Feature Article

Plant Hunting in Asia

By Andrew Bunting

Ever since I was a little boy, I enjoyed being outdoors, hiking and exploring. In my adult life, I got hooked on ecotourism, which took me to Peru, Brazil, Panama, Costa Rica, Tanzania, and Madagascar. Through these trips, I started to develop a passion for birding and began taking birding trips to Honduras, Ecuador, Tunisia, Gambia, and Uruguay. As Curator at the Scott Arboretum, I have also had the opportunity to do a fair amount of international travel to conferences in Belgium, South Korea, and Chile. But for many years, I have dreamed of plant hunting somewhere wild and off the beaten path. To me, this seemed like the ultimate travel adventure. I have read many of the accounts of the famous plant explorers, such as E. H. Wilson, Joseph Rock, Frank Kingdon-Ward, and Augustine Henry and, in more recent times, have followed the explorations of the late Peter Wharton, Bill McNamara, Paul Meyer, Tony Avent, Bleddyn Wynn-Jones, and Dan Hinkley.

At the Scott Arboretum, the emphasis of our collections development is based on adding cultivars and ornamental woody plants. It has never been part of the Arboretum's goals to conduct plant-collecting expeditions to foreign countries. There are, however, many botanical institutions where plant-hunting trips are core to their missions and where many of the plants in their collections have detailed notes of where they were obtained in the wild. Locally, the Morris Arboretum has a strong representation of plants that resulted from seed collected in foreign lands with an emphasis on Asian plants. The Morris is part of a consortium, which includes the Arnold Arboretum, U. S. National Arboretum, Morton Arboretum, and others, called NACPEC (North America-China Plant Exploration Consortium). Many other institutions have wild-collected centric collections such as the Mt. Cuba Center, which collects plants native to the Piedmont. The Morton Arboretum near Chicago focuses on hardy woody plants. The University of California Botanical Garden at Berkeley has strong collections of California natives, cycads, and magnolias. Quarryhill Botanical Garden in Glen Ellen, California, specifically collects plants native to Asia.

Tsuga chinensis, Taiwan

In 2010, I was contacted by Bill McNamara of Quarryhill Botanical Garden to see if I were interested in participating in a planned seed-collecting trip to Sichuan, China in October of that same year. Of course, without hesitation I said, "Yes!" However, I needed to secure funding for this trip. In addition to Bill and me, we would be joined by Christophe Crock from the Arboretum Wespelaar in Belgium, and Andy Hill, Curator of the Asian Garden at the University of British Columbia Botanical Garden. Through the support of The Chanticleer Scholarship and the Franklinia Foundation in Belgium, I was able to make this trip a reality!

On September 26, 2010, the group convened in Chengdu, China, where we were met by out host Professor Tang Ya at Sichuan University. Prior to starting the expedition, Bill had established several goals. Part of the trip would be spent documenting wild populations of *Acer pentaphyllum,* considered to be perhaps the most rare maple on the planet. The IUCN (International Union for the Conservation of Nature) Red List has *A. pentaphyllum* listed as critically endangered—the highest level of conservation status given by the IUCN. We also wanted to make seed collections of three important magnolia species, including *Magnolia sargentiana, M. dawsoniana,*

Seed collecting in Taiwan

and *M. wilsonii. Magnolia sargentiana* is listed as "vulnerable" by the IUCN and *Magnolia wilsonii* is listed as "endangered" with scattered populations in Sichuan, Yunnan, and western Ghizhou.

Prior to any collecting trip, it is important to determine the route; arrange drivers and accommodations or camping; have sufficient supplies, especially those needed for collecting; and determine the roles of each of participants on the trip. Throughout the trip, there is a need for collecting data; taking images; collecting and making herbarium specimens (in triplicate); and collecting, processing, and sorting seed for export. To make your seed collections most valuable from a scientific point of view, you want to collect as much information as possible, such as GPS coordinates, elevation, slope, soil type, and associated plants growing nearby.

Much of this trip we spent traversing massive valleys at towering mountainous divides as high as 15,000'. We made some important coniferous collections including *Abies forrestii* var. *georgei, A. forrestii, A. squamata, Tsuga chinensis* var. *forrestii,* as well as over a dozen collections of *Acer pentaphyllum.* In total, we made 187 collections.

In 2012, I was invited by Dan Hinkley, Ozzie Johnson, and Scott McMahan on a seed-collecting trip to Taiwan. Dan Hinkley is one of the most heralded plant collectors in the last century with an impressive list of expeditions: China (10), Vietnam (12), Taiwan (3), as well as collecting trips to Japan, South

Magnolia foveolata, Vietnam

Korea, Bhutan, Nepal, Turkey, South Africa, Chile, and Costa Rica. Ozzie and Scott have been collecting with Dan for the last ten years or so and have collected multiple times in China and Vietnam.

