

11 May 2009

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RE: Update #2 on Insect Project.

It is time for a second update on our work. Clearance of our last bits of field equipment through Customs last Friday allowed us to have a full complement of 5 trapping sites established (LaPorte, Parrot Hill, Grande Anse, Chassin, and River Dorée), with 2 more identified that will be established this week when 2 more 12 volt batteries become available. Our collections are rapidly expanding, with the mounting soon to be slowed by the problems of getting our 2 crates of specimen boxes through Customs. We hope this will be resolved this week by those most useful helpers Patience and Time, as well as the continued efforts of Mr. Tennent and Mr. Toussaint.

We will now turn our efforts toward finding a 240v portable generator that we can borrow to deploy our mercury vapor lights during our night collecting efforts, and developing discussions with the Ministry of Health about having access to one of their fogging units. If any of you have any ideas on these items, we would be happy to hear them. We only need a small generator -- a 500Watt unit would be great.

Our first set of collaborators left on Sunday (Drs. Runyon and Delphia), and another one will leave on Tuesday (Mr. Foley).

Although our contracted project is focused on beetles, we are using the unique opportunity of this Biodiversity Inventory Project to extend the knowledge produced of many other groups as well.

As an example, among the long-legged fly family Dolichopodidae, a single species has been reported from St. Lucia, now known as *Thrypticus minutus* Parent (Pollet et al. 2004:59). In contrast, Dominica has 113 and Montserrat 46 species. Dipterist (a specialist on the Diptera, the Order that contains the true flies) Dr. Justin B. Runyon left

St. Lucia on Sunday, after a week of collecting, and has a tentative list of 40 species of this family, with the possibility of that number growing considerably when the collections are studied – a 40-fold increase in species known from St. Lucia!. Some of these species are so specific that they are only found on the shady side of native palm tree trunks, others only in the spray zone alongside waterfalls. The endemic/native/introduced status of all these species will require much more study, once the material is back in the laboratory.

Why would we worry about little flies? The Dolichopodidae are an important component of St. Lucia's biodiversity both taxonomically and ecologically. As predators in both their larval and adult stages, their large biomass, high diversity and abundance indicates that massive numbers of other arthropods are controlled by their heavily specific niche partitions, as well themselves providing food for other animals such as the birds, reptiles and amphibians. Without them, there could be huge outbreaks of such groups as sand flies (fed upon by some of the beach and marine rock species), mosquitoes; and many groups that are obscure simply because their numbers are maintained at a low level by these voracious, diverse and abundant predators. Dr. Runyon commented that, surprisingly, they are the most abundant flies he saw on the island.

Dr. Runyon also sampled many other beneficial groups of flies, including the predaceous flower flies (Syrphidae, 7 species recorded from St. Lucia, compared with 23 from Dominica and 22 from Montserrat), and parasitic Tachinidae. He collected shore flies to forward to Dr. Wayne Mathis at the Smithsonian Institution.

We will collect many more specimens of these families in Malaise traps at each of our trapping localities, and a second Dipterist will join us next week to continue expanding that part of the inventory. Study of these specimens will continue for years to come, with a snapshot of what we know to date in our final report.

Tomorrow (Tuesday, 12 May 2009), Dr. and Mrs. Fred Sibley of Yale University (retired) will arrive for work concentrating on the Odonata (dragonflies and damselflies). Then on Sunday, May 16, Dr. Andrew Cline and Dr. Stephen Gamari of California Department of Food and Agriculture will arrive to continue the work on beetles and flies, respectively.

As a highlight, I will include this photo of *Chloronia* taken last week near LaPorte. This beautiful and rarely seen animal belongs to a species previously only known from Dominica, and it the only member of the ancient group Megaloptera known from the Lesser Antilles, and one of only 2 known from all the West Indies (the other is from Cuba). The Megaloptera are excellent indicators of high water quality. We hope to find its larva in the next few months. Even though it is not a beetle, its addition to St. Lucia's fauna is a significant find, testament to the high quality of environmental stewardship in her mountain forests.

