THE GREEN THUMB

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George W. Kelly, Editor
Miss Alice Wood, Assistant to the Editor
L. C. Shoemaker, Office Manager
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"To preserve the natural beauty of Colorado: to protect the forests; to encourage proper maintenance and additional planting of trees, shrubs and perennials; to make available correct information regarding forestry, horticultural practices and plants suited to the climate; and to coordinate the knowledge and experience of foresters, horticulturists and gardeners for their mutual benefit."

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HEADQUARTERS BUILDING
REMODELING of the building at 1355 Bannock to be used as a headquarters for our association is progressing rapidly. We plan to devote a large part of the November number issue to details of the plans for this building. We hope to make it the real horticultural center of the state. Already there is a very good start towards a horticultural library and plans are progressing for an herbarium, and scientific laboratory. There will be a continuous series of lectures and classes on home landscaping for veterans.

THE SUMMER OUTING
A joint meeting of the Colorado Forestry and Horticulture Association and the Colorado Mountain Club was held at Buffalo Park on July 14. The group first met at the Forest Service picnic grounds, "Top of the World" and the Glenmore Arboretum of Robert E. More. This is a very interesting place where Mr. More has protected and Mr. More is to be congratulated on making this fine start. We are hoping that the Association may soon develop plans for a more extensive arboretum for Colorado.

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OAK TREES IN DENVER
By S. R. DeBoer

The largest group of oak trees in the Denver area are the Red Oaks in the Civic Center. They were planted in the spring of 1914. Denver had a Park Commission at that time, and the plans of Mayor Speer were ardently worked on from one administration to the next. The city owes a good deal to this early Park Commission, especially to the outstanding Presidents Jacob Fillius and his successor John McBeth. The latter was president of the Park Board during the episode of the Red Oaks.

Before the planting of the Civic Center Oak trees there were only two or three Red Oaks in the City. These were in Fairmount Cemetery and in Platte Park. There was a line of Burr Oaks on the Brown farm near Littleton. The Park Commission hesitated on the proposal but after several weeks of deliberation decided to follow the recommendation of planting Red Oaks in the Civic Center. To protect ourselves against a possible failure it was decided to plant Ash trees between the Oaks.

A carload of Oak Trees was shipped in from Meehan's Nursery in Germantown, Pennsylvania. On account of the time lost in deliberation, however, the trees did not arrive until the 17th of May, and when they were unpacked, the buds were opening and white. It looked like the Oaks could not possibly live. We had holes for planting dug before, and instead of heeling the trees in, we proceeded to plant them direct from the railroad car. The bark of the trees was protected by burlap and we kept them watered in the ground as well as sprayer on top. It was a painful operation. Old John Ziegler, one of the most careful planters of all times, planted the Red Oaks. The Ash trees had been planted earlier and started to leaf out immediately. The Oak trees were slower and we made daily counts to see how many were showing progress. By the end of the summer it proved we had lost only 3 or 4 trees, and that all the others were sufficiently mature to go through the winter.

As the years went by some trees were lost through disease and these were replaced out of the stock of the Park Nursery. In this way it happened that other varieties slipped in and today the grove is not purely Red Oak any more. There are a few White Oak and several Burr Oak. Many years later a number of Burr Oak were planted in other parts of the Civic Center.

As the Oak trees began to be fully established we cut down the Ash trees and gave all the space to the Oak trees. In later years many Red Oaks were planted in the other Parks. There are some good specimens in the North of Washington Park. There are some smaller ones in the South of Washington Park. City Park has a few specimens of Pin Oak, White Oak and Burr Oak. At Sloans Lake Park a number of Pin Oaks were planted as well as Red Oak. These have done unusually well and at 26th and Tennyson Street there are now specimens of Pin Oak which are of mature size, and which are unusually beautiful.

Along Forest Drive between Broadway and Logan a thicket of trees was planted. The road here is narrow and the early plan was that it should be widened as traffic demanded it. This gave us a good opportunity for growing Red Oaks in the thicket which would gain maturity by the time the road would be widened. These trees were planted 30' apart and today are well established, though the road has not been widened.

