President's Message

Dear Fellow Members,

This is the time to harvest our gardens and enjoy their bounty. Colors are quickly changing and nights are becoming colder. In many areas we can enjoy the last flush of blooms on our primroses as the weather turns cool and revives them from the summer heat. Since there is a great many different degrees of winter severity among us, it would be very difficult to recommend specific winter protection in such a short letter. So, I will just say 'Don't forget the primroses'.

I belong to two chapters which have their show plans well under way, but there can be no shows without good primroses. We can start getting our plants ready for the spring shows and sales by providing the choice and extra-special ones with more protection and ideal conditions. We can also start thinking about which primroses we would like to grow from seed and be ready to order when the seed exchange comes out. Perhaps grow primula from seed that are new and different to our gardens and ones we would like to enter in future primrose shows.

We have several large growers in the Washington-Oregon area who have a great number of primula plants to choose from for their show stock. I believe that the small hobby grower has more time to give individual plants more T.L.C., so even though the number of plants to choose from for show is much smaller, the quality is still excellent.

So start working now on next year's show and sale plants. Let's try plants that are not sold at the chain grocery or garden stores, such as: species, gold & silver laces, Cowichans, older named Julies, etc. If we start now there should be some very nice shows and sales in 1986.

Yours truly,

Albert Ross Smith
Excerpts from
An Interview With Florence Bellis

Richard L. Critz
Rosemont, PA

On a beautiful sunny day in late April of this year, your Editor and his wife motored from Portland down to Lincoln City, OR, to become acquainted with fabulous Florence Bellis, and to hear from her own lips how the American Primrose Society got its start. Mrs. Bellis generously allowed a recorder to be running as we talked, and several hours of conversation was captured on tape. (You may have more reminiscences later.) The following excerpts are just filled with the flavor of the sparkling talk, and do finally get around to the origins of our Society, as you will see.

RICH: Tell me, Florence, how did you get interested in primroses in the first place?

FLORENCE: Richard, it was all so casual. I remember I went over to a friend's house — this was in 1933, I remember as if it were yesterday — and there were some English catalogs and a few issues of the Royal horticultural Society Journal. Now, I had never grown a plant in my life, but browsing through these things, and putting two and two together, I decided to grow some primroses.

I made out my order right then and there — to Sutton's in England. I must have sent $5.00, our total cash on hand. Anyway, I remember that when I left the Post Office on the way home I had just 10¢ left, and my husband and I bought two Hershey bars to eat as we tramped back in the snow to our little place.

RICH: "From such small beginnings — " Let's see, 1933. That's in the middle of the Depression. What was life like for you then?

FLORENCE: Well, I will tell you. I was a victim of the Depression, and a very different person in the 20s than I have ever been since. In the first place I was an aspiring pianist. I remember once playing on Rachmaninoff's piano at the Civic Auditorium. My piano coach knew a man who had the keys, and we would slip in. She sat up in the topmost gallery, and I sat at an instrument that stretched like a boxcar. You didn't dare touch the sustaining pedal — it would all blur.

I was into Little Theatre. This woman who directed the Theatre looked just like a Barrymore. Acted like one, too! She was grand, and the people were grand, and before long I found myself living in the Studio where the Theatre business was conducted. Then I found out that despite the fact that it was Prohibition, our director had a penchant for alcohol, and it made it difficult. Before that I was secretary to a bank manager — I've earned my living since I was 17 — so I became Manager and Money Getter.

The Studio was beautiful — beautiful marble fireplaces, stately arched windows. We were on the top floor of Portland's first bank building, overlooking the river and the mountains. But because of this penchant everything just fell apart, and I found myself stuck in this place with two pianos and a huge piece of statuary that was absolutely gorgeous. I couldn't pay the rent for about two years (this was the depths of the Depression) and I couldn't move out — had no place to go. It seemed as though I would just lie on the floor and starve, when a friend took me to her place. I was sick — tuberculosis, anemia, a complete nervous breakdown, and I weighed less than a hundred pounds.

Still, in this sorry state — maybe because of it — I married, and my husband talked a wealthy acquaintance into letting us move into his leaky old barn. We lived in a corner of the hayloft, with orange crates for chairs and tables, an old second-hand wood stove — and the two pianos, over which we stretched tarps. (The barn leaked like a sieve.) And there was a bed with umbrellas over it. Since we couldn't have quilts, we had old coats for covers.

RICH: Oh Florence, this sounds like a Lillian Gish movie scenario. What in the world happened next?

FLORENCE: The seeds I had ordered from Sutton's came shortly before we moved into the barn, which we eventually named Barnhaven, because it certainly was a haven to us. It was in a beautiful place, right beside a creek and backed up against a hill. The creek had alders arching over it, and wild roses along its banks, on which the deer and their fawns browsed. An otter family lived under the tree roots across from the barn. The nesting wood ducks, pheasants, and mallards, with the ducklings following their mother single file, could barely make it against the current. And all within a half mile of town! It was beautiful! And the beautiful man who owned it paid for doors and windows and cedar shakes, and gradually it began to look like a haven.

My health gradually began to come back, too. Just let me go outside and work in the soil and I'm renewed! At Barnhaven, though I walked with a cane and weighed less than a hundred pounds, I got outside and planted those first few primroses on the edge of the creek.

RICH: So that was the beginning of the famous Barnhaven primroses. What did you do first to create them?

FLORENCE: You know, Richard, in those days there were no colors. There were dull red ones, there were bronzes, a few bright shades in Sutton's Brilliance mix, which I had bought. Sutton's did carry Gertrude Jekyll's Munstead Strain of whites and yellows — and that strain is still preserved intact in Barnhaven's Winter Whites and Harvest Yellows. I never introduced any other primrose blood into the material I got from Sutton except once, which I will tell you about in a minute.

My primroses were increasing and I set about segregating them and improving the colors by means of selection and hand pollination, never attempted before with garden polyanthus. It is hard to believe that at that time very little hand-pollination was being done with other flower families, and when it was, the brush was used. This was too slow for my operation, so one day I tore apart a blossom and saw all the reproductive organs; the pollen lay in my hand. I have a logical mind, and it just came to me as I stood there that you could do all this better by hand. Consequently I did all my pollination by emasculation, and got just tremendous sets of seed. Since then the brush has been set aside in favor of emasculation, and cross-pollination by hand has become a favorite pastime for gardeners everywhere.

My cultural methods were new, too, and they worked. So my stocks grew and grew, and I began to develop world-wide business selling seed; a national one selling the plants.

I advertised nationally right from the start, and when a catalog request would come in, if it was from a part of the country I felt might be primrose territory, I would write back and ask the inquirer, "If I sent you a little gift box of primroses of such and such types, would you follow my instructions exactly and report to
me on the results?” These gift plants (as well as orders) went out to Kentucky and Tennessee, to Vermont and New York, and all over, and there began to be little pools of primrose interest. Neighbors would see the plants and inquire. It just grew and grew. My enthusiasm must have inspired people too, Richard. I was so in love with primroses that I guess it moved others to love them too. Soon there were customers and friends everywhere.

RICH: You spoke a few minutes ago about introducing one new strain or color into the Suttons. How did that come about?

FLORENCE: The only blood I ever introduced was Linda Eichman’s pink. Linda started years after I did — one of those backyard growers. Linda was a nurse who lived and worked in Dayton, Oregon — a little town about 50 miles from Barnhaven. She sent off to Toogoods Nursery in Southampton, England, for seed, and from that seed there flowered the most ethereal true wild-rose pink, and another pink that was inferior to it, but still a true color break. You could hardly breathe on them, they were so fragile. A color break is always very frail. Linda put those two plants in a wicker basket, got on a bus, transferred in Portland, and came to me in Gresham to ask what she should do with them. I told her to cross-pollinate the two, then select and recross. Well, she did, and was soon able to fix the wild-rose pink. From that she got corals and apricots. The good pink she called Crown Pink, the others Warm Laughter. That was so like Linda, a darling sweet person.

As soon as she had enough plants Linda shared with me and I bred them into my lavender pinks. In 1958 the Barnhaven New Pinks were introduced, and they created as big a stir as the Marine Blues had 14 years before. Once more it had taken ten years to breed the Eichman colors into the much more vigorous and hardy Barnhaven stock. But the results were so worth it. We soon had all kinds of luscious colors — lustrous corals and apricots, wild rose and apple blossom, and deep maraschino.

It was like that all through my days at Barnhaven — in some sense real slavery, but always inspiring, too.

RICH: Tell me, Florence, how the Primrose Society got started.

