

Good Food, Friends, Parang and up the Lopinot Mountain

Jo-Anne Sewlal

The Club's annual year end function was attended by 70 members and took the form of a lunch at Café Mariposa owned and operated by the Guerrero family in Lopinot. This rural village is located in a valley 10 km north of Arouca. It was named after the French Count Josef de Lopinot de la Fresilliere who arrived in 1800. Along with his family and 100 slaves he established a cocoa estate on 400 acres of land awarded for services to the royal family.

The ambiance is quite charming, welcoming to both international and local visitors with its mix of international and regional flags as well as displays of antique tools such as, a hand drill, jack plane, knife sharpener, scrubbing board and a shoemaker's last. After some last minute mingling we were welcomed in song by the manager, Bianca Hamel-Smith (formerly Guerrero), and three of her six sisters.

After lunch we were treated to parang by the Guerrero family who were joined by TTFNC members, Glen Wilkes on the banjo, Philippe Picchiottino on the cuatro, and Mary Awai on the castanet. After a few songs Arthur Guerrero took some members on a tour of the nearby herb garden, and a nature walk up the Lopinot Mountain. The tour included demonstrating the use of the "trapiche" (original cane juice extractor). Although traditionally carved out of a live tree trunk this one was carved out of a dead one. We also witnessed the use of "denkey" used to extract the hulls from the coffee beans.

The herb garden we saw Black Pepper (*Piper nigrum*), Cinnamon (*cinnamomum verum*), Citronella (*Eucalyptus citiodora*), Castor oil tree (*Ricinus communis*), Jumbie bead (*Abrus precatoris*), Noni (*Morinda citrifolia*), Roucou (*Bixa orellana*), Cardamom (*Elettaria cardamomum*), Sweet Thyme (*Thymus vulgaris*), Stevia (*Stevia rebaudiana*), Japana (*Eupatorium triplinerve*), Tarragon (*Artemisia dacuncululus*), Saffron (*Crocus sativus*), Arrowroot (*Maranta arundinacea*), Basil (*Ocimum basilinum*), Milkweed (*Asclepias* sp.), Plantain bush (*Plantago major*), Topi Tambu (*Maranta allouia*) and Canna Lily (*Canna* sp.). We also saw the Vanilla orchid (*Vanilla planifolia*) which is the vanilla of commercial use and is not native to Trinidad. It looks like a bright green fleshy vine with flat leaves. The pods or "vanilla beans" are 15-53cm long and are produced when the plant is mature, usually over 3m in height¹. The garden also contained a fenced pond with Galap (*Rhinoclemmys punctulatia*) and Morocoy (*Geochelone carbonaria*). Eggs laid by one species were seen in a parting in the sand surrounding the pond.

As we started up the mountain we were greeted by a stretch of *Impatiens* sp. which extended a few metres up the trail. We saw trees such as Sand Box (*Hura crepitans*), Bois Flot (*Ochroma pyramidale*), Bloodwood (*Croton gossypifolius*), Bois Canot (*Cercropia peltata*). A notable tree was Bois Orange (*Maclura tinctoria*) so called because of its orange roots. It is also called the camouflage tree or Fustic because the dye extracted from it was used to dye soldiers' clothes during World War II. Other

plants seen included *Anthurium jemanii* and the small yellow flower *Cosmos* sp. Besides plants we saw nests of the termite *Nasutitermes costalis*. Arthur also noted that this mountain is home to ocelot, deer and agouti.

About three-quarters of the way up the mountain, huge boulders began to appear frequently along the trail. This is because, according to Arthur, this area underwent an upheaval about 4000 years ago. We even came across a rock that resembled a dinosaur footprint and could be a fossil.

Our tour concluded with a visit to the La Veronica RC Church, some pieces of which were brought from Caura Valley, including its limestone pillars, two corner stones, statues and doors. While the stones comprising the walls were from a local quarry, the stained glass windows were from Paris.

Bianca also gave us some history on the origins of Lopinot. Most of the residents here were originally from Venezuela when they settled in Caura. In 1943 the government wanted to build a dam in the Caura Valley so residents were relocated to Santa Cruz and Lopinot, to name a few places. They wanted to blast the church which was in the way of the dam, however, and the priest at that time cursed the project and the dam was never built. When the residents relocated to Lopinot, each family was given two plots of leasehold land, one was residential and the other was for agriculture, which was cocoa in those

days. Now the use of the latter has shifted to the growing of Christophene or “green gold”.

On exiting the church we were greeted by a flock of Orange-winged Parrots (*Amazona amazonica*) returning to their nesting site. It was truly a memorable day, with the perfect mixture of good food, song, friends and Nature.

Reference

¹<http://www.desert-tropicals.com/Plants/TreeList.htm>

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MISSION STATEMENT
To foster education and knowledge on natural history and to encourage and promote activities that would lead to the appreciation, preservation and conservation of our natural heritage .

BOTANY FIELD TRIP

Erin Savannas – October 16, 2004**Jo-Anne Nina Sewlal**

There were 15 members on the botany group's bi-annual trip to the Erin Savannas in south west Trinidad, including Carlisle MacMillan (T&T Orchid Society), Dr. Victor Quesnel, Mr. Winston Johnson (T&T Herbarium) and Mr. Ramesh Bissoon (Forestry Division, formerly of the South West Conservancy). Located within the Erin Reserve, the Savannas consist of the Western, Middle and Eastern Savannas. Our walk started at around 10.00am on the trail - really a paved road reduced to a track by lack of maintenance. Our goal this morning was to reach the patch numbered 9, the Middle Savanna, according to an aerial photograph taken in 1994 (Armstrong et al.2004).

Christopher Starr (2002) reported that the trail to the Middle Savanna, though overgrown, was not difficult to follow. The lack of maintenance by Forestry Division in the past two years, however, has resulted in the trail becoming almost impossible to find. We had to cut our way in since the trail (formerly an asphalt road) had given way to clumps of Razor Grass (*Scleria bracteata*). This could be quite dangerous since the thick growth masks a drain about 1.5m deep at the side of the road. John Lum Young (2001) reported that the Middle Savanna was in almost pristine condition, verified by Christopher Starr (2002) and by our group on this trip. The planting of Caribbean Pine (*Pinus caribaea*) has stopped but the once expansive Western Savannas have been lost to pine and are now found in patches.

An abundance of charred tree trunks as well as *S. bracteata* that was found before what was once the Western Savanna suggested the reoccurrence of a recent fire in the area. Other grasses present included *Olyra latifolia*. However, fire is not responsible for maintaining the savanna vegetation since the Erin Savannas are edaphic, and not fire, savannas (Comeau 2002). *P. caribaea*, can grow in this area because of characteristics such as resistance to fire and ability to grow on poor soil. It also requires minimum attention so less manpower is needed for its maintenance. *P. caribaea* also has many disadvantages, however: it is self-pruning so there is always fuel for fires, and it produces no food for wildlife.

As we proceeded we were greeted by the smell of mauby. However, the source was not the drink we are all familiar with but the shrub *Piper marginatum* (Piperaceae). A little further we observed the tree *Cordia* sp. (Boraginaceae) belonging to the same family, as well as the vine *Gonoloba* sp. with fruit belonging to the family Asclepiadaceae.

