The New Book By Florence Bellis

Our own Florence Bellis has completed a new book, an important, and timely, and beautiful new book on soil science. At her own request we have asked Canadian member Thea Service Foster to review it for us, and here are her remarks:

Gardening and Beyond
by Florence Bellis

Many readers may pick up Florence Bellis’ book expecting to be taken on a memory trip based on her illustrious past as founder of Barnhaven Nursery, or her participation in the events of the American Primula Society’s earliest days. They will be surprised. Most of the Chapters are firmly set in her recent efforts to make her 100’ x 100’ plot of land on the Oregon Coast productive and useful. The same venturous mind which led her to pioneer in developing more colourful and hardier polyanthus has been focussed on gaining the utmost from her God-given allotment of land. (Primulas play a peripheral part, not the central role some readers may have anticipated.)

Mrs. Bellis’ child-like delight in new discoveries has always shone forth from her writings. I suspect she would have done the extensive research reported on in this book simply for her own satisfaction – through a driving personal need to know why and how things work. We are all the beneficiaries of this need. GARDENING AND BEYOND is obviously the end product of years of study. It must not have been easy for the author to put this material on paper in a manner understandable to people with minds less brilliant than her own. But Florence Bellis succeeds spectacularly in translating soil-science into crystal clear terms! The serious amateur will appreciate her efforts in accomplishing this formidable task, but everybody else will love the book too! In the preface she states in part: “This book rounds off my life’s work and (is) my legacy to all gardeners.” What a legacy it is!
There is such a wealth of information in this book that it is difficult to do a chapter by chapter review. Needless to say, I enjoyed every one of them, and by dipping into a chapter here and there, I shall try to give some of the flavour, if not all of the substance.

In "Dining on Dimes" the author presents an imaginative solution to fitting peas and beans into a garden of ornamental plants, shrubs and small trees. By interplanting our rhododendrons with climbing legumes we can have the best of two worlds: as the vines spread through the branches the bean roots aerate the soil, and both will nourish the shrubs when they decompose. Japanese iris are given potatoes and carrots as companions.

The description of the Bellis compost (or humus) piles is typically thorough. Throughout the book we are never left to wonder why a procedure is undertaken. We are told in scientific terms how the 'unseen helpers' in the ground work their miracles - how they waken into life with the lengthening and warming days of spring. We are also told how we may abet these beneficial organisms. We learn that plants may show signs of undernourishment even when nutrients are present in the soil - nutrients bound up through lack of aeration. "Cultivation", "Humus" and "Oxygen" are key words in Chapter 7, which is significantly titled "Air Power". There is a very clear description of how to till the soil for optimum results. Gypsum is described as a "spring miracle" because of its soil conditioning action which reduces packing. Those of us in areas of heavy rainfall might take special notice of this property.

 Advice on winter-hardening our plants will strike the right note for Northwesterners on the Coast. The sudden drop to 6° F. in November, 1985, caused grievous losses which still weight sadly on our minds. Historic discoveries of soil additives are described. The components of commercial fertilizers are considered and the timing of their applications explained.

Virtues and vices of mulching materials are explained with an analysis of the various types. Here we read of the role of our lovely but important friend, the earth worm - after reading this splendid passage I shall never again take this friend's help for granted - and on looking at our soil, we shall ever imagine these wonderful creatures toiling endlessly below the surface on our behalf.

Being successful in setting out our plants requires close observation of the mini-climates throughout our gardens. In Chapter 9 we are aided in spotting plant preferences by the study of their root and leaf structures. Much practical information is included in this chapter, from soil improvement to specifics about routine (but often poorly executed) procedures in setting out plants.

We all need regular reminders that roots must never, never be bent, cramped or bruised.

Few people are so well qualified to advise us on basic growing techniques. Florence Bellis takes us from soil mixtures to seed sowing, pricking-out and dividing our plants. As we read the clear directions we literally see, in our mind's eye, Florence's deft hands performing these tasks.

She describes the accidental discovery of the benefits of adding small sharp rock to a bench of clayey soil in which Cowichan strain polyanthus were set out. There are descriptions of other procedures, discovered later, where sharp rock chips are very helpful.

In the chapter on "Creative Reproduction" we learn of nature's own ruses to ensure continuation of plants through seed and various types of offsets. There are interesting notes about the work of Mendel, Burbank and Gertrude Jekyll, which form a lead-in to the author's early work in Barnhaven. In hybridizing, line breeding was frowned upon, but Florence Bellis proved it to be the right way to enhance and fix the colours of her modern strains of primroses. Resulting plants exhibited previously unheard of refinement and predictability. Hardiness and sturdiness were bred into her plants and remain as earmarks of her strain to the present day. (Qualities that are noticeably absent in the colourful but fragile and floppy polyanthus bred by many other growers.) She includes paragraphs on pollination, on colour breaks, on the glorious Cowichans and charming doubles.

This is an engrossing chapter - worthy of an entire book of its own. Dynamic
and successful people are a fascination to most of us, but Florence shares her reluctance to reveal too much of her personal side. I do hope that someone, someday, will write a study of her career in a manner that is not overly invasive of her privacy.

Vegetables are not neglected. Their culture is discussed and useful notes on nutritional values are included. There seems to be no limit to our author's field of interest and knowledge.

I have waited until now to mention the writing style in this rewarding book. Florence Bellis' strong personality has always placed its stamp on her prose. Even the most serious chapters are leavened by imaginative phrasing. The descriptions glow with colour and texture as she takes us by the hand to the close-by seashore, to the fringes of her pine woods, or to the inland Oregon of her youth. Humor sparkles throughout the book and Florence will laugh heartily if she starts a run on chamber pots!

Finally, the book's format is so appealing. The pages are kept open and attractive through the lavish use of line drawings. These beautifully executed sketches done by Florence's own grand-daughter, depict the plants, places and wild-life mentioned in the text. Like the book itself, they are obviously a labour of love. It is a pleasure to see such a happy meeting of the minds between author and illustrator. (Could it be genetic?)

Thea Service Foster
West Vancouver, B.C.

