MARCH
Vol. 17
No. 2

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Mrs. John Evans
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The Green Thumb
Colorado Forestry and Horticulture Association
Organized in 1884
"To preserve the natural beauty of Colorado; to protect the forests; to encourage proper maintenance and additional planting of trees, shrubs and gardens; to make available correct information regarding forestry, horticultural practices and plants best suited to the climate; and to coordinate the knowledge and experience of foresters, horticulturists and gardeners for their mutual benefit."

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A non-profit, privately financed Association

EA 2-9656

909 YORK ST. DENVER 6, COLORADO
March 9—Organic Gardeners, 8 p.m.
March 10—Washington Park Garden Club, 1 p.m.
March 10—Rose Society, 7 p.m.
March 11—Colorado Forestry and Horticulture Association Finance Committee, 10:30 a.m.
March 11—Colorado Forestry and Horticulture Association Board Luncheon, 11:30 a.m.
March 11—Landscape Contractors, 7 p.m.
March 14—Judges Council, 10 a.m.
March 14—House Plant Clinic, 7:30 p.m.
March 15—Fun With Flowers Workshop I, 9:30 a.m.
March 21—Botanic Garden’s Board Meeting, 7 p.m.
March 24—Civic Garden Club 1 p.m.
March 25—Landscape Contractors, 7 p.m.
March 28—Alta Vista Garden Club, 7:30 p.m.
March 30—Botany Club, 7:30 p.m.
April 5—Orchid Society, 7:45 p.m.
April 7—Colorado Forestry and Horticulture Association Finance Committee, 10:30 a.m.
April 8—Colorado Forestry and Horticulture Association Board Luncheon, 11:30 a.m.

MEMO
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Officers and Trustees Elected

At our annual banquet and business meeting the following officers were elected to head the Association for 1960. President, Scott Wilmore; vice presidents, Mrs. Alexander Barbour, Clyde Learned, Mrs. Rulison Knox; secretary, Mrs. Hudson Moore, Jr.; treasurer, Earl Sinnamom. In addition to the above officers, Fred Johnson and Herb Gundell were elected to the executive committee.

The following trustees were re-elected to the board for a three year term: Armin Barteldes, George Beach, Mrs. H. R. Catherwood, S. R. DeBoer, Fred R. Johnson, Herbert C. Gundell and Mrs. John Newman.

New members elected to the board for a three year term are Dr. J. Harrison Belknap, Mrs. Elmer Mintkin, and Fred Vetting. Dr. Belknap is a retired engineer and former manager of the Denver Welfare Dept. He has been active on the street and shade tree committee of the Association. Mrs. Mintkin is a past president of the Idaho Springs Garden Club and was chairman of the state convention committee of the Federation last year. Fred Vetting is a partner in the Rocky Mountain Seed Company and has served on our finance committee during the past year.

The unexpired two year term vacated by Mrs. Henry McLister was filled by John Cramer, manager of Sears Roebuck Garden Shop.

An unexpired one year term vacated by Mrs. Frank McLister was filled by Mrs. Henry Conrad. Vella, who needs no introduction, returns to our board after a lengthy illness. Fully recovered, she is again quite active in Association affairs.

Mr. Lemoine Bechtold was elevated to Honorary Trustee in the Association. The following is the citation which was presented to him.

Mr. Lemoine Bechtold has been an active member of the Colorado Forestry and Horticulture Association since its organization in 1944. He has been a member of its Board of Trustees from 1951 to date, and was treasurer of the organization from January 1956 through October 1958.

Mr. Bechtold donated large numbers of plants and shrubs to the Association's plant auctions on many occasions. He also permitted the showing of his garden on the annual garden tours.

He has contributed authoritative articles on iris and hemerocallis culture to The Green Thumb.

His donations of plant materials, equipment and a truck to the 1957 and 1958 garden fairs contributed immensely to their financial and horticultural success.

He has been an outstanding developer and hybridizer of iris, spider lilies, hemerocallis, geraniums and lilacs, and has contributed much to the development of gardening and horticulture in the Rocky Mountain Region.

In recognition of distinguished service to the Association (and to the development of horticulture and gardening in this area) the Board of Trustees of the Colorado Forestry and Horticulture Association, at their regular meeting on January 8, 1960, in accordance with Article I, Section 1 of the By-Laws, elected Mr. Lemoine Bechtold an Honorary Trustee. (With best wishes for a return of good health and business and gardening activities.)

By order of the Board of Trustees
Favorite Shrubs for Landscaping

The following list of shrubs, with descriptions and suggestions for use, was compiled by our editorial staff from lists submitted by Scott Wilmore, W. W. Wilmore Nurseries, Inc.; Maurice Marshall, Marshall Nurseries; Kenneth Wilmore, Green Bowers Nursery; and these members of the Rocky Mountain Chapter of the American Society of Landscape Architects: Julia Jane Silverstein, Frances Novitt, Gerald Kessler, Edmund Wallace, Andrew Larson, Chris Morietz, Richard Armstrong and M. Walter Pesman.

SMALL SHRUBS

These shrubs vary in height from one to four feet, and are useful in foundation plantings, planter boxes, informal low hedges, as low materials facing a high shrub border, in mass effects and as specimens.

Alpine Currant (Ribes alpinum)

Flowers are insignificant greenish yellow. The foliage is bright, light green and is very thick in growth. One of the outstanding small shrubs available.

Gold Drop Cinquefoil (Potentilla farreri)

A beautiful shrub. Fully foliaged, with golden yellow blossoms beginning in mid-June and continuing in full or nearly full bloom until killing frost in the fall.

Barberry—Red Leaf and Green Leaf (Berberis spp.)

Useful in filling space where low to medium sized plants are needed. The red foliage of the Red Leaf makes it popular when used in any sunny location. Used for accent or to face taller background plantings. Green

Blue Mist Spirea (Caryopteris)

The best known introduction of this plant has medium blue spikes of flowers that are quite showy during the early part of the summer. Does well under many situations and will tolerate some shade. Adds color at a time when many shrubs are past their bloom. For best results should be cut off each year to force quantities of fresh, new shoots. Usually used in low borders or masses to face taller material.

Coralberry (Symphoricarpos spp.)

Popular where small to medium sized shrubs are needed. Dependable and reasonably good looking under most conditions. Will tolerate tree roots and adverse situations, both in sun and shade. Use is primarily confined to massed groups.

