



ISSN 1188-2425

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

Volume 4, Number 3, fall 1995

STATION NEWS

It's been a busy summer down here at the station on Cano Palma. We've had a variety of people with diverse backgrounds from Canada, all the way down to Argentina. There have been some interesting sightings and some changes in climate compared to last year. (perhaps due to all the hurricanes up North this summer).

July brought our friends from Texas Wesleyan University. This was their second visit in as many years. Their group of nine students enjoyed their introduction to field techniques in our little corner of the rainforest. This year was a lot drier than last year's swampfest which had them trudging

around in ankle deep water after our big flood. They were well prepared for the onslaught of both rain and clouds of Junebugs but neither arrived in great quantity this year.

One evening while netting bats for identification, they captured thirteen specimens. This was a relatively small sample yet it yielded no less than nine species.

The National Museum of Costa Rica has been by for two visits so far this year. This is positive news, as the station is trying to foster a stronger relationship with this national institution. It allows the station to help a national institution with its

work and study of the natural areas of Costa Rica.

Amongst the scientists from variety of fields working with plants and mushrooms and an entomologist who came armed with light traps and hand nets to sample some of the hundreds of butterflies and moths at the station.

At the time of writing, we are in the process of completing an agreement with the Museum to help us with our butterfly project for the village. We will be working closely with the entomologist on this very worthwhile endeavour. He has already identified for us many of the host plants we will need

to cultivate for the various species of butterflies we will be breeding.

We always seem to have very satisfied visitors at the station. This is probably due to the fact that to those who come, their work is their love. What better place than the middle of a tropical rainforest is there for a zookeeper, naturalist or biologist to spend time studying, birding or relaxing in the hammock on the dock with a good novel and a pair of binoculars ?

Representatives from zoos in North Carolina and Texas sent time taking in the exuberant wildlife of the canals while exploring in our A.A.Z.K. donated canoe. Jean Guy Trussart left his rainforest exhibit at the Biodome in Montreal to get a taste of the real thing. He and a friend enjoyed seeing our poison dart frogs in their natural habitat. If Jean Guy was lost for English words to express himself, his facial expressions certainly showed his enthusiasm for what was a virtual playground for him (and I don't mean the computer generated kind).

You A.A.Z.K. folks might recognize Suzanne Chacon's name from her contribution to the conference in Denver last year. She and two friends working on San Clemente island off the coast of California to save the Loggerhead Shrike, spent eight days in the trails and canals around the station. They were lucky enough to have some very close encounters with the local fauna. Patient paddling brought them within whispering distance of all three monkey species and a herd of White-Lipped Peccaries.

Their stay coincided with an American Forestry sponsored bird migration study being carried out at several locations in the area including our Station. There are five locations in the Tortugeuro area being used as a bird banding station.

The birds which migrate from North America south and back again, are being netted, banded, weighed, measured, sexed, aged and released. It is hoped that this program will provide information which could help the conservation of migratory bird species.

They were able to add dozens of new species to their life lists as the migrants made their way through the bottleneck of the Central American isthmus.

Speaking of migrations, the first weeks of October brought the great flocks of Broad Winged Hawks across the skies. Clouds of thousands of hawks could be seen climbing in the thermals and them lazily soaring Southward to spend the winter in South America.

September brought the first arrival of students from the great continent to the South. This group from the Universidad Nacional were part of the Wildlife Management graduate program and included masters students from as far away as Columbia and Argentina. They were out here to familiarize themselves with yet another of the many life zones in this incredible country. We now have an official agreement with the University, and these kinds of visits will increase. One or more may choose the Station as a base for gathering data for their thesis.

We would like to thank all who made the Station their destination in Costa Rica. Hope to see you again soon.

*Daryl and Pat
Cano Palma Station*

Tortuguero Natural History Museum

Very near COTERC's Cano Palma Station is the newly opened Caribbean Conservation Corporation's (C.C.C.) Visitors' Center and Natural History Museum. The Museum is near the beach area where rare green, leatherback and other species of turtles nest.

The C.C.C. established in 1959, is a non-profit organization dedicated to the preservation of sea turtles and other coastal marine wildlife. The Museum also includes descriptions of other diverse wildlife in the Tortuguero National Park, including jaguars, poison-arrow frogs, sloths and ocelots. The research station has added library and laboratory facilities.

