynahs, we will release birds into native habitat and assist them in their transition to the wild. The information gained from this conservation project will advance the science of reintroducing zoo-bred animals to the wild and has direct applications to planned captive-releases of endangered forest birds in Hawaii, the Caribbean, South America and Africa.

Introduction

Captive propagation of endangered species and reintroduction into native habitats is a management technique that is integral to the Species Survival Plans (SSP) developed by zoological parks and various governmental agencies (Temple 1978, Scott 1987). Usually reserved as a preservation effort of last resort, captive propagation can "buy time" for an endangered species, allowing implementation of more long-term conservation techniques. If captive-bred birds are to be successfully released, life history and behavioral aspects must be addressed (Wiley *et al.* 1992). For example, group size for social species may be essential for successful foraging and mate selection. Additionally, a period of pre-release physical conditioning and behavioral training may be required (Wiley *et al.* 1992).

For small to medium sized birds, however, relatively few studies have focused on these aspects (Ferguson *et al.* 1991). The behavioral transitions that a captive bird must make from life in an aviary to the wild are little known, but likely profound. It is essential, therefore, that the behav-

ioral aspects of captive-released birds be documented and as much information as possible on the life history of the wild populations be obtained. Information gained from such a study may be of value not only for the endangered Bali Mynah as outlined below, but will have applications to future captive propagation programs elsewhere. For example, major efforts are now under way for the breeding of Hawaiian Honeycreepers and work is on-going to breed the critically endangered Hawaiian Crow *Corvus tropicus* (F. Duval pers. comm.).

Background and Justification

The Bali Mynah *Leucopsar rothschildi* is critically endangered and the only endemic bird found on the island of Bali. With white plumage and mask of naked blue skin, the Bali Mynah is regarded as the world's most stunning representative of the Sturnidae family (King 1978). Referred to by a variety of common names including Bali Mynah, Bali Starling, Rothschild's Mynah, or jalak putih as it is known by the Balinese, this handsome bird was declared the provincial symbol of the island in 1989 (ICBP 1992).

Historically, populations were believed to be confined to dry savanna forest habitat in the north-west section of the island (ICBP 1992). Currently, the wild population is in decline with approximately 34 individuals located in a small section of native dry savanna forest, within Bali Barat National Park on the west end of the island (van Balen 1993).

Individuals are easily maintained in captivity, a fact that ironically has led to the near extirpation in the wild. In the 1960s, the Bali Mynah was trapped intensively to supply the demands of Indonesian, American and European private aviculturists. In 1966, the International Union for the Conservation of Nature and Natural Resources (IUCN) listed the species as endangered. The Indonesian government responded with a 1971 law prohibiting hunting, capture and export. However, this law has proven to be difficult to enforce. Whereas the wild population declined

AMAZON JUNGLE SAFARI

October 8 - 15, 1994

Escorted by Daniel Brooks
from the Houston Zoo

Explore Amazonia with naturalist and ornithologist Daniel Brooks. Walk through the treetops on the only canopy walkway in the Americas and get a bird's eye view of the forest! Travel on the Amazon and Napo Rivers, explore virgin rainforest, fish for piranha, visit native villages and see pink dolphins, monkeys, sloths, orchids, giant lilies and much more! Add exotic bird species to your life list, such as: hoatzins, toucans, macaws, parrots, horned screamers, tanagers, cuckoo, potoo, trogons, manakins, cotingas, guans and more. Have fun and learn while staying in exotic jungle lodges, located in remote nature reserves, where great wildlife viewing just comes naturally!

Only \$1795 from Miami.

(Low cost, add-on airfares available.)
Extension to the Andes and Machu Picchu available!
Call Explorations, Inc. for a free detailed brochure.



1-800-446-9660