Froebel Spirea (Spiraea froebeli)

Very dependable except for occasional chlorosis. By proper maintenance it blooms quite freely throughout the entire summer and serves nicely in groups as a facer to taller materials.

Rock Cotoneaster (Cotoneaster horizontalis)

One of the most overlooked shrubs in the listings. A dwarf by nature, will spread unless kept properly trimmed. Colors very highly in the fall and has small red fruit. Under most favorable conditions—through elimination of winter suns—will carry its foliage to mid-December.

MEDIUM SHRUBS

These shrubs are from four to eight feet in height and are quite useful in shrub borders, as tall shrubs in foundation plantings, in formal hedges and as specimens.

Winged Euonymus (Euonymus alatus)

A medium height, full shrub at maturity. Has few, if any, insect pests and takes on an early and beautiful fall coloring.

Vanhoutte Spirea (Spiraea vanhouttei)

Is thought to be too common by some people. Is popular because it is dependable under most conditions, easy to transplant, clothes itself well at the base, does not sprout, has good autumn color and good winter effect.

Peking Cotoneaster (Cotoneaster acutifolia)

The clean, sparkling glossy appearance of the foliage throughout the season together with very good fall color, medium height and rounded contour make this shrub popular and useful in many situations. It leaves out quite early in the spring. Shears very well; can be used in informal plantings.

Zabel Honeysuckle (Lonicera zabeli)

Is small and a little more compact than some of the other honeysuckles. Has a very attractive red bloom followed by red fruits which give
it a good appearance throughout the season. It is adaptable in both sun and semi-shade and can be used for medium sized background material.

**Showy Forsythia (Forsythia intermedia spectabilis)**
In early spring it has yellow flowers on gracefully arching branches. Can be espaliered. Needs plenty of room.

**Oregon Hollygrape (Mahonia aquifoliurn and M. aquifoliurn compacta)**
Semi-evergreen. Useful on east or west exposures. Holly shaped foliage, turning mahogany color in winter. Yellow flowers, blue berries. 2 to 4 feet in spread. Very attractive.

**Firethorn (Pyracantha spp.)**
Semi-evergreen. Small foliage, thorny branches, clusters of orange-red berries. Can be espaliered. Useful in almost any exposure.

**Manchu Cherry (Prunus tomentosa)**
Small, light pink bloom. Edible, small cherry fruit. Will spread to 5 or 6 feet.

**Bridalwreath Spirea (Spiraea prunifolia)**
Small, double, white blossoms set profusely in the bright, glossy green foliage. Only weakness is difficulty in transplanting; cured by severely cutting back and thoroughly soaking until the buds start to break.

**TALL SHRUBS**
Useful for screening, background and as specimens.

**European Euonymus (Euonymus europaeus)**
Green striped bark. Thick, dark, shiny green leaves turning to a beautiful red in the fall. Orange-red fruit, similar to bittersweet, remains most of the winter.

**Wayfaringtree Viburnum (Viburnum lantana)**
Fast growing shrub. Large, bright green leaves with a fuzzy, silver underside. Green clusters of fruit turn red then black as the season progresses.

**Lilac (Syringa spp.)**
Heavy green foliage, excellent for background and border planting. Dense growth and beautiful flowers make this an indispensable shrub in landscape design.

**Purple Leaf Plum (Prunus cistena)**
Dark purple leaves in the spring turn to coppery green later in the season. An abundance of very pale pink flowers in early spring. Very effective when used in contrast to other shrubs. Easy to espalier.

**Mock Orange (Philadelphus virginalis)**
Valuable for its sweet scented white blossoms which bloom intermittently all summer. Can become leggy, so is best when faced by smaller shrubs.

**Nannyberry Viburnum (Viburnum lentago)**
Straight upright growth. Blue berries. Shiny foliage giving good fall color.

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"LET'S keep up with the Joneses!"
Perhaps you haven't come right out and said it, but how many times has that idea been at least a subconscious reason for your activities? Even the present day "do-it-yourself" trend matches you against the Joneses, not only in the field of "we have" but also in the areas of accomplishment and ability. Before tackling a project, your thought processes may run along these lines: "How much can we do and for how little money can we do it? George Jones did it himself; why can't we? Don't forget, we can save money by doing it ourselves."

But how much thought goes into the long range design and planning of your activities, especially the grounds around your home which are an expression of you for the whole passing parade to view? Yes, even here in the open we may take short cuts to save pennies but, when the short cuts turn into costly and unsightly mistakes, we have to turn around and spend dollars to correct the mistakes and achieve the results originally intended. "It really was a cute little plant a few years ago, but look at it now—or, rather, please don't look at it." Have you asked yourself, "Why does the snow and ice remain so long on the sidewalk? Has our evergreen grown too large? I've spent most of my spare time chopping it back."

Or maybe it isn't anything specific that seems to be wrong; it might be the entire setup in general. Does the inadequacy of your fence make it easy for the neighbors' children to use your back yard as a short cut to the grocery store or for left field when a big baseball game is under way? When you're having a cozy little barbecue for a few friends, do you have an audience and, perhaps, some hurt feelings among neighbors who weren't invited? Does your wife insist that the drapes in the picture window must be replaced because the seedling tree you planted five years ago to provide shade just hasn't lived up to your growing expectations and the sunlight has dulled the original bright, cheerful print of the drapes?

Once shelter has been completed and has been made suitable for day-to-day living, the biggest problems facing the homeowner are usually solved. However, the minor problems are just beginning, in most cases. Now the race with the Joneses begins in earnest, especially the outward appearance of the family property that is on display to the entire neighborhood. Lawn, a few evergreens, shrubs, some flowers
—and the budget is barren for a few more years or even wiped out for all time as far as the landscape is concerned.

It is at this point that many homeowners realize their landscape problems have not been solved. Living space, privacy, awkward outdoor service areas, drainage troubles, continual lawn maintenance problems, undesirable plantings—all these contribute to the dissatisfaction of the homeowner until suddenly he realizes, in desperation, that someone, somewhere, must be an expert who can redesign and remodel the property grounds. A quick glance through the yellow pages reveals the existence of a group called “landscape architects.” But is this what he wants? and just what is a “landscape architect?” What can he do for you, the individual homeowner?

To coordinate the needs, activities, desires, and existing property improvements—these are the principal functions of the landscape architect. His design for the site planning illustrates the most desirable and economical method of developing land areas in relation to building structures for maximum utilization of available space and enjoyment of living in pleasing surroundings. The planting of trees, shrubs, and flowers is the last detail in his plan for the home grounds.