FLORENCE: That IS a story Richard. You know, I’ve always loved to write, and did so whenever I got the chance. One day Dean Collins, Garden Editor of the Oregon Journal and an old friend from studio days, came out to Barnhaven and asked me to do a series of 12 articles on primroses, one to appear each week in the paper. There was much more in his mind than I had any idea when I wrote the pieces, which I did, and they created quite a sensation. In that response Mr. Collins sensed the need and desire of gardeners, both east and west, and sounded the call for primrose lovers to band together in the service of primroses, the pleasures and benefits accruing from such a cooperative being the dividends. He visualized a working organization to increase the general interest in the cultivation of primroses and to improve the standard of excellence; he foresaw the enjoyment that the study of the many types and species would bring; he saw the wisdom of encouraging the use of proper nomenclature and cooperating with other organizations in establishing standardized names; he undoubtedly knew in advance with what great interest and appreciation the public would receive the Society’s exhibitions — that the variety and beauty of such displays would carry not only pictorial but educational value as well.

It is difficult to be restrained in an appreciation of Dean Collins. A true patron of gardening and gardeners, a horticultural godfather many times, father of the American Primrose Society, his name heads the list when those who have performed signal service in the interest of the Society are being considered.

RICH: That’s very generous of you Florence, and I’m sure Mr. Collins would appreciate it very dearly if he were here. Nevertheless, I’d like to point out that if he, with his initial idea, was the father of the APS, you with your 12 articles, must just as truly be considered the mother. Right?

FLORENCE: If you say so, Richard.

RICH: Hey, this is all so interesting, Florence. I know we’ve only the high spots, but how in the world have you managed to do so much?

FLORENCE: It has been a whirl. I don’t know why I should be saying this to you Richard, but I have always said that I did not do it. My feet were put on a path — it was done through me. I could not have done it alone. How could I have? A person who had never grown a plant before I grew that first $5.00 worth of Sutton seed?

Yes, my whole life has made me believe wholeheartedly that I was picked to do this work. If I had not been given the power, the strength and the knowledge, how could I have kept on? How could I have discovered those means of hybridization — the mechanics of line-breeding which has been the backbone of the Barnhaven strain, and which I had not even heard about.

But aren’t you people getting a bit hungry? Let’s go get some food!

Primula Polyanthus
Primrose Path Begins Calling to Gardeners

By Florence Bellis

How many of us can read about or mention primroses without smiling somewhat indulgently? Why have they been able to attach themselves so securely to those of us who like to grow plants, or for that matter, to those who just like to pick flowers?

Beauty alone can't remain unchallenged for centuries. They are, as the old novelists put it, as virtuous as they are beautiful. They are good-natured, obliging and gay without being capricious. A further character analysis reveals that they are not as modest as the old-timers were led to believe. Like all of us, primroses do their best when particularly noticed or given a bit of attention. They are persistent too. With them the show must go on even if they are the only ones left on winter's stage. We have all seen them smiling bravely while held fast in an icy embrace.

In the fall they put on a very good dress rehearsal of the spring show and by mid-February are warming up to their big part really enthusiastically. During March and April the center of the stage is taken and held against any scene-stealing until sometime in May when they feel they have earned a vacation and take four or five months off for a much-needed rest.

This Group Old Friends

You will recognize this group as our old friends the Polyanthus and Acaulis primroses. And if you wish more primrose performance, a judicious selection from the hundreds of species will provide year around bloom.

The Polyanthus is not a bit temperamental about its position in the garden. If a situation is discarded as being a mite too shady for some other plant, chances are it would do nicely for this primrose. If the shade is complete, the bunch primrose, Primula Acaulis, or any of the double primroses, would do better inasmuch as the stalk of the Polyanthus would be weakened for lack of some sun.

Deep, well-drained loam is the real growing spot. For all their aesthetic beauty, the Polyanthus loves to eat, and a plentiful, well-balanced diet should be provided. Detailed cultural advice will be offered in a later article.

In recent years great strides have been made in improving the size, form and color range of the Polyanthus. Some of the petals are now ruffled or fringed, scalloped and almost heart-shaped. The gold star in the center of the blossom may be definite or it may be suffused; symmetrically whirled or jagged.

Color Range Vast

It is difficult to describe the depth of color and extensive range of these modern Polyanthus. For the blue ones aren't just blue, but pass through all the shades from deep cobalt to azure. Likewise, the yellows roam from buff on up the scale to orange.

The reds are in a class by themselves with clear scarlet, crimson and maroon. Wandering off over by-ways of the pastels are apricot, peach, tile and countless color graduations.

The sparkling white ones with the clear gold star hold a promise of better days, for they seem to be out more often during the winter months than some of the others.

We all know what a superb bedding plant the Polyanthus is, and it is especially valuable now to supplement or provide early color during the bulb shortage. Those of us who have cut them know how lovely they are in any arrangement and that they last well over a week if care is taken to gather them when the blooms are freshly opened.

Flower for Family

In a few weeks now you will see that familiar picture, the business man engaged in his morning rush to the office, turn back and take the time to pop a primrose in the lapel of his coat.

Later in the day the lady of the house might scout around for enough single-stemmed blossoms for a corsage to cheer up her winter suit. And if daughter is planning the evening out, it might be worth her while to pay a visit to the primrose garden for just the right Polyanthus to cluster in her hair.

It seems that the wearing of primroses in the hair is not new. There were many pretty customs. One, observed during the comparatively calm and peaceful years preceding this century, climaxed each Bell Fair held here and there throughout the Black Forest in Germany.

To these fairs the goatherds would bring their one or two discordant bells to exchange for those which would harmonize properly. This done, the young and spry would try to clamber up a greased pole topped by a wreath of primroses. The nimble-knees who could dislodge the flowers would then carry the crown to his intended to wear in her hair.
Eastside Primula Society Goes APS

At the regular meeting of the Washington State Primrose Chapter, on Friday, September 13, 1985, the Eastside Primula Society President, Charlotta Noble, was presented their 'Chapter Charter Certificate' by Al Smith, President of the American Primrose Society, and the board members who were present.

Pictured presenting the certificate from the left are:
Al Smith: Past President of the Eastside Primula Society
President of the American Primrose Society
Charlotta Noble: President of the Eastside Primula Chapter
Rosetta Jones: Primrose Hybridiser
Member of the Board of Directors
Bill Smith: Past Vice President of the Washington State Primrose Chapter
Larry Bailey: Past Editor of the American Primrose Society Quarterly
President of the Washington State Primrose Chapter
Issues the only Commercial Catalog on Show Auriculas
Irene Buckles: Director of the American Primrose Society
Ester 'Candy' Strickland: Secretary of the American Primrose Society
Chairman of the Seed Exchange of APS
President of the Tacoma Chapter of the American Primrose Society
Herb Dickson: 'Mr. Primrose'
Many times Past President of the American Primrose Society

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Collecting Seeds for the APS Exchange

Irene N. Buckles
Seattle, Washington

Collecting and sharing seed is an interesting hobby. It is interesting to watch the capsules grow and take on their particular form, shape and color of the seed within.

Exceptions

There are exceptions to the rule of picking dried seed. The petiolaris section is one of these irregularities. This section includes such plants as P. petiolaris, P. edgeworthii, P. sonchifolia and P. griffithii. These plants have a capsule in which, at maturity, the walls completely crumble away to scatter the seeds. These seeds need to be picked while they are still moist in the pod. Once these seeds have dried they might never come out of their dormancy to germinate. Primula rosea is another plant from which the seeds are best picked green and planted immediately, resulting in almost 100% germination.

Usually, it is better to wait until the seed pod has dried on the plant and started to open before the seed is collected. The capsules of vernales section (P. polyanthus, P. juliae, P. acaulis) usually turn paper thin so you can see the dark seed inside. This is especially true with the doubles. When they are ready to pick, the capsules open at the top making a small neat hole.

P. auricula

The auricula seed capsule turns brown but is thicker walled so you cannot see through to the brown seed. It splits from the side starting at the top. Auriculas often split their capsules while the seed is still green. Try to leave them on the plant as long as possible, but watch them closely so they don’t spill their seeds before you pick them. If the plant is potted, try moving it to a protected area, such as the greenhouse, to keep the rain off and wind from blowing the stem around. A piece of glass over the top of a garden plant can provide protection also.

Capsules from the candelabra section turn brown and then split from both top and sides. If you don’t check them frequently, when the seeds start to ripen, you may find they have split and spilled from the top part of the capsules.

Pyxidium Pods

P. sieboldii seed pods are reminiscent of a dunce cap or pyxidium. They are a little more sneaky than other primulas by splitting around the bottom. The capsules turn brown and then just seem to sit there. If you touch them when they are ripe, the capsules come off the stem dumping the seeds.

