

ISSN 1188-2425

RAPHIA

**The Canadian Organization for Tropical Education
and Rainforest Conservation (COTERC)
Newsletter.**

VOLUME 3, NUMBER 2, SPRING, 1994

NEWS FROM CANO PALMA

The directors of COTERC have long recognized that the responsibilities and duties required of the Station Manager at Cano Palma Biological Station are onerous and very demanding. Greg Mayne, our first Station Manager, coped very well and we want to thank him for his tireless efforts on behalf of COTERC. We wish him all the best in the future.

Pat Opay was appointed as Greg's replacement in September, 1993 and has done a very capable job. The directors feel that we have now reached a stage where a second individual is needed in order to further the objectives of COTERC within Costa Rica. Pat comes very highly qualified with an M.B.A. in business management, as well as an MS in conservation biology and sustainable development from the University of Wisconsin and will assume the role of

Scientific Officer. Pat will be responsible for developing and expanding our relationships with Costa Rican educational institutions as well as government agencies, and will develop environmental education programmes, both at the Station and within the local community. He will also assist visiting researchers and students, not only with their research but also to obtain the necessary permits from the Costa Rican authorities.

The role of Station Manager will be assumed by Daryl Loth, of Toronto Ontario. Daryl, who has a B.A. Honours degree, has experience operating a fishing camp in Kenya, overseeing the work of 24 employees, as well as a good deal of construction and other practical experience. Welcome Daryl! We feel confident that the combination of Daryl and Pat will benefit the missions of Cano Palma Biological Station and COTERC immensely.

COTERC ELECTS A NEW BOARD OF DIRECTORS

At the annual general meeting, the following were elected as the Board of Directors for 1994/95:-

President - Peter Silverman
Vice-
President - Michael James
Secretary - Elaine Christens
Treasurer - Manon Jenkins
Maurice Christens
Tom Mason
Cathy Ward
Lynn James
Suzanne MacDonald
Ann Russon
Monica Wrobel

ACTIVITIES OF COTERC HIGHLIGHTED AT ANNUAL GENERAL MEETING

At the recent annual general meeting, members of COTERC reviewed the activities of the past year. The following summary of reports presented are indicative of how COTERC has grown and developed.

Education Committee

The Education Committee of COTERC is currently focused on two major goals, namely:

1. Establishing a liaison with local Boards of Education for the purpose of introducing an interactive learning module on rainforest ecology and conservation at the primary and junior grade levels at present

2. Developing our network with other environmental education groups

Negotiations were held with the parents' association and administration at John Fisher School, Toronto Board, to present seven workshops to the Grades 4 to 6. Although this is a French Immersion Centre, the Principal requested presentations in the English language so as to minimize vocabulary comprehension problems. The parents' association approved a \$50 per class donation to COTERC.

Workshops were conducted in volunteer pairs by Julia Murphy, Roslyn Moore, Ann Russon and Deborah Butterfield. Our current slides required compilation, organization and augmentation and our various educational backgrounds and experience in rainforest conservation dictated greater or lesser degrees of research and preparation.

To date, five of the seven workshops have been presented and teachers and students have been very receptive. We have attempted to integrate Toronto Board science curriculum objectives with our presentation. This works very well given the mandate to cover concepts such as species diversity, life cycles, conditions necessary for growth and the interdependence of living things. This guideline will continue to be of great help in both targeting grade

level learning needs and in presenting this package to other schools and school boards.

Additionally, Julia Murphy has presented a workshop at a Pickering school and we have had requests from teachers in Mississauga and Brampton for workshops in the spring.

This has been a time and labour intensive effort. Preparation time is needed to meet different grade level requirements and school organizational issues...this in turn requires volunteer expertise and time. If you are interested in becoming involved, please contact Roslyn Moore at 416-484-8328.

There is a tremendous diversity of comprehension and interaction within and between grade levels and classrooms, dependent upon such factors as individual students' interest and advance preparation. Some students have actually visited tropical rainforests. Others are totally in awe of the subject matter. This makes for a challenging process! We are particularly intent on developing the interactive component to the education process - a sine qua non for the primary level!

Applications for grant funding for curriculum development are underway. We are beginning to collect some resource materials toward a small resource library on rainforest education. As the committee's mandate expands, it will be necessary to reproduce and enlarge our current slide and visual resource collection.