The landscape architect will provide the homeowner with a Master Development Plan, perspectives, grading and construction plan, planting layout, and construction cost estimates.

Using these plans as his guide, the “do-it-yourself” homeowner can then determine the logical sequence of improvements, approximate financial limitations, and the time available to complete certain phases of his property development.

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PLANT AND ANTIQUE AUCTION

A time for fun and a time for bargains is promised at our annual auction scheduled for Saturday and Sunday, May 7 and 8. Mrs. Barbour and Mrs. Catherwood, co-chairmen, are developing plans to make this an outstanding affair.

We don’t want to tip their hand, but we heard that Clyde Learned will be back at his bedding plant stand offering some choice annuals for your garden. It is also rumored that antiques and horribles will be available in quantities. That is providing our members bring us their saleable white elephants. Mrs. Barbour suggests that you set a box on the porch or in the basement and deposit such items in it. When it’s full, bring them over or call and we will arrange to pick them up. Don’t forget the date, May 7 and 8, and be sure to tell your friends about it.

“A common thing is a grass blade small, crushed by the feet that pass, But all the dwarfs and giants tall, Working till doomsday shadows fall Can’t make a blade of grass.—Julian Stearns Cutler

Landscape Contractor  L. D. “LEW” HAMMER  Tel. WE 5-5938
What is a Garden Show?

A garden show is the high point of the gardening year, an institution of learning which should be attended by each and every garden club member or garden conscious person. It gives pleasure and stimulates interest through seeing new horticultural developments and enjoying the pleasant relationship that exists among garden-minded people.

A garden show is a school in landscape design, giving lessons in planning gardens, schemes to fit the pocket book and exhibits which are helpful in solving individual garden problems. It is a media in which garden clubs are born.

A garden show instills in a child the love and interest in growing things and respect for gardens and the wonder thereof makes a better citizen.

A garden show is a beautiful dream in which one is carried away—a fairy tale—a reward for studying an exquisite rose or the modest violet.

If our Colorado Garden Show can do this, then indeed, it has fulfilled a great mission.

INNOCENTS "ABROAD"

or

WHAT, WHEN AND HOW DOES ONE PLANT IN CALIFORNIA?

By Robert E. More

If you think that Colorado is difficult for gardeners, read this article by our Bob More who has moved to new pastures near San Luis Obispo. You'll get some ideas about how to solve new problems in gardening under new conditions. Leave it to Mr. More to go at it whole-heartedly and to get complete information.

Robert More made a name for himself in botanical and horticultural circles in Colorado before his departure from this state in 1958. Details of his Colorado accomplishments along these lines are given in the article, "Robert E. More, An Appreciation," in the August, 1958, Green Thumb.

In June, 1958, we purchased land at Sunset Palisades, California. We were very excited. Our lot was 130 feet by 100 feet, fronted on the ocean, and had a delightful little cove with an interesting beach. We immediately took our architect to the site, and he was as enthusiastic as we were, and said our hope for a Sunken Patio above the cove was perfectly feasible. He sketched it with 4 foot walls for wind protection, glass on the ocean side, and an easy ramp from the kitchen.

While waiting impatiently for completion of the building, I bought Western Garden Book of Sunset Magazine and started reading by night and visiting, repeatedly, all the nurseries in the area by day. In the 30 years I have been reading everything I could get hold of on plants and planting (and the library at Denver's Horticulture House is indeed outstanding) I have never seen any garden book that even remotely approached Western Garden Book. A book of this type is quite necessary because California's unique native flora has been supplemented the last 50 years by exotics from Australia, New Zealand and the Tropics generally. As a prominent horticulturist once said to me, "California gardens are a foreign country."

I read Western Garden Book from cover to cover—371 pages. Then I read through again and then again the
numerous portions I had marked. I wore out all welcome at the nurseries and had to buy more plants at La Jolla, “for later shipment,” than I wanted to, to keep from being forcibly expelled on my many visits.

Probably no soil was ever more conscientiously “prepared” than ours. The dirt here is a gooier gumbo than Park Hill adobe, in Denver. But like that famous soil, it is very fertile. To break it up after months of packing by heavy equipment, I twice went over it with a rototiller, covering it thickly with gypsum after the first tilling. Having noted more native weeds than I ever saw before, I had, prior to this, twice sprayed with Weedone, and after the second tilling I covered the surface with Calcium Cyanamide, a temporary soil sterilant. Having soaked it in thoroughly and kept it wet for three weeks, I then planted my trees, shrubs and Merion Bluegrass. (It rusts badly on the sea coast, and I should have used Newport Bluegrass.) The minute I started watering, I had, as Scott Wilmore would express it, “a jillion weeds.” Of course, a new lawn cannot be sprayed with 2, 4-D for at least 4 months, so I became more bent than the Hunchback of Notre Dame during this period — digging, ever digging weeds.

For the benefit of would-be California gardeners, a few specific comments. Generally, when plants are right on the sea coast, and subjected to constant wind and salt spray, suitable plants are both few and not too well worked out as yet. Nurseries have been “burned” so frequently that they are loath to make positive recommendations. Sunset Company sent me a set of clip-sheets on wind and salt water loving plants that was most helpful.

The soil is very alkaline, and lawns require fertilizing every few months! We have to water constantly during summer months, and quite often in spring and fall. Plants grow with incredible speed and require constant pruning.

The cuts herewith show some of the plantings. Our house faces almost due south and is but 30 feet (at the Cove edge, 10 feet) from the 25 foot rock palisades above the ocean, as shown in Cut A. Porch boxes along the front patio have the Shore Juniper (Juniperus conferta). In front of the house are e.g. Blue Pfitzer, Juniperus monosperma and Pfitzeriana glauca. On the ocean bank are my beloved Russian Savin Junipers taken from Colorado (J. sabina Broadmoor and Buffalo) both “taking” the ocean as well as the Shore Juniper, and several creeping Junipers (J. horizontalis Glenmore, Bar Harbor and Blue Wilton) all of which give similar promise.

Cut B is the west side of the house, looking east. Part of the Sunken Patio is shown in the right foreground. Plant materials are Rhus integrifolia, Myoporum laetum, Xylosma senticosa.

