THE FIELD NATURALIST

Quarterly Bulletin of the Trinidad and Tobago Field Naturalists' Club

October – December 2016 Issue No: 4/2016

PORT OF SPAIN BIOBLITZ 2016

Friday 4th - Sunday 6th November

GENERAL REPORT

by Mike G. Rutherford

Just how much wildlife can you find around the nation's capital city? Apparently quite a lot if you assemble the right team of nature enthusiasts. For the fifth year in a row the University of the West Indies Zoology Museum (UWIZM) and the Trinidad & Tobago Field Naturalists' Club (TTFNC) organised a Bioblitz. This one was a bit different from past events as it was in a major urban area rather than out in the swamps or forests.

The Botanic Gardens was chosen as the basecamp for the Bioblitz as it is a good location in which to

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Red-tailed squirrel in the Botanic Gardens *Photo: D. Mulchansingh*

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

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October - December 2016

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survey and, more importantly, interact with the public. The Horticultural Services Division in the Ministry of Agriculture, Land and Fisheries and the Friends of the Botanic Gardens of Trinidad & Tobago were delighted to help with hosting the event. The Orientation Centre at the front gates of the garden was filled with displays and the equipment needed for the surveying and identification. On the lawn nearby were several marquees to host the Nature Fair part of this year's event. (see page 4).

Friday evening saw the beginning of the surveying as Bioblitzers assembled in the gardens. The mammal team set up mist nets to catch bats and over several hours managed to find 9 species including the uncommon white-winged vampire bat (see page 8). Some of the reptile and amphibian group (see page 10) searched by torchlight all through the gardens whilst several small groups searched for insects, spiders and scorpions (see page 15).

Saturday was the main day for the Bioblitz groups to survey all over the city. The birders were up early doing some banding in the gardens whilst other searched the nearby forests (see page 12). The aquatic group headed to Invader's Bay and the mouth of the Maraval River to search the waters and then headed up to sample the St. Ann's River near Fondes Amandes (see page 20). The mammal team retrieved camera traps from Caroni Swamp, the St. Ann's peak trail and around the Botanic Gardens. The plant (see page 22) and fungus (see page 24) groups searched all over the city and up into the hills. On Saturday night the herpetology and invertebrate groups headed out again to find nocturnal species.

Some of the Bioblitzers at the end
Photo: E.K. Rutherford

Announcing the results
Photo: E.K. Rutherford

One interesting addition this year was the Microbe Team who had collected air, water and soil samples from around the city. They then cultivated the samples in a lab to see what species of bacteria and microfungi they could find and they got some great results (see page 19)

Sunday morning found many of the Bioblitzers identifying their last few specimens, using hand lenses, microscopes, books and their vast range of experience. Surveying stopped at noon and the final total was announced around 1:30pm.

The result was an unexpectedly high 730 species! This included 16 mammals, 97 birds, 19 reptiles, 9 frogs, 15 fish, 245 invertebrates, over 60 fungi, 20 bacteria and 246 plants. As always happens after a Bioblitz a few more species came to light as photos were checked and as specimens were identified so the total for the final Bioblitz report and in some of the groups reports will be even higher than the totals reported on the day.

NATURE FAIR REPORT

by Mike G. Rutherford

For the first time in a T&T Bioblitz the public part of the event lasted three days rather than the usual one. One of the main reasons for holding the Bioblitz in Port of Spain was to be able to reach out to more members of the public than in previous events which had been held in more remote locations. This was a great opportunity to invite over twenty organisations, groups and charities to spread the message about the work they are doing to help the environment.

Visitors were first invited into the Botanic Gardens Orientation Centre where they were met with a display showing a video of previous Bioblitzes and

Students after completing the animal trails round the Botanic Gardens

Photo: M.G. Rutherford

information about the current one. They were then encouraged to follow trails all around the gardens to learn about the biodiversity of Trinidad & Tobago and to complete quizzes about what had been discovered in past Bioblitz events.

In the main room the UWI Zoology Museum team set up a display showing the wide range of species in their collection popular items included a dried leatherback turtle shell and the head of a hammerhead shark. Several dried bats and some mammal skulls helped the group Trinibats to highlight their work. In the centre of the room Dan

The main marquee

Photo: C. de Bruin from Triniview.com

Jaggernauth set up his famous display of fruits, seeds and items from the forests along with information about the TTFNC complemented by Selwyn Gomes selling club books and signing up new members. Fungus enthusiast and club member Jeffrey Wong Sang arranged his popular collection of preserved mushrooms from all over the country at the other end of the TTFNC table. Along the side of the room the UWI Microbe Team put out microscopes and petri dishes to allow people a close up look at some of the bacteria, microbes and microfungus they had found. Next to them was a small display by the

Turtle Village Trust staff talking with visitors *Photo: M.G. Rutherford*

National Herbarium display
Photo: C. de Bruin from Triniview.com

Water aCCSIS group looking at water management and climate change resilience in the Caribbean. Finally the National Herbarium of T&T had a display focusing on mosses and lichens, again using microscopes to get a detailed look at these tiny plants.

Outside on the lawn a huge 20m x 10m marquee was set up to accommodate the majority of the groups taking part. Various groups came and went over the weekend as some could only provide staff or volunteers for a single day whilst others did all three days.

The Asa Wright Nature Centre display
Photo: P. Geerah

At the front of the marquee was a large display by Wa Samaki Ecosystems/Caribbean Permaculture Consultants, Shaun de Luna and John Stollmeyer along with their team introduced visitors to the concepts of permaculture and sustainable agriculture. Next to them the Turtle Village Trust, led by Kathryn Audroing, and Nature Seekers led by Candace Superville talked with everyone about the plight of the sea turtles who visit Trinidad & Tobago's beaches every year to nest. They had lots of great activities to get their messages across.

The EMA team talking to students
Photo: C. de Bruin from Triniview.com

Government groups were represented by the Environmental Management Authority (EMA) and the Environmental Policy and Planning Division. The EMA brought some of their wonderful animal models which were a big hit with the school kids.

On the other side of the marquee Paria Springs Tours, run by Courtenay Rooks, encouraged people to get out and explore for themselves. Nearby, members of the Caribbean Youth Environment Network talked about their groups activities encouraging youth involvement in nature.