West of Broadway between

<--- Young Burr Oak in Civic Center, Denver
street and Bannock Street a line of Burr Oaks were planted. These trees were grown from acorns picked from the Oaks on the Brown farm. They are hard to transplant and grow very slowly, but have now reached the point where they are beginning to take on the mature shape.

There are scattered Red Oaks in Cheesman Park, in the Sunken Gardens, in Lincoln Park, in Platte Park, and in several of the other parks. Colorado Scrub Oaks are found in Washington Park.

Perhaps the best collection of Oaks in the West is on the place of

Mr. and Mrs. John Gates. In their garden have been planted Pin Oaks, Red Oaks, Scarlet Oaks, a White Oak, a Pyramidal English Oak, a Single Oak, a Harvard Shrub Oak and others. Mr. Gates has specialized on this oak grove and has spent no end of effort on making it as complete as possible.

Today the Oak tree has become well established and may be considered our best shade tree. The reason it is not planted more, is due to the slow growth. Many people hate to wait a long time for a mature tree.

WE CAN—AND DO—MAKE WEATHER
Prepared by the U. S. Forest Service

M A R K T W A I N was always brash—but he was 28 and fairly sophisticated when the book was published which, if read, might have kept him from ever minting that immortal bon mot about the weather.

Perhaps he never read it, however, being much too occupied with writing books for others to read.

At any rate, in 1863, a thick tome was published with the title Man and Nature. Through later editions and revisions, it got to be called The Earth as Modified by Human Action. The object of the volume, said its author, George P. Marsh, was "to indicate the character and approximately, the extent of the changes produced by human action in the physical conditions of the globe we inhabit."

His monumental erudition throughout 617 pages of fascinating text revolve upon a thesis embodied in these statements:

"The extension of agricultural and pastoral industry involves an enlargement of the sphere of man's domain, by encroachment upon the forests which once covered the greater part of the earth's surface otherwise adapted to his occupation. The felling of the woods has been attended with momentous consequences to the drainage of the soil, to the external configuration of its surface, and probably, also, to local climate; and the importance of human life as a transforming power is, perhaps, more clearly demonstrable in the influence man has thus exerted upon superficial geography than in any other result of his material effort."

In a few sentences the author then throws off the suggestions of ditching and draining, irrigation, dams, and bulwarks, to build land by sea action.

"Besides these old and comparatively familiar methods of material improvement," concludes Marsh in a burst of prophecy, "modern ambition aspires to yet grander achievements in the conquest of physical nature, and projects are meditated which quite eclipse the boldest enterprises hitherto undertaken for the modification of geographical surface."

Marsh never, with his fulsome imagination, could have envisioned the "grander achievements" that are now, some of them, at "old and ... familiar," other as the blueprint stage. And Coulee, for example, the Dneper-
stroy, TVA; and, to come, the planned structures in the Missouri Valley, and the giant of them all to be, the dam and hydro-electric plant that will harness the ancient flow of Yangtze’s sleeping power. In fact, man accomplishes with some act, something which liberates the homely inaccuracy already inherent to Mark’s statement about the weather. Take a look, for example, at the so-called “copper basin,” 80 miles from Chattanooga, in southeastern Tennessee.

Here, fumes from a big copper smelter have killed every last bit of vegetation, leaving the land as bare as a rock pile on a surrounding area of 7,000 acres. Around this barren, deeply eroded core is a belt of grass and broomsedge from one to two miles wide, and outside that is hardwood forest. In fact, far unaffected by the fumes from the smelter.

Such a spot, deplorable in itself, was the equivalent of a readymade, outdoor laboratory, however, to O. W. Hursh, a scientist attached to the Appalachian Forest and Range Experiment Station, a branch of the Forest Service, U. S. Department of Agriculture, at Asheville, North Carolina. Coming upon it four years ago, Hursh began intensive meteorological research, near Ducktown, Tennessee, which by now indicates that one of Marsh’s “grander achievements” of mankind, as it has been working its will on rain’s weather for a long time.

