

China to northern Vietnam April 1-16, 2017

On this trip back to southeast Asia, Dr. Donglin Zhang and I first traveled from Shanghai to Kunming via plane, trains and automobiles stopping multiple times along the way to meet with friends and colleagues to discuss future forays into the remote backcountry of China's nooks and crannies. Upon arriving in Shanghai, Donglin and I went our separate ways for a couple of days to attend pre-arranged meetings in different cities. I spent the next day meeting with colleagues at Chenshan Botanical Garden and being introduced to two visiting scholars who will be working with us at ABG for the month of June. From Shanghai, I flew to Changsha, Hunan to reconnect with Donglin and visit with Dr. Chow who is a famous seedsman and professor at the Central South University of Forestry and Technology. Dr. Chow knows that we have a keen interest in Magnolias, so he was eager to show us one of his hybrids that happened to be in full flower. It was a beautiful cross of *Magnolia macclurei* x *Magnolia figo* var. *crassipes* with medium size, pink, sweetly scented flowers. Since he had yet to propagate it we were only able to leave with photos, but next time we'll get plants.



Later that afternoon we said goodbye to our friends in Changsha and boarded the high speed train to Guiyang City, the capital of Guizhou Province. After a very comfortable three hour train ride, we arrived

in Guiyang and were met by yet another group of Donglin's friends and classmates who gave us both a very warm welcome and off to dinner we went. During dinner, our hosts explained that the next day we would be taken to the nearby mountains to see the new campus of the Guizhou NORMAL University and then onto an area I had been to 6 years ago in the fall, One Hundred Miles of Rhododendron Forest. During our short visit to Guiyang, I had hoped to visit one or two areas that I had not seen previously to decide whether or not it was appropriate for us to come back to do more field work. Our hosts assured us that we would get to see some nice Rhododendrons in flower and then pointed to a large, old photo of the area we were to see the next day. It was a picture of green rolling hills with pink, white, red and yellow dots all throughout the shot. I leaned over and asked Donglin if the photo had been doctored and he, having never been to the place, agreed it must have been. The next day we were taken to the university where, again, we were treated like kings and were greeted by our name in lights on the marquee in the foyer of the main building at the school. Donglin gave a lecture on his role at UGA and the various breeding projects they are working on currently and then we were back in the car, off to see the Rhododendrons. I was not super excited about driving to an area I had already been where I saw nothing but a sea of various shades of green, but they seemed excited to show us the place so off we went. After a few hours of driving, we pulled into the grass parking lot of the local forest service station. From the car I could see large specimens of Rhododendron blooming in the landscape surrounding the parking lot, but nothing really to write home about. We had tea with the leader and then we were off on a hike. As we were walking, we became surrounded by nothing but massive Rhododendrons. Flowers on the forest floor and roadway indicated that there were plants blooming high overhead, but they were difficult to see. We finally arrived at an overlook area that allowed us to get a bird's eye view of what we were walking under...and it nearly brought me to my knees. The colors were breathtaking.





was far too few. We will go back during the fall in the coming years for a seed collecting trip with our new forestry department friends. Later that afternoon Donglin and I boarded the high speed train once again, this time bound for Kunming, Yunnan.

At this point, we were a week into our trip and we had yet to stay in the same bed two nights in a row. Kunming was a busy stop, but we were there for two nights giving us a little time to get ourselves together before heading into Vietnam. Early the next morning, Donglin and I both gave lectures to students at the Yunnan Agricultural

The area houses over 40 species of Rhododendron with the dominant species being *R. delavayi*. Being able to witness this in person was one of the most amazing naturally occurring floristic displays I've ever seen. I was so glad we had come. While in this forest, not only did we see numerous examples of the diversity of Rhododendrons growing in the area, but there were also a fair number of Magnolias flowering at that time. One area in particular that had 30-50 *Magnolia maudiae* seedlings growing and flowering side by side. Almost every tree was in bloom making it very easy to observe the wide range of variation in the flowers. Spending only two days in Guizhou



Institute. Once that was finished we were taken to a nearly sacred spot for those who study plants...the Kunming Institute of Botany and the Kunming Botanical Garden.





Diversity among *Magnolia maudiae* seedlings.

Our first stop was the Kunming Institute of Botany where we toured their state of the art seed bank known as the Southwest China Germplasm Bank of Wild Species. There they are working to obtain wild germplasm (seed in this case) of every plant species native to China. The facility opened in 2007 and plans to have 19,000 species collected by 2022, which would mean that they would have collected just over half of the more than 31,000 known species native to China. The seed are stored in walk in freezers at a temperature of about -10F. Small test samples of each seed batch are tested regularly for viability using not only the “cut test” to check for the presence of an embryo, but they also go through the trouble of performing a germination test on each batch. Once the test is complete, other institutions in China may request the germinated seed for research or to enhance their plant collections.