In the middle of the marquee the Asa Wright Nature Centre stand, led by Kimberly Chu Foon, had displays highlighting the bird life of T&T and the work done by the centre to help preserve the Arima Valley, educate local school kids and promote research.

Policeman and a young visitor get up close at the Serpentarium display

Photo: C. de Bruin from Triniview.com

On the other side of the tent the Pointe-a-Pierre Wildfowl Trust addressed bird conservation as well but also covered freshwater environments and had a great display simulating a freshwater habitat.

The Fondes Amandes Community Reforestation Project displayed sustainably made products from the forests as well as testing out insect repellents made from natural oils and showcasing the great work they are doing in helping forests to recover.

In a small marquee to the side of the main one, the Serpentarium, run by Saiyaad Ali, set up a great display with a mix of snakes, caiman, lizards and "creepy crawlies" many of which they had collected during the Bioblitz surveying. Giving the public the opportunity to touch and interact with some of these animals hopefully helped dispel a few myths. Further down the lawn the El Socorro Centre for Wildlife Conservation had live animals as well, a selection of owls and hawks that were all used to humans. Ricardo Meade and his group were helped by students from the UWI Biological Society who also had some informative displays about environmental issues.

The Fondes Amandes table

Photo: C. de Bruin from Triniview.com

The permaculture display

Photo: E.K. Rutherford

Marine and aquatic aspects were covered by several groups in the main marquee: the T&T Eco Divers Club looked at the problems of trash in the oceans; the University of T&T Marine Sciences unit had an army of student volunteers to show people the diversity of marine life with preserved specimens; the Environmental Research Institute Charlotteville (ERIC) with Lanya Fanovich talked with visitors about the many projects they run such as coral reef surveys, underwater baited cameras and community outreach; the Institute of Marine Affairs display organised by Lori Lee Lum, highlighted the work done by and the many publications produced by the IMA; aQuaTT showed how aquaculture can be a more sustainable way of providing food for people; the Aquatic Group also displayed many of their finds from the surveying in several large aquaria and let visitors see the sorting and identifying process up close.

The botanical and floral aspects of nature were also well covered by several groups. The Friends of the Botanic Gardens of T&T informed visitors about the history of the gardens and an ongoing mapping project to document the plants found therein. Horticultural Services Division had a table full of fruits, seeds and other products of the forest; the T&T Orchid Society had a graphic display detailing the history of their group.

The Erasmus Mundus Association were there for one day and promoted educational opportunities available to students.

The President receives a TTFNC calendar from Dan Jaggernauth
Photo: C. de Bruin from Triniview.com

Over the course of the Friday we had many school groups from primary to secondary age come to visit. In the afternoon there was a special surprise when the President of Trinidad & Tobago, His Excellency Anthony Carmona, dropped by from next door to have a look around. He spent almost an hour speaking with school children and exhibitors, viewing the displays and being asked to pose for many, many photographs. The Minister of Agriculture, Land and Fisheries, the Honourable Clarence Rambharat also toured the fair to see the displays and talk with those attending.

Saturday and Sunday saw a steady stream of visitors, from local families to a bus load of tourists from a cruise ship, checking out the displays and talking with Bioblitzers.

Minister at the Friends of the Botanics display *Photo: M.G. Rutherford*

By late Sunday afternoon it was time to pack up the Nature Fair and leave the Orientation Centre for the final event of the weekend. The Green Screen Film Festival, organised by Sustain T&T, showed several films to a large and enthusiastic audience.

It is hoped that in the future the environmental umbrella organisation The Council for Presidents of the Environment (COPE), will run the Nature Fair as an annual event alongside the Bioblitz in order to reach out to all citizens of Trinidad & Tobago.

Well done and thank you from the TTFNC to all those who took part.

Kids at a live beehive *Photo: M.G. Rutherford*

MAMMAL GROUP REPORTS

by Luke Rostant and Mike G. Rutherford

Bat Group Report (*Luke Rostant*)

At this year's Bioblitz, the bat group had reason to celebrate as all species of bats (apart from the vampire bats) have been removed from the list of vermin species on the amended Conservation of Wildlife Act. This is of tremendous significance, as it means that most bats, as well as the important ecosystem services they provide, will be afforded more protection under the law in Trinidad and Tobago.

The bat group was only able to trap on Friday November 4th. Trapping was carried out alongside the dry stream bed towards the north of the Botanic Gardens, Three 12 metre long nets were set up on the triple high, with an additional two ground nets set up further along the stream bed (one 12m and one 9 m). Nets were set at about 6pm, and trapping was carried out until 11pm.

All told, around 55 individuals from nine species of bat were captured (see table) including one white-winged vampire bat (*Diaemus youngi).* Unlike the common vampire bat (*Desmodus rotundus)* the white -winged bat feeds predominantly on bird blood. The addition of this species was a welcome surprise to the bat group.

Rondell removing a bat from a net

Photo: S. Rampersad

White-winged vampire bat

Photo: S. Rampersad

Common Name	Scientific Name	Trophic category
Common long-tongued bat	*Glossophaga soricina*	Nectarivore
Gervais' fruit-eating bat	*Artibeus cinereus*	Frugivore
Great fruit-eating bat	*Artibeus lituratus*	Frugivore
Jamaican fruit-eating bat	*Artibeus jamaicensis*	Frugivore
Little big-eared bat	*Mictronycteris megalotis*	Slow flying insectivore
Little yellow-shouldered bat	*Sturnira lilium*	Frugivore
Pale sear-nosed bat	*Phyllostomus discolor*	Omnivore
Seba's short-tailed bat	*Carollia perspicillata*	Frugivore
White-winged vampire bat	*Diaemus youngi*	Sanguivore

Mammal Group members:
Luke Rostant, Darshan Narang, Elliott Petkovic, Rondell Hamilton, Laura Baboolal, Danielle Morong, Nicholas Mohammed, and many others who joined in. We would like to thank Trinibats for the use of equipment for the survey and thanks to Sataish Rampersad for photographing the proceedings.

