

**China Trip Report
July 3-19, 2010**

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This foreign excursion was undertaken to implement a sentinel tree project in China. The objective of the project is to identify native Chinese insects which are potential pests of North American tree species. The goal is to reduce the risk of future introductions of forest insects from China and to expedite the U.S. response once exotic invasive pests are detected, limiting their impact. The project will use three techniques to meet the objective:

1. Review of literature and anecdotal evidence.
2. Examination of previously established North American tree species.
3. Cataloging of exotic tree associates.

The main focus of this trip was #3. We are working in conjunction with Dr. Jianghua Sun of the Chinese Academy of Sciences.

Gary left on July 3, while Tom and I left on July 4 due to lower flight costs and GovTrip malfunctions. We met with Dr. Sun the evening of July 5 to discuss the details of our visit. Lu Min, a graduate student of Dr. Sun, was also present, as he is the primary contact to implement the project on the Chinese side.

On Tuesday we went to the Beijing Forestry and Parks Department and met with Dr. Xiaoping Wang and Mr. Chen Junqi to discuss possible work sites. We planned to spray North American tree species planted in China to sample the insect fauna. We travelled to a nursery north of Beijing that had a Ponderosa pine plantation. We had visited this site on our previous visit. The pines were less than 2 m tall, so were not candidates for the spray projects, as they could be sampled from the ground as part of technique 2 above. We looked for signs of damage, and were able to find scattered evidence of a shoot moth, similar to our previous observations.



Examining ponderosa pine



Gary (3rd from left), Lu Min and Tom (far right)

Lu Min may be able to identify the species during his surveys. That evening we ventured to a Northern Chinese (Uyghur) restaurant and enjoyed the mutton and the entertainment (but not the kidney soup). Tom, with cat-like reflexes, was able to save one of the dancers from an attack by a snake, which apparently had escaped from the kitchen.



All my snake handling finally paid off!

The next morning we went to a planting of black walnut near the Ming Tombs. The trees had been planted in 1997 as a provenance trial. The walnuts were now 4-6 m tall and 10-12 cm in diameter. The site was acceptable for our spray survey, so we retrieved our spray gear and set up to spray that afternoon. First we spread tarps beneath the target walnuts. Lu Min had purchased two green tarps which were very heavy and so large we had to cut them in half. Unfortunately the tarps had such a strong chemical odor we probably didn't need to use insecticides (the fumes from the tarps almost killed the entomologists on the drive to the site). We used a pyrethroid insecticide applied with a hand held sprayer. A lift was not available, so we used a ladder, but were not able to quite reach the tops of the trees. The insecticide was applied as a light mist; the spray designed to quickly knock down any arthropods on the foliage. We sprayed two trees around 4 pm and returned early Thursday morning to collect the fallen arthropods off the tarps. The arthropods were placed in vials with 70% ethanol for later identification. We sprayed two more trees that morning and collected around 1:30 pm.



Spray application on black walnut



The infamous green tarp

While waiting to collect the insects, we visited two of the 13 Ming Tombs. These sites were not yet open to the general public, so we just viewed them from the outside. We also visited the Ming Tombs reservoir, site of the 2008 Olympic triathlon. Though tempted, I opted not to complete a triathlon due to time constraints (I was scheduled to leave on the 17th).



Ming Tomb



Ming Tom

On Friday we flew to Shenyang in the Liaoning Province. From there we drove two hours to Yingkou, a city on the Bo Hai Sea (a gulf of the Yellow Sea). After lunch at a live seafood buffet (they were alive until thrown into a hot pot in the center of the table), we visited the Xiong Yue Arboretum. Several species of North American trees had been planted at the arboretum in 1923, including pitch, jack, and ponderosa pine, plus red oak. Unlike other arboretums visited in China, this institution had some plantings of small groups of individual tree species, perhaps attempting to replicate conditions in native stands. The trees were now very tall, so they would be difficult for us to spray. However, we learned that the arboretum conducted semi-annual insecticide sprays, and one was scheduled for



Tom, Lu, and Gary at Xiong Yue Arboretum



Tommy and the Tigers perform

late July. We asked if it would be permissible for us to put tarps beneath some of the trees the evening before the spray and collect arthropods after the spraying. They agreed, so Lu Min planned to return and set up the tarps prior to the spray. The plan is to sample the arthropod fauna on the aforementioned (four mentioned?) species. We have since learned that due to heavy rains, the planned spraying has not yet been conducted, and may not happen this year. The next spraying is scheduled for spring 2011. We flew back to Beijing late Saturday.

On Monday we had a meeting with the editors and publishers of the 3rd Edition of Forest Insects of China. A separate report on that meeting was submitted. Tuesday we planned to spray more walnut trees, but rainy weather precluded our applications. We went to a large indoor marketplace, and to my surprise, we were able to locate lighter, less odorous and onerous tarps (the green tarps having miraculously disappeared after being left outside of our hotel). Wednesday morning we returned to the walnut orchard and sprayed some new trees. Lu Min volunteered to make the applications, as he will replicate the sprays later this year and next year. We collected the arthropods in the afternoon and returned to Beijing. The remainder of the week we worked with some of Dr. Sun's students and helped edit potential research publications. I gave a seminar on writing scientific publications, focusing on common problems I have observed in reviewing manuscript drafts from Chinese students. We also had the opportunity to visit the Chinese Zoological Museum on the grounds of the Chinese Academy of Sciences. I flew home on Saturday, Gary on Sunday, and Tom on Monday.



Triathlon site near walnut orchard



Butterfly display at Zoological Museum