ROCK GARDEN

QUARTERLY

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COVER: *Oenothera caespitosa* at dusk,
by Dick Van Reyper

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ROCK GARDEN QUARTERLY

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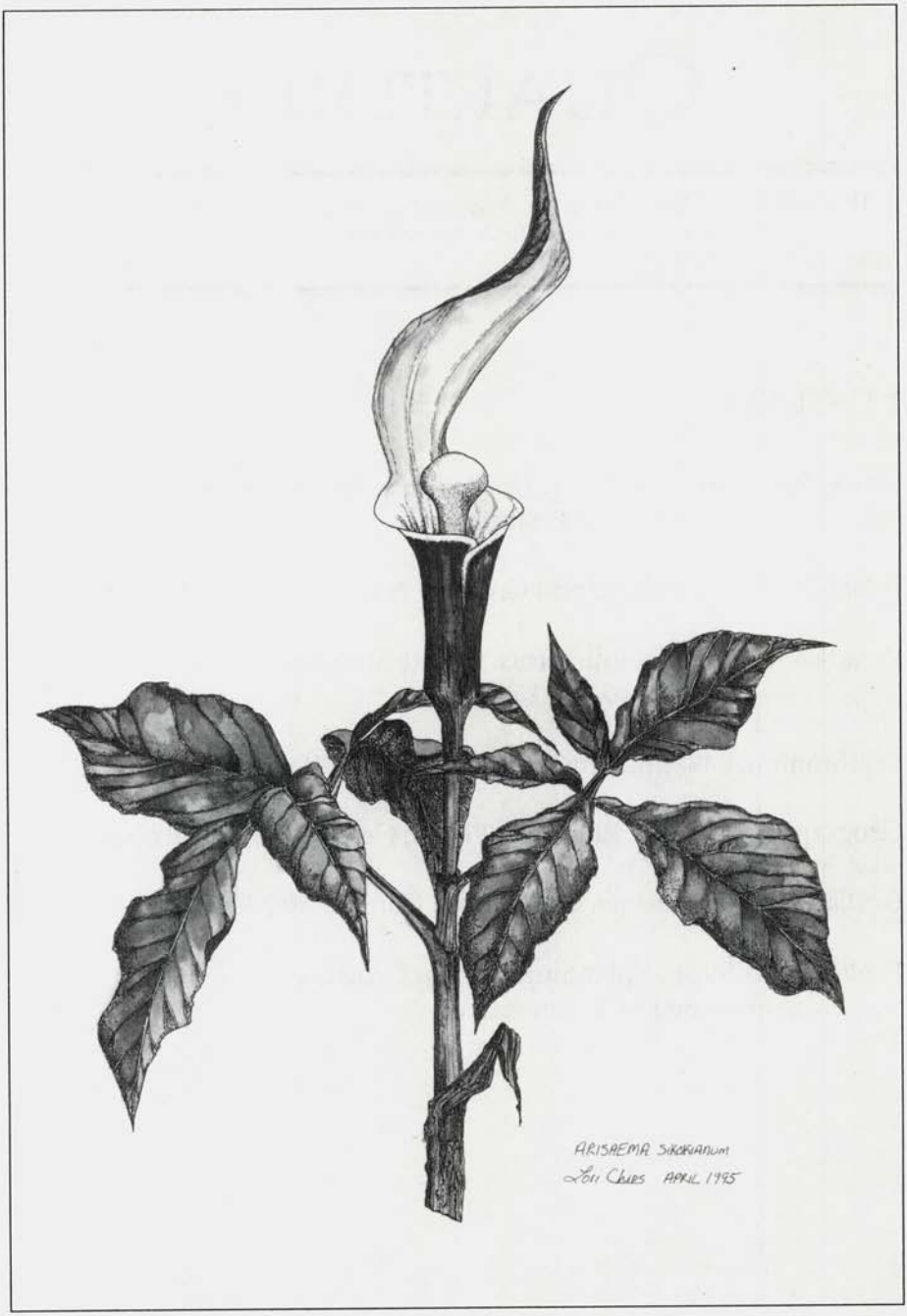
FEATURES


ARISAEMA SIKOKIANUM
LOIS CLUBS APRIL 1985

LIVING SOUVENIRS:

AN URBAN EXPEDITION TO JAPAN

by Carole P. Smith

What is the best way to satisfy all your gardening yens in a foreign country—if you want to explore the finest public gardens, receive invitations to private gardens, shop the best nurseries for specimen purchases? How do you plan efficiently for costly travel when language limitations and social conventions (such as introductions by a third party) are barriers? Of course, contact people in the know!

When my sister and I decided to visit my son in Japan in May, 1996, we did just that. Two months before I left, I checked the directories of NARGS and APS for members in Kyoto and near my son's home in Tokorozawa, northwest of Tokyo. Many members were listed, but I quickly figured out the Japanese 3-number zipcode system (low numbers in the north to 900s in the southernmost area of the country). In a letter giving my professional background I explained that I had a permit to bring plants back to the USA and would appreciate recommendations regarding nurseries open during Golden Week in May, one of the most widely observed vacation periods of the year. I also asked if anyone knew a private garden that my sister, son, and I might visit. Forty-five letters were sent, and I expected to receive five or six replies. To my amazement, twenty-five letters and faxes quickly arrived, along with maps and directions to nurseries. Several people offered to accompany us to nurseries or invited us to visit their gardens or the gardens of friends. This generosity and willingness to help, I soon learned, is typical of the Japanese.

In addition, Mr. Shinpei Miyazaki of Tokyo sent a nursery catalog and a gift box of *Kirengeshoma palmata*, a blooming *Primula japonica, Primula kisoana* var. *shikokiana, Hosta kikuchi, Arisaema kiushianum*, and *Pinellia* sp. (*nana*). He had wrapped the bare-root plants in sphagnum, placed each in a plastic bag, and listed all of them on the outside of the box. The plants were sent through US Postal Customs with no problem. They arrived in good condition and were potted up immediately. Knowing about this procedure was to be very valuable to me later in Japan.

After determining our itinerary, I made arrangements to meet with four of my correspondents (including one American) whose invitations seemed

Shortia soldanelloides var. *intercedens* in wild

to work best within our schedule. I thanked each of the others, apologizing for not accepting their invitations.

The day after we arrived in Kyoto, our first host, Mr. Don Elick, met us at our hotel and led us via train to Osaka, onto a second train, and finally by cab to a nursery in the mountains between Osaka and Kyoto. The entire trip crossed a distance of about 10 miles as the crow flies and lasted over two hours. The proprietor of Hezikan-en Nursery, Mr. Yamaoka, retails most of his plants, including some *Hepatica* priced up to $400 per plant, at large department stores in Osaka. These garden centers, located on the rooftops, make both common and unusual plants readily accessible to people in the cities.

When I began looking around at the hundreds of plants at Hezikan-en Nursery, high in the mountains, I felt as if I were in plant heaven! With Don's help interpreting hardiness for Ohio's USDA Zone 5, I chose 15 plants, some familiar and hardy and a few on whose survival I was willing to gamble. They ranged in price from 400 to 2000 yen each (about $4 to $20). My first choice was *Glaucidium palmatum*, endemic to Japan and risky to move while in bloom; its delicate, lavender-pink flowers were too attractive to pass up. Others included *Campanula punctata*, *Hemerocallis dumortieri* var. *esculenta*, which had a good chance of survival, a purple-leaf variety of *Pinellia cordata*, and several species of *Lychnis*, which bear larger blossoms than the more common *Lychnis chalcedonica*. I couldn't resist *Mertensia maritima* var. *asiatica*, the glaucous-blue foliage reminding me of a small, ghostly Virginia bluebell (*Mertensia virginiana*). For a woodland area I chose *Disporum flavens*, *Arisaema maizuro*, and two hostas, called *giboshi* in Japanese. One, a striped *Hosta ventricosa*, was named 'Ami-me' for the old-fashioned striped paper umbrellas. The other hosta was a very tiny green one called 'Uzonomai'. *Iris ensata* var. *spontanea* would be a different variety of the large garden *Iris ensata*. The marbled leaves of *Asarum maximum* 'Panda' were so attractive that it was worth having to protect it from cold every winter. Each small pot was carefully packed and carried back on the train.

We discovered that Don Elick is the author of *Japonica Magnifica*, published by Timber Press and illustrated by British botanical painter, Raymond Booth. Don has studied the Japanese flora for the many years he has lived in Japan. A recent book review stated, "Rarely do art and science harmonize as magnificently as in this superbly

illustrated look at...the favored growing conditions and botanical habit, [and even] legends for 60 of Japan's most beautiful native plants...now ornamental favorites of North American gardens."

Don was spending Golden Week at his country home in Fukuroi, half-way between Hezikan-en Nursery and Tokyo and graciously invited us to visit. We accepted, and very early in the morning a few days later we boarded the Shinkansen or Bullet Train for the 90-minute ride to Fukuroi. A number of Japanese friends began congregating in his English-style garden, taking photographs and checking to see what was blooming. One guest had brought a gift of *sakurasoh*, the cultivated show variety of the native Japanese primrose, *Primula sieboldii*, lovely and delicate, which she had hybridized and grown from seed. It joined two more pots of *sakurasoh* with differing flower shapes and a branch of a yellow rose from Mongolia, called the Mokko rose, in Don's dining room (photo, p. 10). In a small enclosed courtyard Don showed us a pot of *Asarum minamitanianum*, the "tentacles" of each bloom even longer than its name.

Outside, a yellow-flowered shrub, *Edgeworthia papyrifera*, was certainly attractive, but what caught everyone's eye was a brighter yellow mound of *Chilidonium japonicum* var. *laciniata*. Also appealing was the soft pink *Silene maritima* var. *arctica* in front of a tall, variegated *Arisaema yamatense* var. *sugimotoii* and a *Paeonia tenuifolia* (photo, p. 10) with extremely finely divided leaves, which had originally been in the gardens of King Boris of Bulgaria. Don told us that a similar species, *P. anomala*, from Szechwan, China, is often sold as *P. tenuifolia* but has coarser leaves. Against the garden wall was *Anemone nemerosa* 'Vestal' and a bright pink *Rhodohypoxis*, one of Don's hybrids. Farther along was the almost black *Fritillaria gracilis*. Crimson *Papaver* volunteers dotted the cracks between patio stones.

Soon the party piled into two vans and drove an hour or so into the mountains above the Ishi Kiri River. We hiked up the mountainside along an abandoned road, with Don pointing out tiny, white *Viola verecunda* var. *semilunaris*, blue *Viola grypoceras*, wild horseradish, and wild strawberries that would eventually bear orange fruit. *Tricyrtis hirta*, *Hydrangea petiolaris*, *Rhododendron keiskei*, and a fragrant wild camellia with star-shaped flowers were seen as well. A

Deutzia in nature

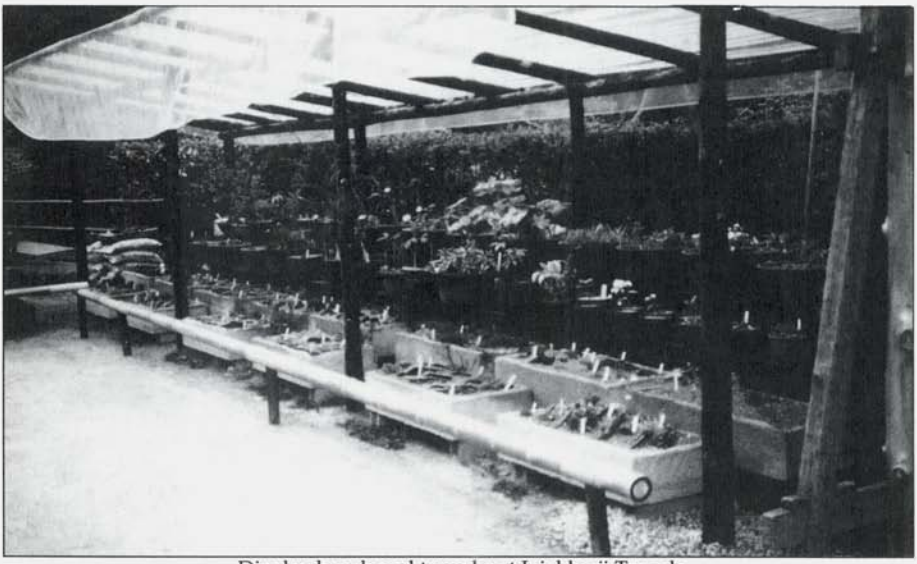
garden favorite, *Hosta plantaginea* var. *grandiflora* seemed out of place growing wild by the side of the road, as did a pretty white *Deutzia* high up on the rocks with yellow sedum nearby. I even recognized a bugle species, *Ajuga decumbens*. *Arisaema yamatense* var. *sugimotoii* was in bloom, but it was not the variegated form we had seen in Don's garden. *Adenophora takedae*, *Saxifraga cortusifolia*, and *Shortia soldanelloides* var. *intercedens* hung from the moist rock wall, the latter's crenulated white bells and shiny foliage contrasting sharply with the dark background.

At one point, two of the men got very excited and pointed to a pile of dry leaves. After a moment I could distinguish a small snake, which Don identified as a highly poisonous adder that had come out into the spring sunshine to warm itself. He said that if we were bitten, we had six hours to get help, or the attack could prove fatal—so I was careful to stay away from the edge of the path. After a picnic lunch next to a small waterfall we headed back. Having the opportunity to visit this natural area was unexpected and much appreciated. Don informed us that we were probably the only Americans except himself ever to have walked that particular mountain path.

Our second invitation came from Mr. Kenyu Nagao, who offered to take us to Shunso-en Nursery on the western outskirts of Kyoto and then to a temple, Jojakko-ji, where he serves as one of the priests. Shunso-en had been recommended in ten letters and Mr. Miyazaki had even sent a catalog, so we were anxious to see such a highly regarded nursery.

Shunso-en was not large in physical area, but what a horticultural treat! I had a very difficult time keeping my choices to a reasonable number. Mr. Nagao informed me that there were several plants from China not available elsewhere. I was tempted—but only for a few seconds—to choose some beautiful *Cypripedium* in bloom. I knew they were unlikely to survive the bare-root procedure, even if US Customs would allow them through, and they were not on the endangered list. Unsure of its hardiness, I passed up a second *Asarum maximum* with its black-edged, white spathe. One of my first choices was a hosta, 'Otome' or 'Maiden', possibly *Hosta venusta*, a small plant with long, narrow, pale cream leaves barely edged in green. I was attracted by the gray-green, lacy foliage of *Dicentra peregrina* (one of the plants that did not survive the return trip) and the variegated leaves of *Disporum smilacinum* 'Diasetsurei', almost white with thin green margins. Other choices were miniature white single and double blue *Iris gracilipes*, a miniscule *Primula modesta* var. *fauriei*, an anemone species, and *Adenophora remotiflora*, recommended for late summer bloom.

After Mr. Nagao translated all of the Japanese names into their botanical equivalents, we drove to Jojakko-ji where we were served some refreshment while we viewed the courtyard garden. We followed tradition and presented him with a few small gifts. Then we strolled through the temple gardens located at the edge of a bamboo forest, enjoying azaleas and camellias in bloom. As we came through an opening in the hedge, we were offered a simple invitation to see the greenhouses. Divided into warm, intermediate, and cool areas, they were filled with orchids in all stages of growth and bloom. One 40-year-old *Dendrobium* was covered with hundreds of blossoms and stretched four feet wide. The most intriguing to me was a table filled with spotted *Phragmipetala* from Borneo that had numerous, large blossoms on each stem, some of which Mr. Nagao



Display bench and troughs at Jojakko-ji Temple

had cross-pollinated. And this was not the end!

Outside the greenhouses was a rock garden, and next to it was a staging area for specimen plants, including peonies and *Arisaema sikokianum*, some in traditional dark clay pots. In front of the shelves were fourteen large trough gardens constructed by Mr. Nagao to hold alpine and other small plants. Nearby was a group of *Arisaema* seedlings with dark, medium, and light foliage forms. Our visit ended as Mr. Nagao departed to participate in a temple prayer service for the holiday weekend.

During the following week, our sightseeing in Kyoto included Ryoan-ji Temple with its famous Zen garden of fifteen rocks and a background of pink cherry trees in bloom (photo, p. 9); Kinkaku-ji, with its Golden Pavilion reflected in the lake; Shugakuin Rikyu, the large, royal vacation estate on three levels around a lake (photos, pp. 9, 12); Katsura Rikyu, another royal estate with numerous tea houses and paths of large stepping stones deliberately placed to slow a visitor's pace, so that he might better appreciate the tea garden (photo, p. 10). A final stop in Kyoto was Saiho-ji Temple and Moss Garden, which my sister described as so green that "even the air seemed mossy." The velvety moss carpet, carefully swept clear of leaves, contrasted with huge rocks higher up the path, just as carefully placed to represent a dry waterfall. Visitors to Saiho-ji must participate in a Buddhist prayer ceremony and copy Kanji script with brush and ink from top to bottom and right to left, a task that was much easier for my son and sister, who are both left-handed.

