



Nature's jottings

· Newsletter of the Natural History Society of Jamaica March 08

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COMING ACTIVITY

FIELD TRIP TO JAMAICA HYDROPONICS LTD., MANDEVILLE

FIELD TRIP to Jamaica Hydroponics Ltd. and other sites in Mandeville.

Date: Saturday, March 8th. We are exploring the possibility of hiring a bus which would depart from the SRC at 8:00 am. We need to obtain a feedback, to see if we have sufficient takers for a bus. Those wishing to go by bus are asked to call Jill Byles at 977-8007 no later than Sat. March 1st. Cost for the bus will be \$750 per person

Bring a packed lunch to eat in the garden of Mandeville members, Irene and Gerald Hollar. They have offered to provide some drinks and dessert. As Mandeville is known for its gardens and the variety of exotic plants grown there, the Hollars are also organizing an afternoon visit to other gardens and/or plant nurseries in Mandeville. You may need a deep pocket, a previous visit to the exotic fruit nursery, resulted in many orders by members.

ANNUAL GENERAL MEETING

The annual General meeting of the Natural History Society will be held at the Tree House, Hope Zoo on Sat. 29th March, starting at 10:00 am. Our guest speaker will be Dr. Karl Aiken, Fisheries expert at UWI who will be describing some interesting areas of his research.

Your Reports

Field Trip to National Rums of Jamaica and Trans Global Aquaculture in Southern Clarendon, 27th October, 2007, described by Andrew Gordon.

On the morning of Sat. 27th October 07, approx. twenty persons travelling in six vehicles, proceeded to the May Pen roundabout then on to the Hayes main road to the Monymusk Sugar Estates houses in South Clarendon. The Monymusk Sugar factory and the large housing estate were once owned by the British multinational Tate and Lyle.

Many, perhaps most of the estate houses, some quite large and stately, appeared to be in a state of disrepair and Dr. Sheorain the MD of National Rums, our gracious host, explained that the houses once housed expatriates who lived on site, and the estate once had beautiful gardens and a functioning golf course. With the divestment of the factory to local hands and the opening of Highway 2000, managers such as Dr. Sheorain, have additional accommodation in Kingston and commute to and from the factory and his house on the estate, from Kingston. The area also suffered considerable damage from the recent Hurricane Dean.

National Rums of Jamaica is a 51:49% owned company with Diageo, the large multinational and the Jamaican Government as partners. Diageo manufactures and markets some of the most internationally famous and consumed brands such as Johnny Walker, J&B, Bell's Black & White, and Vat 69 Scotch Whiskies, Smirnoff Vodkas, Tanquarey, Gilbey's and Gordon's Gins, Bombay Sapphire, Baileys' Rum Cream, and Captain Morgan, Gold Label and Myers Rums from Jamaica. Diageo is the present owners of Guinness and by extension Red Stripe and at one time also owned Seagrams, which owned Estate Industries, producers of Tia Maria. The company presently owns three of the distillery operations in the island, National Rums, the Trelawny Estates distillery at Long Pond and the Inswood distillery, now not operating as a separate distillery but used for aging some of the rums from National Rums. Inswood Estate distillery once produced 95% ethanol for local industry in addition to rums, and clear and dark sugar cane vinegars. The main local brands presently are Captain Morgan of which National Rums supply all of that imported by Europe, but only some 40% that to the larger rum consuming North America. The rest of the Captain Morgan blend in North America, is comprised of blends from Guyana, Trinidad, and Barbados. Dr. Sheorain explained that plans were well advanced for an additional new factory at National Rums, scheduled for completion in 2009, which would result in most of the Captain Morgan blended for North America originating from National Rums. The distillery at Trelawny Estates produces Gold Label, and Myers Rum, the latter which is primarily for the export market.

Dr. Sheorain, who was a trained biochemist before becoming a company executive, explained that distilleries such as that at National Rums have become quite sophisticated and National Rums also operate a fourth distillation process to obtain alcohol that is even purer than that obtained from potato, and which is exported to his head office, implying that it may have been blended into the Smirnoff brands. In fact, except for the legal requirement that Scotch Whiskey has to be blended in Scotland, he opined that Diageo could probably produce excellent Scotch in their other factories around the world. His parent company being the producers of the premium Johnny Walker brand, we didn't dispute his claim.

