THE FIELD NATURALIST

Quarterly Bulletin of the Trinidad and Tobago Field Naturalists' Club

July – September 2017 **Issue No: 3/2017**

DAN JAGGERNAUTH:
THE FACE OF THE TTFNC

by Roma Wong Sang

You may know him as our field trip leader, sharing his abundant knowledge of Trinidad and Tobago's flora and fauna. Or you may have interacted with him at one of our public displays at which he is responsible for replenishing stocks of seeds, pods, nuts, etc. Or, like me, you may have indulged in the many local, hard-to-find fruits that he regularly brings to club meetings.

Dan Jaggernauth is undeniably the face of the TTFNC, much like Muriel Pierre's role in the early years of the club. He is well known in various circles – university, ministries related to forestry and

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Dan Jaggernauth *Photo by Dan Jaggernauth*

Inside This Issue

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

Disclaimer :
The views expressed in this bulletin are those of the respective authors and do not necessarily reflect the opinion and views of the Trinidad and Tobago Field Naturalists' Club

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DAN JAGGERNAUTH

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agriculture, NGOs, hiking groups and more. Invariably, when I mention the club's name in these and other circles, his name is the first to roll off their lips.

Regularly clad in his iconic green T-shirt and rasta beanie hat, Dan is at the core a humble, kind, thoughtful and generous man who is not phased by life's complications. This is one person who has been able to connect more with nature than with his cell phone! I have learnt of the numerous occasions that the TTFNC management tried without success to encourage his use of a cell phone so that they can remain in touch.

His knowledge of trails, his level of preparedness and ability to adapt to any situation in the 'bush' has given me more comfort and confidence on field trips and when he is not there, it just does not seem to be the same. I will not forget the time that the soles of my sneaker became undone in the Aripo Savannah after trudging through muddy waters and the makeshift twine that he used to hold it together until I got out. Or the walking stick he cut effortlessly for me when trekking through the treacherous trail to Madamas River from Grand Tacaribe. And of course the perks that come with the territory…the mangoes, fat pork and other fruits he collects to eat on the trails and the roasted breadfruit on camp nights!

Dan's knowledge of plants is hands-on and wide…and sometimes academic, as he is able to recite scientific names of plants with ease.

He grew up in Rio Claro, where he gained his early knowledge of plants and its uses, from his mother. Now, he is a regular assistant (or perhaps *de facto* staff member) at the National Herbarium where he assists in projects and in bringing in species to be identified. He was, for instance, a

Dan Jaggernauth with *Sargassum* seaweed *Photo by Roma Wong Sang*

DAN JAGGERNAUTH

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participant in the UK funded Darwin Initiative project in collaboration with Oxford University and The UWI, to undertake a national botanical inventory to develop "*A Biodiversity Monitoring System for Trinidad and Tobago*." He has also participated in numerous field trips for UWI, as well as expertly assisting several teams of visiting scientists from some of the world's top universities.

Dan has been a member of the TTFNC for the past 30 years and continues to serve on the TTFNC Management Committee as a valuable member.

Outside of the club, Dan is a contractor by trade and is a regular marathon runner. He also assists hiking clubs in identifying and clearing trails and leading their members when required.

We salute one of the stalwarts of the TTFNC, Dan Jaggernauth, and thank him for his years of dedicated and sterling service to the club!

Right: **Dan leading a field trip, documenting it with his trusty camera.** ***Below*****: Educating and enthusing the public about T&T's native seeds and fruits**

Marine Group Report

TTFNC MARINE GROUP: A LOOK BACK AT 2017

by Marianna Rampaul

Looking back at the year gone by, 2017 was a year of beautiful sights and wildlife encounters for the members of the marine group, both above and under the water. Whether snorkelling, scuba diving or just walking along the coastline, there was much to be seen.

The first trip for the year on 23rd April took place at the popular Macqueripe Bay in Chaguaramas. The clear skies and clam waters were ideal for a morning of exploration especially as long period swells were forecasted to start rolling in from the late afternoon and so they did! Mike Rutherford and I got an early start to the day, getting in one dive along the northern (right) side and middle of the bay before the group snorkel. As we slowly swam alongside the jetty's legs and rocky cliff we saw numerous brightly coloured reef fish, crabs and invertebrates, some more curious about our presence than others.

We even saw predation in action with a large true tulip gastropod *Fasciolaria tulipa* in the act of feeding upon another unidentified gastropod. While the tulip had found its meal, large schools of surgeonfish *Acanthurus* spp., spotfin butterflyfish *Chaetodon ocellatus,* and white grunts *Haemulon pulmierii* foraged for food around the rocks.

The other members of the group then joined in for a snorkel of both sides of the bay which lasted for almost two hours, there was just so much to see! The sun dancing off a bed of aptly named sun anemones was a beautiful sight especially for those snorkelers who were seeing it for the first time.

***Porites* sp. coral and zoanthids at Chacachacare** *Photo by Stephanie Warren Gittens*

Other highlights included a spotted eagle ray *Aetobatus narinari*, *Porites* sp. finger corals and arrow crabs. As we concluded the snorkel, we swam along the route of the subsea fibre optic cable back to shore, taking in the variety of colourful sponges and gorgonians growing along the path. By the time the snorkel was over, the winds had just begun to pick up, producing a slight chop however some snorkelers would have still enjoyed a longer time in the water.

For the second trip on Saturday 17th June, members of the marine group and fellow marine enthusiasts headed out once again to explore several locations down the islands at Chacachacare and Monos Islands. The group of divers and snorkelers visited Doc's Residence, Salt Pond and Fernandez Bay for a full day of exploration onboard the Synchronicity, captained by Paul Ward. After a safety briefing at the marina, the team headed out for our first site at Chacachacare. As Kino dropped anchor, we looked over the side and were thrilled by how crystal clear the water was, especially considering the rainy days that preceded the trip. As the divers suited up, the rest of the group donned snorkel gear and slid over the side of the boat into the cool, clear water.

The vast field of vibrant *Porites sp.* coral that greeted us was an unexpected treat. The green and brown hues of the coral were dotted with brilliant blue patches of zoanthids and pink patches of coralline algae and sponge. The water was also shallow enough for us to duck down to get a closer look and take some gorgeous photos.

We enjoyed sunny weather and good visibility for most of the day, with a brief shower in the afternoon but that was not enough to deter diving or snorkelling. The fish species observed at Chacachacare and Fernandez Bay were similar, and included several species of grunts, angelfish, bass and gobies which were well camouflaged among the algae covered rocks and coral rubble. Stephanie's keen eye was sharp enough to find one goby that was perfectly hidden among the white fragments of finger coral in the shallows.