Our last four days were spent at my son's apartment outside of Tokyo. From there I visited my other two hosts. Having learned to negotiate buses, subways, and trains, I traveled alone to Yokohama and was met by Mr.Yoshito Iwasa, senior managing director of Sakata Seed Company. His home is completely surrounded by his garden, and the front entry is filled with potted plants and a small rock garden with dwarf hosta from Korea, *Hedera helix*, ferns, and an umbrella-

Plants for sale at Seibu Department Store, garden center department

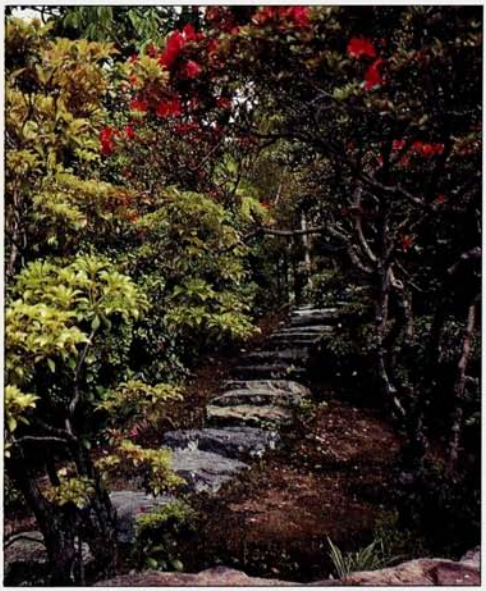
leafed *Aceriphyllum rossii.* An attractive new dwarf *Scabiosa* from Sakata, 'Heige Blue', was featured in front. A large pot of *Allium jesdianum* echoed the rounded shape and complementary color. Although I had expected many unfamiliar varieties in the garden, I was pleasantly surprised to recognize most. Mr. Iwasa gave me a list of over 350 trees, shrubs, and other plants in his garden, with both botanical and Japanese names. In a space equivalent to a small city lot in the United States a *Metasequoia glyptostroboides* towered over *Nandina domestica, Stewartia pseudocamellia, Davidia involucrata, Acer, Aesculus,* magnolias, hydrangeas, camellias, and other shrubs. In the patterns of sun and shade below grew everything from *Arisaema thunbergii, Bletilla ochracea,* and *Clematis florida* 'Sieboldii' to *Zanthoxylum piperitum, Zingiber mioga,* and *Zephyranthus candida.* Shelves were filled with *Primula sieboldii,* hosta, and variegated iris. *Rodgersia podophylla, Kirengeshoma palmata, Arum italicum,* various species of *Arisaema,* and a large, variegated hosta dominated the shaded area.

Inside the house, I presented gifts and Mrs. Iwasa graciously served tea and a melon developed by Sakata Seed Company. I was invited to taste a special treat made to celebrate Boys' Day (May 5th). It was similar to a pudding and made from kudzu (*Peuraria lobata*), sweetened, wrapped in bamboo leaves, and steamed until firm. Mr. Iwasa presented me with *Wild Flowers of Japan: A Field Guide,* by Ran Levy (Kodansha International, NY and Tokyo). Because this book cross-references Japanese, botanical, and common English names, it has been useful in identifying some of the plants I bought that had only Japanese labels. It was interesting to learn that many European and North American natives have naturalized in Japan, just as we have many alien "wildflowers" in the United States. Mr. Iwasa also showed me his extensive library of gardening and botanical books, many of which are written in English.

Afterwards we were driven to the

Ryoan-ji Temple grounds with cherry trees in bloom (p. 7)

Shugakuin Rikyu with *Acer japonicum* (p. 7) photos, Carole P. Smith



Katsura- Rikyu (p. 7)

Mr. Aoki's garden (p. 14)
photos, Carole P. Smith

Arisaema yamatense var. *sugimotii, Paeonia tenuifolia*. Don Elick's garden, Fukuroi (p. 5)

Primula sieboldii with ancient Mokko rose from Mongolia (p. 5)

Mr. Nagao and display benches (p. 6)

photos, Carole P. Smith

Don Elick garden, Fukuroi, Japan (p. 5)

Shugakuin Rikyu (p. 7) photos, Carole P. Smith

Nihonkaki Nursery, rock garden display (p. 14)

Sakata Garden Center in Yokohama. For gardeners, Golden Week holidays in Japan are comparable to Memorial Day weekend here. The weather had become very mild, and the outdoor area was crowded with shoppers choosing hardy plants. We went inside the large florist shop adjacent to the garden sales area. One room was filled with cut orchids, and other exotic flowers. The fragrance of lilies drifted through the air. Racks of Sakata Seed packages were enticing, and it was difficult to choose only a few. Back outside I selected my plants, which included *Lysichiton camtschatcense*, bearing no taint of skunk, whose white flowers are greatly appreciated by the Japanese and are viewed by enthusiasts each spring in certain areas of Honshu. Because they were so attractive, I bought two additional *Iris gracilipes* and another *Glaucidium palmatum*, hoping at least one of each would survive the trip home. My shopping was completed with *Paris verticillata*, the green-and-yellow-variegated *Hosta* 'Nakabu', and a small plant with gray leaves and white bells, labeled only in Japanese, which I later identified as *Mertensia pterocarpa* var. *yezoensis*. Mr. Iwasa warned me that some of the plants would be difficult to transfer bare-root, but I was willing to take the chance. Carrying my purchases, I took the train, subway, and local train back to the apartment in Tokorozawa.

While still planning my trip, I had gone to a conference in Massachusetts where Dan Hinkley of Heronswood Nursery in Washington mentioned getting plants from Japan. After his talk, when I asked where I could buy plants in Japan, he told me that the best places for unusual plants were the roofs of department stores in the big cities. Since this had been confirmed by Don Elick, I decided to stop at the Seibu Depaato in the Ikebukuro train station. The top level, which was actually the street level above the train station, had a plant and garden department. As Dan Hinkley had described, there was a locked cage with plants each costing several hundred dollars. I passed them by, but I took a picture just to prove it. Dan had remarked that while one could lose a diamond tiara on the street in Tokyo and probably have it returned, choice plants were so coveted that they needed to be under lock and key.

I chose a *Primula sieboldii* with magenta flowers that looked like snowflakes; *Aquilegia flabellata* var. *nana*; a second dwarf blue *Aquilegia* with variegated leaves; a tiny, white-flowered primula, probably *Primula denticulata; Viola sieboldiana*, and yet another reliable hosta with streaked leaves. I had by then decided that hostas would survive importation, even if other plants did not. I also chose a *Thalictrum* with deep red leaves, and, as I was debating about the price of 2000 yen, a wise-looking woman came up to me and shook her head. "Muzukashii!" she said. My scant Japanese vocabulary did include the word, which meant "Difficult!" I should have heeded her warning, because that expensive plant was the only one confiscated by the customs inspector when I got back stateside. But more about that later. With sign language and a few words I did understand, she explained to me all the plants I had chosen should be transferred to traditional Japanese clay pots as quickly as possible. I managed to tell her I was going to take them to America; she admonished me to get them into *American* clay pots as soon as I got home.

On my last day in Japan, I had arranged to visit Mr. Gishu Aoki of Urawa City. He is employed by the Board of Education, and among other

duties he is in charge of the Tajigamahara Wild Primrose Preserve, where the remaining wild *Primula sieboldii* still grow and bloom (photo, p. 21). It was pouring rain when he met me at the train station, and we went immediately to Nihonkaki Nursery (p. 12). Mr. Aoki told me this was the largest retail garden center in Tokyo, larger than any I had seen in the United States. I was introduced to the owner, an elderly gentleman, who allowed me to choose one of his seedlings from *Hosta* 'Tsugaru Komachi.' In addition, I bought two other hostas, a tiny, unlabeled one with green center and yellow edge, and *Hosta* 'Shirubaa Sutoriiki' or 'Silver Streak'; two *Saxifraga portonei*; and an epimedium with a leaf almost as large as my hand. It was difficult to leave Nihonkaki, because we had not seen everything, but time was passing. Mr. Aoki then took me to a series of display gardens that demonstrated various landscaping choices available for home gardens, each one with the cost displayed. They ranged from several hundred to several thousands of American dollars. Of course my favorite was the most expensive.

After lunch Mr Aoki presented me with two *Primula sieboldii* and two hostas from his garden, which also included *Acer japonicum, Paeonia suffruticosa*, camellias, iris, and bonsai (photo, p. 10). Then we walked around the corner to visit the gardens of some neighbors. It was amazing to see how many interesting plants and small trees could be squeezed into the very small area next to the house of Mr. and Mrs. Kamio. Another friend, Mrs. Kazama, asked if I wanted to see her "mountain." Curious, I followed her up a path of stepping stones to the "summit"—the top of the garage. The garage had been built partially below grade and, when covered with soil, was then turned into the highest part of the garden. An arbor was covered with blooming wisteria, and a tree peony nearby was exquisite. Junipers, *Acer japonicum*, iris, liriope, camellias, and even a blueberry shrub filled the area.

From Mrs. Kazama's, we were led to the residence of Mrs. Shimane, an 87-year-old tea ceremony master teacher. Outside, the tea house was a large, shaded tea garden enclosed with a fence to keep in the tea ceremony spirits and keep out other unwelcome ones. The emphasis here was on foliage textures. I was allowed to climb through the two-foot door into the tea house. The door is made small to force the samurai of old to remove their swords and armor before entering and to encourage humility, all to ensure a peaceful tea ceremony experience inside. Outside the tea house garden proper was a more colorful area with a *Paeonia suffruticosa* in bloom, brilliant azaleas, *Acer japonicum*, and tall pine trees.

Next, Mr. and Mrs. Aoki and I traveled to the Wild Primula Preserve. Although it was past the peak bloom period, there were still hundreds of native *Primula sieboldii* blooming in various shades of magenta, pink, and lavender, interspersed with wild hostas, *Polygonatum, Heracleum*, and various grasses. On this Sunday afternoon of Golden Week many Japanese families were maneuvering the narrow board walkways through the semi-wetland preserve to enjoy and appreciate the last few natural acres saved from the encroachment of Urawa City. The afternoon sped by, and it was time for me to catch the train home. Parting was difficult, because it meant my visit to Japan was almost over—but I still had work to do.

Back at the apartment I spent most of the night washing all the soil from

Saiho-ji Moss Temple

the roots of my plant treasures, labeling each one, and packaging them for the trip home. Although I had a permit to import an unlimited number of plants, excluding woody shrubs, trees, and noxious or endangered species, it was only valid at a few ports of entry along the coasts. At all other points of entry, any traveler is allowed to bring in only 12 perennials without a permit, as long as they are clearly labeled, soil-free, noted on the customs declaration, not of certain species, and inspected at the airport by a Department of Agriculture inspector. The advantage of getting a permit is that the applicant is sent pages of regulations including lists of permitted and forbidden plants. The possession of a permit also demonstrates to any inspector that you made the effort to fulfill the law. We were to land in Chicago, so my sister and I could declare only 24 plants between us. I chose those that seemed to be most fragile or valuable. The remaining ones I wrapped in damp paper towels and plastic bags and packed them carefully in three small cardboard boxes to mail home. Each box had the plant names clearly listed on the outside, weighed less than two pounds (considered "Small Packet"), were valued at "less than $50; no commercial value," and marked as a gift.

The next day (Monday) was also a holiday, and I was lucky to have read in the guidebook that the main post office in Tokyo was located next to the huge Tokyo Station and was open 24 hours, 7 days, year around. We left early enough for the airport to have time to stop at the post office. When I listed the plants on the customs declaration, the clerk was emphatic that the US Customs would not allow them through. Thank goodness my son's Japanese was good enough to explain that I had a permit, and they would be allowed. Actually, the permit had nothing to do with the mailing, but it helped persuade the clerk to accept the packages. The three boxes arrived by airmail 4 days after we returned—and with much less trouble than the ones we carried on the plane for the 13-hour flight home.

We landed in Chicago, and, because we had declared that we were carry-

ing live plants, we were directed to the Department of Agriculture Inspector, in line behind a couple from the Middle East whose bag had been cut open on suspicion of smuggling something. I was nervous as I opened the precious boxes of plants. The inspector was sharp with me, demanded my typed list of the plants (I had only a hastily scribbled list for my own use), and chided me for not coming through San Francisco or Los Angeles where my permit was valid, and the inspectors knew about plants. It quickly became obvious to me that this inspector knew little about garden plants, and she was worried she would allow something through that was forbidden. She eased up a little when she realized I knew the regulations, and when I reminded her that I was trying to obey the law instead of trying to smuggle the plants through. She ended up confiscating the $20 *Thalictrum*, since I did not know the species, and there was one noxious *Thalictrum* listed in her book. She promised to mail the plant, at my expense, if her supervisor approved. I never saw it again. Luckily, we had three hours before our final flight home, and we just made it.

As soon as I arrived home, even before unpacking the suitcase, I potted up the plants we had carried. As packages arrived I again stopped everything to deal with them first. I gradually hardened the plants off, and, when the soil warmed, I planted them in a special plot where most have survived. The *Lychnis* and *Campanula* withered and died almost immediately, having dried out in one of the boxes sent by mail. The saxifrages, the two tiniest hostas, and three primulas appeared to rot. Although I did not add as much grit as had been used originally in Japan, I thought I had provided sufficient drainage. With the wet, cold spring, the soil mixture may not have been sharp enough. The mertensias, *Disporum, Pinellia, Glaucidium, Iris gracilipes*, and aquilegias in bloom lingered but died within about six weeks; some were still in the pots, and others had been planted out. I surmise that they were unable to tolerate the bare-root procedure. On a happier note, I enjoyed blooms on three of the hostas late in the summer, and the other hosta, *Epimedium, Primula, Lysichiton, Asarum, Adenophera, Iris ensata, Hemerocallis, Viola*, and *Kirengeshoma* are maintaining themselves.

The trip was exhausting but packed with unforgettably rich human experiences, and it more than satisfied all my horticultural expectations. I am looking forward to the spring of '97 to fully enjoy my living souvenirs, recovered from their travels and in new growth.

Some additional information regarding travel in Japan:

I found three Japanese tutors here at home, who were invaluable in telling me current customs and accessibility to certain places, as well as helping me negotiate some of the simpler phrases and basic Japanese grammar. Three months of intense study enabled me to start conversations with many Japanese in buses, at temples, and other places. Because the English skills of most Japanese are far better than my *Nihongo*, we usually switched to English quickly, but they seemed to appreciate that I had attempted to honor their language. It is possible to get around in Japan without any knowledge of the language, if one is willing to ask directions of several people,fy until you find someone with enough English to help. Usually they are willing to help; younger adults or college students are the most skilled in English. The members of NARGS who

hosted me spoke excellent English—and besides—all gardeners speak the same language!

I contacted Julie Messervy, a Boston landscape designer who had studied landscape architecture in Japan for three years. She suggested six famous gardens in Kyoto and told me to write for prior permission to visit Saiho-ji Temple, better known as the Moss Garden. (I found the address by consulting Fodor's travel guide, which also gave useful information about other places to visit, eat, stay, and about traveling inside Japan.) Another garden designer friend, Diane Hilborn, recommended the New Miyako Hotel, located directly across from Kyoto Station. It was reasonably priced, had easy access to all buses, trains, and subways in Kyoto, and was easy to return to because everyone there knows where Kyoto Station is. There was a fax number, which allowed me to contact the hotel during the day here instead of allowing for the time differential. (Japan is 14 hours later than Eastern Standard Time).

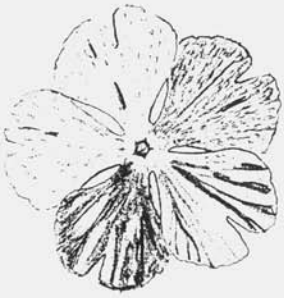
The Japanese National Tourist Organization or JNTO has offices in the USA and provided free maps, brochures, and other information by telephone. Purchase of a rail pass, limited to American tourists, is economical, if you plan to travel between the big cities. I also consulted several books about traveling in Japan, so we knew to pack light (no baggage help on the trains), had business cards printed, learned the protocol of exchanging them, and carried small courtesy gifts. In summary: Get a tutor; consult lots of guidebooks and people who know the country; travel light; contact the JNTO.

I would like to thank the following people for all of their help; if anyone is omitted, please accept my apologies.

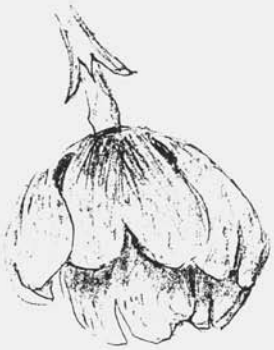
Gishu Aoki, Urawa, APS member; Don Elick, Fukuroi; Ryoko Fujieda, Akashi and Hudson, OH; Makoto Fukuhara, Dai-ichi Seed Co., Ltd., Tokyo; Yoshio Furuhashi, Utsunomiya; Paul Held, Westport, CT; Hironobu Hisashi, Inba; Yoshito Iwasa, Yokohama, APS member;Yuki Kagetani, Hino and OH; Akimoto Kenji, Chosei ; Kana Kodama, Matsue; Atsushi Kuyama, Nishinomiya; Katsuo Masuyama, Tokyo; Akira Miyazaki, Funabashi; Shinpei Miyazaki, Higashimurayama; Kazuhisa Mori, Yokohama; Kazuo Mori, Nishinomiya; Takeshi Motozu, Ibaraki; Kenyu Nagao, Saga; Tetsuji Nakao, Kobe; Yoshiyuki Niwa, Tachikawa; Takemi Noguchi, Mobara; Dr. Tsuneshige Rokujo, Tokyo; Kagetomo Shigematsu, Kakogawa; Takesumi Susa, Tokyo, APS member; Bunji Suwa, Tateyama; Hiroshi Teramura, Kawasaki; Toshio Yamanaka of Miyoshi & Co., Ltd.; Akimoto Yasumasa, Matsudo.

Frontispiece by Lori Chips.

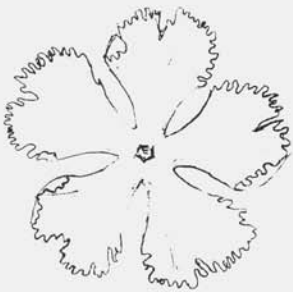
Carole P. Smith gardens at the historic homestead of abolitionist John Brown in Hudson, Ohio. She will be happy to answer any questions about travel in Japan. Photos by the author.



