THE FIELD NATURALIST

Quarterly Bulletin of the Trinidad and Tobago Field Naturalists' Club

January – March 2022 **Issue No: 1/2022**

Botany Group Report, 30 January 2022

PERMANENT SAMPLE PLOT ON THE CENTRE HILL SUMMIT, MAIN RIDGE, TOBAGO, W.I.

by Linton Arneaud, Chantal Leotaud and Matt Kelly

Aerial view (≃30 metres) above the summit of the Centre Hill summit, Tobago, West Indies overseeing east of the Main Ridge. *Photo by Shane Manchouck*

After taking a team photograph outside of the Tobago House Assembly Forestry Section: Main Ridge Reserve Bloody Bay Recreation Site, Division of Agriculture Forestry and Marine Affairs Auditorium, the Botany-birding group started the short walk along the main road towards the trail start. Matt and Dan led the group to the trail start and explained that in Hardy's 'Theory of Biogeography', Trinidad and Tobago were never joined together as one island but rather, Tobago was joined to Venezuela at the south-western area about 350 miles from where it now sits. Trinidad, on the other hand, was joined with Venezuela close to where it is now, by the Orinoco. This is physio-geographically evident in Trinidad's Northern Range, in the outstanding physical feature of Venezuela's Andes Mountains that we share.

Tobago is home to many flora and fauna that are native to Venezuela, as opposed to Trinidad. Amazingly, Little Tobago, an island that lies about a mile off Tobago's north-eastern coast, was also

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Editors' note :
Many thanks to all who contributed and assisted with articles and photographs.

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WELCOME NEW MEMBERS!

The club warmly welcomes the following new members:

Brian Woo

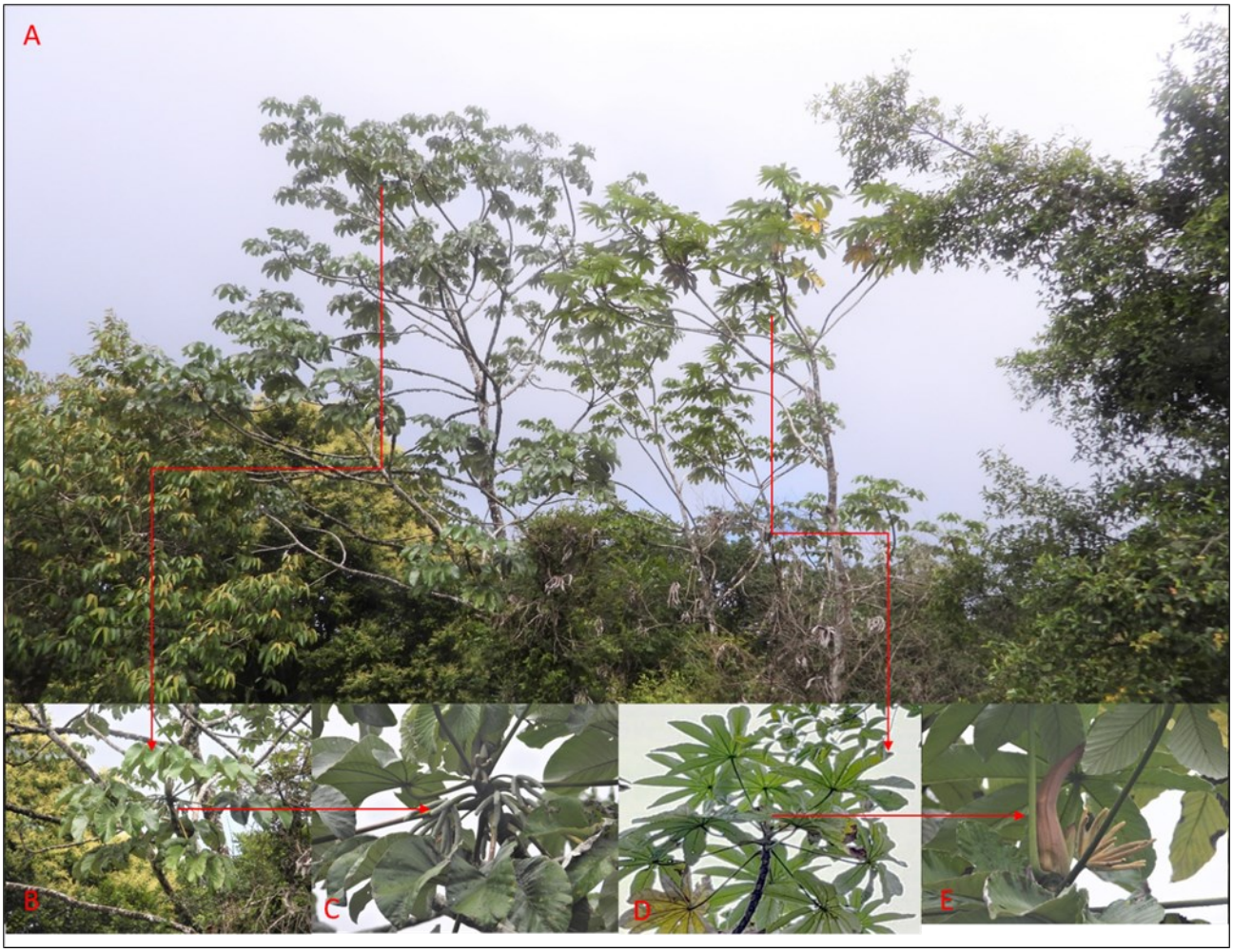
Rachel Wheeler

The team pose for a photograph before botany-birding along the trail and at the summit of the Main Ridge (Centre Hill). From left to right: Dan Jaggernauth, Linton Arneaud, Matt Kelly, Shane Manchouck and Chantal Leotaud. *Photo* by *Shane Manchouck*

called Bird of Paradise Island — due to the island being the only habitat of the Greater Bird of Paradise outside of New Guinea. The bird is now no longer found on the island. The closest island to Tobago (during the time it was attached to Venezuela) is now somewhere near to the southern isles of Africa and the islands are still drifting apart 'as fast as the fingernail grows', according to Matt.

The group tried some of the guavas (*Psidium* sp.) from a local guava tree. Although they were yellow, an indication of mature guava fruit, the guavas were tough (pericarp and pulp) and had little to no flavour. Continuing along the trail, as they began approaching the Centre Hill summit, the group saw many varieties of anthuriums, even one that strikingly resembles *Anthurium aripoense*. There were a lot of razor-sharp grasses (*Scleria* spp.) in certain parts (open areas) of the trail. The leaves of razor grasses are believed to get their sharp cutting abilities from absorbing silica from the soil. Shortly after, the botany-birders summitted the Centre Hill (trigonometric point 36). After taking a photograph, the group spent the next 75 minutes creating and collecting data in the permanent sample plot (see page 16 for details on methodology used).

The group then started descending through what felt like a secondary forest. Much of the forested area contains diverse flora despite Tobago having been affected by the catastrophic category 3 "Hurricane Flora" on the 30th September 1963, with wind speed over 190 km/h (≈120mph). During this hurricane, there were



Two bois canot trees spotted outside the Main Ridge Reserve Bloody Bay Recreation Site:(A) Two adult trees side by side; (B) Leaves of species 1; (C) Pistillate (female) flowers of species 1; (D) Leaves of species 2; (E) Staminate (male) flowers of species 2. *Photos by : Matt Kelly and Linton Arneaud*

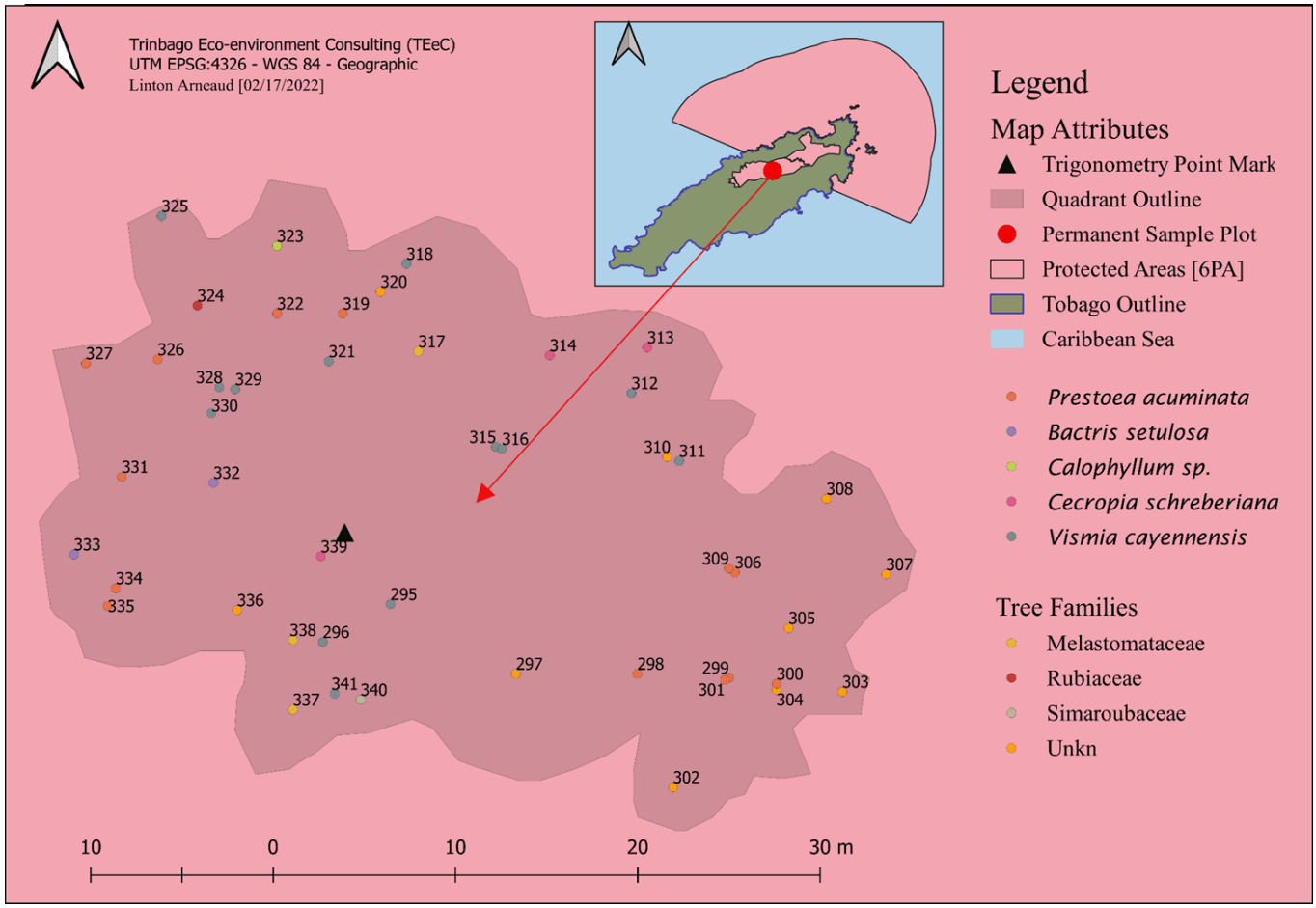
strong gusts and squalls, causing damage to much of the forest.