Fernandez Bay was home to many more sergeant major *Abudefduf saxatilis* damselfish than the other sites visited and their bright yellow and

T-B: French Angelfish juvenile at Macqueripe, and intermediate phases at Chacachacare *Photos by Mike Rutherford and Stephanie Warren Gittens.*

black stripes contrasted beautifully against the algae covered rocks.

Curious French angelfish also came a little closer to check out our party. Coincidently, many of the fish encountered displayed various patterns of yellow and black. The french angelfish seen here were intermediate stage individuals, now acquiring the distinctive "french tipped" scales which the adults are known for.

The final site for the day, Salt Pond, included a short walk along a pebble and coral fragment beach. After about 3 minutes of walking we cut through a line of shrubs to the mysterious pond bordered by lush greenery. As we stepped into the water we were struck by two things, the first being just how soft and deep the mud was and the second being just how hot the water was! Giving up the struggle to walk through the mud, Kino and Terrance swam in from the shallow bank. The visibility and water temperature were not conducive to snorkelling and any attempt to duck dive to see below was defeated by the hot water very quickly.

It was quite an odd sight to see the leaf litter floating about one foot below the surface rather

than on top of it because of the highly dense saline water. The most fascinating thing about this site however was what we first observed as a strange orange haze throughout the entire water column. This haze was actually millions of tiny marine shrimp, reaching as far as the eye could see. In this highly saline, inhospitable environment, this species seemed to be one of the only, if not the only species adapted to survive under such harsh conditions.

The thunder rumbling in the distance was our cue to leave as the rain clouds started to gather once again. After shaking the shrimp out of our hair and struggling through the mud again, we headed back to the beach. Compared to the water in Salt Pond, the sea water tasted like freshwater as we waded back to the boat. We were fortunate to the experience such vastly different habitats all within a relatively small area. I would definitely recommend a visit to Salt Pond to anyone interested in a truly unique experience.

Clockwise from top left: **Mike capturing a photo at Macqueripe, well-camouflaged goby, School of white grunts (*Haemulon pulmierii*); True tulip (*Fasciolaria tulipa*) feeding**

Photos by Marianna Rampaul, Mike Rutherford and Stephanie Warren Gittens

Botany Group Report, 19 March 2017

MORNE DIABLO FOREST RESERVE AND ENVIRONS

By Linton Arneaud and Sarah Evelyn

Twenty-one members of the Botany Group felt highly favoured as they experienced a unique taste of the rich and diverse floral species in the south westerly corner of Trinidad. The north group arrived before the expected meeting time in the village of Quarry Road, Morne Diablo and waited on the south participants. This led to some of our enthusiastic members to ask questions about the different plant species found in the nearby yard of a villager. We were lucky enough to meet the owners, Mr. and Mrs. Ramsubhag and their daughter Tracy who Dan Jaggernauth referred to as the owners of a "backyard botanical garden." Many of us regained our intimate relationships with cultural and medicinal plants such as: neem (*Azadirachta indica*), pipal or peepal (*Ficus religiosa*), bail (*Aegle marmelos*), ashoka (*Saraca indica*), betel palm (*Areca catechu*), stinking susie (*Tagetes patula*), toolsie (*Ocimum tenuiflorum*) and black sage (*Lantana camara*). We even had the privilege to taste the canistel fruit (*Pouteria campechiana*) which was custard-like in texture.

We arrived at the Morne Diablo Forestry Division Office at 9.15 am and were briefed by Lester Doodnath on the geological history of the deciduous forest that surrounded us; he noted that the forest was once dominated by naturally occurring acurel (*Trichilia pleeana*) and moussara (*Brosimum alicastrum*) which were exploited for

Members of the Botany Group are briefed by Forestry Officer Doodnath Soogrim

lumber. This vegetation was replaced with Teak (*Tectona grandis*) trees introduced from Burma, and is managed by the Forestry Division up until this day. Afterwards, Dan took the podium (as he would normally say it) and started identifying all types of floral and faunal species (from the crested oropendola or corn- bird (*Psarocolius decumanus*) to wasps (*Aculeata* sp). Dan surmised this teak plantation to be generally young and the block closest to us may be approximately 40- 50 years old.

Dan then escorted the team along the road through the teak plantation and some disturbed forest, he meticulously identified and explained each species he came across. A couple members were excited to see the stinging nettle bush (*Urtica* sp.) as they had heard so much about its medicinal benefits prior to this trip. Dan informed us on one of the world's lightest wood - the bois flot tree (*Ochroma pyramidale*) and the sandbox tree (*Hura crepitans*) which both have timber, handicraft and other uses.

We spotted numerous jiggerwood trees (*Bravaisia integerrima*) which can act as indicator species as they dictate what forest type would persist. Dan then explained the importance of ethnobotany as he described how plants like penny piece (*Pouteria multiflora*), St. John bush (*Justicia pectoralis*) and wild tobacco (*Acnistus arborescens*) can be used to remedy illness. There were numerous bois canot trees (*Cecropia peltata*) on the margins of the road exemplifying secondary forest characteristics, Vanessa Ramrattan pointed out that bois canot is a pioneer species (r- selected) and focuses most of its energy on reproducing, hence the reason why they were so numerous. Dan then interjected and pointed out that bois cannot is also a keystone species as many other species depend on them for their survival; insects and birds in particular as they are known to feed on sugary excretions from the base of leaves.

At this point we were blessed yet again to cross path with Forestry Officer—Doodnath Soogrim—who was on fire patrol. He gave us a short talk in the art of fighting fires and educated us as to what we should do if we ever noticed smoke or a small fire in the forest. He stated that fires are mainly caused by campers and hunters in the area and are prevalent during holidays (for example the upcoming Easter weekend). We were relieved to hear that squatting was not a concern in the reserve as the Forestry Division does regular patrols.

We continued walking after the short lecture and came across a pond covered with green algae and other plants. Other noticeable tree species that caught our eyes on the walk included; cannon ball (*Couroupita guianensis*), hog plum (*Spondias mombin*), pois doux (*Inga sp*.) and manjak (*Cordia collococca*). Birds such as the crimson-crested woodpecker (*Campephilus melanoleucos*) and the barred antshrike (*Thamnophilus doliatus*) were very noticeable. We found the soapseed tree (*Sapindus saponaria*) to be particularly difficult to identify from a distance, and were only able to successfully identify it after Edmund Charles blazed some bushes and collected a fruit specimen. This illustrated the

Left: Botany Group being briefed by Lester and Dan before setting out; Right: Healthy-looking stinging nettle bush (*Utrica* sp.) *by Linton Arneaud*

point that to properly identify botanical specimens you often need samples of the leaves, flowers and fruits. Other problematic trees identified were the Butterwood (*Diospyros inconstans*) with its common simple alternate leaves and the Fiddlewood (*Vitex sp*.) which looked similar to the Brazilian Rubber tree (*Hevea brasiliensis*) due of its trifoliate leaves.