When picking seeds pods sometimes the stems are extra tough. To avoid spilling the seeds by tugging to hard with your fingers, it would be best to use scissors. Don’t overlook the small capsule that appears empty. Many times it will contain two or three viable seeds, and one of those may turn out to be an award winning plant some day.
Sometimes it is difficult to determine if the seeds are mature or immature, especially if the seeds are very fine. If someone who is familiar with that particular species is not available to ask, collect the seeds anyway. Another thing to remember is that not all seeds are dark colored. Some of the species, particularly if the flowers are yellow or light colored (P. luteola is an example), will have straw-colored seeds.

**Surprises**

You may have a few unexpected surprises when picking primula seed. Such as a ripe pod with a worm or minute mites in it, eating the seed. Or a super fat pod that hasn’t split and just keeps getting bigger. Upon opening the pod out of curiosity, you find the seeds have germinated right in the pod. If this is the case they need to be planted right away. This may happen if the weather is cool and damp just as the seeds are ripening. Seeds may also mold under the same conditions. If you collect seed that is starting to mold, put a fungicide on them such as Captan.

Allow air to circulate in the container for the seed capsules. Closed containers and plastic bags can cause the seed to mold before they are thoroughly dry. Ordinary mailing envelopes work well, as well as paper bags, small bowls, plastic yogurt containers or dinner plates. If envelopes are used, leave the flap up until ready to clean the seed.

**Cleaning Seed**

After picking, the seed can be taken out of the capsule or allowed to dry for a couple of days. Cleaning your seed is very important to discourage mold or damp-off when planted. Pre-cleaned seed sent into the APS seed exchange will also make the work easier for Ross and Helen Willingham. A good pair of tweezers are a big help in removing the larger pieces of pods and stems. A fine mesh sieve also works well for removing the tiny bits. A plastic knitting needle rubbed rapidly on your slacks will cause enough friction on the point to pick up the small pieces of chaff.

**Storing**

After the seed has been cleaned and thoroughly dry, it is ready to plant, store and exchange. Seeds need to be stored correctly to remain fresh and viable. Storing can be done in many types of containers. A successful method is small plastic pill bottles or glass jars filled with seed and then stored in the refrigerator. Another is small manila envelopes stores in a large glass jar with a screw on lid. Packets of activated carbon or silica gel along with the envelopes in a mason jar help keep the seeds dry. A small packet of powdered milk in a facial tissue works well. Both the milk and the gel should be changed at least every six months.

**Mailing**

When sending seeds through the mail, the small manila envelopes that can be sealed work very well. They keep air out and are easily labeled. A small piece of onionskin typing paper folded into a packet so the seeds won’t fall out can be used for light-weight mailing purposes. Aluminum foil can also be used.

**Editor’s Note**

The study of seeds is an exciting field within itself. If any member is doing work in this area, it is requested that it be brought to the editor’s attention.

This article was first published several years ago in this Journal. The material is of such surpassing interest that we felt it worth reprinting at this time.

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**From Idaho — Primula Alcalina**

A. Lee Bower, Bellevue, Washington

Larry A. Bailey, Edmonds, Washington

Flying out of Seattle, June 13, heading for Boise, Idaho, we reflected on the events taking us on this Primula chase. Just after the first of the year Jerry Flintoff (Seattle) brought to Larry’s attention an article published in *Brittonia* (1), classifying a *Primula alcalina* located in Eastern Idaho. This Primula was formerly known and published as a white form of *Primula incana* (2). Jerry remembered an article on *P. incana* Larry had co-authored (3), and knew of his interest in any update of the Section Farinosae (Aleuritia) (4). Sharing the article with Lee, originally from Idaho and familiar with this remote area, the ball started rolling. Both Larry and Lee arranged to be at Birch Creek Valley, Idaho in mid-June of this year (1985).

Arriving in Boise, the primula safari was met by William (Bill) Bower, Lee’s father. Bill, although somewhat skeptical of why two people would take an extended weekend, fly to Idaho and drive 300 miles to locate a plant of no monetary or social benefit, had been kind enough to obtain detailed Forestry maps of the region as well as volunteer his services and motorhome.

Heading east the next morning under clear blue skies, a bright sun and miles upon miles of dull, grey sagebrush greeted us. The five hour drive was softened by stops to inspect flowers and wild grasses. Penstemons of many varieties, lupines, salsify, iris, and larkspur were common sights to enliven an otherwise mundane landscape.

Skirting around the southern foothills of the Lost River and Lemhi range of mountains, the motorhome was turned north and pointed up a bleak looking valley.

Birch Creek Valley is formed with the Lemhi Range of mountains to the west and the Beaverhead Mountains to the east. The valley’s southern approach empties out onto the great Snake River Plains. The environment at the southern edge could be classified as semi-desert with sage-brush the only noticeable feature. Few indications of permanent human habitation can be seen along this valley, although an occasional abandoned log house or cabin indicated previous attempts. To our dismay cattle were grazing along the creek banks (potential growing areas for Primula of the farinose section).

Lacking trees of quantity or size, the starkness of this environment begins to evoke a fascination with the valley floor nestled in between high, snow spotted peaks. The basin is situated at the 6000 foot elevation, while ragged edges of peaks soar to over 11,000 feet. Snow runoff transforms much of the lowlands into bright green hues.

The weather was perfect; sunny, no wind, not hot and many flowers. We soon realized that in all the planning for the trip, one thing was forgotten — mosquitoes! The combination of wet marshes, previously grazing cattle and warm weather was ideal for breeding. Being the only warm blooded animals within miles, the mosquitoes grouped into circling cloud formations to make dive bomber runs. The folly of relieving ourselves in the great outdoors after a long trip was quickly recognized as a mistake. Luckily, the whirling mosquitoes stayed in localized areas.
Rocky Mountain iris (*Iris missouriensis*), large clumps of striking blue-eyed grass (*Sisyrinchium angustifolium*), bright yellow lupines, bluish-colored phlox (*P. pulvinata*), were just a few of the plants greeting us. Flowers were everywhere, but none were primula.

Back in the motorhome a decision was made to head south for a couple of miles and scout an area appearing to have damper soil conditions.

Clumps of iris, phlox, blue-eyed grass, lupines, dandelions, as well as a rush (*Juncus*), Sedge (*Carex aquatilis*) and other wetland grasses were again plentiful, but with one exception; *Dodecatheon alpinum* was noticed for the first time.

Closer to Birch Creek, the meadow became a thick mat of wetlands best described as a rooted fen with small potholes of standing water where cattle hooves had marked the tundra. Admiring the naked beauty of the rolling hills and rugged mountains, glancing down only to avoid falling in the modulating terrain, Larry suddenly became aware he was actually in a field of birdseye primroses, poking white heads above the marsh grasses; white, pure white little nubbins of *Primula alcalina* nodding to each other.

Waving a straw cowboy hat to get Lee's attention, excitement grew as Larry watched the human dot on the horizon grow at a seemingly snail's pace. Lee, stopping now and then to admire the marsh flora and grasses, would not be rushed. But when he finally arrived, the broad smile on Larry's face told the story.

Dragging Lee back toward the area where the primula was first noticed, one had the feeling of being on a gigantic waterbed. Each could feel and see the waves caused by the other's walking, even at some distance. There was a strange feeling as if one might fall through some hidden seepage and never be seen again. Here was the habitat of *Primula alcalina*. Plants grew everywhere in this area; on the upper crowns of the mounded terrain, as well as in the watery holes.

Exploring the creek revealed primroses, as well as the blue violet (*Viola adunca*) growing on the bluff of shallow banks in light tan colored clayish soil, whereas a couple of feet away in the marsh area, the primula was growing amongst matted wet grass roots. Notice was given to the wide range of soil conditions in which the primula was blooming; from the clay creek bed, across the wet marsh and onto the rising whiteish loam banks of the drier grass plains, a distance of approximately 200 feet. These varying conditions indicate *P. alcalina* stands a good chance of surviving in domesticated environments.

*Primula alcalina* is similar in appearance but smaller than *P. incana*. The compact plants are approximately 2 to 2.5 in. (5 to 6 cm) across (a few are wider), scapes averaging 6 in. (15 cm), small flowers just under ½ in. (1 cm), with 4 to 5 florets per umbel (but can range between 1 and 13 florets). Two weeks earlier we would have found the florets in their prime.