Brief, Hursh’s observations port the theory that large-scale human activities such as irrigation projects, extensive tree planting, drainage swamps, or natural forests, do actually change local climate, affecting temperature, wind movement, and amount of rain. So, if such is the case, the tree planters, swamp drainers, and loggers have really been changing local weather patterns, lo, these many years. Since the Tennessee “badland,” Forester Hursh measured and recorded at regular intervals the air and ground temperatures, wind movement, and rainfall in the three areas—the central eroded core, outer belt of vegetation, and outside hardwood forest. Among other findings, Hursh reports that from June to November the average monthly maximum air temperature was from 2.1 to 3.5 degrees Fahrenheit higher out where the fumes had killed off the grass and trees than in the forest, that wind movement two feet above the ground was 15 times faster in the open than in the forest, and that less rain fell in the bare zone around the smelter than in the surrounding grass and forest belts.

Hursh’s records also show that on clean analytical days, the air temperature in a belt of the forest was heated almost three degrees in, passing over the grass and bare zones of the copper basin. The scientist also found that evaporation from free water surfaces, such as lakes or streams, was far greater outside than inside the forest, the yearly amounts from experimental water containers being 56.85 inches for the bare area, 46.19 for the grass zone, and 17.76 for the forest.

Such findings are useful in connection with solving problems of forest land management, fire protection, wind-brakes and shelter-belts, and in the general employment of vegetation in modifying local climate to man’s best interest.

I have watched the variety known as “Garnet” come up spring after spring, but P. Shonhoizeri from Switzerland, known to us as “Cherry Glow” or “Firebrand,” died in an unprotected nursery row last winter. Perhaps mulching would have saved it. Certainly its clear ruby flowers produced all through August’s dearth of bloom make it worth special care or even frequent replacement.

Still more valuable to us are the new hemerocallis, now to be had in bloom all the growing season if varieties are selected with long-season bloom in view. Here H. Minor may be caught by late spring cold and Autumn Prince and August Pioneer may fail to bloom when Jack Frost comes too early, but they are lovely in our more gracious seasons. The color-range of hemerocallis now extends from creamy Moonbeam to wine-purple Trion with countless variations of red, gold, canary and bi-colors in between. In size, too, there are the dainty stars of Bottuniera and the giants Hesperus, Caballero, and our own Mr. Bechtold’s magnificent Gollaih. Pest-free and entirely hardy if we select kinds developed where they have a period of dormancy, there is probably no other perennial we can so ill afford to neglect.

Many plants are worth mentioning for color improvements make them acceptable in our gardens. Tritomas now comes in soft yellows, monardas in white, lovely salmon pink, lilies, tulips, and plateyccodons in pink and in white, chrysanthemums in everything but blue, delphiniums in all save yellow red. All these and many, many more and rarer plants are perennials worth trying in Colorado.
HAVE you ever been to the Morton Arboretum? If not, and you are near Chicago, it will richly repay you to see it—located at the town of Lisle, thirty miles due west of Chicago, it is not over an hour away by paved highway or by suburban train. Here was situated the original Illinois farm of J. Sterling Morton, great student and lover of trees and the founder in 1872 of Arbor Day. Of these eight hundred acres of beautiful wooded hills and valleys along the Du Page River his family, some twenty-three years ago created in his memory a distinguished Arboretum. Maintained through private endowment and administered by a self-perpetuating Board of Trustees.

Here a great educational work is carried on without charge for all, young and old, who are interested to come. Beautiful stone buildings house an extensive horticultural library replete with rare and priceless volumes, a large herbarium, lecture halls and class rooms, where all manner of subjects pertaining to horticulture, farming and botany are taught. These centers of educational work are located in the great out-of-doors laboratory constituting the Arboretum itself. Through these eight hundred acres many miles of paved roadways and nature trails have been constructed, making the growing, well marked exhibits, readily accessible for study.

