Japanese Journal

by Richard E. Weaver, Jr.

The aim of the Arnold Arboretum's collecting trip to Japan and Korea in the fall of 1977 has already been explained briefly in the January-February issue of Arnoldia. The present article will describe in more detail our experiences in Japan; another in the next issue of Arnoldia will cover the Korean portion of the trip. Space allows for the description of only the most memorable days, but a detailed itinerary with a list of the plants collected each day appears at the end of the article.

Steve Spongberg and I left Logan International Airport 10:00 a.m. on September 1, and after changing planes in Chicago, headed for Tokyo. Our route took us across Canada's Prairie Provinces, the southern Yukon Territory, and Alaska's Coast Ranges to Anchorage. The views of the ice-clad peaks and glacier-filled valleys were spectacular and we had an enticing glimpse of Mt. McKinley on the horizon. After a frustrating hour at the Anchorage airport, we took off on the long last leg of our trip, arriving at our hotel approximately 15 hours after leaving Boston.

The next morning was spent in the Ginza, the main shopping district, where everything was fascinating, particularly the flower and produce shops. The former featured many standard items, but we found several surprises: One of the most common potted plants was a dwarf form of Gentiana scabra, a native Japanese gentian. Other gentians, particularly G. triflora var. japonica, a bottle-type, were sold as cut flowers. I could hardly believe my eyes when I first saw bunches of Eustoma grandiflorum in the shops. This plant is an annual member of the Gentian Family native to the southern United States, but practically unheard of as an ornamental in our country; yet the Japanese had even selected white- and double-flowered forms. Ironically their name for it meant "Chinese Bluebell."

We had been told about the produce shops before we left the United States, but it was still quite an experience to see their selection of magnificent fruits which had been carefully nurtured throughout their development, and were sold as absolutely unblemished specimens, individually wrapped, at exorbitant prices. We found Tokyo in general to be as expensive as expected. For its size it is remarkably clean, and the drivers are unbelievably well-behaved. I cannot remember hearing a horn honk in Tokyo, a marked contrast to any large Latin-American city.
Dr. Katsuhiko Kondo, or Katsu for short, a friend of Steve's from graduate student days at the University of North Carolina, met us in the afternoon. Katsu, now on the staff of Hiroshima University, was to accompany us for most of our trip. We took him to a fine restaurant that featured the best beef I have ever eaten (at prices I would rather forget) and he then took off alone by train to Sapporo on Hokkaido where we would meet again a day hence.

On September 5 Steve and I flew to Sapporo, the capital city of Hokkaido Prefecture which encompasses the whole of the northernmost of Japan's four main islands. As we ascended from Tokyo we had a glimpse of Mt. Fuji above the clouds and smog, and travelling north we tried to spot the places where we would be collecting in a week or so. Katsu was waiting in Sapporo to show us to our hotel, the Washington. It was a fine hotel, but our double room was considerably smaller than any single I had stayed in before. With barely enough room to move about, we looked ahead with apprehension to cleaning seeds in such cramped quarters. We also had our first of many encounters with the last word in the Japanese idea of western-style bathrooms — tiny and completely moulded from a solid sheet of plastic.

After lunch we walked to the Botanic Garden of Hokkaido University, where we had an appointment with the Director, Dr. Tadao Ui. As we approached the Administration Building, we remarked on its New England Colonial architecture, recalling that the University and the Botanic Garden had been set up under the direction of a Professor Clark from what is now the University of Massachusetts at Amherst. Dr. Ui and his secretary were most cordial, and they explained the itinerary they had set up for us, starting immediately with a visit to the Hokkaido branch of the Government Forest Experiment Station on the outskirts of the city. Our host there was Mr. Jun-ichiro Samejima, a vigorous and enthusiastic young man, an expert on Trillium who had studied at Vanderbilt University. After considerable effort we explained to him that we were very anxious to do some collecting in the wild.

In the badly cut over forests near the station we had our first good look at a plant that we came to dislike intensely — Sasa kurilensis — a 3- to 4-foot bamboo that has become rampant with the widespread clearing of the forests on Hokkaido, choking out everything in its path. Here it was doubly annoying to wade through since it was covered with a fine dust from the erupting Mt. Usu about 40 miles away. But we were finally able to do some good collecting, and Steve was particularly excited by finding both of Hokkaido's magnolias, M. kobus and M. hypoleuca, with nearly mature fruit.

We returned to Sapporo for a dinner engagement with Dr. Ui and some of his staff. The meal was one that I shall never forget — a traditional multi-course banquet with a great variety of food, much of which we ate with less than gusto. But at least we were able to eat with chopsticks, since we had practiced at home.
The Administration Building of the Botanic Garden of Hokkaido University in Sapporo. The architecture shows the influence of Dr. William S. Clark, a New Englander who helped develop the garden. (All photos are by author.)