Dr. Sheorain explained the processes for the production of rum to the members, starting with the extraction of the juice from sugar cane, which was then concentrated by boiling and the sugar extracted by a centrifugal sieve as the members had observed at the Bernard Lodge sugar factory. After as much sugar as possible was extracted by this process, the resulting molasses was used for the production of rum. He explained that the molasses is piped from the neighbouring sugar factory at a price of approx. J\$120 per ton, but with a credit period of only 15 days, whereas the finished products from the factory were sold on a 45 days credit basis and which therefore requires as much just in time inventories as possible and a fairly efficient overall operation. Despite National Rums being located inside the Monymusk Sugar factory compound, enough molasses is not produced by the factory for the distillery, and molasses has to be imported, along with the other inputs of yeast for fermentation, Bunker C fuel oil to operate the furnaces, and processed water.

There were two main processes performed at the distillery, namely fermentation and distillation. Three different fermentation processes are carried out at National Rums. The least unique is Column Still which produces a product with an odour similar to white rum, and which is the least distinctive but largest product in terms of volume, and for which he explained Jamaica is not very efficient and therefore the sale of which is “married” to the products from the other fermentation processes. The second fermentation was their Pot Still, done in smaller batches in copper stills, with their own proprietary yeast blend done at the factory. This gives a very distinctive, more full bodied, and higher priced rum which is blended to give the particular brands from each distillery. Although the price is much higher than the product from the Column Still, production has to be geared to the orders obtained, stocks to be aged, etc. The time of aging for most of their production is one to five years normally, and for special blends up to fifteen years. The barrels are produced by local coopers from recycled oak casks, used originally for more expensive spirits, when their useful life for those spirits are considered at an end, and Dr. Sheorain estimates that some of the casks they were using would be 150 – 200 years old. In the process of preparing the recycled casks for aging rum, the casks are usually flame charred on the inside. The third fermentation process is the most distinctive of all, the Wedderburn process, is a natural fermentation, and which would use the natural bacteria, etc. from each particular factory and its sugar cane. This would presumably result in the most costly of the three fermentation products but the smallest in overall demand. The fermentations of the Column Still are conducted in very large fermentation vats of 90,000 – 92,000 litres, with periodic tests to ensure when all the sugars are converted into alcohol. Dr. Sheorain explained that white rum, though appearing to be the cleanest was actually the least pure of the rums produced, and that the hangover produced after rum consumption of e.g. white rum was the result of primarily acetaldehyde, not fully removed by the aging process.

In the distillation process, he explained that Jamaican rum goes through a unique system of four columns of distillation, the first dedicated to washing/stripping, followed by a re-dilution process to another column, then rectifying and finally a re-rectifying column. The precise details of the process is a closely guarded secret, and is unique to Jamaican rums. The finished rums are then transported for the export market in tankers, and loaded on to ships.

The members were invited to discern the difference in aromas between the column and pot still rums and then to taste some of Diageo's products at Dr. Sheorain's home. He advised the members that his choice of West Indian rums was El Dorado from Guyana, and that Diageo had recently purchased a 33 1/3 stake in Demerara Distillery the producers of El Dorado. Members then sampled El Dorado and some other Diageo's products including Red Stripe, during their lunch at his home at the Monymusk Estate.

The members enquired about the environmental problems caused by the dunder waste material from the factory, and Dr. Sheorain explained that National Rums and the Monymusk Sugar factory had entered an agreement where the dunder will be used as a fertilizer in the sugar cane fields, and which he opined because of the geography of the location, would not end up in the nearby rivers, as may be occurring at Appleton.

Trans Global Aquaculture Ltd.

The members then went on a tour of the nearby Trans Global Aquaculture Ltd. and we were introduced to the managers, Messers. Shakeeb Rahman, Mullah and Ronan, the Farm, Processing Plant, and Hatchery managers respectively, by Dr. Sheorain.

As far as our eyes could see, were some of the 99 active ponds, each 1 1/2 hectares in area, on some 4,000 acres leased from the GOJ. The farm is operated by USA/Taiwanese interests, and the integrated operations, has a hatchery, growing ponds and a processing plant. In the growing ponds, sea water is pumped from the sea, which is at the southern boundry of the farm, after storage in settling ponds and filtration through meshes. This filtration remove most fish and crabs but some of their eggs pass through. The shrimps being reared is the large White Pacific shrimp and their sizes are monitored over time. Interestingly, the shrimps are reared at the bottom of the ponds and after they reach a desired size, Red Tilapia are then introduced into the ponds and these live more on the surface, and do not consume the shrimps. The salinity in the ponds is approx. 15 parts per thousand of salt. The yield is approx. 7,000 – 8,000 lbs. of shrimps per pond, with an average weight, when reaped of 17 – 20 but the shrimps can grow up to 50 gm.