NATIONAL AURICULA AND PRIMULA SOCIETY - Northern Section
Invites all Auricula and Primula Lovers to join this Old Society
Membership includes year Book
D. G. Hadfield
146 Queens Road, Cheadle Hulme, Cheadle, Cheshire, England

NATIONAL AURICULA AND PRIMULA SOCIETY - Southern Section
Invites all Auricula and Primula Lovers to join this Old Society
Membership includes year Book
Lawrence E. Wigley
67 Warnham Court Road, Carshalton Beeches, Surrey, England

NATIONAL AURICULA AND PRIMULA SOCIETY - Midland Section
Invites all Auricula and Primula Lovers to join this Old Society
Membership includes year Book
Hon. Sec., Mr. P. Green
Primrose Hill, Bell's Bank, Buckley, Worcs., England

And Now – Juliana Anomalies

by Mr. J. W. Martin
The Orchard, Longford, Market Drayton, Shropshire, TF9 3PW

The problem with raising primroses from seed is keeping them going as permanent additions to our gardens. No matter which strain is used most of them fade out after the first year of flowering. There are a few exceptions in the case of doubles, several good modern ones have started to creep into nursery lists, but I know of no named variety of the other anomalous forms that has made it. In fact, there are only two named ones in existence, both Julianas, Tipperary Purple Jack-in-the-Green and the Hose in Hose form of Wanda. Julianas produce more offsets, the best of them spread and they are generally longer lived than Vulgaris forms. Over the past few years therefore I have been trying to produce Juliana strains of all the anomalous forms available, with the following results.

Doubles
The only Juliana double commonly available is Our Pat which fortunately produces pollen. The rarer Pink Juliana double seldom does. Using Our Pat pollen on Barnhaven and Rosetta Jones plants I have produced a number of doubles of recognisable Juliana type. The colours tend towards violet and purple. They do not offset as freely as Our Pat and longevity is hardly improved. I am now into my third generation and I notice that several plants of the last raising are much nearer Our Pat in habit and I intend to concentrate on these in breeding.

Jack in the Green
Using Tipperary Purple as pollen parent on Barnhavens I produced a number of plants only one of which produced a good ruff. The colour was very poor and after using it to breed from I disposed of it. Seed production in this strain is very poor and I only have a few plants. One or two of the latest generation are of good spreading Juliana habit and of acceptable colour although again in the magenta/purple range. This strain also produces some quite good jackanapes.

Hose in Hose
This is a much more promising line. Hose in Hose flowers are best seen on a polyanthus stem and Wanda hose is
not only acaulis in form but passes it on to its offspring. I had a stroke of luck when James Long of Marion, VA sent me a scrap of a magenta hose in hose of mat forming type, very Juliana, and best of all with a good polyanthus stem. It seems not to produce seed but does produce pollen. Again using Barnhavens I have raised quite a number of hose of good form, all on polyanthus stems with a fair proportion of pantaloons among them. Offsetting is of the free Juliana type and the plants seem persistent. I am on the point of naming and distributing the best of them if all goes well.

**Double Jack in the Green**

A few years ago I received a generous gift of seed from the originator of this strain, Dr. Jones of South Wales. The resulting plants were all very similar with rather transparent petals but with very good ruffs. They proved no more long lived than my other doubles. I crossed the best of them with Rosetta Jones strain and got flowers of good substance on much stronger stems. An unlocked for bonus is that the plants have so far done much better than doubles usually do. There seems to be no Juliana blood in them but I intend to use Our Pat on some of them.

The main drawback to introducing a Juliana line into a vulgaris strain is that there is an immediate falling off in the amount of seed. The pods are smaller, they contain fewer seed and there are fewer pods produced. More plants seem to be entirely seedless than is the case with pure vulgaris. Germination is not so good either. Another problem is that the colour range becomes restricted. Good yellows disappear and the reds and blues have a purplish tinge. I can put up with all this if the plants multiply and thrive. If a plant fails to last, its colour is of academic interest only.
This new book—A Synoptic Guide to the Genus Primula by Kris Fenderson—is wonderful! It is a “must” for the library of any amateur or serious grower of Primulas.

At long last Primula growers have a complete and updated reference source for their beloved plants. It has been almost forty years since the American Primrose, Primula and Auricula Society published its Pictorial Dictionary. Although the Pictorial Dictionary is still useful as a guide, it is quite outdated as to current taxonomy. Smith and Fletcher’s monograph dates even further back, it covers a period of time between 1928 and 1949.

Don’t let the title of this new book scare primrose growers away. A more simplified title would be Order Among the Primroses. After I was thoroughly confused with the reclassifications and nomenclature of other recent publications on Primulas, Kris did a fantastic job of carefully leading me through the explanations and reasoning behind the latest changes in taxonomy. He is to be congratulated for bringing order out of an easily confusing nomenclature of Supraspecific Subdivisions. We should realize that changes in the names of our beloved plants are not going to stop just because the new names are not familiar to us.

As Kris points out “The Code (International Code of Botanical Nomenclature), with its important rules of priority and legitimacy, requires that names not be used (or in this case, retained) simply because they are “preferable or better known”. Despite what may be a short-term inconvenience to horticulturists, the goal is a more stable and uniform system of nomenclature.”

For an experienced grower, the book has three chapters of major importance: Supraspecific Subdivisions, Alphabetical List of Taxa (an extensive and wonderful listing), and the Illustrations. Supraspecific Subdivisions notes the Subgenuses, Sections and Subsections of the species. I was fascinated by the listing associated with the Subgenus Aleuritia (known mostly as primula of the Sections Farinosa, Denticulata, Muscarioides, Capitatae, and Soldanelloides) as many of the primula listed are only names associated with distant and exotic regions of the world: P. gemmifera, P. glabra, P. inayatii, P. yunnanensis, etc.

The illustrations Kris has sketched are noteworthy in that they are very carefully selected to show characteristics for the major sections. Many of the illustrations will become extremely useful as more and more seed and plants become available from the eastern slopes of the Himalayas and western China.

It does not take long for a person to understand why the book has taken years in being formulated. The massive amount of time and dedication Kris spent in collecting, organizing, and condensing data becomes obvious as one peruses the extensive listings and illustrations.
It is only occasionally that a book of major horticultural importance is written, and a much, much rarer occasion that a significant reference book on Primula is published; "A Synoptic Guide to the Genus Primula" is such a book. It is a book that belongs on every horticulturalist's bookshelf and in every horticultural society's library. If a person cannot justify purchasing a copy for himself, then I highly recommend he write to his local library to place it on the library's current listings of reference material.

During the short time a copy has been in my possession, I have had opportunity to use it as a reference on many occasions. Thank you Kris Fenderson for this prodigious book.

On the request for suggestions for the forthcoming conference.

a. Contact the Postal Authority for a special stamp to commemorate the conference to be issued on the opening day of the conference with a special commemorative handstamp cancellation for mail posted in the special box at the venue. (We do this in the U.K. and they sell all over the world. A stiffener card in the envelope could give details of the Society and the Conference stressing that this is the first time it has been held outside England. The stamp, or stamps, for you often have pairs of stamps issued, could show a P. acaulis the true primrose on one and Florence Bellis on the other. All it needs is for someone to press the Postal people well in advance.

b. The Conference should be held in the SPRING when Primroses are out and made to coincide with the National Show. By then, God Willing, I shall be 70 but this is not for such as me but for the young florists who will inherit it all from us. A special issue of the Conference Report at a reduce price for A.P.S. members should be available, payable well in advance in order to assist with printing costs. Note: The U.K. did a stamp with Primroses some time ago. It is smashing!!