The next day we toured the plantings of the Hokkaido Forest Tree Breeding Station and made a few half-hearted collections. We really wanted to collect in the natural forests which we could see only a short distance away. We were told at first that the Nopporo Natural Forest was a reserve, and that collecting was forbidden. We persisted, and finally, under the friendly supervision of Mr. Norio Murano, we were allowed into the forest. Although it had been somewhat cut over, this was the sort of place we had been dreaming of — a rich forest dominated by trees of such familiar genera as Acer, Ulmus, Quercus, Magnolia, Styrax, and Carpinus. Here we found one of the main objectives of our trip, Skimmia japonica, growing near the northern limit of its range. The herbaceous vegetation was fantastic, and I could imagine what the place must look like in the springtime. We found orchids of several genera, many ferns, trilliums and their strange relative Paris, Jack-in-the-pulpit, baneberries, etc. I really love such plants and I could hardly contain myself.
Later, after lunch and a tour of the adjacent, ultra-modern museum commemorating Hokkaido's centennial, we set out across the city for Mt. Moiwa, a low peak where Charles Sargent had collected nearly a century before. We ascended the mountain by cable car and had a close look at the forest canopy below with the whitish flower clusters of *Aralia elata* and the huge leaves of *Magnolia hypoleuca* standing out conspicuously. The descent was an easy trail through a forest basically similar to that at Nopporo, but our collecting was limited since daylight was fading fast.

The next morning after touring the botanic garden, we thanked Dr. Ui profusely and boarded the train for Urakawa on Hokkaido's southeastern coast. The countryside was beautiful, reminiscent in many places of southeastern Pennsylvania where I grew up. As we approached Urakawa, the Hidaka Range, among Japan's oldest mountains geologically, came into view. We tried to pick out Mt. Apoi, a peak isolated from the main range that we were to climb the following day. Mt. Apoi is a remarkable mountain, slightly more than 800 meters high, but with an alpine zone and several endemic plants at its summit. The low alpine zone is due to the almost continuous fog that keeps the mean temperature low throughout the year.

We were met by a very jovial Mr. Minowa and ushered around to meet various local governmental and forestry officials. Evidently westerners do not often visit Urakawa. Quite exhausted, we were finally taken to our inn, the only ryokan (or Japanese inn) in which we stayed the entire trip. I was shown my room but told that I could not occupy it because dinner was being set up. I insisted on a bath, and upon returning found a seafood feast set up, attended by Mr. Minowa, the governor of the district, and Mr. Uchida, our guide for the following day. We had a most enjoyable evening, discussing all sorts of problems through Katsu's translation, while our cups were continually refilled with saki and other libations.

We mostly looked at our breakfast the next morning, particularly the bowl of fern fiddleheads with what looked like bacon but turned out to be whale meat. Not knowing our condition, the cook was disappointed that we had not eaten more. The next morning we had eggs.

Much too early on a dreary September 8 we set out for Mt. Apoi. The rain was light but persistent, and soaked us through, except for Mr. Uchida who had a distinct knack for remaining dry. We drove to the edge of the forest and proceeded to climb. The vegetation was basically similar to that at Nopporo. *Viburnum furcatum* was abundant and laden with its beautiful red drupes and we could not resist making a large collection. Several shrubs new to us added a bit of excitement. Our first large-leaved rhododendron, *R. brachycarpum*, was common at lower elevations, and although the capsules were green and scarce, we collected a few. Other members of the Heath Family included a species of *Menziesia*, a genus of deciduous shrubs...
with flowers resembling those of blueberries, and \textit{Vaccinium oldhamii}, our first of many encounters with this beautiful blueberry that now was taking on its burgundy autumn coloration. The maroon fruits in drooping clusters were just ripe enough for collection.

In a clearing along the trail I stopped to photograph a clump of the very beautiful \textit{Ophelia tetrapetala} var. \textit{yezoalpina}, an annual member of the Gentian Family with pale blue, spotted flowers. Focusing with a wet view-finder and fogged-up eyeglasses was frustrating enough, but the last straw was to find that I was out of film after taking just one picture. Soon afterward, Steve discovered that he was out of film as well. (The day was not a good one for photography anyway.)

The climb was an easy one, and the trail was good. As we ascended, the deciduous trees became admixed with \textit{Pinus parviflora}, the Japanese White Pine. This area is one of the few places on Hokkaido where this species is native. We stopped to collect the "berries" of \textit{Juniperus chinensis} var. \textit{sargentii}, a low growing juniper, and soon came abruptly out of the forest and onto a very welcome, dry trailside shelter perched at the foot of a treeless ridge leading to the summit of the mountain. Exciting new plants were all about us. We soon made collections of dwarf forms of \textit{Berberis amurensis} var. \textit{japonica} and \textit{Lespedeza bicolor}, the latter frustrating us as before with immature fruits, but we collected them anyway. A mountain ash, \textit{Sorbus sambucifolia} var. \textit{pseudogracilis}, only 3 feet tall with clusters of large red-orange berries, was one of the most beautiful ones I had ever seen.

The climbing now became harder and we were lucky to find many interesting plants. The Japanese Stone Pine, \textit{Pinus pumila}, a low, timberline species, was abundant, but we found few cones with seeds. We did make a good collection of \textit{Rhododendron dauricum}, one of our favorite harbingers of spring back at the Arnold Arboretum, as well as of a prostrate form of \textit{Potentilla fruticosa}, the Bush Cinquefoil. Well below the summit were 2-foot fruit-laden shrubs of one of our main objectives, \textit{Betula apoiensis}, a dwarf birch restricted in distribution to this mountain. With the summit yet a half-mile distant and the clouds clearing to reveal magnificent views of the Hidaka Range and the Pacific, we cursed our lack of film and decided to go no further.

