One of the greatest plant hunters of the last hundred years was E. H. Wilson, an Englishman who spent years in East Asia collecting plants for the nursery trade and for the Arnold Arboretum. Thanks to his perseverance, thousands of plants were introduced into cultivation in the United Kingdom and the United States. Since Wilson's six collecting trips to Japan, China, Korea, and Taiwan, many botanists have covered the same ground that he did, often using his maps and books as guides for re-collecting the plants he found there. The tales of his collecting adventures often spark envy in latter-day plant collectors like me: Wilson got there first, and he got there when the hunting was far better.

The thick forests Wilson bushwhacked his way through are being overrun by human populations, and some of the species he collected are now endangered and possibly extinct in their former habitats. Of the eighteen genera and twenty-four species of conifers known in Taiwan, for example, the Red List of Threatened Plants of the IUCN (International Union for Conservation of Nature and Natural Resources) classifies twelve species as vulnerable, rare, or endangered. One has only to look at before-and-after satellite photos of the last twenty years to realize that within the next hundred years the world's forests will be reduced to the weeds and scraps left behind from a once great cornucopia.

Wilson's first visit to Taiwan began in January 1918. From his ship rocking on the waves of the Pacific Ocean off the eastern coast of the island, he could see the 7,000-foot mountains meet the water's edge, leaving only the narrowest strip of beach or coastal plain, if any at all. The small boat that took him into shore was manned by "half-breeds of Chinese and savages [who] work the boats ashore, yelling as loudly as possible all the time. They maneuver the boat so as to get it carried stern first on the crest of the wave well to shore. As the wave recedes one jumps ashore and races to safety." Wilson's party included botanists and soldiers from Japan, which then ruled the colony called Formosa. The soldiers had been brought along to fight off mountain tribes that were said to practice headhunting. It is a measure of Taiwan's remarkable economic explosion that eighty years later the only headhunters in evidence are of the corporate variety.

Taiwan was a plant hunter's paradise in Wilson's day and much of it remains so today. Its mountains rise to over 13,000 feet (the highest between the Sierra Nevada Mountains of California and the Himalayas) and harbor lush conifer forests and alpine plants on their flanks and summits. Most of the terrain is so steep that landslides are frequent; development in regions other than the western coastal plain is therefore minimal. So rugged are the interior mountains that only three roads connect the east and west sides of the 244-mile-long island. At lower altitudes an intergrading mix of temperate, subtropical, and tropical floras grow, with a number of species endemic to Taiwan. Taiwan is particularly rich in gymnosperms, the cone-bearing plants such as conifers and cycads. Wilson collected twenty species in fourteen genera of gymnosperms. Among the most remarkable is the massive conifer taiwania (Taiwania cryptomerioides), which rivals the redwoods and giant sequoias for size.

The taiwania, named for the island, is the loftiest tree in the forests, rearing its small, mop-like crown well above its neighbors. The average height of this tree is from 150 to 180 feet but specimens exceeding 200 feet are known. The trunk is sometimes as much as 30 feet in girth, quite straight and bare of branches for 100 to 150 feet. It is a strikingly distinct tree, singularly like a gigantic club moss or lycopod. In the dense forests the crown is small, dome-shaped or flattened, the branches few and short, and
A _Taxus chinensis_—the sole survivor of a stand of nine.

one wonders how so little leafage can support so large a tree. When the top is broken by storms, the lateral branches assume an erect position. In the more open forest the branches are massive, widespread, with an oval or flattened crown. On small trees the branches are often pendant. When young it is singularly beautiful in habit of growth.

Wilson brought back seven herbarium collections of _taiwania_ as well as a few young trees from which cuttings were propagated and distributed in the United States. One propagule was given to Pierre S. du Pont (1870–1954) of Longwood Gardens in Pennsylvania, and he passed it along to the Fairmount Park of Philadelphia. Paul Meyer of the Morris Arboretum, however, tells me that no _taiwania_ are known to exist in the Philadelphia area today.

Beginning in 1997 I undertook a series of collecting trips to Taiwan myself, often following in Wilson's footsteps and, like him, concentrating on conifers and cycads. A number of the plants I wanted to collect contain powerful chemical compounds that pharmaceutical trials have shown to be useful against various cancers and leukemias. Other species on my target list were rare and endangered; one, _Amentotaxus formosana_, is on the IUCN's shortlist of the planet's sixty most rare and endangered conifers. Many institutions worldwide are attempting to establish _ex situ_ collections of these highly endangered plants to prevent their total extinction.