Cut C shows Mirror plant (Coprosma baueri) Raphiolepis indica, Melaleuca nesophila, Fire thorn and Arbutus unedo, the spectacular Strawberry Tree.

Cut D shows a ground cover, Dicodon, that bears traffic and never needs mowing (among the stepping stones). Here is Scott Wilmore’s Gray Gleam Juniper and Mahonia aquifolium compacta.

Dwarf Junipers I brought from Colorado are Pinus cembra, Pseudotsuga taxifolia compacta, Picea engelmannii Glenmore Dwarf, Pinus flexilis Glenmore Dwarf, Pinus aristata, Pinus sylvestris Wateri, Thuya occidentalis Hetz Midget, a gem of gems, and others.

Boxes along the east side of the house have Kinnikinnick, called Bearberry here (Arctostaphylos uva-ursi), Dwarf Pomegranate (Punica granatum nana) and Dwarf Silver Cotoneaster (C. glaucaphylla.)

And that is it.
History
And
Purpose
Of All-America
Rose
Selections, Inc.

All-America Rose Selections, Inc., founded in 1938, is an association of growers dedicated to the task of bringing better roses to the gardens of America through research and encouragement of improved methods of hybridization and propagation.

The designation “All-America” is bestowed annually on the best new varieties introduced. Plants receiving this top award are selected on the basis of actual performance during a two-year testing period.

The careful screening of new varieties and the establishment of a general standard for quality roses has rescued the public from endless confusion. There are more than 5,000 named roses available and in many cases the average gardener is thoroughly bewildered when confronted with the problem of what to include in his rose garden.

To eliminate the difficulty in picking the right new varieties, All-America Rose Selections sponsors thoroughgoing rose trials in official test gardens. The gardens are located in different sections of the country so that new varieties may be studied under varied soil and climatic conditions.

At these “proving grounds,” some at leading universities, others at nurseries and municipal gardens, impartial experts watch the rose plants under actual growing conditions during the two year test period. The roses are checked for such characteristics as hardiness, fragrance, length of flowering period, number of blooms, resistance to disease and all other important qualities.

A uniform point system of scoring is followed and the experts carefully judge the plants on many different categories. Roses entered in the trials are given code numbers which are the sole means of identification. Only those that earn near perfect scores are awarded the coveted designation, “All-America Rose Selection.” There is no compromise with the exacting standards set up by AARS. In 1951, for instance, it was felt that none of the entries came up to the All-America specifications, so no award was given. In all, more than 1,000 roses have been entered in the trials and only fifty-three have won awards.

The AARS system has been the most effective contribution to the raising of rose standards in recent years, and the All-America label is regarded everywhere as the guarantee of highest quality roses.

Garden Party, Sarabande and Fire King, the winners of the award for 1960 are the newest varieties to enter rosedom’s hall of fame. The 1959 winners were Ivory Fashion and Starfire, while honors for 1958 went to Fusilier, Gold Cup and White Knight. A complete list of AARS winners may be obtained by writing to All-America Rose Selections, Room 3006, 45 Rockefeller Plaza, New York 20, N. Y.

There are many good nurseriesmen in Colorado. All of them do not know ALL the answers, but the worst of them can give you better material and service for your garden dollar than most of the salesmen and catalogs from other regions where they have not learned that Rocky Mountain Horticulture is Different.

We try to have such good plants, such accurate advice about growing them and such a complete variety of things that grow well here that no one needs any longer send away for the nice or new plants that they want.

We expect to have stocks complete and ready to go by the middle of March. Come and see us.

George and Sue Kelly
at the Cottonwood Garden Shop

4849 So. Santa Fe Drive, Littleton, Colorado

PY 4-0430
SOWING ANNUAL SEEDS
John S. Coryell

This article is being written for you, whether an amateur or an expert, so I will not try to be technical, but will write from experience. If you will follow the ideas behind each suggestion, rather than the exact suggestion, then sowing seeds in 1960 will be much easier.

For purposes of this article, annuals are any plants which are grown from seed and planted out of doors for bloom the same season. Thus many weak perennials will be included in this group.

Let's separate annuals into long term growers, and short term growers, and qualify each by saying long term growers require from six to 12 weeks from seed to setting outdoors, while short term growers require approximately 6 weeks of growth before the frost free date.

Petunias, snapdragons, carnations, lobelia, portulaca, salvia, dahlias (from seed), Alyssum, phlox, violas and pansies, are among the most important annuals which need to be sown early to produce extra early blooms. January 15th to March 15th is the best period to sow these seeds for late May gardening. The later you sow these seeds, after say February 15th, the later they will bloom in your garden. After March 15th it is probably better to plan on buying your requirements for this year.

In purchasing growing plants, remember that you can have plants in bloom earlier if you purchase plants grown in individual bands, or pots, rather than 12 or more to a small flat. Individual plants cost more, but are worth it, for the extra blooms.

Another point, choose small to medium sized plants, and pinched-back ones, rather than tall, skinny, ones with only a bloom or so. Pinched bushy plants are more valuable, and will start to grow much quicker than tall, crowded plants.

Marigolds, zinnias, cosmos, bachelor buttons, calliopsis, celosia, everlasting flowers, impatiens, larkspur, matthiola or stocks, moonflowers and morning glories, scabiosa, can all be sown now, and transplanted by Decoration Day.

Time is short, and the seeds must be sown now. What should we use for the seed bed? Fine vermiculite, or perlite is ideal if you will feed the plants twice a week with a weak fertilizer solution. One half teaspoonful of Plant Marvel, Hyponex, or other good plant food to a gallon of water is of suitable strength. Feed the seedlings once or twice a week. Transplant seedlings as soon as they are large enough to transplant. They are large enough as soon as you can handle them, and the smaller the better.

To sterilize soil: Select shallow wooden boxes, or flats. Do not use plastic containers, since hot water will warp them. Fill the flats with good soil, or a mixture of 50% sand and 50% peat or screened sphagnum moss. Cover the flat with cheese cloth, or unbleached sheeting, or any cloth that will allow water to flow through, but will not let the soil wash. Heat a tea-kettle of water to boiling and pour slowly over the flat. Let the water soak in and pour on more, until the water flows out the bottom. It is necessary to use lots of water, and to have the water boiling when you start. Remove the cloth and place over the next flat and repeat.