The only undesirable moment on the trip was when we came across numerous piles of garbage dumped on the side of the road. This was sad to see. If we continue to dump-and-run, one day this beautiful deciduous forest will not be able to resist further impacts from the surrounding communities whose lives and culture are rooted there. At stake is nothing less than the ability of the Reserve to provide its ecological services for future generations. Unfortunately, there is a mistaken sense to the average Trinbagonian that the natural wealth of our local forests is boundless and inexhaustible.

Our day did not end after botanising; we all proceeded to the Morne Diablo beach and had lunch, where some of us took advantage of a quick dip in the warm water. We then found ourselves observing trees on the shoreline, such as Naked Indian (*Bursera simaruba*) and Carat Palm (*Sabal* sp.). Overall, the botany visit to the Morne Diablo Reserve and environs was worthwhile, not to mention impressive.

A rich and diverse aquatic ecosystem in the Morne Diablo Reserve *by Veynu Siewrattan*

Geology Trip, 29 October 2017

CUNAPO GORGE

by Feroze Omardeen

Philip Farfan and Reg Potter led us again on another excellent teaching trip. A small group turned up, less than fifteen people. Most of us had never heard of the Cunapo Gorge, and some like myself did not even know where Cunapo was.

We parked on the Cunapo Southern Road about 200 metres north of the famous Growing Rock and delved eastward into the forest. It became apparent that we were on an old logging road, abandoned and overgrown. This was a managed, logged forest with a relatively open canopy, but with tall trees dominated by bois mulatre, and an understory mostly of sardine saplings, and an undergrowth prominently featuring tirite, hot lips, and a variety of ferns and aroids. We descended from the road to a rivulet, followed it to a stream which is a tributary of the Cunapo River, and studied the rocks and riverbed along a segment of this river.

A fascinating story unfolded from the rocks. It appears that our current Northern Range was not always there! It arose about 5 million years ago, uplifted by folding at the interface of the Caribbean and South American plates. But in a period before this, in the late Oligocene to Miocene most of the area of northern Trinidad was occupied by an upland sandstone range that we can call the proto-Northern Range.

To trace the origins of these rocks, we have to go back almost 2 billion years to the formation of the craton underlying the Guyana Shield. This igneous basement layer of the Shield became slowly covered with vast quantities of sand, forming sandstone ranges that eventually would wash away in a strange pattern leaving the Tepuis. The sands

Rounded sandstone pebbles *Photo by Feroze Omardeen*

Philip the Communicator *Photo by Feroze Omardeen*

that weathering washed northward toward the sea later would become sedimentary rock (sandstone) and be uplifted at the border zone of the Caribbean and South American plates, forming a range that we can now call the proto-Northern Range of Trinidad. This sandstone range would exist for millions of years, with varying sea levels and degrees of depth or the rocks, and some interposition of organic sediments, giving rise to the sandstone rocks we saw in the riverbeds. The sandstones again weathered and disintegrated, giving rise to sands which line the Cunapo riverbed (and will eventually wash down to the sea), but also to rounded pebbles of sandstone, smoothed and rounded as they rolled around in the river for decades. Sometimes underground heat and pressure would cement these small rock fragments into larger composite sedimentary rocks known as conglomerates.

In the image, Reg Potter is standing on the riverbed of sand from the crumbled softer sandstones, and on pebbles made up of harder sandstones in which the sand cemented together during a period of greater depth and heat.

In between the layers of sandstone, Philip and Reg showed us many narrow veins of lignite coal, the remnant of the ancient swamps that bordered the range as sea levels rose and fell. Other evidence of ancient coastal life were fossilized burrows of a saltwater shrimp within the sandstones.

The forest and small river were beautiful, even for those not fascinated by the 15 million year old story. We saw very few fishes, perhaps a few characins and one zangee. The water in the stream was tea coloured, laden with tannins, typical of forest on white sandy soil.

The question of safety on these trips again arose when one of us was struck by an old fallen tree trunk while crossing the stream. This was apparently a freak, unavoidable accident, we are still not quite sure what happened. Fortunately there was no major injury or concussion, just a scalp laceration. However it reminded me that if accidents occur deep in the forest, difficult situations may arise.

Other memorable features on this trip for me would be frequent and widespread calling of the channel-billed toucan and a relative abundance of the white-tailed page in the area. This moth has recently been noted in large numbers in south Trinidad, on one of its migrations, which typically occur in the Petit Careme. The trip afforded us a great opportunity to see the forest in the Mt Harris area, which certainly seems worthy of further exploration.

Reg the Bushwacker *Photo by Feroze Omardeen*

Your Ideas and Observations

A Quarterly Update

Suriname toad, *Pipa pipa*

This frog can be found throughout South America and Trinidad. It is aquatic, inhabiting the bottom of rivers. All records from Trinidad are from the southern part of the island. I've yet to see an individual recently in the wild and most publications as far as I am aware do not have records of sightings of this frog over the past few years. If by chance anyone happens to see it (perhaps while seining for fish), please contact me with its locality (email: renguste@gmail.com). It would be noteworthy to keep track of its population in Trinidad.

Renoir Auguste

Pipa pipa *Photo by John Murphy*

Please send us your ideas and observations to admin@ttfnc.org for inclusion in the next Bulletin!

July-December 2017 STRATEGIC PLAN UPDATE

by Amy Deacon

Short Term Goals

Outreach

The club's first Family Day was held on the 22nd of July. Despite the rain, it was a great success— and will be scheduled for dry season next time.

The club was represented at a Scout vacation camp at Naparima College in July, at Camp Omega in August, the Enchanted Gardens event in Princes Town in September and the Orchid Show in October.

The 6th Bioblitz was held in Icacos in November. It was judged to be the most successful yet, in terms of outreach , with many local children attending.

The club sponsored two awards at the UWI Faculty of Science and Technology Prize-Giving Ceremony: The TTFNC Victor Quesnel Prize for Best Performance in Plant Science and the TTFNC Elisha Tikasingh Prize for Best Performance in Zoology.

Publications

The 2018 Calendar was published in early November.

The 2018 Living World Journal was published in December and is accessible online for free or via print-on-demand on Amazon.