Mr. Uchida suggested another route down, following the mostly treeless scrub for quite a distance. We soon found \textit{Ilex rugosa}, \textit{Leucothoe grayana} var. \textit{oblongifolia}, \textit{Ledum palustre} var. \textit{diversipilosum}, \textit{Juniperus communis} var. \textit{nipponica}, and a large selection of my favorite group of herbaceous plants, the Lily Family. In a small area I found at least two species of \textit{Veratrum} (false hellebore), \textit{Lilium medeoloides}, \textit{Tofieldia nutans} var. \textit{kondo}, an endemic species, \textit{Convallaria keiskei}, the Japanese Lily of the Valley, and \textit{Clintonia uden-sis}, with beautiful black fruits.

We worked our way down, with Mr. Uchida in the lead making
various noises to warn bears of our presence (The Eurasian Brown Bear is still relatively common here.). After a very late lunch at Mr. Uchida’s headquarters, the Experimental Garden for the Department of Forestry of the Hidaka District, we looked at the plantings surrounding the station. Many exotic trees were being tested there as candidates for a reforestation program, but native plants were well represented as well. Our best collection was of undoubtedly the most beautiful species of Euonymus I have ever seen, *Euonymus macropterus*, a small tree covered with long, pendent red fruits, each segment with a slender wing.

The next morning Mr. Yojuuro Sato, a college friend of Katsu’s who is now teaching high school on Hokkaido, joined us for a short collecting trip to one of the river valleys northwest of Urakawa. The rain was heavy and the plants mostly unexceptional. We did have our first encounter with *Staphylea bumalda*, the Japanese species of bladdermut, growing almost as a weed shrub. But it was wonderful to gaze over the forests and to see the treetops here and there splotched with the white-variegated leaves of *Actinidia kolomikta*, a woody vine closely related to *A. chinensis*, the plant that produces the familiar “Kiwi Fruit” we can occasionally buy in supermarkets in the United States.

After expressing our sincerest thanks and fond farewells to our hosts in Urakawa, we headed north on a scenic, narrow road toward Asahikawa in the center of Hokkaido. Mr. Sato’s station wagon was loaded with grapes from his father’s orchard—wonderfully sweet small grapes of the cultivar ‘Delaware’ from the United States, but seedless because each inflorescence had been hand-dipped in gibberellic acid. We had a feast, both of these grapes and hybrid melons which were like a cross between a cantaloupe and a honey-dew.

In the late afternoon we stopped for an hour or so at the Tokyo University Forest in Hokkaido, an experimental station near the town of Yamabe. Our most gracious host, Mr. Kurahashi, served us a rather untraditional Japanese tea complete with tomatoes and corn on the cob, fresh from the garden, before showing us around the plantation. Many native woody plants were represented, and we collected our first material of *Alangium platanifolium*, a plant very high on our list of desiderata. This low, shrubby plant with trilobed leaves and black fruits, in a family close to the dogwoods, is very rare in cultivation in the United States.

Another item of interest was a fine row of the true Monarch Birch, *Betula maximowicziana*. This plant has recently caused quite a stir in the United States since it has been touted as a white-barked birch resistant to the devastating bronze birch borer. Unfortunately the trees on which the observations were made were misidentified; as it turns out, most were the so-called Monarch Birches in the United States, including those at the Arnold Arboretum. The plant is resistant to the borer, but it does not have really white bark. Those
Mr. Akio Kurahashi and one of his assistants at the Tokyo University Forest in Hokkaido, preparing a rather untraditional Japanese tea.

we had seen in the wild had mostly silver-gray bark, although those here in Hokkaido were the best we encountered in Japan, with bark approaching white.

Just before we left we were ushered into what turned out to be the strangest museum I have ever seen: A dank, dark, concrete room lined with ceiling-high trunks and the corresponding cross-sections of what used to be magnificent specimens of the most important forest trees of Hokkaido. Who would have imagined two species of alders (Alnus japonica and A. maximowiczii) with trunks nearly 3 feet in diameter?

The last part of our journey, with the sun setting, was most enjoyable: Small towns; rolling farmland with fields of rice and melons growing beautifully at a latitude further north than that of Boston; the volcanic massif of Tokachi with steaming vents; and finally Asahikawa, Hokkaido's second largest city, pleasant and bustling, with a good room and a wonderful meal in a non-tourist restaurant complete with a traditional Japanese folk-singer.
To me, the next day, September 10, was the best of the trip. Our objective was Daisetzu-san National Park, encompassing the Daisetzu massif with one of the peaks, Asahi-dake, at 2345 meters the highest point on the island. As soon as we reached the outskirts of Asahikawa, the mountain loomed before us, the steaming vents plainly visible. Soon after we started the drive up the mountain, we saw a plant of Sambucus sieboldiana heavy with fruit. This elderberry is closely related to our own native S. pubens. A bonus at this stop was Spiranthes sinensis, one of the loveliest wildflowers we encountered. This orchid, the only Japanese species of Spiranthes, closely resembles our native ladies tresses, except that the flowers, arranged in a long spiral spike nearly 10 inches long, are pink rather than creamy white.