Leaves were just under ½ in (1 cm) wide and narrowed toward the base. Some of the leaves on the mature plants were denticulated, but the majority lacked definite serrations. Length of the leaves on mature plants, although some were much longer, averaged ⅜ to 1¼ in. (3½ to 4 cm). New leaves, as with other plants in this section, were revoluted.

The major difference between *P. alcalina* and *P. incana* is the lack of farina. Few plants of *P. alcalina* show farina on the leaves (we suspected the minimal amounts observed had dropped from the scape). Undersides (abaxial) of the leaves were efarinose. Only on the upper portions of the stalk was meal noticed, heaviest just under the calyx. The buds showed traces of farina, but the small seed pods appeared to be void of it.

Some of the plants were growing in clusters, giving indications clumps have divided. Large clumps were not seen, signs of being a monocarpic perennial.

Roots of the plant are surprisingly thick for its size especially with the wet, saturated ground conditions it lives in. Thickness of the roots could hint at a tendency to survive drying cycles later in the summer or fall months. Little environmental protection is afforded the plant except its low growing habit in marsh grass. The meadow lacks any shrubs or trees and will be subjected to the intense summer sun and frigid nights. Temperatures can also drop to -50 degrees F. or lower during the long winters.

Exhausting the initial enthusiasm the two primulators (new *alcalina* experts) started back toward the paved roadway. Skirting the creek edges, *P. alcalina* was found growing along the flood plain for several hundred yards.

Our direction took us through a field previously spotted next to the roadway, bright pink with color. Coming upon the scene, we found thousands upon thousands of dodecathoons! What a sight in the light breeze, intense reddish pink waves with splashes of blue iris, yellow lupines and tiny white dots of the birdseye primrose.
Fording a stream on foot, access was gained to a steep hill west of the narrow Birch Creek Valley. In just a few steps, the green grassy marsh was left behind and we entered a fascinating world of arid sagebrush slopes. A close look revealed a gigantic alpine rock garden. In bloom were different types of low growing penstemons, miniature white phlox, compact plants of the composite family (blue, white, yellow), larkspurs, lupines, etc. Many of the tight clustered needle-leaved plants were not in bloom, intensifying the botanical interest. Outcroppings of compacted round river rock (giving an appearance of tan concrete), held in the crevices miniature plants growing suspiciously like alpine saxifraga, creeping willows, and members of the pea family (Fabaceae) — truly a botanist’s paradise.

Towards the end of the day, sitting down on the silent hillside, overlooking Birch Creek Valley and its wetland marshes, sensing the shadows starting to pick up speed in their race across the valley floor, a deep contentment was felt about this environment. Intense blue skies, with changing rust and brown colors on the hills, exposed previously concealed gullies, outcroppings and caves. No wonder pre-historic man found this valley to his liking.

Realizing all good days come to an end, we walked slowly to the motorhome. It wouldn’t be long before the native animals started their evening patrols through this area. Drying mud paths revealed a number of tracks — including deer, antelope, rattlesnakes, rabbits and a large cougar.

That evening was spent along Birch Creek, watching the millions of stars overhead, reflecting on our good fortune at having so quickly found the primula, and easing into a sincere and contemplative discussion about life. And then, a disturbing loud thump from the motorhome brought the serenity to an abrupt standstill. Lee’s father, while getting down from an upper bunk, slipped on a misplaced head, reflecting on our good fortune at having so quickly found the primula, and putting a very nasty cut across his forehead.

It turned out to be a restless night, and the next morning we got an early start. But not without first stopping at Lone Pine Inn to gather directions, have ourselves eased into a sincere and contemplative discussion about life. And then, a disturbing loud thump from the motorhome brought the serenity to an abrupt standstill. Lee’s father, while getting down from an upper bunk, slipped on a misplaced head, reflecting on our good fortune at having so quickly found the primula, and putting a very nasty cut across his forehead.

Backtracking around the foot of the Lemhi Range of mountains, a northern trek was taken into the Little Lost River Valley to search out other locations of P. alcalina. Pulling off the road for breakfast at a small cafe in Howe; having learnt our lesson, when asked our purpose we would mumble “looking for ‘fishin’ streams”.

Wider than Birch Creek Valley, this valley supports farming as well as grazing cattle. Mechanical irrigation systems turn the floor of the valley into green checker board patterns.

Asphalt pavement soon transformed into an “an all weather road” of compacted gravel, and a slow but steady upward climb set in. More and more antelope were spotted, prairie dogs became bolder, and small squirrels darted back and forth in front of the motorhome. Stopping occasionally to search out stream banks and adjacent dry stage-terrain, more varieties of flora were identified. Monkey flowers (Mimulus guttatus) with their bright yellow clusters, and wild roses were added to the list of plants inhabiting areas within the river’s flood plain.

Farm lands gave way to grazing ranges, with the winding green belt of the Little Lost River becoming more noticeable in sharp contrast to the grey sagebrush. Passing Barney Hot Springs, Summit Creek was followed until we reached Summit Reservoir — a fantastic setting, high alpine snow-covered peaks, abundance of wild flowers, native animals and a wonderful array of birds (both water and land). But no primula.

With feelings of humble rejection, the motorhome was turned around and headed south. At the Custer-Butte County Line another effort was made. Walking across the dry natural rock garden landscape towards Summit Creek, again we came across small clusters of various composites, paintbrush, salvia and clover (possibly Trifolium macrocephalum); but most pleasing, a tiny colony of compact blue penstemons (Penstemon dolius). Along the creek plain, tall penstemons, stalked purple phlox clusters and a wonderful bright yellow stream violet. Absent were both the dodecatheon and primula.

Looking at the map, intriguing mud flats were identified to the east, within the delta of Summit Creek and Little Lost River, but time did not allow further investigation. A start towards Boise could not be delayed any longer.

We wanted to find other locations, as P. alcalina is an endangered species. Very limited sites have been found. The few thousand plants along Birch Creek are very minute on a global scale, very minute indeed.

Slight alterations in weather, microclimate or chemical compositions of the soil would eliminate the existing beds. Because the Primula grows in very boggy areas, it has been protected from the ever-present grazing cattle; but given a dry winter and summer, the lack of protective fencing would be devastating. Here again, as with the P. incana, a situation exists where more information on an American native birdseye primrose is needed, as well as educating the local inhabitants, and state and federal personnel, on protection techniques. The American Primrose Society and concerned individuals should take an active role in safeguarding these treasures.

The ride back to civilization was long but full of contemplative thoughts. When could we plan another trip to investigate those mud flats, those surrounding hills of rock gardens? Or take advantage of the excellent fishing, and swim in the hot spring? Speeding past the unique Craters of the Moon National Monument, more tufts of grass and brightly colored flowers were seen in the distance — another ‘signal’ for our return to eastern Idaho.

Literature Cited
The long, hot summer is over. Primroses that were invisible two weeks ago are sending up fresh green leaves. During the first cool days I replanted some sorry-looking primroses which had been selected at the supermarket last spring. Ruthlessly I cut off all dirt and fibrous roots and most leaves. The remaining finger-size stubs were planted in fresh soil. Already they are covered with healthy new leaves. If you want to have your choice modern primroses be truly perennial, you must remove every trace of their former life in a little square pot.

B.C. Primrose Experts

Just got back from Vancouver, B.C., where I talked primulas to the Alpine Garden club of B.C. Glad to get to know them a little better. Some know their species primula better than I do. Had to watch my step.

We were taken in for the night by Mary Pearson, one of the most delightfully optimistic people I've ever met — a dog person as well as a plant person. I was right at home. Trouble was, every time I picked up a book, it seemed to be one I'd already read and had at home.

Next morning Daphne Guernsey whisked us 1,000 feet up the hill to the home of Frank and Vera Peck. (Just 15 minutes away from Mary Pearson's sea-level home.) There a wide range of alpine plants were happily growing among the rocks and in pots. Vera handles the excellent seed exchange for the Vancouver group. She even gets seeds from collectors who gather in the far corners of the Soviet Union. Besides being highly organized, she is a knowledgable and skillful grower.

Those of you who have occasion to drive between Western Washington and British Columbia should learn about the Lynden border crossing. It is virtually unmarked. Leave I-5 at the Lynden exit on the north side of Bellingham. Go straight through Lynden and stay due north. (Don't be led off the Sumas crossing.) You will be at Columbia should learn about the Lynden border crossing. It is virtually unmarked.

Larry Bailey is pushing for a high-class, one-day show to be held at Seattle's new Center for Urban Horticulture in mid-April 1986. The center — with library, herbarium, classrooms and meeting room with kitchen — draws plant people from all over the Northwest and beyond. Primulas deserve a setting like this.