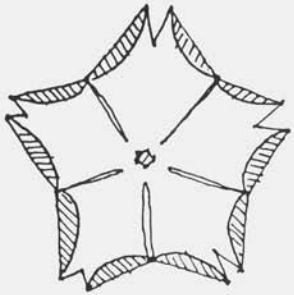
petals notched, flat form



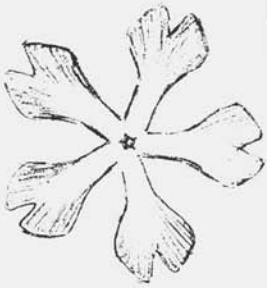
clasped or bell form



dish shape, plum-like petal

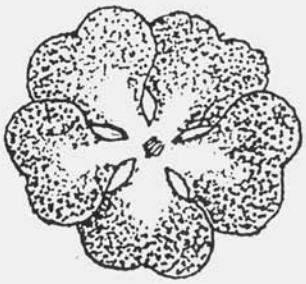


star form

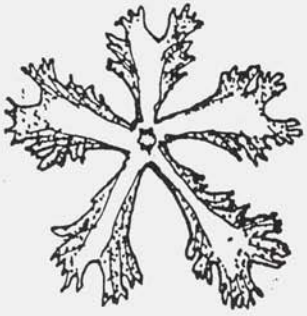


petals narrow, notched

bowl form



petals wavy, overlapped, only slightly notched



petals laciniate, flat at tip, irregularly notched

petals curled, irregularly notched

PRIMULA SIEBOLDII:

VISITING AND GROWING *SAKURASOH*

by Paul Held

When Gishu Aoki and his family invited me stay at their home I foresaw that my dreams of going to Japan to see the primrose called *sakurasoh* would come true. I was entranced with this primrose, *Primula sieboldii*, and had grown from seed and hoarded almost 250 forms. The fascination of this species lies in the fact that each seed, when planted, produces a flower different from that of its parents. This is not so with every plant; something in the evolution of this primrose has led to an explosive number of variations in the floral form.

I had written all of the Japanese members of the America Primrose Society to see if they would be willing to trade seed of *Primula sieboldii*. Seed is rare in the exchanges and disappears quickly. I was amazed that of the ten members from Japan, six responded within a week. Such a very friendly gesture! One member said that he did not have any seed of this primrose to trade but thought that Sakata Seed Company would carry it, and so he sent my letter to them. I received a letter from Sakata Seed giving me the name of three *sakurasoh* societies. One of the societies responded after I wrote them. Mr. Shiino, president of the Shogun Sakurasoh Society, wrote and said that I would receive seed shortly from Mr. Keneko. I did: the following day there arrived a package of 50 packets! Each packet was handmade and labeled with Japanese characters and an English transliteration. It was at this point that I decided I also should start sharing my seed—which I previously jealously treasured for myself—and start the American Sakurasoh Association.

Within a year, without our ever having so much as spoken, Yoshihiko Keneko had sent me over 200 forms of named *sakurasoh* in the form of "buds." (A bud is a crown cutting with a leaf bud.) I was a rich man indeed, as the only nursery in America that carried any named *Primula sieboldii* was Siskiyou Rare Plant Nursery, which had about eight cultivars available.

About 75 members joined the American Sakurasoh Association in the first year. Since seed of *Primula sieboldii* is so difficult to come by in the exchanges, I gave each new member a packet of 400 seed with a guarantee of some germination. I was later to find out just how popular this primrose is

in Japan. The Tokyo-based Sakurasoh Society alone has 600 members!

By the way, the primrose is called *sakurasoh* because the flower resembles that of a cherry blossom, *sakura*, but it is an herb, *soh*. In Japan, it is very common everywhere, as we will see, and almost everyone, horticulturist or hairdresser, knows this primrose.

Mr. Aoki wrote and said that he would like me to see *Primula sieboldii* as it grows wild at the Tajimagahara Field outside the city of Urawa (photo, p. 21). I accepted his invitation to accompany me. I also asked him to arrange my itinerary to include visits to Mr. Kaneko, Mr. Shiino, and Mr. Torii. Mr. Torii has headed the Tokyo-based *sakurasoh* group for 25 years and has published the only complete book on this species and its cultivars. He has, at least for now, the world's largest, best collection of forms, over 500 in number. These are maintained entirely in 6" pots in his home garden; the entire area measures about 20' x 60'.

My first impression of the city of Urawa was made on my way from the airport to Mr. Aoki's home. As we strolled the side streets, my eyes caught the image of a manhole cover. It was of the usual heavy cast iron but deeply inset was a design of *sakurasoh*. I have seen many manhole covers, but they are usually of a rudimentary design, often impressed with the initials of the city where they were manufactured. This one showed the love the city and its people have for the flower called *sakurasoh*. But that was not all. I had considered myself to have an obsession with *Primula sieboldii*. But in this city this primrose was everywhere. This was not a fixation: it was treasuring and honoring a plant that was a part of the very nature and culture of its people. Throughout the city to its farthest reaches each train station displayed pots of *sakurasoh* forms on at least one table, often right at the turnstile. The tables were set up and maintained by volunteers of the Saitama Sakurasoh Society. In larger stations, hotels, or lobbies there were *kadan*, or theaters, displaying five shelves of eight pots each of *sakurasoh*.

I had by now seen many forms of *sakurasoh*, but I had never seen the wild *Primula sieboldii*, rather merely photographs. The typical form was once seen growing wild on river banks, flood plains, and in wet areas of the mountains throughout Japan and Asia. The wild form of the flower looks much like a phlox, with five heart-shaped petals of medium pink. The flower face is basically flat and about 3/4" in diameter. There is a narrow tube about 1/2" long, which opens about 1/8" in diameter in the center of the flower. The calyx is flaring and bell-shaped. The pistil is included in the tube, as are the anthers, which are attached to the wall of the tube.

When early Japanese urban dwellers went out for a picnic, they would often dig up the small rhizomes of *P. sieboldii* and take them home to pot up in their small apartments. Under cultivation variations soon began to show up in the flowers. Some flowers had petals that were rounded at the tip rather than notched like a heart. Some flowers had narrow petals, while in others the petals touched each other or even overlapped. Some had a small white or red eye in the center the flower, some flowers were lighter pink, some darker. With some, the flowers were not flat but were either recurved or cupped. These were and are all natural variations of *Primula sieboldii*, and the differences are too small to be considered as separate species, subspecies, or even varieties.

Primula sieboldii in the wild in field at Primula Preserve, Urawa City Japan (pp. 14, 20) — Carole P. Smith

Primula sieboldii in Paul Held garden (pp. 19-30) — photo, Paul Held

Primula sieboldii variations of floral form
(pp. 19-30)

photos, Paul Held

Primula sieboldii variations of floral form
(pp. 19-30)

photos, Paul Held

Flats of *Primula sieboldii* at Held garden (pp. 19-30)

Variant of *Primula sieboldii*

Variant of *Primula sieboldii*
photos, Paul Held

Gardeners began to make collections of the various forms, and, after 300 years of intense selection and breeding, the *sakurasoh* floral form rivals that of any *Phlox* or primrose species. Each cultivar is unique and has been given a special name. As with any cultivar, the only way to propagate the cultivars is vegetatively.

The forms that I have selected myself have all come from plants grown from seed. Pollination in my garden is accomplished by hummingbird moths. These are in the sphinx moth family, have stripes like a bee, and are just a wee bit smaller than a hummingbird. There may be other pollinators, although I haven't seen any but the moths. I hand pollinated one of my favorite forms by moving pollen from one flower to another within the umbel of flowers. When I grew the hundred seed produced, not one plant bore flowers like the parent.

I arrived in Japan, and the day finally came to see the *Primula sieboldii* at Tajimagahara Field. When I came up the stairs from the subway to the bus depot in the city of Urawa, I noticed *sakurasoh* flowers inset in the winding stairwell. Emerging into the center of the city, we were greeted by 6'-tall posters of close-ups of *sakurasoh* on the walls of buildings. An abstract of the flower pattern adorned the buses coming by to pick up scout groups waiting en masse at the square. It reminded me of scenes from the flower-power days of the 1960s in America. When we looked down, there were *sakurasoh* designs in the ceramic bricks; when we looked up, there were mosaics of *sakurasoh*. On the crowded buses were small posters telling of a specially appointed day when the general public pays homage to *sakurasoh*.

From the city center we had only a short ride. The bus left us off to walk under an arch welcoming us to the fields. I was greeted by the Superintendent of Schools, Mr. Aoki, employed by the Board of Education. This event was staged to educate the public to the importance of *sakurasoh*. I have never heard of another municipality anywhere in the world that respects and preserves any natural phenomenon in such an organized, yet loving and fun way. There certainly was the feeling of a festival in the air. There were vendors cooking up Japanese treats for lunch, inflatable dragon toys for the children to play in, fireworks, a "Sakurockets" band, women dancing around a maypole in unison to music—probably relating to *sakurasoh*. Each matron was wearing a similar kimono with large abstract *sakurasoh* flowers on them in a solid, dark blue color. There must be a reason for this, as *sakurasoh* only come in various shades of red to white, sometimes with a blue blush. I bought a tin of *sakurasoh*-shaped butter cookies for myself and was treated by Mr. Aoki to a sheet of postal stamps that bore the wild-type primrose.

We came upon a flat area. The only thing to be seen in the distance were the huge, modern gates that control the flooding of the Aragawa River. They were painted a gray-blue, sky color with an artistic rendering of pink *Primula sieboldii*. At ground level I could see in the distant meadow streaks of pink and streaks of yellow-green and grass-green throughout. The meadow had been cordoned off into squares with split rail fencing. I could see grassy areas by the river with modern day picnickers. I could see how it all happened 300 years ago. There aren't any other areas like this now, however, as human encroachment has reduced natural areas to a very small number. It was Mr. Aoki's job to preserve this only remaining natural set-

ting of *Primula sieboldii* in all of Japan. I could see that the yellow green was *Euphorbia*! It was more predominant than the primrose! Hoping that I would not sound like an ugly American, I suggested that, to preserve the primrose, he wait until the *Primula sieboldii* was asleep, as in late summer, then spray with Roundup. He, thank goodness, was not offended and said that it was his job to preserve the *Euphorbia* as well! In fact, he showed me what I thought would be the end of every other plant there...bulrush! What they do is pull some *Euphorbia* out by hand when it seems to be engulfing the not so voracious *Primula sieboldii*. The bulrush was now only starting when the primrose was in full bloom. In the fall, when the bulrush was dry, and the *Primula sieboldii* dormant, they would wait for a windy day and have a controlled burn! According to studies, the high temperature was brief enough to pass without harming the shallow-rooted primrose rhizome. Mr. Aoki's job was not to preserve only *Primula sieboldii, but* everything at Urawa that has significant historical value.

No one was allowed to go beyond the fence to get a closer look at the *Primula sieboldii*. I wanted to see if there really were differences in floral forms, and with my zoom lens and tripod, I was able to capture such variation for the record. I was also able to record one clone that had spread almost 3' across. Here all the flowers were a pale, opaque pink with a white eye. There were many other photographers there, also battling the stiff breeze, and children trying to capture the fleeting spirit of the *Primula sieboldii* brightening up an otherwise green pasture. The television crew came around asking people for their impressions, and these were recorded and shown on the local station's news that evening.

Back in the city I was shown the largest display of *sakurasoh* forms I had ever seen. Aside from the most common flat form, the flower may have the shape of a dish, bowl, cup, or clasped bud, even remain closed. Other variations could be seen in color, darkness, and intensity. Some flowers exhibited a different, usually darker color on the reverse. There were variations in color patterns. Color may be diffused equally throughout the petals, or sometimes a lighter or darker center may emanate to the margins of the petals. The petals may be dusted with a darker color or white. There may be stripes, spots, streaks, or smudges. On occasion a plant which displays solid color in most flowers may, on the same stalk, bear one flower which is darker and another lighter, and yet other petals on some flowers will have stripes, spots, or streaks. I raised such a plant myself from seed.

It is interesting to envision how a change in form of just the individual petals makes for a distinctly different look to the overall flower. Start with a heart-shaped, flat petal. Now curl the outer edges forwards towards you. The margins of the petal may be pleated, torn irregularly, deeply or shallowly cut in a serration. The tip of the petal may curl forward, while the sides fold back. The heart shape may be narrow for the length of the petal, or it may be very wide at the top and wasp-waisted near the middle. The indentation in the heart may deep and dramatic—or there may be none at all. Finally, the petals may be so narrow that the space between them becomes as a window through which we see the backs of other petals or the tubes of other flowers in the cluster, often presenting a darker, contrasting color. So, when you use your imagination with the possibilities presented above,

how many different flower forms can you see in your mind's eye? Many, many, perhaps, but not as many as you will see, should you visit Japan in *sakurasoh* time. Fortunately, not many people are interested in the differences in the pale green, crinkly leaves, so their variations go for the most part unnoted.

All this variation can be bewildering. Cultivar names are given to plants to help keep the confusion under control, and to allow people to purchase an identical plant with the same variations. Naturally, not all the forms are desirable, and among the many hundreds I have grown I have selected only 62 deserving of names. When a cultivar is named, accurate records and photographs must be kept, so that material can be compared with this standard in the future. I have set up a registry system, so that people will have a place to go to check the identity of their plants. As of December of 1996 I have registered only 22 selections, with the remainder due to be processed this winter.

The American Sakurasoh Association is also rounding up some stray named forms which have been circulating in America. As we receive and allow Japanese forms into circulation in the United States, I am hoping first to register each with a photo, a dried specimen, a dissection, and a verbal description, as would be done with a new registration. We hope also to have a living plant of each cultivar available for comparative purposes. So far, everything is under control.

Anyone who thinks they have a real find, worthy of selection, can register it. In Japan, by contrast, there are four top people who determine which new plants will be accepted. It may come to that here, too, someday, although people's feelings are bound to be hurt when their plants are rejected, just as happens in Japan. But at the moment the American field is wide open. Will there be similar, even indistinguishable, cultivars registered? Despite care and the best of intentions, this seems unavoidable, but it will be, I think, manageable.

There are a few people, for sure, who are already growing and enjoying *Primula sieboldii* in America, without a care for the names of cultivars. That's good and as it should be. Confusion will only occur when someone puts a cultivar name on a plant and shares or sells these without registering the name first. In Japan there is an established and widely-known procedure: One identifies a plant he thinks unique and beautiful. It is brought to the four-person panel. They approve it or not. Once approved, the plant may be shared with friends. After a decent time interval, often years, one of the friends dreams up a poetic name. This is bantered about until accepted. Only in a few cases is there a written record of these happenings. As you can imagine, there is considerable confusion and a large number of similar cultivars.

Without knowing any of this, I began to grow *sakurasoh* by purchasing any seed whatever available from any source. The only available *P. sieboldii* plants were listed merely as pink or white. I figured I had these or similar plants, whatever they were. I saved seed from my own plants. I could not obtain seed of named cultivars, not even from the only Japanese *sakurasoh* society open to foreigners.

I began by sowing 250 seed each in tiny flats measuring 4"x 6"x 2" deep. The plants were left in the flats all summer and winter, where about 50 plants survived, but hardly a flower could be seen in the second spring.

Then I discovered a local food market that sold large quantities of grapes from California. These arrived in Styrofoam containers about the shape of troughs. The cases varied in size, but many were 12"x 18" x 6" deep. The market management threw these away! I found I could fit 22 empties in my car, and in time I accumulated 300, the new homes for my seedlings, and eventually for named selections. In each I spread a mere 400 seed, and thus obtained a much better germination rate, and the second spring obtained ample bloom. After a while I began to grow seed from different areas separately, rather than mixing it all, and I began a personal selec-

tion of seed from certain flower forms. Over the years a strain seemed to appear. Now, after the arrival of 150 packets of seed from Mr. Kaneko collected from his named forms, I have my hands full of outrageously beautiful and different *sakurasoh*.

The show shelves, or *kadan*, that I saw in Urawa were full of beautifully grown examples of advanced *sakurasoh* forms, each properly set, four flowers, all about the same height, to a 6" *sakurasoh* pot. *Sakurasoh* pots are made of clay and have a dark brown glaze. As president of the American Sakurasoh Association, I got to meet the mayor and other dignitaries and got to make a commendation to the crowd. Awards were given to the outstanding growers. I was presented with an award just for being there! Comments were made, pictures taken, I was in the evening news! A president of a *sakurasoh* organization is very well respected in Japan, probably because *sakurasoh* is so highly regarded.

There was a plant show and plant sale. I do not know if there could be found better growers and presenters. It was marvelous! The show benches were full of exciting, exotic things that could possibly be introduced to America.

I was invited to a talk and dinner by the Saitama Sakurasoh Society and allowed to show all the slides I had brought of my *sakurasoh*. I was very proud of them, although judging by the show, competition here was formidable. Yet there was only friendliness from the group. There seemed to be something odd about my slides, something I could sense whenever I showed the photographs. There was appreciation and sighs of awe—but it wasn't so much the forms I grew, but the way I was growing them. I was growing them in the ground, in large quantities! I had been expecting to see the Japanese *sakurasoh* in pots, as that's how they have been grown traditionally for hundreds of years, most likely because of lack of space. I, on the other hand, came into my obsession with *sakurasoh* not because it once grew wild on the riverbanks of my country, but because of its landscape value and the sheer fascination of the varying flower form. I have two acres of garden to tend. I grew my *sakurasoh* in the rock garden. Well, what else can one do when one lives in New England?!

There were questions: Did I have any problems growing them in the ground? Yes, sometimes Japanese beetle grubs eat some of the roots. Also, in wintertime, wet soil freezes and heaves the rhizomes out. My solution is to poison the grubs, to add soil on top of the heaved rhizomes. Another problem, which I am proactive in preventing, is that one clone may run into another. To prevent this I merely remove plants out around the outer edge of each cultivar clump. The extra divisions of the clone are labeled and propagated for sale. Do I water during the summer? In nature, the home of this primrose is hot and dry. The plant is then going dormant, aestivating. Rather than take a chance and lose a possibly developing bud for next year during long periods of drought, I sprinkle some water on the bare ground where the primroses are resting. I haven't made a study to determine whether or not this is critical. I have lost plants under xeric conditions, but I have never lost one from the ground being too wet. In the middle of the preserve I noticed an occasional upright pipe; these were explained to be for emergency watering. The most vigorous growth of *Primula sieboldii* is in a boggy area. Perhaps grubs and other pathogens drown? Although this primula will

tolerate more drought than many, perhaps it does prefer to remain moist.