Medium and Long Term Goals

Land Acquisition

Management are actively pursuing the potential purchase of plots of land. Members are encouraged to let Management know if they become aware of any promising possibilities.

Membership

The club welcomed 8 new members during these two quarters (July-December).

A copy of the full strategic plan can be requested by email to admin@ttfnc.org. Constructive comments and suggestions from members of ways to work towards these goals are always welcome.

QUEEN'S PARK SAVANNAH: 200th ANNIVERSARY COMMEMORATION

by Roma Wong Sang

On 18 August 1816, the Queen's Park Savannah (QPS), formerly part of the St. Ann's Estate, was officially sold to the Government by the Peschier family. Acquired under Governor Sir Ralph Woodford, the expressed purpose then was for the Savannah to be used "*as a Park and place of exercise and recreation for the public*" - a use that is still maintained today. Reserved from the sale however, was a piece of ground in which the ancestors of the Peschier family were interred.

On 18-20 August 2017, the 200th anniversary of the sale of the QPS was commemorated by the Citizens for Conservation with a series of activities, the main one being the planting of 50 trees in the Savannah by corporate entities, NGOs, embassies and individuals. TTFNC joined in the commemoration and planted a native yellow poui tree (by request) a few yards opposite the entrance to the President's House (full GPS co-ordinates 662,641 easting and 1,179,803 northing).

After the tree planting exercise, TTFNC members enjoyed breakfast and a beautiful relaxing morning on the greens. We were joined by prominent historian, Michael Anthony, who shared interesting facts on the historical, social and cultural significance of this green space.

The next day a guided historic walk around the Savannah was held by the Citizens for Conservation, and a few TTFNC members, including

Photo opportunity with historian, Michael Anthony alongside Club members

Photo courtesy Roma Wong Sang

birder, Feroze Omardeen, participated in the walk.

Later, at dusk, on our way back to base through the savannah, there was an abundance of birds, seemingly swifts and swallows, feeding on the incredible amount of little flies that were also present around the savannah during our walk. Much to our delight, we were also treated to some rare natural history sightings, which Feroze identified as the nacunda nighthawk and double-striped thick-knee, rare migrants to Trinidad, let alone central Port of Spain!

Above: Map showing where the TTFNC tree was planted (no.12). Below (L-R): Historian Michael Antony, Dan Jaggernauth, the Minister of Agriculture, Clarence Rambharat, and Jeffrey Wong Sang have a chat after the tree planting ceremony *Photos by Roma Wong Sang*

NATURE IN THE NEWS

A quarterly summary of local environmental news

by Kris Sookdeo

JULY

Parrots for sale in POS

Several orange winged parrots were reportedly being offered for sale on Charlotte Street (offered at $700) but there was no indication whether or not the vendor was apprehended.

Turtles killed by fire

At a beach party in Blanchisseuse, a beach bonfire inadvertently claimed the life of at least 85 turtle hatchlings. The nest of hatchlings was discovered 2 days after the event.

Poaching in the Caroni Swamp

A privately own boat and a game warden's patrol boat came into contact in a prohibited area of the Caroni Bird Sanctuary. At the time, the patrol boat was said to be in pursuit of another vessel also within the prohibited area. It is alleged that the occupants of the first boat were hunting for crabs in the no-hunting zone.

AUGUST

Scarlet Ibis to be declared an ESS

Minister of Agriculture, Land and Fisheries requested that steps be taken to declare the Scarlet Ibis an Environmentally Sensitive Species. This follows several reports of poaching of the protected national bird during the year in the Caroni Swamp Bird Sanctuary. News reports made mention of the successful use of drone technology by game wardens in controlling poaching in the Caroni Swamp.

SEPTEMBER

Floating island appears off Icacos

Three large floating masses of vegetation were sighted drifting at sea off Icacos. While rafts of dislodged vegetation are not uncommon, these masses were huge with the largest of the three reported to be over two acres. Fishermen actually set foot on the 'island' and are reported to have captured iguanas. The masses eventually drifted out to sea without making landfall

Mammal Group Report, 20 May 2017

ARENA FOREST

by Laura Baboolal

On Saturday 20th May was the first mammal group trip for TTFNC. We set off from the University of the West Indies at 5pm to our destination, Arena Forest. The five person group gathered up the equipment to set up two mist nets for an eventful trip. While searching for the ideal location for the mist nets we stumbled upon a perfectly camouflaged mapepire balsain. We enjoyed seeing this beautiful snake as it slithered away into the forest.

The night of batting began and all hands were on deck. We had our processing table ready with eager persons. As night approached the bat activity increased and we captured and released a total of 34 bats. It was a successful night despite the rainfall which forced us to close the nets around 8:30pm and release five bats at the nets. It was quite eventful attempting to construct a temporary shelter from the rain. While we waited for the rain to stop we were able to replenish our energy before resuming. The nets were reopened at 9:00pm and we were able to mist net for an undisturbed hour. There was a total of four bat species including 27 pale spear-nosed bats *(Phyllostomus discolour)*, five Seba's short-tailed fruit bats *(Carollia perspicullata)*, one common long-tongued bat *(Glossophaga soricina)* and one ghost-faced bat *(Mormoops megalophylla)*.

The team packed up the nets and loaded up the equipment into the vehicles at 10pm and headed to our homes quite satisfied with a night of batting. Thank you to everyone who came out on the first mammal group trip and making it a success.

Left: Ghost-faced bat; Top Right: Infrared image of team extracting bats from mist net; Below: Mammal Group from L-R: Aidan Farrell, Laura Baboolal, Darshan Narang, Alexis Marianes and Richard Smith.

Photos by Laura Baboolal and Aidan Farrell

Herpetology Trip, 18 November 2017

BUSH BUSH WILDLIFE SANCTUARY

by Renoir Auguste

The Herpetology group, led by myself, gathered at Kernahan Forestry Station shortly after 3:30pm. There were 16 keen persons on this trip – some of whom had never been to Bush Bush before. I quite confidently promised it would be a fantastic place to visit and see, as it is one my favourite places on the island to see wildlife. The wildlife, quite graciously, later on assured I would not disappoint those that chose to come. We parked outside of Kernahan Forestry Station and walked slowly to Bush Bush. Along the way, our first herpetofauna sighting was a spectacled caiman (*Caiman crocodilus*) in the ditches along Kernahan. We then saw a variety of raptors, including the rare aplomado falcon (*Falco femoralis*), and the crested caracara (*Caracara cheriway*): a treat for the keen birders, such as Jerome, who came on this trip. We heard ruffles in the grass and saw many beachrunner lizards (*Cnemidophorus lemniscatus*).