When the soil has cooled and drained, it is ready to receive the fine seeds. Scatter them lightly over the soil and cover the flat with a pane of glass or plastic, or perhaps Saran wrap. Remove the glass daily to allow some of the water to evaporate from the glass. Simply turning the glass over works well. When the plants appear, it is time to begin to admit more air. Remove the glass for an hour or so, then two or three hours, then a half or whole day, and finally all day and night.

Transplant the tiny seedlings to other flats, boxes, or pots. You can also use milk cartons, egg cartons (one to each "egg" partition), or to other pots. Transplanting is good for most seedlings. It breaks the tap root, and causes the roots to be more fibrous, and thus better able to withstand the move into the garden.

Poppy, bachelor buttons, larkspur, lupines, and some others resent transplanting, and should be transplanted when very young into individual pots, or sown in individual pots.

Most homes do not have enough light in the windows, nor room, to grow good seedlings. If you have only a flat or two, they can be carried out of doors in the morning, and into the garage or house for the colder nights.

Petunias, snapdragons, carnations, lobelia, portulaca, Alyssum, bachelor buttons, calliopsis, stock, and others may be transplanted out of doors early in May, and protected with a plastic covering only when the weather turns very, very cold.

It is surprising how much cold these annuals can withstand. The length of time you keep them indoors depends upon how much room you have, and how soon you wish to gamble with the out of doors temperatures.

Marigolds, zinnias, tomatoes, begonias, and other tropical plants should not be put out of doors, in the ground until Decoration Day, or early in June. The weather may be fine, but the earth is still cold and so will delay good growth for these plants. Sometimes it is worth the gamble to put them out in the garden. Just resolve to replace them if the weather proves fatal to them.

We must gamble when we sow the seed, when we transplant, and when we put them out of doors. We must judge what we hope to achieve, with the cost of seed, labor, or time, and hope our rewards are worth all the efforts we put forth.

Everyone should also study the seed catalogs and pick a new variety, or type of annual to try each year. In our greenhouse we have tried to grow something different each year, but find the public does not like to buy un-known varieties, so it is up to you to buy the seeds and grow the new types for yourself.

If you have any problems, or need any advice, please feel free to call us or write: John S. Coryell, Arvada, Colorado. Phone HAR rison 4-5024. Good gardening!
IRON IN YOUR GARDEN

By DR. A. C. HILDRETH
Director, Denver Botanic Gardens

ONE hundred and two chemical elements are known. The majority of these have been found to occur in plants. Only 15, however, are now recognized as indispensable. These are: Carbon, oxygen, hydrogen, nitrogen, phosphorus, potassium, calcium, magnesium, sulphur, iron, manganese, boron, zinc, copper, and molybdenum.

Garden plants obtain their requirements of the first three listed elements mostly from the atmosphere and water; the remaining dozen, often called “mineral elements” must come from the soil or other nutrient medium. If there is a deficiency of any essential element the plant will have characteristic abnormalities in structure, function or color.

In strongly alkaline soils, all types of horticultural plants—trees, shrubs, vines, herbaceous flowers and lawn grasses—may show signs of iron-deficiency. This trouble is most prevalent in arid and semi-arid parts of the world, such as plains and intermountain areas of Colorado, where conditions favor the accumulation of alkaline material, especially lime, in the soil. The outstanding symptom of iron-deficiency is yellowing of the foliage which appears first in the youngest leaves of rapidly growing shoots. Later, all normally green parts of the plant may show the effect. By holding a moderately iron-hungry leaf in front of a strong light it will be seen that only the areas between the veins are yellow. Deprived of the protective influence of green pigment, yellow leaves often are injured by our brilliant sunlight, the injured portions turning brown.

Abnormal yellowing, or loss of green color in plants, is called “chlorosis” and plants and plant parts so affected are said to be “chlorotic.” Chlorosis* is a ten-dollar word which means merely that something has gone wrong with the green pigment (chlorophyll). Foliage deficient in chlorophyll cannot carry on normal photosynthesis. Chlorosis, from whatever cause, stunts plants, and reduces their flowering and fruiting. Severe cases may result in premature dropping of foliage and even death of the plant. Chlorotic plants are more susceptible to cold injury the following winter than those that had their normal green color throughout the growing season.

Plant species differ markedly in their susceptibility to iron-deficiency chlorosis. For example, azaleas, hydrangeas, flowering quince and larch become chlorotic in only slightly alkaline soils. Lilacs, carpopteris and Colorado spruce, however, retain their normal color under any degree of soil alkalinity likely to be found in Colorado gardens. Of course there are desert species such as greasewood and rabbit brush that grow in extremely alkaline soils and become chlorotic in only slightly alkaline soils. Lilacs, carpopteris and Colorado spruce, however, retain their normal color under any degree of soil alkalinity likely to be found in Colorado gardens. The great majority of our garden plants, however, are intermediate in their response, tolerating only moderate degrees of alkalinity without showing chlorosis.

The mechanism by which alkaline soils cause iron-deficiency chlorosis in...
plants is not known. Attempts to give a popular explanation of the phenomenon usually result in over-simplification and disregard of known facts. A shortage of iron in the soil is ordinarily not involved. Alkaline soils in which plants develop iron-deficiency chlorosis often contain more iron than acid soils in which such plants retain their normal green color. From this one might jump to the conclusion that plants cannot extract iron from alkaline soils. But many desert plants get enough iron for their needs from extremely alkaline soils. Also, chemical analysis prove that plants showing iron-deficiency chlorosis on alkaline soils may actually contain a higher percentage of iron than green plants of the same species grown on acid soil. Evidently plants do take up iron from alkaline soils.

From these facts one might reason that such chlorotic plants contain iron in some form that cannot be used in the normal process of chlorophyll formation. There is some chemical evidence to support this view. But why can some plants absorb iron from alkaline soils and use it in the process of chlorophyll development while other plants that also absorb iron from such soils cannot utilize it in the chlorophyll-making process? And what is the form of this iron which chlorotic plants cannot employ in chlorophyll formation?

\*Chlorophyll contains no iron, but iron is necessary for the process of chlorophyll formation in plants.

solutions of iron salts. (2) Through the roots, by adding soluble iron compounds to the soil or by placing them in direct contact with the roots. (3) By injecting iron compounds directly into the tissues of trunk roots or main branches. The method employed depends upon the kind of plant to be treated and the whim of the gardener.