Along coastal Taiwan, the flora is subtropical; once you get into the interior mountains and reach elevations as high as 9,000', there are plants that have considerable hardiness. For this trip, we had a few specific goals. We wanted to see if we could document wild locations of the endemic *Magnolia kachirachirai,* which is found in the southern tip of Taiwan, as well as the endemic *Sassafras randaiense* in the northern tip of Taiwan. We were unable to locate the magnolia, but did find several large specimens of the sassafras, however none were fruiting. At the end of this trip, we were able to visit the Taiwan Forestry Research Institute where we made contacts that offered to send us seed and one of the scientists agreed to write an article documenting *M. kachirachirai* for the *Magnolia Society International Journal.*

Taiwan is rich in many fantastic broadleaved evergreens. We made collections of several evergreen *Araliaceae,* including *Schefflera taiwaniana, Fatsia polycarpa,* and *Sinopanax formosanus.* All of these, while tropical looking in nature, might be hardy in the Delaware River Valley with a little protection. In addition to woody plants, we are always combing the forest floor looking for ferns, gesneriads, *Arisaema*, *Asarum*, and hardy begonias. We collected *Blechnum, Woodwardia unigemmata, Polystichum, Begonia chitoensis, Paris polyphylla* var. *stenophylla, Arisaema taiwanense, Arisaema formosanum,* and *Arisaema ringens.*

Abies kawakamii, Taiwan

It is always exciting to see a plant that we cultivate in our gardens growing in its native habitat. In several locations throughout Taiwan, we collected the wheel tree, *Trochodendron aralioides* from specimens over 60' tall with massive robust trunks! Hanging on to the steep mountainous slopes were several spectacular conifers including *Abies kawakamii, Chamaecyparis obtusa* var. *formosana, Tsuga chinensis, Pseudotsuga sinensis* var. *wilsoniana, and Cunninghamia konishii.*

In 2013, I was invited back with Dan, Scott, and Ozzie to northern Vietnam. We all met in Hanoi and took an old Russian night train to the mountainous village of Sa Pa. According to Dan, this is one of the richest areas in which he has collected and it continues to draw him back. Partial funding for this trip was contributed by a grant from HPS/MAG. Goals for this trip were multifold.

1. We knew from prior trips that this was a very magnolia-rich area. At the end of the trip, we had collected: *Magnolia foveolata* with luxuriant golden idumentum; *Magnolia floribunda, M. cathcartii; M. martini; M. championii* (a relatively low elevation species); and the edemic, *M. sapaensis,* which has only been recently described.

2. Our goal was to document any wild populations of the exceedlingly rare *Cupressus vietnamensis* (syn. *Xanthocyparis vietnamensis),* as well as the yew relative *Amentotaxus hatuyenensis.* We were able to find both of these species in the wild, albeit both were at the top of mountains in very rugged terrain.

3. We wanted to make a new collection of the rare horse chestnut *Aesculus wangii.*

Holboellia sp., Hubei, China

Five Finger Mountains, Vietnam

Our group had collected the softball-sized fruits a couple years earlier. Upon our return, we discovered that either this *Aesculus* is cyclical in its fruiting or there is also a possibility that wild pigs feast on the fallen fruits.

Our overriding goal in northern Vietnam was to do further exploration and collecting in the famous Fan Xi Pan Mountain Range (Five Finger Mountains) and the Bat Dai San peaks north of Ban Quan. Once again, in addition to the aforementioned, it was a botanically rich and bountiful trip—211 collections in total which included 13 different magnolias, *Mahonia* aff. *duclouxiana, Schefflera alpina, Viburnum hoanglienense, Hydrangea heteromalla, Aucuba* aff. *chinensis,* and *Blechnum orientale.* Following our trip to Vietnam, Dan continued on for two more weeks of collecting and doing reconnaissance work in northern Myanmar (Burma) for a more expanded collecting trip planned by the group in the fall of 2016.

This year (2014), our destination was Hubei, China. We were very fortunate to be joined by Hubei native Dr. Donglin Zhang, who is a professor of horticulture at the University of Georgia. We all met in Wuhan, China. A primary goal of this trip was to collect in the Shennongjia Forestry District in northwestern Hubei. The SABE (Sino-American Botanical Expedition) had surveyed and collected in this region in 1980. We were also very interested in documenting locations and making seed collections of the rare paperbark maple *Acer griseum.* While this species is abundant in private gardens and botanical gardens, very few collections have been

Metasequoia glyptostroboides, Hubei, China

made of this plant in the wild and it is thought that most plants in gardens today are the offspring of an original collection made by E. H. Wilson over a hundred years ago. Finally, we all hoped to see the original type specimen of *Metasequoia glyptostroboides,* dawn redwood.