The grounds are open every day from sunrise to sunset and all visitors whether nature lovers, or students, or merely sightseers enjoying the beautiful park, are welcomed without charge.

More than 4,800 species, varieties and hybrids of the woody plants of the world are now included in the living plant collection.

Plantings are arranged according to four classifications:

1. Systematic groups defined by botanical relationships.
2. Geographical groups according to native habitats.
3. Ornamental plantings to create landscape effects.
4. Economic plots where trees are tested for timber value.

The labels on trees and shrubs indicate botanical and common names, accession and location numbers. These numbers refer to a card catalogue which gives the location, origin and history of every species and variety represented. This catalogue may be referred to in the Administration Building.

Some of the outstanding features of the Arboretum are:

- Spring Wild Flowers (May-June).
- Flowering Crabapples (flowers during early May, fruit in autumn).
- Hybrid Lilac Collection (flowers in mid May).
- Garden of over 300 species of old fashioned roses (June).
- Lotus Blossoms (July-August).
- Hedge Garden (see illustration).
- Ground Cover Collection. Comprises plots of seventy-two ground cover plants adaptable to various soils and exposures.
- Many Nature Trails (including the notable Evergreen trail).
- Fall Foliage Color Display (October).

So greatly have I enjoyed visiting the Morton Arboretum that I urge every member of the Colorado Forestry and Horticulture Association, not to miss the opportunity of spending some hours there, should they be in the vicinity of Chicago.
UNUSUAL FOUNDATION PLANTING OF EVERGREENS AND DECIDUOUS MATERIAL

1. Lilac 'Lein Gambetta' (Syringa vulgaris)
2. Kuster Kodiak Barberry (Juniperus virginiana kosteri)
3. Weigela Bristol Ruby (Weigela)
4. and 5. Oregon grape (Mahonia aquifolium)
5. Silver Jinker Pine (Pinus flexilis glauca)
6. Peony 'Pauls Cushase' (Paonia)
7. Pygmy Austrian Pine (Pinus nigra Pygmea)
8. Reel of Japanese Barberry (Berberis thunbergii atropurpurea)
9. Umbrella Pine (Sciadopitys verticillata)
10. Japanese Yew (Taxus cuspidata)
11. Andorra Grafting Juniper (Juniperus horizontalis plumosa)
12. Andorra Grafting Juniper (Juniperus sabina tamariscifolia)
13 and 14. Froehlich Spirea (Spiraea fruticosa)
15. Colorado Redosier Dogwood (Cornus stolonifera coloradensis)
16. Colorado Redosier Dogwood (Cornus stolonifera flaviflora)
17. White Fir (Abies concolor)
18. Colorado Redosier Dogwood (Cornus stolonifera flaviflora)
19. Russian Savin Juniper (Juniperus sabina prostrata hirti)
20. Colorado Redosier Dogwood (Cornus stolonifera flaviflora)
21. Japanese Table Pine (Pinus densiflora umbraculifera)
22. Russian Savin Juniper (Juniperus sabina prostrata hirti)
23. Winged Euonymus (Euonymus alatus)
24. Southern Red Oak (Quercus falcata)
25. Japanese Table Pine (Pinus densiflora umbraculifera)
EVERGREENS—THEIR SELECTION AND CARE

By ROBERT E. MORE

This is the third article of a series. The prior articles are mentioned in the text.

III—VERY TALL TREES

E V E R G R E E N S that reach a height in excess of thirty-five or forty feet are usually classified as “very tall.” Their use at country and mountain homes and the larger urban residences is familiar to all. They are also frequently employed in landscaping the small house—which can be either a good use or a bad one, depending on the will power of the owner. Mention was made in the January article of the rapidity with which this group of trees get “out of scale.” If they are well cared for, unrestrained in growth habits, and are owned by persons who are averse to taking out a living tree under any conditions, then a gloomy situation indeed develops. A White Pine can grow two or three feet a year with little or no effort, and a Colorado Spruce frequently gains eighteen inches in height from one spring to the next. Does this mean that this group cannot be used in landscaping the small home? Not at all. Any of them can be kept in bounds for years by well-known nursery practices, which were set forth in the May 1946 issue. And even if they are permitted to develop according to their own inclinations, they can be removed when they get too large. We take out perennials when they get out of hand, and we eliminate the old and leggy shrubs. Why then, do we hesitate to carry out the same sane practice with respect to a tree that has served a splendid purpose for eight or ten years, and now has outlived its usefulness?

