JANUARY EVENTS

ANNUAL NEW YEAR PARTY

DATE: ***Saturday, 20th. January 2001***

Once again Yolanda Becker has kindly offered to host our annual Get-together at her home :

72 Norbrook Drive, Kingston 8

Time: From 6.30p.m.

Cost: $500 per person, which includes the meal and fruit punch. Other drinks are extra.

Friends and family are welcome.

We need to give the caterer sufficient notice so please notify us by Monday 15th. January how many of you will be coming. Call Jill Byles at 977 8007. Leave a contact number and say if you will need transport.

Bring along any photographs or slides of field trips or anything you think we all might find interesting.

SEE YOU ON THE 20th.

HELLSHIRE

DATE: Saturday, 27th. January 2001

We hope to have a field trip to the dry limestone forest of Hellshire, approaching the area from the sea. The trip will be led by Dr. Wilson, who with Dr. Vogel, is examining the Iguana habitat.

If attending, bring lunch, plenty of drinking water, strong walking shoes, sun protection, swim suit.

There is likely to be a charge involved. Final plans will be announced at the New Year Party on 20th. January 2001 and bookings can be made then.

ALSO

Klaus Wolf, Life Sciences Department, UWI has kindly invited members to view specimens through

the microscope in his room on Campus. He can accommodate 10 persons at a time. Dates and times are yet to be confirmed.

RECENT ACTIVITIES

Piano and Violin Recital - a benefit concert

The internationally acclaimed, Jamaican, concert pianist, Orrett Rhoden gave a recital at the University Chapel on Sunday, November 5, 2000. Visiting Jamaica to perform with him was his former tutor, violinist, Dr. Virginia-Gene Rittenhouse.

The NHSJ sincerely thanks Mr. Rhoden and Dr. Rittenhouse for an evening of such accomplished and entertaining musicianship. Thanks, also to Mrs. Rhoden, who contributed greatly to the success of the concert and also to Cecily Tobisch, who brought the idea to the Executive and remained optimistic and enthusiastic throughout the planning; justifiably so, since the concert was a financial success and proceeds from it will support projects of the NHSJ and the St. Andrew Flower Arrangement and Garden Club, of which Cecily is President.

Reports of other recent activities follow, in **Your Jottings**

Your Jottings

THE VERSATILE COCONUT, a report by Trevor Yee

On Saturday, 18th. November 2000,16 NHSJ members and friends heard a two part lecture on the Coconut. The first part was on, "The Natural History of and Research in Coconut, in Jamaica", by Mr. Basil Been, a UWI Post graduate and Director of Research at the Coconut Board. The second part was on, "Non Traditional Coconut Products", by Mrs. Dina Masa, a visiting coconut scientist from the Philippines Coconut Authority.

An underlying theme in both talks, was the versatility of the plant, all parts of the plant being used and the extensive range of chemicals and products provided by the plant.

In his talk, Mr. Been provided some interesting statistics. The plant is an extremely important economic crop in the Asia/Pacific region, accounting for 15-50% of the export earnings of various countries. World production is estimated at 52-53 billion nuts per annum and Jamaica's production is about 142 million nuts per annum.

The coconut crop provides food, drink, lumber and a variety of other products. It can be grown on marginal lands, with high salinity and produces a crop monthly, throughout its economic life.

There is a large oleochemical industry based on coconut and related palms. In addition to its use as a food and food products , coconut/palm oil is the principal source of chemicals used in the cosmetics industry. Among the products are: anionic surfactants, such as Sodium lauryl and laureth sulphates, a number of canionic surfactants such as Coco-betaine, Cocemidopropyl betaine, foam stabilizers such as Coco diethanolamide, glycerine, glyceryl mono and di stearates, stearyl, cetyl and lauryl alcohols, palmitic and stearic acids etc. Bar soaps also generally contain 15-20% coconut soap to obtain a suitable texture.

Coconut/Palm oil contains up to49% Lauric acid, the base for the main surfactant in the cosmetics industry. A recent development has been the genetic engineering of the Rape plant, Brassica napus and B. rapa var. oleifera (Cruciferae) to produce a Rape seed/ Canola oil with 40% Lauric acid, which would make it a serious contender for a number of the oleochemicals from coconut.

Coconuts are believed to have arrived in Jamaica from the Cape Verde Islands, where they were in turn, introduced by Vasco de Gama from East Africa. Captain Bligh, also, brought more coconuts to the island. The early coconut palms were generally the "Talls" and the Malayan Dwarf was introduced later, from various sources.

Basil Been also discussed Lethal Yellowing, which was recognized as early as 1871, in the Western part of the island and has since spread Eastward. Lethal Yellowing has now affected previously resistant plants. He believes that the disease has now mutated into about six different strains and in addition to the Western Hemisphere, is now in East and West Africa.

