

Toucan Talk

The tropical rain forest is divided into layers—the emergent layer, upper canopy, lower canopy, the understory and the forest floor. Climatic conditions promote the growth of an infinite variety of plants that provide food and shelter for the huge assortment of animals that live there. Predator and prey are interconnected in a complex web of life that exists nowhere else on earth.

How important are plants to *our* lives? The list of products and materials we derive from plants is enormous: Fruits, vegetables, fuel, building materials, cosmetics, resins, medicines, and decorative materials all come from plants. Besides these products, plants also absorb carbon dioxide, produce oxygen, keep the topsoil in place, and help maintain climatic stability. In short, plants are of vital importance to human existence.

How much of the earth's plant life is in the rain forest? It is difficult to determine an exact percentage because so much of the rain forest is still unexplored and unclassified. However, consider the following:

- 80% of the world's diet is derived from rain forest plants.
- 50% of modern medicines come from the rain forest.
- Most homes in the developed world contain something made from a tropical hardwood or vine.
- Chocolate, coffee, and rubber are part of our everyday lives.
- The bromeliads, ficus, ferns, epiphytes, and heliconia we plant and nurture in our homes and yards originated in the rain forest.

Rain forests provide us with so much already, but even more important are the products that may be harvested from the planetary storehouses in the future.

The heart and soul of the rain forest: Plants

Botanists tell us that more than 1,500 new types of fruits and vegetables may be available for commercial harvesting in coming years. As many as 2,000 rain forest plants may contain anti-cancer properties and other species may provide new drugs to combat hypertension, schizophrenia, heart disease and AIDS.

Latex, camphor, resins and dyes by the score are already in use, and others could be utilized soon. The babassu palm produces a fruit that is over 70% oil, and that oil can be used to produce fibers, cattle feed, soap, starch, and many other useful products. The oil can also serve as a substitute for diesel oil. Another tree found in the Amazon basin produces a sap that is so similar to petroleum, that it can be burned in a diesel engine *straight from the tree!*

Why don't we just cultivate huge plantations of these useful trees and plants? Many of the trees and plants of the rain forest are scattered widely throughout the forest and are therefore very resistant to disease. When grouped together in plantations, many of these trees fall prey to a variety of fungus or disease strains. At the same time, clearing forests to start plantations would mean the destruction, and possible extinction,



of many species of plants that have not yet been identified, plants that may hold even more promise for the future.

The only alternative is to use the forest in a sustainable manner, to *harvest*, the way the rubber tappers and Brazil nut collectors have done for generations. This can only happen if the rain forests are preserved. Ninety percent of the market value of the rain forest is in the fruits, vegetables and latex it produces, and the destruction of the forest for timber or for agricultural purposes erases these valuable resources.

We hope you have enjoyed this series of articles on the rain forest, written by our Associate Director of Education, Judy Jones, M.S., Ed. When Metrozoo's rain forest exhibit is completed, it will be a constant reminder that we are the caretaker's of this fragile planet; human greed and reckless disregard for the environment must be curtailed if we are to survive and preserve our beautiful world.

If you would like to share the important rain forest message with your children, our education department recommends the following books:

- *The Great Kapok Tree* by Lynne Cherry.
- *Atlas of Environmental Issues* by Nick Middleton.
- *Going Green* by John Elkington, Julia Hailes, Douglas Hill and Joel Makower.
- *Jungle Rescue* by Christina G. Miller and Louise A. Berry.

ATTENTION ALL CHOCOLATE LOVERS: THIS IMPORTANT MESSAGE IS FOR YOU!

Chocolate is an integral part of our American culture, something wonderful that we all take for granted. Yet how many people are aware that our only source of chocolate is the cacao tree, and the only place it grows is in the rain forest! If global warming, the greenhouse effect, or extinction cannot carry the message that we must stop destroying our valuable rain forests, perhaps the fact that we may lose our source of chocolate will have an impact—at least on the 95% of the world's population that has a sweet tooth.

Chocolate is a food made from the seeds of a tropical tree called the cacao. The word chocolate comes from two Mayan words meaning "warm beverage." The cacao tree produces the seeds, or cacao beans from which all chocolate is made. These trees flourish in the warm, tropical, moist climate of the rain forest. Most of the world's cacao beans come from West Africa, where Ghana

and Nigeria are the largest producers. Brazil is the largest cacao bean producer in the western hemisphere.

The cacao tree grows about 25 feet high. It produces leaves, flowers and fruit in all seasons of the year. The flowers are small and grow singly or in clusters on the branches and on the trunk. The ripe fruit, or pod, may be red, yellow, golden, pale green,

or a combination of these colors. The pod resembles a long cantaloupe and contains 20 to 40 almond shaped seeds. When fermented and dried, these seeds become the commercial cacao bean.

Workers cut the pods from the trees; gather them into heaps; cut them open and scoop out the beans. The beans are then placed in piles, covered with banana leaves, and allowed to ferment. After fermentation, the beans are dried in the sun or in artificial heat to prevent mold. Workers then place them into bags for shipment.