The ponds are prepared with tractors, plowed and dried. Then lime is applied if sufficient organic matter is present, the ponds sealed by rolling, fertilized, and the sluice gates closed and the ponds filled, to a depth of approx. 5 ft. The shrimps are reaped after four months, and the Tilapia, which are among the fastest growing fish, after six months. Approx. 90% of the shrimps are exported, the other 10% are sold locally. The cost of operating each pond is \$300,000 - \$350,000 per month. Their total labour force is 150 - 200 employees.

Processing Plant:

Our next stop was the Processing Plant, where both the shrimps and the Tilapia are processed for the market. The shrimps and fish are put on ice when collected from the ponds, when their metabolism slow to a sleep and then they are blast frozen for 6 to 7 hours, then washed and graded according to size on a conveyer. Then depending on their destination, the shrimps may be beheaded or left head on and packed in shipping containers and stored at 5⁰C. Members were advised that both the processed shrimps and Tilapia could be purchased from the Processing Plant, at a saving of 25% off the retail prices in the supermarkets.

The Society is especially grateful to Dr. Sheorain and also Mr. Shakeeb Rahman at Trans Global Aquaculture for an extremely interesting and educational visit to their factory and farm.

More Botanical Notes

11th May, 2007 by Trevor Yee

With the rains we have experiencing recently in Stony Hill, I have been noticing considerable Botanical activity in the Fort George woodland beside me. This woodland, though quite small and only about 50 metres by 20 metres, is very species rich and my count of plant species in it is approaching 100. Like most of the undisturbed or primary forest areas in the Stony Hill area, the woodland is on limestone, and in this case quite sharp and honey-combed in some spots. The vegetation is more of a wetter limestone forest than those forests on the coast, and in this woodland, which is surrounded by residential homes, there are a number of invasive plants species present.

One excellent feature of the woodland is an abundance of trees, but most have so far been unidentified by me. One of the trees that is truly spectacular when flowering is *Byrsonima coriacea* (Malphiaceae), the Locust-berry tree, with a mass of large inflorescences, up to 14 cm. (nearly 6 in), of yellow petals with red to orange red edges. The largest tree in the woodland was a Red Birch, *Bursera simaruba* (Burseraceae), that was probably some 25 metres tall, and whose bark was regularly harvested by a Rasta for use in his "Roots Wine." This tree evidently weakened by the stripping of its bark, fell across the main road in the last hurricane. There are several small Red Birch trees in the woodland but none of the size of the previously dominant tree. Local ethnomedical uses of decoctions of the bark include that for curing problems with "manhood," for strength and back pains from overtiredness.

Presently, all the many Spanish elm, *Cordia gerascanthus* (Boraginaceae) are in full flowering, with masses of fragrant white tubular flowers, in a corymbose inflorescence. Most of the flowers fall, littering the surrounding area with a white carpet, but some flowers also persist on the tree, long after they have dried, with a darker colour than brown paper. In a previous note, two related species of *Cordia* were also reported in the woodland, the rare native *C. bifurcata*, and the endemic *C. bullata*.

Also in bloom is the endemic climber, *Canavalia altipendula* (Papilionaceae), the Wild Outlook Bean, with attractive purple and white flowers, with long racemic inflorescences, up to 18 cm (approx. 7 in) long. The fruit is a huge characteristic pod 20- 24cm (8-10 in) long. This legume was seen dominating the summit of an overgrown archaeological pyramid, in the Moneague area, where many NHSJ members had accompanied the Archaeology Soc. on one of their recent excursions.

There are several plants in late or early fruiting in the woodland. Among these in late fruit is a Galimanta Bullet, *Pouteria multiflora* (Sapotaceae), related to the Starapple and with many species of *Pouteria* being consumed as fruits. *P. multiflora*, does not have a fleshy fruit, but is nevertheless sweet, and attractive to birds, which eat the thin yellow pericarp, littering the base of the tree with the remains of the fruit, containing the seeds.

In late flowering to early fruiting is the Card Gum tree, *Clusia flava* (Guttiferae), with a fruit very reminiscent of the extremely delicious Mangosteen, *Garcinia mangostana* from the Far East, of the same family.

There are several figs in the woodland and one with an epiphytic growing habit, is now in full fruiting, *Ficus perforata* (Moraceae), the Jamaican Cherry fig, with small red globose figs, with the mouth of the figs closed by three surrounding red scales. These figs are attractive to birds.