Linton pointed our attention to the differences in two Bois Canot species (*Cecropia* spp.) growing side by side. From Baksh-Comeau (2016), two species of Cecropia are recorded, they are *Cecropia peltata* and *C. schreberiana*. However, he was reluctant to differentiate them.

All in all, the team had an enjoyable trip bota-birding on the beautiful island of Tobago, while following all Covid-19 protocols. The team continued down to the base of the island's tallest peak. However, our excitement did not stop there, as Linton decided to use the duration of the day to search for flowering Bamboo (*Bambusa vulgaris var. vittata*) on the island. Using two Maverick 2 UAV drones, the team spotted many bamboo clumps that seemed to be in flower, however, using Linton's robust method of differentiating actual flowers from drying/leaves, only one clump proved to be truly flowering on the north-central section of the island.

Matt informed Linton about the two *Epidendrum* arboreal orchids he found on the Main Ridge back in 2012 and 2015 (*see page 12 for article*). The two, together with Dan went searching for them, stopping at numerous points along the Roxborough -Parlatuvier Road. Shane and Chantal took this opportunity to fly their drones at low elevations observing the natural forest canopies, while looking for flowering bamboo, amongst other things. Unfortunately, none could be found.

We were pleased to see that there was little to no litter along the Centre Hill trail and along the roads on the Main Ridge. Also, comparatively, the shorelines in Tobago were much cleaner than



Permanent sample plot established on the Centre Hill, Main Ridge Summit, Tobago, West Indies. Note: please see the demographic parameters of species in Table 2. *Photos by : Matt Kelly and Linton Arneaud*

The team pose at the trigonometry point on the Centre Hill summit. From left to right: Dan Jaggernauth, Chantal Leotaud, Linton Arneaud, Matt and Shane Manchouck. *Photo by Shane Manchouck*

Trinidad. Linton also commended the Tobago House of Assembly and all other relevant authorities for their efforts in preserving the Main Ridge Forest Reserve and National Heritage Site and hopes that Trinidad can one day attain such an achievement.

Addendum:

'Avifaunal observations made by Matt during the botanical survey'.

Matt arrived at the Main Ridge Forest Reserve Visitor's Centre by 6:00 am. It was a rainy morning. He found a dead snake in the road just at the entry drive of the centre. The snake appeared to be a Trinidad snail-eating snake (*Dipsas trinitatis*), about 24 cm. in length, with which Shane also concurred. But according to the TTFNC herpetology field guide, that snake is not found on Tobago, which he later found out. Matt did not take a photo at the time, which was a mistake. He believe he had encountered this snake before on Tobago.

At about 8:00 am, the group struck out for Centre Hill and arrived at the peak in about an hour. The team were on Centre Hill for almost 5 hours, during that time, Matt was able to identify 18 different bird species. Around 2:40 pm, when the group arrived at the Bloody Bay River, not far from the bridge, Matt was able to identify an additional 12 birds in 20 minutes.

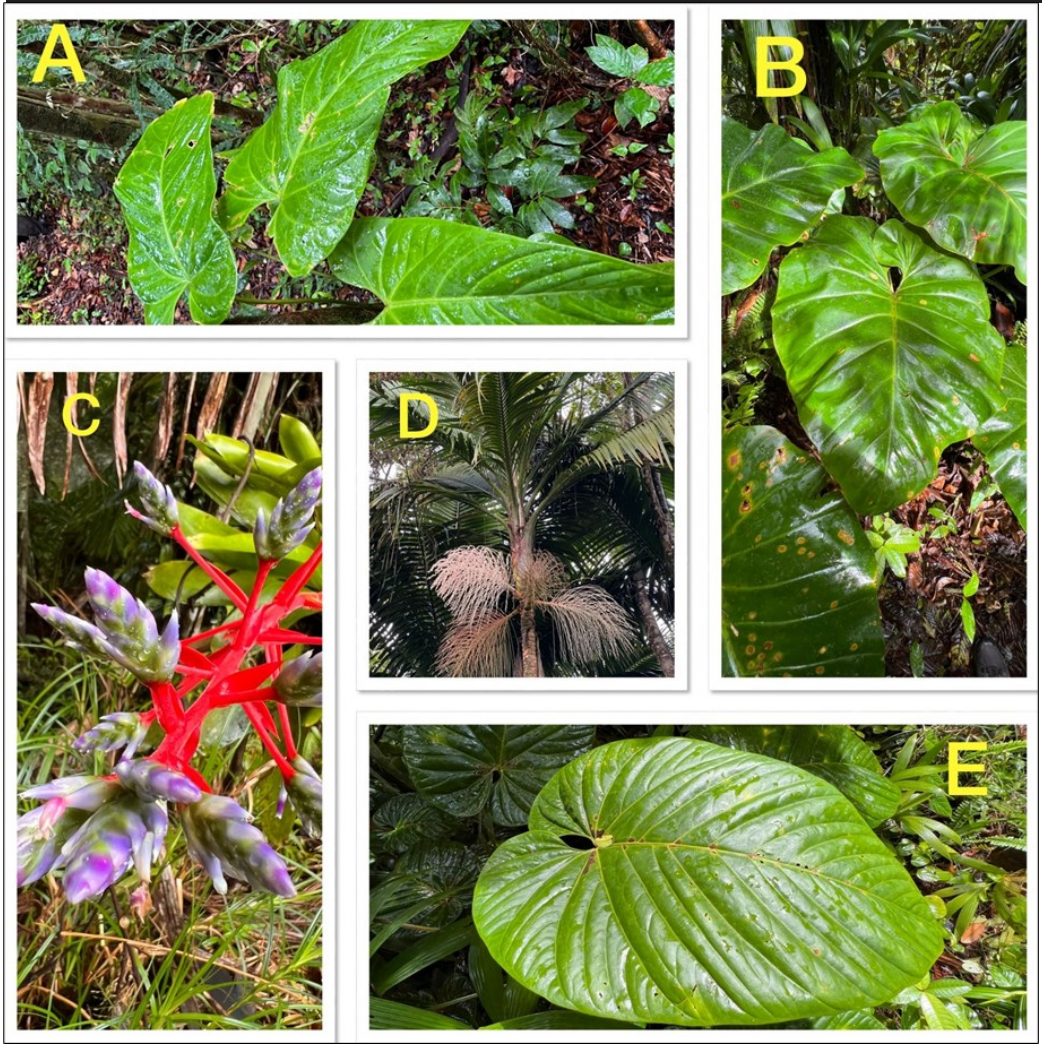
Results will be published in upcoming publications.

References:

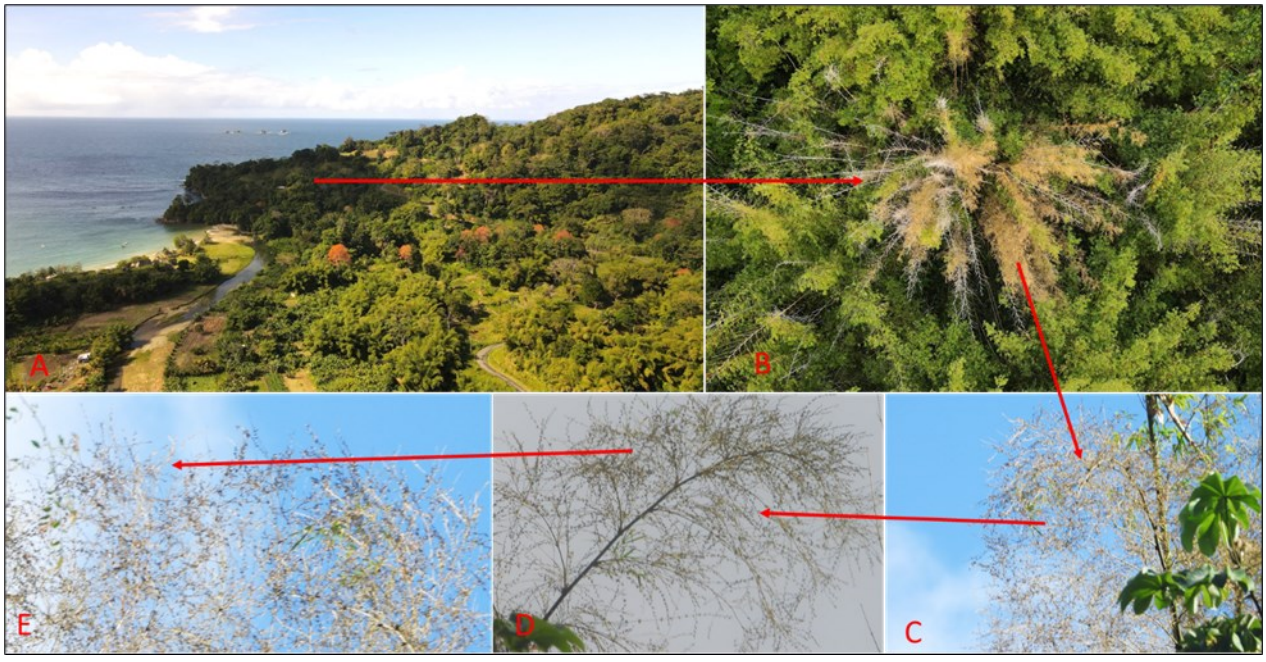
Baksh-Comeau, Yasmin S., Shobha S. Maharaj, C. Dennis Adams, Stephen A. Harris, Denis L. Filer, and William D. Hawthorne. "An annotated checklist of the vascular plants of Trinidad and Tobago with analysis of vegetation types and botanical 'hotspots'." Phytotaxa 250, no. 1 (2016): 1-431.