Climbing higher, we drove through a forest completely different from those we had seen before. The aspect was much like that of the subalpine forests of the western United States. Conifers, primarily Picea jezoensis, were mixed with deciduous trees, the commonest being Acer ukurunduense and Betula ermanii. The road ended at the ski lodge, and we had to rely on a cable car to take us to the alpine zone.

The views from the cable car were such that we could hardly contain our anticipation. For the most part the Japan we saw is often beautiful, but seldom spectacular. However, the view after we left the car and walked over a small rise was breathtaking. The peaks themselves set the backdrop, with the steam from the fumaroles near their base rising eerily to blend with the fog above. The half-mile in between was a gently rolling plateau covered with alpine vegetation. The edges, basically the treeline, were rimmed with Pinus pumila, Acer ukurunduense and Sorbus matsumurana, the last two with their autumn foliage brilliant orange and scarlet.

Although Gentiana triflora var. japonica, a bottle-type gentian with flowering shoots nearly 2 feet tall, added a touch of color, very few plants in the alpine vegetation were in bloom at this season. The vegetation is dominated by shrublets of a wide variety of species, mostly members of the Heath Family. The most conspicuous plant, however, was a species of the Rose Family, Sieversia pentapetala, a woody segregate of Geum, whose fuzzy fruit aggregates stood out above the green.

The alpine zone of Mt. Daisetzu is carefully patrolled by uniformed rangers, and we were warned by our hosts that we must not collect any plant material. Thoroughly frustrated, we were poking about on our hands and knees when one of the rangers came to investigate. As it turned out, he had a great appreciation for the plants he was protecting. Apparently overjoyed to find kindred spirits, he went about gathering seeds for us. After about an hour we decided to climb up for a closer look at the fumaroles, and when we returned,
our ranger friend had several more packets of seeds, neatly labeled in Japanese, waiting for us.

Some of the plants we collected were as follows: Several species of Vaccinium, including V. vitis-idaea, the Mountain Cranberry, an old friend from the alpine areas of New England, and V. praestans, a prostrate species with large, red fruits; Gaultheria miquelianana, a relative of our Checkerberry but with large white fruits; Loiseluria procumbens, the Alpine Azalea of the New Hampshire mountains, but here growing more upright; Phyllococe nipponica, still with a few pink flowers; Rhododendron aureum, a dwarf, yellow-flowered species that I can hardly wait to see in bloom; Harrimenella stelleriana (a segregate of Cassiope) and Arcterica nana, two dwarf species of the Heath Family; and a lovely alpine blackberry (Rubus) which we could not identify.

As we worked our way down the mountain we were appalled to find that Sasa kurilensis, the scourge of Hokkaido, was spreading even into the lower areas of the alpine zone. The subalpine forest was lovely, very open with many herbaceous plants of great interest, although few were in bloom. The most conspicuous was Lysichiton camtschaticense, a member of the Arum Family whose western Ameri-
can counterpart is called the Western Skunk Cabbage. The large leaves resemble those of our native Skunk Cabbage of a related genus. The ripe fruit aggregates were all that remained of the inflorescence, with its large white, calla-like spathe.

In our searches on Mt. Daisetzu we failed to find one of our objectives, *Bryanthus gmelinii*, a rare, endemic Japanese shrublet of the Heath Family. But Mr. Sato knew of a nursery near the base of the mountain that specialized in local alpines. We paid the establishment a visit on our way back to Asahikawa, and among many other interesting plants we found a *Bryanthus*.

The next day, after a few hours of collecting, we boarded the train for a seven-hour trip to Hakodate, Hokkaido's main port and one of the first Japanese cities opened to foreign commerce in the late 1850's. That night Katsu and I took a cable car to the top of Mt. Hakodate, overlooking the city, for a magnificent view. Our collecting the next day, in the coastal scrub near the city, was interesting but we encountered few new plants.

On September 13, we boarded the ferry for Aomori on Honshu, the Japanese "mainland." The boat was spacious and comfortable, a good thing since the trip took about four hours. Dr. Kankichi Sohma and one of his graduate students, Mr. Masamichi Takahashi, our hosts for the second portion of our trip, met us when we landed. Katsu had to return to Hiroshima, so we made arrangements for meeting him again in Nagoya before bidding farewell.

Dr. Sohma, a palynologist at Tohoku University in Sendai, was driving a university jeep into which we loaded all our gear before heading south for Mt. Hakkoda. Our destination was Tohoku University's biological laboratory on the slopes of the mountain. The laboratory itself turned out to be a delightful place. The main building was rustic inside and out, with a large western-style dormitory room, a small kitchen, and a traditional style room which we used as a combination working-dining room. Surrounding the building was a small but fine botanic garden, with plants native to the region interspersed amongst the natural vegetation. Most of the plants were labeled with their Japanese and Latin names.