The First Day of Issue cover should of course have the A.P.S. Logo on it.

Bernard Smith, 'Windways'

The English Florist's Show Day

by Jack Wemyss-Cooke
Manchester, England

Though by nature mine is a pragmatic disposition, Richard Critz's request for an article on the philosophy of the auricula show in England caused some anxiety. I was minded that, because our shows are generally so successful and run reasonably smoothly, I had never thought to cogitate or analyse the organizational philosophy or mores that apparently make our approach work so well.

To me the show year really seems to start at the February committee meeting in Manchester, when the fine tuning of organizational detail is undertaken, eg. the appointment of judges and stewards; adjustments to schedules (rarely necessary); confirmation of dates, times and venues; and catering arrangements. Never, to my knowledge, has the standard show format been considered for change or serious modification over a period of many years, therefore Show Superintendents and other officials tread a well known path on which all have ventured before without mishap, and the whole operation runs like clockwork.

The venue for any show has almost certainly been booked some twelve months in advance by our Secretary. Ideally this should be, and is, a spacious hall with adequate supplies of suitable tables and plenty of natural light, located conveniently for road/rail termini and access to parking and off-loading space. A bonus is a venue provided with catering facilities - member volunteers can then organize a coffee and sandwich bar wherein exhibitors and visitors alike can relax and gossip, particularly during judging, when the exhibition hall is totally out of bounds until the results are finally recorded.

Church or school halls are often rented for our shows and each area has its' favoured location; most of these types of venues have the necessary catering annexe and rentals tend to be reasonable. Discussing the question of show location recently with some florist friends, they were horrified at the thought of having a flower show of any description in a shopping mall or supermarket.

My view, and that of my friends, is this: we believe the essential ethos of the show would be severely impaired or even destroyed when in close proximity to commercial activity of such na-
ture, which in any case must attract a preponderance of shoppers with no interest whatsoever in our activities. Even our gift plant sale, which raises many hundreds of pounds for the society, takes place at a location away from the main exhibition area so that exhibits can be viewed and discussed without such distraction as a noisy sales area generates.

The payment of prize money at our shows was discontinued many years ago; members in the old days usually donated it back to the society in any case. Prizes consist of medals, cups, cards and other trophies donated over the years by members and their families. Competition is keen, though friendly; underlying the jocular chit-chat of the competitors is the tacit acknowledgement that all our judges subscribe to the accepted florists' standards - consequently their decisions are rarely questioned. The absence of any pecuniary advantage either way guarantees the probity of such judgements, coming as they do from respected florists appointed by their peers annually to perform these duties.

At the main auricula show in Cheadle on the traditional first Saturday in May there are 65 classes, out of which 42 are solely restricted to florist flowers, judged strictly in accordance with the old time-honoured standards. Occasionally we get the odd parrot cry from one or two members who appear unable to raise seedlings of acceptable quality, that standards should be modified to accommodate such washed-out misfits as, for example, the so-called silver-laced polyanthus. Fortunately Northern florists have closed ranks and will have none of this heresy which has led to a decline in the quality of seedlings shown elsewhere in this country and the USA, if some photographic evidence is to be believed.

Much of the success of the Northern florists can, I am sure, be directly attributed to the utter rejection of any attempt to dilute the exacting standards set for us by honoured and learned predecessors. When one considers that the 1986 Cheadle show attracted a massive 879 entries, comprising 1,333 plants, there is adequate justification for assuming that maintaining standards has, in fact, enhanced our shows and made prize-winning at them a very moving and worthwhile objective, in spite of the total absence of pecuniary advantage to the successful exhibitor. Competition in Class One (six show auriculas) has never been keener - to exhibit, say, three edged and three self auriculas on the bench in prime condition and take first, or any, prize at all when judged by florist standards is no mean feat. The dual coup of also winning a premier medal with one of the plants in your group of six is a rare event, usually only viewed as a florists's fantasy, but a possibility that one dreams about in quieter months.

The English auricula/primula show, by the very nature of its organization, venue and conduct of publicity, is bound to attract the type of visitor interested in gardening or accompanying friends and relatives who are themselves florists. Consequently our shows are a yearly re-dedication of old friendships and a convivial coming together of interested persons of goodwill who are then exposed to the magical influence generated by our flowers. Annually our harvest of new members is generated by the shows and, of course, by visitors and members stimulating interest in gardening circles. At home locations as well we are guaranteed to recruit a nucleus of the really interested rather than the gardening dilettante.

In recent years no-one has held high office in our society who has been engaged in the commercial production or sale of plants, although we have a number of respected members in the trade. Policy in the society, virtually since its inception in 1872, has traditionally favoured high office being in the gift of the membership only to those who have served the society faithfully, putting our flowers before commercial considerations. We therefore treasure our status as florists and amateurs and defer to no-one in the pursuit of all that is best for them. It seems to me, therefore, that after all is said and done the philosophical touchstone of our movement and society stems from our deep attachment and rapport with the object of our devotion, the auricula, and it was ever thus.

Whether my discourse has thrown any light into the philosophical corners Richard wished me to illuminate is for my readers to decide. What is quite clear to me is that the finest theatre for the display of our treasure is of no account unless we can induce the discerning gardener to share our wonder and pleasure in these wonderful flowers.
Oregon Primrose Society
PRESENTS ITS
TWENTY-EIGHTH ANNUAL SPRING SHOW
THE NATIONAL SHOW FOR 1987
There will be 15 classes of entries including classes for juniors, for arrangers and novices. Co-chairmen Mrs. William Tate and Frank Berthold emphasize that novices — people not actively involved with or even members of the Chapter — are warmly encouraged to enter their plants. Exhibitors who bring in their material on Friday evening or early Saturday morning can get help or advice in grooming their plants.
April 4, 1987 2:00 p.m. - 6:00 p.m.
April 5, 1987 1:00 p.m. - 5:00 p.m.
Call or write for your schedule today!

GARDENS
by Florence Bellis
(In her article last week Florence Bellis began consideration of the outstanding Chinese contributions to the primrose wealth of our gardens, Bulleyana, Littoniana and Chionantha. Owing to space limitations the article was continued to this week and herewith concludes with further detail description of these species and their hybrids.)

Shades of rose, carmine and salmon-pink have been produced and one, Asthore by name, is a coppery old rose tinged heliotrope with a yellow eye. Not one stem carrying its many whorls of bloom, but many crowd up from the crown of Bulleyana and its hybrids.