On the eastern margin of the Western Savannas we saw *Curatella americana* whose leaves are coarse as sand paper. On the opposite side of the trail was the Savannah Serrette, also called Golden-spoon or Nance (*Brysonima crassifolia*) with reddish brown leaves that usually form whorls of three, and yellow flowers identified from rings on the trunk located at the leaf nodes. The bark can be used to make a tea that is supposed to improve digestion and appetite¹. Its small yellow fruits can be eaten raw or used in soups or as meat stuffings¹. Also seen was the legume *Desmodium barbatum* that has purple flowers and hairy bunches of fruit, as well as the small tree *Miconia rubiginosa* from the family Melastomataceae.

Nearby we noted the Stranger Fig (*Ficus guianensis*) entwined around a Cocorite Palm (*Attalea maripa*). It is the only palm to regenerate in large numbers in *P. caribaea* plantations, (Comeau et al. 2003) hence its presence here. In Ecuador a liquid extract from this plant is used to treat colds (Schultes and Raffauf 1990)*

Some members sampled the small yellow edible fruit of the Serrette *Brysonima spicata* or Maricao which was reported to have a taste similar to Sour Cherry (*Phyllanthus acidus*). This tree can reach heights of 21-24m¹. Its elliptic or lanceolate leaves are pubescent when young but almost free of hairs when mature. Inflorescences and young twigs are covered with reddish hairs¹.

Also seen was Pinguin or Manicou Fig (*Bromelia pinguin*), whose stiff, linear, long-attenuate leaves with serrated margins and arranged in a compact rosette,¹ can reach up to about 2m in length. This plant reproduces by means of thick runners usually produced above ground¹. It produces yellow pointed ovoid fruits which are 2.5-5cm long. Its pulp is used to make a drink rich in calcium, vitamin C and the protein-splitting enzyme pinguinain¹. This enzyme can be used as a meat tenderizer¹.

Also observed and collected was *Psychotria* sp. a relative of “Hot Lips” (*Psychotria bracteocardia*), as well as *Buchenera* sp. a plant with a pinkish flower belonging to the Scrophulariaceae family.

The rare vine *Uncaria guianensis* (Rubiaceae) was observed. It had a pair of recurved spines at each leaf node which could be an adaptation to aid in climbing. Another vine *Sabicea* sp. (Rubiaceae) which bore small reddish berries was also seen. On reaching Patch 9 we had a clear view to the west coast of Trinidad, as well as Seegobin’s quarry. On the way, we observed a patch of Moriche palms (*Mauritia flexuosa*). This palm is found in five areas in this country: Nariva Swamp, Aripo Savannas, Erin Savannas, Valencia Wildlife Sanctuary and Los Blanquizales Lagoon.

During a rest stop we observed Giant Granadilla (*Passiflora quadrangularis*) whose species name is derived from the fact that the stems are quadrangular in cross-section¹. It produces alternately arranged, cordate leaves, as well as yellow fruit up to 30cm long. Its pulp is used to flavour ice-cream and make a drink¹. The flesh is edible and when young can be eaten boiled¹. Nearby was a plant of Vanilla Orchid (*Vanilla phaeantha*) which is native to the West Indies². It is similar to *V. planifolia* which is the vanilla of commerce and is not native to Trinidad. However, *V. phaeantha* has a much larger stature than *V. planifolia*². With water running short and the heat bearing down we decided to return to the vehicles where we were treated to watermelon and soft drinks, courtesy Dan Jaggernaut, after which we had a scenic but uneventful ride back through Cap-de-Ville.

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¹<http://www.desert-tropicals.com/Plants/TreeList.htm>

²<http://www.rickstropica.com/culturevanillaphaeantha.html>.

Citations next to which have an (*) have been cited in Comeau et al. 2003.

BOTANY FIELD TRIP TO ERIN SAVANNAS – PLANT LIST

October 16, 2004

The following plant list was compiled from data contributed by Dr. Victor Quesnel and Nicholla Johnson (Trinidad and Tobago Field Naturalists' Club), Mr. Winston Johnson (Trinidad and Tobago National Herbarium) and Jo-Anne Sewlal (University of the West Indies, St. Augustine).

<i>Aegiphila integrifolia</i>	<i>Amaiouia corymbosa</i>
<i>Arrabidea</i> sp.	<i>Axonopus anceps</i>
<i>Banara guianensis</i>	<i>Bromelia pinguin</i>
<i>Brysonima crassifolia</i>	<i>Byrsonima spicata</i>
<i>Buchenera</i> sp.	<i>Catatheca lutea</i>
<i>Cephaelis pubescens</i>	<i>Cestrum</i> sp.
<i>Cordia</i> sp.	<i>Curatella americana</i>
<i>Desmodium barbatum</i>	<i>Ficus guianensis</i>
<i>Gonoloba</i> sp.	<i>Heliconia psittacorum</i>
<i>Hyptis</i> sp.	<i>Lisianthus chelonoides</i>
<i>Mauritia flexuosa</i>	<i>Matalea viridiflora</i>
<i>Maximiliana maripa</i>	<i>Miconia macrothyrsse</i>
<i>Miconia rubiginosa</i>	<i>Nepsera aquatica</i>
<i>Ocotoa</i> sp.	<i>Olyra latifolia</i>
<i>Passiflora quadriglandulosa</i>	<i>Passiflora serato-digitata</i>
<i>Pentaclethra macroloba</i>	<i>Piper marginatum</i>
<i>Precartoria euterpe</i>	<i>Psychotria</i> sp.
<i>Rollandra fruticosum</i>	<i>Rollinia exsucca</i>
<i>Sabicea</i> sp.	<i>Scleria bracteata</i>
<i>Sida latifolia</i>	<i>Sipanea pratensis</i>
<i>Trattinickia rhoifolia</i>	<i>Trema micranthum</i>
<i>Uncaria guianensis</i>	<i>Vanilla phaeantha</i>
<i>Vismia falcata</i>	

A SNAKE IN THE BEDROOM

Christopher K. Starr

First of all, girls and boys, the title of this informal little piece is not intended as a double-entendre, a euphemism, or anything like that. As my good friend Sigmund Freud once said, sometimes a snake is just a snake. Okay, let's proceed.

To a naturalist, my house up the Caura Valley is a real paradise. I spent my formative years between 40-48 degrees North latitude and never even set foot in the tropics until I was almost 30, so life in the Northern Range is a cycle of daily amazement. I have several tarantulas (*Avicularia avicularia*) in the house, various species of social wasps, two species of stingless bees (including the robber bee *Lestimelitta limao*), three species of gekkonid lizards, the daddy-longlegs spider *Physocyclus globosus* and the spitting spider *Scytodes* sp. in the bathroom, and once or twice a year I find army ants raiding across my patio. A great flock of orange-winged parrots (*Amazona amazonica*) flies over the house every morning and every evening, and white-bearded manakins (*Manacus manacus*) tirelessly and audibly strut their stuff in the woods just across the road. I don't mean to suggest that my place is as wild as Victor Quesnel's house in central, but I tell you, I am forever stopping in the middle of something, looking around in awe and forming the thought that this must be the place.