After about a 30-minute walk trying to bypass some muddy paths, we got to the edge of Bush Bush forest. Almost immediately upon entering the forest, we were met with mosquitoes – and they would not leave us until we left! Bush Bush, though, is quite known for mosquitoes, so much so researchers have been studying them there for decades and still to this day. While in Bush Bush, and within five minutes of walking, Rainer spotted a swamp snake (*Erythrolamprus cobellus*) at around 4:30 pm and carefully grabbed it so we could all see it before it disappeared into the forest. This snake is not venomous and is non-aggressive. It was a sign of

Jungle anole *Photo by Renoir Auguste*

things to come as wildlife were making themselves readily observable.

Sunlight quickly disappeared on us as we slowly walked to the old abandoned wooden research house and arrived there at around 6 pm. This is where researchers once stayed in Bush Bush to study mosquitoes. We took a break here to sit and eat – however one had to keep moving otherwise the mosquitoes would be feeding on us! Not much was seen during our afternoon walk but that would all change once we set out for our night walk at around 6:30 pm. We walked back out the same trail in with flash lights in hand. Four other snakes would present themselves to us, including the venomous small coral (*Micrurus circinalis*), and the non-venomous cascabel (*Corallus ruschenbergerii*), water mapepire (*Helicops angulatus*), and horsewhip (*Oxybelis aeneus*). Not too bad for the snake enthusiasts. There were also many leptodactylid frogs hopping quickly in the leaf litter. Some so quick that they would hop away most times before a picture can be taken. However, not all frogs were hopping away successfully. Peter saw something incredible. It was a spider predating on a frog! These kinds of observations are rare (to see) yet spectacular to observe and further details will hopefully be published later in 2018. As for me, I was so giddy, I thought that that sighting would be the highlight of my night – but I was mistaken, as it was not to be my last fantastic wildlife sighting.

Although the main aim was to spot as many reptiles and frogs as possible, we managed to spot many native mammal species, as the bug group did during the day. Most of these native mammals are very elusive, especially the nocturnal species. First up was the bare-tailed woolly opossum (*Caluromys philander*), locally known as manicou gros-yeux. It was my first time seeing this species in the wild. It was on a vine swapping away mosquitoes with its ears as it looked curiously at us. It is one of three opossum species in Trinidad, along with the common opossum or manicou (which some persons eat) and the Robinson's mouse opossum.

As we walked, we were constantly looking for wildlife, and we saw lizards on tree barks and sleeping on vegetation along the trail. Then, I heard someone at the front say "porcupine!" I ran! I could not believe it. It was my first time seeing a porcupine (*Coendou prehensilis*) in the wild in Trinidad! We all lowered our voices and took photos. It posed for us for a couple minutes before disappearing up the vine it was on into the canopy. Normally one would only smell the rancid odour it emits, but to see one is an absolute treat for any naturalist. What a night!

As we exited Bush Bush, I thought the only thing that could have topped everything was seeing an anaconda and ocelot fighting each other. One can dream. But I was very grateful for the spectacular night out in Bush Bush, and everyone else on the trip shared my sentiments.

Swamp snake (left) and whistling frog (right). *Photos by Renoir Auguste*

HERPETOLOGY TRIP REPORT - BUSH BUSH

Overall, we saw 14 reptile species, including 8 lizards (Beachrunner, zandolie (*Ameiva atrigularis*), matte (*Tupinambis cryptus*), jungle anole (*Anolis planiceps*), streaked lizard (*Gonatodes humeralis*), spot-nosed gecko (*G. humeralis*), green iguana (*Iguana iguana*), turnip-tailed gecko (*Thecadactylus rapicauda*)), 5 snakes (mentioned in text prior), spectacled caiman, and 10 frog species: (cane toad (*Rhinella marina*), whistling frog (*Leptodactylus fuscus*), Garman's thin-toed frog (*L. validus*), Trinidad thin-toed frog (*L. nesiotus*), tungara frog (*E. pustulosus*), small-headed treefrog (*Dendropsophus microcephalus*), Maracaibo treefrog (*Scarthyla vigilans*), lesser-brown treefrog (*Scinax ruber*), paradox frog (*Pseudis paradoxa*), and Urich's litter frog (*Pristimantis urichi*). I encourage anyone who has never been to Bush Bush to visit one day (once you acquire the necessary permit from Forestry Division). Thanks to all those that came out. Looking forward to our next trip!

Some of the other highlights of the night included a woolly opossum (above) and a tree porcupine (below). *Photos by Renoir Auguste*

Bird Group Report, 16 April 2017

HOBAL TRACE

By Feroze Omardeen

A small turnout of 12 keen birders on Easter Sunday made for a wonderful, relaxing and intimate trip to Hobal Trace, Lloango village, Maracas St Joseph. It was dry and cool on this semi-overcast morning, just enough light for pictures.

Along the Maracas Royal Road we were delayed at the scene of an accident. A noisy ringed kingfisher perched over the river demanded our attention, like a disgruntled customer. This is the largest kingfisher in the hemisphere. (The smaller green kingfisher also shares this habitat of the mid-valley streams). Although the streams seem fairly polluted to me, they are apparently still full of life for a kingfisher to feed on. Amy said "*We frequently count more than 10 different fish species at these sites, including coscorob and pike cichlid, guppies, guabine, jumping guabine, zangee, corynopoma, and several of the 'sardines' (characins)*".

On reading, I further came to understand that these large kingfishers were not very fussy in their dietary habits, including crabs, frogs, aquatic

The bird paparazzi *Photo by Ann Williams*

insects, small mammals, lizards and berries if necessary.

There are several interesting trails in the area. Hobal trace is one of the last right (east) turns on the Maracas Royal Road before Lloango Village, and is the most direct route to the summit of El Tucuche. The first kilometre has been well paved, and proved to be an excellent birding road. The plan was to use the forest edge visibility to detect forest species.

We were able to detect some deep forest species by call, including the bellbirds and tinamous on the mountainside. Patience and determination paid off, when some of the group were able to call out and photograph the black-faced antthrush, a secretive forest floor species of the Formicaridae, a family related to the "true" antbirds (Thamnophilidae). It is a comical and entertaining rail-like little character whose disposition seems to oscillate between curiosity and nervousness. Resemblance to woodrails is simply due to convergent evolution.