We are pursuing the possibility of a CIDA grant for cross-cultural environmental education in Costa Rica and Canada with the assistance of Dr. Bill Andrews, Ontario Society for Environmental Education. We are also beginning to participate in the environmental education network.

There is a need to:-

- * review the goals regarding liaison with local school boards and to set realistic targets
- * spend time in network building to boost our resource capacity
- * enhance our complement of volunteer speakers and our slide collection, immediately

Research Report

During 1993, Cano Palma Biological Station hosted several scientists and groups from various parts of North America, including the:-

- . University of Toronto, Scarborough College
- . University of Guelph
- . University of British Columbia
- . University of Ohio
- . University of Miami
- . Southern Nazarene University
- . University of California at Berkeley
- . Brookfield Zoo - Chicago

Their studies incorporated a variety of topics ranging from the study of light intensity on tree growth to a survey of the frog and reptile species of the area, to the tent-making abilities of a species of bat prevalent at the station.

We also accepted several volunteers from various parts of the country to assist with our migratory bird monitoring program, as well as general duties like skull cleaning, trail clearing, temperature and rain monitoring, washing dishes, etc.

The new wildlife law in Costa Rica has meant more work for researchers and administrators of COTERC but everyone has adjusted and we are looking forward to an active year at Cano Palma Biological Station.

Executive Director's Review of 1993

Since COTERC was established in 1991, the organization has expanded and developed considerably.

Our membership now stands at 101 members. We will be actively seeking new members in the coming year and expect to expand on this base.

Volunteers are the backbone of a non-profit organization. Without volunteers COTERC simply could not exist and I want to take this opportunity to acknowledge the contributions made.

First of all, our Board of Directors. Peter Silverman, Michael James, Julia Murphy, Tom Mason, Mark Engstrom, Jon Barlow, Ann Russon, Suzanne MacDonald, Monica Wrobel and Chris McGirr. Their input and participation is gratefully acknowledged.

During 1993, Julia Murphy devoted considerable time in developing some slide programs for presentation in Toronto and adjacent schools. I want to take this opportunity to thank her and Roslyn Moore for their efforts on behalf of COTERC.

Elaine Christens has taken on the task of keeping the membership records straight and welcoming new and renewing members. Thanks Elaine for your help.

Cathy Ward has taken on the task of preparing and editing the Raphia newsletter. She would like to invite all members to contribute comments, articles and suggestions as well.

Suzanne MacDonald reviews applications from those who wish to do research at Cano Palma Biological Station and also has taken time out of her very busy schedule, along with her

husband John Turtle, to assist at yard sales, barbecues and bingos.

There are others who have helped out in various ways, either at fund raising functions or on special projects and I would like to acknowledge in particular Margaret Fenwick, Stephanie Gibeault and Katrina Chan.

And last, but by no means least, I want to thank Lynn James. Lynn has been a pillar of support in many ways. She phones me frequently to see if something is needed; she offers good advice and most importantly, she has been involved in every single fundraising function held since COTERC was begun. She has cooked hot dogs; sold drinks; braved downpours to host yard sales; prepared food for our annual picnic and the Annual General Meetings and endured smokey bingo halls week after week.

Fundraising has been difficult in these tough economic times. The corporate sector has been very disappointing, despite a letter writing campaign. It seems that most corporations are cutting back and are not interested in new charities. So, we have continued to develop our own small efforts with several yard sales and barbecues sponsored by Loeb and Super Centre. We have been operating a bingo on every second Wednesday afternoon. Revenues have begun to increase and we anticipate that this form of fundraising will provide the majority of our needs for the upcoming year. In 1994, we will again approach the corporate sector and we will also identify private foundations and funding organizations.

Katarina Chan has taken on the job of publicizing Cano Palma Biological Station to various universities throughout North America.

Meanwhile, in Costa Rica there have been several developments. The new Wildlife Law has created some potential obstacles for students and researchers and Suzanne MacDonald has outlined these in detail in our last Raphia newsletter.

After two years of service, our station manager, Greg Mayne decided that he would return to Canada and can be contacted at #740, 7288 Acorn Ave., Burnaby, B.C. V5E 3A6. In the meantime, Pat Opay has taken over his duties.

