

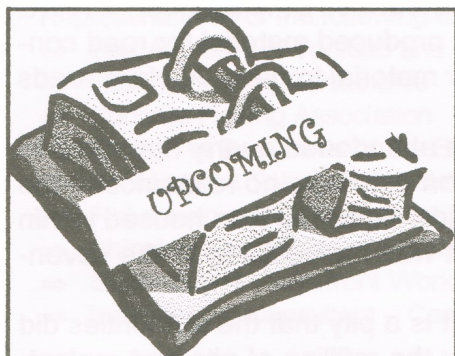


THE FIELD NATURALIST

Quarterly Bulletin of the Trinidad and Tobago Field Naturalists' Club

April-June 2000

No. 02



Members' Evening - August 10
Book Launching - August 12

BE AN ACTIVE MEMBER !!!

- ♦ Attend Meetings
- ♦ Support Special Interest Groups
- ♦ Participate in Club Activities
- ♦ Contribute Ideas for Projects and Help Implement Them
- ♦ Pay your membership dues early

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2000
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27, 2000
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Session

OUR DEAR FRIEND, THE TERMITE

Christopher K. Starr
Dep't of Life Sciences, University of the West Indies
(Lecture Summary: April 13 2000)

A remarkable feature of natural and secondary landscapes that we tend to take for granted is their greenness. Most plants remain alive and reasonably healthy in the face of huge numbers of plant-feeding animals. The simple reason is that plants have an array of chemical and other defenses. When a plant dies, these defenses are for the most part lost. However, the breakdown of dead plant matter can take some time, especially in the case of wood. While it is an abundant source of food, very few animals are able to digest the cellulose and lignin that make up the bulk of it. This is left to fungi, bacteria and some other micro-organisms.

Termites are among the few groups of animals that are efficient at utilizing dead plant matter. This is on account of their intestinal symbionts – micro-organisms that live in the hind-gut and provide the enzymes to break down cellulose and lignin. This is a true mutualistic relationship, in which the termites chew up the plant matter and provide an hospitable micro-environment for the micro-organisms that provide the final breakdown of the food source. The diet of termites provides a convenient introduction to their ecological significance and social life. It is the key to understanding what termites are all about.

Termites comprise the insect order Isoptera. They are closely related to the familiar orders Orthoptera (grasshoppers and crickets), Phasmatodea (stick insects), Mantodea (mantises) and Blattodea (cockroaches), but are only very distantly related to the Hymenoptera, which contain the other groups of social insects (social wasps, social bees, ants).

Termites are relatively well-studied, with about 2800 known species in the world. They are abundant throughout

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Field Trip Report : Valencia – Sunday March 26, 2000.**John Lum Young - Member**

We really enjoyed the outing on Sunday last. The trip included visits to quarry sites in the Arima Valley, Wallerfield, Valencia Wild Life Sanctuary and Mathura Forest Reserve.

We left the St. Augustine meeting point promptly at 7:00 a.m. A good start! After about 5 miles we got to PTF Mining which produces stones using a dry crushing method. Mr. C. Alexander, TTFNC president and the tour guide for this field trip, explained that this quarry produced material for road construction and paving. The Americans were the first to exploit this area for material to pave 'A' class roads in this country.

Our next destination was an abandoned quarry in Wallerfield. The abandoned quarry appeared to be manned by a single female attendant. Somehow the lone watchman on duty bore no relevance to the millions of dollars worth of equipment and spare parts which the tour guide explained was housed within the compound. This quarry was originally operated by a German firm. It was nationalised in the seventies and was subsequently closed down about twelve years ago.

We drove eastwards past abandoned sand and gravel quarries. It is a pity that the authorities did not have the foresight to include, in the leasing arrangement, clauses for the refilling of pits and replanting of trees after the open pit mining ceased. Or maybe they did!

We saw some mining activity here. The tour guide explained that this was illegal. The lands belonged to the state and were under the purview of National Quarries and National Quarries does not work on weekends.