Mrs. Masa began her talk with an impressive chart, showing the various uses of the coconut , which was referred to as the " tree of life". Among the parts listed, were the following:

- *Shoot: Heart of Palm*
- *Inflorescence: Toddy and other drinks*
- *Fronds: Brooms, handicrafts*
- *Spade of Inflorescence: Handicrafts*
- *Trunk: Lumber*
- *Husk of nut: Coir for furniture, Charcoal*
- *Hard part of shell: Activated charcoal, fuel*
- *Nut: oil, Coconut water and other food products.*

Dina Masa also showed us many of the coconut derived food products from the Orient and for which her organization has won a number of International awards. She left a number of brochures, some on the production of coal from coconut husks, a project in which she was collaborating with the Jamaica Coconut Board. She also showed a number of craft items, which could be developed further, locally, using various parts of the plant.

Among the food products was coconut water, produced by a non caramel producing micro filtration process, coconut chips, coconut milk powder, coconut water blended with other fruit juices in brick packs, coconut jelly flavoured with other fruits, e.g. lychee, several processed foods and a very successful fad health product for the Japanese market, Nata de Coco, which is a gelatinous product from the action of a microorganism on coconut milk and which is promoted in Japan as a high fiber, low fat food.

BIOMONITORING OF THE RIO COBRE USING MACRO INVERTEBRATES AS POLLUTION INDICATORS.

Dr. Eric Hyslop, Damian Nesbeth, Sherine Shakes and Sheries Ruddock

A report by Sylvia Barber on the 9th. December 2000 field trip, by bus, along the Rio Cobre, conducted by Sheries Ruddock.

Biological monitoring provides essential information that is required for an assessment of water quality. Communities of organisms, or individuals can be used as indicators of water quality, in particular, of the level of pollution. The most commonly used indicator organisms include microscopic and filamentous algae, zooplankton and benthic macro-invertebrates. Of these most work has been carried out using benthic macro-invertebrates.

The Rio Cobre can arguably be considered to be one of the most polluted river systems in the island, as it receives varied pollutants from numerous sources throughout its large catchment area. The nature of these pollutants can be used to characterize three distinct regions of pollution. These are zones of predominantly metallic, agricultural and organic pollution respectively, downstream from the source.

In its upper reaches, the main tributary of the Rio Cobre, the Jordan Spring, runs parallel to the Ewarton Bauxite Works and serves as a conduit for waste water from the plant. High levels of various metals and other ions can be detected in the water of the Jordan Spring. The uptake of metal ion, in particular, aluminum, by snails of the family Thiaridae at the location downstream from the Ewarton pollution source is being investigated by Sherine Shakes in conjunction with the International Centre for Environmental Nuclear Studies (ICENS) as part of her Mphil degree. Preliminary findings indicate a close correlation between levels of aluminum in the sediment and those found in snails at various locations downstream. Damian Nesbeth, also a Mphil student, is investigating the effects of elevated concentrations of aluminum and other ions at downstream sites upon the diversity and composition of the benthic macro-invertebrate communities, with a view to identifying those species that tolerate elevated metal concentrations and thus have potential for biomonitoring.

Chemicals, from farms using pesticides, weedicides and fertilizers, enter the river and its tributaries, where they flow through fields between Ewarton and Spanish Town.

By the time the river passes through Spanish Town the discharge is greatly reduced due to the presence of the Rio Cobre Dam, approximately 12 km upstr eam, which channels water to Portmore. The introduction of organic wastes from Spanish Town, road run- off and raw sewage from the many settlements along the banks of the river, contribute greatly to the organic pollution load in the lower reaches. The reduced discharge and the high levels of organic loading lead to the creation of eutrophic conditions, at least on a seasonal basis. By using macro-invertebrates and zooplankton as indicators, Sheries Ruddock is attempting to link community diversity and indicator species with organic pollution levels in the lower reaches of the river, from Spanish Town to the mouth of the river in Hunts Bay as her Mphil project. The use of zooplankton as pollution indicators is widespread within marine coastal waters but rarely has been used in freshwaters. Initial analysis of zooplankton abundance, shows that, as is common in polluted waters, there is a large number of individuals present but with low taxonomic diversity. It is also observed that the zooplankton and the benthic macro-invertebrates exhibit a definite longitudinal zonation with respects to distance from organic pollutant sources within the stretch of river examined.

It is anticipated that these three related pieces of work will yield novel information on the susceptibility of freshwater benthic macro-invertebrates of Jamaican rivers and the current research projects are expected to make a significant contribution to this.

** Copies of the map of the Rio Cobre study area showing Mphil research study sites, will be available at the Party (20/1/01).*

Education Committee

The topic chosen by the Education Committee for the year 2000-2001 Children's Own Newspaper Competition is " Water for Life". The Committee submits a series of articles to the newspaper, on which it bases its competition at the end of each school year.

Condolences

On behalf of the NHSJ membership we extend our sympathies to Annette Chin on her recent bereavement .

Prepared by Jill Byles 28/12/00