Tortuguero currently has the largest green turtle nesting population in the Western Hemisphere. The turtles are threatened by illegal poaching, water pollution and coastal development.

This year, the station completed its first full-scale leatherback tagging, and continued green turtle studies. Most information is compiled in Florida and released to the scientific community.

Anyone staying at COTERC's Cano Palma Station should include the C.C.C. centre in their visit.

EARTH CHARTER FLOUNDERS

The Costa Rica based Earth Council had hoped to present the Earth Charter to world leaders who gathered in California last June to commemorate 50 years of the United Nations. However, lack of consensus may mean that the environmental equivalent of the Universal Declaration of Human Rights may not be ready for another five years.

Lack of consensus at a meeting in Holland in April led to rewriting the draft that had been presented.. Currently, the council is collecting opinions from as many non-governmental organizations as possible. The goal is to have a draft of the charter ready in 1997, the fifth anniversary of the Rio de Janeiro Earth Summit .

COTERC COMMUNICATES ! FAX ,EMAIL AND A CELLULAR PHONE AT CANO PALMA

*In Canada, COTERC's
new fax number is 905-
683-5897. We are also
hooked up to the internet
and our e-mail address is
coterc@maple.net*

*In Costa Rica, we now
have a cellular phone
directly to the Cano Palma
Biological Station. The
number at Cano Palma is
011-506-381-4116.
Phoning in the evening is
best and you may need to
try several times.*

COTERC SCHOLARSHIPS FOR STUDENTS

We now have a signed agreement with the Universidad Nacional, San Jose. We have agreed to provide scholarships for two students to conduct their research at Cano Palma Biological Station in partial fulfillment of their theses.

The university will be responsible for choosing the two students, who will receive free transportation to and from the station plus food and lodging while at the station. We feel this is an important step in promoting cross-cultural relations, and hope to be able to make similar arrangements with some of the other universities in Costa Rica.

AGRO RESEARCH TO SAVE THE RAINFOREST

Figures from the Tropical Science Research Centre reveal that from 1970 to 1989, Costa Rica suffered deforestation at a rate 2-3

times higher than the rest of the tropics and lost 26 % of its forest cover between 1963 and 1989. Over half of the deforested land was converted into pasture, and another 20 % into annual crops.

Researchers in Panama are fine tuning a pre-Hispanic method of cultivation known as *frijol tapado* (slash/mulch) system, currently used by 40 % of Costa Rican bean farmers. Their goal is to increase yield and cut the amount of land, chemical and labour required for cultivation.

Beans are made into secondary growth vegetation, which is then cut down, chopped up and left on the ground as mulch. Nothing more is done until harvest, which keeps production costs down, as well as reducing consumption of nonrenewable resources and the potential for chemical contamination of the environment

COTERC DIRECTOR A REGULAR COLUMNIST ON THE DISCOVERY CHANNEL

Watch for COTERC director, Dr. Suzanne MacDonald on the Discovery Channel. She appears as a 'weekly columnist' on their nightly science show, "At Discovery.Ca". her column on animal behavior and recent editions have included research at the Metro Toronto Zoo including behavioural enrichment with orangutans; the black-footed ferret behavioral project; the elephant protected contact program; two projects with the gorillas; giraffe maternal behavior; marmoset communication and social behaviour of meerkats.

UPDATE TO CANO PALMA PLANT LIST

The following is the most up to date plant inventory being developed by the Scientific Officer.