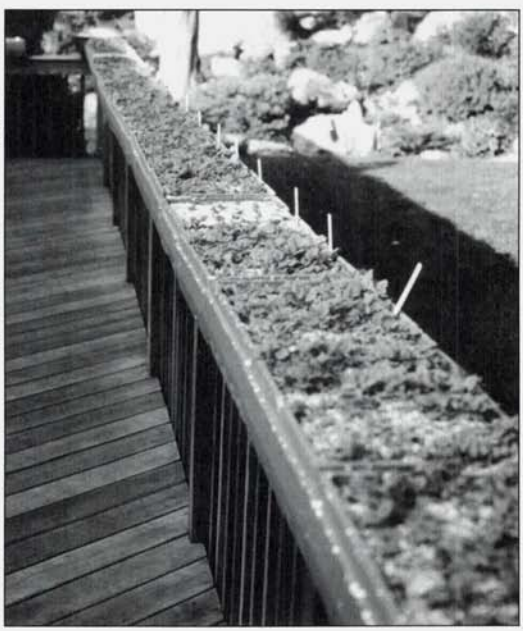
What do I do to improve the appearance of the area when the *sakurasoh* are dormant? I underplant with *Gentiana scabra* and *Hibiscus moscheutos*. These plants are among last to appear from the ground in late spring. The gentian is also native to Japan and looks perfect in the fall. The hibiscus plants are 3' high by late August and are laden with gaudy 10" blooms. Each flower opens for one day only, but each day there are ten fresh ones. I pick them for the dinner table, and I bring them to school to impress the children and the secretaries.

What about seeds? For me it is critical to collect all the seeds! If I were to let them fall where they stand, my color groupings would be ruined and in a jumble. Besides, I need the seed for my fellow members. Once the capsules are picked and dried, the seed can be cleaned as much as a few months later, though it could be also planted right away. Once cleaned, seed must be stored in the refrigerator, preferably in a glass jar. Stored in that manner, it retains viability for a long time. In Japan, seed is prevented from forming in the belief that this increases the strength of the developing bud for next year. I do not find this. Nor do I fertilize plants in the ground. The rhizomes are tenacious and fiercely intermingle with their competition. I've never had to divide a clump for lack of bloom.

I spent the remainder of my time in Japan enjoying *sakurasoh* shows and studying some of the cultural aspects of Japan. I gave life membership in the ASA to the Saitama Sakurasoh Society. I received a gold *sakurasoh* pin from the Board of Education. I tried to make contact with as many people as I thought might be willing to exchange divisions. Indeed, it is my mission to introduce an appreciation of *sakurasoh* wherever I go and to make it possible for everyone to enjoy some of the named cultivars that I and especially the Japanese have developed. Further, it is my goal to make seed available for others to experience the delight in finding and saying "Hello there!" to that newborn flower face that has never been seen before.

I did, of course, join the Japanese Sakurasoh Society, the first foreign member! I asked how I might get buds. Mr. Torii said, "Just ask." I will, and if I do receive divisions, I will get these plants out to all the members of the ASA, as soon as possible. In the meantime, we can create our own wonder and traditions. We are on our way!

Paul Held gardens in Westport, Connecticut. Other special interests include *Hepatica*.



PARADISE REGAINED:
SOUTH AFRICA IN LATE SUMMER

by Panayoti Kelaidis

Heraclitus remarked that you never step in the same river twice. Knowing that, I should not have been so surprised when I returned to South Africa. My second three-week expedition to that country managed to belie many of the assumptions I had glibly made after a single trip. Some places I visited fourteen months after my first trip were so utterly unrecognizable with the advancing season that I found nothing I remembered.

Yet elsewhere, it was as if time had frozen: the same species of *Agapanthus*, *Dierama*, and *Nerine* were still in full bloom on the cliffs of Mount-aux-Sources, although this time it was early autumn and before it was midsummer. Among them, however, were ever so many plants I hadn't seen.

In two recent issues of *Rock Garden Quarterly* [Vol. 52(3); Vol. 53(1)], I wrote at length of the flowers I saw on a breathless, 6,000-kilometer whirlwind tour of the Karroo (the arid to semi-arid interior) and the Drakensberg Mountains. In March of 1996 I managed to clock almost the same mileage, travelling through a number of areas I had never been before, as well as circumnavigating the southern Drakensberg Mountains in a counterclockwise direction this time.

The two trips had a few delightful things in common, the first being weather. Every day was warm, every evening cool and beautiful, and azure sky overhead was unfailing. The second constant was the courtesy of South Africans of all ages, races, and economic levels: this is one place where Old-World charm still lingers.

No matter how jaded, cynical, or resigned you may be in your North Temperate mode, the incredible grandeur of the South African landscape, the wild plants and animals, and the Homeric drama of its politics and socioeconomic predicament are sure to jolt you into passion and concern. And oh! above all, the plants.

I was fortunate to have as a travelling companion Jim Archibald of seed-collecting fame. I felt somehow comforted to watch Jim become as overwhelmed with the scenery and floristic bounty as I had been at first—as I continue to be. His voluminous knowledge of South African plants from the literature and from British gardens was a great boon to the trip. Quite simply, it was another lark!

Cape Town

Once again, we start in Cape Town. Even those who have been there only once find it hard to mention Cape Town without a sentimental pang—the setting is so dramatic, the ocean, the sun are all so breathtaking. In spite of the government and public administration undergoing radical change since the time of my last visit, somewhat to my surprise, the National Botanic Garden, Kirstenbosch, seemed to be thriving. It was exploding at the seams: during the three weeks of our visit the entire taxonomy staff moved from the charming but cramped Compton Herbarium building to a spacious, elegantly landscaped, new structure that seemed to have all the amenities, as well as the airy grace so characteristic of South African structures. A gigantic desert conservatory was in the final stages of completion, a wonderfully modernistic structure that nevertheless somehow reminded me of a Roman basilica, with its immense cupola shape and resonance.

Yet no matter how wonderful you find Cape Town, a walk with a Kirstenbosch horticulturist through the Fynbos will wipe all memory of it from your mind. Here we were, at the end of the long Cape summer. Fiona Powrie (who now manages the nursery operations at the Botanical Garden) drove us up to a pass a few miles from her home in Constantia. A few hundred feet along the trail, we saw dozens of species of ornamental plants still in full bloom—proteas and leucospermums of course, but, too, there were a variety of bulbs still out, *Mesembryanthemum, Restio* still blooming, and there, on a cliff not too far away, hot coals seemed to be burning bright in the daylight: closer up the scarlet gradually settled into the flowers of *Crassula coccinea,* one of the showiest blossoms of that immense genus. The trim columns of somewhat overlapping leaves are topped with succulent, tubular flowers—the same hot, coral-orange color found in that fiery orchid, *Disa aurantiaca,* which happened to be growing in a swale not too far away. These two likely share a pollinator. The sparse wisps of *Restios* and grassy monocots everywhere are speckled with color—numerous species of *Erica* are still in bloom, two or three different genera of Thymeliaceae, several showy-flowered members of the Rue family (Rutaceae), the incredible bric-a-brac of Fynbos that combines together so artistically, like some extravagant Romantic painting—certainly not the dry, Mediterranean landscape one might be led to expect. Just over the bluff is the cold Atlantic Ocean, which offers up frequent, cool fogs and even the occasional summer shower, and ambient air temperatures are never very hot, so plants bloom for extraordinary long periods. It seems to be spring all year around.

Karroo

No matter how alluring the Fynbos and its tantalizing mountains, so many of them with snow and cold near the top, we dash off immediately for the more promising interior, the Great Karroo. Why promising? Since this area is so much farther from maritime influence, the extremes of temperature in the Great Karroo are far greater than elsewhere in South Africa. The landscape and temperature regimes throughout this region are so close to those of the American Southwest that a Westerner like myself feels utterly at home. Luckily, the seed we have brought back takes to its new American home with equal comfort: this is quite simply the richest source of novel horticultural plants for continental climates throughout the

Northern Hemisphere.

One mountain range in particular lured me. I remembered driving by Beaufort West twice in 1994 and admiring the huge hulk of the Nieuwveld Mountains looming so vast and yet so near to the north of town. Their imposing presence reminded me of Mt. Garfield and the Book Cliffs of western Colorado. This sort of parallelism occurs to me with surprising frequency everywhere in the Karroo. There was no way to fit in a side trip to this mountain range in 1994, and the imposing image of these mountains came back to me again and again in the months that followed. Of course, every time I researched any genus of karroid plants, the name of these mountains would recur on herbarium collections, so it was obvious that there were many endemics, many special plants up there.

Finally, almost magically, I find myself retracing the road I had imagined, only this time this really is Beaufort West. The road steepens, and in a matter of minutes we are near the summit. You don't even need to focus your eyes to imagine yourself in the Big Bend or Organ Mountains, and the climate is remarkably close to that of these and other mountains of West Texas. It is not quite so hot in this corner of Africa, perhaps, and the soils are not generally very alkaline. The plants have such similar vegetative forms it takes a while to realize that those shrubs aren't some Texas agarita berry (*Mahonia*), but a dryland persimmon, and that the occasional cacti one sees so often in Africa don't really belong there.

The Nieuwveld Mountains are really just an extension of the Roggeveld Mountains I had explored in 1994, but so rich is the steppe hereabouts that many conspicuous plants found in one area are not found in the other. Here there are frequent patches of karroo gold, for instance, the willowy Bignoniaceae family member roughly the size of a forsythia that blooms solid yellow in late spring, with scattered flowers later. These do not occur much farther west. Although bulbs are still absurdly common, they do not make up such a large proportion of the vegetation as they do in the Roggeveld, which is, after all, the richest area on earth in diversity of bulbous plants.

All up the slopes of the mountain (much of it farther to the west contained in the Karroo National Park) there are dozens of flowers still obviously in bloom. Well, this is in the summer-rainfall karroo, which means that whatever scant rainfall comes, usually comes in the summer months. The plants then bloom or re-bloom in response to the moisture.

The first massive display of color, as we neared the summit of Molteno Pass, were sheets of bright rose-red—hundreds of tiny mats of some mysterious plant scattered over the better part of an acre in a wide swale. Stop the car!

We bent down at the first plant—ridiculously similar to some Western American *Astragalus*: but a quick look at our reference books indicated that this is one of the huge number of *Indigofera* that occur in the region—a genus which approaches *Astragalus* in complexity. Among the dense cover of fresh, brick-red bloom were numerous swollen pods and some that had already shed; this is obviously a plant that blooms for a very long season. We saw this and numerous similar, showy *Indigofera* species throughout the Karroo and later in the Drakensberg as well. Any one of these would make an outstanding summer- and autumn-flowering plant for the rock garden. We haven't found a single reference to

these and hundreds of other ornamental Karroo endemics in the horticultural literature: obviously we haven't even begun to tap the potential of South Africa for our gardens.

I stumbled quickly into the next surprise: the thicket of gnarled and picturesque shrubs along a fence line—superficially resembling willows—were a compact form of the ubiquitous and variable karroo persimmon, *Diospyros austromontana*. Anyone familiar with North Temperate persimmons would do well to forget what they know, since this species has tiny, narrow, gray leaves an inch or so long and a very dense habit familiar to anyone who knows dryland shrubs. One is tipped off to its affinity by the fruit—unmistakable, perfectly shaped persimmons—only the size of a marble. These cover the tips of every branch. If they were only edible, this would be a truly irresistible addition to the garden.

Our impressions of these and a dozen other delightful wildflowers were completely erased when we found a dense, pulvinate, mounding plant with powdery, toothed, blue-gray leaves that somehow recall *Petrophytum* to me. But there were still scattered, stemless, cobalt-blue blossoms ridiculously similar to those of a white-throated, flat-faced penstemon. I immediately recognized the genus, *Aptosimum*, from my last trip. This species was as stunning a rock plant as the spiny-tipped mounds near Fraserberg, although clearly different. How this remarkable, variable genus of Scrophulariaceae has eluded rock gardeners is a mystery. These are not rare plants. You can drive along miles of highway and see thousands of their mats and cushions stretching on to the horizon. Nor, judging by the vigorous and ancient specimens at the Karroo Botanic Garden, are they hard to grow. They've simply been overlooked. We were to spend the next few days finding this species, *Aptosimum procumbens*, growing over much of the high country around Beaufort West, and later far to the east and south. I had misidentified the simpler rosettes of *Aptosimum indivisum*, which abounds around Sutherland, under this name in 1994.

The *Aptosimum* was so stunning and abundant all over the higher mountains here that we almost overlooked the dozens of other ornamental plants in the area. There was *Cotyledon orbiculata* in a particularly robust, silvery form on steep slopes. Along one bank an incredibly condensed *Melianthus* only a few feet high with silvery blue, pinnate leaves only a few inches long was irresistible. Elsewhere, the dense, tufted shrubs looking exactly like the sagebrush meadows of Wyoming stretched forever atop the summit plateau—interspersed among the gnarled, Asteraceous shrubs of many species were dozens of herbaceous and succulent jewels, including several tiny *Delosperma* species and wonderful, rubbery mounds of a *Stomatium* that had no trace of bloom or seed left this late in the season. *Stomatium beaufortense*, I presume? We were to find more *Stomatium* species on nearly every hill where we stopped for the next few hundred miles—sometimes two species growing near one another. What were they all? I have grown a dozen species so far in Colorado, all of which seem to be very hardy indeed. Obviously this is a genus that will figure much larger in our gardens in the future.

Any patch of karroid steppe hereabouts is worthy of examination. Withered remains of bulbous seed heads are sure to be present. There will be a new *Crassula* showing up on every new exposure of the terrain, and some mysterious *Euphorbia* will

appear to challenge your curiosity and taxonomic skills. *Heliophila*, one of the few South African crucifers, will undoubtedly be present, along with yet another permutation of *Dianthus*. There is something both reassuring and yet troubling about these universal African pinks: how could something so European, so gardenesque, so familiar be so common among these Cocoa family plants, growing alongside *Mesembryanthemum* and *Crassula*, for heavens sake? How could these two groups cohabit in such an unconventional fashion?

Worse yet, why is it that every time you see a *Dianthus*, it looks different? Sometimes they make dense, pulvinate mounds approaching those of Silene *acaulis*, with stems just a few inches high. The flowers are usually white, sometimes deeply gashed and pinked, other times entire. Just when you are about to decide that they at least always have white flowers, you stumble across deep pink ones on Platberg, say, or hear of some that are approaching yellow. It is fun to see how widespread and abundant something as commonplace to us as a *Dianthus* is in this exotic flora.

Another widely distributed and variable genus that occurs in both hemispheres is *Polygala*. Usually quite large-flowered, the most common ones in the Drakensberg are miniscule mat formers, while in the Karroo a much taller, sub-shrubby form prevails. Again and again we found one with green stems and apparently deciduous leaves that fit the description of *P. ephedrioides*. The showy clusters of rose-pink flowers interspersed with ripe seed indicated this was a plant with a very long bloom season.

A few minutes of walking anywhere in the Karroo are sure to turn up some variation on a *Felicia* along with a dozen other genera of composites. You will to find representatives of the giant genera of South African ornamentals: *Pelargonium*, *Sutera*, *Selago*, and *Hermannia*. The only certainty is that at the next stop you will have something altogether different appear, something unexpected.

The drive from Beaufort West to Graaff Reinet is just a few hours long: you could tell where rains had fallen in the not-too-distant past, because a patch of steppe would look considerably more lush than its surroundings, and there would be a distinct flush of color on the landscape. On one long stretch along a busy highway, where the road crews were rebuilding, and there was no place whatsoever to stop, we drove past an acre or two studded with *Aptosimum procumbens* in full bloom—their dazzling, gentian-blue cushions—sometimes 2' across—positively glowed in the light of slightly overcast skies. Perhaps there would be more farther along? There never were, and we never retraced our steps. A few miles later we ran across a different *Aptosimum* (photo, p. 37), this time with stems 5-6" tall, looking ridiculously like a bluer *Penstemon hallii*. A dozen or so plants were all we ever saw, fortunately on a quieter stretch of highway where we could get out and examine them closely.

Finally we arrived at Ouberg Pass and looked out into the valley of Graaff Reinet far below. We spent three magical days exploring an area altogether new to me, with a magical flora that deserves years, not days, of study. A small division capital, Graaff Reinet is a classic Karroo town of moderate size, with immaculate Cape Dutch villas in the vicinity of the commercial strip along a main highway. The town plan is so similar to that of an average small town of the American West. The illusion of being back at home is almost complete around the

Total Petroleum station, where an enthusiast has planted a cactus garden featuring barrel and cylindrical cacti native to North America.

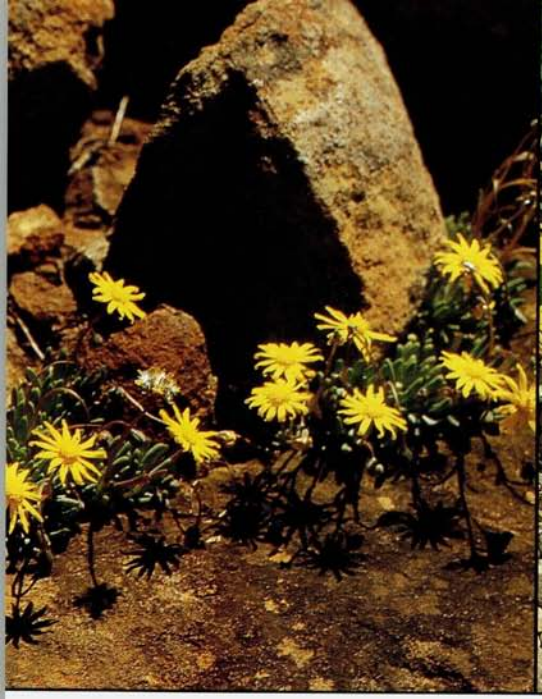
The town itself is distinctly subtropical, very hot in the summer months, rarely experiencing frost in winter. In the hills immediately around the town a dense forest of arboreal aloes seems like something from another planet. But about ten miles away, on the rim of the higher mountains rising another 5,000' in elevation, summers days are rarely hot, frost is severe for months at a time, and snow frequently dusts the ground in winter. This juxtaposition of cold temperate mountains and subtropical valleys occurs throughout the Eastern Cape. The transition between these two zones is a complicated reticulation of terrain and climate whose diversity is ultimately responsible for the incredible richness of the Karroo flora.