Starry-eyed primroses and those spraying out a shower of bells, primrose blooms packed tightly into a globe have been mentioned, but Primula Littoniana is of still another form bearing its flowers closely packed on a spike, quite like a miniature Tritoma.

From a clump of up-standing, typically primrose foliage, the stout, powdered stem pushes up and up until the last four or six inches terminates into the astonishing flower spike.

Brilliant scarlet before they open, the innumerable pendant blossoms packed around the spike with such precision are a deep violet. Beginning their bloom at the bottom of the spike and unfolding up the stem, the crimson buds giving way before the purple advance, they are like tall tapers burning in the grassy meadows of the Yunnanese Alps.

Littoniana’s wants are the same as the other primroses under consideration: afternoon shade, deep, rich soil, plenty of summer moisture, and the other “must” in primrose culture, perfect drainage.

Shining on the same alpine meadows among the great candles of Littoniana and the sulphur bells of the Sikkim cowslip are the white stars of P. Chionantha crowding tier above tier up the stalk. Growing well over a foot high, the plant is powdered over with a golden meal and the flowers give off a ravishing perfume. The culture of Chionantha is the same as Bulleyana and Littoniana.

There are many more beautiful Chinese primroses in cultivation, but how many lovely unknowns still await the plant hunter’s trowel and the seed gatherer’s hand?)
Primula Suffretescens

by Gwen Baker
Wolverhampton, England

Sometimes known as the shrubby Primula, because of it's trailing rooting stems, *Primula suffretescens* grows wild in the high Sierras of Nevada and California, in pockets of detritus and fissures in the granite rocks. It is reputed to spend half it's life under snow, and a graphic eye-portrait in the American Primrose Journal Volume 39, no. 4, tells of it in full bloom in the torrid heat of August, with the temperature 100°C. It grew in the cracks at the side of an ice-cold, glacier-fed stream, sharing it's crevice with an alpine willow, the bright magenta primula flowers in clusters at the top of a 15cm stem.

It's trailing stems are not really woody, like a true shrub, but they are persistant, with long thin evergreen leaves in whorls at the ends of the branching stems. Though unlike the majority of Primula leaves, they are similar in shape to the leaves of *Primula minima*, oblong with straight sides and a narrow toothed extremity. I have mistaken a single rosette in a pot for the leaves of *Primula minima*, but on a larger plant the creeping stem of *P. suffretescens* is unmistakable and sets it apart from all other Primulas. As they creep over the ground, these stems root down at intervals, and new branches of the stem arise at intervals so that a well grown plant slowly enlarges it's territory. Mine has grown to about 30cm square.

Four years ago I was given a seedling. Having had and lost it before, I read all I could about it's requirements, then planted it in an old deep trough situated to the east of a high fence. In winter and Spring it got full sun till midday, and in summer it was shaded but not overhung by a deciduous tree. The trough was given a good layer of drainage material, and then filled with a mixture of lime-free well-rotted fibrous loam, two-year old leaf flakes and pea-gravel, spiked with Vitax Q4 which contains slow-acting nitrogen and trace elements. I top-dress each spring with a similar mixture. The plant was placed in an outside corner and in winter I prop a pane of glass over it to keep off the worst of the winter wet. Last winter the temperature went below freezing for a month, and the plant took no harm.

I soon discovered that a new shoot had developed a strong new root, white, as long and as thick as a darning needle, with little knobs alongside which I presume were root radicals. I severed the shoot and potted it up, and slowly it grew. I placed egg-sized pebbles on the remaining stems to peg them down and encourage them to root down, too. A similar offset taken later did not prosper; perhaps the weather was too hot or I did not give it enough water. In due course I planted the offset in a sunny leafy scree, with perfect drainage, where it is growing slowly and now has four rosettes. Both plants flowered in June, the parent plant bearing nine spikes of flowers, the biggest with five round flat-faced magenta flowers. Neither plant set seed, though I saw bees round them. Presumably it needs...
another clone to cross-fertilize it.

This September, 1986, I found vine weevil in another Primula in the trough, and I investigated the roots of *P. sufi
treescens* but found no pest. However, being anxious, I took about half the plant as cuttings and rooted them in a mixture rich in iron, as suggested in my APS journal. Two months later they look healthy. I have ordered another clone from a famous Primula nursery, Edrom. With luck, next year I might have some seed.

That primrose is a yellow colour and that most wild primroses are of this pale moonlight colour is a well-known fact. Hints and suggestions that not all primroses are yellow abound, and one of the most famous is Harbinger, a wild white primrose found in a Cornish wood. Another persistant rumor has it that in parts of the British Isles wild pink primroses occur, in Northumberland and in Pembroke, the furthest southern point of Wales. One Spring I was talking to a friend about wild flowers, and the conversation turns as usual to Primulas. It was spring and I was feeling that old familiar yearning to go places and discover things. I mentioned the Pink primroses of Pembroke and bewailed the impossibility of going so far to see for myself. “No need to go to Pembroke”, my friend replied, “I know a place not ten miles away where they grow, here in the Midlands.”

Naturally I took him up on this, and in due course I was given the address of the farmer and his wife on whose land they grew. I wrote and was given a time and a place to go, not ten miles away from the city, in the middle of cow-grazing country. At last the day came and I set off with my camera and my gumboots as instructed. The farmer and his wife welcomed me, and after a cup of coffee I was conducted along a country lane, across two meadows, up a slope to the outskirts of a small wood and a hollow where there was a cattle pond. One side was rather steep and slippery and was fenced off lest the cows damage themselves. Here, beneath the trees by the water, on a clay bank, the primroses had chosen to grow, a small isolated colony. There were about thirty plants, all told, and about a quarter of them were pink. One particularly robust plant was a deep pink, but some of the pink ones were of a shade suggesting yellow pigment as well as pink.

As we walked, my hostess told me all she knew of the colony. It was there when she and her husband bought the farm twenty-four years ago, and the colony had moved over the years from a place the other side of the coppice, but in all those years there had always been pink ones. There were other larger colonies on the banks of a reservoir not far away and these were mainly the normal yellow kind. I have since seen a naturalist’s report of a “red” one seen by the reservoir. She thought the primroses were genuine wild ones, the nearest house and garden being over a mile away, and the place was remote from roads and field paths. The plants could not possibly be garden throwouts gone wild.

I took many photographs and asked many questions. Soil and conditions were right for the colony to maintain itself, and as it was a small and isolated, conditions perfect for the inbreeding of a recessive gene. The proportion of pink ones to yellow ones was about right, too. Before I went I requested and was given leave to collect a small clump of seedlings growing in the shade of the big pink plant, a place where they would have been smothered as the mother plant grew bigger in the early summer. I carried

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**Pink Primroses in the Wild**

by Gwen Baker

Wolverhampton, England

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As we walked, my hostess told me all she knew of the colony. It was there when she and her husband bought the farm twenty-four years ago, and the colony had moved over the years from a place the other side of the coppice, but in all those years there had always been pink ones. There were other larger colonies on the banks of a reservoir not far away and these were mainly the normal yellow kind. I have since seen a naturalist’s report of a “red” one seen by the reservoir. She thought the primroses were genuine wild ones, the nearest house and garden being over a mile away, and the place was remote from roads and field paths. The plants could not possibly be garden throwouts gone wild.