Murphy, John, et al, 2018, A Field Guide to the Amphibians and Reptiles of Trinidad & Tobago, published by the Trinidad & Tobago Field Naturalists' Club, 336 pages, hardcover.

A male white-tailed sabrewing spotted at the top of Centre Hill, Tobago, W.I. The species is found only in Tobago and Venezuela, and is absent in Trinidad. After the catastrophic Hurricane Flora struck Tobago in 1963, and wiped out most of the forest, it was thought this species could have been extirpated from Tobago. They have been red-listed for Tobago ever since. The good news is they have made a tremendous come-back on Tobago, and can now be regularly found in the upland rain forests of Tobago 2. *Photo by Matt Kelly*



(Left): Photographs of notable flora (Aroideae, Arecaceae and Bromelioideae) along Main Ridge, Tobago, W.I. (A & B) *Anthurium* spp.; *Aechmea dichlamydea*; (D) *Prestoea acuminata;* and (E) *Anthurium* sp. *Photos by Chantal Leotaud*



Common bamboo flowering on the hillside at Bloody Bay, Tobago, W.I. (A) Aerial view (≃30 metres) of the general area of flowering bamboo; (B) Aerial view of the flowering bamboo clump; (C-E) Close up photography of flowering bamboo flowers. *Photos by Shane Manchouck and Matt Kelly*

Table 1. Some species identified in the permanent plot on the Centre Hill, Main Ridge summit, Tobago, WI.

#	Common Name	Scientific Name	Order/Family	*IUCN Listing
1	Melastoma tree	-	Melastomataceae	-
2	Fern	-	Polypodiopsida	-
3	-	-	Rubiaceae	-
4	Moss	-	Bryophyta	-
5	-	*Eugenia* sp.	Myrtaceae	LC
6	Cow Gru Gru	*Bactris setulosa*	Arecaceae	LC
7	Bois Canot	*Cecropia* sp. (aff. *schreberiana*)	Urticaceae	NE
8	Nutgrass	*Cyperus rotundus*	Cyperaceae	LC (Ex)
9	Mamoo	*Evodianthus funifer*	Cyclanthaceae	LC
10	Ficus	*Ficus* sp.	Moraceae	LC
11	Balisier	*Heliconia bihai*	Heliconiaceae	LC
12	Wild Ixora	*Isertia parviflora*	Rubiaceae	LC
13	Bamboo Grass	*Lasiacis* sp. (aff. *divaricata*)	Poaceae	LC
14	Bamboo Grass	*Lasiacis* sp. (aff. *ligulata*)	Poaceae	LC
15	Giant Moss	*Leucobryum martianum*	Dicranaceae	LC
16	Miconia	*Miconia* sp. 1	Melastomataceae	LC
17	Miconia	*Miconia* sp. 2	Melastomataceae	LC
18	Red-Hot Pocker	*Norantea guianensis*	Marcgraviaceae	LC
19	-	*Passiflora* sp.	Passifloraceae	-
20	Philodendron	*Philodendron* sp. 1	Araceae	-
21	Philodendron	*Philodendron* sp. 2	Araceae	-
22	Piper	*Piper* sp.	Piperaceae	-
23	Mountain Cabbage	*Prestoea acuminata* var. *acuminata*	Cucurbitaceae	NE
24	Razor Grass	*Scleria bracteata*	Poaceae	LC
25	Razor Grass	*Scleria secans*	Poaceae	LC
26	Devil Vine	*Smilax* sp. (aff. *solanifolia*)	Smilacaceae	NE
27	Fern	*Thelyteris* sp.	Dryopteridaceae	-
28	Wild Pine	*Tillandsia* sp.	Bromeliaceae	-
29	Cajuca	*Virola surinamensis*	Myristicaceae	LC
30	Black Kiskadee	*Vismia cayennensis*	Hypericaceae	LC
31	Vriesea	*Vriesea* sp.	Bromeliaceae	LC
32	Vriesea	*Vriesea splendens var. formosa*	Bromeliaceae	NE
33	Wild Tania	*Xanthosoma undipes*	Araceae	LC
34	-	*Calophyllum* sp.	Clusiaceae	-
35	-	-	Simaroubaceae	-

Note: *IU21CN Listing based on Comeau et al. 2016 "Checklist to Vascular Plants of Trinidad and Tobago"
Note: LC (Ex) : Exotic Species

Table 2. Species identification, estimated total height (TH), diameter at breast height (DBH), basal area (BA), and coordinates (UTM-WGS) of adult trees >10 DBH/cm found on the Centre Hill, Main Ridge summit, Tobago, WI.

#	Scientific Name	*Elevation (m)	TH (m)	DBH	Basal Area (m2)	Lattitude	Longitude
333	*Bactris setulosa*	569.90	6	49.7	0.1938	1247240.689	758756.9644
332	*Bactris setulosa*	570.15	6	43.3	0.1473	1247244.734	758764.5782
342	*Bactris setulosa*	580.55	14	10.2	0.0082	1247637.895	758855.1197
323	*Calophyllum* sp.	569.40	12	0.0	0.0000	1247257.931	758767.967
314	*Cecropia schreberiana*	569.27	8	15.0	0.0176	1247251.966	758782.9806
313	*Cecropia schreberiana*	569.93	8	17.8	0.0250	1247252.452	758788.3292
339	*Cecropia schreberiana*	571.91	11	34.7	0.0946	1247240.688	758770.5097
317	Melastomataceae1	570.33	8	14.6	0.0168	1247252.129	758775.7697
338	Melastomataceae2	569.48	4	10.2	0.0082	1247236.027	758769.0181
337	Melastomataceae2	570.85	5	15.0	0.0176	1247232.154	758769.0495
306	*Prestoea acuminata*	565.82	11	53.2	0.2220	1247239.986	758793.2365
300	*Prestoea acuminata*	565.98	7	12.4	0.0121	1247233.808	758795.5805
309	*Prestoea acuminata*	566.06	10	40.4	0.1284	1247240.205	758792.907
301	*Prestoea acuminata*	566.07	11	24.8	0.0484	1247234.006	758792.7387
299	*Prestoea acuminata*	567.74	7	20.7	0.0336	1247234.118	758792.9563
298	*Prestoea acuminata*	568.37	6	15.6	0.0191	1247234.299	758787.93
326	*Prestoea acuminata*	568.41	13	24.5	0.0472	1247251.57	758761.4643
327	*Prestoea acuminata*	568.69	12	20.1	0.0316	1247251.317	758757.5339
335	*Prestoea acuminata*	568.76	7	133.8	1.4045	1247237.826	758758.8446
334	*Prestoea acuminata*	569.07	6	13.4	0.0140	1247238.826	758759.2735
319	*Prestoea acuminata*	570.37	7	14.0	0.0154	1247254.198	758771.602
322	*Prestoea acuminata*	570.49	8	10.5	0.0087	1247254.169	758767.9974
331	*Prestoea acuminata*	571.44	9	12.4	0.0121	1247245.026	758759.551
324	Rubiaceae1	568.61	10	18.8	0.0277	1247254.576	758763.6247
340	Simaroubaceae	570.65	10	24.8	0.0484	1247232.738	758772.7588
297	Unkn1	568.37	7	25.2	0.0497	1247234.245	758781.267
336	Unkn1	569.67	8	17.2	0.0232	1247237.663	758765.9463
302	Unkn2	564.75	15	64.3	0.3249	1247228.007	758789.9471
310	Unkn2	566.61	7	31.8	0.0796	1247246.374	758789.4708
308	Unkn3	563.69	9	11.8	0.0109	1247244.121	758798.2279
305	Unkn3	563.85	12	18.8	0.0277	1247236.911	758796.2108
307	Unkn3	564.00	9	14.6	0.0168	1247239.943	758801.5388
304	Unkn3	564.15	13	24.2	0.0460	1247233.476	758795.5831
303	Unkn3	564.22	12	17.8	0.0250	1247233.394	758799.1886
320	Unkn4	569.96	9	31.5	0.0780	1247255.432	758773.6675
318	*Virola surinamensis*	570.19	8	15.0	0.0176	1247256.993	758775.0749
311	*Vismia cayennensis*	568.85	8	12.1	0.0115	1247246.158	758790.1279
312	*Vismia cayennensis*	568.87	6	17.8	0.0250	1247249.9	758787.476
325	*Vismia cayennensis*	569.11	12	17.8	0.0250	1247259.54	758761.6183
296	*Vismia cayennensis*	569.16	10	32.8	0.0845	1247235.93	758770.6575
295	*Vismia cayennensis*	569.51	7	22.0	0.0379	1247238.063	758774.3542
315	*Vismia cayennensis*	569.69	8	17.8	0.0250	1247246.852	758780.0726
316	*Vismia cayennensis*	569.76	8	30.9	0.0749	1247246.744	758780.4012
321	*Vismia cayennensis*	569.80	11	22.9	0.0413	1247251.536	758770.8589
330	*Vismia cayennensis*	570.08	11	13.7	0.0147	1247248.606	758764.4377
329	*Vismia cayennensis*	570.08	10	12.4	0.0121	1247249.945	758765.7377
328	*Vismia cayennensis*	570.08	10	20.7	0.0336	1247250.049	758764.8629
341	*Vismia cayennensis*	571.37	16	12.4	0.0121	1247233.058	758771.3361