Chocolate serves as both a confection and a food. It has a pleasant and very popular flavor. It ranks high in food value, because it contains a high concentration of energy-producing compounds. People whose work requires physical endurance such as soldiers and athletes rely on chocolate as a source of quick energy. Chocolate also contains small amounts of caffeine and theobromine. Both of these alkaloids have a mild, stimulating effect on the nervous system.

Historians do not know how long the Maya Indians of Central America and the Aztec Indians of Mexico cultivated cacao beans. Botanists believe the cacao tree originated in the Amazon-Orinoco river basin in South America. It is in this area and the upper Amazon tributaries that botanists and geneticists are searching for original types of cacao which may have resistance to the diseases that plague this tree in civilization.

Chocolate is popular in most parts of the world. Americans eat more chocolate than any other people and Germany, Great Britain, France, the Netherlands, and Switzerland are also large users. If you needed a reason to be concerned about the destruction of the rain forests—we think you will definitely agree, this is serious food for thought!





Officers and Directors elected for 1991-1992

The election of the Board of Directors was held in August, and the Board of Trustees is proud to present the following slate of officers and directors for the coming year:

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Run for the rain forest... the tenth annual Jungle Jog is coming

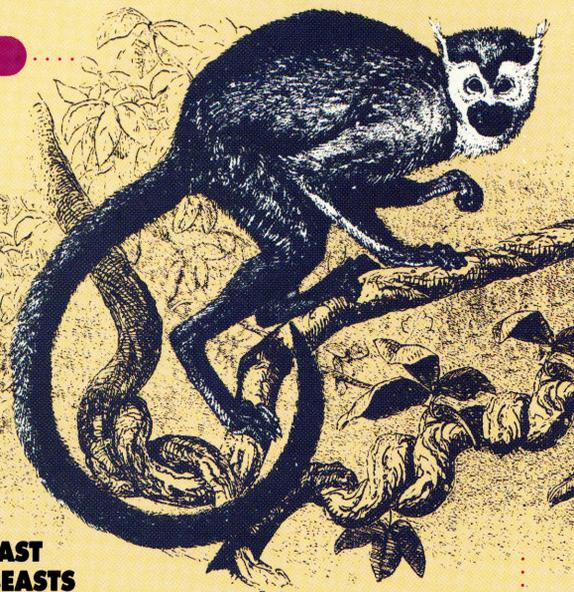
If you gallop like a gazelle, zip like a zebra, or are as slow as a snail, you belong at the zoo on Sunday, January 12, 1992 at 8:00 am for the 10th running of the Jungle Jog. Sponsored by Baptist Hospital and Bud Light, Jungle Jog is open to all ages and is the largest family-oriented race in South Florida, drawing over 3,000 participants.

The morning's events include the five-mile state sanctioned championship run, open to men and women in fourteen different age categories, teams and wheelchair; a five-mile judged race walk and a two-mile fitness walk open to all ages. Prizes include:

- Cash to the top open and masters finishers of the run, the wheelchair and race walk.
- 130 special awards and ribbons to second and third place finishers in all categories.
- Special awards to the oldest runner, the youngest runner, and the best individual and team animal costume entries.
- All entrants are eligible to win a trip for two to the rain forest of Belize, courtesy of American Airlines and Ramada Inns.
- A special award will go to anyone who brings to the race all ten years' of Jungle Jog tee shirts.

For a \$12 advance entry fee (\$15 the day of the race) the first 2,000 runners receive a special commemorative Jungle Jog t-shirt. These shirts have become collectors items. Plus all runners and walkers get free refreshments at the finish line and free entrance to the zoo for the day.

Please call the special events department at 255-5551 for registration information. See you there!



THE FIFTH ANNUAL FEAST WITH THE BEASTS

"The best event in Miami"

Miami Today Magazine

"The best organized event... and just plain fun"

The Miami Herald

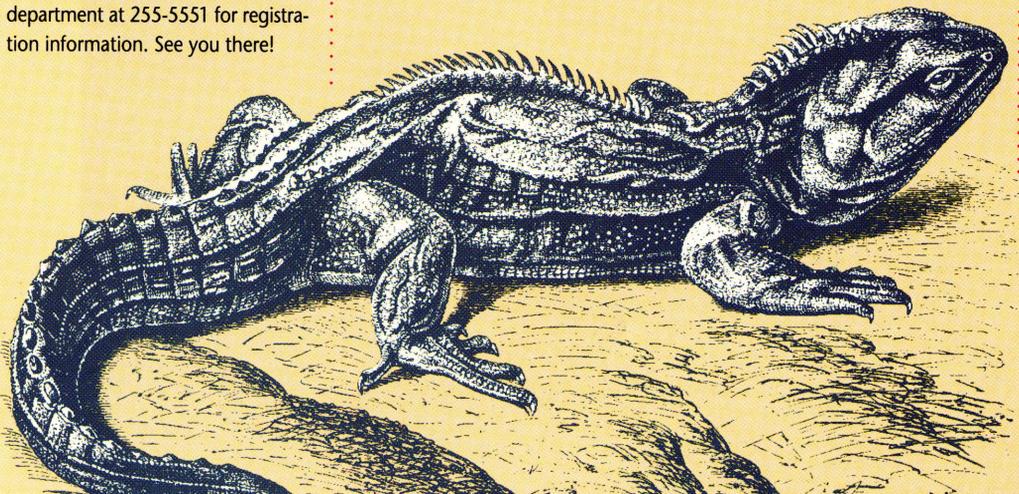
Feast With the Beasts, sponsored by the American Express® Card, is just around the corner! On Friday, March 13, 1992, our largest fund raiser will transform Metrozoo's pathways into a tropical rain forest, aglow with lights and festooned with decorations. Bev Assmar, Feast With the Beasts Chairman, Jacki Gran, Art Director, and the Feast committee members are applying their jungle genius to create the "Night of the Jaguar."