Cano Palma Biological Station has grown and developed considerably over the past year. There are now separate small houses for the station manager and the assistant, to afford them privacy. An industrial propane cooking stove has replaced the old wood burning stove. Unfortunately, the original kitchen has succumbed to termites and is in the process of being replaced. We have a septic toilet system now - a much needed addition.

There is also a museum kiosk where visitors from the local lodges, as well as those who stay at the station can receive orientation through printed material and collected specimens, before they go on the trail. Two Canadian volunteers who worked at the station in the fall are developing an interpretive brochure that will be available for a self-guided tour of the Colibri trail, where numbered signs will refer to an explanation and conservation message in the brochure. We have Gareth Thomson and Sylvia McAllister to thank for this.

The influx of tourists who visit the station from nearby lodges has increased dramatically and we will take advantage of these visits to promote our conservation goals, and hopefully garner some donations!

In addition, a B.C. visitor and COTERC member, Norm Krannitz is developing a poster to tell people of our work.

Our COTERC T-shirts are now available in a local souvenir shop, thanks to Antoinette Gutierrez, and we are cooperating with her to provide some funding to develop a playground for the local Tortuguero children.

An important item to mention is that we have developed more formal arrangements with Universidad Nacional as well as Museo Nacional de Costa Rica, to have their scientists and students work at Cano Palma. This should enable us to have a closer working relationship in future with our Costa Rican colleagues and we anticipate expanding our commitment in this area in 1994.

As we enter into our third year of operations, I remain optimistic about our future as a conservation organization. Despite the tough economic times, conservation is still an extremely important issue - one worth sacrifices and hard work. You should all feel proud that you are participating in this effort to save at least one small piece of our planet, and to promote the need for ongoing conservation efforts.

CONSERVATION AND TRANQUILITY - A FIRST HAND REPORT

by Barbara Frost-Flores
A "Proud Canadian"

I met my fellow Canadian, Marilyn Cole by chance through a mutual friend in Costa Rica. Having visited many regions of this glorious country, I had yet to

explore the tropical rainforest. What a great opportunity for me to travel with an expert to discover the wonders of the much talked about tropical ecosystem.

We travelled to Tortuguero via small aircraft. Patrick, the station manager was waiting to transport us by boat to the camp. We journeyed up river for about 30 minutes and our first sighting was a flock of Toucans. How thrilling to see them flying freely across the sky. As we turned into the narrow inlet, the feeling was awesome. Each riverbank reflected on the water; it felt like we were travelling between two worlds. By and by we reached Cano Palmo Biological Station, a beautifully manicured garden ~~was surrounded with flowering~~ shrubs amongst stately palms, flying side by side our Canadian and Costa Rican flags. As we stepped ashore, a sense of peace and tranquillity took over and time appeared to stop.

After a most welcome cup of coffee, Marilyn took me on a tour of the camp. A couple of buildings had been erected since her last visit and she was very pleased with the progress. They have a major problem with termites and the kitchen/dining area had all but toppled over. This was part of the original

property and replacement is planned in the near future. I was escorted to the dormitory, selected my bed with comfy foam mattress and freshly laundered sheets. Although rustic, I was pleasantly surprised. All facilities were comfortable. Bearing in mind, this was my first trip to the jungle, I was jumping at my own shadow for the first couple of hours. But with Marilyn's calmness and true love of her surroundings, I quickly became more relaxed.

Later, we went down to the boat dock. Pat had hung the two hammocks we had brought from San Jose and we stretched out for a little siesta.

A small motor boat passed by and over the noise of the motor, I was startled by several loud roars. Marilyn quickly identified these as Howler monkeys who were obviously protesting the disturbance of their solitude. We grabbed binoculars and cameras and spent the next couple of hours catching glimpses of them moving from tree to tree.

I volunteered to cook dinner as Marilyn set out on her long awaited trek through the carefully planned trails. She invited me to join her, but, I wasn't quite up to it. I felt more comfortable in the kitchen.

Night falls very quickly in Costa Rica and at 5:30 pm it was pitch

black. We ate by camp light, chatted for awhile and I learned more about the research station.