Note: *Elevation as per Garmin GPSMAP 64s data output

Note: ** not recorded

Note: Average Canopy Coverage for the permanent sample plot = 77.54%

Marine Group Report — 06 March, 2022

MATURA BEACH CLEAN UP 2022

by Karishma Rampersad

Seven of our eight member beach cleanup team. *Photos by Karishma Rampersad*

What a day - beach cleaning with masks on! On March 6, 2022, the first day of a week-long clean up, the Marine group headed to Matura beach a first stop treasure for turtle nesting, on the north-east side of Trinidad. Our annual participation in Nature Seekers beach clean-up is a must, since the event is prioritized on cleaning and clearing the shores of debris and sargassum for the March-September turtle nesting season. This ensures a clear path to and from shore for nesting turtles and emerging hatchlings. The 8.8km beach is a central hub for the vulnerable leatherback turtle (*Dermochelys coriacea*) and also a nesting area for the endangered green turtles (*Chelonia mydas*) and critically endangered hawksbill sea turtle (*Eretmochelys imbricata*).

Upon entering Orosco Road, we took a 20 minute drive through a very scenic, forested path which welcomed breaths of fresh, oxygen-rich air. Already hearing the ocean whistling in the midst, we arrived at the semi-filled carpark where the members met, and a short briefing was done. We ventured to the registration tent and collected gloves and garbage bags and we were all set. Due to the Covid-19 protocols still in place, a guide briefed us on the specifics and our team independently went out on shore seeking an area that wasn't already cleaned.

Our walk to finding an unclean spot was very long as the participants who started at 6:00am had already done their work pretty well. Some of the other 9:00 a.m. teams beat us to it and all we could see in the distance were large groups already stuffing their bags with debris.

Some of our members were particularly interested in the microplastics that were left out since it can be harmful to sea turtles if ingested. So, we stopped and collected lots of tiny pieces in our garbage bags. Some of the items found were small pieces of unidentified plastics, bottle covers, cue tips, floss picks, small pieces of styrofoam and toothbrushes.

Sharis, Rhea and Leah removing a fishing net.

Aldo collecting plastic bottles.

We also encountered a fishing net that was stuck in the sand, one which our members were determined to remove since it may have resulted in the entanglement of sea turtles.

On route thus far, we managed to fill three garbage bags containing the large fishing net, microplastics, large styrofoam pieces and plastics bottles that were stuck in the sand. These were placed above the high water mark and left for collection by Nature Seekers.

A very interesting and a first sighting for some members, was an encounter of a log with pelagic gooseneck barnacles (*Lepas anatifera*) attached. It was a definite cause for closer observation. We also spotted several Portuguese man o' war (*Physalia physalis*) that was stuck in the piles of sargassum.

Finally an uncleaned area of the beach! Our highly motivated team immediately got to work.

We found various types of debris with plastics unfortunately being most prevalent. Large plastic bottles, beverage cans, fishing nets, styrofoam, iron mesh, food wrappers and many large pieces of unidentified plastics were found, all of which could be potentially hazardous to sea turtles.

At the end of the clean up and due to a very proud team effort. we managed to completely fill 10 bags. All thanks to Rhea, Marie, Sharis, Leah, Davion, Joshua and Aldo for an exceptional day's work.

(Top) Pelagic gooseneck barnacles attached to a log; (bottom) Portuguese man o' war stuck in Sargassum.

11 February 2015

TWO ARBOREAL ORCHIDS FOUND IN TOBAGO

by Matt Kelly

Blooming orchids hanging upside down from a vine on February 18, 2012. Photograph is with camera flash. *Photos by Matt Kelly*

On February 18, 2012, I was hiking over the Main Ridge on Tobago, above the Parlatuvier area. On the very top, or saddle of the ridge, at approximately 1750 feet above sea level, I came upon a huge arboreal orchid, that had been growing on a branch which had died and snapped off. A strong liana, holding the dead branch from falling, was swinging above the ground, along with the orchid's root basket still firmly attached to the branch. It had evidently been this way for a long while, as the spikes, or canes from the root basket had altered their growing direction, and grown in the opposite direction to accommodate the upside-down posture of the plant. They had grown in a curved shape, going up.

This phenomenon would probably have taken a long time to adjust to this condition. Upon further study, I found that there were indeed two separate types of orchids growing from this same root basket. The predominate orchid had a bright pink flower, while the other had bright orange flower. I took several pictures. All photos herein are taken at the same location on Tobago.

Both orchids appeared to be fairly robust, even though they were now growing upside down. The flower stalks, or spikes on this plant were from about three feet to maybe seven feet long. They ended with a cluster of blooming flowers, which appeared to bloom in succession at the end of the spike, or cane, as the spike grew in length. The root basket was so big around, that I doubted if my arms could reach around it. I believed that I recognized

both of these species, but in much smaller sizes, along the roadside on the Roxborough/Bloody Bay Road (on the way down to Roxborough). I had seen both species in Tobago in the past.

The area is very inaccessible, which is good for the safety and security of the orchids. The only persons likely to pass by this area would be hunters. No birders or hikers would be here. Even a hunter passing by is not very likely to notice them, as they are obscured by the canopy, and are very high.

I had a copy of Julian Kenny's book, "Native Orchids of the Eastern Caribbean," but could not find anything resembling these orchids in there.

On February 25, 2013, I walked up the ridge to the place where I had found the big arboreal orchid last year. It was still hanging upside-down there. It was only about half the size, or less, than it was last year, and was losing a lot of its vitality. I decided to take it down, as it was going to die out, especially when the vine it was hanging on fell, or if it fell from the vine. I thought that maybe it could be revived and propagate more plants.

Blooming flowers of the orchid hanging upside down from a vine. Closer up photo of the flowers in bloom, February 18, 2012. Photograph is with camera flash.

Even closer up of the pink flowers in bloom, February 18, 2012. Photograph is with camera flash.

Last time I was here (a week or so ago), I had cut the vine that the orchid was hanging on, trying to get it to fall, but it didn't drop. This time, I brought a coil of rope. I made a hook, out of a branch, and tied it to the end of the rope. I threw it and threw it, trying to hook the orchid. Twice, I hooked it, only to have the rope break. I finally got it hooked, and pulled down the orchid. I had to climb out on a tree limb, high over a drop-off on a steep side of the mountainside to do this, which was very precarious and dangerous, especially being alone on the ridge top, where no one knew how to find me.

Once I hooked it, I pulled it down, with a lot of effort, and finally cut the vine it was attached to. I tied the whole orchid mass up with a rope. It was over 7 feet long! I then carried the bundle on my shoulders, over the trail, and down the mountain. It was a lot of exhausting work. After about an hour, I got it down to a road! Once on the road, I got a second wind, and carried it farther along the road. After a while, I was too tired to carry it anymore. I stashed it in the bush, on the side of the road, and walked home for the car. I was able to get it in the car, and drive the orchid clump home later. Some expedition!

On the trail February 25, 2013. I carried the orchid down the mountain. It was quite a hike! The length was over 7 feet long from the root basket to the ends of the spikes or canes.

I gave the orchid to Rick and Judy Hayton, who are experts with orchids and plants. Rick has many, many species of orchids under his care. I thought that if anyone could bring this orchid around, it would be Rick and Judy. In December of 2014, I learned that they made a very valiant effort, but could not keep the orchid alive.

On a later trip to Trinidad, I bought a copy of Julian Kenny's hardcover, coffee-table-sized book, "Orchids of Trinidad and Tobago." From that book, I believe I was able to identify the orchids.

I believe the orchid plant is mostly: *Epidendrum imatophyllum,* which are the ones which have the pinkish-red flowers. This orchid will make up most of the bundle. But when I first discovered it, there were orange flowers blooming in the bunch, on one stalk alone, which I believe were: *Epidendrum ibaguense*. This species has two sub-species which are: *Var confluens* or *Var Schomburgkii.*

Both *E. imatophyllum* and *E. ibaguense* are listed in Kenny's orchid book as not occurring, and/or not recorded on Tobago, and "rare" in Trinidad. Except, Schomburgkii is listed as "uncommon" and not "rare" in Trinidad, which I believe was the orchid with the orange flowers.

On January 19, 2014, I again visited the same spot on the Main Ridge, and saw pink and orange orchid flowers blooming in the canopy.

On February 6, 2015, I was back to the same location on the mountain, and found another of these orchids. It was a very large and healthy specimen. There was also the species with the orange flowers blooming in the mix, but there were not many orange flowers. There were at least 6 – 10 pink spikes or canes in bloom. Getting any really clear pictures was very difficult, as I was down on the ground, and the orchids were flowering very high up in the canopy, overhanging a drop off of the hillside.

It was very difficult to take photographs. I had to get into the right angle from the sun, wait for cloud cover to move off, wait for the wind to be just right, to expose certain portions of the canopy, and hold my hands as steady as a surgeon, as I was

February 6, 2015; detail of flowers. Photograph is without camera flash.

shooting on the highest zoom the camera could manage. I must have shot about 15 pictures for every clear one I have presented here - my camera has a 50x zoom feature. After that amount of zoom, I enlarged the photos even more on my computer. With the enlargements, ants are visible.