North into Antigua Road, we stopped briefly by Seereeram Bros, the largest road builder in the country. This plant produces sand and stone. There was no extraction on this site. All the raw material was trucked in. We drove past Valencia Junction proceeding eastwards along Valencia Old Road. After some three miles we turned south along Plantation Road. This was an unpaved road that went deep into the Valencia Wild Life Sanctuary.

The name "Valencia Wild Life Sanctuary" has an exotic ring to it. The reality is that this area, surrounded by the Valencia Old Road, Valencia Stretch (Eastern Main Road) and Sangre Grande and environs, is riddled with abandoned open mines as this was once the sand and gravel hub that fostered infrastructure development in Trinidad, Tobago, Guyana and other Caribbean territories. In addition there are many squatters located in areas that are reasonably close to transportation links. Illegal mining also continues.

East along Valencia Old Road for another mile or so, we turned south into Tattoo Trace. The landscape was similar to that at Plantation Road – abandoned quarries and secondary vegetation.

Of interest was a picnic area maintained by the members of End Time Ministries,

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The Trinidad and Tobago Field Naturalists' Club is a non-profit, non-governmental organisation.

OUR MISSION

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.

Editorial Team

Calista Pierre, Rupert Mends

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Field Trip Report – El Tucuche : February 27 2000

Krishanta Maharaj, Junior Member

When I joined the Field Naturalists' Club almost two years ago I never thought that I would be one of the few people to make it to the top of El Tucuche, the second highest peak in Trinidad. On February 27th 2000, however, I proved to myself that I could face the challenge and I'm quite proud to say that I made it. Let me assure you though that it was far from easy!

We left CIC at the usual time and met at Medical Associates Nursing home in St Joseph rather than at UWI. From there it was a short drive to the base of El Tucuche but after that it was all uphill. Before we actually started up the trail we encountered a large pile of discarded bamboo remains. Dan informed us that this was the waste product from furniture making and basket weaving as the shoots were stripped for these purposes.

Our trek up the mountain took about 3 hours but the canopy protected us from the sun's rays and there was an abundance of flora and fauna to observe. Tree ferns were very abundant and were found in varying sizes while the distinctive call of the Bell bird could be heard throughout the day. The last group, led by Sheldon, was fortunate enough to see a mapipire balsain, which was approximately 4 feet long, as they made their way up and marked the spot in the hope of showing the others on the way down.

We made it to the summit just in time for lunch and were treated to a breathtaking view of the sparkling blue ocean stretched out before us, as well as a clear view of Las Cuevas Bay. It was rather chilly and a bit misty but, luckily, the mist did not obscure our view for too long. A few things caught our interest while we were at the top, namely, the trigonometric station marker indicating the height of the 3072 feet as well as the lone lime tree standing on the otherwise grass covered surface. We also saw an 'El Tucuche cockroach', resembling a black German roach, which was bigger and darker in colour than our normal 'lowland' roaches. Of course Dan had to do more than just observe the creature, he picked it up and let it crawl all over his arm, ugh!

The downhill trek was a great deal less strenuous than the trail up, so that the true beauty of the area could be better appreciated while the cool breeze added to the enjoyment of the walk. There were several things to observe and marvel at on the way, the most outstanding of which was the truly rare sight of a scorpion eating a grasshopper on a leaf. We watched in awe as this wonder of Nature took place right before our very eyes. We were also fortunate enough to spot a White-Bearded Manakin through the leaves, and were able to get a good look at it before it flew away. As we came down to the base of El Tucuche we noticed a strange sight. There were a few holes in the river banks along the sides, and Selwyn informed us that they were the nests of the Rufous-tailed Jacana. I was amazed at these peculiar nests and wished that I could have seen the inhabitants as well.

When we at last reached flat land again we went to take a look at the two springs that were found in the area. The water looked delightful but was too crowded with bathers for our liking. From there it was time to return to the confines of city life but I left El Tucuche feeling quite accomplished, as I'm sure the other 50 plus members who made the trip felt as well.



a small Christian Church from Chaguanas. An abandoned pit was stocked with local river fish, the grass on the bank was cut low, there were concrete benches strategically located around the pond and reeds were planted at the water's edge. A picturesque spot. Be on the alert however for caimans which inhabit the pond.