Our fifth annual fete will continue the culinary tradition and feature forty of Miami's finest restaurants serving their best dishes. Guests will enjoy non-stop entertainment of all kinds, climaxing with a concert in the amphitheater followed by dancing at the dessert service area.

Through the generous sponsorship of American Express, contributions by the restaurants and drink providers (over 80 percent of the goods and services donated), and the support of 100 volunteers, Feast With the Beasts has raised nearly \$500,000 toward Metrozoo projects in four years. The funds raised at this year's event will be dedicated to the zoological Society's newest project, the Batchelor Foundation Rain Forest Exhibit.

If you haven't attended Miami's premiere event of the season, we assure you, it gets better and better every year. General admission tickets are \$150 per person. For a \$500 donation, our special Beastkeeper patrons enjoy distinct recognition and an exclusive pre-event cocktail reception to kick off the night's festivities.

Tickets are limited to the first 1,000 guests. Call 255-5551 and use the American Express® Card to reserve your Feast With the Beasts tickets.



JEWELS OF THE NEOTROPICS

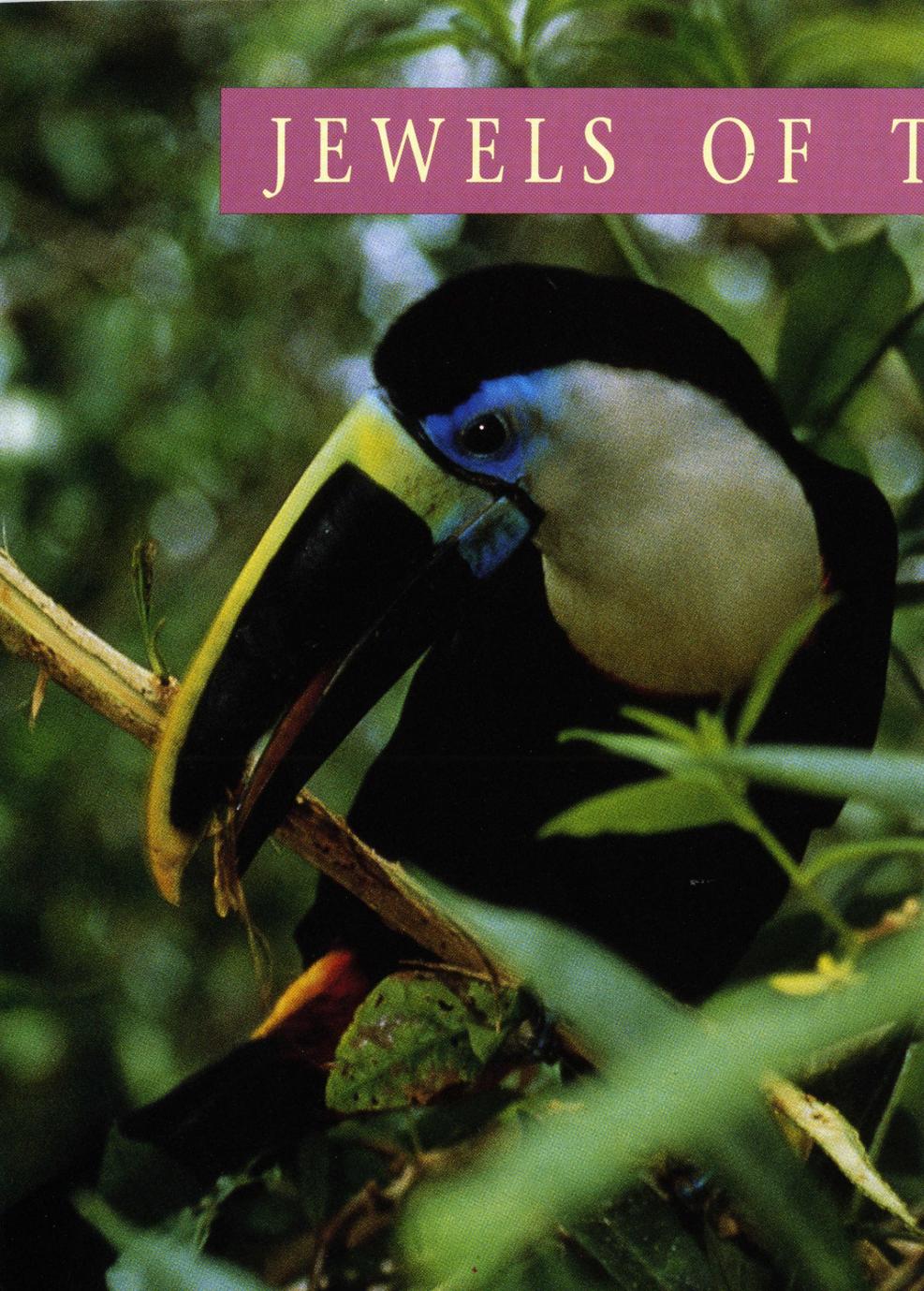
by Ron Johnson, *Curator of Birds*

BIODIVERSITY is the in-vogue environmental mega-term of the nineties, and is used to describe the numerous organisms that cohabit the tropics.