On my most recent trip, the second in the series, I collaborated with Shu-Miaw Chaw of the Academia Sinica Taipei, a specialist in the molecular genetics of gymnosperms, who would be collecting DNA samples from various species. The pleasures of hunting for plants in a tract of unspoiled forest are many: every few yards the landscape gives up another treasure or another mystery, making the forest seem like an enigmatic box of wonders. However, finding desired plants in the vast green mosaic of a forest canopy is not the easiest of occupations.

On the first day of our expedition, we headed up Taiwan's western coast, the wide plain that faces the Taiwan Strait and that supports the vast majority of the island's human population. Our group included Dr. Chaw, three of her students, and me. Many of the plants on our target list were in the yew and plum yew families, of which Taiwan boasts a great number: _Taxus chinensis_, _Cephalotaxus wilsoniana_, and the rare _Amentotaxus formosana_ can be found in its forests. The latter two genera grow throughout Southeast Asia but occur only sporadically and never, to my knowledge, in large populations.

Our first collections were of the Chinese yew, _Taxus chinensis_, known for the powerful anticancer taxane compounds like taxol and bac-
A stand that Dr. Chaw had seen on previous trips now consisted of a single tree. We were told that eight trees had been illegally harvested within the last year, probably for sale in Japan, where yew-wood desks bring exorbitant sums from business executives. We continued driving through the rain to 7,800 feet, our driver clearly uneasy about landslides. I was stunned by the giant T. chinesis we next stopped at, a stout colossus eighty feet high with a trunk that measured eight feet in diameter—the largest yew I have ever seen in my collection trips around the world.

On our target list for the second day was a plum yew named for E. H. Wilson, who was the first to bring specimens out of Taiwan: Cephalotaxus wilsoniana (Wilson’s plum yew), named by Japanese taxonomist Bunzo Hayata (1874–1934). While similar to yews in appearance, plum yews belong to a different family and have very different chemical compounds. Its foliage can be mistaken for yew, but it has much larger fruits, held in clusters, and its seeds are entirely enclosed by the fleshy aril. Chinese researchers have isolated a number of chemicals from Cephalotaxus that show promise in treatments for granulocytic and myelocytic leukemias; Western pharmaceutical researchers have also shown interest in it. Of the six to eight species known, C. wilsoniana is the only one considered endangered, so we wanted to collect the species both for its rarity and its efficacy.

On the day we planned to search for Cephalotaxus wilsoniana, we left Taipei in the usual Taiwanese drizzle, our highway winding past blocks of gray, factory-like apartments that sprouted beneath the lush green hills. Ornately painted temples with upcurved corners provided the only refreshment for the eyes in this soggy urban landscape. The road wound upward, switchback after switchback, frequently passing scars from past landslides; in one area an entire village had been covered.

At 4,600 feet we entered the YuShan National Park and soon began to see conifers, among them pine, spruce, and hemlock. After parking at the highest point of the road, 8,456 feet, we walked into a restricted research area, a rich forest with a dense understory of ferns and forbs beneath towering conifers, including some Morrison’s spruce that were six feet across and 150 feet high. Where slides had occurred, thick brambles of roses and blackberries had sprouted. We bushwhacked through the trackless forest, looking for the stand of plum yew that was said to be there, but after hours of fruitless hand-to-thorn combat we surrendered.

The effort was not a total loss, however, since I collected a beautiful plant of the lily family, Polygonatum alte-lobata, with large violet fruits dangling beneath the arching stem. We drove on toward the Alisan National Scenic area, where Wilson himself had found Cephalotaxus wilsoniana. Spotting a large plum yew from the roadside, we clambered up a steep embankment of underbrush into the forest’s dark and moist understory. C. wilsoniana abounded here, most of them with stems bent to horizontal and hanging over the steep slope. The largest had three trunks that com-
bined at the base to form a twenty-inch trunk. On a few female plants we found fruits, greenish drupes the shape and color of small olives. I knew from other species of Cephalotaxus that when the pulp is ripe, it has an amazingly heady aroma that in Taiwan attracts macaques to feed. Back at the roadside, Dr. Chaw and I divided the seeds and cuttings from two dozen trees, potential ex-situ collections for both our institutions. The day's successes were topped off by the sight of an endangered Mikado pheasant, *Syrmatics mikado*, a black, white, and red beauty. We ended with an evening meal at a truckstop in Alishan, where Wilson had his base camp and where we also purchased plants of wasabi, the fiery oriental horseradish.

