



*Thang Hen Lake located in Quoc Toan commune, Tra Linh district*

In early April of this year, I had the opportunity to travel to two distinctly different areas of Vietnam to study the flora in each. Our first stop was a very remote province in northern Vietnam called Cao Bang. I had seen photos and read quite a bit about this area in recent years, so I was thrilled when my good friend and host, Dr. Du Van Nguyen from the Vietnam Academy of Science and Technology, suggested that we spend about 10 days scouting a few different locations there. Because Cao Bang is so rugged and remote, many new herbaceous and woody species have been found there in recent years which made it all the more appealing. The only drawback was the outbreak of Cerebral Malaria in the area, which I prepared for by taking an anti-Malarial drug daily. However, once I explained the outbreak had occurred in the area, I did not have much luck finding anyone to travel with me.

The drive from Hanoi to Cao Bang was a long one. Fortunately, there is a decent highway in place now for part of the way, but once you are on the dusty and narrow mountain roads the going becomes much slower. In addition to the bumpy drive into the mountains, I soon found out that my seat mate in the back of the SUV was very prone to becoming car sick. I assumed it was because he looked about 18 and he proceeded to take a half dozen shots of “wine” at lunch...but he unconvincingly said no, it was the curvy roads. The closer we got to Cao Bang, the more scenic and full of life the jagged limestone hills

became. We arrived in the city just before dinner time, so all we had time to do was take a quick walk around town to get our bearings, have dinner and go to bed. My jet lag was in full swing and the long, rough ride up from Hanoi (and trying to avoid getting puked on) had only made it worse.



*Upper and lower leaf surface of Acer tonkinense*

I awoke in the middle of the night to a deafening sound, but I couldn't figure out what was going on. Finally I was able to focus my eyes enough to see it was storming like mad outside of our hotel, and the corrugated metal roof made it sound like WWII was taking place. I didn't find out until the next morning that a very severe hail storm had come through and decimated all of the crops that had just been planted a few weeks before. A storm like that at the perfectly wrong time can be devastating to small communities or villages, but what choice did they have but to get out in the fields as soon as possible to salvage what they could and begin to replant.



*Unknown species of Begonia (left) and Impatiens morsei (very rare and a recent new record for VN)*

The next morning we awoke early and set out for Thang Hen Lake in Quoc Toan commune, Tra Linh district. Apparently, locals flock to this area when the monsoon is severe enough to fill the lake, which slowly drains out once the rains have stopped. Due to less rainfall in the areas in the past few years,

much of the lake has dried up leaving only a grassy meadow surrounded by beautiful limestone hills. As usual in this part of the world, the surrounding hills were covered in amazing plants.



*Amorphophallus tonkinensis* in foliage and flower

As we hiked around the dry lake bed and into heart of the limestone hills, the plant diversity became even greater and even more interesting. We were fortunate enough to see not only the huge solitary leaf of *Amorphophallus tonkinensis* in all its glory, but we also found a few just coming into bloom. As shown in the photos, this plant prefers rich soil pockets and sharp drainage so it is found appearing to grow straight out of the limestone. We were also finding Mahonia, Aspidistra, Begonias a handful of terrestrial Orchids and, as we had hoped, *Pseudotsuga* aff. *sinensis* growing in its usual spot relegated to the nearly inaccessible tops of a few of the limestone smokestacks that surrounded us. Sadly, but not

surprisingly given the time of year, no cones were present. However, we did make note of the location of the trees and will make a return trip sometime in the near future.



*Me demonstrating how to get stuck on a ledge. A remarkable (however potentially invasive) Smilax sp.*