The boreal migrants seemed to have departed on the spring migration event, with the exception of a northern waterthrush by the river, and many red-eyed vireos, presumably of the boreal migrant subspecies (but who really knows, even the experts seem to have difficulty separating the races). Instead we found a fair mix of our local passerines, with an unusual abundance of the Trinidad euphonia, almost balancing the violaceous in numbers. Darshan took up the role of the fake-news/false-flag owl caller, and hooted out his monotonous whistle. Bay-headed and turquoise tanagers responded to the call, along with greenlets and gnatwrens. Red-eyed vireos and tropical parulas completed the crew who appeared out of nowhere to attack Darshan.

As usual when you keep making the pygmy owl call, a real ferruginous pygmy owl turns up to find out who's invading his territory. Owls always look surprised, sleepy or annoyed, and this one, a brown morph, looked particularly annoyed.

Persistent playback by Vishal and Richard also paid off in calling out a pair of squirrel cuckoos, although it took a while. Toucans called from the ridge above us, and were spotted on a distant tree. There were many flycatchers seen, including good views of the streaked and piratic, the southern beardless tyrannulet and the tropical pewee. However the bright-rumped atilla, which is always heard in the mornings on Hobal trace, was too far away for a sighting.

Regarding raptors, two large white hawks were intermittently soaring in the area, as well as two common black hawks. What we initially interpreted as a pair of grey-lined hawks prove to be an adult and juvenile.

Some trees along the roadside included locust (*Hymenea* sp), bois pois (*Swartzia* sp) and bay cedar (*Guazuma* sp). Monkey apple (*Genipa* sp) and wild chataigne (*Pachira* sp) were fruiting.

The dryness was palpable, not just visible. However there was not much visible recent fire damage to the area. Tonka beans on the ground were shrivelled and parched. The flow in the river was slow, Gerard told us about his young days in the valley long before today's overcrowded age, when the water flow was much greater, and people would sometimes drown in the river. But El Tucuche was still green; let's hope it stays that way in the decades to come.

Black-faced antthrush *Photo by Richard Lakhan*

'Naturalist In' Series

IN A BEAUTIFUL, WOUNDED LAND

By Christopher K. Starr

Review of: Raymond B. Cowles 1959. *Zulu Journal.* Berkeley: Univ. California Press 267 pp. *44th in a series on 'naturalist-in' books; see www.ckstarr.net.*

Natal (now KwaZulu-Natal) province is on the southeastern edge of South Africa between about 27°S and 31°S. Between the coastal lowlands and the magnificent Drakensberg and Lebomba mountains, lies an extensive high plateau of rolling hills. This area is the inspiration of the most famous book to come out of South Africa, Alan Paton's *Cry, the Beloved Country*. One cannot resist quoting the novel's opening. "*There is a lovely road that runs from Ixopo into the hills. These hills are grass-covered and rolling, and they are lovely beyond any singing of it*."

The plateau is at the edge of the subtropics, far enough south that it can be quite cold in the winter. There are also large climatic differences over relatively short distances, and biotic differences to go with them. Toward the plateau's southeastern limits lies the Hluhluwe Umfolozi Park, the nucleus locality of *Zulu Journal*. The book is as much about landscape and the author's enchantment with it, as it is about wildlife. It is also of course about race relations and social (in)justice.

Raymond B. Cowles (1896-1975) was born in Natal of american missionary parents. In his youth he lived on missions in native reserves, where Zulus were the main ethnic group. He grew up speaking their language fluently and was very much interested in their natural-history lore, language and customs. He has many comments on these people from a natural-history point of view and delights in giving the Zulu names of vertebrates and many plants. More than almost any other naturalist-in writer, Cowles made a point of treating the native people as a natural part of their environment.

In his boyhood he was sometimes privileged to join in hunting expeditions with these men whom he regarded as heroic. "*Frequently during the proceedings some man started a deep, humming song. In the chorus all the big, stalwart Zulus joined with enthusiasm ... There is no race that sings more naturally than the Zulu.*" He also shows an ear for the vocalizations of other species, for example "*The mellowed sound of the hyenas [is] one of the truly beautiful calls of the wild, although it occasionally lapses into hideous, high-pitched squeals and gurglings*."

As puberty approached his parents sent him to the USA. This was evidently done to preserve his virtue, as "*There is no Zulu word for virginity*."

Cowles was on staff at the University of California for many years. In his youth he gained a key insight into the *"big and blundering Nile monitor lizard"*, *Varanus niloticus*, found throughout most of sub-saharan Africa. The female lizard excavates hole in a termite (*Macrotermes* spp.) mound when the rain has softened the nest walls and lays her eggs inside. The termites seal the breach, and the mound protects and incubates the eggs (Cowles 1930). *V. niloticus* apparently does not have this habit in northern Africa, although I have occasionally seen it in a member of the *V. salvator* group in South Asia.

From this early start, he went on to do pioneering research on the temperature relations of desert reptiles (Turner 1984), which helped to establish the reptile physiology as a distinct scientific field. Aside from his professional research papers, he wrote a naturalist-in book on the deserts of

Adult Nile monitor lizard: very widespread in sub-saharan Africa and north along the Nile

California (Cowles 1977),

Zulu Journal, dedicated to Thomas Malthus (1766-1834), is based on boyhood memories and on field notes from two visits back to South Africa in the 1920s and another in the 1950s. It is a book that endeavours "t*o capture the mood of the country, the seasons, and the passing years."*

Arriving in 1953, he took a train ride into the interior. Looking out the window, some of what he saw was familiar, but there were also changes. Large wildlife was notably scarcer and mostly in poor condition. He reflected that coming generations might have very little opportunity outside of zoos to experience the kind of wildlife encounters that had been commonplace in his childhood. The landscape was still beautiful, but no longer filled with the creatures that had once made it so magical.

On the other hand, the absence of such top predators as lions and leopards had allowed some animals - such as baboons - to become much commoner. Overpopulation beyond the environment's carrying capacity appeared to contribute to the animals' poor physical state. There was also the problem of a huge growth in the human population, leading to further environmental degradation.

Like any well-rounded naturalist, Cowles displays a keen interest in questions outside his professional research. Among these are a) concealing colouration, which he believed was a major function of the Africans' dark skin colour, b) the causes and origin of flocking in birds, with attention to various weaverbirds, especially in winter, and c) the place of humans in the balance of nature.

A naturalist-in book set in southern Africa cannot very well lack adventure. Among other things, Cowles writes of encounters with rhinoceroses, huge unpredictable beasts that make it advantageous to be able to locate and climb a tree quickly. He describes tense moments when stalking rhinos and Cape buffalos, trying to get close enough for photography without alarming the animal into charging, while keeping an eye open for climbable trees.