After walking through and learning about what goes on in the Kunming Institute of Botany we then ventured out into the Kunming Botanical Garden. The Garden was all I had hoped it would be. Although the climate is pretty mild in Kunming, the botanical garden has a wide variety of temperate plants, many of which have proven quite hardy in the southeastern US. Donglin and I toured the extensive collections of Rhododendrons, Oaks, Maples, Magnolias and finally the Plants with Especially Small Populations collection which housed the rarest of the rare from the area.



Rhododendron molle
(left)



Acer paxii
(right)

We saw a lot of but the one that with its beauty that day was figured out to be This tree was height and covered in large, fragrant flowers. came across this cultivation rather to see it in full one of the trip.



amazing plants, had us baffled above all the rest what we finally Magnolia fulva. easily 40' in absolutely creamy yellow, Even though we plant in than in the wild, bloom was still highlights of the

The next morning we said goodbye to the bustling city of Kunming and boarded yet another train, but this time instead of the westward direction we had been taking our entire trip, we headed due south across the border into the northern part Vietnam. Our train stopped in a wild west looking town on the China side of the border called Hekou. Donglin and I had a hotel reservation there that evening, but we hatched a plan on the train to instead have someone in our party who had already arrived in Vietnam come to the border and pick us up...and we were glad we did. When we exited the train station to hail a cab to take us to the actual border crossing we were first slapped in the face by the stifling heat and humidity, then we heard the commotion. From the station, we were dumped directly into a crowd of screaming cab drivers all trying to get our attention. On top of this, the street was only a dirt road and the dust rising from all the excitement made it difficult to breathe. Finally we got the attention of a woman who crammed us and all of our gear into her very small car. Just as I thought we were off, she got out and made her way back into the crowd. Despite the fact that there was no room left in the vehicle either in the cab or the trunk, we were only two paying customers and she had three seats she wanted to fill. Donglin went back into the fray and convinced the lady we were full and it was time to go. I have traveled with my good friend Donglin many times in China and have come to rely on his knowledge of not only the plants, but also the culture and language. Had he not been there that day, I don't know what I would have done. The crowd was not a violent one, but there wasn't a person amongst them that spoke a word of English other than to repeat what I was saying in a very mocking tone. One of these days I'm going to learn Chinese. Without further incident, we made it across the border and into Lao Cai, Vietnam. A short time later our ride showed up and we were off again, this time up to the beautiful mountain town of Sapa where we would meet the rest of our crew.

We arrived in Sapa that evening to a warm welcome from our friends who had come a week earlier to scout a treacherous pass up and over the nearby mountains called Five Fingers. They had just returned that day and were only planning on staying one night in the hotel before heading out early the next morning to a remote area called Y-Ty. Donglin and I had arrived just in time and were off with them the next day. The core group that participated in this outing has been the same for the past several years, with a few additions. This year the group consisted of our host Dr. Dzu Nguyen from the Vietnam Academy of Science, Andy Hill and Douglas Justice were there representing the University of British Columbia, Dan Crowley from the Westbirt Arbortem in the UK, Dan Hinkley from Heronswood Garden in Seattle, Bledlyn Wynn-Jones from Crug Farm in Wales, Dr. Donglin Zhang from the University of Georgia and myself.



Early the next morning we set off for Y-Ty. We were all in wonderful spirits, the weather was beautiful, we were seeing interesting plants along the road....and then we came to a stop. Less than an hour into our drive, just as we were headed into the mountains, we encountered a very overloaded truck that misjudged the switchback in the road and his wheels sank deep into the mud completely blocking the narrow road. The load was so heavy and the ground so soft, the truck was slowly starting to fall downhill. Thinking that we were not going anywhere that day, our guide Uoc called the van with the porters in it to tell them what had happened. By some miracle, our van full of porters had gotten ahead of this truck and Uoc instructed them to turn around and fetch us. So we all exited our vehicle, walked



around the accident that surely closed that road for a day or two and with only about a 30 minute delay, we were back on our way.

By late morning we had arrived at the village known as Y-Ty. We decided to get out of the sun and have lunch on the “porch” of one of the huts at the base of the mountains before heading out on the 4 hour hike to our campsite. The sky was virtually free of clouds for our entire stay, which meant no sleeping in wet tents, but it was HOT. After lunch, the porters loaded up and we set out for the mountains.

We spent the next three days working from a camp site the porters had found about a third of the way up the mountain. The first day was spent taking short hikes from the camp to see what was growing in all directions. The further away from the village we got, the more dense and mature the forest became. In the lower hills of Y-Ty (just as it is done in most areas of northern Vietnam),



Cardamom is farmed throughout the understory of the forest which plays havoc on the natural regeneration processes. While the larger trees are left to provide shade for the crop, much of the remaining understory is cut out to make room for planting. Getting into these areas before all of the



plant diversity is cut down is of the utmost importance. Once the lower hills had been preliminarily scouted and documented, we decided to try for the ridge and see what we could see growing along the way.



The diversity of Rhododendrons is incredible. Even subtle, yet beautiful differences in their new spring growth help to distinguish between species.