Photos required a very steady hand, and the wind to be just right. These photos are looking through small holes in the foliage. These flowers are growing very far from the ground.

The orchid roots were a very large, rough, whitish, wooly mass. There were well over 50 spikes or canes growing out of the root mass, or root basket. The limb this mass of orchids is attached to appears to be healthy, and will probably last a while, unless the orchids amass too much weight.

In summary, I believe I may have added two more wild orchids to the list of native Tobago orchids (at least as far as the orchid check-list in Kenny's book is concerned). I believe these orchids to be:

The pink flowered:
Epidendrum imatophyllum

The orange flowered:
Epidendrum ibaguense var Schomburgkii

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February 6, 2015; detail of root basked attached to tree limb. There are well over 50 spikes growing out of the basket. Photograph is without camera flash.

Botany Group Report, 16 November 2021

PERMANENT SAMPLE PLOT ON EL TUCUCHE SUMMIT, TRINIDAD, W.I.

by Chantal Leotaud, Shane Manchouck and Linton Arneaud

Aerial view (≃30 metres) of the Maracas Bay, above the El Tucuche trigonometry mark, facing 350° north-west. *Photo by Shane Manchouck*

The Botany Group resumed recording botanical data on the island's highest peaks, and trusts that researchers and naturalists will continue to revisit these permanent plots in the future, not only to contribute botanical data, but also zoological and mycological data. At around 8:35 am, after securely parking at Dan Jaggernauth's friend's place (private property) at the foothills of El Tucuche, the team of four: Dan Jaggernauth, Linton Arneaud, Shane Manchouck and Chantal Leotaud, began the botanical survey of the second-highest mountain in Trinidad. The hike started with an initial sharply-inclined road along the Hobal Trace for about 20 minutes. During this time, members identified common flora, while providing possible uses for some species. Along this first leg of the hike, plant species such as monkey apple (*Genipa americana*), incense wood (*Protium guian*ense), stinking toe (*Hymenaea courbaril*), pois doux (*Inga* sp.), cush-cush (*Dioscorea trifida*), and manicou fig (*Bromelia plumieri* or *B. karatas)* were seen.

As we hiked further up the tarmac to the El Tucuche trailhead, via the Hobal Trace tarmac span, there were some guava seeds (*Psidium guajava*) that recently germinated within their decomposing external skins. These guavas had rolled some metres from their parent tree which was hanging from a hillside above the tarmac, a few metres from the El Tucuche trail start. According to the article, "Growing guava in pots from seeds and cuttings", written by Garden Tips in 2021- in horticulture - guava seedlings germinate through the process of boiling for a few minutes or are soaked in water for a couple of weeks in order to break seed dormancy. Whether the sun-heated tarmac promoted seed germination, or consistent rainfall, allowing the seeds to soak in a rain puddle for a couple of weeks - the results were clear - a high germination success rate. Nevertheless, this

Aerial view (≃30 metres) above the summit of the El Tucuche, Trinidad, West Indies overseeing east of the Northern Range.

Photo by Shane Manchouck

Guava seedlings (at various stages of germination) were observed on the tarmac span not far from the parent tree, possibly due to the sun-heated tarmac, consistent rainfall, or a combination of both.

Photo by Shane Manchouck

phenomenon remains unclear, yet notable.

About a quarter of the way up to El Tucuche, near the only camp that was spotted just off the trail (a black tarpaulin strewn over a square frame), were some fallen serrette or dunks (*Byrsonima spicata*) that we ate. At that point, we rested and took note of the forest vines, and their potential uses, even discussing sustainable harvesting methods and their importance for forest thriving and continuity, as the group reconvened. There were a few overhead flying insects that a bat took interest in. The bat flew back and forth, in and out of the canopy area, numerous times while feeding on the insects. Chantal was captivated by it.

Nearly 500m from the summit, Dan pointed out that there had been a forest fire in the area. It was evident in the types of flora that regrew after the blaze, and the surrounding area was still a lot more forested than where the fire had been. The fire had likely started due to the harsh dry seasons that the island succumbed to, over the last two years. Montane forest species such as manac palm (*Euterpe broadwayi*), anare palms (*Geonoma interrupta* and *Prestoea pubigera*), giant tree fern (*Cyathea* sp.), and green moss (*Leucobryum* sp.) were easily sited after the previously burnt area.

Another highlight of the trip was when, while walking a couple of hundred metres towards the summit, Dan pointed out strange sucking/ murmuring sounds that were later suspected to be made by 'red burrowing earthworms' coming out of the soil. Linton was initially not persuaded, but eventually came around; he later researched the same using the TTFNC Trail Guide and corroborated Dan's observations.

Near the El Tucuche summit, Dan located a jar that was left there by the Trinidad & Tobago Field Naturalists' Club (TTFNC) as part of an environmental assessment that was meant to collect data. In the 1990s, Dan, along with some other naturalists (all of whom are no longer with us), had placed some items in the jar, inclusive of a battery, that was meant to collect environmental data from the area. The jar had some tamper-proofing on it, and was labelled as an apparatus placed at the location by the TTFNC with further contact information. It is suspected that the jar had been tampered with as it contained nothing more than some residual liquid; only the jar's outer label was still intact.

At the El Tucuche summit, there was a concrete trigonometry pillar. A couple of metres away, there was another trigonometry pillar with a plaque attached to the top of it, containing trigonometrical information about El Tucuche - at the top of the mountain's north-facing trail access. Also notable was that the GPS points were different for the highest point recorded by the Garmin 64 GPS device, similar to the El Cerro del Aripo trigonometry pillar. The El Tucuche trigonometry

Members of the Botany Group at the summit of the El Tucuche before setting up the permanent sample plot. From left to right: Chantal Leotaud, Linton Arneaud, Shane Manchouck and Dan Jaggernauth. *Photo by Shane Manchouck*

A data-collection jar was retrieved near the summit of the El Tucuche summit, Trinidad. This jar was placed by a TTFNC research team in the 1990s, and suspected to be removed from its original place and tossed by hikers. *Photo by Linton Arneaud*

point mark was measured at 936m.

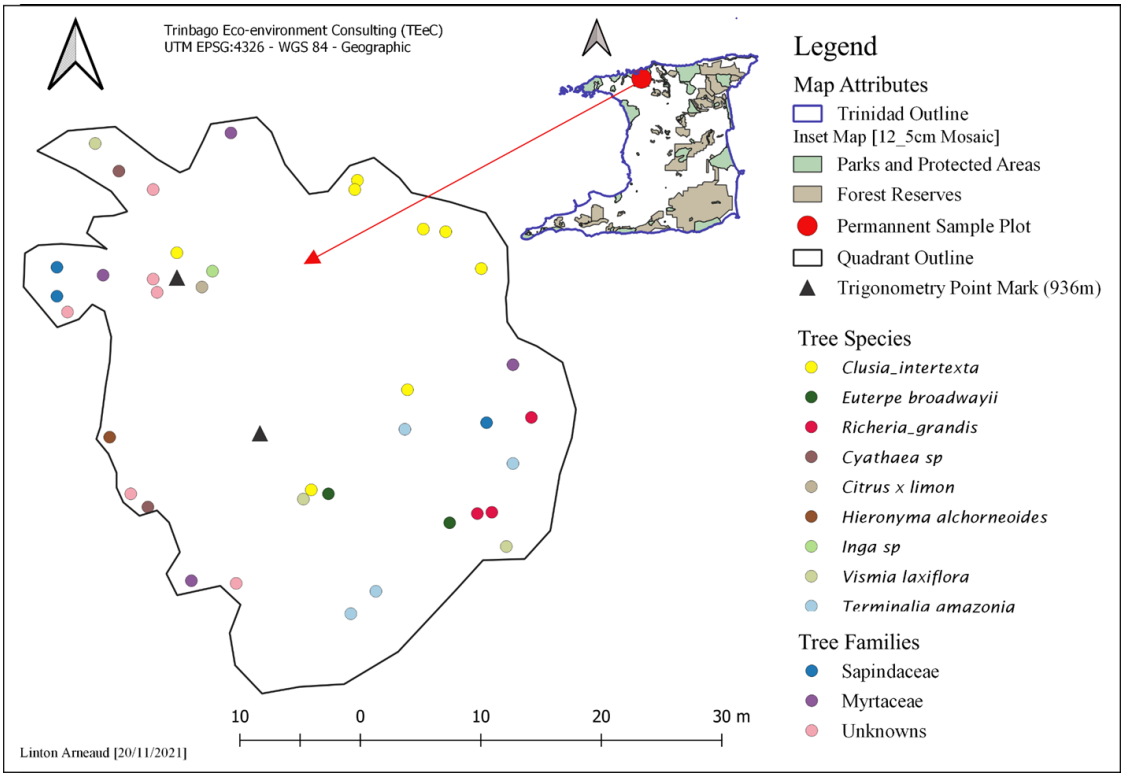
The El Tucuche summit was generally clean of human litter. However, Dan and Linton indicated that while collecting data from the nearby range, they noticed a lot of strewn glass bottles and other trash items within the forested area. It seemed as though some visitors or hikers of the mountain chucked their litter into the nearby bushes. Among the litter, was a signpost that belongs to the Trinidad and Tobago Forestry Division depicting visitor information for El Tucuche.