On the third day, our target was a member of the yew family (Taxaceae) that not even Wilson had collected in Taiwan, *Amentotaxus formosana* (Taiwan catkin yew). The genus *Amentotaxus* is comprised of only four to six species; and though found over a wide area in Southeast Asia, it is rare throughout. Two populations of *A. formosana* are known and accessible in Taiwan, and we planned to collect from both of them.

Our drive to the first location was halted abruptly by a fresh landslide. We could have dug our way through it, but a large boulder perched on the steep slope above persuaded us to backtrack quickly and head toward the second stand, farther north on the main coastal road. We cut eastward onto the craggy spine of the island along a typical mountain road: two parallel concrete strips to aim your tires at, with lush vegetation growing between them and on the sides. We passed gorgeous tropical ginger, *Alpinia speciosa*, and the curiously flowered *Mussaenda pubescens*. By the time we reached the boundary of the Amentotaxus Preserve, marked by a sign announcing its protected status, the day had become cloudy and dark with misty rain falling.

Setting out on the trail, we immediately spied examples of the beautiful ferns to be expected in this environment: two large tree ferns; another “miniature,” eighteen-inch tree fern, *Diploblechnum fraseri*; epiphytic bird's-nest ferns resting on tree branches; and everywhere the fronds of numerous terrestrial ferns slowly waving in the mist.

Each specimen of *Amentotaxus formosana* in the preserve had been tagged and numbered, and we planned to take a few cuttings from as many as we could find. We thrashed our way through the fog into the forest, not knowing whether we had already passed by some of the trees we were looking for or even whether we were in the right area to find them. Each glance at our watches told us that dusk was approaching, and none of us relished the thought of navigating the twisting ribbons of road in the dark fog. There was little choice but to split up, with Dr. Chaw and her student Chih-Hui Chen heading down the slope and me covering higher ground.

As it grew darker our botanizing trek turned into a frenzy of activity, with all of us running along the fogbound trails, occasionally calling out for one another, desperately peering at the trees' darkening silhouettes in search of one particular shape and texture. After twenty

_Foliage of Amentotaxus formosana, the Taiwan catkin yew._
minutes a muffled cry came from down the slope: they had found *Amentotaxus formosana*. I ran toward the cries, and we quickly took cuttings from as many trees as possible in order to get maximum genetic representation for the *ex-situ* collections.

Stopping for breath, we gazed at the trees stretching upward in the crowded forest, battling for light, their foliage as beautiful as that of any conifer I'd seen: seven-inch, dark green, stiletto blades marked on their undersides by pairs of dramatically white stomatal bands. Chih went farther downhill while Dr. Chaw and I collected cuttings and labeled each bag with the mother plant's identification number. The largest tree we saw was thirty-five feet high with a basal trunk diameter of eight inches, but Chih reported seeing a cut trunk fifteen inches in diameter farther down the slope. We managed to find twenty trees in the sliver of remaining light and then reassembled to hike back out to our vehicle.

Having failed to reach the first population and almost missing the second, we felt fortunate to have any collections at all for the day's effort. We packed up and bumped down the twin strips of concrete, our headlights illuminating the wild tangle of leaves and grass blades. We burst through the green dome of the forest and instantly found ourselves back in the urban sprawl of the coastal plain where we rewarded ourselves with a feast of shrimp, eel, and miso soup.