So there are a variety of uses for these very tall evergreens. We shall now discuss the selection, use and care of certain individual trees.

First of all, consider the Colorado natives. Native trees are invariably harder than exotics, so they should always be given preference, when all other things are equal. At the head of any list must come the stately White Fir (Abies concolor). No better evergreen than this can be found for Colorado use. It has the symmetry of the Colorado Spruce, but a less obtrusive color. Its long, yet soft, needles, its freedom from disfiguring galls, and an easy adaptability to most soils make it the writer’s favorite evergreen. It will cost you money, however. It is a very difficult tree to handle in the nursery, until it is three or four feet high, and even then it is likely to scorch if given no protection from the west sun and wind. So either plant your White Fir on the east side of the house, or have some other planting to the west of it.

The White Fir can be retarded in growth by disbudding (plucking out in April, with thumb and first finger, the center bud in each group of three), or by cutting the new growth in half with grass shears—about June 1st. Never cut into last year’s wood, however; this usually causes great damage. Disbudding in April, or docking the new growth in June will not only cause no injury to the tree, but it will make it thicker of foliage and more attractive looking. The two splendid White Firs shown on the next page were moved from Park Hill to Englewood last February. The tree on the right of the windmill is a full thirty-five feet high, and the earth ball weighed over six tons. Mr. Andrew S. Larson, who moved the trees, froze the earth balls with dry ice before moving.

The Colorado Spruce (Picea pungens) needs no introduction. Its striking blue and silver colors are
famous the world over. Its growth also can be retarded by cutting the new shoots in half before the wood hardens. As the form of the tree is at its best when under twenty feet in height, there is this additional reason for replacing it, when it gets this large—at least around the small home. The Koster and Moerheim grafts are especially fine in color, though the shape of these varieties is often inferior to the ordinary types. An Aphid that employs the Douglas fir as an alternate host causes the ugly brown galls on the Colorado Spruce. These look like cones, and when numerous are very disfiguring. The Douglas fir should not, therefore, be planted in proximity to the Colorado Spruce. It is believed by some that the Aphid can exist on the Spruce alone without its other host tree. This pest is the Spruce’s worst enemy.

A nicotine or lime-sulphur spray in April just before the buds break helps a great deal.

The Engelmann Spruce (Picea engelmanni) has proved inferior to the Colorado Spruce for horticultural purposes. The Engelmann likes the cool and moisture of high altitudes, where it grows naturally. Its form and color is usually inferior to that of the Colorado Spruce, also.

The Common Douglas fir (Pseudotsuga taxifolia) has already been mentioned. Providing a haven for the Aphid that causes the unsightly galls on spruce trees, it must not be used in conjunction with spruces. In addition, this tree seems to want more moisture and shade than is ordinarily found about Denver. In its native state in the mountains, it is always found on the north and east slopes. The relatively few specimens about Denver are inclined to be a trifle thin of foliage. The tree has never been pressed by Colorado nurseries, so there is not much local information relative to how much the foliage will fill out if disbudding or careful pruning is practiced. The tree is invaluable in landscaping mountain homes, where perfection of detail is not important. Probably the Douglas fir would make an excellent north side boundary barrier in a city planting. The tree has few pests. Most hardy of the native evergreen is the Ponderosa Pine (Pinus ponderosa). In a survey of the pines (Green Thumb for September, 1944) this tree ranked first. As will be developed later, the writer prefers the Austrian Pine for city planting. But certainly the Ponderosa is a splendid tree.