*Beautiful, but very pungent fungus.*



*Leathery foliage of Acer tonkeninsis.*



*Distinctive needles of Pseudotsuga aff. sinensis.*

After spending a couple of days botanizing around the lake area, we continued on deeper into Cao Bang province to a small village in Trung Khanh district called Gian Village. We needed to spend part of a day in the village talking with the leader and getting his permission and advice on which direction we needed to go to find uncut forest. On more than one occasion I have found myself sitting in the village elder's

hut unable to understand a word of the intense, yet friendly, negotiations going on in front of me. As I was the only westerner in the group, this time was no different right down to the shots of homeade liquor we each were highly encouraged to take to seal our new friendship. Once we had completed our meal of sticky rice cakes stuffed with stinging ants and washed it down with firewater made from fern fronds, it was time to move on and look at plants. Upon pushing the cloth door of the hut aside, I saw about a dozen women standing in a loose line all holding young babies. Apparently, while we were inside making plans and forging new friendships, word traveled fast that there was a tall white guy with a camera in town. Before leaving, they all wanted me to take a picture holding their child which I gladly did. I have often said that the plant discoveries we make come second to the emotional human experiences we have while visiting such remote areas and this was a perfect manifestation of that.



*Gian Village*



*Trying to get the true village elders to look at the camera instead of me*



*Lunch...sticky rice cakes stuffed with stinging ants and fern frond liquor to wash it down.*

Our third and final destination on our Cao Bang excursion was a bit higher in the mountains where the diversity of broadleaved evergreens as well as understory plants was some of the finest I've ever seen in Vietnam. It was a very well established and preserved forest called Phia Oac near the Phia Den Commune in Nguyen Binh district. Knowing my love for Magnolias, Du wanted to be sure he took me to this area to see the shocking diversity that is represented here. However, our approach to this forest turned out to be almost as interesting as the protected area itself. As we were driving up through the mountains, we decided to stop about half way up to see what we could see. Within minutes we began seeing multiple species of Begonia (including a remarkable silver foliated species growing in near darkness under a boulder), Asarums and Acers...the days' discoveries had begun.



*Begonia sp. with silvery foliage growing in near darkness.*



*Leaf of same plant with \$20 bill for scale*



*Begonia diversity*



*Acer aff. macrantha* (left) and *Acer aff. campbelli* shown with purple / black emerging foliage



*Acer aff. tonkinense* in flower

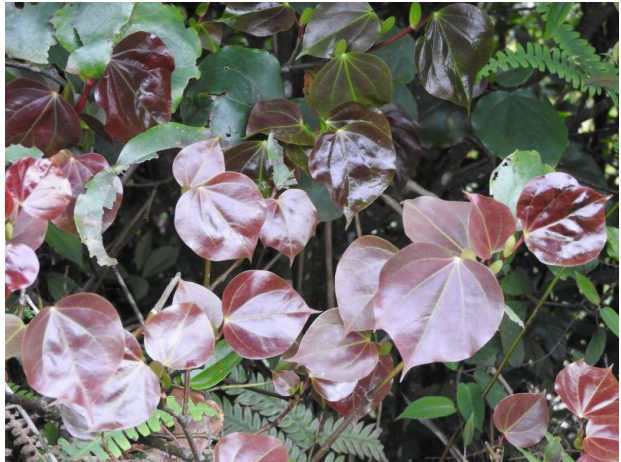


*Phia Oac Forest located near Phia Den commune in Nguyen Binh district*

After a quick bite of black sticky rice stuffed with sweet bean (to me, more palatable than the ants), we continued our ascent into the older forest. We hadn't been driving long when we came upon a locked gate with a sleeping guard in a falling down guard house just off the road. When we finally woke him up, it was apparent that it was more likely that he passed out after a little too much to drink during lunch and he wasn't happy we had awoken him. He wasn't going to let us in, but Du finally convinced him to call his supervisor who arrived in minutes on a motorbike on the other side of the gate. He and Du recognized each other immediately and a wave of relief came over me. We had come a long way and, for a minute, it looked like we were not going to have a very productive day. Once Du and his old forestry buddy finished catching up, we were literally given the keys to the place and told to lock up as we left.

I could tell from a distance that the forest looked GOOD. We drove in for only a few miles before deciding that the area deserved a closer look and began walking up the steep road. It was almost comical all of the OOOOO's and AHHHHHHH's coming from Du and me. I would stop to photograph something, and he would almost instantly start calling me to come over to look at what else he had found and vice versa. Over the course of the next few hours, we would find what appeared to be four different species of evergreen Magnolia, a remarkable purple foliated form of Exbucklandia, Daphniphyllum, Quercus, Acer, Arisaema, Dipteris, Primula, Dysosma and even another Begonia or two. We spent the rest of that afternoon and the following day studying the area and making notes of the most interesting spots. My time in this region was meant to be a scouting trip for future collecting work

and in less than 48 hours we had seen more than enough to warrant multiple return trips during seed collecting season. I will definitely be going back.