The birds of the neotropics certainly fit this expression of biodiversity. Clearly, one third of all bird species (over 3,000 species) exist in South America. Over 850 genera in almost 100 families comprise the avian fauna. Specialization occurs to fit the mosaic of plants and micro habitats that are layered vertically throughout the forest.

For example, more than 300 species of flycatchers, humming birds and parrots are located in South America. Two major feeding adaptations have evolved to allow the majority of species to eat—birds that are insectivorous and those that are frugivorous. Some do both, or at certain times in their lives adapt to one system or the other. Foraging techniques determine whether a bird is a plant predator or disperser. Both are important. Evolution marches on, like a long, deliberate chess game with bird and plant on opposing sides. One cannot exist without the other.

Enough of the reasons why the neotropics are exciting from a biological perspective. What about color, vision, activity, and song, those attributes one envisions when thinking about tropical birds. How does one translate this diversity into a free flight South American aviary? As in the "Wings of Asia," each species must be considered a "living" ambassador fulfilling one of the assorted roles. The South American free flight exhibit will be most



TROPICAL RAIN FOREST

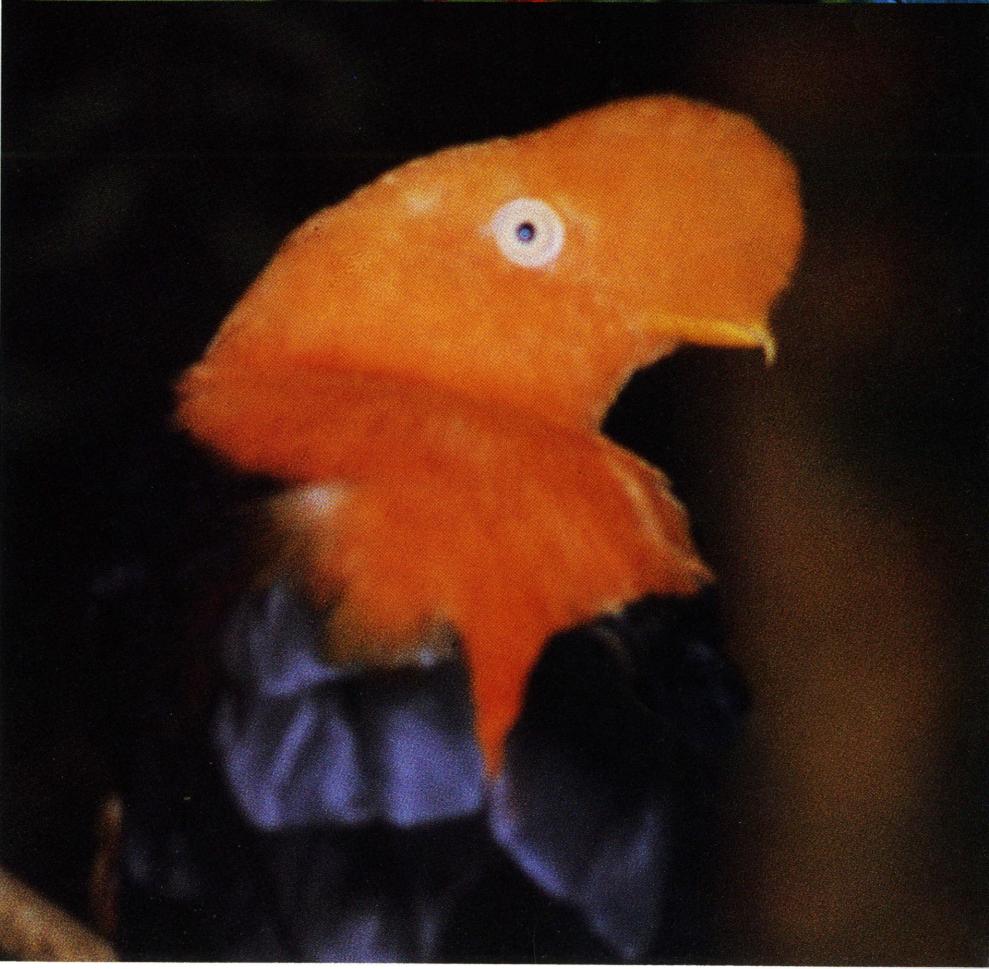
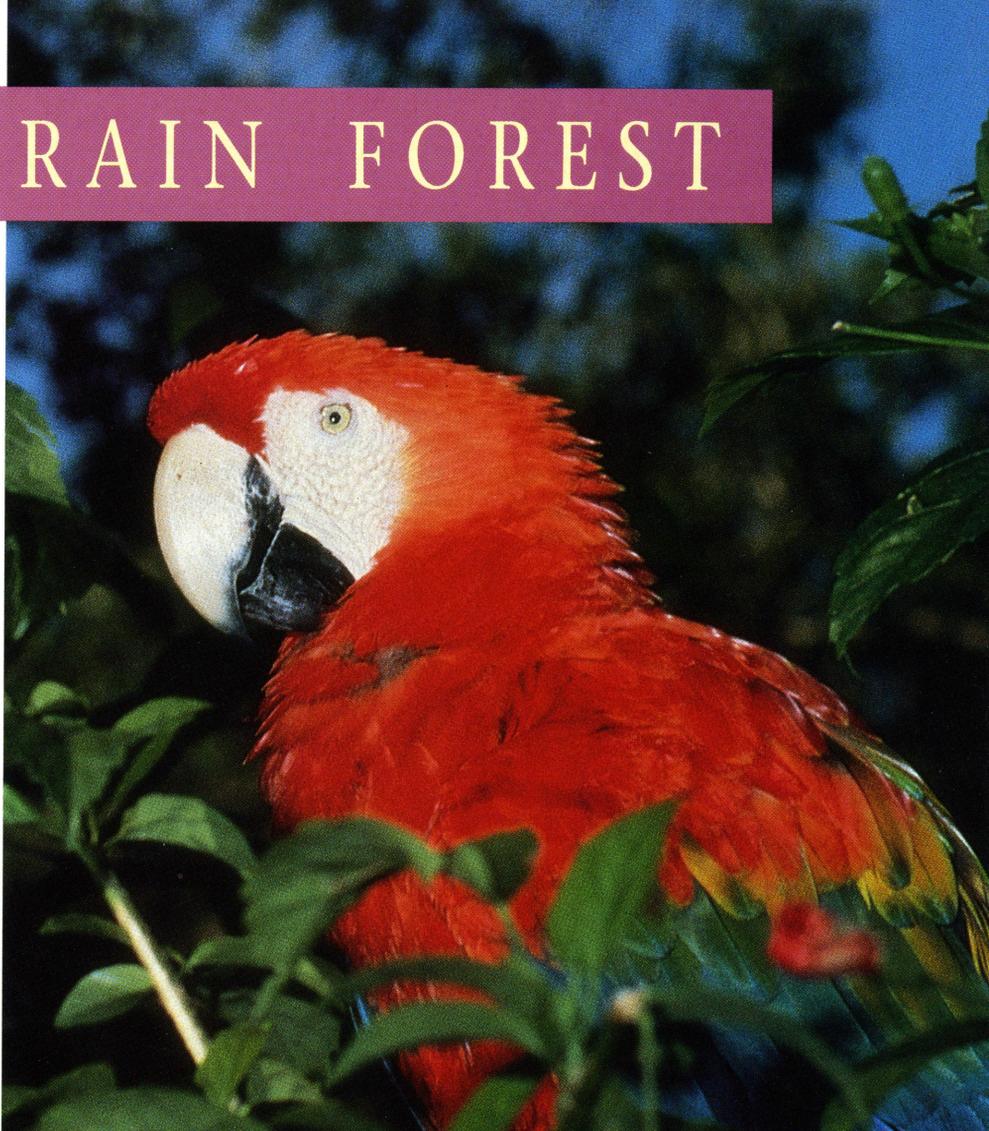
unique because of the size of species that will be exhibited. By utilizing a small mesh size screen, smaller, often more colorful birds can be presented.