Remembering how Peter Klein used a lot of rabbit manure in his bedding and potting soil, I used some in a raised bed in which nothing wanted to grow. A mix of boiler ash and rabbit manure was tilled into the old soil, and lettuce seed was planted immediately. The lettuce exceeded any I have previously grown. Now primroses are being planted, and they like it too.

Irish Primulas

Just re-read a letter from Charles Nelson, National Botanic Garden, Glasneven, Dublin 9, Ireland. Listed in two recent society newsetters are primroses, polyanthus and candelabra primula originated or raised in Ireland. many of the varieties are now considered extinct.

Many were successfully propagated by small nurseries or “little old lady gardeners” who knew what the plant wanted — new aor restored soil, timely dividing, removal of all diseased portions, trimming off all fibrous roots and old leaves at each replanting, adequate moisture during growing seasons and perhaps a little shade in summer. Simple protection from insect pests and slugs and a basically healthy stock to begin with were other factors.

Oh, yes. Nelson disagrees with Cecil Monson, who claimed the original Garryard had no julie “blood” and was known by his mother before 1900.

Note to Vera Peck: I think your tiny primula with one inch hairy leaves and very “toothy” margins is P. sapphirina, but check on P. soldanelloides too.

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The Pictorial Dictionary Revisited

In 1948 the American Primula Society brought out its “Pictorial Dictionary of the Genus Primula” — a landmark publication, and one which has served the Society members and most Americans interested in the genus as few books are privileged to do. Unfortunately this book has, for a number of years, been out of print, and copies of it scarce as the proverbial hen’s teeth. From time to time the Board has considered reprinting it ‘as is,’ but numerous changes in nomenclature (like Section Candelabra to Section Proliferae, P. nutans to P. flaccida, etc.), new discoveries and new hybrids, as well as more sophisticated cultural directions have made a rethinking, rewriting and republication seem more desirable. At the spring Board Meeting in Tacoma your Editor, Richard Critz, was appointed to oversee this project and bring it to fruition. That he is endeavoring to do, but it is — as you can imagine — an enormous task.

One notable development has transpired since Tacoma. A publisher has been found who wishes to work with us in the preparation and publication of this book. In preliminary discussions it has been decided:

1. that the work will come out in two volumes; one devoted to the species, the other to hybrids.
2. that each entry (following roughly the format in the original Dictionary) will consist of a relatively brief, non-technical, description of the plant, accompanied by a line drawing of it; and
3. that a section (or sections) of the book will be devoted to color photographs of some of the more important, elegant, exotic or interesting members of the genus — enough to satisfactorily present the full range of this extensive, fascinating and beloved group of plants.

This will be OUR book; the one “old hands” will need in order to collect and grow primulas intelligently and effectively, the one presented to new members as their road map into a rich, colorful and rewarding country. In order for it to be truly OUR book the help of as many of you as possible must be enlisted. Here is what you can do.

Prepare a brief article or articles (one or 2 double-spaced, typed pages each) about primulas you have grown — a separate article on each species or hybrid. Include a description of the plant: its habit, foliage, flowers; its native habitat if a species, or origin if hybrid, with something of its history in cultivation; its culture and use in your garden with comments about how you have grown it; any special problems, its likes and dislikes as to soil, moisture, sun/shade, etc.; whatever you know about propagating it. Extol its special charms. Pictures, especially line drawings, or black and white prints and/or color slides, would add considerably to the value of your article. These articles will be published in forthcoming issues of Primroses, then collected for later use in putting together the Dictionary revision.

The following, adopted from Doretta Klaber’s “Primroses and Spring,” is an example of the kind of thing we want.

Primula Abschasica

Primula abschasica sounds like a wonderful addition to the vernal primroses. It is not new but evidently it has not been grown in this country until very recently. Seed was offered in the 1960 exchange list of the American Primrose Society. The seed had been received from a botanical garden in Linz, Austria, which had received it from the Leningrad Botanical Society, and it had been collected in Abschasica in the Russian Caucasus. The Austrians considered P. abschasica to be a form of P. Sibthorpii (a subspecies of P. vulgaris), seed of which they also supplied.

H. Lincoln Foster grew both the P. abschasica and P. Sibthorpii seed, and was kind enough to send me slides of P. abschasica in bloom and plants to show me the leaves and manner of growth, as well as a plant of P. Sibthorpii grown from the seed sent by the Austrians.

The only reference to P. abschasica that Mr. Foster was able to find was in the Bulletin of the Alpine Garden Society (Vol. 30, No. 2, June 1962) — a woman botanist, Zinaida T. Artushenko, mentioned having seen the fragrant flowers in a broad-leaved forest in the Caucasus.

In Mr. Foster’s garden in Connecticut P. abschasica grew, bloomed very early (among dry fallen leaves) and continued to bloom for about a month. It flowered prolifically in deep sandy peaty soil under pines and in heavier soil under apple trees, and then gave a strong repeat bloom in fall. Mr. Foster speaks of the “gleaming wine-purple [flowers] with a washed golden eye, the eye rimmed with white,” each blossom erect and solitary on a short slender strong scape. The smooth leaves enlarged into a cabbagelike head quite distinct from other vernal primroses. Division of plants proved easy; they lived unattended through a bad drought and increased quickly. No seed was set even when flowers were hand pollinated, although a white acaulis produced seed when pollinated with P. abschasica pollen.

From the slides and plants Mr. Foster sent to me, I make the following observations. The color of the P. abschasica flowers as shown on the transparencies looked a fine rich deep pink with the small white and yellow eye. The color was darker, the flowers more cupped, the calyx narrower, and there was less white in the center of the flower, than any P. Sibthorpii I have grown. The leaves of P. abschasica curl back at the edges and are thinner in texture and more lettuce like than any other vernal, and grow in large and crowded clumps. The plant seems to start to bloom earlier than most vernals, keeps on blooming for as long or longer, and the heavy repeat performance in fall is quite different from the scattered autumn flowers we all find on other vernals.

For gardeners, P. abschasica is a new and valuable addition to the vernal clan.
Primrose Picking in South Devon — The Social, Environmental and Biological Background

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ABSTRACT
The history of primrose picking, associated with advertising of paper mills in South Devon is described. An investigation into the social, environmental and biological aspects of picking, initiated by Wiggins Teape and carried out by Plymouth Polytechnic is outlined, and preliminary conclusions presented.

INTRODUCTION
Traditions not only die hard, but can be established very quickly. In the early part of this century the owner of Hele paper mill decided to bring a breath of Devon spring to the buyers of paper; he arranged for bunches of primrose blooms to be picked and dispatched to valued customers. The primroses were picked from fields and hedgerows by the wives and children of the mill-workers. No doubt this provided a useful supplement to a meagre income after the rigours of winter. Before there were strong pressures on the countryside, or, indeed, any local conservation interests, one can imagine the pickers ranging freely along lanes and over fields, owned by people they knew, and who benevolently condoned innocent trespass.

The custom spread to other Devon paper-mills. Eventually, with the economic ‘progress’ of our times the individually-owned mills became part of larger companies and those at Hele and Ivybridge became part of the Wiggins Teape Group. This company continued the practice of primrose picking, initially using the Hele mill, and later transferring the operation to Ivybridge, when an outbreak of foot-and-mouth disease around Hele restricted access to fields and hedgerows.

Eventually the practice became the focus of adverse publicity and came to the attention of the Conservation Committee of the Botanical Society of the British Isles. However, it is probable that the origin of objections to primrose picking was simply the result of a change in public attitude. Conservation of wildlife and landscape became a matter of general concern in the 1960s and 1970s, and a custom which had been an unobtrusive local event for several decades achieved county and then national notoriety.

INVESTIGATION OF PRIMROSE PICKING
Wiggins Teape were faced with a paradox; their practice of primrose distribution appeared to be a valuable and acceptable customer-relations exercise, yet generated damaging publicity which had begun to reach national newspapers. In 1973 a radio programme on species conservation made by an eminent naturalist for the Open University Ecology course cited the example of primrose picking in South Devon as an example of a serious threat to the regeneration of populations of a well-loved native plant.

The advertising group of Wiggins Teape sought help in establishing whether their primrose picking venture was deleterious to the primrose populations of the South Hams, and also if it would be viable to establish a commercial, rather than natural, base for the distribution of blooms. The Plymouth Polytechnic Experimental Station and its staff were invited to investigate the problem in 1977, and this paper presents our approach and preliminary findings.