Almost every known iron compound has been used for correcting iron-deficiency chlorosis. Iron sulphate (copperas) is the cheapest source of iron for this purpose but it has certain disadvantages. It stains light colored soil brick, stone, concrete and certain painted surfaces and discolors open flowers. It will injure plants if used in excessive amounts and is too toxic for injection into plant tissues. It is satisfactory, however, for foliage sprays, for application to the soil and for contact applications to the roots. One ounce per gallon of water makes a suitable solution for spraying lawns and mature foliage of trees. For young leaves and for tender-foliaged species the strength should be reduced to one-half or one-fourth ounce per gallon of water.

Lawns may be treated also with the dry chemical at the rate of 3 lbs. per 1000 sq. ft. Application should be made only when the grass is dry. Light irrigation should follow immediately. Perennial borders, strawberry beds and small shrubs may be treated with the dry compound by application to the soil surface at the rate of 1 lb. per sq. yd., followed by light cultivation and irrigation. If chlorosis is not corrected within two weeks the treatment should be repeated.

For treating a large shrub or small tree, a narrow trench or several holes one to two feet deep should be dug around the plant, the distance from the trunk varying according to the size of the plant. The object is to expose many small roots. Dry iron sulphate is placed in the excavation which is then refilled with soil. A pound of iron sulphate is used for each inch of trunk diameter.

Large chlorotic trees should be treated by injecting dry ferric citrate into the wood. Holes 3/4 inch in diameter are bored 3 inches apart around the circumference. They should be from 2 to 3 inches deep, depending upon the thickness of the bark, and should slant downward to prevent the iron salt from falling out. The holes are filled nearly full with the chemical and then sealed with an asphaltic tree-wound dressing.

In recent years chelated iron compounds have been developed that can be used for correcting chlorosis. These materials have none of the faults of iron sulphate. They can be used as sprays, injections or as applications to the soil. Their only disadvantage is their cost, which is 4 or 5 times greater than that of iron sulphate for the same corrective effect.

The use of iron compounds for correcting iron-deficiency chlorosis has been used for more than a quarter. Only recently however, has this treatment been widely employed in our region. Most of our gardeners still do not use iron compounds in their gardens nor do they recognize iron-deficiency chlorosis when they see it. Iron has a definite and permanent place in gardens built on alkaline soil.
Bluegrass (Poa pratensis) as a Lawn Grass

ROBERT W. SCHERY
Director Lawn Institute

Poa pratensis has had a long and varied history, having been recorded in pre-Christian times in the North Mediterranean civilizations of that day. By the time it became named “Poa of the meadow” (Poa pratensis), by Linnaeus in 1753, it had volunteered widely throughout Europe. Today it is prominent in the cooler parts of Europe, although (I gather) not having received quite the acclaim as a lawn grass there that it has in the New World.

There is no exact recording of bluegrass’ arrival in America. Likely it was an ingredient of the cattle bedding on the first ships bringing colonists to the New World. It had become widely spread through eastern coastal North America by the time of the War for Independence from Great Britain. As colonization moved westward, Poa pratensis volunteered on the extensive acreages cleared of trees, the soil turned for agriculture. Very likely its first spread westward was down the St. Lawrence valley and across the Great Lakes with the French missionaries.

In these earlier days in America, Poa pratensis was highly regarded chiefly as a pasture and forage grass. In the process of conquering a wilderness, the colonists found scant time for planting or tending lawns; rather, their every effort was directed towards producing food and materials for an expanding economy. In this fight for survival Poa pratensis played its part, nurturing the herds and claiming raw soil newly turned. Especially on the rich phosphatic soils of northcentral Kentucky was its growth superlative.

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Prior to the early 1800s and its support of a flourishing economy in the Lexington area of Kentucky, it had been known by a number of names including English grass, but not Kentucky bluegrass.

In the last century Poa pratensis has become even more widely dispersed in North America. Its importance as a hay and pasture grass has given way somewhat before the selection and breeding of some of the forage species. But the very attributes that made it an outstanding pasture grass for the colonists, also make it an outstanding lawn grass for the better lawns of most of North America.

Here are some of the outstanding features of Kentucky bluegrass:

1. Turf texture. Kentucky bluegrass leaves are narrow bladed, with a crisp firm body, dark green glossy color, and delicate spoon-like tips. There are usually 4 to 6 green leaves, on a gracefully arching upright stem. As a new leaf forms at the tip, an older one dies at the base, so that there is continuous replacement of fresh, attractive young foliage.

2. Growth Pattern. The upright arrangement of the leafy stems of Kentucky bluegrass distinguishes the grass from the trailing kinds such as bent (Agrostis) and Bermuda (Cynodon). As a result the tips of leaves cut in mowing settle down between the leaves and stems, to reach the soil where they decay rather readily. In contrast to the trailing grasses, which build up thick mats of stems and leaves, the bluegrasses seldom need thinning out or combing away of the dead remains. Consequently, they afford easier maintenance than many other lawn species.

3. Spreads by rhizomes. Each bluegrass stem will eventually terminate in a seedhead (about 20% of the stems may form seed each year). But there are constantly arising from the base of the stems, buds which produce other upright stems (tillers), or creeping underground stems called rhizomes. It is the latter that lace into a network of plants providing the firmest sod of almost any grass. There are two advantages to this spreading. One is that a single seed (or original plant) can enlarge greatly, filling in much adjacent bare area. Bluegrass is thus an excellent colonizer and expander. Secondly, the tightly woven sod makes an excellent turf, which holds the soil well and improves it each year as many of the finer rootlets die adding their organic materials to the soil.

4. Size of seed. Bluegrass seeds are small by comparison to the hay grasses, running over two million to the pound. Because there are so many seeds light seeding rates will suffice (2 pounds per 1000 square feet makes an excellent stand quickly). Bluegrass thus proves one of the most economical lawn grasses available.

A great many new selections of Kentucky bluegrass have been made in North America as well as Northern Europe. None, however, are yet as widely used as is the volunteer bluegrass which has been in the fields for years and years. Seedsman term this natural Kentucky bluegrass. Since it has survived well in the field with little attention, it also proves durable in the lawn. There is enough natural variability in grass harvested from these fields that complete killing out of a lawn turf is unlikely, compared to uni-
form selected strains that do not deviate from the parent type. Thus, just as we believe in the desirability of including Oregon red fescue varieties (Festuca rubra) in a bluegrass seed mixture, to broaden its adaptedness, so we also feel that selected bluegrass varieties are best used mixed with natural Kentucky bluegrass.