However, as we know from the Southeast Asian tropical birds, the rain forest does not give up its beauty easily. By careful planting and landscaping, we can bring these treasures down to eye level. Using heliconias, those exquisite flowers that provide nectar, or wild fruits such as avocado, the natural feeding behaviors can be observed. Through diligent management, many species can live together in close proximity.

One of the most spectacular birds we hope to exhibit is the brightly colored cock-of-the-rock, whose lek breeding display rivals even the birds of paradise. Others include the elegant trogon, and the many vibrant tanagers who are always busy. One cannot think about South American birds without displaying toucans and parrots. Due to their aggressive nature and destructive tendencies, these species will be carefully chosen and conditioned into the aviary. Some species, such as hummingbirds or predatory raptors, will be given separate housing to enhance their viewing.

All in all, the wonders of the tropics will come to life as you walk along the paths immersed in the textures, sounds and fragrances that comprise the biodiversity of the rain forest.

above left: Toucan
(photo by William Boehm, International Expeditions)
lower left: Golden Conure
above right: Green Wing Macaw
right: Andean Cock-of-the-Rock



Enter the hidden world of the rain forest

Travel with fellow zoological Society members and experience the earth's natural treasures. Each of our trips is fully escorted by trained naturalists familiar with the flora and fauna of the region. In addition to exploring nature, each expedition also schedules time in some of the world's great cities, allowing you time to take in theaters, museums and cultural tours wherever possible.

EXPERIENCE COSTA RICA'S RICH DIVERSITY of wilderness areas including tropical rain forest, cloud forest, and tropical dry forest from the Caribbean shoreline to the Pacific. The 10-day expedition departs February 14–February 24, 1992 and is \$1,995 including round trip air fare from Miami.