Adiantaceae	Convolvulaceae	<i>Miconia sp.</i>
<i>Adiantum</i>	<i>Ipomoea sp.</i>	Meliaceae
<i>ferrugineum</i>	Costaceae	<i>Carapa guianensis</i>
Annonaceae	<i>Costus sp.</i>	Mimosaceae
<i>Xylopia frutescens</i>	(<i>pulverulentus or</i>	<i>Calliandra bijuga</i>
Araceae	<i>scaber</i>)	<i>Pentaclethra</i>
<i>Anthurium sp.</i>	Cyclanthaceae	<i>macroloba</i>
<i>Caladium sp.</i>	<i>Dioranopigyum sp.</i>	<i>Pithecellobium</i>
<i>Montrichardia aff.</i>	<i>Thoracacarpus sp.</i>	<i>longifolium</i>
<i>arborescens Philode</i>	Cyperaceae	Monimiaceae
<i>ndron radiatum</i>	<i>Calyptracaria sp.</i>	<i>Siparuna sp</i>
<i>Philodendron</i>	<i>Hypolytrum</i>	Moraceae
<i>triphilum</i>	<i>longifolium sp.</i>	<i>Ficus sp</i>
<i>Syngonium</i>	<i>nicaraguensis</i>	Myristicaceae
(<i>podophyllum</i>)	<i>Soleria sp.</i>	<i>Compsonera</i>
<i>Urospata sp.</i>	Esneraceae	<i>sprucei</i>
<i>Zanthosoma</i>	<i>Columnnea sp.</i>	Nyctaginaceae
(<i>violaceum</i>)	Fabaceae-Mimosaceae	<i>Nees amplifolia</i>
Arecaceae	<i>Inga sp.</i>	Ochnaceae
<i>Astrocaryum sp.</i>	Fabaceae	<i>Gustavia sp.</i>
<i>Bactris gaspae</i>	<i>Lonchocarpus sp.</i>	Orchidaceae
<i>Bactris</i>	<i>Pithecellobium sp.</i>	<i>Dichiaea sp.</i>
<i>wendlandiana</i>	<i>Pterocarpus sp.</i>	<i>Epidendrum sp</i>
<i>Caliptrogyne sp.</i>	<i>Swartzia sp.</i>	<i>Sobralia sp.</i>
<i>Manicaria</i>	Gentianaceae	<i>Trigonidium sp.</i>
<i>saccifera</i>	<i>Vordia sp</i>	Passifloraceae
<i>Raphia taedigera</i>	Gnetaceae	<i>Passifora oerstedii</i>
Araliaceae	<i>Gnetum leyboldii</i>	<i>Passiflora vitafolia</i>
<i>Schefflera sp.</i>	Heliconiaceae	Piperaceae
Aspleniaceae	<i>Heliconia</i>	<i>Piper sp.</i>
Bignoniaceae	<i>pogonanthus</i>	<i>Piperomia sp.</i>
Bombacaceae	<i>Heliconia irrasa</i>	Polypodaceae
<i>Ochroma lagopus</i>	<i>Heliconia</i>	Poaceae
<i>Pachira aquatica</i>	<i>latispatha</i>	Pteridaceae
Boraginaceae	Hippocrataceae	<i>Adiantum sp.</i>
<i>Cordia sp.</i>	Icacinaceae	Rhizophoraceae
Cantaceae	<i>Calatola</i>	<i>Cassipourea sp.</i>
Cecropiaceae	Maranthaceae	Rubiaceae
<i>Cecropia</i>	<i>Calathea sp.</i>	<i>Hamelia</i>
<i>obtusifolis</i>	Melastomatoceae	<i>Isertia sp.</i>
Clusiaceae	<i>Clidemia sp.</i>	<i>Palicourea</i>
<i>Clusia sp.</i>	<i>Conostegia</i>	<i>guianensis</i>
<i>Vismia sp.</i>	<i>xalapensis</i>	<i>Psychotria</i>
Connaraceae	<i>Henrietta a.f.</i>	<i>glomerulata</i>
<i>Connarus sp.</i>	<i>succosa</i>	<i>P. poeppigiana</i>

Sabicea panamensis
Sapindaceae
Paulinia sp.
Schyzaceae
Schyzaea sp.
Solanaceae
Solanum sp.
Telipteridaceae
Tiliperis sp.
Vittaraceae
Cissus sp.
Vittaria sp.
Hongos-
Auriculariaceae
Aurioularia auricula
Ganodermataceae
Ganoderma lucidum
Ganoderma colossum
Polyporaceae
Coriopsis polyzona
Earliella scabrosa
Hexagonia hydroidea
Polyporus tricholoma
Pycnoporus sanguineus
Schizophyllaceae
Schizophyllaceae comune
Order- *Pezizales, Cookeine sulcipes*

MORE ON THE INTERNET

Announcing the creation of a new mailing list on rain forests. This list is dedicated to discussions concerning all aspects of Rain Forest. If you would like to subscribe, send the following email message to:

listserv@gdarwin.cox.miami.edu

Subscribe RainForest
<Your name>

Make sure the message above is the only thing you include in the body of the message. Any inquiries can be sent to :
administrator@gdarwin.cox.miami.edu

There is a Rain Forest

Web page at
<http://fig.co.miami.edu/Faculty/NickCarter/whitejag.html>.