I took many photographs and asked many questions. Soil and conditions were right for the colony to maintain itself, and as it was a small and isolated, conditions perfect for the inbreeding of a recessive gene. The proportion of pink ones to yellow ones was about right, too. Before I went I requested and was given leave to collect a small clump of seedlings growing in the shade of the big pink plant, a place where they would have been smothered as the mother plant grew bigger in the early summer. I carried
my prize off wrapped in a dock leaf and you may be sure those babies were cherished. When they grew large enough I planted them in a row beside my greenhouse, in a place as isolated as possible from my other primroses and polyanthus, to prevent pollination by other strains. Last year they flowered. One was a deep rose pink, three were pinky-yellow, and the rest the normal primrose yellow. Now it is Fall and I see my wild pink primroses have seeded down. It is a known fact the pink genes do show up occasionally in other parts of Britain. Why not here in the middle of the country?

A Reply to Dan Bamford

Many of our members will recall the close and cordial association with this Society of English Florist Dan Bamford. In the short piece below, entitled "On Primula Heritage" our friend Bernard Smith of Windways, England responds to a Bamford query.

In 1955 Capt. G. Leonard Hearn of Stevenage, Herts, passed away at the age of 69 years and part of an appreciation in the N.A.P.S. Annual Report by Mr. Dan Bamford of Middleton, Lancs, read "One by one these old staunch members are leaving us - a little while and the last one will have departed. Their love of gardening began before most of the glory of floriculture was shed. They remember the old faces of many of the old florists who handed us their treasures, faces which seemed almost synonymous with the English spoken word. What will happen when the last has gone? Their soul was indeed with the old florist flowers of this country. Will the rising generation carry on the old tradition handed down to us by our forebears?"

Dan Bamford need not have worried. His rising generation have well looked after their heritage with new introductions from corners of the globe beyond his ken. New hybrids have been raised and membership of the Societies increased. More and more people grow the old flowers in modern forms and, as many of us are getting older, I am certain that our 'next generation' will carry on where we left off. Fear not old friend, our heritage is safe and in good hands.

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Update

INTERNATIONAL PHOTO PRIMULA SHOW

Interest is definitely picking up in the Photo Show. We have had a number of communications expressing appreciation for extending the closing date to June 15, 1987. We hope and expect that this will encourage many more of you to photograph your plants this coming spring and get them entered.

Of course, it is not necessary that your photographs be new — only that they be primulas. Pictures taken years ago will be fine if the prints are clear and that proper information is provided.

We hope especially that many of you readers in England, Japan, and any other land will submit entries. (The prize money is being offered mainly to compensate for the cost of the photographs, incidentally.) Judging from what I have seen in the Scottish, English, Japanese and other journals, it is likely that some of you friends will be winning that compensation in almost every class. I wouldn't mind seeing that at all!

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American Primrose Society
What's New?

Edited by Joe Dupre
Anacortes, WA

Item:
MICROWAVED. "SUPERSEEDS"

The Crossville, Tennessee Chroni-
cle recently reported that Professor C.B. Coburn, in the biology depart-
ment at Tennessee Tech, Cookeville,
had discovered that seeds can grow
faster after exposure to microwaves.
He put seeds in his microwave oven
at home for 15 second intervals, up
to a total of four times (for a total
exposure of 60 seconds). Popcorn,
heat, pinto bean, alfalfa, and mung
bean seeds grew up to about 30% fas-
ter than unexposed seeds, with the
60-second exposure most effective.

Coburn offers no theory on why the
seeds become "super" after being
microwaved. Exposure times and in-
tensities for best results remain ex-
perimental. It is even possible that
plants raised from "superseeds" might flower and fruit earlier.

Item:
ANOTHER DEER REPELLENT TO
TRY

We have tried many odoriferous
materials suggested by various indi-
viduals as sure-fire deer repellents,
and our experiences with all of them
have been similar: they work for a
few weeks at most, then the deer act
as if they aren't there any more.
We've seen heavy browsing by deer
off trees (including apples, chestnuts,
mulberries, and occasionally persim-
mons) "protected" by mothballs, hair,
carnivore manure, and human
erine.

Now John Strang, Extension Hor-
ticulturist at the University of Ken-
tucky, says that apple orchardists are
excited about hand soap as a deer rep-
ellant. Commercial growers in the
Midwest have discovered that hanging
bags of deodorant soap (like Dial;
nondeodorant soaps do not work) in
their trees gives long-lasting relief
from deer predation -- and, we sup-
pose, good-smelling trees! the
technique seems worth a try by
amateur growers. We'd appreciate
hearing about your results if you try it.

Item:
UNUSUAL SEEDS FROM "DOWN
UNDER"

The Vicarage, Sheffield, NEW ZEAL-
LAND, offers a price list for $1 U.S.
(seeds of native alpine plants); bush-
land Flora Seed Specialists, Box 118,
Scarborough 6019, WESTERN AU-
STRALIA, offers a list for $1 U.S.
(seeds of Australian wildflowers). Be
sure to check with your state plant
protection officials before importing
any of these materials!

Item:
MICROWAVE STERILIZATION OF
SOIL

Soils can be treated with chemicals
or heated to control disease or-
ganisms, weeds, and nematodes
which are injurious to plants. But the
difficulties involved with conven-
tional methods of soil sterilization are
enough to send the amateur grower
running to the garden store for a bag
of sterile soil mix! The chemicals rec-
ommended for soil fumigation (such as
formaldehyde, chloropicrin, and
methyl bromide) are quite hazardous
to use. And heating can result in the
formation of toxic compounds which
can only be removed by leaching with
water (or planting can be delayed for
three to six weeks!). The standard
recommendation for heating is 30 mi-
utes at 180 degrees F, though 140
degrees F reduces toxicity problems.

Now, microwave-oven technology
promises to reduce, if not eliminate
the uncertainties and "fuss" of soil steril-
azation, at least for small amounts of
soil (up to about 10 pounds per treat-
ment). An extensive series of trials
using a home microwave oven (Sears
Kenmore, 625 watts maximum heat-
ing power) to sterilize soils have been
conducted in the Department of Plant
Pathology at the University of Ken-
tucky. Because standard microwave
ovens vary little in maximum heating
power, the results with the Sears oven
should be quite similar to those when
other ovens are used.