VISIT THE WORLD'S OLDEST RAIN FORESTS on our 17-day expedition to Borneo and view rare inhabitants such as the orangutan, proboscis monkey and monitor lizard. You'll explore Borneo's largest, most pristine national park, Taman Negara, Kinabalu National Park at the base of the 13,000 foot Mt. Kinabalu and the untouched forests on Sarawak. At Sandakan, you'll visit the Sepilok Orangutan Sanctuary, where orphaned

orangans are helped to return to the wild.

You'll also learn about the people of the rain forest, the Orang-Asli, Malaysia's aboriginal hunters and gatherers and stay overnight with the Dayak, who have left behind their head hunting past. In Kuala Lumpur, you'll experience the blend of traditional Islamic culture and modern Bornean life as you explore this city's riches. Departing October 16–November 1, 1992, \$3,798 per person from Miami.

CRUISE THE AMAZON ON OUR 10-DAY EXPEDITION to Ecuador and the Amazon. Experience this beautiful country's diverse history and cultures in Quito and Cotopaxi before you enter the virgin jungle. There you'll see thousands of species of plant and animal life as you explore this pristine ecosystem from your base aboard ship. You'll be led by a Cofan Indian guide who will share the rain forest and his own culture with you in an experience like no other. Departing November 9–November 18, 1992, \$1,995 per person from Miami.

OUR 13-DAY KENYA SAFARI will take you to see the richest abundance of large animals on the planet. You'll see the annual migration in the Masai Mara and Serengeti, travel to Samburu in the northern province and to a tree hotel in Mount Kenya National Park. This once in a lifetime experience departs July 10–July 22, 1992, at \$3,850 per person round trip from Miami. The 7-day optional

extension to Zimbabwe returns July 29, 1992 and is \$2,795.

TAKE OUR 13-DAY ALASKAN WILDLIFE TOUR to escape the South Florida heat. Cruise aboard ship to experience the prime summering grounds of humpback whales and magnificent glaciers along the Alaskan coast. In Denali National Park, you'll glimpse grizzly bear, caribou, wolves, and moose. You'll take with you wonderful memories of Alaska's abundant wildlife as well as its cities, the frontier towns of Fairbanks and Anchorage, where half of Alaska's population resides. Departing August 13–August 25, 1992, \$2,295 round trip from Miami.

OUR 15-DAY AUSTRALIAN EXPLORER will show you the wonders "down under." The Great Barrier Reef, Lamington National Park, the Koala Sanctuary at Lone Pine and the Healesville Wildlife Sanctuary. In addition to enjoying Australia's forests and ocean, you'll experience her culture in the cities of Sydney, Melbourne, Cairns, and Brisbane. Departing October 4–October 18, 1992, \$4,295 per person from Miami. The 10-day optional tour extension to New Zealand returns October 28, 1992 and is \$1,795 per person.

For more information and a complete itinerary on any of our trips, please call the travel coordinator at 255-5551.

Dr. Alan Rabinowitz to lecture at Metrozoo

Dr. Alan Rabinowitz, a leading expert on the world's large cat species and their conservation needs, will lecture at Metrozoo on Friday, November 8, 1991.

Dr. Rabinowitz received his Ph.D. in Wildlife Ecology in 1982 and was recruited by George Schaller to study jaguars in Belize for Wildlife Conservation International, a division of the New York Zoological Society. In Belize, he succeeded in establishing the world's first jaguar preserve. In 1990, the reserve was tripled in size and declared a national park.

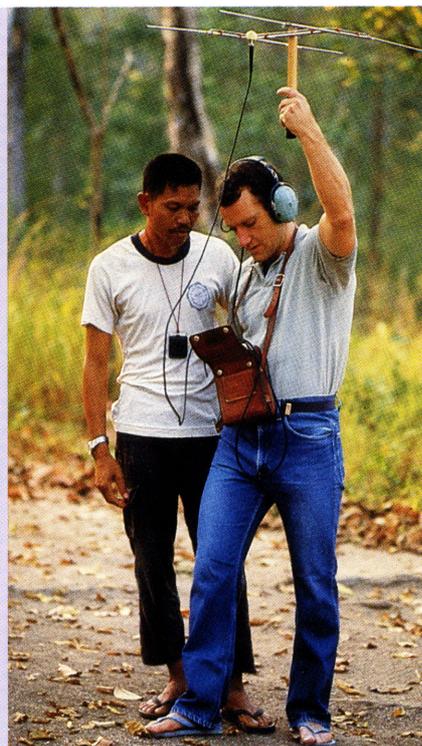
After Belize, Dr. Rabinowitz conducted a survey of the mysterious clouded leopard in southern Taiwan that quickly led to the creation of the Tawu Mountain Sanctuary, almost two percent of the entire island's surface area.

In 1987, Dr. Rabinowitz moved to Thailand to conduct studies of several species of carnivores in Huai Kha Khaeng Reserve, including tigers, Asiatic leopards, and civets. While training Thai wildlife managers and graduate students, a solid base of information on the cats was established so the species and their legally protected areas could be more effectively managed and conserved.

Dr. Rabinowitz has also completed conservation work in Sarawak and Sabah states in Malaysia, and recently traveled to the People's Republic of Laos to investigate conservation needs and establish a rapport with outside conservation groups.