A SOCIAL AND ENVIRONMENTAL APPROACH TO A BIOLOGICAL PROBLEM
The investigation of the effects of picking on population dynamics of Primula vulgaris L. might seem to be a purely biological problem. However, the opposition to the activity has to be put into a social context. For many years the practice was accepted as part of the life of a local community, and only later regarded by some with disdain. There can be no doubt that the common primrose has in many counties suffered a decline of populations and numbers in its natural range, largely through the uprooting of plants and their transfer to urban gardens. Hopefully, the Wildlife and Countryside Act of 1981 will help to protect primrose plants from such depredation. What is clear is that we must distinguish between uprooting of whole plants and the picking of blooms.

On being invited to evaluate the effects of picking on primrose populations, we felt it necessary to adopt a multidisciplinary approach. The simple answer would be to advise discontinuing picking of a potentially threatened species, but would this really solve the problems of P. vulgaris? One cannot easily dismiss the opinion of elderly and experienced farmers who argue that picking of blooms enhances primrose plants, and who also deplore the ravages of urban dwellers removing plants from hedgerows. Our approach was to investigate:

(a) the current knowledge of the biology of Primula vulgaris L.
(b) the distribution of the species in the South Hams.
(c) the history and current practice of picking for paper mill customer-relations
(d) the social implications of the activity, and its possible discontinuity, for the area and for the recipients of the blooms
(e) the attitude of conservationists to the practice.
(f) the biological effects of picking
(g) the feasibility of transferring the practice to commercial growing.

MORAL IMPLICATIONS
Advertising has a powerful and important, but potentially distasteful, role in modern society — it is necessary to promulgate the services that an organization provides if it is to contribute to the economy, but it can be regarded as ‘gimmicky’. Large companies are part of our national and international trade, and they may provide funds for organizations such as county naturalists trusts. This may be viewed with suspicion, but currently such funds are welcome, and Wiggins Teape has supported the Devon Trust for Nature Conservation in many of its activities. From the outset we were assured, and accepted, that Wiggins Teape would not wish to see the demise of P. vulgaris. One can always be cynical about the motives of a company or entrepreneur, but there are
PRIMROSE-GATHERERS.

FROM THE PICTURE IN THE COLLECTION OF GILES REDMAYNE, ESQ.

Reproduction of the engraving given the Society by Mrs. Charles Hutchinson, Girard, Pennsylvania
good precedents for large firms supporting conservation projects, such as the ICI funding of research into the plants of upper Teesdale which were threatened by the construction of the dam above High Force (to provide water for ICI on Teeside).

Nevertheless, it was agreed between us and Wiggins Teape that no constraints would be placed on the progress or results of our investigations, and it is important to view our approach in this light.

THE SOCIAL HISTORY OF PRIMROSE PICKING

Field investigations commenced in 1978 when we accompanied a representative of Wiggins Teape on visits to farms involved in the picking of primroses, and to the hall in Ivybridge where the packaging of the bundles for posting is carried out. It was evident that the operation is very carefully organized, and we saw no evidence of “mass” picking or removal of whole plants. In particular we noted that only a few blooms were picked from a plant at any one time; for the packaging and posting process, only immature blooms can be used, so that the recipient receives fresh, lasting material (which can last from seven to 14 days). Thus the pickers selected young blooms, and open flowers remained on the plants. Clearly, although the picking reduces the total number of flowers able to set seed, no plant has all of its flowers removed. All the plants we saw being picked were hedgerow plants, and none were from level parts of fields or woodlands. It was also evident that all involved in the operation, farmers, pickers, packers and organizers at the hall, enjoyed being involved, and the annual event, lasting for up to three weeks, was regarded as something of an “occasion”. Later in the year Wiggins Teape held a social evening for those involved, where they display letters received from the recipients of the blooms. These clearly showed the great pleasure that the exercise gave to valued customers of Wiggins Teape.

However, from the company records it was clear that from time to time Wiggins Teape had obtained adverse publicity from individuals and organizations, both locally and nationally, objecting to the primrose picking. It was evident that the unobtrusive and efficient operation of primrose picking that we observed had been very different some years ago. Flowers were often purchased from “ad hoc” pickers, and in one case school children had been encouraged to pick blooms and sell them to the hall; understandably this raised strong protests from schoolmasters and local amenity groups. Ultimately the issue was raised with the Conservation Committee of the Botanical Society of the British Isles, which at the time was involved in advising the Secretary of State for the Environment on the drafting of the Wild Creatures and Wild Plants Protection Bill, and therefore very aware of threats to British plants. Their correspondence on the matter is extensive, and reveals two effects. First, analysis of the correspondence allows the collation of information on the biology of the primrose from a range of experts. Second, it revealed considerable misconceptions about the nature and scale of the primrose picking exercise. For example, one authority calculated in 1977 that Wiggins Teape spent some £140,000 per annum on the exercise and argued that this money could be better spent on commercially raising primrose plants for picking. In fact in 1978 the total cost of the exercise was £7,300 — a relatively small advertising expenditure in this day and age. The company will now only purchase blooms from authorized pickers and from farms registered for the exercise. This removes the problem of uncontrolled picking which is much more likely to result in damage to the plants and their ecosystem. For example, occasional pickers are unlikely to restrict themselves to immature blooms. We have one main reservation about the public image of picking at present — farmers with hedges opening onto public highways may authorize picking where it can be seen by the general public. Indeed, this was the only cause of criticism in 1978 and again in 1980. Apart from the bad publicity, it may inadvertently set the wrong example to individuals not aware of the controls of the operation.

BILOGICAL ASPECTS OF PRIMROSE PICKING

The correspondence to the Conservation Committee of the Botanical Society revealed contradictory statements about the reproductive biology and population dynamics of Primula vulgaris L., even from experts on the Primulaceae. Some of the problems raised in the correspondence and published literature were amenable to study as part of the field and experimental programme of our project: (a) some authorities state that the primrose is a short-lived perennial and therefore ultimately relies on seed for dispersal. The argument is thus that picking reduces seed set and therefore the reproductive capacity of the plant, and could reduce populations to critical levels from which they might not recover. However, the quoted survival for a plant is 15-25 years, which is not particularly short for a herbaceous perennial. In addition to our observation that not all blooms are picked from a single plant, it was important in our field and experimental observations to test the effect of picking on both individual plants and population survival, and to estimate the reduction in seed set. We were surprised in our conversations with farmers to find that they regularly each year went back (several times in the picking period) to certain favoured hedgerows where primroses were always plentiful. This would appear to be contrary to the ideas that constant picking would reduce populations. Some of these hedges were therefore included in our field survey. The comment was also made that picking actually induces more flowers to be produced. This can clearly be tested in experimental plots. Picking is said in the literature to ‘increase plant vigour’.
(b) Primrose flowers are polymorphic for anther and style position. Three types of flower are known, called ‘pin-eyed’, ‘thrum-eyed’, and long homostyles. In pins the style is above the anthers and below the anthers in thrums. In the long homostyle both style and anthers are set at the opening of the corolla. We have not observed long homostyles in Devon. Only long homostyles self-pollinate, and for populations containing only pins and thrums both types of flower are needed for seed set. We observed whole populations with only one flower type, and this is also recorded in the literature; thus it appears that some populations can survive without seed set, presumably relying on vegetative growth. The paradox is therefore that picking could not affect (indeed, might increase the vigour of) single flower-type vegetative clones of either pins or thrums, but reduce seed set in mixed flower-type populations (but presumably not affecting their vegetative reproductive capacity). Thus in addition to seed set we also record numbers of pin-eyed and thrum-eyed flowers in the investigation.
(c) Information on the vegetative reproductive capacity of primroses is
also contradictory. One authority informed us that although the plant has a rhizomatous habit, it does not spread more than a few inches and does not spread vegetatively in the sense of producing a widely spreading clone. If this is the case it is difficult to understand how large populations of a single flower-type, either pins or thurms, are produced. Whatever the vegetative reproductive capacity of the plant it is clear that complete removal of plants with their rhizome and root system must reduce population survival. It is apparent from the Botanical Society correspondence that some authorities have confused picking with complete plant removal, but we saw no evidence of this in our observations of the picking exercise. If our experiments continue for long enough, we may be able to state something about the longevity of individual plants and vegetative reproductive capacity, but this could not be part of our more immediate investigation of the effects of picking.