So I took it as part of my natural due when a snake appeared in the bathroom one night. A good-looking yellow-brown snake with a constrictor head. The next morning it was gone, but on several subsequent nights it re-appeared, looking out from behind the books on the shelves in the bedroom. Well, if this snake was going to stick around, I might as well know what it was. Murphy (1997) and Boos (2001) identified it as *Corallus ruschenbergerii*, or *C. hortulanus* the Cook's tree boa. Isn't that grand? A genuine tree boa residing in my bedroom of its own free will.

Now, I disapprove of naming wild animals unless it is necessary for research purposes. Hanging a name on an animal is a step toward turning it into a pet, a terrible insult to a wild thing. It was thus with some irritation that I heard "Awake!" murmured one night as I looked at the snake and realized that it was being suggested as a name. As a born-again atheist, I don't believe in angels, but that doesn't stop the angels from whispering in my ear every now and then, and it seemed plain enough that I was being told to call the snake Awake. And I went along with it. Sure, it's a ridiculous name, but it could have been worse. And a beast with a name should not be called "it", so I am arbitrarily designating Awake as masculine until I learn otherwise.

What was Awake doing in my house? Cook's tree boas are nocturnal, and my bedtime comes early, so I have never seen him in motion, only getting ready to hunt. My working hypothesis is that he uses the house mainly as a den and does most of his hunting outside, but that he has no objection to opportunities that present themselves indoors. And what might these be? There are no mice in my house, and no birds nest inside, but I did mention those three gekkonid lizards. Two of these, the small *Gonatodes vittatus* and *Sphaerodactylus molei*, are mostly diurnal and spend the nights in inaccessible crevices, but the much larger *Hemicatylus mabouia* walks about the walls and ceilings in the nighttime and is almost as big around as Awake. One of those would probably feed him for a week, and I had long had three of them conspicuously resident in the bedroom to delight my insomnia time with their raucous quarrels.

Now, there's a funny thing about those three lizards. It occurred to me yesterday that I hadn't noticed them since Awake came to visit. Had he cleaned them out? Apparently not. Last night I made a point of checking, and I found two of them, but a major change seems to have come over them. I no longer see them scrambling about as if they own the place. They keep much quieter, move around little, and mostly stay close to what seem to be places of refuge.

This is all consistent with the idea that Awake has made the world a much more dangerous place for big juicy lizards. What about the third *Hemidactylus*, the one that I haven't seen lately? Well, maybe that one is playing it even safer than the others or has moved out entirely. Or it could be the difference between the quick and the dead.

No doubt about it, this is the place.

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OPINION

TTFNC's responsibility to the Nation's Stewardship of the Environment
Reginald Potter

Exactly what should we as the country's oldest natural history club be doing about national development planning that potentially threatens the natural environment? Should we confine ourselves to our traditional role of observations, publications and academic study of species, ecosystems, and field trips, that provide information and internal intellectual entertainment, leaving comment on developments to the umbrella organisation "COPE", through which environmental NGOs have sometimes submitted views on EIAs when given the chance?

In considering this question we may want to first speculate on what any expanded role implies. The more confrontational models such as Fishermen and Friends of The Sea, Green Peace, etc. are probably not the style that most members would like to see our club adopting, even though we may agree that they do champion some important causes. Also, we as a group include some considerable scientific knowledge, history, and experience which, if alienated due to perceived political alignment, or dogmatic objection to all development, would be a serious loss to potential quality public debate.

But is it correct to simply remain silent and grumble internally while developments continue to ravage our dwindling natural environment?

One of several cases in point is the currently proposed industrialisation of the South-western peninsula. This is now in the form of a proposed 2000 acre industrial estate at Cap-de-Ville/ Chatham, which follows the bulldozing of 800 acres of primary and secondary forest for the Union Industrial Estate, which in turn followed the clearing of areas around La Brea to form the (still largely empty) Labidco industrial estate.

As each estate is opened a certain amount of local construction employment becomes available but also population movement occurs into the area to supply skilled labour. As the long term industrial tenants move in, permanent population increases can be anticipated to supplement the local work forces, and industrial wage levels effectively rule out agriculture, which previously represented the primary activity in the area. Eventually road upgrades and influx of service industries, will follow, as the transition to urbanisation of the widening area proceeds.

Do we, as an environmentally-oriented club (or as a nation), agree with this process spreading (often apparently by stealth) ever wider across the country? Should we advocate some prior higher level planning and consultation, such as the revision of the National Physical Development Plan (as currently required by legislation), precede these invasive and irreversible changes to the landscape? And even if it is felt that TTFNC should provide early active comment, what form should this take?

Comment on TORs and EIAs for individual projects is undoubtedly the responsibility of environmental NGOs, but the sad truth is that the most these can achieve is perhaps some minor tweaking of drainage, effluent studies, promises to replant elsewhere as compensation, or similar. The implementation and siting of the project and its expanding effects on the surrounding environment are virtually a forgone conclusion by the time the NGOs learn of the 'consultation' to be held with villagers in some remote location. Notices to COPE are invariably so late that effective input is impossible. Any resultant inputs seem to be filed away as evidence that 'consultation' occurred, and measurement of any real effects on the development would require much more research than the average NGO has the capacity for.

Members who have views on this, particularly members willing to contribute their time and skills toward the course they advocate, should contact the Management Committee and let them know what practical actions they feel should be taken toward this aspect of our club's objectives. 

FIELD TRIP REPORT

Proposed Nariva Swamp National Park

August 29, 2004
Jo-Anne Nina Sewlal

This month's field trip was to the Bush Bush Wildlife Sanctuary and Prohibited Area located within the proposed Nariva Swamp National Park. Bush Bush, established in 1968 and comprising 1,554 hectares, is home to about 57 species of mammals.

In 1971 Nariva Swamp, some 6,234 hectares was declared the only Ramsar site in Trinidad and Tobago. In addition to being the largest freshwater swamp in the Caribbean it has the greatest biodiversity in this country. The Convention on Wetlands signed in Ramsar, Iran, in 1971 is an intergovernmental treaty that provides the framework for action on a national level and international cooperation for the conservation and wise use of wetlands and their resources.

As we headed along the Manzanilla Stretch our first stop was at the Manatee Field Station, built through the "Manatee Conservation Project" and sponsored by the Rotary Club of San Juan. This Field Station is devoted to the study and conservation of the endangered West Indian Manatee (*Trichechus manatus*). To the back of the station, a dilapidated boardwalk led to a freshwater pond, and though something was present in the water evident by the bubbles and ripples the shy creature did not surface.

We turned into Kernahan Trace which was lined with houses. Each house had its own little pond with Cascadoux (*Hoplosternum littorale*) which was sold as a means of gaining income. In the ponds were two species of water lilies, the native *Nymphaea ampla* and the introduced *N. capensis*, white and pink, respectively. Seen too was the Wattled Jacana (*Jacana jacana*) also known as the "Spurwing" or Lily-Trotter," the latter name no doubt because the bird's long legs and very long toes allow it to walk on the lily pads with relative ease. This is a marsh-dweller but prefers freshwater to brackish areas (French 1991). Another bird was the Cattle Egret (*Bubulcus ibis*) which came by natural means from Africa and which was first recorded in Trinidad in 1951 (French 1991). Also seen was *Orthemis ferruginea*, or Red Skimmer, that belongs to the commonest type of dragonfly (skimmers) which are brightly coloured and have bodies that are shorter than the wingspan.