Dr. Rabinowitz is an outstanding speaker and has lectured throughout the world. He has battled poachers, fire ant infestations, and elephant stampedes, and his adventures were fraught not only with physical struggles, but emotional ones.

Please join us on Friday, November 8, at 6:30pm and share the exploits and achievements of a very determined man.



Dr. Alan Rabinowitz teaching Thai assistant, Soowan, to radio track.

November/December, 1991

The holiday season is approaching and we know that everyone is busy, but we encourage you to look over the programs we are offering and take a "time out" from your schedule to visit the zoo. Many of the programs have limited space and some require a minimum number of participants to run. Please — insure your space in the program by registering in advance.



PROGRAMS FOR FAMILIES

Weekend Adventure: MEALTIME

(Age 10 to adult)
Do you know what to feed a tiger to keep it healthy and happy? How about a giant tortoise, otters, or flamingos? Our November Weekend Adventure will give you the opportunity to see, smell, even taste some of the foods our animals love to munch.
Date: Saturday, Nov. 16, 1991
Hours: 10:00am–noon
Fee: Members \$5.00
Non-members \$8.00
(Does not include zoo admission.)

Family Film Festival

(Not recommended for pre-school children; children must be accompanied by an adult)
Bring the family to our classrooms for a special showing of wildlife films and some educational activities. We supply the popcorn and soft drinks. Call the Education Department at 255- 5551 for specific titles.
Date: Sunday, Nov. 17, 1991
Hours: 12:30–2:30pm
Fee: Members \$3.00,
Children \$1.00
Non-members \$4.00,
Children \$2.00

PROGRAMS FOR ADULTS ONLY

(No children, please!)

Wildlife Conservation Seminar (WCS)

This series of monthly lectures, followed by refreshments and discussion, is designed to provide information about wildlife and the environment in an informal setting.

NOVEMBER:

Jungle Cats

Dr. Alan Rabinowitz of Wildlife Conservation International is one of the world's foremost experts on large cats. He has led field research in Belize, Malaysia, and Thailand to study a variety of big cats in their natural habitats. His work has resulted in the establishment of preserves in several countries, development of wildlife management programs, and the publication of two books: *Jaguar* and *Chasing The Dragon's Tail*.

This lecture, made possible through the generosity of Wildlife Conservation International, Doubleday, and Global Action, will provide great insight to big cats such as the tiger, clouded leopard, and jaguar. Don't miss it!
Date: Friday, Nov. 8, 1991
Hours: 6:30–9:00pm
Fee: Members \$15.00
Non-members \$20.00

PROGRAMS FOR CHILDREN

(Please observe age limits)

Mini Camp

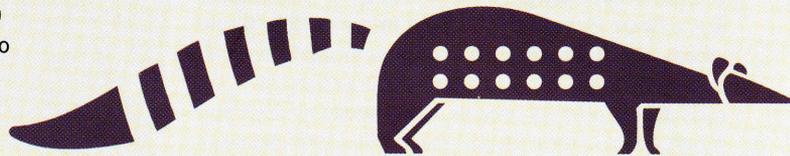
We have scheduled several sessions of our popular one-day camps to coincide with school vacation days. The camps are open to students in grades 1 through 4 and each day's activities center on an animal or conservation theme. Crafts, games, films and visits with animals are all part of the fun. Each camper must bring a sack lunch, a snack is provided. Space is limited.

Dates: Friday, Nov. 8
Monday, Nov. 11
Monday, Dec. 30
Tuesday, Dec. 31
Thursday, Jan. 2
Friday, Jan. 3
Hours: 8:30am–3:30pm
Fee: Members \$25.00
Non-members \$30.00

All four December–January dates:
Members \$75.00
Non-members \$95.00

A.I.R. Scouting Program (Grades 1–12)

This program is designed to help scout groups and their leaders learn about the functions of modern zoos, conservation of wildlife, and the animals at Metrozoo. Participants receive the A.I.R. (Awareness, Interest, Respect) patch. Scout leaders, contact the education department to reserve space.
Dates: Saturday mornings
September–June
Hours: 9:00–11:30am
Fee: \$12.00 per person
(1 chaperone per 8 scouts is free)



Programs may be cancelled without sufficient enrollment. Please call for reservations.

Register Here

Please send registration form and a check or money order with a self-addressed envelope to:

Education Department, Zoological Society of Florida
12400 S.W. 152 Street, Miami, Florida 33177-1499 • (305) 255-5551

Participant's name
Street address
City State Zip
Home phone Business phone
program(s) Date Fee \$
..... Date Fee \$
Member membership # Non-Member Fee \$
 Mastercard Visa American Express
Expiration Date (important!)
Card # Signature

For children's programs, please complete the following:

Parent's name
Student's age Grade in school (as of Sept. 1991)

Registration policy: Advance registration is required for all programs. Registration is by mail or telephone. Program information may be obtained over the telephone, however a reservation is contingent upon payment. Fees may be paid by check, money order, cash, or Visa/Mastercard/American Express. A confirmation letter will be sent upon receipt of payment.
Cancellations: All fees are non-refundable. Cancellation notices must be received at least 3 business days prior to the actual program date in order for credit to be accrued. Fees then may be transferred to another program. You may transfer to another program only once without losing your payment and the transfer must occur within 2 months.