(d) In a report to Wiggins Teape in 1977, a representative of the Institute of Terrestrial Ecology stated that “Whilst picking the flowers the area around the plant and the plant itself may be trampled and damaged. Flattened bare ground is not suitable for seed germination. Bruised new vegetative stocks do not recover quickly”. All the field populations we observed were on near vertical hedgerows, and trampling did not appear to be a problem. It could, however, be a problem in a field-station growing primroses commercially for picking. One unexpected field observation relating to this is that in some fields the hedgerows are grazed by cattle, and the primroses are also grazed. This happens after the flower picking season when the stock are put out. By contrast, some of the fields used in the picking operation are left to grow on for hay and silage, and this includes the hedgerows. The growth form of the primrose plants in the two management regimes is quite different. In the grazed fields the plants have a close rosette form, with the leaves close adpressed to the soil surface. The blooms are considerably raised up above the vegetative part of the plant. In the hay fields the leaves are long and straggly amongst the growth of grasses and other plants, and the blooms are hidden below the level of the leaves. We concluded that it was important to simulate these field conditions in any experimental plots.

(e) Although woodland is said to be the natural habitat for Primula vulgaris, more seed is set in grassy habitats than woodland shaded areas, and does not flourish under dense shade. Overgrowth of brambles is said to be particularly deleterious. Apart from the intrinsic interest of growing primroses in woodland, should Wiggins Teape decide to grow their own material for picking, they may wish to use the woodland around the mill at Ivybridge for such growth. The Plymouth Polytechnic Field Station includes a woodland area, and this could thus be included in the experimental design.

FIELD OBSERVATIONS
Three farms, with the kind cooperation of the farmers, were selected:
(a) A control — a farm not involved in the operation and where no picking occurs. Uppaton farm on the edge of Dartmoor was used, but it should be noted that the farm is at a higher altitude than those involved in the picking programme. Also the hedgerows are heavily grazed by sheep and this has been observed by the farmer to damage the primrose plants.
(b) A farm grazed by cattle after the picking season. Clicklands farm has been involved in the picking operation for many years. One particular field has a south-facing hedgerow which is habitually picked, several times in each season. All four hedgerows of the field were used in the investigation. North-facing hedges usually produce fewer plants and blooms.
(c) A farm where fields used in the picking operation are grown on for hay. Orchard farm was used. This farm has fields sloping to the north, whereas Clicklands has south-sloping fields. Primrose development is noticeably later at Orchard farm. Again a field was chosen with an habitually picked south-facing hedgerow, and the other three hedges in the field were also included for monitoring.

Pairs of quadrats (sample areas 1 m x ½ m subdivided into 50 sub-squares 10 cm x 10 cm) were located at random along hedgerows (totaling about 18-20 quadrats per farm). One quadrat in a pair was clearly marked and farmers instructed not to pick within that area. The position of the other quadrat was only known to the investigating team, by coordinate location. Since 1979 these quadrats have been monitored over the growing season for:
- Number of plants per area
- Mean cover and range per plant
- Number of blooms per plant at any sample time (recorded as mature/immature, and pin/thrum for mature open blooms)

EXPERIMENTAL DESIGN
The field plots set up at the Plymouth Polytechnic Field Station at Runleigh, near Bere Alston, intended to investigate:
(a) the problems involved in the propagation of Primula vulgaris
(b) the feasibility of commercial growing of primroses for flower production under controlled conditions
(c) simulating field conditions for monitoring the effects of picking.

Propagation
Vegetative propagation was investigated in 1978 using material taken from plants growing in hedgerows around the experimental station. Two forms of propagation were attempted — leaf cuttings and plant division. It was found that primroses could not easily be propagated from leaf cuttings, and these results precluded this as a commercial method of producing large numbers of plants. Propagation by division was successful, but only a limited number of splits could be taken from a single established plant. The labour involved and the material required to raise a large number of primrose plants made this method impracticable.

Three sources of seed were obtained to investigate seed propagation, two commercial sources and seed obtained from plants growing around the field station. One commercial seed lot completely failed, but the other lot and the native material gave good germination, although the latter gave staggered germination over a longer period. Germination and survival after transplantation was as high as 99%.

Feasibility of commercial growth
In 1978 Wiggins Teape mailed 13,000 boxes of primroses; each box contains two bunches of blooms, with 50 blooms per bunch — some 1,300,000 blooms. We calculated an average of about 20 suitable blooms picked per plant, and to obtain adequate plant spacing and access for picking without trampling, we could plant 672 plants in a polythene tunnel. It would thus require some 100 polythene tunnels to grow enough plants for an annual mailing. It is clear that the land area involved, the costs of the tunnels and the labour preclude any consideration of commercial growth for picking at a reasonable cost.

Trial plots
In simulating field conditions in the
trial plots, three sets of plants were required:

(a) A control set in a polythene tunnel (shaded controlled conditions; the tunnel, 52' x 18', was covered with Nicofence 41, which is a woven polythene, ultraviolet light stabilized fabric giving 55% permeability and allowing air movement and rain seepage).

(b) open field conditions

(c) woodland conditions

Each includes primroses grown from commercial seed and from locally collected seed. Each group of plants is subdivided into plots of plants grown separately and weeded, and plants grown with grass seed to simulate hayfield conditions, and these are cut and harvested at the end of the season. Each of these is then subdivided into (1) control, (2) light picking (one pick per season), (3) moderate picking (one pick per week for three weeks), (4) heavy picking (one pick every day for three weeks).

For (c) an area of woodland at the experimental station was roughly cleared and planted up in a random manner, with about 600 plants grown from commercial seed. One half of the plot is maintained free of brambles and the other not cleared. In each subplot are located two fixed quadrats; one is a control (no picking) and the other is subjected to moderate picking.

PRELIMINARY RESULTS AND CONCLUSIONS

To date we have two sets of field data, for 1979 and 1980. Picking did not occur in 1981 owing to the threat of an outbreak of foot-and-mouth disease. The field plots were commenced in 1979 and we have two sets of picking data for 1980 and 1981. Seed set data was obtained for 1980, but in 1981 the very damp conditions caused the seed pods to rot and break down. Under natural conditions pods often rot or are eaten by slugs before the seed is ripe. Collection of this data will continue for another year at least, and will be subject to an analysis of variance. Thus we can only give preliminary conclusions from these experiments and observations, but our impression is that the level of picking carried out is not a serious biological threat to the survival of Primula vulgaris in the South Hams. We also conclude that proper control of the picking exercise reduces the possibility of any adverse side-effects such as uncontrolled picking by casual passersby. However, we would like to see all picking from roadside verges eliminated.

Definite conclusions can be made about some aspects of our work to date:

1. Vegetative propagation is not a commercially viable proposition.  
2. Commercial growth of primroses for picking would be prohibitively expensive.  
3. Primula vulgaris seed from good commercial sources and from local collections has a high viability, and germination and subsequent growth are very rapid. It took a maximum of seven months from seed sowing to transplanting, and on some plants flowers were produced within this period.  
4. Plants can be raised in peat soil, despite assertions in the literature that they will only do well in soils with a high clay content.

Note: this article first appeared in Nature in Devon, The Journal for the Devon Trust of Nature Conservation, and is reprinted by permission of the authors.
Did you know that you can win a Life Membership in the American Primrose Society?

You can, and here’s how:

At the October 12 Board of Director’s Meeting it was decided to award a Life Membership to that Society member who personally sponsors the most new memberships between now and July 1, 1986.

All you have to do is:

1. find someone willing to join the Society
2. have that person fill out and sign a membership application envelope upon which you have previously written “Sponsored by _________.” (Your name. This is very, very important.)
3. You mail, or have your new member mail, this envelope with his/her check for $10.

That’s all there is to it, except that in order to qualify for the Life Membership you MUST sponsor and submit at least five (5) bona fide new memberships. Each application must be on one of the regular application envelopes, a packet (15) of which you may procure by writing your Editor (address inside back cover). Additional packets are available at any time.

In case of a tie, duplicate prizes will be awarded.

And one other thing. This is a reminder that Christmas is coming.

We would like to suggest that each of you consider giving membership in the American Primrose Society to everyone on your list who is a plant person. If these gift memberships are received six (6) weeks before Christmas (that is, by November 15) your friend will be sent a card announcing your gift.

A gift membership will count for you as a LIFE MEMBERSHIP sponsorship, provided it is submitted on an application envelope with full name and address, etc., and properly marked for your sponsorship identification.

1986 Dues Reminder

1986 membership renewals are now due. The envelope for sending in your renewal is included with this mailing. You will note that the annual rate is unchanged this year at $10.00.

We note that overseas dues are now the same as for home members, $10.00. As a convenience for those wishing to pay in sterling, cheques for £7.50, payable to Brian Skidmore, Treasurer, may be sent to:

Acct. No. 0291941
Lloyds Bank, C & C Branch
49 Milsom St., Bath
BA1 1DX, England

The envelope informing the Treasurer that the cheque has been deposited will help insure the proper credit in the U.S.A.