Linton and Dan, soon after summiting, measured the quadrat (following the same methodology used on the El Cerro Del Aripo data retrieval) and began recording flora species names or subsequently identifying plants either to the species, genus or family names (Table 1). Plant species that could not have been immediately identified, were photographed for further study. After the initial survey, Chantal and Shane joined Dan and Linton, in order to record the GPS coordinates and take the measurements of the flora within the measured sample plot. The GPS coordinates were taken using the Universal Transverse Mercator-World Geodetic System (UTM-20N-WGS). Shane took tree height measurements using his unmanned aerial vehicle - UAV (Model: Mavic Air 2) after using the same device to gather topographical information of the El Tucuche summit and its surrounding area. A dressmakers' tape was used to measure the circumference of the marked trees with DBH/cm greater than 10cm within the quadrat (Table 2).

Shane, being an avid photographer took any opportunity to capture sightings of birds, butterflies and insects along the trail and at the summit.

The team continued botanizing all the way down to the base of the island's tallest mountain and safely arrived at the parked vehicle at approximately 5.30 pm. Overall, the trip was successful and the team was pleased with the clean main trail, as they only picked up little to no trash on their way back down. Linton, however, was concerned about the numerous non-indigenous plant species recorded on the summit and hoped that persons be more cognitive of the impacts these could have on the

montane forest.



Permanent sample plot established on the summit of the El Tucuche Summit, Trinidad, West Indies. Note: please see the demographic parameters of species in Table 2.

Species observed along the El Tucuche trail, Trinidad, WI. From left to right:

A—Manicou fig: *Bromelia plumieri* (Bromeliaceae)

B— Soap Vine: *Gouania* sp. (Rhamnaceae)

C—Cush-cush: *Dioscorea trifida* (Dioscoreaceae)

D—White sage: *Trema micrantha* (Cannabaceae) with a juvenile pink-toed tarantula spider (*Avicularia avicularia*) nest on a leaf (arrow)

E & F—Stinking toe: *Hymenaea courbaril* (Fabaceae) fruit and cut bark

G—*Miconia* sp. (aff. *nervosa*) (Melastomataceae) inflorescence

H—*Vriesea* sp. (Bromeliaceae) inflorescence

I—*Miconia* sp. (aff. *stenostachya*) (Melastomataceae) inflorescence

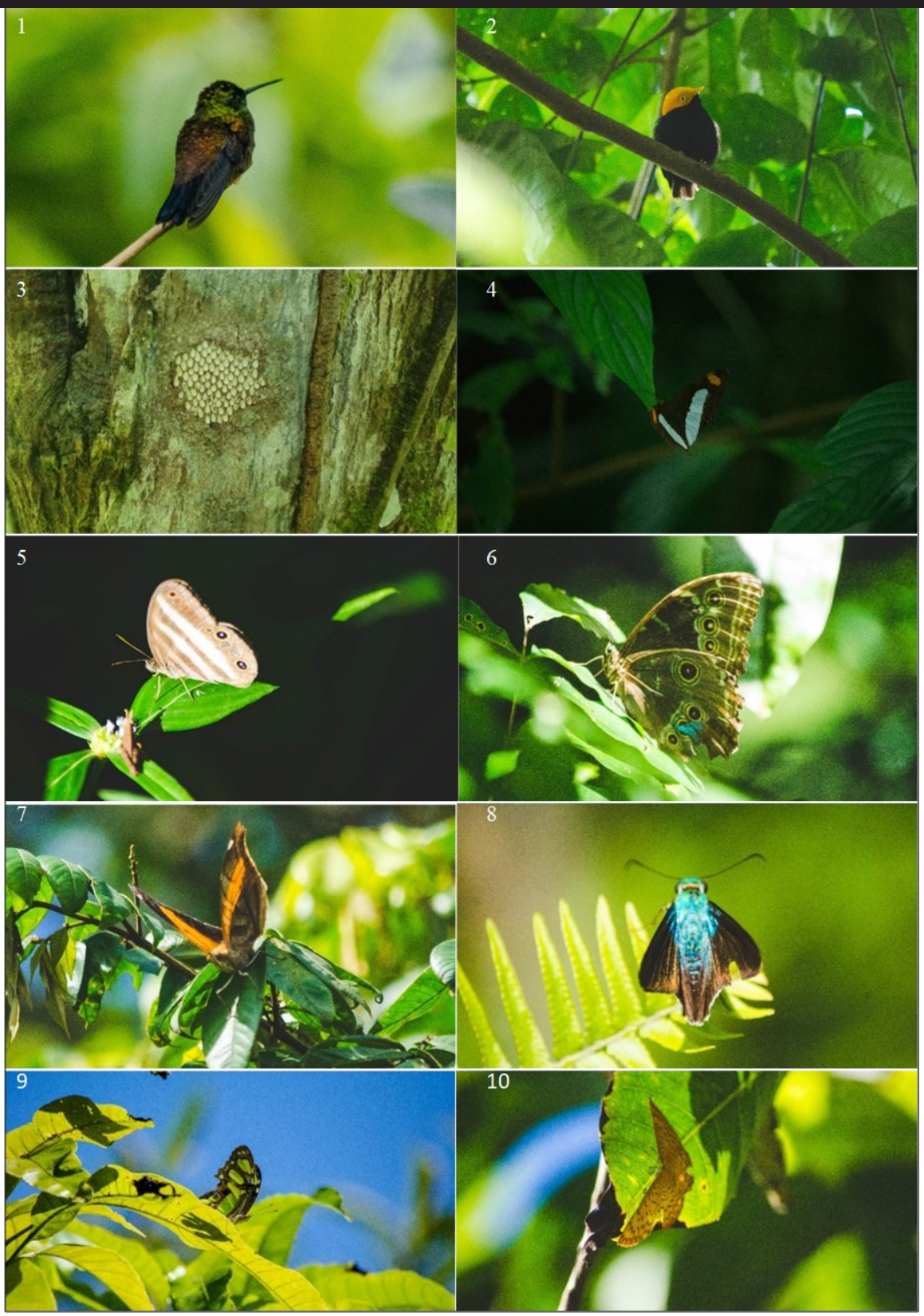
J—Serrette or dunks: *Byrsonima spicata* (Malpighiaceae)

K—Anthurium: *Anthurium aripoense* (Araceae) predated by insects

L—Anthurium: *Anthurium hookeri* (Araceae) established at the base of a tree

M—Mountain mangrove: *Clusia intertexta* (Clusiaceae) infructescence

N—Fern: *Adiatum* sp. (Pteridaceae) potted at the foot of the Devil's Staircase



Some species of birds, butterflies and insect eggs observed and partially identified along the trail, as well as on the peak.:

1. Copper-rumped hummingbird (*Amazilia tobaci*)
2. Golden-headed manikin (*Ceratopipra erythrocephala*)
3. Unknown Insect eggs on the truck of a tree
4. Iphiclus sister (*Adelpha iphiclus*)
5. Two banded satyr (*Pareuptychia occirhoe*)
6. Common morpho (*Morpho helenor* ssp. *Insularis*)
7. Stinky leafwing (*Historis odius*)
8. *Telegonus alardus*
9. Malachite *(Siproeta stelenes)*
10. *Emesis fatimella*

Photos by Shane Manchouck

- **Table 1. Some species identified in the permanent plot on the El Tucuche summit, Trinidad, WI.**

#	Common Name	Scientific Name	Family	*IUCN Listing
41	Cashew	*Anacardium occidentale*	Anacardiaceae	LC
8	Anthurium	*Anthurium aripoense*	Araceae	NE
9	Anthurium	*Anthurium hookeri*	Araceae	NE
24	Running Bamboo	*Arthrostylidium* sp.	Poaceae	-
17	Carpet Grass	*Axonopus compressus*	Poaceae	LC
25	Blechnum	*Blechnum serrulatum*	Aspleniaceae	LC
26	Bird-seed Grass	*Brachiaria* sp.	Poaceae	-
21	Serette	*Brysonima* sp. (aff. *spicata*)	Malpighiaceae	LC
12	Cachez-vous	*Calathea casupito*	Marantaceae	LC
27	Deer Bush	*Centropogon cornutus*	Campanulaceae	LC
39	Lemon	*Citrus x limon*	Rutaceae	LC
1	Mountain Mangrove	*Clusia intertexta*	Clusiaceae	NE
49	-	Cnemidaria	Cyatheaceae	-
48	-	*Coccocypselum* sp.	Rubiaceae	-
28	Wild Grape	*Coccoloba latifolia*	Polygonaceae	NE
4	Giant Tree Fern	*Cyathea* sp. (aff) *sagittifolia*	Cyatheaceae	NE
6	Nutgrass	*Cyperus rotundus*	Cyperaceae	LC
19	Dump Cane	*Dieffenbachia seguine*	Araceae	LC
38	Goo-goo-loo	*Dypsis lutescens*	Arecaceae	LC
11	Manac	*Euterpe broadwayi*	Arecaceae	NE
14	Anare	*Geonoma interrupta*	Arecaceae	LC
36	Bracken Fern	*Gleichenella pectinata*	Gleicheniaceae	NE
10	Tank Bromeliad	*Glomeropitcairnia erectiflora*	Bromeliaceae	NE
47	Bromeliad	*Guzmania* sp. (aff. *monostachia*)	Bromeliaceae	LC
2	Balisier	*Heliconia bihai*	Heliconiaceae	LC
29	Tapana	*Hieronyma alchorneoides*	Phyllanthaceae	LC
30	Hairy Pois Doux	*Inga* sp.	Fabaceae	-
46	Christmas Bush	*Lycopodiella* sp. (aff. *cernua)*	Lycopodiaceae	LC
42	Mango	*Mangifera indica*	Anacardiaceae	LC
7	Sardine	*Miconia chrysophylla*	Melastomataceae	LC
3	Miconia	*Miconia* sp. (aff.) *stenostachya*	Melastomataceae	LC
23	Sardine	*Miconia tomentosa*	Melastomataceae	LC
31	Red-Hot Poker	*Norantea guianensis*	Marcgraviaceae	LC
16	Palicourea	*Palicourea* sp. (aff. *crocea*)	Rubiaceae	LC
32	Philodendron	*Philodendron* sp.	Araceae	-
18	Piper	*Piper* sp.	Piperaceae	-
33	Anare	*Prestoea pubigera*	Arecaceae	NE
15	Wild Clove	*Psammisia urichiana*	Ericaceae	NE
43	Guava	*Psidium guajava*	Mrystaceae	LC
20	Ink Plant	*Renealmia alpinia*	Zingiberaceae	LC
13	Star Grass	*Rhynchospora nervosa*	Cyperaceae	LC
22	Bois Bande	*Richeria grandis*	Phyllanthaceae	NE
45	Razor Grasss	*Scleria bracteata*	Cyperaceae	LC
44	Razor Grasss	*Scleria* sp.	Cyperaceae	LC
40	White Olivier	*Terminalia amazonia*	Compretaceae	LC
5	Fern	*Thelyteris* sp.	Dryopteridaceae	-
37	-	*Uknown*	Malvaceae	-
34	Bladderwort	*Utricularia* sp.	Lentibulariaceae	-
35	Kiskadee	*Vismia laxiflora*	Hypericaceae	NE

Table 2. Species identification, estimated total height (TH), diameter at breast height (DBH), basal area (BA), and coordinates (UTM-WGS) of adult trees >10 DBH/cm found on the summit of the El Tucuche summit, Trinidad, WI.