We left Tattoo Trace and proceeded westwards back along Valencia Old Road. At Valencia Junction we drove south following the Eastern Main Road along the Valencia Stretch, a notorious death strip for speeding motorists before the road was lined with street lights in 1984. Imagine back in the fifties there were once strips of forest on both sides of the road and a canopy over the Stretch making the temperature noticeably cooler. Due to squatting and bush fires there is no more forest, and the Aripo Savanna forms the southern border of the roadway.

We turned in an easterly direction into Ture Road and headed towards National Quarries about three miles up the road. We crossed two "red" rivers. These rivers were once crystal clear and the water was as good as any in the uninhabited mountains we visit on our field trips. Due to poor and unregulated mining practices these rivers no longer sustain the varied aquatic life of twenty-five years ago. Responsible quarrying dictates that water used to wash sand and gravel be channelled to a settling pond before release into rivers and other watercourses. But no one cares.

We headed north through the quarry and the Valencia Wild Life Sanctuary towards the Readymix plant off the Valencia Old Road. We stopped by a pit where the sand is mined from a pond. The pond covered a wide area and appeared to be very deep. It was an attractive bluish green in colour, unlike the muddy coloured ones we had seen earlier.

The Readymix plant operated sixteen-hour shifts seven days per week. We were welcomed by Mr. Villafana, the Quality Control Manager, who was kind enough to give us a tour of the plant. It was very informative. We observed all the stages of processing from the raw material to the finished products of sharp sand, 10mm and 20mm stone. Unfortunately, not all our members were able to climb to the top of the various conveyor belts to observe the separation processes. Quality control continues to be exercised after the finished product is loaded on to the trucks for shipment. The material on the truck trays is sprayed until the colour of the run off water indicates that clay and other impurities are within acceptable tolerances.

From Readymix we continued in a northerly direction to the Valencia Old Road. We then drove east to Toco Road and turned north to Mathura.

Our next stop was the Carib Glassworks silica sand mining operation. Mr. Thompson, the Plant Manager, gave us a tour of the operation from the raw material stage to the finished product. It was most interesting. In order to get clear glass bottle grade silica sand from the raw material, a relatively simple process of water, centrifugal force and gravity is used. The centrifugal force system is an improvement to the process and allows sand with higher iron content to be processed. This effectively extends the potential yield of the acreage under lease. The sand grain for the furnace must be of a specific size. All oversized and undersized grains are separated. These unused grains of sand are used to refill the sand pits. A variety of local forest trees are replanted on the refilled pits. Mr. Thompson informed us that very recently 2,000 trees, a mix of mahogany, olivier and other local woods, were planted on a refilled pit. Reafforesting of the sandpits is part of Carib Glassworks' lease agreement with the Government.

The majority of the abandoned pits we saw on the field trip belonged to the National Quarries Company and their former tenants. One wondered whether the state was a major contributor to the degradation of the landscape.

This silica sand mine also operates a closed loop system. All water used in the process is channelled to a settling pond and reused. Additional water is obtained from a 150 foot well on the estate, and by storing the rainwater that runs off the finished product shed in large water tanks. We then visited a silica sand pit on the Carib Glassworks' estate. The quality of the sand coming out of the ground was unbelievable. It was off-white, almost the colour of the processed sand. The Mathura Forest Reserve is the only area in Trinidad with this quality of sand. This sand was won at only about eight feet below the forest floor.

This was our last stop. A most interesting tour ended at about 2:45 p.m.