I was very impressed with the dedication of this organization, not only are they faced with hard work in maintaining this property, fund raising topped off with keeping abreast of the changing laws, controls and permit requirements set forth by the Costa Rican government to enable researchers and students to conduct their studies properly. Part of their plan is to interact with the village school, inviting the students for nature walks. A museum is being set up explaining the flora and fauna indicative of their country and create awareness of their goals for the preservation of habitats ensuring ecosystem diversity.

By 9:00 pm, we were ready to call it a day. The sky was ablaze with millions of sparkling stars a sight to behold. We were lulled to sleep by the sounds of the jungle and in the background the constant beat of the ocean against the distant shores.

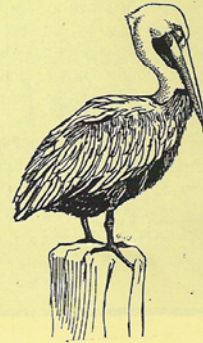
In the morning, we donned our rubber boots and suitable exploring regalia and hit the trails. Marilyn, my trusted guide, led me carefully through the jungle searching and photographing many varieties of plant life. There was little animal activity this trip, but all in all it was a great experience and we

returned to camp for a hearty bowl of oatmeal.

The rest of the day past lazily for me. Patrick and Julio (his assistant) were busily working, so Marilyn and I headed for a stroll on the beach, a somewhat unnerving experience as the path to the ocean side was very overgrown. This is not a recreational beach area. There are dangerous undertow, sharks and barracudas lurking about. There was an overwhelming feeling of sadness to see hundreds of plastic bottles of every variety along the shoreline.

As the day quickly fell into nightfall, we shared dinner, saving a portion of the food. We gathered our flashlights and headed to the river to feed the cayman who promptly appeared for his evening snack.

I left Cano Palmo very early the next morning, grateful for my memorable jungle adventure, feeling very proud knowing first hand that donations made to COTERC are put to very good use.



CONSERVATION NEWS FROM COSTA RICA

extracts from the Tico Times

Lighthawks Fly Costa Rica

A Costa Rican volunteer pilot and his son have joined Lighthawk. Lighthawk is an Arizona based group of environmentally conscious pilots and plane owners that began making annual visits to Costa Rica six years ago to conduct environmental monitoring from the air.

The Costa Rican pilot plans to fly for Lighthawk twice a month. "In my 46 years of flying over Costa Rica I've seen how slowly but surely, the forest is receding... My goal is to take as many people as possible on these trips." He hopes the impact of seeing the destruction of the forests from the air will make people more willing to do something to save the environment.

THANKS TO THE A.A.Z.K.

A very special thank you to the Metro Toronto Zoo chapter of the American Association of Zoo Keepers who have donated the funds to purchase a canoe for Cano Palma Biological Station. For anyone who has visited the station, you will know just how significant this addition will be. So many of you have commented that they wished that it was possible to paddle quietly up and down the rivers in order to observe the animals, instead of having to use an outboard motor boat.

'GREEN' DIRECTORY FOR CONSERVATIONISTS

The National Biodiversity Institute (INBio) and the international environmental organization the Nature Conservancy have published the first annual directory of environmental institutions in Costa Rica.

The directory lists over 170 Costa Rican organizations actively working to preserve the country's natural resources and the environment. It is targeted at all those interested in the conservation of biological diversity, sustainable development and environmental policy.

For information about the directory, contact Renan Chaves at PACA (Central American Environmental Project) at 234-9580 in Costa Rica.

THE POISON DART FROG

by Pat Opray

One of the more common frogs at Cano Palma is the *Dendrobates pumilio* or "poison dart frog". The local Spanish name for this frog is "Ranita Roja".

Dendrobates pumilio is a very small frog (about 24 mm snout to vent length in adults). It is recognized by its relatively bright red body and smooth or slightly granular red dorsum. The hind legs are either red or partly or entirely blue or black. This frog is one of the three species in its genus found in Costa Rica. The other two which are similar are *Dendrobates granuliferus* and *Dendrobates auratus*.

The poison dart frog is thought to be diurnal; eats termites and ants and lives on the ground and the lower level of

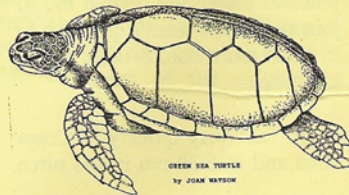
tree trunks. The female lays three to five eggs on a leaf, and when the tadpole emerges, the adult takes it on its back, climbs up a tree and deposits the tadpole into a spot containing water. After the tadpole is deposited into the water, it is thought that the female deposits unfertilized eggs into the water for the tadpole to eat.