When I told botanist friends that I wanted to visit Graaff Reinet, they shrugged their shoulders and assured me the area was rich enough, only no one seemed to have explored it thoroughly. The few plants I had obtained from the East Cape mountains thus far were excellent performers, so why not go see what else might be there? The first road towards a ridge we could find was obviously on private property, so naturally we started looking for the farm house to obtain permission. No need to bother; the owner was working right alongside the road. Here ensued a scene we were to encounter time and again throughout the East Cape: a very tall, handsome, elderly gentleman loped up to our vehicle. Within a few sentences it became apparent that this landowner was no ordinary mortal: he knew every corner of the surrounding hills like the back of his hand. Although obviously mostly interested in the forbs his sheep would graze, he knew the scientific name of every plant we queried. His discourse was peppered with humorous asides. We were horticulturists, eh? Did we know Hilliard and Burtt? Did we know Acocks? He rolled off a list of the honor roll of South African botany and horticulture, all of whom he knew personally, most of whom had stayed at his home.

We spent the better part of the next two days enjoying his and his wife's hospitality. He led us to the plants we sought and a good many others. We discussed at length (and he persuaded me utterly) that traditional "light" grazing tends to eliminate palatable forbs, and that the alternative method of careful rotation of sheep through different camps first described by Acocks was a much sounder land use practice.

The pristine landscape that surrounded his ranch was proof of his assertion. As far as the eye could see a gentle, diverse landscape stretched, burgeoning with an unbelievable variety of shrubs, herbs, trees, and bulbs. Even for me, who was there less than a year ago, talk now of Graaf Reinet and our generous hosts seems like some distant legend. They were amazing days botanizing on the high ridges overlooking the village far below, with northward, as far as the eye could see, bluff after bluff of the Great Karroo receding. Evenings were spent in the expansive farmhouse after a delicious meal, listening to stories about leopards and the diverse herds of antelopes hereabouts, as our host dashed back and forth to his well-stocked botanical library to assist in identifying the subtle characteristics of some obscure Karroo wildflower.

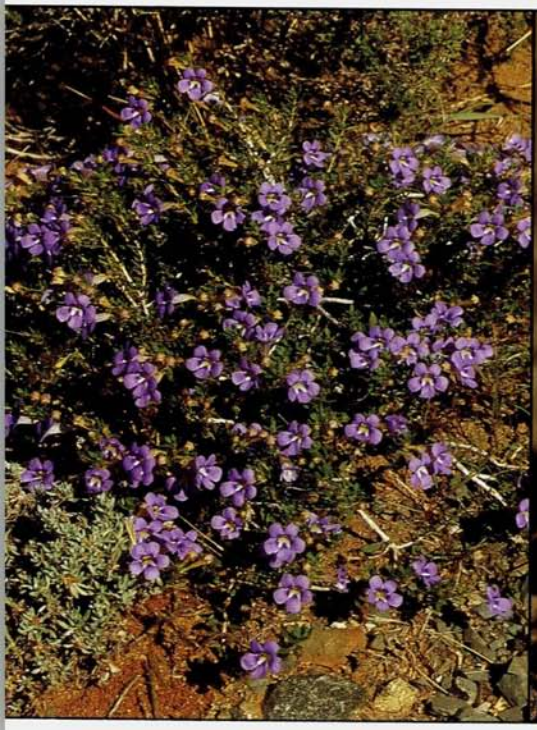
Come on a short walk up to a summit. Alongside the gate near the entrance to steep and (miraculously)



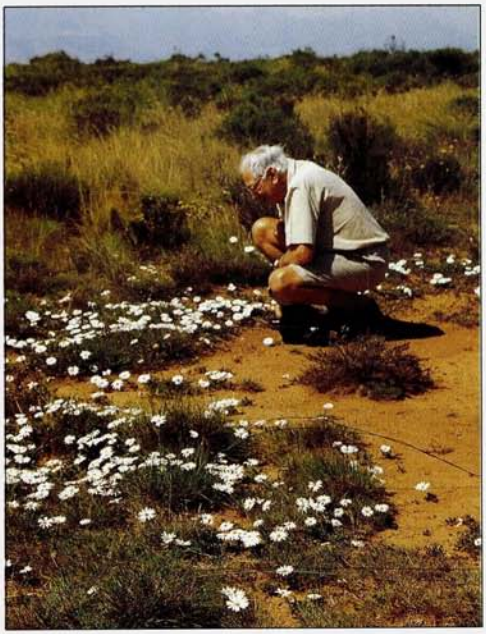
Othonna capensis in the wild (left) and in the garden (right) (p. 41)

Aptosimum sp. between Beaufort West and Graaff Reinet (p. 35)

Zaluzianskya, Naude's Nek (p. 45)
photos, Panayoti Kelaidis



Osteospermum ecklonis

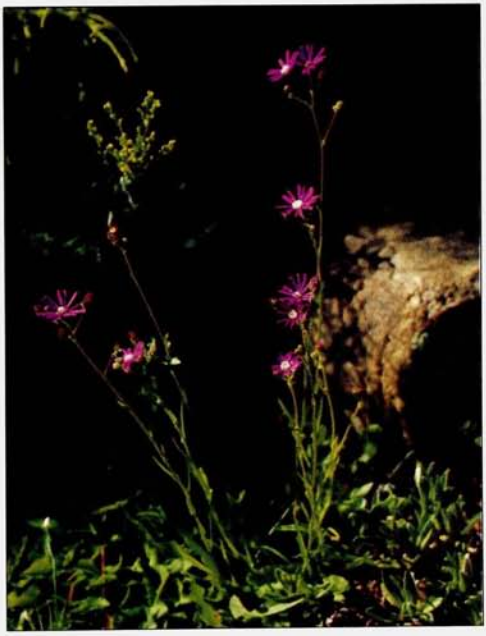


Osteospermum species(p. 42)

photos, Panayoti Kelaidis

Osteospermum barberiae var. *compactum* (p. 46)

Senecio polyodon ssp. *subglaber* (p. 44)

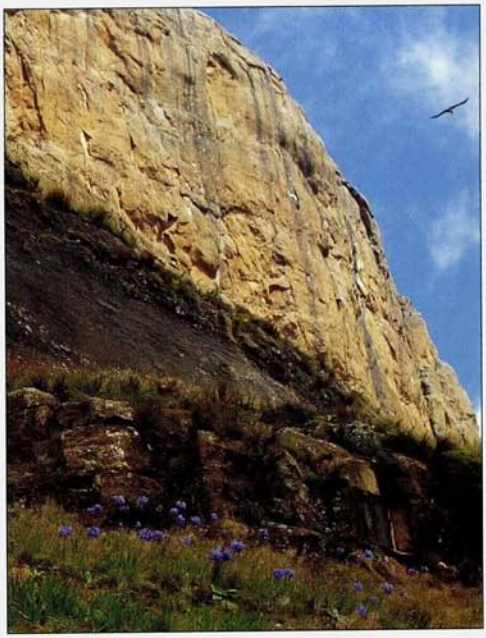


Sebaea, Sani Cliff (p. 45)

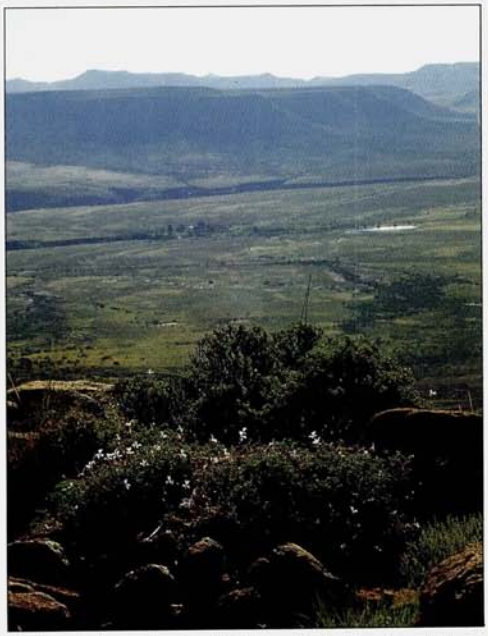
Sutherlandia montana (p. 42)

Hirpicium armerioides

photos, Panayoti Kelaidis



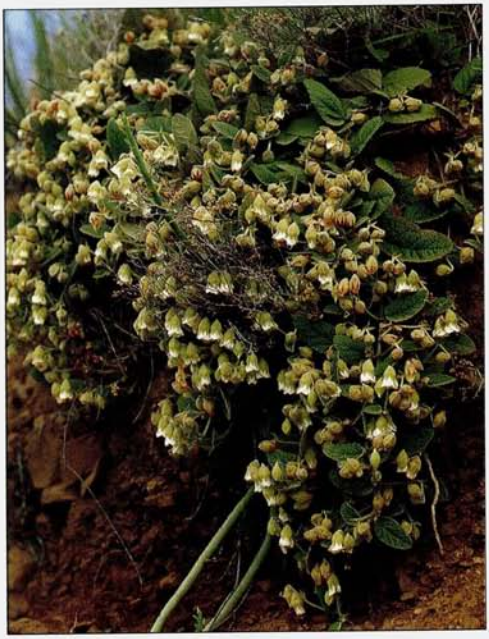
Sentinel with lammergeier (p. 46) and *Agapanthus campanulatus* ssp. *patens* (p. 43)



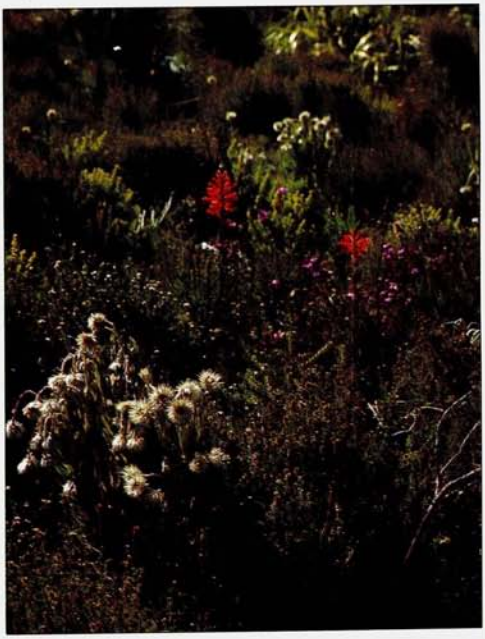
Pelargonium abrotanifolium, Ouberg (p. 41)

photos, Panayoti Kelaidis

Hermannia sp., Cradock (p. 42)



Fynbos, Constantianek (p. 32)



paved road stretching within the last 1,000' of the summit, a meadow is filled with the tiniest of *Eriocephalus*: barely a foot tall, unlike the 6-8' shrubs elsewhere on the Karroo. This widespread genus of the Asteraceae bears small flowers in cylindrical columns, a few inches long perhaps. This tiny species bears an amazing resemblance to a miniaturized form of Winterfat (*Ceratoides lanata* or *Eurotia ceratoides*), a chenopod found in the Northern Hemisphere. Here and there among the *Eriocephalus* there are miniature, dense mats of an *Acanthus* relative, looking like a pint-size, blue-and-white version of *Acanthus spinosus*, say. The flowers were just finishing, alas, so no seed. All the way up the road huge, billowing *Euryops* in a variety of species were in full bloom still, now in early autumn. A *Selago* resembling *S. halimifolia* greeted us here, as it did everywhere all the way to the Drakensberg and beyond. Mats of tiny yellow and pink and rose Fabaceae were everywhere, still in bloom. Along with a luminous *Diascia*, a half dozen or more species of *Crassula*. There are novelties everywhere, such as a showy *Walafrida* with white, clustered flowers. But as we approached the ridge leading to the top, the vegetation suddenly shrinks to dense mats and low mounds—very alpine in character, although technically the climate is only cold temperate. Although they have not had particularly good rains this year, everything looks lush: dozens of species of composites and thick tussocks of grasses are all in luxuriant bloom. A wide pavement of shattered rock covers a saddle on the top of the mountains, and we are drawn here and must explore. A wealth of succulents carpets the ground—*Delosperma* and *Crassula corraloides* (which looks like *Sedum humifusum* dipped in flour). There is yet another *Stomatium*, an *Anacampseros*, more mystery *Crassula* species, a number of species of succulent *Euphorbia*. There is first one, then more and more of the most outlandish succulent of all, *Othonna capensis* (photo, p. 37). This is a succulent *Senecio* ally which looks like nothing so much as a dusty gray *Delosperma nubigenum*. The flowers are on stems 3-5" tall. I had first seen this in 1994 in the Witteberg spur of the Drakensberg Mountains, where it formed dense mats a foot or so across on the basaltic screes alongside *Pelargonium abrotanifolium* and *Anacampseros rufescens*.

Germplasm from the Witteberg populations has proven to be hardy through two Colorado winters. The plants bloom in as little as two months from seed in warm weather. The mats spread up to a foot across in a single year, forming a luminous, gray-green mat that turns a plum purple in winter. It comes into bloom with the first warm days of spring, as early as April some years, and the mat can be repeatedly obscured with bright yellow daisies thenceforward all the way to November—making this one of the most floriferous, long season rock garden plants. It roots with ease from cuttings, so I suspect it will not take long to find its way to sunny rock gardens around the world.

Then I notice some particularly twiggy, silvery cushions studded with spidery white flowers: *Pelargonium abrotanifolium* (p. 40) had already been blooming for weeks, judging by the feathery seed capsules it was producing. There are brighter, pinker forms far to the North, but I am instantly charmed by this intricate, dense shrub echoing the form of the surrounding mesas with its low, flat-topped mound.

Next to it is another *Geranium* relative, but a succulent one, *Sarcocaulon camdeboense*, with its muscular, spine-

tipped stems and vestigial leaves. The pale yellow flowers are as luminous as multiple moons. And yet another *Pelargonium, P. sidoides,* is scattered hither and thither with dense, silvery cushions of leaves and wiry stems a foot or so high fluttering with dark, chocolate-brown flowers—enchanting!

Then, with a jolt, we see what looks suspiciously like an autumn crocus. First one, then more—what? a crocus? Surely, there are no crocuses in South Africa? After a little research we discovered this was *Syringodea,* a close relative of *Romulea* and *Crocus,* restricted in nature to South Africa.

Everywhere we look, we find more and more varieties of plants. There is a seepage slope dotted with *Kniphofia* and dozens of seed heads of the papery flowered *Colchicum* relative *Androcymbium; Scilla* remains; gnarled ancient shrubs of a *Crassula sarcocaulis* in full bloom on the cliffs; a rich-magenta-flowered *Hermannia* in the grass all over the mountain, like a nodding *Oxalis,* with glossy, oak-shaped leaves. The cliffs near the summit were filled with a variety of treasures: tiny *Crassula* with many unusual forms; a pure white *Delosperma;* and in shady crevices a peculiar *Crassula* cousin called *Andromischus marlothii* in full bloom, with dull purple, tubular flowers and chubby, pillow-shaped leaves. Another shady crevice is filled with a miniature *Streptocarpus* with bright blue flowers. Then, on the summit cliffs, among the giant pads of an escaped *Opuntia,* we found particularly thick clumps of the specialty of the region, *Dierama grandiflorum,* with lavender flowers over 3" long. (That is according to the literature—these plants were long past seed even). How strange to see this glorious irid I've only hitherto seen in wet, British gardens forming dense clumps on a hot cliff.

The last treasure I stumbled on was the tiniest *Osteospermum* I had ever seen, forming a fairy ring in a sparse spot on the summit. Thousands of huge, ivory flowers on stems only a few inches tall with deep green rosettes of foliage spread through the hardpan in a circumference of 20' to 30'. I'd walked past them in the morning, not noticing, perhaps, because they close their blossoms, and the reverse of their ray flowers is a dark mahogany brown.

This is just a cursory glimpse into the Eastern Cape karroo flora. Every little range of hills, every mountain seem to have its own special form, endemic representatives of virtually every Cape family of plants. On the cold escarpment of the Swarzhoek Mountains above Cradock we saw the grassy tundra filled with spires of *Kniphofia acraeus,* the local, white-flowered poker. Most of the meadows hereabouts looked very much like the Drakensberg, with many typical montane plants (*Diascia, Sutera, Selago*). A case in point is the numerous wide mounds of *Sutherlandia montana,* a smaller, Drakensberg variant of the widespread scarlet pea with bubble-like, mottled pods (photo, p. 39).

There are other surprises, however. You can imagine my delight when at over 7,000' I stumble on dense tufts of *Trichodiadema barbatum*(?): the stunning, caudiciform member of the Mesembryanthaceae usually found only in subtropical valleys. Each leaf is crowned with a delicate diadem of prickly hairs that truly make it look like a cactus. The shimmering, pink flowers somehow look cactus-like as well, an unexpected and whimsical form of mimicry, if there ever was one.

On the steep road descending towards Cradock, huge mats of some luxuriant *Hermannia* are tumbling a foot or more over the road embank-

ment (photo, p. 40): they are growing cheek by jowl with a glistening, white-flowered cousin to *Zaluzianskya*, with day-blooming, jasmine-like flowers over a glossy mound of holly-like leaves. A little farther along there are clumps of *Euphorbia pulvinata* over a foot high, 3' or more across, with an absurd resemblance to some short-spined form of Western hedgehog cactus—more capricious mimicry.

I went to the rugged range of mountains above Tarkastad in search of a *Delosperma*. We never found that but did encounter more extraordinary hospitality, some mysterious *Dierama*, huge bushes of *Aloe striatula* apparently growing wild at nearly 7,000', more *Euphorbia pulvinata*, large tufts of an unidentified *Haworthia*, and many rock pavements studded with succulents. On one such we found a particularly attractive succulent new to us. *Bergeranthus jamesii* has wedge-shaped, silvery leaves in dense mounds, with 2", multi-petaled, fresh flowers and deep orange-red ones a day or two old, giving the plant a wonderful bi-colored effect. Again, there were spent and fresh seed capsules, so this plant had been blooming for many months already. If there were no other reason to explore these mountains, the variety of late-season flowers offering such a long season of showy effect would be reason enough.

Drakensberg

At first blush, the Drakensberg alpine flora is not entirely alien. After all, most of the major North Temperate families of plants that occur in the mountains of the American West or Eurasia—Asteraceae, Caryophyllaceae, Ericaceae, Gentianaceae, Lamiaceae, Liliaceae, Iridaceae, Poaceae, Scrophulariaceae—are present here too, although in a novel mix, and the genera are for the most part different. As you look more closely, and begin to cogitate, you wonder why universal and ubiquitous genera of the African alpine in these families such as *Hirpicium, Sebaea, Sutera,* and *Zaluzianskya* are entirely absent from rock gardening literature? And then there are entirely unfamiliar families—*Hermannia* in the Sterculiaceae, *Hebentretia,* and *Selago* in the Selaginaceae, *Xerophyta* in the Velloziaceae, as well as the modest number of Cape Floristic specialties in the Restionaceae and Proteaceae.