Red-rumped agouti feeding on seeds on St. Ann's Trail *Photo: Camera Trap*

Camera Trapping Report (*Mike Rutherford*)

Camera traps were set up at several different sites to try and cover as wide a range of habitats as possible. The first was put in place on the 30th September beside a stream flowing down towards Fondes Amandes. Two more were put out in the Botanic Gardens on the 3rd October, both in the more overgrown areas towards the northern end of the gardens. Five cameras were placed on 22nd October along the trail leading from the top of Lady Chancellor Road to St. Ann's Peak. They were spaced out roughly every 400 metres some overlooking streams and some along paths. Finally, four cameras were placed on 23rd October in the patch of Caroni Swamp to the west of the Laventille sewage ponds, this was just within the 5km radius for surveying.

All the cameras were retrieved on Saturday 5th November and the photos were checked at the Bioblitz basecamp. The Fondes Amandes camera captured images of red-rumped agouti (*Dasyprocta leporina*) during the day and common opossum (*Didelphis marsupialis*) at night as well as domestic dogs.

The two cameras in the Botanic Gardens did not get any photos. Of the five cameras on the St. Ann's Peak trail one malfunctioned and took no photos and another malfunctioned and took a photo every minute until the batteries ran out resulting in over 18,000 images (the Mammal Group diligently looked through every single image just in case!). The three other cameras captured images of agouti and domestic cats and dogs.

The Caroni Swamp cameras all worked and recorded a wide variety of bird life including flocks of feeding scarlet ibis (*Eudocimus ruber*), tricoloured heron (*Egretta tricolor*) and boat-billed heron (*Cochlearis cochlearius*) and yellow-crowned night heron (*Nyctanassa violacea*); one sighting of a small Indian mongoose (*Herpestes auropunctatus*) and several sightings of rats which were not positiviely identifiable to species but could have been the Trinidad water rat (*Nectomys palmipes*). There were also photos of a very large spectacled caiman (*Caiman crocodilus*) and once more many domestic dogs running through the swamp.

Although the main purpose of setting out the camera traps was to survey for mammals, it was very interesting to see such a range of birds in the Caroni Swamp, especially the mixed age ibis feeding in such large numbers.

Manicou near Fondes Amandes
Photo: Camera Trap

AMPHIBIAN AND REPTILE GROUP REPORT

by Renoir Auguste

The Port of Spain Bioblitz provided an interesting opportunity to document species of amphibians and reptiles (herpetofauna) found in and around the city. For the most part, the capital is predominantly urbanized. However, there are forested areas to the north, which encompass portions of the northern range, and to the south, there is the Caroni Swamp. Of further interest, the city also represents an area where most non-native herpetofauna were first documented for the country.

Three-lined Snake at Fondes Amandes

Photo: R. Auguste

The group consisted of two main survey teams. One was led by Saiyaad Ali of the Serpentarium, and the other by myself. Each team actively searched for reptiles and amphibians within the Botanic Gardens, Mt. Hololo, Lady Chancellor Road, The Fondes Amandes Reforestation site, and along the streets of St. Ann's during day and night. Camera traps were also deployed in the northern portion of the Caroni Swamp.

With our combined effort over the weekend, we observed 23 reptile species (which consisted of one crocodilian, one freshwater turtle, 11 lizards and 10 snakes), and nine amphibian species. Of the 23 reptile species, most of the snake species were observed at Mt. Hololo. However, Avion Phillips from the invertebrate group saw a macajuel (*Boa constrictor*) within the dense vegetation in the Botanic Gardens which was a pleasant surprise! These snakes all play an important role in the ecosystem, feeding on rodents and other animals, and should be left alone, as they generally do not attack people unless aggravated. Other reptiles of interest observed included spectacled caiman (*Caiman crocodilus*) in the Maraval River and the Caroni Swamp (thanks to camera trap photos), scorpion mud turtle (*Kinosternon scorpioides*), and the non-native Bronze Anolis Lizard (*Anolis aeneus*), which were observed on walls and plants while walking through the streets in St. Ann's.

Of the nine amphibian species observed, some of the interesting species included the endemic Trinidad stream frog (*Mannophryne trinitatis*) which were seen and heard calling along rivers in St. Ann's, and the invasive Lesser Antillean whistling frog (*Eleutherodactylus johnstonei*), which were seen and heard calling within the Botanic Gardens and in the urban areas of St. Ann's. However, of potentially significant interest, one frog that was seen and collected by myself may represent a new species record for the country. I was unable to definitively identify the frog upon collecting it, and after consulting with fellow Trinidad and Tobago herpetofauna expert, John Murphy, he suggested it could potentially be a new species to document for Trinidad. The specimen is lodged at the University

Spectacled Caiman at the Nature Fair

Photo: S. Warren-Gittens

of the West Indies Zoology Museum, and further analysis will be conducted to confirm the species identification.

It appears that this seems to be the trend now for the reptile and amphibian group during the past three Bioblitzes, where potentially new species for the country were observed! This of course further highlights the importance of the Bioblitz occurring here in Trinidad and Tobago. It would not be surprising if during the next Bioblitz, another new potential species record is observed, adding to the known species list for the country.

Scorpion mud turtle at Nature Fair
Photo: M.G. Rutherford

These new findings can have potential conservation implications, but also economic and social benefits. For example, herpetofauna are used in medical research for humans across the world. Monitoring of amphibians and reptiles in Trinidad and Tobago is thus vitally important, and hopefully can be a more regular feat taken on by persons in the country.

At the Nature Fair the herptiles were well represented at the Serpentarium display run by Saiyaad and his enthusiastic team. As well as showing some of the mud turtle, snakes, lizards and frogs found by the surveyors there were also several other snakes and a few caiman. Of particular interest was the Cuvier's dwarf caiman (*Paleosuchus palpebrosus*) which has only recently been confirmed as being present in Trinidad.

Streak Lizard in the Botanics
Photo: M.G. Rutherford

Amphibian and Reptile Group members:
Adam Fifi, Rainer Deo, Sachin Maraj, Renoir Auguste, Saiyaad Ali, Siddeeq Ali, Nalini Rampersad-Ali, Shameel Mohammed, Daryl Abraham, Darius Baldeo, Joel Lennard, Kuan Liao, Jonathan Harris, Adam Fifi, Jyothi Singh, Kester Dass, Aaron Croney, Peter Dickson, Drew Howell, Javiel St Hilaire, Jason Jagroopsingh, Natalie Jagroopsingh and Nikita Ali.