At the briefing before the trip, Dr. Victor Quesnel had stated that while rice farming which had taken place in the prohibited section had ceased, the area has become pastureland and cattle have moved in. The area also experiences saltwater intrusion due to periodic high tides; this, however, is not a major problem. Afterwards, we embarked on the walk to the entrance of the Bush Bush Wildlife Sanctuary. On the way we saw a grove of coconut trees (*Cocos nucifera*) which was infected with Red Ring disease evident by the yellow colour of their leaves. This disease is caused by a nematode that enters the tree through holes dug by beetles. Young trees are more susceptible than mature trees.

Along the road, a jeep from the Forestry Division passed us and further down we met up with the group of three foresters who checked our permits and filled us in on the problems they face in patrolling the area on a weekly basis. One officer who also coordinates with the police claimed that the major problem was the lack of manpower, since he was in charge of an area that included Cedros in the extreme southwest of the island. This lack of resources is not an uncommon problem and was highlighted in the recent field trip to the proposed Matura National Park. For example, the lack of daily patrols encourages illegal hunting, logging, and housing, such as squatting and settlement by migrant farmers. Also, the boundaries of national parks need to be clearly defined. Clear definition of the boundaries would serve a double function in that lawbreakers would have one less excuse if caught committing any illegal activities. It also acts as a deterrent to potential lawbreakers, however, the occupants around national park areas must also be encouraged to report illegal activities.

We came across a group of farmers contracted by Forestry Division to replant the area with native trees. Among the species being planted were, Hogplum (*Spondias mombin*), Monkey bone (*Mauriri rhizophorifolia*), Sac e sac (*Inga laurina*), Mahoe (*Sterculia caribaea*), Guatecare (*Eschweilera subglandulosa*), and Fineleaf (*Pentaclethra macroloba*), whose bark is toxic and is used by the Amerindians in the Guianas as a fish poison (Quesnel and Farrell 2000). It should be noted that farmers bordering Nariva Swamp have been contracted in the past to replant local trees on former melon acreage, as in Sand Hill. However, melon continues to be grown on the same lands that were to be reforested (Herrera 2004). Also noted was the Cannonball or Carrion tree (*Couroupita guianensis*) with red, sweet-smelling blossoms that have a diameter of 12 cm that become round, hard-shelled fruits of 14-19 cm in diameter, which when ripe have a rotting odour (Quesnel and Farrell 2000). The shells can be used as calabashes (Quesnel and Farrell 2000).

Sandbox (*Hura crepitans*), which is easily recognised by its spiny trunk, was a common sight. We were fortunate to

come across a notably large one with an approximate diameter of 3m indicating an age of about 200 years. We also came across a Wild Chataigne (*Pachira insignis*) that was unusual in that it had both stilt and buttress roots. The former are really buttress roots formed when the soil beneath the roots has been removed. This species is not known to produce buttress roots. It may be, however, that the presence of buttresses could be influenced by the type soil it is growing in, where they are needed for extra support. Palms observed included Cabbage Palm (*Roystonea oleracea*), at the start of our journey, as well as a patch of Roseau (*Bactris major*) in the prohibited area. Understory plants seen included *Renealmia alpinia* where the seeds of the ripe, red fruits are eaten by Yellowtails (*Psarocolius decumanus*). Besides providing food, it can be used as an ink. Also seen was one of the 47 species of *Miconia*, and the reed Tirite (*Ischnosiphon arouma*).

Although no bats were seen the smell of guano was strong in some spots along the trail. This is not uncommon since bats are known to roost in the hollow trunks of large trees, and in “bat tents” which they form by biting a circle around the middle of the petiole of the leaf of the *Sabal mauritiiformis* which collapses to form a “tent”. We were lucky to observe both species of monkeys common to this area, the endemic White Fronted Capuchins (*Cebus albifrons*) and Red Howler monkeys (*Alouatta seniculus*). However, the usually noisy Red Howlers were very docile though in greater numbers than the Capuchins. The Howlers’ presence could account for the low numbers of Capuchins in the vicinity.

Near the start of our journey we noticed an abandoned nest of *Synoeca surinama* also commonly called djep tatu, guitar wasp, and 5, 7 and 11 mile wasp. It is called djep tatu because the outside of the nest resembles the back of a tatu, and guitar wasp because it rhythmically drums the inside of the nest when disturbed and finally because it is said that one can run 5, 7 and 11 miles if stung by one of them (depending on how far your village is from the nest).

Also seen were two butterfly species, the well-known Emperor (*Morpho peleides*), and the Cocoa Mort Bleu (*Caligo teucer*), so named because it is often found in cocoa estates (Stiling 1986). The undersides of its wings resemble bark and have a large eye spot in contrast to the blue colour which covers its body and about 50% of its wings. It usually rests with its wings closed, so as to blend with the tree trunks it rests on. This is a South and Central American species and like *M. peleides* its only location in the Caribbean is Trinidad and Tobago.

The leaf-footed bug *Leptoglossus balteatus* which sucks plant juices was also seen. It has a variety of defense mechanisms which include giving off a foul-smelling secretion when agitated. Another one is advertising its unpalatability with bright colours and prominent projections on its last pair of legs (Stiling 1986). The skins of cicadas were a common sight on the underside of leaves near the entrance of the Sanctuary, however, live ones were observed on a tree trunk further inside. Trinidad, however, does not have any species that emerge in mass synchrony periodically in a given area with few emerging either the year before or after. Two species of termites were observed, *Nasutitermes costalis* and *N. ephratae*, which can be differentiated by the texture of the outer covering of their nests.

The silk-covered retreats of the webspinner (*Pararhagadochir trinitatis*) were also common on tree trunks in the Sanctuary. These insects feed on lichens and algae on bark and although they produce silk they are not related to spiders. The silk spun by this species has a lilac tint, suspected to play a part in protecting the inhabitants against UV radiation. This species, regarded as an exotic, is spreading throughout Central America and the Caribbean (J. Edgerly, pers. comm.). However, spiders belonging to five families - *Mesabolivar aurantiacus* (Pholcidae), *Azilia vachoni* (Tetragnathidae), *Argiope* sp. (Araneidae), Linyphiidae, and Agelenidae - were observed.

At our lunch stop, trip leader Dan Jaggernaut gave us an impromptu lesson on how to use the fruit of the Toporite (*Hernandia guianensis*) as a whistle. On the way back a few members stopped at a dilapidated hut, originally constructed as a community centre and used to train locals about tour-guiding. Here we saw one of the nine species of stingless bees in this country feeding on fallen mangoes, and nests of what appeared to be *Trypoxylon maidli* wasps.

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Management Notices

Exhibitions / Displays

The TTFNC's exhibition at the 2005 Annual Flower Show of the Horticultural Society focused on the Guiana Shield. The display highlighted the areas visited in past years by the TTFNC. The display won a silver medal and was visited by prominent members of society, including H.E. The President of the Republic of Trinidad and Tobago, Dr. Maxwell Richards, Dr. Roy Austin, US Ambassador to Trinidad and Tobago, and Minister Penelope Beckles.