LECTURES & FIELD TRIPS – June 2000 – March 2001

MONTH	DATE	GENERAL FIELD TRIP	LECTURE	LECTURER	BIRD GROUP TRIP
JUNE	11				North Coast Road
	25	Arima River			
JULY	13		Pollutants in our Waters and What to Do About Them	Sharda Mahabir	
	24-31	Dominica			
	30	Marianne River			
AUG.	10		Members' Evening		
	26-27	Tacarib (Overnight)			
SEPT.	3				Caroni Rice Fields Waterloo, Cacan-dee
	14		Hunting for Wild Cacao in the Land of the Maya	Vishnu Mooleedhar & Winston Maharaj	
	24	Centeno, Arena Forest Reserve, Arena Dam			
OCT.	12		Parasites: To Be or Not To Be	Indira Omah-Maharaj	
	28-29	Blanchisseuse to Paria – Overnight			
NOV.	09		Cultural Life of Mussels and Oysters	David R. Ammons	
	12				Morne Catherine, Tucker Valley
	26	Guayaguayare – Mud Volcanoes			
DEC.	10		Year-End Luncheon – Manzanilla		
JAN	11		Annual General Meeting		
	14				Aripo Valley
	27-28	Chacachacare – Overnight			
FEB	08		Revising Beard: Mapping the Vegetation of Trinidad and Tobago		Howard Nelson
	26	Mystery Trip			
MAR	08		On Ants and Plants and Shifting Symbioses		Shane T. Ballah
	26	Nariva Swamp-Bush Bush			

MANAGEMENT NOTES & NOTICES

Book Launching

The Launching of the Book "Native Trees of Trinidad and Tobago" by Victor Quesnel and Frankie Farrell is scheduled for Saturday August 12, 2000 at 6:00 p.m. at the Horticultural Society Headquarters, Lady Chancellor Road, St. Clair.

AUGUST MEMBERS' EVENING

The August 10, 2000 Monthly Members meeting is a social event. This year it will include New Members' Evening as well. Everyone is encouraged to bring photos or any material suitable for exhibiting. As there is no business meeting, it is also an opportunity to bring friends who have expressed interest in the Club.

Anna Griffith
Honorary Secretary

REMINDERS

- ◆ **Yearly subscription is due. Please contact Selwyn Gomes, the Treasurer.**

MEMBERSHIP

Membership has increased by approximately twenty since January 1, 2000. TTFNC membership ID cards are now ready. Honorary, life and current members can collect their cards from Selwyn Gomes, Treasurer.

Secretary's Update on Activities for Jan-June 2000

During the past six months, through various members, the Club participated in: the EMA's panel discussion for school children; the Citizens' Consultation on "Fostering the Potential of Young Citizens"; a presentation to apprise special interest groups of the impacts of the Port Authority's planned deepening of the Port of Spain Harbour and associated land reclamation in the vicinity of Invader's Bay; and a Public Consultation on the establishment of the Caribbean Nitrogen Plant in the Point Lisas area.

Field trips continue apace, the most recent to the coral reef at Toco/Salybia and then on to the permaculture estate of Dr. Hugh Skinner. More than 30 members are looking forward to the field trip to Dominica in July/August, where they will offer assistance in starting a Field Naturalists' Club and present a small exhibition of Club materials and Trinidad landscape art, in addition to enjoying hikes and trips to Dominica's many natural wonders.



LETTER TO THE EDITOR

THE EDITOR, FIELD NATURALIST

Dear Sir,

As suggested by Chris Starr, member, at the monthly meeting of the Club on Thursday March 9 2000, I submit the following for inclusion in the next quarterly bulletin.

For years I have been advocating a special fund, set up specifically to benefit the aging, and at times destitute, members of the Club. Largely this suggestion has been ignored by the Management Committee of the Club, though the suggestion has generally met with the approval of the floor members of the Club who were present when I made the suggestion.

The proposal was first made in the time when Ewoud Heesterman was the President, and I once more made the suggestion early in 1999. Again my suggestion seems to be in the main, ignored. In the meantime, one of our oldest and staunchest members, Mr. Clyde Crichlow, passed away, and we never knew if he was in need, or in what way the Club may have been able to assist his last years. The same could be said of former, now deceased members and past Presidents, Mr. George La Forest, Capt. Mendez, Mr. Urban Cross and I am sure, many more. Today, there are several old faithful members who are perhaps in the same dire straits, and we still have not made a firm decision, but waffle on, the latest 'decision' by the Management Committee being that the cases will be treated in a case-by-case manner.