For you American members, please mail your renewals in time to reach the Treasurer by December 15. You are reminded that the APS is a tax exempt organization under Section 501 (c) (3) of the Internal Revenue Code. Contributions to APS are fully tax deductible to the extent of the law.

Your Board of Directors recognize that there are members who are prepared to contribute to the operations of the Society more than the regular dues. A “Sustaining” category of membership has been established for persons who contribute $50.00 or more in a year. Of course, contributions of any size will be gratefully accepted and acknowledged. In addition, Life Membership is now available for $200.00.

The 1985-86 Seed Exchange is open only to those APS members who have paid their 1986 dues.

The Open Door?

Unfortunately, the “APS Open Door” appears to be closing. This column, carried on so faithfully and effectively by Harriet Gurney, is in danger of being discontinued unless it is used by more members. A recent letter from Mrs. Gurney says in part:

“I have received no request for the Open Door all summer. No letters — no Open Door column. After three years I’m afraid there is no further interest. During this time I have received many wonderful letters; helped members to find plants, seed
Eating Crow

In a publication of this kind errors inevitably creep in, but those committed in the last issue go somewhat beyond the usual. Here is a list of known sins and what is being done about them.

(1) The statement attributed to Anita Alexander on page 6 of the Round Table, the one reading “I never allow primrose seed to freeze.” is erroneous. A letter from Mrs. Alexander says, “I store my seed frozen, have for many years. If I want to use certain seed 5-10-20 years from now, I freeze it. Seed used within a season I store in a tightly-covered glass jar in a cold refrigerator. Freezing is the better method when storing from one year to the next, or for many years.” Thank you, Anita. I hope this clarifies your intent and practice.

(2) An ad for Sue Olsen’s Foliage Gardens was omitted entirely (the copy was simply mislaid). Elsewhere in this issue the ad will be found, as it should have been last quarter. Sorry, Miss Olsen.

(3) A much more serious error occurred on the inside back cover where the new officers and Board were simply ignored, and last year’s slate blithely printed as usual. One irate member, in writing me about this, said “About the inside back cover — Shame on You!” And, of course, she was right. The new roster has been corrected and is hopefully in perfect order.

The writer of the letter goes on to comment on the covers we have had since my editorship began. “Let’s go back to a primula on both front and back covers,” she wrote. This would be nice, but I am hampered by two problems here. First, I do not have a supply of good photos from which to choose such covers as graced the Quarterly in years past. Second, our printer informs me that a dark photograph which “bleeds” on three sides (goes over the edges) is not possible on his printing equipment. The second problem we cannot entirely remedy; the first, we most emphatically can. If you have a favorite photo or photos, by all means send them to me for use on the cover. Otherwise I’ll be forced to continue to use what I have. OK?

(4) A considerable number of typographical and grammatical errors did not get picked up in my proofreading for this issue. My only excuse is that I am a busy man. I hold a full time job as an architect, which keeps me busy from 8:15 to 6:45 five days a week; I edit two magazines, I maintain a substantial garden, I have a family with whom I love to relate. But a kind and thoughtful (and very talented) friend, Mrs. Preston Carter, has taken pity on all of you and volunteered to supplement my efforts with a really thorough proofreading. The results should be abundantly apparent in this issue. Thank you, Jane, from the bottom of all our hearts (especially mine).

Resources Directory

The present Editor is very desirous of continuing the annual feature called “Resources Directory, 198” which appeared in 1982, 83 and 84. Unfortunately we have been unable to collect data for a 1985 directory, but with help will get one out in 1986. We need to know: Dates to remember in 1986 – the shows; the chapters: officers and activities. If you can offer help on either of these, please contact me at once.

APS Board Meeting

The summer Board meeting was called to order by President Albert Ross Smith at 11:30 am on July 13, 1985. The Board meeting was held prior to the picnic at Herb Dickson’s. When the meeting was adjourned everyone joined in a potluck luncheon, after which the annual plant auction was held.

Minutes of the last meeting were approved as read.

Treasurer’s report indicates we are in a healthier position this year than at the same time last year. It was agreed we would keep the dues at $10.00 for another year.

Seed Exchange Director reported that after 350 orders and 12,000 packets had been mailed the expenses paid the bank balance was $1,677.57 with $529.00 worth of inventory.

Etha Tate presented a guideline for the General Judging of primulas. This is food for thought and should be acted upon before next show time. Al Rapp suggested a meeting of judges before the next show to discuss rules — and Etha Tate agreed to work on setting up a meeting.

It was agreed that at the Board Meeting on the 12th of October we would have the meeting first and then, after a lunch break, the judges would convene. Meeting to start at 11:30 AM.

Ann Lunn reported on her slide program. She has sent out seven slide sets which have been used for approximately sixteen programs. She has two complete slide sets with script available. A $10 donation was made to the slide exchange by the Kodiak Garden Club, and donations of slides have been made to her collection by Orval Agee and Jay Lunn.

The Quilt Committee reported it was behind schedule but is progressing nicely. One item of business was the problem of the increasing Quarterly collection and how to reduce it. Terri Koch offered to take some and sell to her customers. Betty Ritch asked for help in completing the set of her group and Thelma Genheimer made a motion we donate the necessary ones to her society.

Herb Dickson told the Board he had a lot of information collected over the years, scrap books, etc. Betty Ritch offered to put this all together for a history of the Society.

Mrs. Diesen asked that the Eastside Chapter be permitted to host the National Show this next year. They have just been chartered and would welcome the show. A motion was made and seconded that, upon the contingency their Chapter charter is accepted, they be allowed to host the show.

The Board was lacking one member. Irene Buckles from the Washington State Chapter was appointed to fill the position.
Ann Lunn suggests we grow as many species as possible. She shared the information that the Berry Botanical Garden has just approved the formation of a National Primula Reference Collection. Its purpose is to grow, study, and disseminate as many authenticated species of Primula as possible.

Ruth Huston says there have been many inquiries about her Round Robins, and if there are enough who would participate she would start them over again. (Editor's note: Please send your comments on this to Ruth.)

The Board agreed the ballots would be mailed out with the seed exchange lists again this year. So the nominating committee was appointed at this time. The members will be Thelma Genhiemer, Chairman, Al Rapp and Ann Lunn. They will present the slate at the next meeting.

Betty Ritch suggests pertinent information be sent to new members. Suggests items such as nearest chapter and members nearby — this will be acted upon.

A letter from Editor Richard Critz was read to the Board. It advised us of the progress of the Pictorial Dictionary, moving along nicely — and makes a plea for all of us to search thru our photos for good ones which would be of value to him in editing the Quarterly.

The meeting was adjourned at 12:30 PM

Respectfully submitted,
Candy Strickland

From Your Editor

Season's Greetings!

We extend warmest wishes to you for all that is good in the new year. We wish to thank you for the appreciation and cooperation you have given so wholeheartedly and which has been responsible for any successes we have enjoyed.

The Quarterly is the Society's connecting link with the bulk of our membership and it is imperative that it continue to be guided by your wishes. Its design is for the practical use and enjoyment of both new and old members, and to that end we ask for your comments and requests as to subject matter, we encourage questions on culture, etc. One thing we plan for the new year: the Editor happily comes into possession of a "complete" file of past issues of the Quarterly, and this Editor is taking time to read that file, "cover to cover." Many treasures have come to light for him and YOU will get the benefit of some of that material in 1986 and following. Look for it. And may the Lord be with you.

SEED of DOUBLE ACAULIS

NEW SEED CROP IN AUGUST
Minimum Order - 50 seed - $5.00

Rosetta Jones
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6214 South 287th Street
Kent, Washington 98031

American Primrose Society

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Directors
Rosetta Jones, Kent, WA 1983
Etha Tate, Milwaukee, OR 1983
Thelma Genheimer, Beaverton, OR 1984

Presidents of affiliated societies and chapters

Membership
Dues of $10 a year are payable Nov. 15. Membership includes four issues annually of the Quarterly, cultural chart and seed exchange privileges. Sustaining member $50. Life membership, $200; library and horticultural societies, $10 a year; garden club affiliated societies, $10 a year; overseas members, $10 a year; please send by international money order. Send dues to the treasurer.

Publications
Back issues of the Quarterly are available. Order from the secretary. Manuscripts for publication in the quarterly are solicited from members and other gardening experts, although there is no payment. Please send articles and photographs to the editor at 1236 Wendover Ave., Rosemont, PA 19010. Advertising rates per issue: full page $60; half page $30; quarter page $15; eighth page and minimum $10. Submit advertising to the editor.

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