Primate Info Net is a worldwide Internet Gopher server which links people to information resources on primatology, such as the Primate Information Centre in Seattle, a taxonomy of the primates and gorilla ethograms. Net Address: telnet.wiscinfo.wisc.edu and use login wiscinfo.

Primate Talk is an electronic forum for the exchange of information

and for discussion of subjects related to the field of primatology. Included are news items, research issues, meeting announcement, job posting and other information. Send a message to primate-talk-request@primate.wisc.edu requesting to join.

Many Thanks

Thanks to our chairman, Peter Silverman, Bell has donated our cellular phone for the station and we are now the proud owners of A Stevenson weather station from Environment Canada. The weather station will measure temperature and rainfall within international standards.

EXECUTIVE DIRECTOR'S NOTES

Many thanks to the following people who have donated money towards the manufacture of school desks for the children of Tortuguero. We have received donations from as far away as California and Virginia. Specific thanks to Ruth MacQueen and

Connie Sweet.

Each desk will cost \$20 (U.S.) to manufacture locally in the village. If you would like to make a contribution to this project, send your funds to COTERC in Canada and designate the funds for the School Desk Project.

I attended the annual conference of the American Association of Zoo keepers in Denver, Colorado in September. As many of you know, I have been a zoo keeper for 22 years at the Metro Toronto Zoo and this was an opportunity to introduce my colleagues to COTERC and the opportunities at the Cano Palma Station. We had a table display at the conference showing photographs, drawings and descriptions of the station.

A new information brochure was distributed with a flyer offering a special rate to stay at the station. During the past few years, several keepers have already visited and we hope that more will be encouraged to come and see animals in their native habitat.

In Canada, we are putting the finishing touches on a new teachers' resource

manual on tropical rainforest conservation. This manual follows the common curriculum for the province of Ontario and will be a useful tool for teachers who are not familiar with the topic. It will contain suggested activities for different age grades, as well as a guide for further material. We anticipate that the guide will be available by January, 1996.

We will again be participating in the Christmas Bird Count at Cano Palma Biological Station. If you are thinking of a Christmas vacation in Costa Rica, why not participate? We need as many volunteers as possible to help in the gathering of information on this important international project coordinated by the National Audubon Society. We will be offering a special rate of \$30 per day including dormitory style accommodation and three Costa Rican meals a day. We have electricity and running water. For more information, contact me at the COTERC Canadian office. Thanks to all who came out to help with our fundraising car wash and barbeque recently held at Millwork Home Centre in Ajax, Ontario. We raised

just over \$100 and had a lot of fun too (although washing cars is hard work!). We sold hamburgers and hot dogs to the customers who came to the hardware store. Thanks also to the manager of Millwork Home Centre for allowing us the use of their parking lot and to the Town of Ajax for arranging for the use of the hydrant.

MINISTRY OF NATURAL RESOURCES TAKES AIM AT TURTLE POACHING IN TORTUGUERO

The Ministry of Natural Resources is making a concerted effort to halt poaching at sea in areas where poaching laws were not previously being enforced in the Tortuguero National Park region.

The law establishing the park created an unusual situation. The marine section of the park which extends 12 miles out to sea and has complete turtle protection, is flanked on each side by an area that is not part of the park but which also has complete turtle protection.

However, the ministry has not made much of an effort to halt poaching outside the park for a variety of reasons. As a result, fishermen from Limon, with or without permits, had become accustomed to fishing turtles in the areas north and south of the park.

Now with additional enforcement resources and a broad based education program, the Ministry staff have begun to crack down on the poaching.