Trinidad stream frog
Photo: R. Auguste

BIRD GROUP REPORT

by Darshan Narang

The fifth year of Bioblitz took us on our first urban bird survey in the capital city of Port-of-Spain. Instead of walking through only forest trails and wetlands as in previous years Bioblitzes, this time, city streets and urban parks were also among the areas where birds were observed, counted and recorded. And lo and behold, there were not just pigeons and those little blackbirds that's associated with the city, but just about one hundred bird species were spotted in and around POS. Who knew that this much diversity, about a fifth of all birds recorded in Trinidad and Tobago, would be found in a 12 kilometre radius of Port-of-Spain. The

Yellow caracara preening
Photo: D. Mulchansingh

Squirrel cuckoo *Photo: D. Mulchansingh*

city is not just a concrete jungle as one would think, but comprises many microhabitats and ecotones that birds will exploit to forage, to breed and to nest. Birds not only survive in such a harsh and unfriendly urban environment but they thrive as well.

This year the bird survey was conducted mainly on Saturday 5th and the morning of Sunday 6th, with our base located at the Botanic Gardens, a refuge area for urban birds as well as some interesting forest dwelling birds. As with the last two Bioblitzes in Nariva Swamp in 2014 and Charlotteville in 2015, we conducted a mist netting exercise in the Botanic Gardens on the Saturday for a 12-hour period and various teams drove to birding hotspots within the survey area to conduct general area searches and record as many species of birds possible. In total, we recorded about 100 species of birds including many passerines, raptors and shorebirds.

The mist netting took place in a secluded corner of the Botanic Gardens, where we had hoped to capture many of the resident birds there. Mist nets are one method of surveying birds and a lot of

Birders at the Maraval River
Photo: E. Seeberan

useful information can be gathered from having the birds in hand such as species, age, sex, molting strategy, mass and wing length. This data can tell us about the life history of the birds as well how healthy the birds are when compared to birds from other environments.

We banded the birds with an aluminium leg band which allows us to identify each individual in case it is caught again. We set up nets from 0600 hrs and closed nets at 1800hrs for a total period of 12 hours.

Bat falcon *Photo: L. James*

In total we caught 14 individuals across seven species of bird in the mist nets. The most common species caught were spectacled thrush (7) and cocoa thrush (2) with one individual each of copper-rumped hummingbird, great kiskadee, greyish saltator, green hermit and white-tipped dove. The banding was conducted by certified bird banders Carl Fitzjames (who trained at the Klamath Bird Observatory in Oregon, USA) and Richard Smith. Assisting in setting up nets and extracting birds was a large group of volunteers too numerous to name here.

The birders who conducted the area searches within the environs of Port-of-Spain had much better luck in observing higher diversity of species, as is generally the case. Over the weekend various

Pectoral sandpiper *Photo: J. Foster*

small groups of birders surveyed the urban study area via foot and car and boat. Some of the main habitats surveyed included the coastal waters of the city and its associated wetlands, the urban parks and squares, the forested hills overlooking the capital and within the Botanic Gardens.

All together 100 species of birds were documented during the Bioblitz, with some of the highlights for the area including raptors: pearl kite, peregrine falcon, grey-lined hawk, zone-tailed hawk, short-tailed hawk, bat falcon and merlin; hummingbirds: copper-rumped hummingbird, green hermit, white-chested emerald, blue-chinned sapphire, little hermit and one of the world's smallest birds, the tufted coquette; shorebirds and seabirds: greater yellowlegs, lesser yellowlegs, semipalmated

Striated heron *Photo: L. James*

Black vulture or corbeaux
Photo: D. Mulchansingh

sandpiper, brown pelican, magnificent frigatebird, whimbrel, semipalmated plover and black-necked stilt. Some of the migrants included the fairly common yellow warbler and northern waterthrush which both spend most of their annual life cycle overwintering in warm and sunny Trinidad and Tobago.

Birders in the Botanic Gardens
Photo: M.G. Rutherford

One of the highlights of the day was the scarlet ibis, Trinidad's national bird that is very distinctive due to the spectacular bright scarlet plumage. These were observed towards the coastal wetland areas in the south of the study area which is in close proximity to the Caroni Swamp, the main roosting and nesting grounds of the scarlet ibis in Trinidad.

Orange-winged parrot
Photo: D. Mulchansingh

Bird Group members:
Faraaz Abdool, Zakariyya Ali, Vicki Blanchard, Paul Christopher, Vishnu Debie, Jerome Foster, Maurice-Mandela Frank, Kay Hinkson, Lawrence James, Stuart Miller, Devan Mulchansingh, Darshan Narang, Feroze Omardeen, Elizabeth Seebaran, Richard Smith and many more.

Northern waterthrush
Photo: D. Mulchansingh

TERRESTRIAL INVERTEBRATE REPORTS

by Pauline Geerah, Rakesh Bhukal, Avion Phillips, Mike G. Rutherford

Lepidoptera (*Pauline Geerah*)

The Lepidoptera group, had a fairly satisfying result for this year's Bioblitz. Surveying initiated on Friday afternoon in the Botanical Gardens, with the rare tomato butterfly (*Temenis laothoe hondurensis*) kick-starting our list. Teaming up with the Fungus group on Saturday morning, we searched Fort George and all green spaces within Port of Spain. Observations showed two species; the white peacock (*Anartia jatrophae jatrophae*) and a skipper (*Pyrgus orcus*) predominating the city's parks.

Cucumber moth *Photo: P. Geerah*

We proceeded to Fondes Amandes afterwards, witnessing the spectacular sight of several lady slippers (*Pierella hyalinus hyalinus*) flying along the bank of the St. Ann's River. A quick walk through the trail to the visitor's center added further species to our growing tally. Returning to the Botanical Gardens, the Fungus and Lepidoptera group went separate ways and surveying was directed to the bushy and trail-ridden hill slopes.

The moth *Azeta melanea* was quite abundant, residing in broad-bladed grasses in the steeper areas. Hanging baited fruit traps set up on Thursday throughout the gardens, came up empty handed

Zebra butterfly *Photo: P. Geerah*

with the exception of one, capturing two Hermes satyrs (*Hermeuptychia hermes*). Despite this, a few fruit feeding species were noted within the vicinity of the traps, including the beautiful bamboo page (*Siproeta stelenes meridonalis*).

The Botanical Gardens surprisingly provided a fairly higher range of species than expected; nearly as high as Fondes Amandes. At the end of surveying, 53 species of Lepidoptera from six different families were recorded.