That night we pressed on around the bottom tip of the island and then up the Pacific-facing eastern coast to Taitung. Here the mountains come all the way down to the sea, leaving the area unpopulated and free of the stressful hustle of the western coastal plain. Our collecting goal for the next day was the one known population of *Cycas taitungensis*, the only cycad native to Taiwan. Cycads are remarkable organisms that defy our limited understanding of plants. Though most people guess them to be palms, they are gymnosperms, carrying naked seed that is held in a cone scale and not enclosed by a fleshy fruit. The fossil record shows cycad-like plants present in the early Permian Epoch,
Home of Cycas taitungensis. At left, the narrow ravine of a whitewater river. Center, the cliffside path. Right, C. taitungensis on the ravine’s slope.

contemporaneous with the dinosaurs that were roaming around 250 million years ago. This was to be a first for me since I had never before collected a plant with so long a history.

In the morning we drove from the coast into the foothills along the course of the Lu Yeh River and began a four-mile hike up to the cycad population. At the lower elevations we passed through a lowland tropical rainforest, still glistening from the night’s rain. One giant fern stood out, the epiphytic Pseudodrynaria coronans with its four-foot fronds, of which a specimen is now growing in the Smith College conservatory. An hour into the hike, we began to get sporadic glimpses of cycads in the forest shade, looking like old hermit gymnosperms in this forest of flowering trees. Chih spotted a cluster of germinating seedlings at the base of a tree, clear evidence of an animal or bird caching the seeds.

Dr. Chaw said the main stand was farther on, and another student, Shy-Yuan Hwang, pressed on alone; the rest of us followed after stopping for a snack. The path soon broke out of the forest into a sun-baked, rocky landscape through which a narrow gorge, 100 to 150 feet deep, had been carved through the shale by a whitewater river. We found hundreds of Cycas taitungensis in this short stretch, cliff dwellers perched atop the chasm or even growing on its sheer walls. Their habitat, a combination of extreme heat and dry rocky soils, is unusual in monsoon-soaked Taiwan but a niche that cycads occupy in many parts of the world.

So far we’d found none of the fecund females we were looking for, easily identified by their crowns of massive seed-bearing cones. We continued up the river valley, by now looking for the long overdue Shy-Yuan as well. The path began to deteriorate, showing few signs of use, and before long we came to a spot where a large rockslide of many acres had cut through the forest long ago, leaving the slope covered by a million plates of shale. We could see the trail winding over this heap of sliding, slippery shards and up the side of a sheer cliff, becoming a hand-carved half-tube 150 feet above the roaring rapids.

We all looked at one another. Had Shy-Yuan gone on? Numerous calls brought no answer. We decided that Dr. Chaw and I would go on while the others stayed and searched for seeds.
We threaded our way across the burning slate pile, sending an occasional rockslide to the river below, and finally reached the cliff path, which tilted toward the water so that we had to walk in a crouch, grabbing onto whatever roots and crannies we could. Any glance downward set my knees to wobbling. The trail curved, following the river, cutting into the cliff, and passing under some cliff-dwelling cycads—old Methuselahs anchored in the rock—and after the longest 100 yards of my life, it flattened out into the forest. The cycads soon disappeared, and we came to the obvious conclusion: Dr. Chaw’s student would not have gone any farther. When our calls were met with silence we reversed our course. On our return, we found him with the rest of the group. The rapid-fire lecture that Dr. Chaw delivered to her wayward student was made only slightly less embarrassing by my ignorance of Chinese.

After lunch, I ambled down onto a bluff overlooking the river. A few dozen cycads grew there, some old eight-foot-long leaners and younger, upright umbrellas of five feet. And there, at the very edge of the cliff in full sun, stood a magnificent female *Cycas taitungensis*, its fifteen-inch-wide, minaret-shaped cone topping the trunk—a resplendent cluster of golden-furred cone scales with large, crimson, egg-shaped seeds.

Plucking seeds from the cone felt a bit like robbing eggs from a dinosaur’s nest. The small number we collected would be used for germinating trials at our own institutions and for limited distribution to botanic gardens that specialize in *ex-situ* cycad conservation, such as Miami’s Montgomery Center. (After six months in a seed pot, my seeds began to crack their thick coats and the first wisp of a leaf came curling up through the soil. It now graces our conservatory.) As we left the cycad valley, I thought to take a picture of Dr. Chaw, who was walking on the trail ahead of me. I readied my camera and just as I was going to call to her, she suddenly turned with a big smile and said, “This has been a good day.” I clicked in agreement. Still alive, seed in the bag, a good day indeed.

Rob Nicholson manages the conservatories of the Smith College Botanic Garden in Northampton, Massachusetts.