Dr. Sohma suggested that we take a bath in the hot springs nearby before supper. As he said that it was one of the few traditional baths remaining in this part of Japan, we were excited and curious. When we got inside the men's dressing room we found a window leading directly to the comparable room for women so we suspected that the baths were coed. Inside the baths themselves, the scene was eerie in the extreme — a huge room paneled with rough-hewn timbers, dimly lit and very steamy, smelling strongly of sulphur, with two very large pools filled with milky-colored water and mostly old Japanese of both sexes. We slipped into the first bath, whose water had been slightly cooled, and tried to relax. The bath was soothing, and we soon decided to try the other pool, whose water had been heated so
that it was possible for me to stay in only for a few minutes at a time. Mr. Takahashi left before we did, and when we got back to the laboratory he was busily cooking supper. Since Steve and I had trouble remembering his name, it was suggested that we call him “Hashi,” which appropriately was the word for the utensils we call chopsticks. Both Hashi and Dr. Sohma spoke English well and were extremely personable men, so we had a very enjoyable, as well as profitable, time with them.

The next morning, September 14, we climbed Mt. Hakkoda. Like Mt. Daisetzu, this is a volcanic massif with several peaks. However, there are no active vents and the hot springs are about the only evidence of volcanic activity. The trail we took led to the highest peak, at 1585 meters above sea level. This was a good day for collecting, since we encountered many new plants. The vegetation at the beginning of the trail was mostly deciduous forest with Sorbus commixta, Acer tschonoskii, Acer ukurunduense, Cornus controversa, and Acanthopanax sciadophylloides; the last, a member of the Aralia Family with large, palmately compound leaves. The shrubs again were mostly members of the Heath Family, including several azaleas, blueberries and species of Menziesia; in addition, Ilex sugerokii var. brevipedunculata, an evergreen holly, and Lindera umbellata var. membranacea, a relative of our spicebush, were abundant. As we climbed, Abies mariesii, a species of fir with dull purple cones, became prevalent. Mt. Hakkoda is the northern limit of its distribution.

This day we also had our first of many encounters with the phenomenon of Japanese high school students on holiday. Particularly in the fall, students from all over Japan, dressed in their black and white uniforms, are taken en masse on field trips. This day they were rather like ants and just as annoying. Besides detracting from the pristine beauty and seeming isolation of Mt. Hakkoda, they wasted much of our time by causing us to step off the narrow trails as they passed in seemingly unending streams.

We persevered, and finally lost the students as we neared the summit. Unfortunately, at the same time the weather deteriorated. The gray skies finally did more than threaten, and in the chill at the top of the mountain sleet fell as we tried to view the old crater through the mist.

The woody alpine vegetation was similar in composition to that on Mt. Daisetzu, except that here Phyllocladus aleutica, with creamy flowers, replaced P. nipponica. The herbaceous flora was quite new to us, however. On our descent we came across a large area where the snow had melted relatively recently, and many plants were in bloom. One of the most wonderful was Shortia soldanelloides, its pink, frilled flowers reminiscent of those of its famous American counterpart. This rare and notoriously difficult plant in American gardens was almost a weed all over the alpine zone on Mt. Hakkoda, even growing in the middle of the trail. Quite common also was a
Phyllodoce aleutica, a dwarf shrub of the Heath Family in the alpine zone on Mt. Hakkoda in northern Honshu. The urn-shaped, creamy-colored flowers are about 3/8-inch long.

brilliant blue alpine gentian, Gentiana nipponica, and a relative of the gentians, Fauria crista-galli, with its clusters of white star-shaped flowers and kidney-shaped basal leaves. Metanarthecium luteo-viride, an endemic Japanese member of the Lily Family, and a diminutive primrose, Primula nipponica, were in abundant fruit and I could not resist collecting them.

In the subalpine zone we came upon vast areas of a very unusual type of vegetation — a peat bog almost completely covered with a mat of grasses and sedges but interspersed here and there with orchids and several members of the Lily Family. Traversing the area was easy because of a very extensive and beautifully constructed boardwalk. Occasionally we came upon clumps of shrubs, mostly Pinus pumila and a natural hybrid, P. × hakkodensis (P. pumila × P. parviflora). Our most exciting find was a dwarf witch hazel, Hamamelis japonica. Hopefully, the seeds we collected from it will produce equally dwarf plants.

Heading south the next day, our ultimate destination being Sendai, we paused to make a collection of Tsuga diversifolia, one of the two Japanese hemlocks, which we found growing at the northern limit of its range. At Tsuta Hot Springs on the lower slopes of Mt. Hak-

Drs. Stephen Spongberg and Kankichi Sohma in the beautiful forests typical of the Lake Towada area on northern Honshu. The commonest trees in the forest were Magnolia hypoleuca, Fagus crenata, and Aesculus turbinata.
koda, we stopped longer to admire the truly magnificent forests where the dominant trees were *Fagus crenata*, (a species of beech), *Magnolia hypoleuca*, and *Aesculus turbinata*, the Japanese species of horse chestnut. All of these species have a smooth silvery-gray bark, and the last two have huge leaves. The undergrowth was sparse and open, everything combining to make a forest of uniquely beautiful character from the floor to the canopy. It was perfectly quiet and beautifully sunny, devoid of tourists or schoolchildren — all in all a wonderful experience for one who loves forests.

Still further south we collected along the shores of Lake Towada, a deep and very blue lake occupying the caldera of a long-gone volcano, much like Crater Lake, Oregon, in our own country. The forests here were similar but not quite so beautiful as those described above.