Tourism has been a mixed blessing. Where once turtle watchers dispersed in groups of no more than 10 along the beach around Tortuguero, guides now take tourists only on to the 4 kilometers of beach north of the town, because the beach to the south is subject to newly elevated park fees. Guides now report that as many as 200 tourists have surrounded a lone nesting turtle. Guides have reported that turtles will abandon nest sites when they become aware of all the tourists.

ART THAT FLIES

Often, it is the flashy, brightly coloured species that grab's ones attention.

One such group of creatures which has a grand variety of these type of individuals is the butterflies. While not all butterflies are flashy, a number of the butterflies of Costa Rica are indeed strikingly colourful.

Butterflies are members of the animal kingdom and the order Lepidoptera, an order which includes moths. Lepidopters is a Greek derivation relating to wings with scales.

Butterflies have a pair of forewings and a pair of hindwings, all usually covered with scales and it is these scales which give butterflies their patterns and colours. What kinds of butterflies are there at the Cano Palma Biological station?

We are currently working studying the butterflies of the Tortuguero area. Some of the things we are working with include an inventory of the species at the station, the host plants used by the butterfly larva, the food sources of the adult butterflies and

aspects of their reproductive cycles. Some of the members of our initial inventory include:

Morpho sp. This is the group which includes some of the most striking butterflies in the area. One species has large, beautiful, iridescent blue wings, which push it through the air in a rapid, erratic manner, frustrating anyone trying to catch it in a net for closer observation. This group of butterflies can have a forewing length of up to 80 mm. The larvae eat plants of the Fabaceae family, and the adults eat rotting fruits and sap flows from wounds in trees and vines.

Heliconius sp. A second group found at the station is the genus *Heliconius* or 'long wing' butterflies. This group displays a mix of colours, including different combinations of red, orange, black, blue and yellow. While some butterflies only live a week or two, these can live for months. Larvae of this genus of butterflies like leaves of the passion flower and adults visit a variety of flowers for their food.

Parides sp A third group of butterflies found at the

station includes the genus *Parides* of the family Papilionidae. They sport black backgrounds with reds, greens, grays and whites. The larva like leaves from the family Aristolochiaceae.

While it may be difficult for you to picture some of the butterflies just mentioned, perhaps this brief discussion has 'whetted your appetite'. If so, try to find *The Butterflies of Costa Rica* by Philip J. DeVries, 1987.

Pat Opay
Scientific Officer

RAIN FORESTS ARE DISAPPEARING TOO FAST

The executive director of the U.S. based Rainforest Alliance has stated that the Costa Rican land is being gobbled up. Daniel Katz reported "I see less and less protected land and I see more and more cows. The public will come to see the rainforests, not the cows."

The Rainforest Alliance is involved with several projects in Costa Rica, including a computerized system to monitor logging

activity. Katz pointed to the growing acceptability of 'environmentally friendly' bananas under the Alliance's ECO-OK program and sustainable logging through the Alliance's Smart Woods program as signs of a trend in Costa Rica towards adopting a less destructive form of resource production.

BIRDS AND MORE BIRDS

We have two reports of bird sightings and nettings from the Cano Palma Station. The American Forestry sponsored bird migration study personnel have made many visits to the Station and report the following birds captured in September and October, 1995:

White-Collared Manakin
Trail's Flycatcher
Long-tailed Hermit
Bronzy Hermit
Variable Seedeater
Northern Waterthrush
Crowned Woodnymph
Red-capped Manakin
Veery
Kentucky Warbler
Red-eyed Vireo
Prothonotary Warbler
Chestnut-backed Antbird
Rufous-tailed Hummingbird

Yellow-bellied Flycatcher
Ochre-bellied Flycatcher
Gray-cheeked Thrush
Swainson's Thrush
Dusky Antbird
White-breasted Wood-Wren
Barred Woodcreeper
American Pygmy Kingfisher
Bay Wren
Little Hermit
Yellow-green Vireo
Scarlet-rumped Tanager
Bicolored Antbird
Long-billed Gnatwren
Red-throated Ant-Tanager
Tropical Kingbird
Slaty Antshrike
Mourning Warbler
Chestnut-sided warbler
Canada Warbler
Wedge-billed Woodcreeper
Band-tailed Barbthroat