The Management Committee would like to thank members who assisted in the display and manned the booth on the two days.

Your 2005 Annual Membership Fees are Due!!

A HOME FOR THE TTFNC

We are seeking a permanent location to conduct our business and house our historic records and materials. Please contact the Management Team if you can be of assistance.

SPECIAL THANKS

Thank you Deonath Maharaj for the donation of a used Dell Computer to back up the records of the TTFNC.

Publications

- ? The 2004 Issue of the Living World Journal has been published. Please collect your copy at the next monthly meeting.
- ? Members are asked to note that copies of the *Native Trees of Trinidad and Tobago* are still available for purchase at TT\$80.00 per copy.
- ? Issues of the *Living World Journal* from 1892—1896 are now available on CD.
- ? The Revised Trail Guide is due to be published by end-2005.

Welcome New Members

Mathew Cock
Monique Konings
Betty Ann Fraites
Monica Sturge

Adana Mahase
Noella S Francette Alexis
Penelope Beckles

FIELD TRIP REPORT

Madamas Forest—September 26, 2004

Jo-Anne Nina Sewlal

The turnout for this month's field trip to Madamas Forest was quite small, consisting of 13 members. We departed at 7.10 a.m. and reached our starting point after a 2 ½ hour drive.

Two birds were noted by their calls, the Bearded Bellbird (*Procnias averano*) and an unidentified Trogon. As for reptiles, we were quite fortunate to observe a dark green snake, approximately 25mm in diameter and 1m in length, with a yellow belly and a blunt tail, climbing up the rock face at the side of the trail. Most likely *Pseustes poecilonotus polylepis* (H. Boos, pers. comm.). Accompanying us was solitary wasp specialist Dr. Allan Hook, who drew our attention to some wasp species as we walked. This included *Cerceris binodis* where the females' nests are guarded by the males whose purposes were to keep away other males and to mate the female every time she returned to her nest with prey. This species feeds on chrysomelid beetles (leaf beetles). Another solitary species was *Trypoxylon manni* that build mud nests attached to rootlets under earth banks, which they provision with jumping spiders.

Mischocyttarus labiatus is a social wasp species which in Trinidad is commonly found under rock or earth banks, where the dark brown nest and body colouration make it inconspicuous. A notable feature of this and closely related species is the exceptionally long and narrow petiole or stalk that connects the nest to the substrate. Adult females also regularly smear the nest with an ant-repellant substance which they produce (C.K. Starr, pers. comm). Also observed was an active nest of the social "djep tatu" (*Synoeca surinama*), so called because the pattern of the nest resembles the back of a tatu.

The prominent arboreal carton nest of the ant, *Azteca* sp. found only in the neotropics (Kirkpatrick 1957) was also observed. The ant builds its nest over colonies of scale-insects and other homoptera which it cares for, in order to harvest the homoptera's honeydew (Kirkpatrick 1957). Also noted was the Click beetle (*Chalcolepidius porcatus*), so called because of the sharp clicking sound they produce when they flip into the air to right themselves if overturned (Stiling 1986). The actual sound is produced by the snapping of a small fingerlike spine on the underside of the thorax into a groove below the mesothorax (Stiling 1986). Identified too was the orb-weaving spider *Azilia vachoni* (Tetragnathidae) and *Mesabolivar aurantiacus* (Pholcidae), the adults of which are red and exhibit a defense mechanism called whirling, where they hold on to their web and move their bodies in an elliptical motion until they become a blur, making it difficult to be detected by predators.

Flowers seen included *Hedychium* sp. which lined the trail near the starting point. The white flower, originally from Indonesia, is typically found in wet places. *Chaconia* (*Warszewiczia coccinea*), which tends to bloom during the wet parts of the year (Lennox and Seddon 1980), were plentiful. Although the single variety is the official national flower of Trinidad, the double variety which has a greater number of bright red sepals is the one portrayed as the national flower. Two species of *Anthurium* were seen. The first was a vine with small yellow flowers; the second was a patch of the ornamental species. Other flowers observed were the orchid (*Columna scandenes*) which resembled an epiphyte. It consisted of a pair of red flowers at the tips of the branches. This species shared the branch of a tree with the epiphyte Old Man's Beard (*Ripsalis baccifera*).

Plants seen included, Riau or Boundary Flower (*Cordyline terminalis*), a multicoloured understory plant so named because it was used to indicate the boundary of estates, since it stood out against the green of the understory. Also seen were the Stinging Nettle (*Ureca caracasana*) and Razor Grass (*Scleria scans*), growing on the rock face on the side of the trail. This species of *Scleria* is characteristically found at higher altitudes and has smaller and narrower leaves than those at lower altitudes.

We saw Bois Canot or Bois Canon (*Cercropia peltata*), which is a secondary growth species found in places that have been disturbed either naturally, for example by tree falls, or by man (Quesnel and Farrell 2000). The large round leaves of this tree are divided into ten lobes and when dried forms a "clenched fist." One member of the group said that in Cuba it is believed that if one places the green leaf in one's house, on drying it entraps all evil spirits within the house. Bois Flot or Balsa (*Ochroma pyramidale*) is another species that grows where there is disturbance. The wood is the lightest known worldwide and is used to construct model airplanes (Quesnel and Farrell 2000) as well as birdcages.

We took a break under a Nutmeg (*Myristica fragrans*) well-known for its use in flavouring. However, nutmeg and mace (the scarlet coloured layer of flesh covering the nut), can be poisonous when consumed in large quantities because of the presence of the aromatic oil myristicin (Bourne et al. 1993).

NATURE NOTES

Where have all the Jack Spaniards gone?

Christopher K. Starr

Four species of social wasps are native to the Lesser Antilles. In Grenada there are two very widespread continental species, *Polistes versicolor* and *Polybia occidentalis*. The first is a typical Jack Spaniard, with small colonies and a nest consisting of a single, open comb. The second is unlike anything seen elsewhere in the Lesser Antilles. It is a very small wasp, but its colonies can be very populous, and its nest consists of several combs with a surrounding envelope.

In the rest of these islands there are exactly two native species of Jack Spaniards. *Polistes crinitus* is found in the northern Lesser Antilles as far south as Dominica, as well as in Puerto Rico, Hispaniola and Jamaica. There is a certain amount of colour and even size variation within the species from island to island, and several subspecies are named. However, in my view they have little scientific value. One indication of this is the report of two subspecies on Montserrat, when by definition subspecies are supposed to be non-overlapping geographic variants.

Polistes dominicus (known in much of the older literature as *P. cinctus*) is the social wasp of the southern Lesser Antilles, from Martinique down to St Vincent and Barbados. I have also seen it in Montserrat and St Kitts, where it was evidently introduced earlier in this century as a biological control agent for crop pests. In those islands it exists alongside the native *P. crinitus*, although there seems to be some habitat separation between the two.

The very peculiar feature of Jack Spaniards in the Lesser Antilles is their rarity or absence from some islands for no apparent reason. *P. crinitus* is reliably reported from St Martin, for example, yet it is so uncommon that I have failed to find it there, even though it is reasonably abundant in similar habitat in Antigua.