Only a handful of South African alpines, *Agapanthus campanulatus* ssp. *patens, Cyrtanthus breviflorus, Crassula setulosa* ssp. *curta, Delosperma nubigenum, Euryops acraeus, Helichrysum milfordiae, Kniphofia triangularis, Osteospermum barberiae* 'Compactum', *Romulea macowanii,* and *Rhodohypoxis baurii* have been consistently cultivated in North Temperate gardens for more than a few decades. It is likely virtually all of these were introduced by Helen Milford in the late 1930s. A few more species and genera have slowly crept into cultivation in recent decades (various *Diascia* and *Dierama* thanks to Hilliard and Burtt; *Helichrysum sessiloides* and more recently *H. pagophilum,* thanks to some British expeditions; and a sprinkling of other plants in a few American and Southern Hemisphere collections.) After revisiting the Drakensberg, rediscovering this paradise of novel and great plants, I can only draw two conclusions: we have not yet begun to fathom this immense body of hardy, adaptable, long-blooming alpines. I believe this mountain range will provide our gardens with more good garden plants, acre per acre, than any comparable region in the Northern Hemisphere.

Unlike the strangely familiar Karroo, the landscape of the Drakens-

berg produced no sense of recognition in me. The immense cliffs of sheer, black basalt smothered with dark greenery resemble nothing I have ever seen before. Everywhere you look the earth is studded with bulbs, mats, succulents. There is sparse, shrubby vegetation at all elevations, with larger trees confined to deep ravines at the lowest reaches of the mountains: Surely there is nothing quite like this in the Northern Hemisphere. So heavy and frequent are the summer showers that waterfalls emerge at frequent intervals and the steep landscape everywhere is bright, emerald green. There is a tapestry of thick tussock grasses interspersed with bulbs, low shrubs, and mounding perennials. This landscape seems to have been created by some mad, Romantic, German landscape designer, or perhaps by Beth Chatto in a grandiose moment; it hardly seems possible that it could be a random accident of nature.

In addition to revisiting classic sites in the south, central, and northernmost Drakensberg, this time I spent a little more time in the mid-level, montane zone, which is called the Little Berg in much of the popular literature. Although obviously not as cold as the High Berg, its flora is so distinctive and rich that one mustn't commit the cardinal sin of alpinists and seek only the summits. Too many riches will be missed on the way.

Naude's Nek

How to describe the East Cape Drakensberg? Unlike the verdant country up north, this area is colder and definitely drier. It forms a huge bowl, centered on a rough plateau between the quaint provincial towns of Rhodes and Barkly East, this drier, sparsely settled land reminds me almost achingly of the parklands of the Middle Rockies. The escarpment of the Witteberg separates this region from the Orange Free State and Lesotho to the north and west, while the Drakensberg range proper swings in an ever-lowering escarpment along the eastern side. The exotic, subtropical elements which give the Natal Drakensberg such an exotic flavor, the many proteas, cycad and tree ferns, yellowwood and cabbage trees are almost entirely absent here, so harsh and windswept are the winters. This area, renowned for its cold in South Africa, is still fabulously rich in families and genera of plants normally thought of as quite tender in the Northern Hemisphere: *Aloe, Aristea, Dierama,* succulent *Euphorbia,* and dozens of genera unknown to most of us occur in great abundance hereabouts.

We drove the road from Rhodes to the summit of Naude's Nek innumerable times this past March through 20 miles of horticultural heaven. *Sutera* in many species and numerous colors (bright purple, brick red, and white) formed mounds along the road, as did at least two species of the unearthly, lavender, South African broom, *Lotononis.* I was particularly thrilled to find a patch or two of the purple senecio I had been growing for two years, *Senecio polyodon* ssp. *subglaber* (photo, p. 38). I had found this on Blue Mountain Pass in 1994—or at least these two have been identified as the same species—but the Lesotho plants are far less hairy, with smaller flowers produced in great clouds of lavender most of the summer. The wonderful form from Rhodes is a deeper violet-blue, has toothed, pointed leaves, and behaved like an annual until self-sown seedlings found just where they wanted to grow, formed dense tufts. These have survived the last two winters. *Senecio speciosus* occurred here and practically everywhere we hiked in the east Cape and the high Drakensberg. This is an altogether different plant

with huge, furry leaves and fewer-rayed, larger flowers produced on hairy stems.

On the very summit of the pass, a whole new assortment of plants appeared: I was particularly surprised to find both the miniscule *Zaluzianskya* (photo, p. 37) still in bloom, which I had seen blooming a few months earlier in 1994. This reminded me more of an *Androsace* from a distance than of any scroph, although the stems had a suspiciously annual look about them. The shimmering white or pink stars are irresistible, however. It grew alongside dense mats of *Senecio seminiveus*—that beautiful, white-woolly-leaved mat-former, various crassulas, orchids, ericas, and bulbs galore. There were spent seed heads of *Cyrtanthus breviflorus*, and yes! still blooming here were the romuleas we had seen in January before, still in full bloom in March: *Romulea macowanii* v. *alticola* is well established in British horticulture. Obviously from a very cold area, this should do well in America as well. Imagine a typical yellow crocus that blooms all summer long!

Not too far away you can find fields filled with *Kniphofia caulescens*, still in bloom in March. Another hill covered with that tiny gem, *Kniphofia hirsuta*, and the insignificantly-flowered, but still interesting, pale yellow *Kniphofia, parviflora*. This is also the area where much of the *Kniphofia northiae* in cultivation comes from—it forms vast colonies hereabouts like a *Tillandsia* on steroids. Guided by Ernie and Marietta O'Byrne's directions, two months after their trip we went right to the spot where *Cyrtanthus epiphyticus* grew thickly in long grass, still producing a few fresh, coral-red blooms on foot-high stems; surely here it is at its altitudinal limit at over 9,000'. Waxy red amaryllids are the last thing one expects here on the roof of South Africa, but there are no end of surprises as you wander these endless, verdant, and fascinating slopes.

Surely Sani Pass couldn't exceed the impression it made a year or so earlier: That brilliant, crisp day when I walked over a dozen miles and gained nearly a mile of elevation ranks as a high point in my life. This time we reversed the process: staying a day in the wonderful chalet at the top and walking down. Let me recommend the endless cliffs on either side of the chalet: the diversity of flowers on these seems to have no end. There are orchids and irids galore, *Gladiolus flanaganii*, the brilliant cliff plant that they call "suicide plant" in Africa, aptly named, as it is always just tantalizingly out of reach. *Helichrysum album* in full, bicolored bloom sprawls all over the summit saddle, while new helichrysums appear with real frequency the farther you hike. I was particularly thrilled to stumble on compact mats of *Helichrysum pagophilum*, long out of bloom and seed, of course, but with irresistibly wooly rosettes. The other queen of helichrysums hereabouts was the giant vegetable sheep *Helichrysum sutherlandii* v. *montanum* in full bloom. This is perhaps the most condensed and most imposing pulvinate helichrysum in South Africa, or the world for that matter. It was in full, peak bloom wherever we looked—seed wouldn't be ready until May, I suspect. There are momentous things happening in South Africa and a reason to return every month of the year!

A particularly gratifying find was *Delosperma nubigenum* growing on vertical rock faces in just a few spots. It grew alongside a narrow-leaved phase of *Cotyledon orbiculata* and the eye-blasting yellow mounds of a *Sebaea* that we had noticed at many sites (photo, p. 39). *Cyrtanthus flanaganii*, another yellow Amaryllid, this time

nearly a foot tall, also liked to grow on cliffs just beyond reach. Even now, months later, I often find myself climbing along these cliffs in my dreams, they are so rich, so haunting and intricately satisfying to any alpine enthusiast. I dare say they could hold their own against the richest cliffs in China, the Dolomites, or the Sierras for biodiversity and just plain grandeur. Plant for plant, they appear to produce a greater percentage of horticultural winners, most unknown to gardens or garden literature.

And finally a few days later, I found myself again on the Sentinel Trail leading up Mount-aux-Sources. Surely this is the closest approach to the Elysian fields: the density and richness of plants even exceeded what I feebly remembered from the time before: three or four species of *Kniphofia*, at least five kinds of heathers (mostly still in bloom in late summer), a dozen or more kinds of helichrysum still in bloom—the gem of which was *Helichrysum confertum* which mimicked *H. sutherlandii* var. *montanum* in its dense tufts, although the flower clusters are a trifle larger and lusher.

And here is *Dierama dracomontanum* in its brick red form, still swinging innumerable bells—though not as richly as in January. An embankment is filled with glossy, peltate leaved *Ranunculus baurii*, a gem. Here is a swale with *Moraea alticola*, and, of course, there are at least six other *Moraea* species along the path. Before, I was most struck by the tiny, blue flowered *Moraea inclinata*, and I see clump after clump of a husky *Moraea* in the same area I assume at first must be this. Then I notice that the pod is much too big, produced too low on the ground. Finally a fresh flower reveals *Moraea robusta*, pale yellow on stems less than a foot tall, surely the showiest miniature in the genus.

The *Osteospermum* that I assumed to be *O. jucundum* still had a few flowers. This had been keyed out as *Osteospermum barberiae* at the Capetown herbarium, so maybe the magnificent groundcover we grow and treasure (photo, p. 38) is in fact from this population. Many individual plants recalled our fabulous garden plant, but these wild ones were all setting heavy seed, whereas the single clone in the garden is sterile.

The *Osteospermum* from Mount-aux-Sources, with brilliant violet-purple flowers is the most brightly colored so far in cultivation. There are at least different two white flowered plants circulating under the dubious name *O. ecklonis*, one with a pure white flowers with blue-gray reverse, sold by specialty nurseries in England. In America, the plant under this name is larger and more lush, with flowers that open white but quickly turn a lavender color, aging to soft purple. I would be very interested in knowing their origins.

How could the cliffs still be lit up with so many spidery pink *Nerine bowdenii* we had seen two months earlier in the year? Surely this form will not only be hardy, but long blooming into the bargain. Not far away were still numerous stalwart, dramatic clumps of *Agapanthus campanulatus* ssp. *patens*, the highest altitude agapanthus. This has grown well for decades in Colorado, so any question of hardiness should be put to rest. As I pause to take my last picture (p. 40), a lammergeier—the condor of South Africa—obliges by flying into the frame. Tell me there isn't a little magic going on here?

Panayoti Kelaidis of Denver, Colorado,, is an avid collector of plants, delighted by the novel and obscure. He started gardening at age 8 and hasn't stopped yet.

ERYTHRONIUMS:

Naturalizing with the Best

by Bill Dale

When I bought my lot 20 years ago at Sidney, about 15 miles from Victoria, British Columbia, it was completely wooded with second-growth fir and cedar trees. My number-one priority was to have a garden with plenty of rhododendrons that would continue to grow lovelier and larger each year. This plan succeeded until now I am having to remove some rhododendrons to make room for those remaining. This situation isn't all bad, as I have now selected the varieties that I especially like.

Growing wild on the property were *Erythronium oregonum* (photo, p. 52), the white Easter lilies that we as children gathered and took home to our mothers—not knowing any better. The flowers have white petals with brownish-yellow markings at the throat, mostly a single ring, but occasionally with a double ring, especially attractive. The stamens are bright yellow, and the flowers are usually single or double, held above a pair of mottled green leaves. These range in nature from Oregon through British Columbia.

Erythroniums like the acid soil which I have, and they bloom each spring and after blooming quietly go dormant. They require no more attention until next spring. So I started a few other species, and by obtaining gifts from friends I now have about ten species. I have found these so beautiful and trouble-free and am looking for still more. What a delight they are when they come up and announce that spring is here again, and all is right with the world.

I was given 30 or 40 bulbs of *E. tuolumnense* (photo, p. 51) by my friend, Don MacLaurin, long a fancier of erythroniums. These are among the largest and most rapid to increase of all the species. Bulbs, or rather corms, are 4-5" long and increase by producing new corms each year. The bright, butter-yellow blooms make quite a show, as they bear many flowers on each stem. I have seen as many as nine on a single stem. The leaves are a good, clear green. They are native to central California.

Because of their habit of reproducing so rapidly, I have them planted in a bed where I can dig them up every third year and divide. I now have a bed of 240 good-sized corms, and I have given away several hundred

more over the years. In their third year after planting they make a wonderful display in April.

Erythronium 'Kondo' is a hybrid, probably between *E. tuolumnense* and *E. oregonum*, as the flowers have the markings of the *E. oregonum* at the throat but with slightly less yellow flowers and larger, plain leaves from the *tuolumnense* parent.

Erythronium citrinum, which is slow to reproduce, has a yellow center fading to almost white at the edge of the petals and yellow stamens (photo, p. 50). Haling from the Oregon-California border, this erythronium, like most, is reproduced only from seed. Seven years may be required to produce a blooming plant.

I have one small patch of *E. hendersonii*, from the same area, a beautiful thing with mauve petals fading as they near the center (photo, p. 52). The stamens are dark.

Erythronium dens-canis (photo, p. 49), from Europe and Asia, seems to multiply fairly rapidly, I assume by putting out new corms. This is the first to make its appearance in spring and is a delicate thing with pale green leaves with brown blotches held parallel to the ground. The flowers are pale pink with distinctive markings near the center and light gray anthers. Each stem has only one flower, and the plants are not nearly as tall as their cousins, *E. oregonum*. The flowers do vary from light to dark pink, the lighter hues being most common.

I was given six corms of *E. dens-canis* var. *japonicum* (native to Japan; photo, p. 52) which have slowly increased to ten. The wait has been worth it, as these are quite different. The flowers are mauve with black anthers protruding from a deep purple center. The leaves, also held parallel to the ground, are pale green but dusted with brown, disappearing as the leaves age.

My favorite erythroniums are *E. revolutum*, whose beautiful, pink, curved-back petals and bright yellow stamens are outstanding (photo, pp. 49, 50). The leaves are green with distinctive mottling. The *E. revolutum* that I have tend to vary in the deepness of their pink color. They range in nature from northern California to Vancouver Island.

I have found these to be the most difficult to grow as they multiply only from seed and are quite fussy as to soil conditions. They grow best in nature along a streambed where they are occasionally flooded and thus have a fresh deposit of new river silt every few years. Old maples provide a high canopy, shading them from bright, hot sunlight. When they have bloomed and set seed, the whole area is covered with 4-5'-tall bracken fern, which keeps the soil slightly moist even during the hot summer.

I have many *E. oregonum* and *E. revolutum* naturalized in my garden, and, as they are promiscuous little rascals, I have started to see some very interesting hybrids. The bees have evidently crossed these two, and last year I discovered three hybrids so beautiful that I wish I knew how to reproduce them vegetatively. The *revolutum* parentage is evident in the pink petals which fade white near the center, the *oregonum* takes over with a band of reddish brown markings. The stamens are yellow. The effect is very beautiful.

The time of erythronium flowering is quite varied and dependent on weather, but in the month of April they can be expected to be in their glory.

Bill Dale gardens in Sidney, British Columbia, Canada, specializing in rhododendrons and wildflowers.

Erythronium dens-canis (p. 48)

Erythronium revolutum (p. 48) photos, Bill Dale

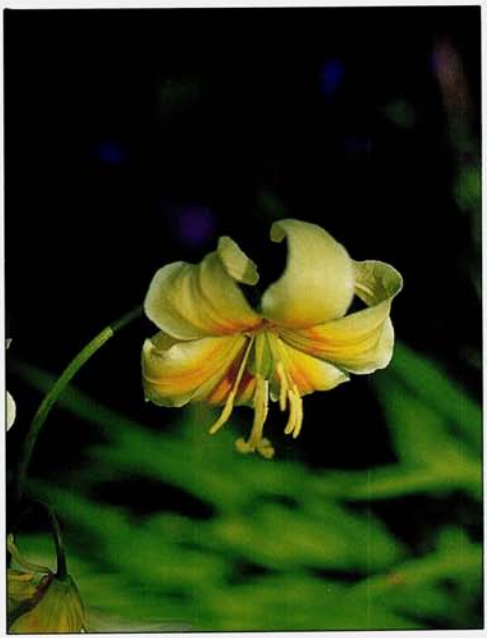
Erythronium howellii

Erythronium tuolumnense (p. 47)

photos, Bill Dale

Erythronium revolutum (p. 48)

Erythronium citrinum (p. 48)



Erythronium tuolumnense (p. 47)

Erythronium americanum, white and yellow photos, Bill Dale

Erythronium revolutum x *oregonum*

Erythronium oregonum (p. 47)

Erythronium hendersonii (p. 48)

Erythronium dens-canis var. *japonicum* (p. 48)

photos, Bill Dale

GEOGRAPHICAL NAMES:

EUROPEAN PLANTS

by Geoffrey Charlesworth

One of the more interesting pieces of information you can have about a species is its provenance—where it grows in the wild. The idea, valid or not, is that knowing what its original home was enables us to choose the spot in the garden that suits it best. We want to know the altitude at which the seed was collected, whether it came from granite or limestone, whether it grew in a crevice sheltered from the sun, whether it flowered at the edge of melting snow and so on. Knowing these things gives us a first approximation to the growing conditions it is going to tolerate in cultivation. But the truth is we can never duplicate even approximately conditions on a high mountain, especially a mountain in a totally different region of the earth from our own, where even the duration of daylight may differ. Ultimately we fall back on the experience of other gardeners and a good deal of our own trial and error to provide a home for our plants, and the fact that most plants are very adaptable has much to do with our success.

Especially fallacious is using the country of origin to speculate about growing conditions. Nevertheless, country of origin has a special fascination for many gardeners who will collect, segregate, and specialize, even to the exclusion of interesting plants from other countries, on this criterion alone. And this, though every country in the world—even one as small as Wales or Andorra—has a multitude of different habitats for plants, so that merely knowing political boundaries tells us virtually nothing about the plants' needs. Still some plants really are associated only with certain well-defined localities, and many of them have been given specific names to honor the country or region of origin. Such a plant may not be endemic to that country, so there could be a strong element of jingoism in burdening an innocent plant with such a dubious honor as that country's name.