The species secretes a toxin through its skin, thus making itself a distasteful meal to other animals. Interestingly, this frog is related to another frog in Columbia secretes a much stronger toxin.

COTERC MEMBER STUDIES ONTARIO EARTHQUAKE

Alex Mohajer, a member of COTERC is a Scarborough campus geophysicist studying seismic hazard assessment in southern Ontario. It has been suggested that an earthquake of 7 magnitude is likely to occur anywhere along the projection of the St. Lawrence valley fault system across Lake Ontario and Lake Erie.

Alex Mohajer's message is that earthquake risk has increased dramatically in recent decades due to the concentration of population and wealth in fast-growing, usually unprotected and unprepared, metropolitan areas.



WILDLIFE IN COSTA RICA

by Tom Mason,
Curator of Invertebrates,
Metro Toronto Zoo

Although the Costa Rica is small, habitats range from cloud forest to lowland rainforest and dry scrub forest. The animals are also extremely diverse because of the country's position acts as a corridor for both North and South American species. The diversity includes 150 species of amphibians, 212 species of reptiles, 800 plus birds and over 1200 species of butterflies. Add to this myriads of insects, tarantulas, a large variety of mammals and marine life on both the Pacific coast and the Caribbean.

It was because of this that

V O L U N T E E R R E C O G N I T I O N

Many thanks to:

Gareth Thomson and Sylvia McAllister for creating and an interpretive brochure for use as a self-guided tour of the Colibri Trail.
Antoinette Rudolf for translating the interpretive brochure.
Bob Mutart for redesigning the COTERC membership brochure.
Norman Krannitz for designing, printing and laminating a poster describing the Station and COTERC's mission and will be hung in the museum area.

Graham Crawshaw, Metro Toronto Zoo vet and I travelled to Costa Rica. Graham was in search of birds, while I was looking for herps and insects. We managed to see several habitats within the country. Most of these were in the north western area of Guanacaste. We also spent several days in the area of San Jose. Time was required to apply for export permits for bugs and to confer with their staff at the zoo. Permits for the animals of Costa Rica are extremely difficult to obtain.

We managed to get off the beaten path and get into rural areas. A couple of days were spent in the highlands of Guanacaste. This was mainly a birders area. Flycatchers and swallows were common, as were parrots, parakeets and warblers. As for amphibians, I managed to see one small *Eleutherodactylus* and *Bufo marinus*. Reptiles included spiny tailed iguana, several anoles and *Gonatodes albogularis*. The high areas tended to be wet and cool. This reduced the chances of seeing much activity in reptiles. This area also proved interesting for the invertebrate life. We observed two species of tarantula, a large variety of katydids, leaf cutting ants and one species of scorpion in the trees.

La Pacifica was lower in elevation than the coffee plantation and had been left largely undeveloped for 30 years. The wildlife had been left untouched and paths criss-crossed the entire farm. Overnight rooms are available. Trogons were visible near the restaurant and howler monkeys sat above us in the trees. Spiny-tailed iguana, *Ameiva undulata*, *Basiliscus basiliscus*, *Anoles* sps. and *Oxybelis aeneus* were relatively common.

A little to the north of La Pacifica, we turned west into an area that was hotter and dryer. On the drive to the Lomas Barbudal animal reserve we came across a small stream. During two stops by this stream we saw an abundance of herps. These included, *B.basiliscus*, anoles, spiny-tails, *Cnemidophorus*, *Sceloporus variabilis*, *Phyllodactylus tuberculatus*, *Conopsis lineatus* and *Chironius grandisquamis*. The best find was the whipsnake. It was about two meters long and was missing a foot of tail. Graham spotted it and there was a moment of pandemonium as Graham and I headed in opposite directions. Graham beating a fast retreat while I gave chase before it disappeared. Graham also received a bit of a fright when I caught the snake by the tail and swung it around to get clear of the undergrowth. I didn't realize

that he was that close. I think he broke the record for the standing broad jump.

The roadside in this area is great for seeing spiny-tails approaching a meter in length. For birds, the area had a large number of flycatchers, doves and birds of prey. *Bufo coccifer* was the only amphibian that I was able to identify. This spot is a must for reptile collectors. Night cruising would be great.