After spending the night in the city of Morioka, we collected part of the next day (September 16) on Mt. Hayachine, a non-volcanic mountain with serpentine rocks and several unusual plants. On our way to Sendai we stopped to inspect a traditional thatch-roofed farmhouse, a rare sight in Japan these days.

For the next several days our base was Sendai. We went to several interesting localities with Dr. Sohma and/or Hashi, but space will allow the discussion of only one, the northeastern part of Nikko National Park. This day, September 17, did not yield a large number
of collections, but the ones we did make were among the most interesting of the entire trip. The forests of the central part of Honshu are very rich, many of the more southern elements reaching their northern limit here. Within a few miles of Kashi Hot Springs, we found nine species of maples, unfortunately with very few in fruit. Here we saw our finest wild specimens of *Stewartia pseudocamellia*, but again without fruit. We did manage to make good collections of *Euptelea polyandra*, an unusual tree of uncertain classification, and one rare in cultivation but here growing almost as a weed. Our main objective this day was *Trochodendron aralioides*, a primitive, evergreen tree with its northernmost high elevation station in this area. To reach it we had to climb nearly to the top of Mt. Kashi on an easy trail through beautiful forest. On the way were a number of plants of *Magnolia salicifolia*, of great interest to Steve because these were shrubby, while most plants of this species cultivated in the United States are treelike. Reaching the ridge, we could not help but notice the similarity in the aspect of the vegetation to that of like situations in the Appalachians. Only pines were absent. We found the *Trochodendron* as the sun began to get quite low and we searched desperately for fruits. Finding none, in desperation we dug up a few rooted layers. As we were about to head down we found a few plants of another broad-leaved evergreen that none of us could identify. A few layers of this "mystery plant" were taken also, and we will have to wait until it flowers to find out what it is.

The morning of September 22 was our last in Sendai. Our farewell to Hashi and Dr. Sohma was a sad one since we had become good friends. I still look back in amazement at the time and effort these two men put into helping two complete strangers.

Most of the two days in Tokyo were spent packing things to be sent home as we would be taking the train to Sukuoka, on the island of Kyushu, before catching a flight for Seoul. Our party had now grown to three with the arrival of Steve's wife on September 24. The Japanese trains were as efficient and comfortable as universally reported, especially the Shinkan-sen or Bullet Train, with a maximum speed of 120 miles per hour. On September 26 we arrived in Nagoya where Katsu and his father were waiting for us. We visited the Nagoya Botanical Garden briefly and were able to collect a few plants in a patch of natural woodland there. The next day we visited the elder Kondo's garden — a remarkable place. Mr. Kondo is interested in carnivorous plants and he has amassed a very good collection which he grows in a natural boggy area about an hour's drive from Nagoya. We were amazed to find Venus Flytraps growing happily and reseeding themselves, as well as many species and hybrids of our native pitcher plants.

On the evening of September 27 we arrived in Kyoto, spending the next day sightseeing in this wonderful city. Always on the go, we took the train to Hiroshima on September 29 and spent an en-
joyable afternoon at the Botanic Garden there. At that time the garden was less than a year old and it was hard to believe the progress in such a short time. It features the largest conservatory in all of Japan, and it is well planted with remarkably well established plants; even orchids have started reseeding themselves. The research program spearheaded by the Director, Mr. Karasawa, an authority on terrestrial orchids, is well established; so is the educational program which, we can proudly say, was developed with help and advice from the Arnold Arboretum.

On September 30 we met Katsu’s young family before saying goodbye and leaving for Fukuoka. It was a sad moment. Besides providing more assistance than we can ever adequately thank him for, Katsuhiko Kondo has become a good friend.

**Itinerary in Japan with plants collected at each site**

2 September — Arrived in Tokyo.

3 September — Sightseeing and shopping in Tokyo. Met Katsuhiko Kondo.

4 September — Took bus tour to Nikko and Nikko National Park.

* Acer japonicum

* Weigela hortensis

5 September — Flew from Tokyo to Sapporo. Visited botanical garden of Hokkaido University in Sapporo, and Government Forest Experimental Station, Hokkaido Branch, near Sapporo.

* Acer mono

* Acer palmatum

* Actinidia arguta

* Aralia cordata

* Magnolia hypoleuca

* Magnolia kobus

* Quercus mongolica

* Vitis coignetiae

6 September — Visited Nopporo Natural Forest near Sapporo.

* Abies sachalinensis

* Acer japonicum

* Alnus hirsuta

* Alnus japonica

* Alnus maximowiczii

* Betula grossa

* Carpinus cordata

* Cephalotaxus harringtonia var. nana

* Daphniphyllum macropodum var. humile

* Euonymus oxyphyllus

* Paeonia japonica

— Visited Hokkaido Centennial Museum. Took cable car up Mt. Moiwa, near Sapporo.  

* Betula ermanii

* Rhus sp.

* Cultivated material.