The pattern of *P. dominicus* is even more puzzling. In the Grenadines it is certainly not present in Carriacou, and it appears not to have been there in living memory. However, on neighbouring Union Island it is very common, as in parts of St Vincent. It seems reasonable to assume that it could do well in Carriacou and is not there now simply because it has never reached that far south. However, it is absent from Bequia, which lies between Union Island and St Vincent. Friends in Barbados tell me that it is present there, but hard to find.

As all but the youngest members of the Naturalists' Society can recall, *P. dominicus* was once common in St Lucia. Middle-aged St Lucians tell me that as children they had to be cautious in climbing a mango tree, because Jack Spaniards often nested there. You probably have the impression that they are much less common now. In fact, if you think about it, you probably cannot recall definitely having seen one in St Lucia in about 20 years.

Your memory is not at fault. Jack Spaniards are relatively conspicuous insects that fly about in the daytime, and their nests are often built under eaves of buildings, where they can persist for years. I have searched for these wasps in all parts and habitats of St Lucia, from the very arid scrub area around Vieux Fort to the rain forest of Quillesse and Barre-de-Lisle to the mesic habitat of Pigeon Island (ideal for *P. dominicus*, it seems to me). Nowhere have I seen a single wasp or any vestige of a nest.

We must conclude that Jack Spaniards are now either extinct in St Lucia or extremely rare. It seems much more likely that they are extinct, as the habitat is certainly suitable, so that any viable small population should grow rapidly.

What could possibly have driven this common, apparently hardy insect to extinction? I posed this question in the *Voice* newspaper on 17 September 1996, asking readers to report any recent sightings and inviting ideas about why Jack Spaniards are now extinct or rare in St Lucia. No one reported any sighting, but I did receive comments on its disappearance from several readers, including Naturalists' Society member Gregor William.

In raising this question with St Lucians over the years, the usual suggestion is that increased pesticide use wiped out the wasp. As I said in the *Voice*, I very much doubt that this is the cause. I have seen no indication that pesticide use is especially heavy in St Lucia or that it has risen sharply over the last two decades. Furthermore, I have found Jack Spaniards in considerable abundance in parts of the Dominican Republic where pesticides are sprayed with great abandon. The advantage of taking a comparative view is that it forces one to ask, for example, "What makes St Lucia different from St Vincent in this respect?" and in this light the pesticide hypothesis clearly falls short.

Several people have told me that Jack Spaniards were no longer common from about 20 years ago, and some draw a definite correlation between a sudden disappearance and Hurricane Allen in 1980. This coincidence is too sharp to be ignored, and I think there must be something in it. Certainly, hurricanes are implicated in the disappearance of some birds from particular islands, so why not Jack Spaniards?

There are two problems with the hurricane hypothesis. First, I do not see it as a complete explanation. A hurricane could certainly be very damaging to a social-wasp population, but could not very well wipe out each and every fertile female from an area the size of St Lucia, and I very much doubt that it could drive all local populations below the sustainable level.

Second, we can be reasonably sure that the species did not go immediately extinct at that time. Naturalists' Society stalwart Donald Anthony reports having seen it some years afterwards, although as a rarity.

The most likely explanation, in my view, is a combination of at least two causes. A plausible scenario has

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FIELD TRIP REPORT

Mt Harris: July 25, 2004

John Lum Young

Mt. Harris (903 ft), the second highest point in the Central Range after Mt. Tamana (1,027ft) was this month's destination. Heading south from Sangre Grande along the Cunapo Southern we passed through rural communities that seemed to be now stirring—Superville Flat, Maraj Hill, Coalmine, Grosvenor and Lovers Hill—before entering Mt. Harris Central Range Reserve which comprised 41,722 acres. This reserve had its genesis in 1913 when 35 acres were planted in teak. Planting did not resume until 1971 with 248 acres under mixed hardwood including Cedar (*Cedrela odorata*), Apamate (*Tabebuia pentaphylla*), Serrette (*Byrsonima spicata*) and Cypre (*Cordia alliodora*) but that same year it was decided to leave the area, which by then comprised 2,262 acres, to natural regeneration.

The first stop was the large sandstone boulder, locally called the growing stone, on the side of the road just past the 6¾ mile post. Scattered throughout the neighbouring forest were a number of these massive stones formed some 60 million years ago from sands deposited when here was the sea floor. Laurent de Verteuil, geologist, explained that these rocks were weathered out of the Chaudiere Formation of the Paleocene Age and formed the backbone of the hills around Mt. Harris. The Central Range fault was a very active fault and these boulders were pushed up from underneath and/or dislodged from the mountaintop. Surprisingly, the Ministry of Agriculture plaque on the sandstone boulder described the Mt. Harris forest as “worthless”. The term “worthless” clearly was used to label the non-commercial trees but what a description by those charged with the responsibility of managing our indigenous forests!

The direct trail to the summit started a further 4¼ miles down the Cunapo Southern near the 11 mile mark. The area was reputed for its numerous mosquitoes that bit through one's clothing and the walkers who did not bring any insect repellent must have regretted it. Workmen dread cutlassing the road verge here because of these aggressive insects.

As stated by Laurent, Mt. Harris was a cone shaped hill of sand and a brown/red coloured clay. The well-cemented sand of the Chaudiere Formation protected the hill from being eroded. As a matter of interest, de Verteuil added that some scientists regard the Paleocene Age as the transition stage after the death of the dinosaurs since no animals have been found in the fossil record. The theory was that a huge comet struck the planet obliterating all, as evidenced by the low diversity of life following alleged disaster.

From the Cunapo Southern we followed a fresh trail, likely cut by the Forestry Division, passing through Mahoe (*Sterculia caribea*), Balata (*Manilkara bidentata*), Cocorite (*Attalea maripa*), Manac (*Euterpe precatoria*) and Jere-ton (*Didymopanax morototoni*), with the dominant strains being Bois Mulatre (*Pentaclethra macroloba*), Guatecare (*Eschweilera subglandulosa*) and Crappo (*Carapa guianensis*). A pair of Locusts (*Tropdecris cristata*), our largest grasshopper, belonging to the Acridoidea family, was observed copulating, the male being less than half the size of female. After about 35 minutes the trail ended abruptly not quite at the highest point. After a brief search Bobby Oumdash found the trig mark identifying the summit.

From the summit, the group elected to scout through the Reserve in a northwesterly direction hoping to pick up a hunters' trail that passed near a huge cylindrical concrete water tank. Red Howlers (*Alouatta seniculus*) could be heard in the distance. At a prominent fork in the trail some continued the search for the water tank and others went down the Chaudiere River.

In the upper section of the Chaudiere River bedding planes formed the riverbed and one could observe the rock profile of the Chaudiere Formation. Laurent explained that this area easily demonstrated the features of the Chaudiere Formation and was popular with researchers; it provided the classic example. The sand was well cemented and not compressed as in metamorphic types. We noted the two Chaudiere River Falls on the way downstream, the first about 20 ft in height and the second about 12 ft.

On the return to the cars we learnt that the water tank was located. 