On the road to Shennongjia, we spotted a fantastic, approximately 400-year-old specimen of *Emmenopterys henryi.* Luckily, it was hanging over the road and there were still some capsules intact. We found Shennongjia to be a very rich area for both herbaceous and woody plants alike. We made collections of *Helwingia japonica, Decumaria sinensis, Epimedium fargesii, Paeonia obovata, Polygonatum zanlanscianense, Euptelea pleiosperma, Acer henryi,* and *Fagus* aff. *lucida.*

From Shennongjia, we headed west to Jianshi County. We started to see quite a few *Magnolia officinalis,* but most likely these were cultivated for the medicinal

Collecting *Emmenopterys henryi* in Hubei, China

properties in their bark. On a hike, at relatively low elevations of about 3,500', we made multiple epimedium collections, including one species that was 4' tall! In Jianshi, the woods were filled with *Liquidambar acalycina* and *Sassafras tzumu.* The forest floor was rich with ferns—*Pyrrosia, Blechnum, Dryopteris,* and *Arachniodes,* and on one hillside there were hundreds of *Cardiocrinum cordatum.*

Midway through the trip, we made a day trip to Mo-tau-chi, site of the original dawn redwood, *Metasequoia glyptostroboides,* which was discovered in the wild in 1945. While it is a failing and decrepit specimen, it was incredibly exciting to see this venerable tree.

Perhaps, the most exciting day of the trip was on October 28, when we woke to dark skies and heavy rains. Our colleagues had spent a lot of time talking to local foresters to see if they could find any local populations of *Acer griseum.* We drove through the mountains in poor visibility. At 5,500', we stopped at a small forestry station and the forester said he knew where one was, but it was in cultivation on a farm. We drove up a muddy farm road and the farmer took us to a cinnamon-barked tree, but it was *Stewartia sinensis*! However, after some discussion, the farmer said he knew of this tree on a local mountainside. We followed him on his motorcycle. In the pouring rain, we slogged across a cabbage field and climbed up a steep and muddy hillside, finally taking us directly to a fantastic 40' tall specimen of *Acer griseum.* It was growing out of rocky bluffs at 5,940'.

Donglin Zhang, *Cercidiphyllum japonicum,* Hubei, China

Sassafras tsuzumu, Hubei, China

The understory was a very thick bamboo, *Hydrangea aspera, Holboellia* sp., *Cornus kousa, Kerria japonica,* and *Sarcococca hookeriana.* We were able to find five specimens in total. One tree had seed on it, but it had all fallen to the forest floor. So, Dan, Scott, and I spent about an hour sifting through the fallen leaves in search of the maple seed. We gathered about 150 in total. It is our hope that Donglin back at his lab will be able to do embryo rescue on the seed and significantly speed up germination. In cultivation, *Acer griseum* is notorious for having very low germination levels.

From China, Dan headed back to Hanoi to start a short collecting trip in Sa Pa, his 12th collecting trip to Vietnam. As soon as we were back in the U.S., we almost immediately began planning for our trip in 2015 to Arunachal Pradesh on the northeastern edge of India, which borders Bhutan to the west, Myanmar to the east, and China in the north.

Andrew Bunting *is the curator at the Scott Arboretum of Swarthmore College where he has worked for the last 25 years. He owns Fine Garden Creations, a design/build garden company, which is in its 23rd year. Andrew was also the curator at the Chanticleer Foundation in Wayne, PA in the early '90s. His home garden Belvidere has been featured in* This Old House Magazine *and the* Wall Street Journal. *He has served as president of the Magnolia Society International and The Delaware Center for Horticulture; chaired Horticulture at the Philadelphia Flower Show; and chaired the North American Plant Collections Consortium, a national collections scheme through the American Public Gardens Association. He has gone on plant exploration trips to China, Taiwan, and Vietnam. He has written over 100 articles for the* American Gardener, Fine Gardening Magazine, Horticulture, Public Garden, *and* Arnoldia. *Andrew is a passionate gardener and avid birder and traveler.*

Ed Note: All pictures ©Andrew Bunting. For a full-color version of this article, go to the HPS/MAG web site, www.hardyplant.org. Andrew will be one of this year's MIS speakers, talking about the development of his Swarthmore garden Belvidere.