8 September — Climbed Mt. Apoi.

*Acer japonicum* — Quercus mongolica

*Alnus maximowiczii* — *Rhododendron brachycarpum*

*Betula apuensis* — *Rhododendron dauricum*

*Clintonia udensis* — *Rosa acicularis*

*Ilex rugosa* — *Rubus crataegifolius*

*Juniperus communis var. nipponica* — *Sorbaria sp.*

*Juniperus chinensis var. sargentii* — *Sorbus commixta*

*Ledum palustre var. diversipilosum* — *Sorbus sambucifolia var. pseudogracilis*

*Lespedeza bicolor* — *Spiraea miyabei*

*Leucothoe grayana var. oblongifolia* — *Vaccinium oldhamii*

*Menziesia sp.* — *Vaccinium vitis-idaea*

*Pinus parviflora* — *Viburnum furcatum*

*Pinus pumila* — *Viburnum sp.*

*Potentilla fruticosa* — *Zanthoxylum piperitum*

*Prunus nipponica* — * — Visited Experimental Garden for the Department of Forestry of Hidaka District in Urakawa.

*^Acer ukurunduense* — *^Ilex macropoda*

*^Euonymus macropertus* — *^Rhododendron albrechtii*

*^Euonymus sp.*

9 September — Collected around Urokorethu, Urakawa Mountain.

*Actinidia polygama* — *Rubus sp.*

*Juglans ailanthifolia* — *Staphylea bumalda*

*Metaplexis japonica* — *Stephanandra sp.*

*Picrasma quassioides* — *Tilia sp.*

*Prunus sp.* — * — Traveled by automobile to Asahikawa; enroute stopped at Tokyo University Forest in Hokkaido near Yamabe.

*^Abies sachalinensis* — *^Euonymus planipes*

*^Acanthopanax divaricatus* — *^Euonymus sieboldianus*

*^Acanthopanax senticosus* — *^Juglans ailanthifolia*

*^Aesculus turbinata* — *^Ribes latifolium*

*^Alangium platanifolium var. trilobum* — *^Spiraea cantoniensis*

*^Alnus hirsuta* — *^Spiraea sp.*

*^Betula platyphylla* — *^Styrax obassia*

*^Carpinus cordata* — *^Symphococchis chinensis*

*Cephalotaxus harringtonia var. nana* — *^Vaccinium uliginosum*

10 September — Collected on Asahi-dake, Mt. Daisetzu, Daisetzu-san National Park.

*Acer ukurunduense* — *Potentilla miyabei*

*Arcteria nana* — *Rhododendron aureum*

*Betula ermanii* — *Rubus sp.*

*Empetrum nigrum var. japonicum* — *Sambucus sieboldiana*

*Euonymus sieboldianus* — *Sieversia pentapetala*

*Gaultheria miquelian* — *Sorbus matsumurana*

*Harrimanella stelleriana* — *Spiraea betulifolia*

*Ledum palustre var. diversipilosum* — *Streptopus sp.*

*Loiseluria procumbens* — *Vaccinium hirtum*

*Phylloclode niponica* — *Vaccinium praestans*

*Picea jezoensis* — *Vaccinium uliginosum*

*Pinus pumila* — *Vaccinium vitis-idaea*

11 September — Collected in Northern Plant Garden, Asahikawa.

*Alangium platanifolium var. trilobum* — *Caulophyllum robustum*

*Bryanthus gmelini* — *Cephalotaxus harringtonia var. nana*

* Cultivated material.
12 September — Visited Forest Experiment Station at Ohno, near Hakodate. Collected in coastal scrub in Akukawa-cho, near Hakodate.

Crataegus jozana (?) Smilax sp.
Ilex macropoda Staphylea bumaalda
Pinus thunbergii Vaccinium oldhamii
Quercus dentata × mongolica Viburnum sp.
Quercus mongolica Weigela hortensis

— Collected along roadside in Mitsumori-cho, near Hakodate.

Amelopsis brevipedunculata var. heterophylla Maackia amurensis var. buergeri
Amelopsis sp. Prunus grayana
Corylus sieboldiana Viburnum opulus var. calvescens

13 September — Traveled by ferry to Aomori on Honshu; met Dr. Sohma and Mr. Taka-hashi. Traveled by jeep to the Mt. Hakkoda Biological Laboratory of Tohoku University; enroute stopped at entrance to Hachimantai-Towada National Park to collect. (Aomori Pref.)

Akebia trifoliata Sorbus commixta
Betula ermanii Tilia miquelianana

14 September — Climbed Mt. Hakkoda, Aomori Pref.
Abies mariesii Lindera umbellata var. membranacea
Acanthopanax sciadophylloides Loiseluria procumbens
Acer japonicum Menziesia ciliicalyx var. multiflora
Acer tschonoskii Menziesia pentandra
Acer uhurunduense Phyllocladus aleutica
Alnus maximowiczii Prunus grayana
Arcterica nana Quercus mongolica
Cornus controversa Rhododendron brachycarpum
Daphniphyllum macropodum var. humile Rubus vernus
Gaultheria adenophrix Tripetaleia bracteata
Gaultheria miquelianana Vaccinium japonicum
Hamamelis japonica Vaccinium ovalifolium
Ilex sugerokii var. brevipedunculata Weigela hortensis

15 September — Collected in vicinity of Mt. Hakkoda Biological Laboratory. *Daphniphyllum macropodum var. humile *Ilex leucocladia

— Traveled by jeep to Tsuta Hot Springs; enroute stopped to collect on slopes of Mt. Hakkoda.