#	Scientific Name	*Elevation (m)	TH (m)	DBH	Basal Area (m2)	Lattitude	Longitude
58	*Clusia intertexta*	926.88	5	20.1	0.0316	1187616.43	673806.39
59	*Terminalia amazonia*	926.62	10.5	68.8	0.3715	1187621.56	673814.13
57	*Euterpe broadwayii*	926.13	6	19.1	0.0287	1187616.10	673807.82
78	*Citrus x limon*	926.13	4	14.0	0.0154	1187633.41	673797.23
79	*Inga* sp.	926.09	5	17.2	0.0232	1187634.75	673798.10
82	*Clusia intertexta*	925.82	5.5	101.9	0.8153	1187636.28	673795.13
80	Unk 4	925.55	6.5	21.3	0.0357	1187632.95	673793.51
81	Unk 4	925.54	5.5	13.1	0.0134	1187634.06	673793.18
77	Unk 3	925.13	5	13.7	0.0147	1187641.58	673793.14
76	*Cyathea* sp.	924.72	4.5	15.9	0.0199	1187643.11	673790.29
65	Unk 1	924.70	6	12.1	0.0115	1187622.14	673820.91
68	*Clusia intertexta*	924.56	9.5	56.4	0.2494	1187624.87	673814.33
61	*Euterpe broadwayii*	924.46	11	17.5	0.0241	1187613.72	673817.89
64	*Terminalia amazonia*	924.32	11	17.5	0.0241	1187618.73	673823.12
67	Unk 2	924.22	8	33.8	0.0895	1187627.02	673823.07
63	*Richeria grandis*	924.08	11	35.0	0.0963	1187614.62	673821.39
60	*Richeria grandis*	923.76	10	13.4	0.0140	1187614.51	673820.19
83	Unk 2	923.73	8	13.4	0.0140	1187634.37	673789.02
69	*Clusia intertexta*	923.31	8	44.6	0.1561	1187635.08	673820.41
66	*Richeria grandis*	923.28	8	19.1	0.0287	1187622.60	673824.63
75	*Vismia laxiflora*	923.23	8	26.4	0.0548	1187645.42	673788.31
85	Unk 1	923.06	8.5	26.8	0.0562	1187635.01	673785.19
70	*Clusia intertexta*	923.00	9	26.1	0.0535	1187638.16	673817.44
62	*Vismia laxiflora*	922.80	11.5	16.6	0.0215	1187611.75	673822.61
84	Unk 1	922.68	75	16.9	0.0224	1187632.58	673785.20
86	Unk 5	922.60	9	19.1	0.0287	1187631.25	673786.08
73	*Clusia intertexta*	922.52	6.5	14.3	0.0161	1187641.66	673809.87
87	*Hieronyma alchorneoides*	921.90	8	11.5	0.0103	1187620.76	673789.64
71	*Clusia intertexta*	921.43	10.5	44.6	0.1561	1187638.38	673815.58
94	*Vismia laxiflora*	921.40	5	11.5	0.0103	1187615.65	673805.74
89	Unk 5	921.31	6	13.4	0.0140	1187616.02	673791.41
88	*Cyathea* sp.	921.24	4	14.3	0.0161	1187614.92	673792.84
74	Unk 2	921.03	6	33.8	0.0895	1187646.37	673799.57
90	Unk 2	920.59	78	49.0	0.1888	1187608.74	673796.48
72	*Clusia intertexta*	920.59	6	16.6	0.0215	1187642.44	673810.09
91	Unk 5	919.91	5	11.5	0.0103	1187608.54	673800.20
93	*Terminalia amazonia*	919.31	5.5	17.2	0.0232	1187607.94	673811.80
92	*Terminalia amazonia*	918.62	6.5	11.1	0.0098	1187606.05	673809.73

Naturalist-in Series

LIFE AT THE LIMIT

by Chris K. Starr

Review of:

Théodore Monod & Marc de Gouvenain 1996. Majâbat al-Koubrâ. Paris: Actes Sud 233 pp.

[53rd in a series on "naturalist-in" books; see https://ckstarr.net/book-reviews/]

Théodore Monod (1902-2000) was a Frenchman who developed into his country's leading expert on deserts and one of the world's leading Sahara experts. Beyond this, he was an outstanding humanist, pacifist and anti-racist, who openly opposed apartheid, nuclear weapons and the French war in Algeria. He is the subject of at least two full biographies (Jarry 1990?, Vray 1994) and has an abundant presence on Youtube, including as the subject of an admirable 1½ hour-long documentary movie https://www.youtube.com/watch?v=mgEEPBrJND4

Source: Wikimedia Commons

In introducing Theodore Baskaran's 'The Dance of the Sarus' (Review No. 45), I drew attention to an unusual feature of "naturalist-in" books. Those set in Third World countries are almost always by visitors from advanced industrialized countries, while Baskaran is a native son of India. Still, travels by naturalists from the great powers to the poorer, usually tropical regions have a long, proud tradition that has enriched the literature considerably.

It bears mention that the motivations of the naturalists and their sponsors were often in strong contrast, especially during the colonial period. Beginning with Spain in the 16th century and reaching its peak in 19th century Britain, the colonial powers were mainly interested in possibilities for economic exploitation, while the naturalists of course had quite a different focus. Monod's repeated presence in Mauritania illustrates this tendency well, as he was explicitly there on scientific missions from France and was even embedded as a military officer at times. If this brought this gentle man into conflict with his administrative and military superiors, he kept it to himself, but Monod was far from being an imperialist.

Monod spent his entire working life with the National Museum of Natural History in Paris. However, this is not to say that he lived in Paris or even in France the whole time. He first went to Africa in 1922 to conduct researches in oceanography and marine biology in Mauritania. In the 1930s he became director of the French Institute of Black Africa, headquartered in Senegal, which became a major research institution under his leadership. His main focus was the deserts of North Africa, where he made many major journeys, or méharées (the title of another of Monod's books about Saharan exploration). These were times of extreme frugality, especially with water, which was strictly rationed. Traveling on camel, on a good day they could make 40 km.

Monod set forth a kind of manifesto of just what kind of scientist he was. Quoted by Sers & Monod, he noted that many people of good reputation "are of the opinion that a researcher, in order to do well, must devote himself entirely to a single field and explore it in depth. However, I claim

Map by T.L. Miles. *Source: Wikipedia.*

the right to take an interest not just in one specialty but in all that nature offers. No matter what others may say, I make no excuses if I go wherever my curiosity leads."

Married with children, his family life was of course affected by his many and often prolonged absences. He likened it to that of a sailor in the era of European exploration with voyages alternating with periods of home stay.

Most of the southern third of the Arabian Peninsula, an area of about 650,000 km², is so severely inhospitable that it is uninhabited and seldom crossed. This Rub'al Khali, or Empty Quarter, has been the subject of a number of explorations, most famously by Wilfred Thesiger, who made two crossings in the 1940s and wrote an account of them that counts as one of the classics of travel literature.

The Sahara Region of north Africa is far from uniform. The semi-arid zone is marked by an annual precipitation between 150 and 300 mm; following this are the arid (70-150 mm) and hyper-arid zones (less than 70 mm). This latter includes the Sahara's own Empty Quarter, although much smaller and much less known than that of Arabia. The Majâbat al -Koubrâ, or El Djouf, lies across the boundary between Mauritania and Mali. For humans and most other organisms, it is the most inhospitable part of the Sahara. Annual temperature fluctuations are minor, but not so the major fluctuations during the day.

It is windy much or most of the time, even if the famous Sahara sandstorms are very rare. For the most part, then, rocks are sculpted not by water but by wind-blown sand. However, this was not always the case in every place. Sand grains can be placed in three main categories, readily distinguishable under the microscope. Unelaborated grains have a rough outline and show traces of their crystalline origin. Round grains with a matte surface indicate the effects of wind and round grains with a shiny surface give evidence of very long submersion, during which they have been polished by wave action. Monod's examination of samples of Majâbat sand showed that it was of this third type, consistent with the hypothesis that the area was long part of an inland sea.

Source: Wikimedia Commons

The extreme, constant scarcity of water and food for both plants and animals is the over-riding fact of life here. In considering how some manage to hold on in this environment, the plain fact is that most do not. This leads to very low species-richness counts. However, the Majâbat is not a dead zone. Here and there, often in unsuspected places, were tenuous and sometimes tenacious signs of life.