Poa pratensis does best on better soils, as would be expected. It does not need a great deal of watering, and can actually brown completely in summer only to spring back a luxuriant full sod with the first rains of autumn. Few other turfgrasses are so durable.

Bluegrass prefers that the mower be set rather high, as least where the summers are warm. One and a half to three inches are usually recommended in the midwest of America. This allows enough leaf to remain after mowing to build up food reserves, and causes the roots to grow deeper.

Most lawns in the “Bluegrass Zone” of North America utilize a mixture of species and varieties. While natural Kentucky bluegrass makes an excellent turf by itself, the varieties of red fescue (Festuca rubra) which come mainly from Oregon are excellent companions. These have the same fine attributes listed above for Kentucky bluegrass, and the red fescues respond to the same type of treatment. They are especially useful where soils are not rich; they can also endure a good deal of shade and dryness. By mixing a fair proportion of the red fescues with the Kentucky bluegrasses one is assured of a wider range of adaptation for the variable conditions found in any lawn (shade, hot slopes, dry spots, sand outcrops, etc.). The chief varieties produced in the United States are Chewings, Illahee, Penalawn and Rainier. The chief bluegrass varieties, in addition to natural Kentucky bluegrass, are Delta, Merion, Newport, Park, and others which are just beginning to reach the market.

**DIG THESE QUESTIONS**

**Question:** What is a “piggy-back” plant?

**Answer:** This is the common name for a novelty house plant, Totmiea menziesii. It is so-named because small plantlets are produced on the leaves. This plant is also known as “pick-back plant” and “mother of thousands.”

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Denver, Colo.
Composting

BY MRS. JOHN SCOTT

The right speaker can be the difference between boom and doom for your club. And what’s right for you isn’t necessarily right for another group. In the Autumn, 1959, issue of the Colorado Composter, Mrs. James Tillotson had an apt article, “Main Springs,” which it would be well for you Federated Gardeners to review. Mrs. Tillotson, a popular and versatile speaker, asked program chairmen to always consider the needs, wants and abilities of their members. This puts the program chairman in the position of mediator or go-between. It furthermore puts the proposed speaker in competition with the entertainment world and paid lecturers, as most passive audiences are accustomed to being played-up to. Understandably, there’s a bit of reluctance among some tried, true but tired speakers. Why not retire a few of them for a time and try someone new? “But, who?” you chorus in minor tones.

Take note, Program Chairman, of the business and professional people in your own area. Is your publicity sparse? There’s a newspaper person, journalism teacher or writer who would be willing to tell you how to make the press and influence advertisers.

Is your therapy limping. There’s a nurse (practical, public, special, registered or retired) who’s been dreaming of directing your dealings with dependents—aged, ill, crippled, etc.

Is your scientific research sidetracked? Here’s where the commercial companies can come to your club. Their men are paid specialists. They’ll have films, slides, booklets, and samples.

And if this isn’t cause for celebration, try tapping trained talkers from: civic clubs, chambers of commerce, colleges, transportation companies, plant societies, county agents, specialists (nursery men, landscape architects, arborists, florists, etc.), and hobbyists (interior decorating, ceramics, sculpture, design, art, painting, etc.).

Speakers should spark any program now and then. They are especially valuable to new clubs, assuring members of ready-made, worthwhile programs. Aspiring gardeners can acquire a broad view of the field via speakers, while seasoned gardeners enjoy a new slant or a different twist of an old subject.

But not all club members want to be done-unto, like The Sit and Sippers. More want to do unto others. For the latter, I heartily recommend our youth, 4-H in particular, as National 4-H Club Week is March 5-12 this year. Purpose: “To inform more people—especially youth and parents—about 4-H educational aims and methods, and opportunities open to other young men and women.”

County 4-H Agents (usually in the same office as the County Agricultural and Home Demonstration Agents) will gladly give the particulars of the 4-H program and its varied projects, some of which are: home beautification (flowers, lawn, landscaping); entomology (insect-courtesy Art Linkletter); forestry and gardening.

Previously we have listed, primarily, non-horticultural speakers for our garden club meetings. But let’s become Jane Appleseeds and recommend some of our best speakers on gardening to the non-horticultural organizations to which we belong.

You’ve no doubt heard, and maybe quoted, that old refrain, “What difference does it make what church we belong to, we’re all seeking the same reward?” Let’s apply this to our immediate inner-club relations; The Men’s Garden Club, Turf Advisory Council, Flower Growers, Inc., United Florists, seedsmen, naturalists, foresters and on and on. Program Chairman, wouldn’t you just love to promote an exchange of speakers and see how the other half digs?

How are you going to dig up these speakers for here, there and everywhere? Grow your own. Within your membership are one or more potential speakers. Determine their principal interest, nurture it with research, fertilize it with pictures, slides, films, specimens, literature, “throw-aways”, etc. (we learn with all our senses; not only sight and hearing, but touching, smelling and tasting) and groom this future speaker by listening to her within your own and other tolerant groups until she’s ready for the big time.

Big time? It’s the biggest, yet. Time is shorter than you think, too. You’re being reminded of the Colorado Garden Show, April 7-10 at the Denver Coliseum. There are tickets, yes; money is the laff of life. But people are wanted more than purses. This is the occasion for a coketail, cocktail or covered-dish for your neighbors, relatives or those people you’ve owed a pay-back, for—well, too long. Then, all together to the Show.

LOOK AND LEARN TOURS

RESTAURANTEURS place heavy emphasis on the interior decorations of their establishments. They have found that pleasant surroundings and atmosphere are essential to customer satisfaction. How does your outdoor dining area, the patio, rate in this respect? If you need new and exciting ideas on well designed patios, plan to attend our “Designed for Garden Living,” tour July 13 and 14.

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for 205 of these members. A Garden Club and Commercial membership was introduced this year and brought in approximately 700 memberships. Radio and newspaper publicity accounted for 300 additional memberships.

Street and Shade Tree Committee — This committee met twice this year, both times to consider the suit pending in the State Supreme Court regarding the widening of Colorado Boulevard at City Park. Several members attended a hearing of this case January 4, 1960. It is expected that the Judges will hand down their decision shortly.

Educational Committee — As a committee this group presented two programs at Botanic Gardens House. Both were of excellent quality. Fred Johnson secured the speakers who were Dr. Belknap, speaking on “Cities and Gardens of Africa,” and Mr. Schwan who spoke on “Iraq and Its Range Management Problems.” This series will continue in 1960. In addition, the educational program by the staff was coordinated with this committee. A review of these activities will be found in the Staff Report.