Open polyethylene or polypropylene
bags of soil were exposed
to full power for various times.
(Sometimes the polyethylene bags
broke open during long exposures!) For
2 pounds (wet weight; actual
water content, if below about 35%,
did not significantly affect the results)
of soil, 150 seconds of heating elimi-
nated Pythium species ("damping-
off" fungi), Fusarium, species (root
rot fungi), and most harmful
nematodes, but longer periods of
heating were needed to control
Rhizoctonia species ("damping-off"
fungi) and the nematode Heterodera
glycines. For 10 pounds of soil, 425
seconds of heating eliminated Pythium,
Fusarium, and most nematodes.
"Excessive" treatment times did not
greatly affect levels of soil nutrients,
so it appears that doubling the times,
to improve control of Rhizoctonia and
nematodes, has no disadvantages.
These results were for "mineral
soils, with fairly low organic matter
content; "organic" soils, with over 20%
organic matter, might require
different treatment times for effective
control of plant pathogens.

And remember, microwave ovens
are quite accessible: check local
businesses and schools for snack bars
with sandwich machines. You can
have lunch and sterilize your soil at
the same time!

Reference: R.S. Ferriss, "Effects of
Microwave Oven Treatment on Mi-
croorganisms in Soil", Phytopathology
74(1), January 1984, pp. 121-126. (The
American Phytopathological Society,
3340 Pilot Knob Rd., St. Paul, MN
55121).

Item:
CATERPILLAR NEMATODE FOR
BIOLOGICAL CONTROL

The parasitic caterpillar nematode
(Steaplectana carpocapae) attacks
over 250 insect pests, including straw-
berry root weevil, cabbage root mag-

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got, carpenterworm, black-currant borer, corn rootworm, corn borer, cutworm, wireworm, Mediterranean fruit fly, and gypsy moth. This nematode is now being marketed by TNF, Inc. in "SEEK", available as cedar shavings (to be sprinkled on garden soil) or in a paste (to be diluted with water and sprayed on the garden).

Under conditions of moist soil and 59 degrees to 85 degrees F., the nematodes should remain active for two months or more after application of "SEEK".

Ask at your local garden supply store about the local availability of "SEEK".

Reference: Anonymous, "New Biological Pest Control", Better Homes and Gardens 67(11), November 1983, p. 66. (Meredith Corporation, 1716 Locust Street, Des Moines, IA 50336.)

Item: ELECTRIC FENCING FOR DEER CONTROL

Deer browsing is a big problem for many rural gardeners. Various repellents and noisemakers have been shown to be unreliable, and conventional types of fencing are very costly. Researchers at Penn State have been searching for low-cost, effective deer-control methods -- the result is a new electric fence design which is fairly inexpensive and very effective.

The Penn State 5-wire electric deer fence is a vertical design. The bottom wire must be about 10" off the ground, and the remaining four wires are spaced at 12" intervals, making the total height to the top wire about 58" from the ground. The wire itself is high-tensile steel (200,000 psi, 12½ gauge) held under 250 pounds of tension. Chargers are high-voltage, low-impedance types.

Field trials with this fence design have been very favorable where there was proper maintenance (especially weed control). Installation costs, including a charger, are typically between 60¢ and $1.00 per linear foot.

Because of the high forces on fence components, especially corner posts, in this design, proper construction techniques are essential. A comprehensive building manual, "How to Build Fences with USS Max-Ten 200 High-Tensile Fence Wire" (75 pages) is available for $6.50 from Manager, Wire Products, U.S. Steel, P.O. Box 86 (A-705), Pittsburgh, PA 15230.

The materials needed to build a Penn State 5-wire electric deer fence are available locally in most areas of the U.S. Check with your local farm supply store.

Reference: J.L. George, W.L. Palmer, and R.G. Wingard, "Cost-Effective Deer Control in Penn State 5-Wire Fence", Science in Agriculture 30(4), Summer 1983, p. 10. (Pennsylvania State University, College of Agriculture, Agricultural Experiment Station, University Park, PA 16802.)

Item: IMPORTING PLANT MATERIALS INTO THE U.S.

Can individuals import seeds or plants into the U.S.? Certainly, if the materials are not prohibited by the U.S. Department of Agriculture. And the procedure is not very complicated. Full information is available from U.S.D.A. Animal and Plant Health Inspection Service, Plant Protection and Quarantine Programs, Federal Building, Hyattsville, MD 20782.

Note: in general, there is no problem with importing seeds from Canada, and no permits are necessary. A few Canadian seeds are prohibited, but none of these are common vegetable or flower seeds. When in doubt, check with U.S.D.A.

Item: HOW TO ACIDIFY POTTING SOIL... IF YOU WANT

Plants of the heath family (Ericaceae), including ornamentals such as heather, sourwood, and rhododendron, and blueberry and cranberry, require a growing medium with low pH (ideally, between 4.5 and 6.0). Typical potting soils have pH levels between 6.0 and 7.0, and so their acidity must be increased in order to grow ericaceous plants in containers.

Recent work at the Connecticut Agricultural Experiment Station Valley Laboratory, at Windsor, has shown that growing media can be easily acidified by adding sulfur, or granular sulfur can be added directly to the media surface as topdressings, or flowable sulfur can be added as a drench. The suggested rate of application is about 35 pounds of sulfur per 1000 square feet of media surface (about 5 grams per 6-quart pot).

There is evidence accumulating that media pH is relatively important for container-grown plants, as long as levels of plant nutrients are maintained at an adequate level. Some researchers think that you need not add sulfur to grow ericaceous plants in pots -- but fertilize well!


Item: SPHAGNUM MOSS: A POTENTIAL HEALTH HAZARD

A sometimes fatal fungal disease, sporotrichosis, can be contracted by handling sphagnum moss. The fungus, Sporotrichum schenkii, enters the body through a cut in the skin. A small, painless blister develops within a month, then becomes inflamed and slowly enlarges. The fungus spreads through the lymph system and eventually involves much of the body. If treated early, the disease is rarely fatal; but inaccurate diagnosis is a problem, because most doctors are unfamiliar with the problem.

Gardeners should not handle sphagnum moss or nursery stock which has been packed in sphagnum moss with their bare hands. If contact with sphagnum moss is made, wash immediately and use a disinfectant on any cuts.

Any sore that does not heal in a few days does not respond to lancing or through an existing cut or puncture wound, or through a prk, as from a rose thorn. In fact, sporotrichosis is sometimes called the rosebud disease. Peat moss commonly harbors this disease, sporotrichosis, caused by the fungus Sporothrix schenckii.

Dr. Wright says that the disease involves accidental implantation of the fungus into the human body, usually through an existing cut or puncture wound. Dr. Wright comments on the availability of information on this disease, sporotrichosis, caused by the fungus Sporothrix schenckii.