Tsuga diversifolia
— Collected in forest surrounding Tsuta Hot Springs, Aomori Pref.
Aesculus turbinata Pterocarya rhoifolia
Daphniphyllum macropodum var. humile Vaccinium smallii
Hydrangea macrophylla Viburnum wrightii
Ilex leucocladia

— Drove to Lake Towada and collected in the vicinity. (Aomori Pref.)

Acer japonicum Lindera umbellata var. membranacea
Acer mono var. mayrii Pterocarya rhoifolia
Aucuba japonica var. boreale Stachyurus praecox
Euonymus sp.

* Cultivated material.
— Drove to Morioka to spend the night; enroute did sightseeing around Lake Towada and collected along roadside near Yuze, Akita Pref.

*Ampelopsis brevipedunculata var. brevipedunculata*  
*Berchemia racemosa*  
*Lespedeza bicolor*  
*Quercus serrata*

**16 September** — Drove from Morioka to Mt. Hayachine; climbed into alpine zone. (Iwate Pref.)

*Acer distylum*  
*Acer tschonoskii*  
*Acer ukurundense*  
*Betula corylofolia (?)*  
*Betula ermanii*  
*Clematis apiifolia*  
*Juniperus chinensis var. sargentii*

— Drove from Mt. Hayachine to Sendai.

**17 September** — Drove from Sendai to Nikko National Park; collected along roadside and climbed Mt. Kashi, behind Kashi Hot Springs, Fukushima Pref.

*Acer cissifolium*  
*Euptelea polyandra*  
*Hamamelis japonica*  
*Hydrangea macrophylla*  
*Leucothoe sp.*  
*Magnolia salicifolia*  
*Meliosma tenuis*  
*Skimmia japonica*  
*Trochodendron aralioides*

— Returned to Sendai.

**18 September** — Collected on the grounds of the Medical School of Tohoku University, Sendai, Miyagi Pref.

*Camellia sp.*  
*Distylum racemosum*  
*Trachycarpus fortunei*  
— Visited the Botanical Garden of Tohoku University, Sendai, Miyagi Pref.

*Ardisia japonica*  
*Aucuba japonica*  
*Betula platyphylla*  
*Buckleya lanceolata*  
*Enkianthus campanulatus*  
*Lespedeza homoloba*  
*Lyonia elliptica*  
*Neolitsea sericea*  
*Rhododendron semibarbatum*  
*Spiraea nipponica f. nipponica*  
*Spiraea nipponica f. rotundifolia*  
*Viburnum phlebotrichum*  
*Zanthoxylum ailanthoides*

**19 September** — Drove from Sendai to Mt. Daito, Miyagi Pref.

*Abelia spathulata*  
*Akebia trifoliata*  
*Aucuba japonica var. boreale*  
*Berchemia racemosa*  
*Callirica sp.*  
*Castanea crenata*  
*Clematis maximowicziana*  
*Clematis sp.*  
*Cryptomeria japonica*  
*Deutzia crenata*  
*Helwingia japonica*  
*Lespedeza bicolor*  
*Lespedeza homoloba*  
*Pyrus calleryana var. dimorphophylla (?)*  
*Sapindus japonicum*  
*Sapium calleryana var.*  
*Schisandra repanda*  
*Staphylea bumalda*  
*Symlocos chinensis*  
*Viburnum sp.*  
*Weigela sp.*

— Returned to Sendai.

* Cultivated material.
20 September — Drove to Miyato, near Matsushima, Miyagi Pref.

Ardisia japonica
Boehmeria biloba
Buckleya lanceolata
Callitcarpa mollis
Camellia japonica
Coriolus sieboldiana
Diospyros lotus
Euonymus radicans
Eurya japonica
Helwingia japonica
Juniperus chinensis
Ligustrum ovalifolium
Liriopoe minor
Neolitsea sericea

— Returned to Sendai.

21 September — Drove to Yamagata Prefecture on the Sea of Japan side of Honshu; collected in the mountain behind Yamadera.

Betula schmidtii
Clethra barbinervis
Deutzia sp.

— Drove to Yamadera; visited the temple there and collected in the vicinity.

Acer cissifolium
Betula platyphylla

— Returned to Sendai.

22 September — Took train from Sendai to Tokyo.

23 September — Spent the day in Tokyo; met with Professor Hara.

24 September — Spent the day in Tokyo; "Happy" Spongberg arrived.

25 September — Took bus tour to Kamakura to see the giant Buddha, and then continued on to Hakone; visited Art Museum and adjacent garden.

— Returned to Tokyo.

26 September — Traveled by train to Nagoya; visited the Nagoya Botanical Garden.

Ilex serrata
Quercus sp.

— Visited Chrysanthemum show at Nagoya Castle.

27 September — Drove from Nagoya to Toyota; visited the carnivorous plant garden of Mr. Kondo.

Ilex serrata
Quercus sp.

— Returned to Nagoya. Traveled by train from Nagoya to Kyoto.

28 September — Sightseeing in Kyoto.

29 September — Traveled by train from Kyoto to Hiroshima. Visited the Hiroshima Botanical Garden.

Alnus pendula

30 September — Sightseeing on Miyajima Island. Traveled by train from Hiroshima to Fukuoka.

1 October — Flew from Fukuoka to Seoul.

* Cultivated material.