There are two species of zebra butterfly (*Colobura* spp. Nymphalidae) in Trinidad, but only one has striped caterpillars

Matthew J.W. Cock

The zebra is one of Trinidad's common and distinctive butterflies, the adults coming to fallen rotting fruit in disturbed forest and suburban situations (Fig. 1) and the caterpillars feeding on Bois Canot (*Cecropia peltata* L. Moraceae) (Barcant 1970). William Beebe (1952) published an account of two larvae that he reared at Simla, describing how the young larvae built "frass chains" of faecal pellets held together with silk, projecting from the edge of the food plant leaves, on which they rest when not feeding (Fig. 2). This behaviour probably provides some protection from walking predators such as ants, as shown, for example by Freitas et al. (1992) and Machado & Freitas (2001) for other nymphalids that construct frass chains.

A recent paper by Willmott et al. (2001) changes this picture dramatically. This paper is downloadable from Hall & Willmott (2004) and should be consulted for details. Willmott et al. (2001) showed that there are actually two species involved, *Colobura dirce* (Linnaeus) and a sibling species, which they described as *C. annulata* Willmott, Constantino & Hall. The adults can be distinguished by minor differences in the zebra stripes in the apical area of the forewing underside. The adults of *C. annulata* tend to fly higher in the canopy than do those of *C. dirce*, and so are probably less frequently encountered than *C. dirce*, which seems commoner in collections. The caterpillars of both species feed on bois canot, but whereas those of *C. dirce* (Fig. 3) feed singly or in small groups on rather young saplings, those of *C. annulata* feed in large groups (Fig. 4) and are found on larger trees, often in the canopy. Both caterpillars are black with white or yellow spined scoli, but *C. annulata* has a strong yellow ring (stripe) on each segment (Fig. 5).

Barcant (1970, plate 18) illustrates an adult *Colobura* sp. upper surface only, which cannot be attributed to either species. Beebe (1952) illustrates the larvae that he reared and these are clearly *C. dirce*. However, both species occur in Trinidad (Willmott et al. 2001). Armed with this information, I reviewed my collection and rearing notes. I found that in my collection I had specimens of *C. dirce* only, but that I had found both species as caterpillars in 1980. At the time I had noted the differences between two batches of larvae, but had not recorded the timing of events carefully enough, so that although I noted this difference, I thought that I might have written my notes based on two different instars. I had photographs of *C. annulata* damage (Fig. 6) and larvae (Fig. 4 and 5), which confirmed that I had indeed found this species. Unfortunately, I had not labelled these pictures at the time, or linked them to my notes, so that although they were probably taken at the same time, I cannot remember now, 24 years later.

The mature larvae of *C. dirce* cut, or partially cut, the veins of the abaxial surface of their *Cecropia peltata* food plant leaves (J.O. Boos, pers. comm.; M.J.W. Cock unpublished observations). The leaf then folds and the distal parts hang from the points where the main veins have been damaged, making a sort of shelter. The function of this behaviour may be two fold: (1) cutting the veins prevents flow of latex to the distal parts of the leaf, making them more suitable for the larva to feed, and (2) the larvae rest within the shelter, thereby being protected from weather and/or natural enemies. *Cecropia* spp. are known to produce caustic white latex when damaged (Allen 1943). Generally, such latex is a plant defence against herbivores. However, many insect herbivores have developed strategies such as vein cutting to prevent the flow of latex to areas of the leaf distal to the cut, where the insect then feeds (e.g. Dussourd & Denno 1991). I have not found any reference to the arrangement of the latex canals in *Cecropia* spp., whether branching, anastomosing or restricted to the main veins (see Dussourd & Denno (1991) for a discussion of the different arrangements, and their implications for insect feeding behaviour). Neither Beebe (1952) nor Willmott et al. (2001) note this behaviour. This may be because their observations were made in the laboratory on cut leaves; latex will not flow heavily from detached leaves, so larvae may not need to exhibit this behaviour. However, Muysshondt & Muysshondt (1976) note that all instars of *C. dirce* "gnaw the prominent ribs at short intervals on the undersurface apparently to control the flow of fluids on the tissues they are consuming" and that "when several large larvae are congregated on the same leaf, this ... might cause the collapse of the leaf lobes around their petiole." They interpret this as incidental to the benefits of controlling the latex flow. In contrast, judging from Figure 4, *C. annulata* does not show vein cutting behaviour. This may be because a large group of

larvae are able to overcome the latex defence by feeding synchronously at several points, or the pattern of damage suggests that the latex may be limited to the main veins, which are not eaten. If this were the case, it would support the suggestion that the larvae of *C. dirce* are actually cutting the veins in order to change the leaf shape to make a shelter. My observations on this behaviour were only casual and not recorded at the time, so more carefully recorded observations on the distribution of latex in *C. peltata* leaves, and the vein-cutting and feeding behaviour of larvae of both *Colobura* spp. would be of interest. Naturalists will be able to use the pictures here and in Willmott et al. (2001) to distinguish these two species in future. The moral I draw from reviewing my notes is that if I had recorded my observations more carefully and consistently (and labelled my photos at the time), then I could have followed up on this apparent discrepancy between the two colour forms of the larvae, and demonstrated there are two different species of zebra in Trinidad. There is a lesson there for everyone! On a more positive note, with the benefit of hindsight from the work of Willmott et al. (2001), my notes and photos were adequate to enable unambiguous confirmation of identification of the species concerned.

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A rather unpleasant sight was two large patches of Christophine (*Sechium edule*) along the trail. A member of the gourd family, this species originated in Mexico (Bourne et al. 1993). It is hoped that in years to come the entire stretch does not resemble the vast fields on the hillside that one encounters driving along the Arima-Blanchisseuse Road.

Our destination was Double River Falls, so called because lower downstream two rivers join before crossing the road. The water cascades down a height of approximately 20m into a shallow pool about 1.5 m deep. We stayed here for about half an hour to have lunch while some members took a dip in the pool. John Lum Young treated us to Amazon Custard Apple (*Annona* sp.) so called because of the custard-like consistency of the pulp (Bourne et al. 1993) and the lobes are pointed and apart. This differs from wild Cashima (*Annona* sp.) seen earlier along the trail which has lobes that are more rounded and closer together. We also snacked on Pomegranate (*Punica granatum*) which is about the size of an orange and has a juicy pulp which has a mass of small white seeds. It can be eaten raw or used to make a drink called grenadine. The peel of the fruit can also be used to produce high quality leather (Bourne et al. 1993).

After lunch some members decided to visit a small waterfall known as "Lovers Fall" since there is only room for two. Although the fall is only about 2 m high the pool beneath is 1.5 m deep. We had an uneventful walk back to the vehicles.

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FIELD TRIP REPORT

Guayaguayare—October 31, 2004

John Lum Young

On the outing to Guayaguayare the benefits included the calming influence of the breezy, coconut-lined Manzanilla/Mayaro stretch. The stretch was not always bordered with majestic palms. There were virgin forests before French settlers, invited under the Cedula of Population in 1783, first cultivated cotton, then cocoa, coffee, sugarcane and eventually from the 1870s the coconuts that define the coastline up to today. Leaving Port of Spain the sunny conditions changed to rain on approaching Sangre Grande. Not for nothing is Grande called the Bathroom; rain falls almost every day even it is simply a sprinkle to maintain the reputation. But seriously, this daily precipitation demonstrates the effect of the surrounding forests on climate. Descending to the seaside from Nariva we inhaled deeply of the clean air; clean because there were no island settlements between the east coast of Trinidad and Guinea on Africa's west coast. There was bright blue sky in the south so we would have a dry day as expected.