Continuing Medical Education at the J. Zeb Wright, Ph.D., Director of HortScience 19(1), February 1984, p. 18. (American Society for Horticultural Science, 701 N. Saint Asaph St., Alexandria, VA 22314.)

Item:
MORE ON SPOROTRICHOSIS
J. Zeb Wright, Ph.D., Director of Continuing Medical Education at the West Virginia University Medical Center at Charleston, has recently collected the available information on this disease, sporotrichosis, caused by the fungus Sporothrix schenckii.

Generally, the disease remains localized at the point of infection, but sometimes (if suppressed immunological responses were already present) it can become systemic, even resulting in death. So the risk of death from sporotrichosis is quite low, but it is a difficult disease to treat: typically, potassium iodide is used, requiring a treatment time of up to 4 months. Prevention is the best strategy for dealing with sporotrichosis. Avoid scratches, especially when handling sphagnum moss. Always wear protective gloves when working with roses or wire. And wash thoroughly after exposure to gardening materials.

Reference: J.Z. Wright, "Gardeners, Beware!", Garden Writers Bulletin, July-August 1984, 8, 11. (P.O. Box 433, Alexandria, VA 22314.)

Item:
INEXPENSIVE HOMEMADE "STICKY STAKES" AND "STICKY BARS"

"Sticky Stakes" and "Sticky Bars" are commercial products for controlling aphids and white flies by attracting and trapping these insects. The secret is the bright yellow color of these devices, to which the insects are attracted. A sticky coating traps the bugs. Unfortunately, these products aren't cheap! Homemade substitutes can be made easily from yellow plastic, such as detergent bottles, coated with Vaseline. Place near plants suffering from aphids and/or white flies, and replenish the coating when necessary.


Item:
LIQUID ROOTING SUBSTANCE
Dip 'n Grow (TM) is a liquid formulation of the rooting "hormones" indole-3-butyric acid and 1-naphthaleneacetic acid which can be diluted as required for rooting various cuttings. Much easier to use than powders! For more information and the address of your nearest distributor, write to Alpenkem Corporation, P.O. Box 1260, Clackamas, OR 97015.

Reference: S. Forrest, "Let's Save the Bees", Gleanings in Bee Culture 112(10), October 1984, 552-553. (A.I. Root Co., Publishers, P.O. Box 706, Medina, OH 44258.)

Item:
BUG JUICE SPRAYS FIGHT INSECTS IN CHINA
In Henan Province, Peoples Republic of China, sprays of water extracts of the decaying bodies of scarabaeid insects (species not listed) were applied to fruit trees, including apples. These sprays gave better control of scarabaeids than parathion sprays. The scarabaeid insects include such nasties as June beetles (Phyllephaga species) and Japanese beetles (Popillia japonica). The encouraging results in China suggest that American gardeners plagued by Japanese beetles might benefit from applying sprays made by soaking partially decomposed beetles (easily collected from the popular pheromone-baited bag traps) in water, then straining. Please let us know your results if you try this (and, if you can bear it, leave some plants unsprayed as controls).

Reference: Abstract 5971, Horticultural Abstracts 54(9), September 1984, 575. (Commonwealth Agricultural Bureaux, Farnham Royal, Slough SL2 3BN, UNITED KINGDOM.)

Item:
TIPS ON PREVENTING PESTICIDE DAMAGE TO PLANTS
When you spray can be nearly as important as what you spray, at least with respect to plant damage caused by pesticides. Some plant/pesticide combinations are much more likely to result in plant damage than other combinations, and pesticide labels often give information about which plants are likely to be damaged, but regardless of the situation, plant dam-
age can be minimized by following a few simple rules:

**Do not spray stressed plants.** Plant damage is probable if the temperature is above 90 degrees F! On sunny days, leaf temperatures can be as much as 15 degrees above the air temperature. Also, slowly growing plants are susceptible to damage from pesticides, so be wary of spraying in periods of drought or abnormally cold temperatures.

**Spray when weather conditions promote rapid drying.** Plant damage likelihood is increased when pesticides remain in solution on plant surfaces for long periods of time. High humidity conditions increase the risk of damage.

**Mixtures of pesticides can cause plant damage even if the individual pesticides do not.** So be particularly careful with mixtures!

**Keep sprayer equipment clean.** Contamination with residues from previous sprayings can cause plant damage.

If you do have plant damage due to pesticides, what will it look like? The most common symptoms are listed below:

- **Plant burn.** On the tips or edges of leaves as spots which are dark brown or black; sometimes whole leaves are blackened; growing points can be killed.
- **Chlorosis.** Yellowing of leaves.
- **Abnormal growth.**
- **General stunting.**
- **Leaf distortions.**

New growth usually shows pesticide damage most, although soil drenches can affect older leaves most.

Pesticide damage is not always easily diagnosed, even by experts, but if you see strange symptoms on that plant after spraying, check with your local extension agent before spraying it again!


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**1987 Show Dates**

Dates for the 1987 Primrose Shows have been announced as follows:

- **March 28** – Washington State Primrose Chapter — Chairman: Joe Dupre
- **April 3 and 4** – National Show at Milwaukee, Oregon – Oregon Chapter — President, Thelma Genheimer
- **April 9 and 10** – Eastside Chapter, Kirkland, WA
- **April 10 and 11** – Tacoma Chapter at the Tacoma Mall — Show Chairmen: Dolly and Jim Krob

In addition to the above the Board has asked that the following letter be printed in the Winter Quarterly.

**Dear APS Members,**

One of the items on the agenda of the October 25, 1986 APS Board Meeting was a Five-Year Plan for National Show dates. This will allow better planning for all the upcoming years’ shows by knowing well in advance both the date of the National Show and the host chapter.

In keeping with the rotation of National Show host chapters during the past few years, the following rotation slate was recommended by the APS Board of Directors:

**National Primrose Show Hosts**

- **April 4-5, 1987** – Oregon Chapter
- **1988** – Washington State Chapter
- **1989** – Valley-Hi Chapter
- **1990** – Tacoma Chapter
- **1991** – Eastside Chapter
Please note although 1991 is tentatively slated for our anniversary celebration in Portland, we will plan to hold a regular National Show.

The exact date, both month and days (according to present APS regulations, a National Show must be a two day event), should be discussed by your chapter members as soon as possible. Dates need to be submitted to the APS Board on or before the January 10th, 1987 meeting date. Either send your chapter representative to the board meeting or send your National Show date information to Irene Buckles, 13732 45th Ave. S., Seattle, WA 98168 (phone: 206-242-3846) prior to the meeting. A list of the dates will be sent to all chapters as well as the Quarterly Editor.