Other trees in the woodland include many of the local Frangipani, *Plumeria obtusa* (Apocynaceae), the local endemic Poui, *Tabeuia riparia* (Bignoniaceae), with white flowers. Among the many other trees that have been identified in the woodland is the rare *Pseudolmedia spuria* (Moraceae), the Bastard Breadnut, a Silk cotton, *Ceiba pentandra* (Bombaceae), numerous Prickly Yellows, *Zanthoxylum martinicense* (syn. *Fagara martinicensis*) (Rutaceae), the irritating Maiden Plum, *Comocladia pinnatifolia* (Anacardiaceae), many of the introduced palm, *Ptycosperma elegans* (Palmae), no doubt spread by birds attracted to their fleshy red fruits, the invasive Mock Orange, *Murraya paniculata* (Rutaceae), also spread by birds attracted to the red drupaceous fruits, the West Indian Cedar, *Cedrela odorata* (Meliaceae), Pimento, *Pimenta dioica* (Myrtaceae), Wild Tamarind, *Pithecellobium arboretum*, (Mimosaceae,) Ramoon, *Trophis racemosa* (Moraceae), Bull Hoof, *Bauhinia divericata* (Caesalpiniaceae) and plants more common in wetter limestone forests such as, the Native Anthurium or Wild Coco, *Anthurium grandifolium* (Araceae), *Peperomia* sp. (Piperaceae), and *Urera baccifera* (Urticaceae) with large leaves and irritating hairs, as well as many vines, such as the Twining Cow Itch, *Tragia volubilis* (Euphorbiaceae), several high climbing Monkey Combs, *Pithecoctenium echinatum* (Bignoniaceae), and at least two species of native Passion Flowers, the Goat Foot, *Passiflora sexflora*, and the Handsome Gal, *P. penduliflora* (Passifloraceae). In blossom and about to cover the entire lower reaches of the woodland with a mass of white flowers, is the Snowberry, *Chiococca alba*, (Rubiaceae), also observed occurring commonly in another wet area, the Cockpit Country.

The Fort George woodland is also home to several orchids, including the Brown Gal or Dancing Lady, *Oncidium luridum*, with very long inflorescences of 1 metre or more, and the orchid believed transmitted in a dust storm from the Sahara Desert, *Oeceoclades maculate* (Orchidaceae), and many weeds, in its lower sections, some of which are not so common elsewhere, such as *Triumfetta bogotensis* (Tiliaceae), with small attractive yellow flowers resembling tiny *Hibiscus* spp.

On the same property, with the Fort George woodland, several other interesting trees have been observed, the Macca Fat Palm, *Acrocomia spinosa* (Palmae), which is listed as being endemic in Adams, but at least a close relative of which was observed in the Dominican Republic, the Jamaican Bitterwood, *Picramnia excelsa* (Simaroubaceae), and a tree with attractive round red fruits, approx. 2 in. in diameter, the Scarlet Seed, *Laetia thamnia* (Flacourtiaceae), a relative of the delicious Governor's Plum, *Flacourtia indica*.

Footnote:

In the last quarter of 2007, unfortunately from a naturalist point of view, there has been an extensive clearing of the woodland and burning of its vegetation. A recent check revealed that 1/2 to 2/3 of it has now been destroyed for the construction of houses. With the quite steep slope and honey-combed limestone, more damage is likely in the construction of houses. A recent visit to the woodland confirms that it is fast losing its character, and that the exposure of the once undisturbed area to the bright sunlight has resulted in the *Byrsonima coriacea* and the *Ceiba pentandra* appearing close to dying, and the destruction of the *Pseudolmedia spuria* and a large part of the vegetation.

TREVOR YEE SHARES A CHAT HE HAD WITH DR. GEORGE PROCTOR LAST MAY

Chat with Dr. Proctor, May, 2007.

I recently met with Dr. Proctor and had a chat on a number of matters contained in some of my recent contributions to the Jottings. Firstly, he mentioned that the Botanical term used to describe the persistence of flowers on trees, even after they have dried up, similar to that which I described in my notes on the Spanish Elm, *Cordia gerascanthus* (Boraginaceae) in the Fort George woodlands, is “marcescent”.

He also mentioned that the clearing at Corn Puss Gap that Andreas Oberli had thought was possibly a landing site for a helicopter, was actually the site of a Forestry Department house, in which he had stayed during a visit to the Gap in the early 1950's. While at Corn Puss Gap then, he had found 9 species of the tree fern, *Cyathea* spp., one of which was new and which he named after C. Bernard Lewis, the then Director of the Institute of Jamaica.