Tomato butterfly *Photo: P. Geerah*

Odonata and Scorpions (*Rakesh Bhukal*)

The Odonata group (Dragonflies & Damselflies) took to the trails of the Botanic gardens and environs between the hours of 3 – 6pm on Friday afternoon to survey and record the various species that exist there. Surveys were conducted primarily around water bodies as these creatures have an aquatic larval stage and as such often frequent these types of environments for mating, reproduction and when air temperatures are highest, display, as adult males can often be seen gliding through air currents. Specimens were identified in the field by visual observation and by photographs taken in the field.

Red-faced dragonlet *Photo: R. Bhukal*

Surveys were repeated throughout Saturday as well as on Sunday morning. The final count of species recorded out of the 121 species of Odonata recorded for Trinidad and Tobago, was 8. This included seven dragonflies (*Tramea calverti, Orthemis schmidti, Erythrodiplax umbrata, Tramea binotata, Perithemis mooma, Erythemis vesiculosa, Erythrodiplax fusca*) and one damselfly, *Argia pulla.*

On the nights of both Friday & Saturday the focus switched to another group of arthropods that elicit both fear and fascination, the scorpions! Ultraviolet flashlights of wavelengths of 395 nm was used to search through debris and various other microhabitats as these creatures fluoresce or "glow" when illuminated with this type of light

Scorpion *(Broteochactas nitidus)*
Photo: M.G. Rutherford

making their presence easily observable. The survey area included the general area of the Botanic Gardens as well as both up and down Lady Chancellor Hill. Specimens were also contributed by other groups, notably the Serpentarium, from their night time field surveys. Five species in total were recorded for both nights effort comprising of the following; *Tityus melanostictus, Microtityus rickyi, Broteochactas nitidus, Tityus tenuicauda* and *Ananteris cussinii*. One notable species recorded, that was also found in the highest numbers, was the *A. cussinii*. Members of this genus are the only scorpions in the world that are known to shed their tail in an attempt to escape predation.

Praying mantis *Photo: P. Geerah*

Stick Insects, Mantids and Roaches: A Surprising Encounter (*Avion Phillips*)

Brandon Mohammed and I decided to survey two areas, the Botanical Gardens on the Friday night and then the trail at the top of Lady Chancellor Hill on the Saturday morning in our search for Stick Insects, Mantids and Roaches.

We entered the gardens armed with flashlights and phone cameras, eager to be in search of our harmless and tiny six-legged friends. We started off in one of the more undisturbed areas in the gardens and after some time, not finding many roaches, mantids or stick insects we decided to add spiders to our list since they were all out in their glory. We came across one particular spider that was in the midst of constructing its web and so, of course we got closer and settled in with our phones out to capture some footage of the spider weaving its web. It was then that I felt something move most sinuously and slowly underfoot in the dense patch of ginger lilies in which we were standing. My mind not quite processing what it was, I looked down with my flash light to see if my eyes would help, only to see the black and brown pattern I familiarly associated with –

Avion searching in the Botanic Gardens

Photo: B. Mohammed

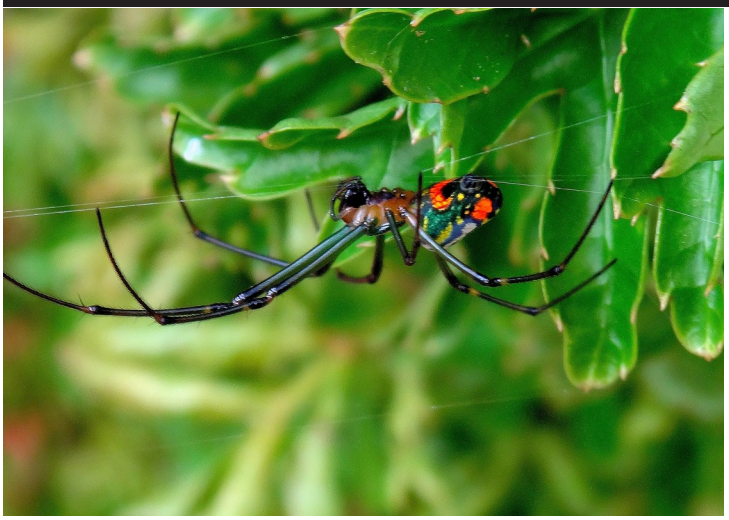
Cockroach (*Periplaneta australasiae*)

Photo: A. Farrell

"Macajuel!" I exclaimed to Brandon and we both dashed away instinctively, only to stop after a few feet and think, "We should have taken a picture!"

No way was I expecting this, the middle of Port of Spain, us looking for critters with many legs, no way was I expecting this animal with none; snakes are most certainly not my thing.

Our Saturday outing was far less surprising and much more in line with our humble expectations, a few roaches, lots of spiders including the molt of a chevron tarantula and a stick insect camouflaging in a rocky crevice. The trail had quite a mix of micro habitats along with some wonderful views of Port of Spain spread out below us. All in all, we found two species of stick insect, four species of roaches, many species of spiders, a few odds and ends and of course one species of snake.



Orbweaver Spider (*Leucauge venusta*)
Photo: N. Bridglal

Other Invertebrates (*M.G. Rutherford*)

Throughout the Bioblitz several other experts and amateur enthusiasts contributed sightings of all manner of terrestrial invertebrates.

Shane Manchouck surveyed for centipedes, millipedes and other arthropods in the Botanics and along the St. Ann's hill trail and found around 18 species during the event.

Other groups including the Herpetology team from the Serpentarium brought back some lovely large invertebrates including giant centipedes, tarantulas and even a velvet worm. These were put on display at basecamp for all to see and proved very popular (with most people!)

Velvet worm (*Epiperipatus imthurni*)
Photo: M.G. Rutherford

Chris Starr and Shane Ballah searched the streets of Port of Spain from the Botanic Gardens down to the coast for ants and found 23 different species. Four species made up the majority of the 154 samples they collected.

I searched in several places for terrestrial snails and found some of the common larger species but the best results came from soil sample gathered from the Botanics, Fondes Amandes and along the Lady Young Road. These were brought back to the basecamp where they were sieved before being examined under a microscope. This resulted in several small species of snails with shells barely 2mm wide, for a total of 11 land snail species. The soil samples also provided many species of ticks, mites and other tiny arachnids and a range of tine spiders, millipedes and worms.