The reserve itself was in a deep valley. Being well protected, and watered, the area was predominately forest. Spiny-tail and green iguana live together as well as anoles, *Ameiva undulata* and one little toad (*Crepidophryne epioticus*). The only snake observed was a DOR (dead on the road) *Boa constrictor*. This animal was just over a meter and showed good colour for the *imperator* ssp. Birds were not great in this area, however, butterflies were fantastic.

From here, we travelled further north to a sugar plantation in the town of Al Viejo. Hospitality and birding were great. Green iguana were very common but otherwise the reptile and amphibian collecting were slight. Basilisk, *Ameiva festiva*, one large *Caiman crocodilus*, *Hyla microcephala* and *Bufo marinus* were also observed. On the first night there, I also managed to

catch the only live turtle caught on the trip (*Kinosternon scorpioides*).

During our stay we managed two trips to the coast -to Hermosa beach and Coco beach, both have been developed for the turistas. Half a kilometre inland along the road, the area was bush. Here, driving at night we were able to see as fresh DOR's, *Trimorphodon biscutatus*, *Boa constrictor* and *Loxocemus bicolor*.

We also visited Santa Rosa National Park. The only way to really see this park is by 4-wheel drive. From the entrance one drives for a couple of kilometres to the museum and first campsite. Past this is a 13-kilometre 'road' to the beach and second campsite. White face capuchins and a large spiny-tailed iguana were in the inhabited area. Jaguar had walked through the campsite the week before. White tailed deer are common and *coati muni* were also seen. The area looked good for reptiles but I was unable to really get a good look at the best habitat. Geckos, anoles, and *ameiva* were all that I spotted. The museum however showed photos of lots of species including boas, *cantil* and *cascabel*.

Travelling back to San Jose that evening, DOR's included *cascabel* near the town of

Pegasus and *Stenorhina freminivilli*.

Single day trips were spent in Monteverde and the Braulio Carrillo National Park. Monteverde proved cold and wet. Little was seen - one anole during an eight hour walk. On the trip down the mountain one large *Rana warschewitschii* was found and one *Leptodactylus fragilis*. Birds however were good when the weather broke to allow vision.

The upper slopes of Braulio Carrillo also pored rain. This was the area where jumping vipers, palm vipers, the *Atelopus* toad were supposed to be found. I found one anole.

The lower slopes of the park were better. The rangers had a two eyelash viper in a cage, one green and one gold. I fed a *Dipoglossus* to them much to Graham's chagrin. Anoles were relatively common and I managed to spot my only *Basiliscus plumifrons* near the river. The nicest sighting for me that day however was a *Spilotes* rat snake about two and a half meters long that cruised over my head about fifty feet up.

Costa Rica is definitely worth travelling to. Next time I go, I'll spend more time on the east side and the south-west where a different variety of life exists.

**CANADIAN ORGANIZATION FOR
TROPICAL EDUCATION AND RAINFOREST CONSERVATION**

MEMBERSHIP

*YES, I want to join COTERC
and support its efforts in the
tropics. I'm enclosing my
membership fee of :*

- Senior/Student* \$ 15.00
- Individual* \$ 25.00
- School Class* \$ 25.00
- Family* \$ 35.00
- International* \$ 50.00
- Corporate* \$100.00
- Donation** _____

**tax deductible*

TOTAL _____

**SUPPORT COTERC- BUY A COTERC
T-SHIRT**

**100% WHITE COTTON SHIRTS FEATURING
OUR LOGO OF HANDS PROTECTING THE
RAINFOREST (JADE COLOUR)**

*ONLY \$15.00 PLUS \$2.50 for postage and
handling charges*

*I would like to order _____ COTERC shirts for
\$15.00 plus \$2.50 postage each.*

NAME:(PLEASE PRINT) _____

ADDRESS: _____

CITY: _____

STATE/PROVINCE: _____



CANADIAN ORGANIZATION FOR TROPICAL
EDUCATION AND RAINFOREST CONSERVATION

P.O. Box 335 Pickering, Ont. L1V 2R6 Canada TEL: (416) 683-2116, FAX: (416) 392-4979

HONOURARY PATRONS SIR CHARLES & LADY MACKERRAS