Luncheon Committee — Mrs. Enos and her daughter, Becky Wood, were the committee, and furnished fine luncheons at each of the Board of Trustees’ meetings.

Editorial Committee — With M. Walter Pesman as chairman, this committee met monthly, reviewing and advising our editor of materials for The Green Thumb magazine. Ten issues were produced within the allotted budget. Ten issues were produced within the allotted budget. In addition, members of this group submitted many articles for The Green Thumb.

Chuck Wagon Round Up Committee — This committee, with Mrs. Conrad and Herb Gundell as co-chairmen, started out with an idea for renewal of the annual picnic and wound up as a fund raising endeavor.
for the Botanic Gardens House Fund. Mrs. Conrad worked hard and came up with a terrific home cooked chuck wagon meal. This activity raised $300.00.

Staff Report — Our major project was moving the library and other properties of the Association from 1355 Bannock to our new quarters at 909 York. Once in and established, it was found that we had many more visitors than at Horticulture House. With the increased activity, schedules had to be readjusted constantly in order to maintain the educational services of past years. Our manager reports that he talked to some 67 groups, mainly garden clubs and civic organizations. He produced 52 programs for The Green Thumb on KLZ radio. He and his staff answered some 5000 phone calls and mailed out pamphlets and answers to some 3500 persons. This, of course, was in addition to producing 10 issues of The Green Thumb and participating in most of the committee activities. He also reports that the Association has cooperated with many allied groups and organizations in joint educational programs that have helped stimulate gardening in our area.

As a non-profit educational organization, our Association is earnestly trying to help home owners, gardeners, and horticulturists cope with our peculiar climate and growing conditions. Without aid from city, state, or national government, we depend upon memberships and tax exempt private contributions to balance the budget. Some of us are raising our memberships from the minimum of three dollars to five or twenty-five dollars. It helps the cause that is near to us.

Some of us feel that we can help by leaving a lump sum in trust from our estate. The income from such a trust fund can be used for regular expenses. At our request, an experienced attorney has compounded this prescription for a simple, do-it-yourself codicil. In order to make sure that your memory is kept dear, you do not have to wait until you make a new will.

After dinner this evening, after church next Sunday or during any five minute lull this week, sit down at your home or at your office with any two persons who are not named in your will.

You don’t need a lawyer, you don’t need a Notary Public. Just sign your three names on this Codicil.

Then put it in a safe place, preferably attached to your will.

CODICIL

I, ___________________________________________ of _____________________________________________ City State hereby make, publish and declare this to be a Codicil to my Last Will and Testament, which, in all other respects, I hereby confirm:

I bequeath to the Colorado Forestry and Horticulture Association, a Colorado corporation, the sum of ________________________________________ dollars ($ ).

IN WITNESS WHEREOF I have hereunto set my hand and seal this __________ day of ______________, 19________.

In the presence of each of us, on the day above indicated, the foregoing instrument was signed and published, and was declared to be a Codicil as above stated, by the aforesaid maker. We hereby subscribe as attesting witnesses in the presence of the maker and of each other.

Address: ____________________________________________

Address: ____________________________________________

Seasonal Suggestions

By Pat

For one swallow does not make spring, nor yet one fine day. — Aristotle. Ethic 1.6.

Civilization has changed considerably since Aristotle’s time, but the weather observation he made centuries ago still holds true. March is noted for its changeable weather and is a problem month to gardeners. It is, however, an important time for gardening if we can learn to roll with its punches. Of course, this means planning but there will be numerous inclement days for this.

Out of doors probably the most important job is the preparation of soil for lawns and flower beds. This can be done as soon as the frost is out of the ground and the soil is workable. Complete replacement of six to eight inches of soil with good top soil would be an excellent idea, provided one could afford it and could find enough good top soil available. In most cases such replacement is not feasible, but we can do much to convert the soil we already have into a better growing medium. Basically our soils are rich in minerals but very deficient in organic matter. This can be corrected by the addition of at least 2 yards of manure per 1000 square feet. This should be spread or plowed in to a depth of 8 to 10 inches and mixed well with the soil. The soil can then be rough graded and allowed to set until planting time. For lawns, experience has taught us that there is no particular advantage in sowing seed until the middle of April. Annuals and vegetables for the most part are not planted until late May.

Next in importance is the planting of dormant bare root nursery stock which will be available in the latter part of the month at all the local nurseries and garden shops. Here again, soil preparation is the key to success. Whether it is a tree, shrub or rose, dig a hole large enough to receive the complete root system of the plant spread out in its natural form. The soil taken from the hole should be modified by adding peat moss, 1/3 by volume, to it before it is placed around the plant.

Other chores outside during March might include a clean up of the debris blown in over winter, leveling walks that have been heaved by the frost, repairing fences and other such items.

Older trees and shrubs can be pruned and shaped now. A special effort should be made to
remove all the stubs and broken branches so that they will not provide a breeding place for insects and diseases. Dormant sprays to control scale insects can be applied to elms, lilacs and other plants infested with these pests.

Indoors it's time to plant seeds for bedding plants. There is a complete article on this subject on page 54. One word of caution on seed growing projects, don't start unless you have plenty of window space for the transplants once the seeds have sprouted.

Another indoor activity might be the repair of garden tools and equipment. Sharpen your spades and other cultivating tools. Check your hoses for leaks and repair them if necessary. Lawn mowing season is just around the corner, so be sure to check your mower. If it needs sharpening, send it out now before the spring rush begins.

This is also the season for itinerant peddlers of nursery stock, sprays, top soil and fertilizers. Many of these persons are out and out frauds. We've had calls in the past from people who have bought large trees balled and burlaped only to receive a chopped off tree devoid of roots in a bag of dirt. Others have had their trees sprayed with canned milk and crankcase oil for fancy prices. Another favorite trick is to spread sheep manure on top of a light snow to make it appear that large quantities at high prices were used, whereas, in reality, a very small amount is required to achieve this effect. The Better Business Bureau slogan, "If you don't know your merchandise, be sure to know your merchant," is a good one for gardeners to follow this season of the year.

Take time to look at other gardens and the public parks. You'll be pleasantly surprised by the early flowers like crocus, hyacinths, and species tulips, and a few shrubs like forsythia, flowering quince and flowering almond that pop out in late March.
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