Land snail (*Subulina octona*)
Photo: M.G. Rutherford

Many people either took photos or collected samples of spiders some of which were identified by Jo-Anne Sewlal after the Bioblitz giving a total of around 20 species.

Terrestrial Invertebrate Group members:
Virmal Arjoonsingh, Shane T. Ballah, Rakesh Bhukal, Pauline Geerah, Kristy Khemraj, Shane Manchouck, Brandon Mohammed, Avion Phillips, Mike G. Rutherford, Chris Starr and several other unnamed individuals.

MICROBIOLOGY GROUP REPORT

by Nikhella Winter, Akilah Stewart and Renee Ali

Microbe display *Photo: M.G. Rutherford*

Microbes are minute organisms that are considered archaic. Understanding microbes is vital to bridge gaps between our past and present. The team surveyed several diverse landmarks in the capital city including the Botanic Gardens, the Hollows, Lady Chancellor stream, City Gate, Brian Lara Promenade, Independence Square, Frederick Street, Invader's Bay, Sea Lots, Maraval River and upper and lower points of the St. Ann's River in order to assess the microbial diversity. Several techniques that sought to characterize soil, water, air and surface microbes were employed.

For soil, samples were collected 10 cm below the rhizosphere, along the Sea Lots shore front and dilutions were made because typically 1 g of soil has millions of microorganisms. This was then plated in Nutrient Agar to facilitate bacterial growth, as well as Potato Dextrose Agar to promote the growth of fungi.

Air samples were collected through the use of an Air Impactor which drew air inwards via a pumping mechanism and deposited its contents through a perforated sieve plate onto Nutrient and Potato Dextrose Agar. 500L volumes were used during the process of this survey.

Surface swabbing was done to distinguish microbial life on representative physical exteriors by means of sterile cotton swabs and similarly water was collected in sterilized bottles from various rivers, streams and bays. Dilutions were done and 10-1 and 10-2 volumes were grown on plates.

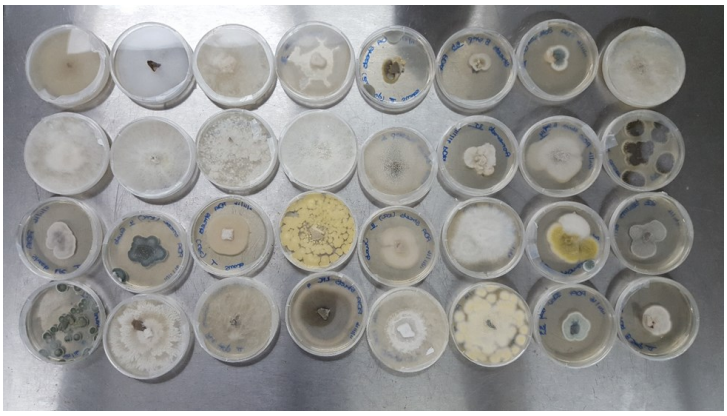
Characteristic bacteria were isolated by means of quadrant streak methodologies and identification at this point were based on unique physical features that were visible with the naked eye.

The water was also filtered on Heterotrophic Plate Count for enumeration of bacterial cultures and Membrane Filtration Count agar for the identification of coliforms and *Escherichia coli*. In total, 25 bacteria were subcultured for further verification.

Perhaps the most interesting aspect of our findings dealt with microfungi. We characterized a total of 35 unique colonies including *Aspergillus* sp. and *Trichoderma* sp..

Further verification is ongoing as DNA samples have been extracted from both the bacteria and fungi This DNA has been shipped to Macrogen, Korea for identification.

Group members: Authors and Farah Mohammed, Brent Daniel, Diyaday Ramsaran, Judy Ramsoondar, Stephen Ramnarine, Aarti Pustam, Vijai Ramdhan, Kathryn De Abreu, Sarah Tyrell, Ornella Jugmohan, Janiel Yallery, Omar Ali, Antonio Ramkisson, Adesh Ramsubhag, Jayaraj Jayaraman



Agar plates *Photo: A. Stewart*

AQUATIC GROUP REPORT

by Amy Deacon and Ryan Mohammed

Chasing Guppy's Guppies: the Aquatic Diversity of POS

On Saturday morning we headed straight for Invader's Bay, parking by the Marriott Hotel and walking down to the shore through the scrub. The tide was slowly rising, and we were greeted by a plastic-bottle-covered sandy beach to use as the base for our seining. Jeniece and Marianna volunteered to operate the seine, under Ryan's experienced direction – and it paid off, capturing 8 different estuarine fish species, all of which were juveniles.

At the same location Jahson used a benthic grab to take sediment samples for later processing. Meanwhile, Amy ventured around the corner to investigate a stagnant pond full of mosquito larvae and crabs, where she took some water samples to be examined under the microscope.

On the way out we spotted blue and fiddler crabs in the mud, collecting a male and female of the latter for further identification. Before we left, Ryan baited a fish pot, which yielded a large catfish and a swimmer crab or 'cirique' on Sunday morning. They also noted a caiman at the site near the bridge crossing the highway.

Seine-netting at the mouth of the Maraval River *Photo: S. Warren-Gittens*

Catfish found dead on the shore

Photo: A. Deacon

After a short lunch break at Basecamp, where we introduced some of our finds to the display tank, the crew split into two teams for the afternoon's sampling efforts.

Ryan led a team around to the upper reaches of the St. Ann's River along Serpentine Road. Here they surveyed two sites with Sachin, Alan, Lauren and Stephanie. At both sites similar species were documented with an established introduced species, the liberty molly, dominating the catch. The invasive turret snail also dominated the molluscan fauna at both sites. A total of 5 fish and 2 snail species were noted at both sites.

Amy and the remainder of the group headed up to Fondes Amandes to explore the freshwater habitats of this portion of the St Ann's River. This was the very river where Robert Lechmere Guppy first collected specimens of *Poecilia reticulata* back in 1866, unaware that 150 years later they would be distributed all over the world and known globally by his name. As well as Guppy's guppies, we also found jumping guabine in abundance; these were the only two fish species present so far upstream. However, there was no shortage of aquatic invertebrates, including manicou crabs, damselflies, dragonflies and

Guppy nibbling a toe in the St. Ann's River *Photo: A. Deacon*

mayflies. Not to mention various species of caddisflies in their carefully constructed 'houses', numerous pond skaters, gastropods and stream frogs. The setting was absolutely stunning, especially considering that we were just minutes from the centre of the capital city. We were extremely grateful for the cooperation of the Fondes Amandes centre, and our knowledgeable guide, Cowin.