Source: Wikipedia

The totemic animal of the Majâbat is the white antelope or addax, a medium-sized antelope with distinctive twisted horns up to about 80 cm long. It lives in herds of up to 20 individuals and is very well adapted to survive in this severe desert, where it can live for long periods without water except what comes with its food. The white antelope was previously widespread in North Africa, but due mainly to intensive hunting it is now extinct in most of its native range. There are probably many more in captivity now than in the wild.

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NATURE IN THE NEWS

Compiled by Kris Sookdeo

January

Four hunters, two from Grand Couva and two from Freeport, were arrested at a hunting camp at Guayaguayare where officers allegedly found five rounds of Remington 12-gauge cartridges on one of the hunters. Further checks inside the camp by police led to the discovery of a 12-gauge homemade shotgun and six rounds of 12-gauge cartridges. The four hunters were not the holders of firearm licenses.

Police said that based on intelligence gathering, surveillance was conducted and an operation was executed at several locations at Navet Road Heritage, Guayaguayare, Mayaro, during which several hunting camps were searched when the discovery was made.

February

The Noise Pollution Control Rules, 2001 has been amended to reduce the timeframe required to monitor noise levels from three hours to thirty minutes.

The amendment applies to activities being undertaken with Noise Variation Permits.

According to the Environmental Management Authority the reduction in the timeframe to monitor noise levels is one milestone in the fight against noise pollution as it increases the EMA's ability to monitor a larger number of events and activities in a given day and generate noise level readings with greater efficiency.

March

A Diego Martin man was held transporting 13 baby macaws and a tortoise along the Penal Rock Road. The suspect was taken into custody and is expect to face 14 counts of keeping protected animals in captivity without a permit.

A NEW MILLIPEDE FOR T&T

Source: UWI Zoology Museum & Loop News

The newly discovered Jaggernauth's odd-legged millipede. *Source: Zootaxa.*

There is a new species of millipede, named Jaggernauth's odd-legged millipede (*Pandirodesmus jaggernauthi*). The *P. jaggernauthi* is endemic to Trinidad and was first found and discovered in 2015 on El Cerro del Aripo, by Mike Rutherford, former curator of UWI Zoology Museum (UWIZM) and TTFNC member, on a trip with Dan .

Mike & Dan at a past Bioblitz event. *Source: UWIZM.*

The *Pandirodesmus jaggernauthi* was so named in in recognition and honour of Dan Jaggernauth's selfless service and dedication to the environment and wildlife of Trinidad & Tobago. The odd-legged millipede, as given by it's name, has one pair of short legs and one pair of long legs on each segment and can be found in the layer of soil under the leaf litter in the higher forests of the Northern range. The millipede, one centimetre in length, is covered in a fine layer of sand grains which are thought to help protect them by strengthening their exoskeleton.

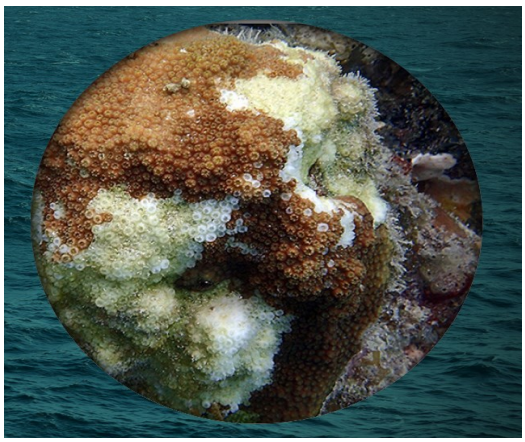
The odd-legged millipede was described through international collaboration and the use of highly magnified scanning electron microscope (SEM) images to obtain distinctive features of the millipede. You can read more here on the newly discovered millipede in Zootaxa, an international taxonomy journal.

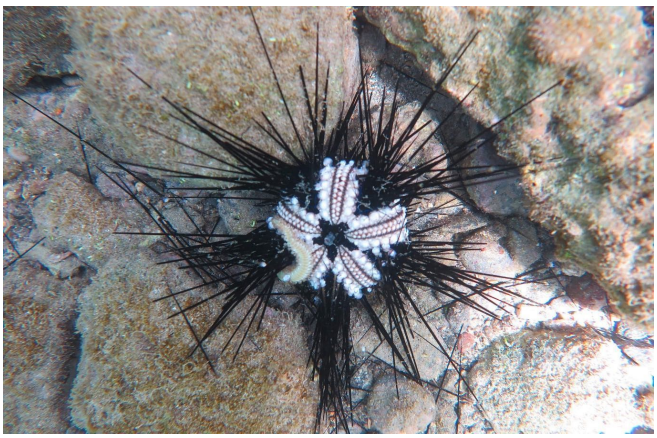
References:

Loop News. 2022. New local millipede species discovered, named after conservationist. Accessed May 21, 2022

BE ON THE LOOK OUT!

Source: Institute of Marine Affairs & Wild Tobago





Left: Stony Coral Tissue Loss Disease & right: a dying long spined urchin displaying loss of spines. *Source: IMA & Dr Kimani Kitson-Walters sourced from Wild Tobago's blogspot*

If out, in and around the oceans of Trinidad & Tobago, keep an eye out for evidence of two diseases that possibly affect certain marine organisms: Stony Coral Tissue Loss Disease (SCTLD) and another affecting sea urchins.

SCTLD has spread through the Caribbean over the last couple years and targets coral species that make up a large portion of our coral communities found throughout Tobago, such as the largest brain coral in the western hemisphere, found in Speyside. If you come across corals on a reef while diving that resembles the disease, please record it by taking a picture or a video of the infected colonies. Take close-up photos of the infected area, and a zoomed-out photo of the whole coral colony and the surrounding area. Record the location and the depth of the infected corals. If you know the species of the coral, this will be helpful, otherwise the following category of coral will be useful to know brain coral, boulder coral, pillar coral and plating coral. please DO NOT TOUCH the coral with the disease

Please report through the IMA SeaiTT App or email any observations of SCTLD incidents@ima.gov.tt; marinepark08@gmail.com.

The other disease to be on the look out for is affecting the sea urchin population. Also detected elsewhere in the Caribbean, sea urchins are being observed to be sick dying and losing spines (as seen in the above photo). Report any sightings of healthy, sick, or dead urchins on the Diadema response network on AGRRA website: https://www.agrra.org/sea-urchin-die-off/

References:

A. Ganase, 2021. Stony Coral Tissue Loss Disease (SCTLD) and Tobago's Coral Reefs, Marine Bulletin, IMA. Accessed May 21, 2022

Keep an eye out for Sea Urchings. 2022. Wild Tobago Blogspot. Accessed May 21, 2022.

MANAGEMENT NOTICES

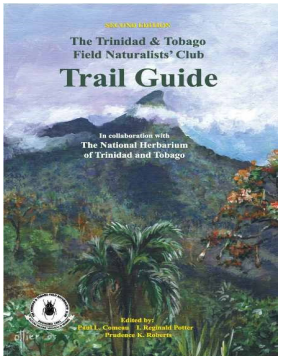
- Official club trips resumed in February 2022, with the relaxing and lifting of some COVID-19 regulations. All protocols are to still be observed on all Club trips.

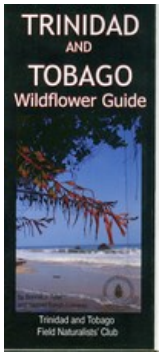
- A small tranche of Club funding has been allocated to the Club's subgroups in order to support each subgroup in the pursuit of worthwhile projects. These projects will not only produce a useful output, but also provide an opportunity for member involvement and education.

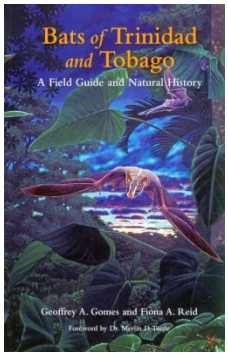
Trinidad and Tobago Field Naturalists' Club
P.O. Box 642, Port of Spain, Trinidad and Tobago

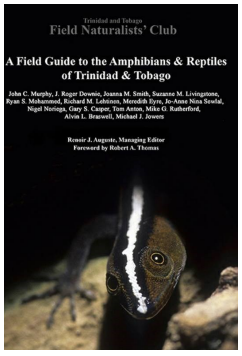
PUBLICATIONS

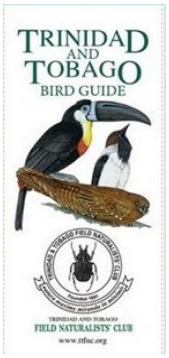
The following Club publications are available to members and non-members (*prices shown are those paid when purchasing directly from the Club*):

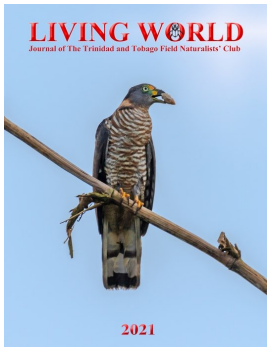












TTFNC Trail Guide ($150); T&T Wildflower Guide ($50); Bats of T&T ($200); Field Guide to Amphibians & Reptiles ($180); 2021 Living World Journal ($60); TTFNC Bird Guide ($50).

MISCELLANEOUS

Your 2022 Annual Membership Fees Are Due:

Please view bottom right of the mailing label to check if your subscription has been paid.

Did you know? It is now possible to renew your membership online? See www.ttfnc.org/funding for details. You can join the club this way, too!

Do you have an article to submit for the next QB?

Submission of articles and field trip reports:

1. **All articles must reach the editors by the eighth week of each quarter.**
2. **Electronic copies can be submitted to the editors at: admin@ttfnc.org or directly to the editors or any member of Management. Please include 'QB2022' in the email subject label.**