Monitoring Nature

Date: March 20 to 25 2013
Weather (in Gatlinburg TN): Cloudy and unseasonably cool
Activity: We attend the DLIA ATBI Conference

Gatlinburg, Tennessee serves as a gateway to the Great Smoky Mountains, a major component of the Appalachian chain. The mountains in question have not the snowcapped majesty of the Himalayas, although they did some 350 million years ago. They have since eroded to their current profile, as here in the distance.

Gatlinburg is not only the beginning of Great Smokies National Park, but head-quarters of a project called Discover Life in America (DLIA). Under this title a massive "all taxa biological inventory" or ATBI has been going on in the Great Smokies for more than a decade, with an annual meeting around the start of spring. The ultimate aim is to find and record every life form in the Park. Although such a project is well understood to be unfeasible, the aim powers an

ongoing inventory that has found 7,636 species in the park so far, an astounding 923 being undescribed or new to science. See the DLIA website at

http://www.dlia.org/about-atbi

Organized by Todd Wicher and staff at the DLIA Centre, the purpose of the conference is to bring together scientists and naturalists with an interest in ATBI. The focus is not only on ATBI per se, but additional information about species already known to be there. How is the newly introduced elk population doing? Why do the Great Smokies have so many species of salamanders? Other talks included monitoring, lichens as indicators, mapping projects, classroom education, citizen science topics, and so on.

Pat and I had intended to go together but a lingering winter had magnified her disabilities and she thought better of it. I made a presentation about Newport Forest and the ATBI project there in a context of the wider conservation effort. I mentioned the Thames Talbot Land Trust more than once, noting that several talks in the conference acknowledged their respective land trusts.

Only two presentations besides ours described the work at other ATBI sites. One of these is a 500 ha site in Ohio called Crane Hollow and a much larger site in Texas called Big Thicket. ATBI projects not reported this year are listed in the ATBI Alliance page at http://www.atbialliance.org/index.shtml

Here some 13 sites are listed, most of them in extended areas like parks. Crane Hollow is not listed, nor is Newport Forest, but this may change. In any case, Newport Forest is probably the smallest ATBI site in North America. This is actually a plus, as it a) contributes to our understanding of species/area relationships (an active topic in population biology) and b) sets the stage for a proliferation of ATBI projects in more local contexts.

One can't meet everyone at a large conference like this, but among the interesting contacts I made were Eric Dinerstein, Director of the World Wildlife Fund who gave the keynote address at the final reception on large mammals nearing extinction around the world. I enjoyed a couple of interesting chats with Dinerstein on the subject of rarity and rare mammals. Copies of his new book *The Kingdom of Rarities* were on sale at the conference. Kevin Fitzpatrick is a skilled photographer who specializes in Citizen Science projects such as bioblitzes that often involve children. He has worked for *National Geographic* on occasion. I mentioned that we might have a bioblitz involving youths this summer. The idea is that a number

of experts divide participants into teams and send them off to appropriate habitats in search of beetles, fungi or whatever. The kids come puffing back with life forms in nets or jars, in a state of tremendous excitement

Dan Pittello is a botanist who specializes in “floristics” which includes analyses of the distribution and habitats of plants. I had a number of useful discussions with Dan about local trees. Tom Powers hails from Nebraska. He specializes in nematodes and had the best poster at the conference, with blowups of various nematode species that showed wonderful structures from cuticles to stylets. Tom took an interest in my descriptions of Newport Forest and seemed interested in a visit to southern Ontario this summer. He thought we could easily have over a hundred nematode species on site. Heather Stehle and Joe Moosbrugger manage the Crane Hollow site in Ohio. They are not quite as far along as we are at Newport Forest in their state of data organization, but intend to get there. Carl Knight is associated with the Big Thicket site in Texas, where tropical elements meet shortgrass prairie and other distinctive habitats. Needless to say, the site is very rich in species. Carl is originally from Canada, so we were buddies from the start!

In our own presentation I mentioned the issue of data quality and how to ensure it. This is an issue for us, owing to the varying levels of expertise brought to bear on the identification of species. As yet there seem to be no published standards. One biologist came up to me after the talk to point out that data quality is a key issue that has received less attention than it should.

Conferences like this one seem to absorb a great deal of time, so I played hooky twice to get up into the mountains -- at least a bit. I marveled at the beautiful clear running mountain streams I saw, the dispersed Hemlocks, and evergreen bushes and trees. The background colour however, was a sombre grey/brown. I saw not a single deciduous leaf or any spring ephemeral for that matter. Perhaps this was the result of a prolonged cold spell that felt just like home! Meanwhile, tree ID was made difficult by a tendency of bark to be covered by mosses and lichens, so I made a collection of leaves from the litter and brought them back to the hotel for some help from Dan Pittello.

The rest of my waking hours were spent on Gatlinburg’s main drag, searching for gifts to bring home. The strip is clearly a tourist trap, reminding me of the midway of fairs when I was a kid. Returning from one foray in this human habitat I was serenaded by a Mockingbird overhead. I interpreted it as a gift for me.

IMAGES:

A typical mountain stream flows past slowly awakening vegetation with evergreen rhododendrons growing nearby. The forest floor is strewn with boulders large and small. I called them “tumblestones”, from higher up. The trees I found on my two brief forays into the forest included Basswood sp, American Beech., Bitternut Hickory*, Black Oak, Hemlock sp, Red Maple, Red Oak, Sassafras, Sugar Maple, Sycamore, and Tulip Tree. The understory and shrub layer had the following distinctive plants that were either evergreen or in bloom: Holly sp, Forsythia sp (nonnative but widely distributed), Amelanchier sp, Mountain Fetterbush, and Rhododendron sp.

*probably, according to Dan Pittello, who helped with my leaf collection. Surprisingly, Bitternut Hickory is a major component of the Appalachian Cove Forest type!

The only trees I saw with buds about to open were the Rhododendrons that seemed to grow everywhere. I can't be sure from just an image, but this appears to be *Rhododendron arborescens*, a treelike form of the genus.