Back at basecamp on Sunday, we enjoyed surprising visitors with the diversity of aquatic creatures collected around POS, and answered many inquisitive questions about crabs, fish and the state of freshwater habitats more widely. The public also had the chance to watch team members working hard to sort and identify the benthic and plankton samples throughout the morning.

Sorting samples at the basecamp
Photo: M.G. Rutherford

It is impressive that our freshwater fish total exceeded the Tucker Valley Bioblitz total, and compared well with the Arima Valley survey, especially as we certainly only sampled a fraction of the estuarine and marine species from the turbid coastal waters south of the city. Our totals for estuarine and freshwater included 15 fish, 4 molluscs, 5 crustaceans, 1 reptile, 1 amphibian, 13 macroinvertebrates and 11 planktonic species: another successful bioblitz for the aquatic group!

Blue land crabs *Photo: S. Warren-Gittens*

Aquatic Group members:
Amy Deacon, Ryan Mohammed, Jahson Alemu, Stephanie Warren-Gittens, Jeniece Germain, Delezia Singh, Alan Chung, Jarome Ali, Keshan Mahabir, Anthony Ali, Sachin Maraj, Marianna Rampaul, Lauren Ali and Neema Ramlogan.

PLANT GROUP REPORT

by Mike Oatham and Shane T. Ballah

Expectations

1. First Bioblitz in a mainly dry forest environment, so expecting a different set of species compared to previous years.
2. First Bioblitz in a predominately urban and suburban environment, so expecting a large number of introduced and ornamental plants.
3. Using the same methodology as Tobago to maximize coverage and minimize sample collection and handling.
4. Sampling time was reduced due to lack of overnighting options. Also no time for identification and entering data in the evening as nobody was around.

Juniper ink *(Genipa americana)*

Photo: N. Bridglal

Methods

Armed with an abundance of enthusiasm and a new and improved sampling strategy, Team Plant was ready for our fifth Bioblitz. From our experience from the previous Bioblitz in Tobago we have learnt how to maximize our species list. The area was examined on Google Earth. All the different ecosystem types were noted (mainly urban and non-urban environments such as mangrove and dry woodland/lower montane forest) and the access points (roads and trails marked on the maps and known to group members and Bioblitz organizers) were also noted. For this Bioblitz, roadside vegetation was important so areas of trees or closed canopies close to roads were also noted. The group was split into two for the Saturday (9 am to 3 -4 pm) in order to cover the two main ecosystem types urban and dry woodland/lower montane forest. One group concentrated on walking a trail to reach the highest point in the area (Mt Hololo) which had Dry Woodland and Lower Montane vegetation in various states of degradation. Another group used a vehicle to access the urban and mangrove ecosystem types and the lower montane forest on the hill behind Ft. George. They covered more ecosystem types but did not move away from the road. Groups encountered secondary vegetation (fire degraded dry woodland, abandoned estates in degraded lower montane forest) but little intact native vegetation communities. Each group maintained a list of plant species visually sighted (identification certain - mainly common species) and they also collected specimens of plant species they were unsure of.

Purple sweet pea (*Dioclea guianensis*)

Photo: N. Bridglal

On the morning of the second day, team Plant was still working on specimens from the zealous collecting the previous day. All specimens collected were examined and compared to keys and

Members of the Plant Group and guests
Photo: C. de Bruin from Triniview.com

photographs from the literature for identification. New species were added to the list and already-listed species were confirmed.

Results

Approximately 245 species were observed in the Bioblitz area around POS. This is less than the number of plant species observed in the Tobago Bioblitz, probably due to the shorter collecting time this year and due to the absence of some personnel due to other commitments. The number of vegetation communities that were found in the vicinity of the POS Bioblitz area were not as great as in the past, but the ecosystems reached were: degraded Lower Montane Forest (on the Hill behind Ft. George), Licania-Serrette Forest, Dry Seasonal Forest (Poui-Incense Forest), Fringing Mangrove Forest (Red, Black and White mangroves), Young Secondary Forest, Secondary Forest- Former Cocoa plantation and Bamboo Thicket. Urban and Suburban areas and Gardens around the POS area were also visited. No endemics were found and few rare species.

The natural vegetation communities visited are fragmented and much reduced from their natural extent and so represent interesting and valuable features of the natural heritage of Tobago.

Conclusions

The lower rainfall and degraded habitats around POS act as a homogenizing force which reduces the number of ecosystems. The urban and suburban environments are particularly homogenous with the same species occurring in gardens and yards across the area. Methods for rapidly observing plants and reducing the number of specimens that need to be collected has increased the ability of the plant group to record the maximum number of species in the 24 hours of the Bioblitz. However, this method relies heavily on the knowledge in plant ID of a small group if people and in particular on Mr Winston Johnson, recently retired from the National Herbarium of Trinidad and Tobago. This means a large number of plant species were observed during the 24 hour period of the Bioblitz.

Bryophyte Survey – Short Note (*S.T. Ballah*)

Six species of bryophytes including one liverwort and five mosses from six families were collected from Port-of-Spain. All specimens are represented in the collection at the National Herbarium of Trinidad and Tobago, which contains just over 200-recorded species to date (unpublished).

Most specimens were collected randomly during a scout from the north of the Queen's Park Savanna to the area in and around the Lapeyrouse Cemetery during the morning of November 5 between the hours of 8:00 am to 12 noon. One individual was collected on the grounds of the Botanical Gardens

Dyer's mulberry (*Maclura tinctoria*)
Photo: M. Oatham

on the morning of November 4. Collections were made from tree barks, roots, the ground, rotten wood and concrete surfaces.

The number of families represented would most certainly increase with a more detailed survey of the area.