After the relaxing drive in the shade of the palms we drove through the laid-back villages of the Mayaro/Guayaguayare region: Ortoire (casually known as Little Laventille), St. Joseph, Resthouse, Grinaldo, Mayaro Junction, (sometimes referred to as the Quarters), St. Anns, Radix (the centre of Mayaro before the relocation of the Post Office and other government services to the Junction in the 1920s), Gran Lagoon, Stonebright, La Brea, Newlands, La Savanne, Cal Mapas, Seawall, Guayaguayare village and Rustville (now abandoned and fenced off for a natural gas terminal).

Parking on Trinity Road we walked along the lane observing the flora. Shrubs included Vervain (*Stachytarpheta jamaicensis*), Wild Hops or Money Bush (*Flemingia strobilifera*) fam. LEGUMINOSAE-P and Black Sage (*Cordia curassavica*) fam. BORAGINACEAE. Noni (*Morinda citrifolia*) of the RUBIACEAE family was a common fruit bearing plant along the roadside. There was an area, about 3 acres, which seemed to have been cleared from within a stand of Palmiste as these giant palms surrounded the clearing with the odd palm in the open hinting at the extent of the Roystonea. The migrant farmers have moved on and tall grasses and shrubs have started the reclamation process.

On another disturbed slope Bois Canot (*Cecropia peltata*), always one of the first trees in such areas, was relatively numerous. It is commonly known that the dried Bois Canot leaf is good for the flu, however, this medium-sized tree is an important part of the environment. Its fruits are eaten by birds such as the Grey Saltator (*Saltator coerulescens*), Yellow-rumped Cacique (*Cacicus cela*), Bay-headed Tanager (*Tangara gyrola*), Palm Tanager (*Thraupis palmarum*) and Turquoise Tanager (*Tangara mexicana*). Several butterflies feast on nectar from the flowers including Zebra (*Colobura dirce*), Grapeshoemaker (*Historis odius*), and Venezuelan Shoemaker (*Historis acheronta*). Bats also eat the fruits and the Silky Anteater (*Cyclopes didactyles*) feeds on the flowers. In addition, there is a symbiotic relationship between this second-growth plant and ants of the *Azteca* sp. The ants live within the hollow trunk feeding on globules of glycogen at the base of the leaf and in exchange they keep the tree free from vines and epiphytes.

The road ended at a man made lake, muddy from recent rains. In parts of the lake the skeleton of drowned Coconut, Almond and other trees reminded one that this reckless activity was relatively recent. Reckless because the well-known oil entrepreneur who bulldozed the area in a failed eco-tourism attempt almost destroyed the Amerindian midden on the seaward side. This midden was well documented and is still under active study by archaeologists in Trinidad and Tobago and should not be disturbed. Studies indicate that this midden was in use continuously from about 200 AD to several hundred years after Columbus.

After the midden we descended the cliff to the beach to view the erosion from a seaward direction. Roots of trees, shrubs and other plants protect the soil from surface run off but once the sea removes the land from beneath them the resistance is virtually at an end. There were examples of how roots hold soil together. A Sea Grape

(*Coccoloba uvifera*) was holding on still although the soil underneath had slipped onto the beach, its roots forming a tangled web overhead, trapping soil to the very end. A huge Almond (*Terminalia catappa*) toppled on to the beach by tidal erosion still managed to survive but it was only a matter of time before the remaining section of bank succumbed completely to the waves. To understand the steady and relentless onslaught of the sea R. Potter, retired petroleum engineer, stated that in 1903 Randolph Rust and John Lee Lum drilled well No. 3, 50 feet inland. Today at low tide that well pipe could be seen 175 feet out at sea. In one hundred years the sea advanced 225 feet! And that's nature at work: We are yet to fully experience man at work - advancing seas from global warming. 🌿

From Page 17 the wasp suffering from a serious disease or parasite in 1980, so that it was still present but not breeding nearly as well as usual, then suffering a catastrophic reverse from Hurrigan Allen. Under normal circumstances, the wasp would recover from the hurricane within a year or so, but the circumstances were not normal. It was already weakened, and Allen delivered the knockout punch. Jack Spaniards hung on for some years in St Lucia in isolated pockets, each very vulnerable to local extinction just on account of small numbers. As a result, it was never able to re-develop a viable breeding population and is now extinct in St Lucia.

This, at least, is my suggested scenario. It is consistent with the known facts, yet far from conclusive. Most important, there is no particular evidence of any such disease or parasite among Jack Spaniards in the years leading up to 1980, and such evidence would be very hard to find.

Polistes dominicus is a legitimate part of the native biota of St Lucia. Should it be re-introduced? This is no idle question. After all, who would not be very happy to re-establish *Cnemidophorus pleei* in the main island of St Lucia from its refuge in the Maria Islands? Besides, the Jack Spaniard was deliberately introduced into Montserrat and St Kitts as an exotic for agricultural purposes, so why not into part of its natural range as an exercise in restoration ecology?

I would be all in favour of such a move, and I expect that most readers of this bulletin would too. But could St Lucians as a whole be brought to this point of view? We are talking about stinging insects that often react aggressively when their nest and larvae are threatened, not some pretty little lizard that never bothers anyone. This deserves some serious consideration. If, through intelligent and sustained public education, the Jack Spaniard can be made into a popular icon, then the cause of respect for all species will be greatly strengthened.

The next question is of course whether it can be re-introduced. Alongside successes in Montserrat and St Kitts, we should take note of failures in some other islands, introductions that did not become established. Still, it should be easy enough to bring a large number of healthy, intact colonies from St Vincent and/or Martinique to form a substantial nucleus population in St Lucia, and they could even be propagated in a screen house.

The only real doubt relates to our ignorance of why there is now no St Lucia population. If the above scenario is accurate and a disease or parasite was a major part of the cause, is that disease or parasite still present, perhaps persisting in solitary wasps or bees? If it is, then the situation is analogous to that of the Maria Islands lizard, which cannot be re-introduced to the main island because the agent that drove it out is still there.



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FOR PUBLIC COMMENT

The Administrative Record for the environmentally sensitive area—Aripo Savannas Strict Nature Reserve—is presently out for public comment until May 13, 2005.

The document is available on the EMA's website at <http://www.ema.co.tt>...Also at the Forestry Divisions—Port of Spain, Cumuto and St Joseph, at the Port of Spain and San Fernando City Corporations, the Chaguanas and Arima Borough Corporations and the Tobago House of Assembly among other venues.

Editor's Note

Guidelines for Articles:

Font Type: Times New Roman. Font size: 12 point. Maximum Length : 1,750 words (approx. 3 pages). Unformatted.

You can email your articles to any of the following: 1) mendsr@bp.com 2) cpierre@energy.gov.tt 3) tfnc@wow.net, or to any member of the Management Committee.

The deadline for submission of articles for the 2nd Quarter 2005 issue of the Bulletin is June 1, 2005