Is it possible to go around Europe and find a plant named after each country? Is Asia any easier? How about finding a plant named after each State in the USA?

Let us travel around Europe approximately clockwise, mentioning a few plants that have been blessed with the names of Nation States.

Start with Portugal in the bottom left hand corner of the map. The Romans called the western part of the Iberian Peninsula Lusitania, so plants from Portugal could be called *lusitanicus*. *Astragalus lusitanicus, Colchicum lusitanicum,* and *Fritillaria lusitanica* show the three gender endings possible. The ending *-icus* to make an adjective out of the place name could have been accomplished instead by using the endings *-ensis* or *-anus,* but this is the choice of the botanical "author" who describes the plant. These endings are not interchangeable once one of them has been accepted as the name of a plant. Also, if a plant were to be accepted as *lusitanicus* instead of a variant with a different spelling or ending, that name is then fixed: the 'endings' are not interchangeable. Portuguese plants are likely to be on the tender side for New England, but the *Colchicum* and the *Fritillaria* have wider distribution than Portugal, so you cannot tell from the name what temperatures they would tolerate.

Spain is a large country with many high mountains so is of great interest to rock gardeners. You might expect the epithet *ibericus* to refer to Spain, and so it could, but *ibericus* is usually reserved for that part of the Caucasus which is now Georgia. *Hispanicus* is okay, and we have *Hyacinthoides hispanica* (the Spanish bluebells everybody grows), *Draba hispanica* (neat little bun in the *aizoides* section with spiky looking leaves), *Petrocallis hispanica* (the lovely pink draba relative that disappears temperamentally in some places while surviving in exactly similar places), etc. Other Spanish plant names refer to a particular region of Spain, such as *baeticus, cantabricus, balearicus, catalaonicus, gibraltaricus,* or *granatensis*. For instance *Cyclamen balearicum* comes from the islands of Spain; *Arenaria tetraquetra* var. *granatensis* is a Spanish endemic named for Granada; *Iberis gibraltarica* is widely grown in spite of its southern home because it is an annual; Cantabria is a mountainous region in the north of Spain and gives a heath, *Daboecia cantabrica,* a *Convolvulus,* a *Sempervivum,* a *Cytisus* and *Narcissus cantabricus* their specific names.

France is separated from Spain by the Pyrenees, high mountains with a number of plants named for them: *Gentiana pyrenaica* is a beautiful and difficult plant that is also found in the Caucasus and Turkey, so the name doesn't imply 'endemic'. *Fritillaria pyrenaica* occurs both in France and Spain, but not at very high elevations, so the name doesn't necessarily mean the plant comes from the high mountains. *Androsace pyrenaica* is a good, difficult bun with tiny leaves, best known as one parent of the relatively easy 'Millstream', which inherited the tiny leaves of *A.pyrenaica* but traces its sugar pink color to its other parent, *A. carnea*. *Achillea pyrenaica* is not one of the best, so a good name doesn't guarantee a great plant.

The Roman name for France gives us the specific *gallicus*. You wouldn't expect such a name to be given to a mountain plant, France being mostly not mountains. *Dianthus gallicus* is from the Atlantic Coastal regions including Spain. French plants with localized names such as *alsaticus* (Alsace), *armoricus* (Brittany), *ruscionensis* (Dordorgne), would also not be alpines. *Dianthus gratianopolitanus* (from Grenoble, near the Alps), and *Dianthus monspessulanus* (from Montpelier) sound as though they ought to be alpines but are both just "rock garden plants" and have a distribution over other parts of Europe. *Cistus monspeliensis* in addition wouldn't even be hardy.

The British Isles (as a geographic entity, rather than political) are not notable for high mountains, but Ireland is home of the Burren where alpines such as *Gentiana verna* grow down at sea level. Scotland is far enough north so that some of its mountains have alpine regions. Scottish specific names would include *caledonica* and *scotica*, Irish would be *hibernica* —but the only plant I know worth trying is *Primula scotica*. This tiny plant is short lived so doesn't produce large clumps in the garden. It would need frequent renewing in a trough so isn't quite suitable for that either. The best bet is to try to find a place where it is visible and is contented enough to form a colony. I haven't yet succeeded in doing this, so it remains an "annual" that I sow nearly every year. The Welsh *Meconopsis cambrica* is a useful spreader for the woodland, with orange and double forms as well as the usual yellow, much more amenable than its aristocratic Himalayan relatives. You can find it growing by the wayside in the English Lake District. The English *Aconitum anglicum* would also be a good edge of the woodland plant. *Genista anglica* is a European plant already part of the Common Market. Nothing labeled *britannicus* could be alpine. If you see a name like *cantabrigiensis* or *kewensis* it will be English (from Cambridge or Kew) and surely a hybrid.

The Lowlands (*belgicus, hollandicus*) must have wild flowers but perhaps not any suitable for a rock garden. *Aster novi-belgii* is of course the North American Michaelmas daisy and gets its name from colonial days.

Denmark (*danicus*) is or has been associated politically with Iceland (*islandica*), the Faeroe islands (*faroensis*) and Greenland (*groenlandica*). *Alchemilla faroensis* is a neat version of lady's mantle but no lady's mantle is wildly exciting, except as a background plant or groundcover. *Pedicularis groenlandica* is probably ungrowable, but *Arenaria groenlandica* is a familiar plant that also grows in North America. The flora of Greenland ignores the politics of Europe, having more affinity with circumpolar vegetation than with Danish.

Plants from Scandinavia (*scandinavica*), including the northern region close to the arctic circle (*arctica*), could be called *norvegicus* for Norway, *suecicus* for Sweden or *fennicus* for Finland, but any plant with these names could be circumpolar or have a wide distribution. *Arenaria norvegica* and *Draba norvegica* are northern European, possibly found also in Britain. *Cornus suecicus* is a plant very similar to our own *Cornus canadensis* and occurs also in North America and Japan. *Helianthemum oelandicum*, named by Linnaeus for an island off the southeast coast of Sweden, is a species with several beautiful subspecies including *H. o.* ssp. *alpestre*, but the plant first named was, of course, *H. oelandicum* ssp *oelandicum*.

By the time you reach Russia, you question first what "Russia" actually is, and then whether Europe itself is a meaningful entity, and what its boundaries are. The part of Russia west of the Urals (*uralensis*), south of the arctic circle (*arctica, lapponica*) and north of the Caucasus doesn't have any real mountains, so we are spared growing plants labeled *rossia*. But *ruthenica* refers to southern European Russia, *caucasica* to the mountains at the southern borders of Russia with Georgia and Azerbaijan, *uralensis* to the eastern 'boundary'. There are many plants with name *caucasicus* (–a, –um): *Scabiosa, Arabis, Daphne, Anemone, Alchemilla, Fritillaria, Silene, Veronica, Sedum, Muscari, Doronicum, Rhododendron, Galanthus*, and *Gladiolus*,

to name a few. The name doesn't clearly indicate whether the plant originates in the northern (Russian) Caucasus or the southern (Georgian) Caucasus or somewhere else in the region between the Black Sea and the Caspian Sea. Its ambiguity is much like that of *pyrenaicus*.

Other bits of the ex-USSR like Estonia, Latvia, Lithuania (*balticus* would suit the Baltic states), Belarus, Ukraine (*ucranica*) have no mountains and haven't produced any rock garden plants with a nationalistic soubriquet. Nor has Poland (*polonius*) and Germany (*germanicus*). Ukraine shares with Poland and Moldavia (*moldavica*) the north side of the Carpathian mountains, so *carpatica* (*Ranunculus, Campanula, Soldanella*) and *Saxifraga carpathica* could come from these countries or from Slovakia and Romania on the southern slopes. Josef Jurasek collected seed of *Anthemis carpatica* in the Bucegi mountains of Romania, which is where the Carpathians join the Transylvanian Alps.*Campanula carpatica* is in Slovakia at the western end of the Carpathians and ssp. *turbinata* from the eastern end in Romania.

The Czech Republic lost its high mountains (the Tatras) when it split with Slovakia, but there is a *Geranium bohemicum* for a large rock garden. Hungary, with no mountains at all, has produced *Soldanella hungarica, Colchicum hungaricum,* and *Erysimum hungaricum*. There is a wonderful plant circulating with the name *Dianthus hungaricus*; it is a tight bun with tiny leaves. The official description of *Dianthus hungaricus*,however, to quote the *Encyclopedia of Alpines*, is: "probably a hybrid between *D. monspessulanus* and *D. plumarius*...closer to *plumarius*", which means it would be a much less useful plant for an alpine garden than the imposter.

Backtracking to the east and Romania (*romanicus*) we are in very mountainous country with the Carpathians and the Transylvanian Alps (*transsilvanica*); this is Dracula country. There is a *Campanula transsilvanica*, to my eye very similar to *C. carpatica, Cerastium transsilvanicum*, the tall *Aquilegia transsilvanica*, and *Corydalis transsilvanica*, this name is now used for cultivars of *C. solida*. Perhaps the most interesting plant is *Hepatica transsilvanica*, with flowers twice the diameter of the European *Hepatica nobilis*. These have given us the hybrid between the two *H.*x *ballardii*, which is a very early and very decorative ephemeral for the woodland garden.

South of Romania is Bulgaria with the Balkan mountains (Stara Planina) stretched across its middle from east to west and the Rhodope mountains bordering Greek Macedonia in the south. You might assume any plant with specific name *balcanica* is probably from Bulgaria, but the Roman name for the Balkan Mts. was Haemus Mons, giving us also *haematica* as a possible name, though I know of no plants so named. There are several plants with the specific epithet *bulgaricus*, including *Inula bulgarica* and *Nectaroscordum bulgaricum*, close relative of *Allium*, now lumped as a subspecies of *N. siculum*. From southern Bulgaria we get *Haberlea rhodopensis*, a relative of the ramondas, and *Linum rhodopensis*, one of the yellow linums, pretty much like *L. flavum*. *Linum bulgaricum* is a synonym of *L. tauricum*, another member of the same group. *Saxifraga ferdinandi-coburgii* is associated with Bulgarian independence from Turkey. After 500 years as a Turkish province, Bulgaria was a buffer between western and Russian aspirations and "given" to Prince Ferdinand of Saxe-Coburg-Gotha, who declared its independence

from Turkish rule in 1887 and made himself Tsar. The saxifrage was named for him, the local hero. *Tulipa rhodopea* is now *T. urumoffii*.

We are now at the edge of "Europe" again, and the question is whether to include Turkey. Turkey itself, once ruling a large part of southeastern Europe, has now only a small piece of land around Constantinople, originally called Byzantium (*byzantinus*). Much of its flora has been given geographical names of the provinces and mountains in Turkey which resonate with classical and biblical reference. The whole region could be called Anatolia (*anatolica*) with many names honoring subsections:*Crocus ancyrensis* (Ankara), *Scilla bithynica, Draba cappadocica, Convolvulus cataonicus, Cyclamen cilicicus, Genista lydia, Crocus pamphylicus, Gentiana verna* ssp *pontica, Iberis taurica,* etc.).

So leaving Turkey to its ambiguous Middle East status, we continue clockwise into Greece. *Alkanna graeca* is not an alpine but can be used in front of a border, its yellow borage flowers and gray-green foliage interesting, but not exciting. *Fritillaria graeca* is one of the easier frits but also easily lost to mice. There are also *Alyssum, Micromeria, Verbascum, Cyclamen,* and *Galanthus graecus* (*–a,–um*). But Greece like Turkey is not only mountainous but subdivided from ancient times into regions: Aetolia on the Adriatic coast (*Viola aetolica*), Arcadia in the Peloponnesus (arcadensis), Attica, the region around Athens (*Erigeron atticus,* this however widespread in Europe), Thrace in the north (*Centaurea thracica*), *Campanula thessala* from Thessaly, shrubby, difficult *Viola delphinantha* from Delphi maybe, and *Fritillaria euboeica* from the large island east of Athens. Not to mention *Colchicum* and *Cyclamen creticum, Arabis cypria* and *Cyclamen cyprium.* Can anyone remember the status of Cyprus any more? On the Adriatic we find *Fritillaria epirotica.* Macedonia, too, has many meanings, and from one comes the name *Knautia macedonica* designating a tall knapweed with deep wine-red flowers.

But now we are in the political wilderness of "the Balkans," where three cruel and vindictive religions converge and continue to perpetuate the ancient struggles of the greedy rulers of Troy, Greece, Rome, Persia, Arabia, Turkey, and Asia, by validating their unresolved vendettas. The names of the beautiful wheelbells, *Edraianthus,* which seem to be concentrated in the mountains behind the Dalmatian coast, also reflect these rivalries now reduced (or elevated) to nationalisms. *Edraianthus serbicus, E. bosniacus, E. croaticus, E. dalmaticus, E. dinaricus, E. parnassicus,* have all been named. The whole region was Illyricum in Roman times (*Gladiolus illyricus, Petrorhagia illyricus, Pancratium illyricum, Ranunculus illyricus*), with Epirus at the Greek end of the coast (*Fritillaria epirotica*). Then there are *Hyacinthella, Geranium, Crocus dalmaticus* (*–a,–um*). The *Geranium* is a lovely miniature that spreads rather rapidly like all the other geraniums but can be kept in check to form a counterpoint to an equally vigorous *Campanula* such as *C. kemularia,* or grown in a crevice to contain its exhuberance.

By the fourteenth century Albania was a political or at least an administrative entity (*Lilium albanicum, Cistus albanicus*), surrounded by Serbian principalities (*Achillea serbica, Astragalus serbicus*), one of them being Herzogovina (*Campanula hercegovina*), another Montenegro (*Crocus montenegrinus*). The mountains along the coast are the Dinaric Alps (*Silene dinarica, Gentiana dinarica*) and are in contemporary Croatia (*Micromeria croatica*).

Italy, too, is a mountainous country with the Alps in the north and the Apennines (*apennina)* down its middle. *Orchis, Silene, Sempervivum, Arum* and *Gladiolus* rejoice in the name *italicus* (*–a,–um*). *Arum italicum* 'Pictum' is a vigorous, variegated version of a woodland plant, hardy even in Massachusetts. *Gladiolus italicus* is an agricultural weed in its native land but would be borderline hardy here. *Primula apennina* is an auricula section primula like *P. hirsuta. Anemone apennina* is similar to *A. blanda. Bononiensis* refers to Bologna—one wouldn't expect a good rock garden plant to bear its name. *Calabricus, Florentinus, Neapolitanus* would all suggest tenderness or unsuitability. But *Iris florentina* is a widely grown albino of bearded iris grown commercially for orris root, which is used in making perfume. *Cyclamen neapolitanum* (now *hederifolium*) is remarkably hardy despite its name. *Woodsia ilvensis* has a specific name meaning from Elba, Napoleon's first prison, where you would least expect to find this hardy, circumpolar fern. *Gentiana tergestina* means from Trieste, an unlikely place to find this subspecies of *Gentiana verna. Allium insubricum* gets its name from a region near Lake Maggiore and is a variety of *A. narcissiflorum.* From Sicily comes another onion, *Nectoroscordum siculum.* Pictures of this show green-and-red, nodding bells, which make it appear interesting, although it probably has little effect in the garden. Laguria is the coastal department of Italy surrounding Genoa, and *Gentiana ligustica* is the form of *G. acaulis* that comes from the Maritime Alps. North of Liguria is Piedmont, which has high alps in the north. Here grows *Primula pedemontana,* a nice, neat, rose primrose of the Auricula section. Other Italian plants take their names from individual mountains such as *Campanula garganica* (Mt. Gargano), *Anemone baldensis* (Mt. Baldo), *Saxifraga tombeanensis* (Mt. Tombea), *Genista aetnensis* (Mt. Etna).

From Italy we wind into the heart of the high mountains to Switzerland and Austria. The Romans called the mountains in north and west Switzerland Helvetica, hence *helveticus* (*–a,–um*). The Rhaetian Alps run from east Swtzerland into Austria, hence *rhaeticus* (*–a,–um*). These are the Alps from which other high, treeless places got the name "alpine." Hence *alpinus* (*–a,–um*). *Androsace helvetica* is a beautiful, difficult bun in the Aretian section of *Androsace.* I believe the photo in Anna Griffith's book, *Collin's Book of Alpines,* was the inspiration for many to start rock gardening. *Androsace alpina* is equally temperamental, a bit looser than *A. helvetica. Erysimum helveticum* or *E rhaeticum* is a neat, yellow wallflower forming a low mat or mound. *Centaurea rhaetica* is an undistinguished red knapweed from meadows and woodlands. Plants with the specific epithet *alpinus* are legion: *Acinos, Alchemilla, Androsace, Antennaria, Aquilegia, Arabis, Arctostaphylos, Artemisia, Aster, Astragalus,*to name a few of those beginning with "A". The name doesn't mean restricted to the Alps. *Aster alpinus* and *Erigeron alpinus* occur in Spain and the mountains between Poland and Slovakia. *Dianthus alpinus* is only from northeast Switzerland. Special places in Switzerland also lend their names to plants. *Saxifraga valdensis* is from the canton of Vaud, *Silene vallesia* from Valais. The saxifrage forms a dense cushion of small hard leaves and is one of the best silver saxifrages out of flower.

Austria gives us *Minuartia austriaca, Veronica austriaca,* and a *Linum, Dracocephalum,* and *Doronicum.* The difficult-to-grow, but nice-to-see-in-

the-wild gentianellas are reddish rather than the bluish of most gentians and *Gentianopsis*. Their geographic names include *austriaca, germanica, bulgarica,* and *engadienensis* after the Engadine canton of Switzerland. The Tyrol is a mountainous region that includes parts of Austria and Italy and which probably wants to be part of neither. Attractive little *Primula tyrolensis* is currently Italian. *Senecio abrotanifolius* var. *tirolensis* is a nice, large plant given plenty of room, assuming you don't mind the strong goldenrod color.