The Texas Wesleyan Team reported the following in July, 1995:-

BIRDS

Brown Pelican
Olivaceous Cormorant
Bare-throated Tiger Heron
Great Blue Heron
Great Egret
Snowy Egret
Little Blue Heron
Green-backed Heron
Yellow-crowned Night Heron
Turkey Vulture
Black Vulture
King Vulture
Crested Guan

Great Curassow
Rufous-necked Wood Rail
Northern Jacana
Short-billed Pigeon
Orange-chinned Parakeet
Mealy Parrot
Squirrel Cuckoo
Groove-billed Ani
White-collared Swift
Slaty-tailed Trogon
Green Kingfisher
Collared Aracari
Keel-billed Toucan
Chesnut-mandibled Toucan
Black-cheeked
Woodpecker
Great Kiskadee
Boat-billed Flycatcher
Tropical Kingbird
Mangrove Swallow
house Wren
Blue-gray Tanager
Scarlet-rumped Tanager
Montezuma Oropendula

MAMMALS:

Thomas Fruit-eating Bats
Heller's Broad-nosed Bat
Pygmy Round-eared Bat
Fringe-lipped Bat
Seba's Short-tailed Fruit
Bat
Allen's Short-tailed Bat
Underwood's Long-tongue
Bat
Argentine Brown Bat
Black Myotis
Long-nosed Bats
White-lined Bats
Fishing Bats
Mantled Howler Monkey
Spider Monkey
White-throated Capuchin

Three-toed Sloth
Nine-banded Armadillo
Southern River Otter
REPTILES:

Spectacled Caiman
American Crocodile
Striped Basilisk
Green Basilisk
Ameivas
Anoles
Green Iguana
Black River Turtle
Green Sea Turtle

AMPHIBIANS:

Marine Toad
Arrow poison Frogs
Red-eyed Treefrogs
Tink Frogs
Mexican Treefrog

**NEW CANO PALMA
STATION MANAGER
WANTED**

We are looking for a new Station Manager for Cano Palma. Darryl is leaving and we are looking for someone to fill the position. The Station Manager works in partnership with the Scientific Officer to provide the support needed by the researchers, including maintenance of the facilities (buildings, equipment and trail system, meal preparation, obtaining provisions and interacting with local suppliers.

Regular reports to the Canadian office are expected, as well as contributions to the newsletters.

The Candidate should have the following qualifications: commitment to conservation and knowledge of environmental issues relating to rainforest conservation; self-starter; common sense; good practical skills; good communication skills; ability to repair small motors ; some construction knowledge; sensitivity to local community issues; academic degree in related field is desirable; previous experience in isolated field conditions. It is important that the applicant have good repair skills and common sense.

Because we are a small non-profit organization, salary is minimal. Room and board plus travel expenses are provided. If you are interested please contact Marilyn Cole at the COTERC office, Box 335, Pickering, Ont. L1V 3R6, email coterc@maple.net or fax 905-683-5897.



**CANO PALMA T-SHIRT NOW
AVAILABLE
SIZE EXTRA LARGE ONLY
IN SIX COLOURS PRINTED ON A
WHITE ALL-COTTON SHIRT
ONLY \$18 PLUS \$4.00 SHIPPING AND
HANDLING CHARGE**

**TO ORDER, SEND CHEQUE OR
MONEY ORDER TO COTERC, BOX 335,
PICKERING, ONTARIO L1V 2R6
CANADA**

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

MEMBERSHIP

YES, I want to join COTERC and support its efforts in the tropics.

Senior/Student	<input type="checkbox"/>	\$15.00
Individual	<input type="checkbox"/>	\$ 25.00
School Class	<input type="checkbox"/>	\$ 25.00
Family	<input type="checkbox"/>	\$ 35.00
International	<input type="checkbox"/>	\$ 50.00
Corporate		
Membership	<input type="checkbox"/>	\$100.00
Donation*	<input type="checkbox"/>	

TOTAL _____

*tax deductible

(PLEASE PRINT)

NAME: _____

ADDRESS: _____

CITY: _____

PROVINCE/STATE: _____

COUNTRY: _____

return cheque and completed form to :

**COTERC
P.O. Box 335,
Pickering, Ont.
L1V 2R6**