At this time, we would like chapter members to know the new book PRIMULA SIEBOLTLI E. Moren by Mr. Torii of Japan will be rotated among chapters for the length of one year per rotation beginning with the Oregon Chapter, 1987 National Show Hosts. The next years National host chapter will receive this primula book at the 1987 annual banquet, keep it for a year and then pass it on at the next annual banquet. Since we will know the rotation of National Show hosts we will be able to keep track of this valuable and interesting book.

Thank you for your cooperation. If there are any questions, please contact Irene Buckles.

Primulas Old and New
by Jack Wemyss-Cooke

We note that you have already run a very nice review of this book in your publication, although unfortunately, David & Charles Ltd. sent you a copy directly from England and you were not able to include the U.S. price ($29.95) or our address for ordering.

We would like to make this book available to members of the American Primrose Society at a special price of $23.95, a 20% savings. Members may order directly from us stating their membership and enclosing a check or money order for the price of the book plus $1.50 shipping per book. Visa and MasterCard are also accepted.

If your association has a book program for purchasing books for resale to members, we do have a quantity discount available. Please have your book chairman contact me.

Thank you for the fine review of this book.

Sincerely yours,
David & Charles Inc.
North Pomfret, Vermont 05053
Telephone (802) 457-1911

Book Review
Primeln, by Fritz Kohlein, 1984 – 406 pages

This book is printed in Germany in the German language. I am not a botanist nor can I read German. I am a long time grower of Primula. Dr. Hans Sauter of the American Rock Garden Society translated portions of the book for me so I could review it for the Primula growers of the U.S.

The superb collection of 112 color pictures and the 100 line drawings that illustrate the instructions on care and propagation make the book valuable to anyone interested in Primula regardless of the ability to read German.

Fritz Kohlein is a knowledgeable and interested horticulturist with the ability to write in an interesting way about his subjects. He has written on other horticultural subjects. He enlivens some instructions and species descriptions with tips and observations from his personal experience.

He has done a thorough job of covering the species and sub-species and some of the hybrids. Many I have never heard of or seen mentioned in other books. (That does not mean I am an authority on the subject) I doubt if all of them are in cultivation now. Some of the newer discoveries are not in the book as they came too late to be included.

Primeln is another of the recent good books on Primula. Included are the Alpine Garden Society's publication of "Asiatic Primulas", "Primulas of Europe and America" and Kris Fenderson's "A Synoptic Guide to the Genus Primula"

To the American Gardener interested in Primula the book "Primeln" will serve as a good reference even in German. I am sure if an English translation could be made available it would be purchased and used as a reference for many years. I have only looked at it from a gardener's viewpoint. I will leave the botanists to decide the botanical worth of the book.

Sincerely yours,

Herbert Dickson
American Primrose Society

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Valley-Hi Primrose Society, Mrs. W. Trzynka, 1985 SW 325th Ave., Hillsboro, OR 97123
Valvili, Magnus, Prof., Hansestaat GT 20, N-5000 Begen, Norway
Valtonen, Ruth A., Sharples, Bu, Yr 2000, England
Van Dyke, Margaret & Family, 2105 S. 124th Ave., Seattle, WA 98168
Van Osman, Elizabeth, 83 Old South Hills Rd., Short Hills, NJ 07078
Van Sickel, Elizabeth, 654 Marine Drive, Sequim, WA 98382
Vanden Heuvel, Richard, 43969 1 st Ave. N.W., Seattle, WA 98103
Vanderpool, R. R., 26081 Apple Tree Lane, Barrington, IL 60010
Vandervelden, Frances W., 1156 N. 9th St., Coos Bay, OR 97420
Vangassen, Jakon, 9130 Risnes, Norway
Vanderlinde, Florence, 502 Washington Ave., BO Box 283, Bransonville, OR 97272
Vargha, Malte & Lou, 29846 6th Ave. S., Federal Way, WA 98003
Vasapuma, Rose, 413 Avenue Garden, Western Springs, IL 60558
Vaughn, William P., 2140 Sunset Terrace, Western Springs, IL 60558
Verrall, Dr. and Mrs. David J., 9850 Heron Ave., N. White Bear Lake, MN 55110
Virachaghavan, M.S., Hillview Fernhill Rd., Kodaikanal 62410, Tamilnadu, India
Wachs, Henry, 100 Edgewood Ave., Mill Valley, CA 94941
Wade, Tony, 1941 F S Grade Road, Sedro Woolley, WA 98284
Ward, Betty A., Osseola Rd. RD 1, Lake Carmel, NY 10952
Ward, Elizabeth, Furzehill Molland, S. Molton Devon, EX36 3NN, England
Washington, University of, Urban Horticulture (GF-15), Seattle, WA 98115
Washington State Library, Technical Services, AJ-11, Serials Section, Olympia, WA 98504-0111
Washington State Chapter, APS, c/o Martha Harrison, 7773 35th Ave. N.E., Seattle, WA 98115
Watana, Kenji, 39-1 Pukutani Kuroishi, Amori, 036-03, Japan
Watson, Mrs. James W., #102 2290 Marine Drive, Vancouver, B.C., V7Y 1K4, Canada
Weeks, Joe Pye, 45 Elm St., Bedford, MA 01730
Weeks, Donald, RD 2 Box 156, Weedsport, NY 13166
Wein, Mrs. Barbara, Northgate Rd., Chatham, MA 02650
Weeler, Mrs. E. P., Box 148, Blue Mt. Lake, NY 12815
Weyman, Brian A., c/o 47A Plums Valley Rd., Northland, New Zealand
Whitcher, Steve, 9005 Riverside Rd., Summer, WA 98390
Whitemore, Mary A., 1656A Old Olympic Hwy, Sequim, WA 98382
Whitemore, Mrs. B. J., Box 74, Penrose, CO 81240
White, Mrs. George, 14015 84th Ave. NE, Bothell, WA 98011
Wildschut, Mrs. A., 28 Highland Ave., Middlesbrough, NY 10940
Wilkins, Mrs. H.D., 213 Rosedale Heights Drive, Toronto, Ontario, MT 1C7, Canada
Wilkins Jr, Dr. James W., 3601 Vrooman Rd., Jackson, MI 49201
Wilkins, Mr. and Mrs. L. D., Route 1 Box 1504, LaGrande, OR 97850
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Williams, Ross, 2248 South 134th, Seattle, WA 98168
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Windsor, C. F., 40 Litchfield Drive, Warden Hill, Cheltenham, Glos, GL5 5DH, England
Winterthur, Museum, Gardens Division, Winterthur, DE 19735
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Wolter, Helmut, Hasselrot 32, D-2303 Gebert/Kiel, West Germany
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Wright, Whitney J., 744 Morse St., Bronx, NY 10467
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