I seem to remember that I passed a resolution at the Annual General Meeting in January of 2000, concerning this, but as usual, any action can be delayed for a whole year, for decisions taken at an AGM, need not be implemented if they are not carried in the monthly minutes to remind members of what was decided or transacted.

And I need not remind you of the excruciatingly painful lack of meaningful and well recorded minutes to which the Club has been subjected over the past months, minutes, the correction of which takes up an inordinate amount of time.

Yet, this same Management Committee, on its own, without consultation went ahead and donated \$1000.00 of Club's funds to the Venezuelan disaster relief!

This communication is to formally bring to the notice of all members of the Club, that I believe that a special fund be set up, by way of a fixed deposit in a Bank, or in the Unit Trust Second Scheme, the interest accruing thereon be set aside exclusively for the relief of our older, and in-need, members of the Club. I believe this is the way to go. We have already wasted too much time talking about it.

Please lend your support, or voice your dissent at the next meeting after you have been made aware of this notice.

Signed,
Hans E.A. Boos

the tropics and subtropics. The known fauna of Trinidad and Tobago comprises 55 species in the families Kalotermitidae (17 species), Rhinotermitidae (3 species) and Termitidae (35 species). The Termitidae are commonly known as the "higher termites", while all other families (including a few small ones not found here) constitute the "lower termites". Their proportionate numbers of species in Trinidad and Tobago approximate those for the world fauna.

Because of their ability to utilize dead plant matter, some termites include structural timbers in their diet. As a result, a few species have become structural pests. However, this is an insignificantly small factor in the broader scheme of termite life and diversity. Looked at as a whole, termites can only be regarded as environmentally very friendly, as well as an extremely interesting part of our biota.

It has been estimated that ants and termites together make up about 30% of the animal biomass in the rain forests of the Amazon. While closer examination shows that this estimate is little better than a guess, these two groups of insects are plainly extremely abundant in tropical habitats. What difference does this mass of termites make to the health of the environment?

In the absence of termites or other animals to physically break down dead plant matter into little bits, micro-organisms would still do their job of digesting it, but much more slowly. Termites accelerate the process by which the materials in a dead tree come back into circulation. As a result, at any given time there is more material available to be turned into living organisms. This means an increased biomass and probably more species in the community. As a key agent in this recycling process, termites have an ecological impact out of all proportion to their modest number of species and probably out of proportion to their large biomass. They can also have a physical impact on the environment through the effects of their tunneling and nest building on the turnover of the soil.

Up to now we have treated termites as if they are just abundant solitary insects with a peculiar feeding habit. In fact, all species are social. That is, termites all live in durable, structured groups known as colonies. A fundamental property of social insects is the distinction between different behavioural types in the colony, known as castes. In termites these are physically distinct from each other.

The primary distinction is between the reproductive and non-reproductive castes. A colony typically contains just two reproductive individuals, known as the queen and king. Among the non-reproductive individuals, there is a further division into specialists in defense of the colony (soldiers) and those who undertake all other colony-maintaining tasks (workers). Soldiers are present as a physically distinct caste in virtually all species. Each species manifests one of two basic defensive tactics, physical (usually with strong, sharp mandibles) or chemical (with enlarged glands in the head that produce and deliver noxious compounds). Workers are very generalized, little more than simplified cockroaches. Unlike the queen and king and the soldiers, they differ very little between species.

An outstanding feature of social-insect colonies is their closely regulated composition. A termite colony of a given species and age has quite predictable caste proportions. It is now known that the main regulatory mechanism is negative chemical feedback (inhibitory pheromones). That is, each caste gives off signals to inhibit development of similar individuals. If one caste is under-strength, its chemical signal will be weaker, and immatures will develop in greatest proportion along that line.