In trying to return to Kingston that evening, he heard that there was a riot of workers at the Myrtle Bank Hotel and that the Police from all across the island had been moved to Kingston. Obtaining transportation back to Kingston that evening, became a major problem, because of the riot. Not knowing what to do and being short of funds to have even considered staying at the Bath Fountain Hotel, he visited the Police Station at Bath, which was virtually abandoned, most of the staff having gone to Kingston. Well, he then asked if he could stay in the staff barracks and was allowed to do so, and so spent the night at the Bath Police Station. I wondered if he would have taken up the offer, if they had said he could have stayed in the cells. Then he could have reported that he was a prisoner for a night.

He also commented on the Hillside Fall that NHSJ had visited in Sept. 2006, and is considering revisiting in 2007. He remembers when the dam was functioning but knows the Johnson River by another name, the Wild Cane River. He had gone to do a Botanical study at the summit of one of the surrounding hills, where he was transported and left at 6:00 am one morning, by an army helicopter, to be recollectd in the evening, when he would have completed his study. While there he saw a 9ft. yellow Jamaican Boa, *Epicrates subflavus*, that had an iridescent sheen and had just shed his old skin and was swimming in the river. Dr. Proctor was able to pick up the tame snake by placing his hands under the animal and to put it across his shoulders. When it was time to remove the snake and he replaced it in the river, where he had found it and where it continued swimming on its way.

Candances

The NHSJ sympathises with the family and friends of the late Audrey Downer. During her long life she contributed greatly to our knowledge of Jamaican birds. A tribute to her by John Fletcher, President of Birdlife Jamaica follows.

Audrey Downer died peacefully in hospital on December 21st 2007 at the age of 89.

Audrey was the driving force behind the Gosse Bird Club [later to be renamed BirdLife Jamaica] for virtually its entire existence from 1963 to 1998 and has therefore been fundamental to the development and growth of Jamaican ornithology.

She was a founding member of the club in 1963 and started contributing articles from the first Broadsheet. Her extensive work on the banding of Indigo Buntings in her garden in Montego Bay was one of the earliest pieces of local bird research to be acknowledged in the North American birding literature

In its early years the small club was largely expatriate, and as they came and went continuity was left in the hands of a few local members including Audrey. She was not a great committee person but she got things done and by the early 70s was running the club, keeping the books, and collating and publishing the Broadsheet virtually on her own from her living room in Stony Hill. The pages of the Broadsheet were run off on a Gestetner copier at the Kingston office of Price Waterhouse. Audrey would pull in a few members to help staple the pages and covers together, address them for mailing and see to their distribution. I joined the club in 1977 and was soon enlisted into the Broadsheet activity.

Over many years she maintained close ties with her younger cousin Robert Sutton who was, until his death in 2002 Jamaica's No.1 birder, and together they produced "Birds of Jamaica-- A photographic Field Guide" which was published in 1990. Robert was in his element in the field, where his skills of observation and identification were unmatched- but he was notoriously reluctant to write reports, so it was Audrey's task to extract information from Robert and put it into a succinct field guide format; and then to follow through the tedious process of printing and publishing which took about two to three years.

The book was printed in Hong Kong, obviously by people who were not familiar with Jamaican birds, and this involved Audrey in a long frustrating correspondence with Messrs. Wing King Tong concerning matters such as the particular shade of yellow for a Jamaican Oriole. But, being Audrey, she finally got what she wanted and we had for the first time a definitive field guide of Jamaica's endemic birds.

She taught herself taxidermy and collected from friends and members dozens of dead birds, many of which she preserved and mounted-- the majority of such bird specimens now in Jamaica were prepared by Audrey. As advancing years curtailed her field activities she spent more time on her taxidermy and also on her notes for a study of plumages of Jamaican birds, which she intended to publish.

She was awarded a Silver Musgrave Medal for her long and dedicated pursuit of knowledge of Jamaican birdlife; when in 1998 we were encouraged by BirdLife International to rename the club BirdLife Jamaica and to apply to be their local partner, it was also necessary to create a more formal structure with a constitution, an executive committee, President, Treasurer and Secretary- quite unlike the club that Audrey had nurtured for some thirty five years and so she gradually drew back from participation in the running of the club- but never lost interest in its progress, and contributed a few bird notes, even after suffering a stroke in 2002.

In recent years we have lost the three most influential figures in Jamaican ornithology since Phillip Henry Gosse-- Robert Sutton the observer, Peter Vogel the teacher, and Audrey Downer the organiser. Let us honour their memory by continuing to promote the knowledge and appreciation of our unique birdlife.

Congratulations

Prepared by Jill Byles 19/2/08