

15 June 2009

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RE: Update #7 on Insect Project. [Last week's update was mislabeled as #7, but was really #6, sorry]

This was a busy week, with 9 people living in the house at Escap and going out collecting every day. More than 20 new sites were examined for beetles during this time, in addition to the regular trap site visits. The volume of material that came in is simply amazing. Ross and Crystal each had a day during the week that I pulled them from the field to help at the scopes to keep up with material before it spoiled. We worked 7 days a week, and into the evening after dinner every night to keep up.

Last Thursday (Corpus Christi), we visited Ravine Chabot to try to figure out where a pair of Italian amateur beetle enthusiasts might have done some soil washing some 24 years ago that yielded 2 tiny-but-spectacular species endemic to St. Lucia. After scouting around and talking to locals, we believe they must have worked in the area along the Castries River, near or above the old water pump house. We are making plans to return and work on testing that hypothesis this coming week. The test will involve repeating their methods in that area, in hopes of rediscovering the animals. A side benefit of this trip was that some examination of a few dead mango logs turned into an impromptu education session, with several Ravine Chabot youth and children joining us and enthusiastically learning about what lives under the bark of dead logs. This was apparently as greatly enjoyed by them as it was by us.

The BYU group left today, taking with them a very large number of mounted specimens. Indeed, virtually all of the labeled material went with Dr. Clark, so that we do not run out of room for people to hand carry the material. This will allow us a bit of a breather until the next group of helpers arrive next week.

We are still adding species to the list of St. Lucian beetles every day. Obviously, this is now going less rapidly than during the first few weeks, but the rate of discovery is still surprisingly good. No *Dynastes*, nor *Mallodon* yet. At this point we cannot even approximate the number of species taken so far -- the numbers are too large and the labeling cannot keep up. I have to devote my time to cleaning, sorting and mounting the material so I can deal with identifications rapidly when I return to my laboratory. So, how do we assess the level of progress at this point? There are 2 ways, and the one I will talk about this week is the number of families represented.

Among the Coleoptera (beetles), there are 165 lineages recognized as families. These represent important, more-or-less equivalently old, groups that are important biodiversity representatives. Some of these are huge, with more than 50,000 species world-wide, while others have only a single species. Most have a few hundred to several thousand species in the world. Some occur all over the world, and some are limited to a small region, such as New Zealand or Chile, so no one place has all families occurring there.

The West Indian Biogeographic Region (Greater Antilles, Lesser Antilles as far south as Grenada, and the islands of the Bahamas and Turks & Caicos), is very rich in biodiversity at this level, with 98 families known from the region (60% of the world number -- for comparison, all of North America north of Mexico has only 130). Again, some are very speciose in the region (have many species), while others are known from only a single species. At the extreme, one is known from a single specimen from one of my traps in the Dominican Republic, and another from only a single fossil specimen in amber. Of the remaining 67 families not (yet) known from the West Indies, only 9 have a serious chance of ever being found here.

The entire Lesser Antilles Subregion (Sombbrero to Grenada) has some 80+ known families, with another 7 or so expected. We have collected 66 of these families on St. Lucia, to which we add one more family that is recorded-but-not-recollected, to make a known total of 67. Three families were added to our collections in the last week, one a few minutes before I began writing this update! We fully expect to add a few more before we leave. We realistically could make it to 70 families, maybe even more, because still lacking from our list are 12 families that almost certainly occur here. Some of these are far more common and speciose than things we have already found. Less likely to be here, but still possible are another 5 families. Thus, we expect the total actually on-island to be approaching the 80-families range, roughly equivalent to the entire Subregion! We will not find all the families here on this visit, but we will get close to a full picture.

How does this compare to other Eastern Caribbean islands? We have now passed second-place Montserrat's 63 families, and have tied the previous record-holder Guadeloupe's (I think) 67 families, which would make St. Lucia's recorded biodiversity regionally very high. Of course, pride goeth before destruction, and a haughty spirit before a fall, so keep in mind that only Montserrat and Guadeloupe have had this level of attention paid to their beetles. Never-the-less, St. Lucia will remain among the region's most biodiverse nations.

Next week, species estimates.