*Black sticky rice with sweet bean and Exbucklandia with shiney, purple new growth*



*Magnolia aff. ovoidea with brilliant red new growth and lasting leaf sheaths*



*Primula sp. (left) and Daphniphyllum sp.*

After finishing up our work in Cao Bang, we packed up our gear for the day-long drive back to Hanoi. We arrived back on the bustling streets of downtown Hanoi by late afternoon, so all we had time to do was find a place to launder our clothes so we could fly south the next afternoon to Dalat located in the picturesque central highlands of Vietnam. We would only have a few days in Dalat, so we had to make the most of our time. Du made contact with another forestry colleague who was in charge of the Bidoup – Nui ba National Park, one of the three largest parks in Vietnam. This park was created in 2004 and named after the two highest peaks in the area. While it is only protected by a handful of paid foresters, there is a very effective system in place to report poaching of any kind by paying villagers an annual stipend to alert the authorities of any illegal logging or hunting that they find. As a result they have been able to protect the nearly 2,000 species of vascular plants (62 of which are on the IUCN Red List) including 14 out of the 33 conifer species in Vietnam.



I had never been to this area before, but I had read a lot about it and at ABG we have had several plants given to us that have been collected from this area that lead me to believe it was worth investigating. One of the main trees I hoped to find was the exceedingly rare *Pinus krempfii* which occurs only in and around Bidoup – Nui ba National Park. This pine is different from any other in that it has long, flat needles making it fairly easy to identify if you can see the needles. Another good way to find them in the forest is to look for the largest pine trunks you've ever seen that appear to be lifting the ground up with them. Sadly, in fact, these 1,800 year old trees are doing just that. Our forester friend was telling us that one of the major problems this tree faces is with natural regeneration. The trees are so big and their root system is so expansive, as they grow they are causing large air pockets to occur under the mat of roots that makes up the forest floor. As a result, when the seedlings send their tap root down to anchor the plant and to start taking up nutrients they often times encounter the air pockets causing the tap root to dry out and die, killing the seedling.



*Hard to see, but the large flat-topped Pine in the center is a huge *P. krempfii* towering over the canopy.*



*Dr. Du Nguyen and our forestry friend standing at the base of an 1,800 year old *P. krempfii*.*



*Seedling of *P. krempfii* we found in the forest(left) and a young cone on a tree getting ample sunlight.*

Du and I spent three days in the Dalat area studying the plants of the central highlands of Vietnam. Our forester friend knew this forest like the back of his hand as he has spent all of his life right there. He took great pride in showing us not only the enormous *Pinus krempfii* but also pointed out beautiful specimens of *Fokienia hodginsii*, *Dacrydium elatum*, *Rhodoleia championii* and multiple species of *Magnolias*. At the end of our stay, our friend invited us to a meal near his village. With broken English

and Du translating from time to time, we all discussed the difficulties this forest will face in the future as the city of Dalat continues to boil over out of its boundaries. Dalat is the epicenter of floraculture for Vientam and probably several surrounding countries. As we were driving out of the city and up into the forest the first time, when I looked back all I could see were poly tunnels and large cleared squares meant for agriculutral fields. It won't be long before this amazingly diverse forest is completely surrounded by people and industry...then what will happen??



*Agricultural fields and poly tunnels as far as you can see just outside of Dalat, Vietnam*

Fast forward five months to mid summer of this year when my friend Dr. Du sent me a surprise email. He said that the forestry department in control of the Bidoup – Nui ba National Park has offered to issue permits to me that would allow us to collect seed in December to bring back to the US for safeguarding and evaluation. I was thrilled to hear this as only a handful of plants are known outside of Vietnam, so to be able to collect seed for future germination in the US is very exciting. I will be leaving for Vietnam in hopes of collecting this seed in just a few months, and I hope to be able to write a trip report following our progress on this project in the very near future.