Plant Group members:
Mike Oatham, Doreen Jodhan, Winston Johnson, Jonathan Ramtahal, Linton Arneaud, Fayola McDonald, Nandani Bridglal, Chernell Crooks, Adanna Alexander, Wyvonne Crooks, Dan Jaggernauth, Lester Doodnath, Aidan Farrell and Shane T. Ballah

Collating the plant data *Photo: M.G. Rutherford*

FUNGUS GROUP REPORT

by Jeffrey Wong Sang

Rotting log being host to three different types of Bracket fungi on the St. Ann's Peak trail *Photo: J. Wong Sang*

Being the 125th Anniversary of the Trinidad and Tobago Field Naturalist Club it was only fitting we should have the Bioblitz in Port of Spain this year. Yes, an urban Bioblitz; what would it yield? How would the count be affected by urbanization? Would the green areas around the 5km designated area around the Botanical Gardens (basecamp) be enough stomping ground to traverse for fungi?

The fungi group was small this year comprising of solely my wife Roma and myself, ably supported by Pauline Geerah from the Lepidoptera group who decided to join forces with us so that she could cover more areas. We were periodically joined by Eddison Baptiste and Jalaludin Khan who did short stints with us. Thanks also to Darius Baldeo (Serpentarium), Vicki-Beth Blanchard and Shane Manchouck (TTFNC) who whilst bioblitzing in their chosen areas still managed to capture some fungi to add to our final tally.

The plan was to cover as many of the green areas as possible between the Diego Martin River, which was the western perimeter and the Botanic Gardens. I reside in Petit Valley, so we decided to commence on the banks of that river and were rewarded with our first find of the morning, several puffballs and other assorted fungi. Onward to Fort George which yielded two more fungi. Our route took us next along Long Circular road to the football/hockey fields by the corner of the Western Main Road. We passed by Nelson Mandela Park, Siegert Square, Adam Smith Square, Augustus Williams Park, Victoria Square and Woodford Square. Woodford Square proved very rewarding with several fungi thriving amongst the pedestrians and buildings of downtown.

Puffball on the front lawn of Fort George *Photo: J. Wong Sang*

After a brief stop at basecamp, we proceeded to the Fondes Amandes Reforestation Project in St. Ann's where, Pauline Geerah had her most productive stop for butterflies and moths. This was easily the most picturesque of the locations, with the St. Ann's river, flowing lazily down the hill towards Port of Spain.

Wildflower Park was our next stop, where we also had our lunch before calling it a day and returning to basecamp to man my Fungi display for the rest of the day for the Nature Fair. The Nature Fair spanned three days from 4-6th November. The kids in particular were targeted on Friday with several schools visiting along with President Anthony Carmona and Minister Clarence Rambharat both visiting independently. Both shared their thoughts and enthusiasm on my Fungi project and the former even pledged to purchase several copies of my "Mushrooms of Trinidad and Tobago" pictorial book.

Sunday was another busy day with the viewing public and I was able to touch base with Dr. Adesh Ramsubhag, Head of UWI Life Sciences, who also expressed his delight and offered assistance in my project which will be pursued in the future.

Fungus display at the basecamp
Photo: R. Wong Sang

Oyster mushroom at Fondes Amandes Reforestation Project *Photo: J. Wong Sang*

I also completed my surveying of the areas with the St Ann's Peak trail which yielded the fungi find of the Bioblitz: a log with three different bracket fungi. Saving the Botanic Gardens for the last walk, it yielded the most fungi in count for one location. The rest of the day was again spent interacting with the visiting public and manning my display to raise awareness of the local fungi. Final fungi count was 32, and 2 lichens.

The TTFNC and the Bioblitz organisers thank all of the following organisations for partnering with us for the 2016 Port of Spain Bioblitz and Nature Fair.

Ministry of Agriculture, Land and Fisheries
Horticultural Services Division

UNIVERSITY OF THE WEST INDIES
ZOOLOGY MUSEUM

THE UNIVERSITY OF THE WEST INDIES

Friends Of the Botanic Gardens of Trinidad & Tobago

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Photos: C. de Bruin, P. Geerah, S. Rampersad, M.G. Rutherford

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

Management Notices

New members; Volunteers; Publications

New Members

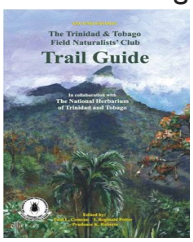
The Club warmly welcomes the following new members:
Ivan Hinkson, Akilah Stewart, Curtis Sammy, Samraj Seunarine, Anesty Tudor, Linton Arneaud, Maurice-Mandela Frank, Devan Mulchansingh, Ben Taylor, Brandon Smith, Ivan Laughlin, Elliott Petkovic, Janelle Zakour, Anelka Zoé, Afiya Zoé, Kathryn de Abreau, Marcus Leotard, Don Savant, Jonathan Harris

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

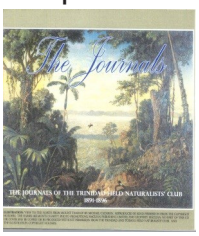
PUBLICATIONS

The following Club publications are available to members and non-members:



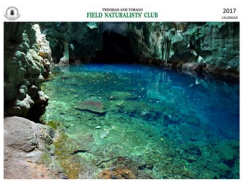
The TTFNC Trail Guide

Members : TT$160.00

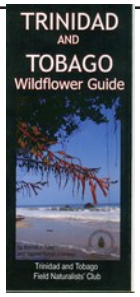


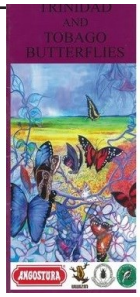
Living World Journal 1892-1896 CD
Members : TT$95.00

Living World Journal back issues
Members price : free
Living World 2012 Supplement: $20



2017 Natural History Calendars
Members : TT$25.00 each or $100 for 5





Laminated wildflower and butterfly guides
Members : TT$50.00 each

MISCELLANEOUS

The Greenhall Trust

Started in 2005, in memory of Elizabeth and Arthur Greenhall, dedicated artist and zoologist respectively, the Trust offers financial assistance to aspiring artists and biologists (in the areas of flora and fauna) in Trinidad and Tobago. Full details are available on their website: http://www.greenhallstrust-wi.org/link.htm

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1. **All articles must reach the editor by the eighth week of each quarter. Submission deadline for the 1st Quarter 2017 issue is February 26, 2017.**
2. **Electronic copies can be submitted to the 'Editor' at: admin@ttfnc.org or directly to the editor or any member of Management. Please include the code QB2017-1 in the email subject label.**