Having corkscrewed to the center of alpine Europe we can look back with surprise and anxiety at a few half-truths. For instance, the impact each country has on the rock gardening world: the places that were least visited and least lived-in not very long ago and least useful to Economic Man are now the mecca for Gardening Man. Unfortunately, Skiing Man and Vacationing Man have invaded the same territory, and Economic Man has moved in on a very good thing. Human beings destroy the things they love. Economic Man, having done a bad enough number on the hills with his sheep and cows, has been joined by dam builders, resort makers, power exploiters, and the like. Is there going to be room for everybody and for plants, too?

We can be mildly and pleasantly surprised at the unifying effect of Botanical Latin. In spite of the daunting collection of languages in the tiny area of Europe, every gardener knows at least two words of Czech—*Silene acaulis*—which would be understood in Finland as well. Will Botanical Latin become the *Lingua Franca* of the European Market?

Then we can observe how fleeting is the fame obtained by attaching our names and the names of our nations to plants, which after all don't really care. The name-givers indulge their sins of personal and political pride but have the integrity to value the Rules of Botanical Nomenclature over all other vanities. They have no respect for either type of pride when the Rules decree a name change. *Allium serbicum* has become *Allium pallens, Lilium albanicum* has been reduced to *Lilium pyrenaicum* ssp *carniolicum* var. *albanicum. Primula carpathica* is just a form of *P. elatior, P. uralensis* a form of *P. veris,* so even mountains may be slighted.

We can also deduce something about the pervasive influence of classical culture on our plant names. Because Greece and Rome produced such a valuable intellectual legacy, and because Latin was preserved as a universal language of science (and the church), and because Linnaeus was part of that stream of scientists and thinkers who needed to communicate with other intelligent residents of the tower of Babel in that Age of Reason, we are blessed with the remnants of a language now only used in the most limited way by scientists to describe plants and other objects of nature. What modern mathematician or physicist would dream of writing their results in Latin?

Geoffrey Charlesworth is a dedicated grower of a wide variety of plants, who gardens in Sandisfield, Massachusetts. His writings include two books, *The Opinionated Gardener* and *A Gardener Obsessed,* both available through the NARGS Bookstore.

GENTIANA SCABRA:
Musings from a Rock Garden

by Alexej Borkovec

Of the many battles which the rock gardener fights every year none is fiercer than that of space. Where are the days when one was willing to plant and maintain huge carpets of phloxes, sedums, even ajugas just to cover up the bare places that were abundantly available in the newly constructed rock garden? To put it plainly, they are gone, never to return. Space in the rock garden is now a most precious commodity that is allocated only after long pacing back and forth and muttering dark words. With much regret, duplicates of some of the fast-growing, vigorous species have to be eliminated, and even the numbers of small buns and tuffets are closely watched.

Nevertheless, there are exceptions. The small spring bulbs are frequently allowed to multiply freely at least in some parts of the rock garden, but after several years their number may reach a thousand or more, and radical steps have to be taken to keep them under control. Of the herbaceous plants that reseed and have to be removed annually, the glowing exception, at least in my garden located in the northern suburb of Washington, DC, is *Gentiana scabra*. And glow it does by the hundreds, every September and October, in various shades of blue in every corner, shady or sunny, dry or wet.

For the uninitiated, here are some notes on this great gentian. If you start with a small packet of tiny, rusty brown seed, sow them in winter or very early spring on top of your regular soil mixture, and cover the seed with a thin layer of finely crushed stone or brick. Almost any medium will do as long as it drains freely, but do not sow more than five seeds on one square centimeter of the soil surface! If the seeded container is kept outside, protect it from heavy rain that could dislodge the seed, but don't allow the soil to dry out. Tiny seedlings will appear in early spring (late March or early April in zone 7) and will grow slowly, very slowly, through the entire growing season. At this stage, they do best in semi-shade with frequent watering. Although it is possible to prick out the little seedlings in June, it is much easier to leave them in their container until the new growth starts next spring. Then they will be easy to transplant with a good root

system and will grow rather rapidly and be ready for planting out in June; a few may even bloom in the fall.

As I see it, *G. scabra* as cultivated in America is a plethora of several varieties that interbreed freely and yield plants that vary in height from 10-70 cm with flowers ranging from dark purplish to very pale shades of blue, spotted and striped inside and outside with white and green. The trumpet-like corolla, 3-5 cm long and about 2.5 cm wide, has five prominent lobes connected with smaller plicae. Because most of the blue coloring is concentrated in the upper part of the flower, and the lobes open and curl out in bright light, the blue glow is visible from a considerable distance, more so than in other, showier gentian species. Each flower lasts at least a week or longer, perhaps because in murky weather and at night the corolla closes and reverts to a bud. The variability of this gentian is further expressed in the number and placement of individual flowers. Some appear singly at the end of the stem, others are in rich terminal clusters containing as many as six flowers, and in most varieties additional flowers appear in leaf nodes along the entire stem. The firm, maroon stems with glossy, lanceolate, opposite leaves rise from a sturdy crown of long, white roots that reach for water and nourishment as deep as 30 cm into the ground. Undoubtedly, this characteristic is responsible for the ability of this gentian to survive drought and heat as well as the competition of weeds and such rampant growers as ajuga and vinca. The roots of mature plants can be easily lifted and divided in the spring; the divisions may bloom in the fall of the same year. The stems, single or multiple, may grow upright or bend down to a varying degree but the flowers always face up to the sky. Doretta Klaber who shared my enthusiasm for *G. scabra* in her slender but great book on gentians (*Gentians for Your Garden*, M. Barrows and Co., New York, 1964) mentions a plant with 100 flowers, and I believe that with some coddling even this number could be exceeded.

About three weeks after a flower fades, a seed capsule loaded with hundreds of tiny seed is produced. In dry weather, the capsule splits, and wind scatters the seed far and wide. For seed exchange purposes, *G. scabra* seed may become available too late to be included in the exchange but, fortunately, a year-long storage in a cool place does not greatly reduce its viability.

Few plants are as undemanding in their culture as *G. scabra*. Ideally, and if one wants to produce the one-hundred-flower specimen, it should have a rich, deep, neutral or slightly acid soil, fairly moist, but well drained, and be exposed to sun for 5-6 hours during the entire growing season. However, for those who don't particularly care to grow exhibition plants, much more modest conditions will suffice. Except for deep shade, bone-dry soil, or utterly parched locations, almost any place and soil type will do. Nevertheless, good soil and occasional watering will be appreciated and rewarded with better floral display. As mentioned earlier, *G. scabra* is well equipped to compete with other plants, though it rarely interferes with them. As long as it doesn't grow in your choice cushion of *Eritrichium nanum*, a seedling of this gentian only rarely needs to be removed from the rock garden.

Occasionally, when these gentians do reseed into some sunny scree, most interesting dwarf forms are produced. They are usually single- or double-stemmed, less than 15 cm tall, and have only one terminal flower. When I first found one such pygmy in my rock garden, growing through a mat

of *Hypericum* in a fairly exposed, deep scree, I tried to propagate it. However, the progeny, grown to maturity in a half-shaded bed, was the usual mixture of forms and sizes that my regular plants always yield. Apparently, the dwarfness was the result of nurture rather than of nature. Since that time, I always keep a few *G. scabra* in this lean, sunny bed and every fall admire two or three plants, with a single terminal flower, all in all less than 15 cm tall.

Gentiana scabra is perhaps the only gentian that can be pruned with excellent results. In late May, when the plant is about 20 cm tall, cut the stems down to about 7-8 cm. A low, very floriferous plant will result in the fall. This operation should be performed only on mature, upright-growing plants that grow in good soil with an ample supply of water. Also, don't do it if you have only one plant. The patient doesn't always survive.

Among the gentians, *G. scabra* is a well-defined, easy to identify species but its varieties are a different story. Even a superficial search of the literature reveals the following varieties: *G. buergeri, bungeana, fortunei, orientalis, procumbens, saxatilis,* and *G. stenophylla*. Because *G. scabra* is native to northeastern Asia, including Japan, the Japanese took a great fancy to it and developed their own nomenclature which, in English transcription and its varieties, is even more entangled than the Latin one. Just to give you a taste of it, the variety of *G. buergeri* is variably named *Kamagawa-rindo, Fukasa-rindo, or Tsukushi-rindo,* with only one thing being certain: *rindo* is gentian in Japanese. I won't even try to describe the botanical features pertaining to each of these names, but my own experience indicates that for most rock gardeners it is hardly necessary.

Some 20 years ago, I received from a seed exchange two packages of seed labeled *G. s. buergeri,* presumably the tall, upright variety, and *G. s. saxatilis,* the lowest, mat-forming type. Sown in winter and germinating in March, the numerous seedlings looked suspiciously similar, at least the first year. The third year, in various places in the rock garden, each presumed variety produced small and large plants, upright and decumbent, some with flowers in the nodes, some with only terminal flowers. However, the glory of their autumn display erased all my qualms about the plants' genetic purity. After another three years, new plants began to appear in all possible corners of the garden, almost every one slightly different from the other. Now, and for the past ten years, my garden contains well over a hundred of these lovely plants, and hundreds of them have been distributed to friends, visitors, and fellow gardeners. You can't go wrong with *G. scabra* , and you can never have too many of them.

Alexej (Sasha) Borkovec gardens in Silver Spring, Maryland, USDA zone 7. Ably assisted by a voracious herd of deer, he attempts to determine which alpines and other rock garden plants can survive this assistance as well as the local climate.

PHYLLODOCE:
A Supra-Sphagnum Way to Grow

by Phil Zimmerman

Phyllodoce, along with *Cassiope*, are the mountain heaths of the Ericaceae. They are small, needle-leaved shrubs usually not over 10" high with flower colors varying from white to pink and yellow. Photographs and descriptions of their habitat had left me with the impression that I would probably never be able to grow these plants.

Casual research in the literature gave me the impression that I was not alone. I could find but few articles on this ericaceous genus. "Why?," I wondered. Was it because no one else cared to grow them? Or because no one could germinate them? Or was it because the plants had the reputation of dying whenever the temperature goes above 70°F, something which happens frequently in our summers.

I was reacquainted with these plants and others of the Arctic region when, five years ago, I took a course on circumpolar flora at the Museum of Natural History. The professor, who had traveled widely in northern arctic regions, showed us both slides and pressed herbarium specimens of the plants on which he would lecture that evening. The most interesting thing for me to see were examples of the same plant growing in differing microclimates. One of these was *Phyllodoce*. The professor explained the root adaptation that many ericaceous plants are able to make. These plants grow in soil which is quite cold and often at high elevations, but often the same plant will grow much farther down the mountain in lowland sphagnum bogs! Apparently the low oxygen situation of the bog requires a similar root adaptation as growing in cold, often arid soil.

I had grown plants such as *Dionaea, Drosera* and *Sarracenia* in living sphagnum, why not try *Phyllodoce*? Of course, the literature did not sound particularly encouraging to this idea. Anyone who has a copy of *The Alaska-Yukon Wild Flower Guide* can find, on page 114, the habitat description of *Phyllodoce aleutica* as a plant "growing on *arid* mountainsides and rocky habitats."

It seemed clear to me that to grow these plants I would have to start with the roots, since it was this root adaptation that I was counting on to change how the plants respond to our hot summers.

To test the theory, I purchased *Phyllodoce breweri* and *Phyllodoce*

caerulea from Siskiyou Rare Plant Nursery, washed as much soil from the roots as possible, and planted them in living sphagnum. The plants were very small, barely more than rooted cuttings. They loved the sphagnum and established nicely!

Interestingly enough, this past winter at the Eastern Study Weekend in Framingham, Massachusetts, I was lucky enough to be able to purchase an original copy of *Rock Garden and Alpine Plants*, a now classic work by Henry Correvon, the great Swiss nurseryman. In it, he told of a study he performed in 1891 that paralleled my own experiment. Correvon washed all soil from the roots of many differing alpines and proceeded to grow *all* of them in sphagnum moss (I don't believe it was living sphagnum moss). Lime-lover or acidophile, surprisingly, they all grew! Too bad this encouragement had not been available to me when I was just starting out.

After my initial success with the rooted cuttings I was anxious to try to grow these plants from seed and to see if I would get a similar response. I chose plastic containers which were about 1.5" deep. I have always found that living sphagnum responds better to plastic than to clay containers. These plastic containers were filled with dried, long-fiber sphagnum moss cut into slightly shorter pieces to fit the tray and packed tightly into place. You can find this moss at most garden centers. I had tried in the past to grow ericaceous plants from seed sown on peat; they did not respond for me. I now believe that it is the living balance of flora existing within the living sphagnum which sets up conditions for the success of the young *Phyllodoce* seedlings. It is also clear that young seedlings could be quickly overgrown by the sphagnum, so I began with dried moss, soaked in water, with only the green, dried tips placed on the surface on the dried moss. Yes, in every bag of dried sphagnum there are those small, dried, yet still green growing tips which, if placed on the bed of dried moss, will grow, if kept wet and in good light. Seed was sprinkled on the surface, and the pans were set in larger receiving trays filled with about 0.75" of water, all placed under two 40-watt, cool-white fluorescent lights which were on all the time. Temperature in the growing area was 70°F, and at no point were the trays allowed to dry out or placed in direct sun.

Gradually, the moss and all it contained came to life, and judging from the variety of green life forms that popped up, I worried that any emerging *Phyllodoce* seedlings might be overcome. Of course, at that time, I didn't know what a *Phyllodoce* seedling would look like! The one thing that I have consistently observed about this process is that no seedling germinates until this flora of molds and fungi are established. Further, it seems to be the living sphagnum which holds the whole thing in balance, and young *Phyllodoce* plants grow next to and associated with small filamentous fungi on the surface on the moss.

After about one month, as if on cue, seedlings in all pans began to emerge. First one, then three, then many. They were incredibly small but grew quickly. You will need a magnifying glass to find them at first. Much of the fun was finding them among the moss and watching them develop. I have found that most seed germinates when this method is used. My seed comes from exchanges such as AGS, SRGC, and NARGS. Some of it has come from Ron Ratko's Northwest Native Seed. My guess is that most seed less than six months old and dry stored at 70°F will germinate.

I had begun this process in a living room in January; by April the young seedlings were ready to move outside as temperatures inside were beginning to get too high, and I was worried about the lack of fresh air movement. The young plants were moved outside with no change in cultural conditions. The pans were kept standing in fresh water to about half their depth and placed in a northeast location with morning sun for about three hours and sky-shine for the rest of the day.

By fall the seedlings had begun to look like little *Phyllodoce* plants, even though New York City had dealt out its usual summer of 90°F for days on end. The first winter, and every winter since, the plants are frozen solid by our capricious winters which can deal out snow followed by rain. The plants see little sun in winter, perhaps an hour in the morning.

I now have worked with every species of *Phyllodoce* of which I'm aware, including *P. aleutica, P. breweri, P. caerulea, P. empetriformis, P.* x *intermedia, P. nipponica,* and *P. tsugifolia. Phyllodoce tsugifolia* has been the most difficult, and I lost some of these in the pan, because they were crowded out by the sphagnum, which can be an aggressive grower. I have been careful not to let this happen again and now have one small plant of this species. This species seems to be the most difficult to germinate, and this, too, accounts for my only having a single plant. But not the other species! They are easy! They grow like weeds, albeit small ones, and they are so beautiful that I don't care if they ever flower, though they do, by the way, under these conditions. Because I have limited room in which to grow these plants I do not maintain many of each species, preferring rather to pass them along to good homes.

It was, and continues to be, very important to test these growing methods under the hands of good growers. For that reason I passed some of the plants along to Caroline Burgess of Stonecrop Nursery in Cold Spring, New York. Caroline planted them in a shallow bog where she is growing *Sarracenia purpurea.* The bog is shaded by trees high overhead and is shallow, because it was constructed on an existing rock outcrop. The roots of the plants are completely immersed in water, and I'm sure the plants freeze solid in winter. They were doing well when last I looked.

Some plants have gone to my friend Paul Held, in Westport, Connecticut. Paul planted his by a stream which sometimes goes dry in summer. They are in much more sun than I had dared. They are doing well, no yellowing or any other signs of unhappiness. Paul also planted another in a more upland position in the leafmold and loamy soil he is blessed to have. This plant is growing in high shade but receives some direct morning sun. Keep in mind, however, that Paul's garden is on a gently descending slope with a subsurface running stream (discovered when he installed a pool and found he had to constantly pump the excavation to keep it dry). As a result the *Phyllodoce* is benefiting from a light soil that is constantly moist beneath the surface. Still, according to the books, this plant should not be alive! It has endured 100°F summer heat. Will it last under such circumstances? Have the roots adjusted permanently to the point where they can support the plant in a general garden environment? Time will tell, but for the moment they look happy.

Other plants have recently been placed with Tamsin Goggin, lead propagator for Stonecrop Nursery, who is growing them in her own gar-

den. This makes three gardens in which these plants are growing successfully. Some plants were sold at the recent Hudson Valley Plant Sale, though I do not know who bought them, or how they are doing. (I would like to have this information; either good or bad results are important to know about.)

It has been over five years since I began this experiment, and it is time to move on to another stage. Several of my plants are large enough now so that I feel I can begin to take cuttings. This I will do next spring and summer on green and half-ripened wood. I will keep you informed of what happens.

Additionally, I have used this living sphagnum technique with other genera of the Ericaceae including *Arcterica* and *Loiseleuria*, and am working with plants such as *Kalmia polifolia* var. *microphylla* f. *nana*, *Andromeda*, and *Cassiope*. Results will be reported as time goes on.

Phil Zimmerman is one of a small band of rock gardeners who grow alpine plants on Manhattan roof tops. Phil is always looking for techniques to triumph over New York winter weather.

ERRATA

#@!*%$*#@!!!

Vol. 54(4), p. 324. The top photo is of well-shaped *roches moutonees* of granodiorite with plantings at base and in depressions, at Mount Newton. The photo on the bottom is an alpine pool in a depression in glaciated rocks at Jack Todd's garden in Oak Bay.

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SUMMIT IN THE SISKIYOUS

Feb. 28, Mar. 1 & 2 1997

Ashland, Oregon Siskiyou Chapter

Registrar: Barbara Lane (541) 779-0164

ANNUAL MEETING:

MINNESOTA MINI-MOUNTAINS MEGAMALL MINNEAPOLIS

May 16-18, 1997

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