Among the most salient general differences between the lower and higher termites is their basic nest structure. Lower termites typically nest inside their food source (usually wood), so that the nest effectively consists of the space created by eating. Higher termites, on the other hand, develop their nests independently of the food source by burrowing in the soil and/or constructing a self-standing structure. This allows for much greater flexibility in nest site and structure. It also explains why almost all structural pests are lower termites.



REPORT ON BRIEFING SESSION

Dredging of the Port of Spain Harbour by the Port Authority of Trinidad and Tobago to Reclaim Land at Invaders' Bay

Rupert Mends, TTFNC member, represented the Club at a briefing session held by The Port Authority of Trinidad and Tobago (PATT) on Friday April 14, 2000 at its Port of Spain offices to update certain NGO's on the status of their project designed to extend the Port of Spain port through the reclamation of land at Invaders' Bay. Below is his report.

Attendees

Representatives of the following organizations attended the meeting:

- ⇒ Port Authority of Trinidad and Tobago
- ⇒ Ecoengineering Consultants
- ⇒ Cocorite Fishing Association
- ⇒ Council of Presidents of the Environment
- ⇒ Trinidad and Tobago Field Naturalists' Club
- ⇒ Fishermen and Friends of the Sea
- ⇒ Shipping Association of Trinidad and Tobago
- ⇒ Seamen and Waterfront Workers Trade Union
- ⇒ Independent Consultant – Captain Ron Wilde

About 20 persons in total were in attendance

The deputy general manager of PATT gave the background to the holding of the briefing session which, he indicated, was not a part of the planning process. The government had held two sessions in the past to which NGOs and the government agencies were invited. The present meeting was being held, therefore, as a courtesy to the NGOs to apprise them of what is taking place in the port development project.

PATT is taking steps to accommodate new cargo handling business in line with the Authority's thrust to make the Port of Spain port "the premier port in the Caribbean". Currently, ships of increasing size and tonnage, which require a deeper harbour, are calling at the port. As a consequence, because of limitations on the size of vessels that can be safely accommodated at the port in its present configuration, PATT is catering for future business by undertaking the deepening of the harbour. The port also has to be lengthened as, with the construction of the ACS headquarters, its eastern section will be lost.

In the past, PATT in deepening the harbour, used to dump dredged material (spoils) at a designated dumpsite at sea. The government objected to the employment of this method and, in line with the government's overall plans for developing the western Port of Spain area, ordered the Authority to reclaim land with the dredged spoils. The objective of creating a large reclaimed area in the vicinity of Invaders Bay is to be carried in accord with the plans of the West Coast Planning Committee. This did not conform with PATT's plan to replant the mangrove in the area.

From the point of view of its effect on the environment, the net result of the project is that the mangrove on the eastern side of the Maraval River will be adversely affected.

PATT received strong support for the project from the SWWTU and the Shipping Association.

Engineering Consultants presented the following documents:

- ◇ EIA for Deepening Port of Spain Harbour and Reclamation and
- ◇ EIA for Offshore Disposal of Dredge Spoil

The NGO representatives made several observations and raised a number of issues at the conclusion of the presentation.

Trinidad and Tobago Field Naturalists' Club
P.O. Box 642, Port of Spain, Trinidad and Tobago



PATT, from Page 9

Among these were the following:

- ♦ The environmental organizations are not anti development but are advocating safe and responsible development.
- ♦ The briefing session was in the nature of presenting a '*fait accompli*'.
- ♦ The EIAs did not evaluate the economic impact of the project on fishermen.
- ♦ The role of the EMA was not addressed in the discussions.
- ♦ The fact that the National Environmental Policy mandates no net loss of wetlands.
- ♦ A contract to carry out the project has already been awarded but it is not clear whether the approval of the Town and Country Planning Division was obtained.

Follow-up Actions by PATT:

- ♦ The education programme that is now in force will continue.
- ♦ Special attention will be given to the trucking of earth fill out of Diego Martin – much of the work will be done at off-peak hours to minimize disruptions.
- ♦ A response to COPE's request for a copy of the EIAs that were presented.