"*Eventually one of the three [black rhinoceroses] trotted toward us. [My guide] suggested a more or less leisurely retreat into a convenient tree. I accepted his suggestion with alacrity, especially as the animal continued to advance and came so close that only its forequarters showed in the camera view finder*." Rhinos have very poor eyesight, but their senses of smell and hearing are acute.

And then there were the little tick birds, which sit on the rhinos to pick off and eat blood-engorged ticks. These have good eyesight, and when alarmed by a large animal, such as a person, they move over to the far side or end of the host. Accordingly, a rhino can point itself in the intruder's direction simply by shifting about until the tick birds are congregated on its rump. The presence of dangerous large animals raises the question of carrying a rifle. Can one do field trips on foot in such habitat without being armed? As Cowles shows, there is no obvious answer. "*At first a man strolling through big-game country with only a camera and no rifle at hand feels extraordinarily naked and helpless. It is not surprising that one's resolve not to carry a gun will suffer a fate like that of the monthly resolution to quit smoking*."

There are also engaging comments on many smaller vertebrates, e.g. aardvark, mongooses, cane rats and fruit bats. All of these notes illustrate that Africa remained - and to some extent still remains -- a rich hunting ground for original discoveries in natural history.

And there are of course the tiny animals. The seemingly insignificant fungus-gardening termites form huge mound nests that are a conspicuous part of the landscape in much of Africa. Cowles gives a good description of colony's preparation for mating flight and subsequent mating. With the first warm rains of the spring, untold thousands of winged queens and kings emerge from the mounds. These edible creatures are so abundant that they form a windfall for many predators: toads, bats, birds, mice, lizards, even human beings. People catch them in quantity in pans and fry them in their own fat, eating much of their catch on the spot.

One naturally assumes that people living in intimate relations with the creatures around them know them well. This is well founded, for the most part, but naturalists have occasionally remarked on

striking counter-examples. Cowles found some native beliefs about even relatively common animals rather preposterous. For example, the perfectly harmless file snake, *Simocephalus capensis*, was among the most feared among the Zulus. It was believed that even to touch a dead file snake was invariably fatal. Cowles's attempt to dispel this idea by handling one simply proved that white people were immune to its effects.

Throughout the period of the book, and especially at the time of his last visit, apartheid was the central social fact in South Africa. The country had a very small number of rich and a large mass of very poor people, with the division almost entirely along racial lines. In the segregated train, first class was reserved for whites, the second and third classes for blacks. Even so, he was struck by the "*irrepressible pleasure of life*" among even the poorest natives and a decrease in public happiness as he went from third to first class. The master race's position and wealth had come at a heavy cost. Or, as Cowles puts it, "*Seemingly, as a man acquired position that was held only precariously by a narrow range of comportment and money, spontaneous happiness expressed outwardly and shared with others diminished*."

He remarked that "*Above all, it is difficult to explain the existing relations between white and black*." Really? Cowles did not live to see the end of apartheid. He would likely have been amazed at how quickly and relatively painlessly it came, although its abolition has done relatively little toward resolving the economic divide.

References

Cowles, R.B. 1930. The life history of *Varanus niloticus* (Lin.) as observed in Natal, South Africa. *J. Entomol. Zool.* 22:1-31.

Cowles, R.B. 1977. *Desert Journal.* Berkeley: Univ. California Press 263 pp.

Paton, A. 1948. *Cry, the Beloved Country.* New York: Scribners 256 pp.

Turner, J.S. 1984. Raymond B. Cowles and the biology of temperature in reptiles. *J. Herpetol.* 18:421-36.

Mound nest of *Macrotermes natalensis.* This one is a little taller than an average adult person.

Memoir

NO KOALAS FOR TRINIDAD

By Hans Boos

In 1971 I was working in Taronga Park Zoo in Sydney, Australia as a Zookeeper in the Reptile Section. I had been there from July 1968 and it was becoming increasingly difficult to be promoted any higher than Section Supervisor, mainly because I was, as they put it, "waiting for dead man's shoes," for my boss, Uwe Peters, neither showed any signs of moving on, nor of dying, and because I could not cross the chasm to management as I did not have any University Degree.

Then I got a letter from my brother back in Trinidad, enclosing a clipping from a local newspaper, that the incumbent Curator of The Emperor Valley Zoo, in Port of Spain, had been killed in a car crash. Apparently he swerved to miss a cyclist, ran off the road east of the town of Arima and plunged into a river, being killed instantly. The Board of directors of the Zoological Society of Trinidad and Tobago and The Statutory Authority were looking to fill the absent post and it was suggested that I apply for the job.

So while the Boards that would decide my fate for the next coming two and a half decades deliberated on whether I was welcome to the job, I began making plans in the event that I was given the chance to come back to my homeland and for the possibilities this return could hold.

There were three spectacular animal additions I thought that the climate and environment of Trinidad would be perfect to accomplish.

Giant tortoises from the Seychelles and Galapagos Islands had been taken to Sydney's Zoo and others around the world in the hope of breeding them to save these endangered species.

It was not noticed that Sydney, unfortunately, was too cold in the winter months and though their tortoises had been there since the 1930s, some eggs had been laid, but they were deformed and infertile.

I had made every effort to improve the living conditions for these giants, with limited success due to resistance from the management of the zoo, but I was pleased to hear that within a year of my leaving Australia in April of 1973, that eggs from the Seychellese tortoises had been hatched for the first time in the world. Up to that date only San Diego Zoo in western United States, with good husbandry, had Galapagos tortoises been successfully bred.

I thought that if I could get a breeding herd of these rare giants from zoos that had not had successes due to inadequate climatic choice,

Cuddling a koala

Trinidad would be the perfect place to have them both for display purposes and for breeding in our tropical and suitable clime.

The second idea, in that I had been in charge of the welfare of one of the largest komodo dragons in captivity, was to approach the Indonesian Government, (once I was established in my new job) and request a pair of komodo dragons, *Varanus komodoensis*, to attempt a breeding programme similar to the one in the Washington Zoo. To also breed this, the world's largest lizard, would be a spectacular zoological event, and these giant lizards would also be a wonderful new addition to a small tropical zoo in Trinidad.

The third, and wildest, and by far the longest shot, was to establish koalas in Trinidad's zoo. But to do this, one prime condition would have to be pre-established before any koalas could be considered as an import.

Koalas feed exclusively on eucalyptus leaves, and are zoologically linked to these trees that form the major vegetation type that ensured their evolution and survival only on Australia.

Only the planting of vast tracts of eucalyptus in western United States has allowed these marsupials to be kept in San Diego Zoo, in California.