The hike between our campsite and the ridge was a long and difficult one. The path was obvious in some places and completely invisible in others as slowly we began botanizing our way up the mountain. Early on in the hike, we ended up splitting into two groups. Myself, Dan H., Donglin, Uoc and Bledlyn were ahead and pushing hard to reach the ridge and get back to camp before dark. The remainder of our group were moving a bit slower because they were responsible for collecting herbarium specimens in triplicate for all of the plants of interest we were coming across. Since we were there in the spring, the goal was not to collect seed, but to get a better idea of what was growing in the area by making observations during the flowering season. By lunchtime we had gotten so far ahead of them, we ate and waited at the Cardamom shack as long as we could before we decided our time would be better spent hiking on and reporting what we saw to the others later. At that point, we began collecting herbarium material of what we felt was worth documenting for fear that the second group wouldn't have time to make it as far as we would. From our lunch spot we could see a singular, yet enormous specimen of *Huodendron tibeticum* towering over the Cardamom and we hoped that was a sign of what we might find further up the mountain.



As we continued to climb, we were first walking uphill in narrow drainages as the wind was howling overhead, but as we hiked closer and closer to the top we were forced to take a more exposed route which had us walking at nearly a 45 degree angle to keep from blowing over. Once we exited the

drainages, we were suddenly surrounded by large groves of ancient (and somewhat decrepit) *Tsuga dumosa*. Much of the understory had been cut on the way to the top, leaving these trees towering hundreds of feet above the ground. In the high temperate mountains, it is the surrounding forest that shields the large trees from extreme temperatures and wind. Once the understory is gone, the remaining trees have no protection. It was like walking through a warzone in some places looking at all of the huge Hemlocks that had blown over, just lying there dying a very slow death. Finally, we arrived at the top. It was thrilling to see the view from the ridge, but equally exciting was the sight of forests and mountains as far as the eye could see on the other side.



We spent the next four or five hours hiking back down the way we had come, making our way back to camp. Many rough and rocky hours later, our group made it back dog tired and in bad need of water. We found the second group had made it back just before us, but in worse shape. Andy was suffering from flu-like symptoms and was sound asleep in his tent and Douglas had taken a spill and sprained his ankle causing it to swell unbelievably. However, there is nothing like gathering around a campfire after an amazing day of botanizing, filling our little plastic cups with some local hooch and taking turns reminiscing about the best finds of the day to get everyone's spirits back on track again....and that's just what happened.

The next day, everyone woke up feeling much better after having slept for nearly 12 hours. We had breakfast and began to pack our gear for the hike out. Once again, the sun was shining and it was going to be another beautiful day. Even though our hike back down the mountain was basically the same



route we took on the way up, we still saw quite a few plants we missed earlier. Despite the fact that several areas along the path had been hacked back to some degree, the diversity in the area was astounding.



After a short hike back to the village, we decided to spend a couple of hours carefully walking through the surrounding woods. Much of the understory had been grazed over or trampled on by water buffalo, but the area was naturally wet and still managed to sustain a very impressive inventory of woody trees and shrubs including Magnolias, Rhododendron, Mahonia, Rehderodendron, Maples, Podocarpus, Fagus and Illicium just to name a few.



While we were traipsing about arguing whether or not a certain tree was a new species of *Prunus* or not, our friends from the Vietnam Academy of Science were hard at work preparing the herbarium specimens. (Incidentally, the tree in question turned out to be the rare and Red Listed *Dipentodon sinicus*, one of many monotypic species in and around Y-Ty.) In Vietnam, they still use a somewhat antiquated system of soaking the herbarium collections in a bag of alcohol to ensure they are free of pest and disease before pressing. This step can damage the specimen's quality, but for now it is how the field researchers are being trained.



Shortly after all of the specimens were packaged, we finished off the last bit of food we had with us for lunch and the vans arrived promptly to take us back to Sapa. We loaded everything in and took our places for the winding trip back down the valley. Uoc was our driver and we'd been moving for all of about 5 minutes when several of us all at once yelled "STOP"!!! In the distance, about 100 yards off the broken road we were driving on was a big tree covered in large, PINK flower stalks and no leaves. We really had no idea what it was...an *Aesculus* was our best guess as we were all but running towards it to get a closer look. Douglas Justice was the first one to identify it and we all began to agree, *Bretschneidera sinensis*. With all of the experience in the group (and there was a lot) Douglas and Andy were the only ones who had actually seen the plant in person in the collections at UBC, but that plant is still far too young to bloom. For all practical purposes this was a new plant to all of us, and it was stunning.

Bretschneidera sinensis is another example of a monotypic genus in the area on the ICUN Red List and that is currently classified as endangered. This was only the second time our group had been to Y-Ty in the spring so it is possible there are others there, but in the days and hours we spend hiking through those woods we only came across a single specimen of *Bretschneidera*. Even the specimen that we did find once had a forked trunk and we could easily see that someone had hacked off one of the trunks fairly recently with a machete. Since we were not there at the right time to take propagative material, we left with only photos of the plant, but our colleagues at the Vietnam Academy of Science are keeping an eye on the tree as they anxiously await the ripening of seed. It was with this amazing memory of Y-Ty that we all drove back to Sapa, already making plans for a return visit to this bizarrely diverse place.