Put a Little Something in Your ZOO-logical SOC-iety This Year:

Consider These Gift Ideas...

We all know someone who presents the same problem year after year; what kind of gift do you buy for the person who has everything? Your Society would like to offer the following unique gift suggestions.

Toucan Trader Gift Shop

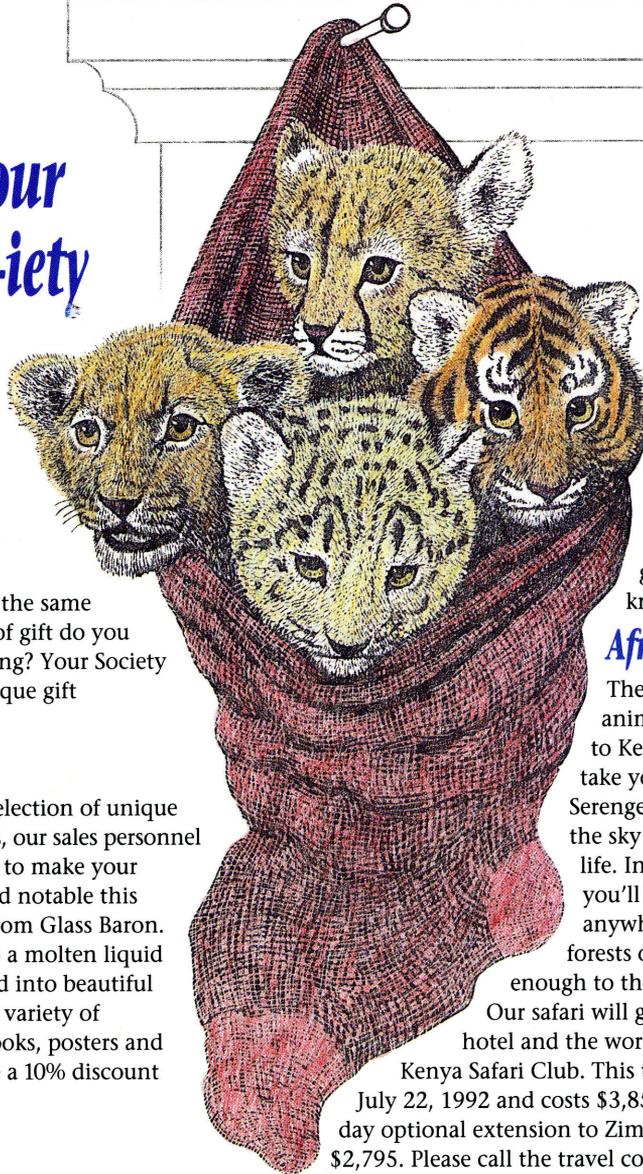
Our gift shop is famous for its fine selection of unique merchandise and during the holidays, our sales personnel put their talents to work in an effort to make your shopping easy, fast and fun! New and notable this holiday season are glass sculptures from Glass Baron. Borosilicate glass is transformed into a molten liquid which is individually hand fashioned into beautiful animal designs. We also offer a wide variety of collectibles, stuffed animals, toys, books, posters and much, much more. Members receive a 10% discount on purchases of \$10.00 or more.

Gift Membership

What a terrific idea for a family or friend—this is truly an investment in fun! A gift membership offers so many great benefits, the best being free admission to the zoo for a whole year. Your friends will also receive money saving discounts on other community attractions; our bimonthly newsletter *Toucan Talk*, plus additional savings on our education programs and in the zoo's gift shops. Give the gift that keeps on giving all year long.

Be a Friend

Enroll your friend in our "Be A Friend" program for the benefit of the more than 2,000 animals at Metrozoo. Participation in this program helps maintain our world class animal collection and think how much fun it will be matching human traits with animal traits. Is your friend a lion, an elephant, or perhaps one of our beautiful aviary birds? Let your imagination run wild this holiday season!



Education Programs

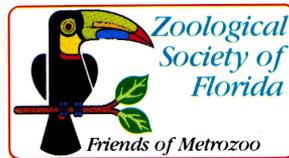
Our education department is constantly developing new programs to entertain, involve, and teach. Youngsters, adults, and families will find a topic in our curriculum to satisfy their intellectual curiosity. Call our education department today and give someone the precious gift of knowledge.

African Safari. July 1992

The ultimate gift to yourself and your animal lover is a 13-day wildlife safari to Kenya. Our African experience will take you to the Masai Mara and the Serengeti, where everything – the earth, the sky and the animals – is larger than life. In the scrublands of Samburu, you'll discover wildlife not seen anywhere else in Kenya and in the forests of Mount Kenya, you'll come close enough to the animals to hear them breathe.

Our safari will give you the experience of a tree hotel and the world class luxury of the Mount Kenya Safari Club. This trip of a lifetime departs July 10–July 22, 1992 and costs \$3,850 round trip from Miami. The 7-day optional extension to Zimbabwe returns July 29 and costs \$2,795. Please call the travel coordinator at 255-555.

Toucan Talk is the bi-monthly newsletter of the Zoological Society of Florida, a non-profit organization supporting Miami Metrozoo. Editors: Sally Liddell and Judy Jones • Design: Shank Design



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