In Taronga Zoo, there was special truck that went out every other day into the hinterland and parks surrounding and within the city to collect branches of several species of eucalyptus tree to feed the koalas held in captivity in the zoo. Koalas are finicky feeders, choosing to eat one species one day and another—probably sensing or tasting the leaves that were not quite right, and choosing to eat those that were—the next.

The branches were placed in large vase-like containers fastened to posts in their enclosure where the animals could climb up, and sit and feast away their sleepy days. The discarded and denuded branches were then fed to the giraffes when the koalas had finished with them. Young and abandoned koalas were put out to feed in a small enclosure where several species of their favorite trees grew, and they could choose which leaves to consume on any given day.

So I asked myself if it were possible to grow a field of eucalyptus trees in Trinidad, would it then be possible to import koalas sometime in the future, and thus have a unique display, similar to the ones in Taronga and San Diego Zoos.

To do this I would need seeds. Lots of seeds. And of many varieties to suit the palate of the koalas.

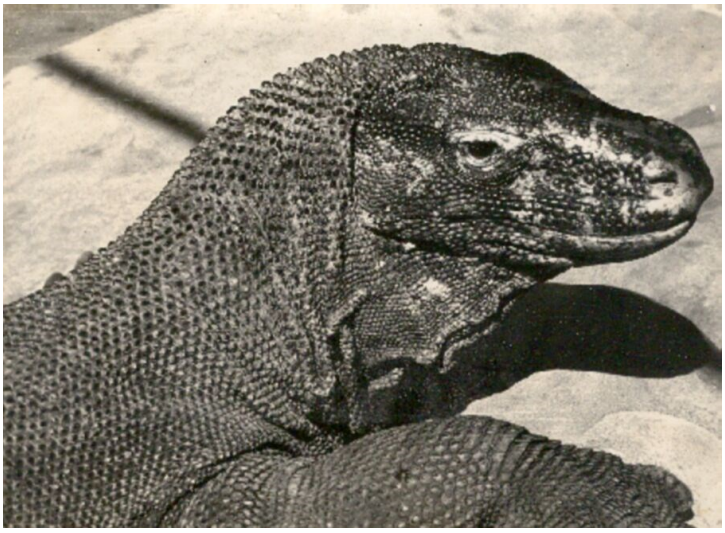
So when I finally was approved for the job in Trinidad, in the intervening months that I waited for the details of my travel arrangements and finances to be thrashed out, I set about collecting seeds.

The eucalyptus seeds are enclosed in small cup-like structures and when ripe and ready for planting are very tiny, very much like black-pepper grains. So I collected them by the thousands, perhaps tens of thousands, kept in separate envelopes. I had no idea as to what species I was collecting, but chose trees whose leaves I could see that the koalas ate

Finally when I left Australia, packed in my baggage were about ten envelopes with what I hoped was the seed bank of ten, koala food-trees.

The realty of the task I had taken on when I finally got to Trinidad made me realize that my eucalyptus forest project was one I personally could not undertake or supervise, and Emperor Valley Zoo was in no condition to house and breed either giant tortoises or komodo dragons. My pipe dreams went up in smoke.

But I still had the seeds. So I divided them and gave half of them to the Botanical Gardens whose offices were across the road from the zoo's, and the other half I gave to my friend Richard



Plan B: Komodo dragon

"Dick" Deane from the Wild Fowl Trust in Pointe a Pierre. I reckoned that both these recipients had the expertise and space to germinate and plant at least some of the seeds, and in the future there might be some hope of realizing my dreams.

Needless to say, the ones given to the Botanical Gardens came to nothing, due to the ineptitude of the public servants working there, but Dick did grow the seeds. Two seeds, from the thousands I had given him.

He pointed out the two trees to me several years later, and I photographed them in January of 1999. They can still be seen where they grew. The first is a paperbark, *Melaleuca quinquenervia*, and it stands on the southern edge of the main pond of the Wild Fowl Trust, its roots sometimes in the water of the pond. Its distinctive bark can be peeled off like spongy sheets of paper, hence its common name.

The second *Eucalyptus* sp., loomed tall in 1999, on the edge of the car-park of the Pointe a Pierre recreation club, and it is still there though partially obscured behind a shed and in the company of other trees.I have visited these trees over the years, lonely immigrants from Australia, and they were still there when I again photographed them late in 2015.

This second tree could actually be seen, alone and unique as it was, some time before 2015, in an aerial photograph of the recreational club that I accessed over the internet. There may never be koalas munching away on eucalyptus leaves, for visitors to see and cuddle for photo-ops in Trinidad, but my vision lives on, however abbreviated, in these two patriarchs, after more than forty years.

Paperbark eucalyptus (2013) *By Hans Boos*

TTFNC QUARTERLY BULLETINS & INDEX ONLINE LINK :
www.ttfnc.org/publication/field-naturalist/

Management Notices

New Members

The Club warmly welcomes the following new members:

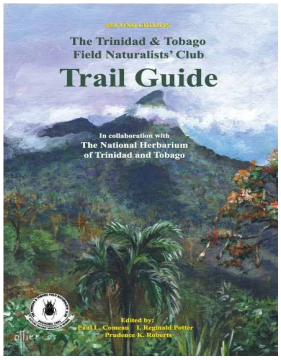
Joymarie Millar, Keshan Mahabir, Edward Barrow and Taariq Ali.

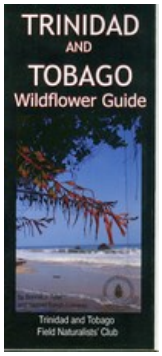
NOTICE FROM THE EDITORS: ***Do you have any natural history articles, anecdotes or trip reports that could be published in The Field Naturalist? We welcome contributions from members. Please email your ideas or finished pieces to admin@ttfnc.org. We look forward to hearing from you!***

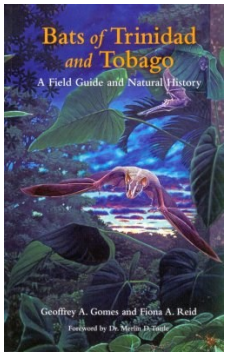
Trinidad and Tobago Field Naturalists' Club
P.O. Box 642, Port of Spain, Trinidad and Tobago

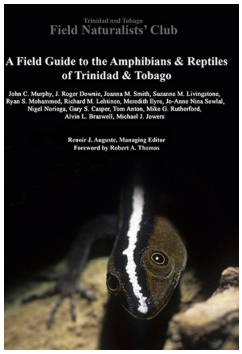
PUBLICATIONS

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); 2018 Calendar ($25)

MISCELLANEOUS

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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 'QB2018' in the email subject label.**