Be sure that this tree has plenty of sun and room. If crowded, it soon drops its lower branches, and thus loses much of its beauty. The foliage is coarse, and the whole aspect of the tree is rugged. Don’t use it where daintiness is required, therefore. As the Ponderosa sheds needles in considerable quantity each fall, it goes through a “messy stage” at this time. The dead needles are all off the tree by cold weather, and can then be raked up. Like all pines, the needles come in “bundles.” The Ponderosa usually has three needles in a bundle, four to six inches long.

The worst enemy of the Ponderosa is a pest that some believe is the spruce worm (with a taste for pine), and others swear is the tip moth. It is a bad actor, whatever it is. The “candles” develop beautifully in the spring—and then fall to pieces. Use an arsenic spray the last of April.

The Lodgepole Pine (Pinus contorta latifolia) is seldom used horticulturally. It should be, however. When not crowded (as it invariably is in its native state), the Lodgepole develops into a symmetrical and handsome tree. Its bright, yellow-
green needles and brilliant red pollen clusters make it perhaps the most colorful of the pines. Try a group of Lodgepoles in front of Austrian Pines, or Colorado Spruces. Growing more slowly than many pines, the Lodgepole can be kept longer by trimming the "candles," its period of usefulness about the small home can be further increased. It is almost never susceptible to the tip moth.

The Colorado Pinyon Pine (Pinus cembroides edulis) will be discussed in a later article when smaller evergreens are reviewed.

The last two native pines to be discussed are probably the most interesting of all. Both have five needles in a bundle, and both are found naturally in high altitudes. They are the Bristlecone and Limber Pines (Pinus aristata and Pinus flexilis). The trees are easy to distinguish. The Bristlecone has bristles on its cone scales, while the Limber does not. The needles of the Bristlecones are shorter, stiffer and a darker green. Usually exudations of pitch on the Bristlecone needles dot them with white specks. No other native evergreen has this characteristic.

Next to the Pinyon, the Bristlecone is the slowest growing Colorado Pine. For this reason, it is valuable for an informal, barrier hedge. (See picture in January, 1946 issue of Green Thumb.)

If happy in its location (plenty of sun, good drainage and a sandy loam), it will shoot out numerous casting tufts that give the tree its other common name of "Fox-tail" Pine. (See picture on preceding page.) As this pine holds its needles for fourteen years, it does not have the untidy fall appearance which the Ponderosa and Austrian pines exhibit.

Use the Bristlecone for unusual picturesqueness effects.

The Limber is the writer's favorite native pine. In cultivation, its needles are frequently four to five inches in length, and sometimes of a beautiful silvery cast. The Limber is a very long lived pine and at complete maturity, becomes the largest of our evergreens. The largest evergreen in Wyoming is a Limber Pine whose trunk is nineteen feet in circumference, and Colorado's largest evergreen is likewise a Limber Pine, with an eighteen-foot trunk. However, by clipping the candles regularly, a fine, compact specimen like the one shown in the picture at the center of this issue can be kept in bounds for years. Of course, on extensive grounds, it can be permitted to develop naturally and never fails to excite favorable comment.

The Alpine Fir (Abies lasiocarpa) and the Corkbark Fir (Abies lasiocarpa arizonica) conclude the list of very large native trees. Neither of these has had sufficient trial in Denver to warrant any conclusions as yet. At the writer's mountain arboretum, the Corkbark Fir has had few, if any, rivals for beauty and dependability. Its color rivals that of the finest blue in the Colorado Spruce, while its soft needles and freedom from gall aphids make it less rigid and easier to care for. The slender, stately growth habit of both the Alpine and Corkbark Firs, and their erect, colorful cones make them of great horticultural value—if hardy. They constitute an interesting experiment for the curious.

Four extremely fine exotic trees must be briefly discussed. The Eastern White Pine (Pinus strobus) is one of the great evergreens of the world. The magnificent specimen in the accompanying picture tells its own story. Those who have not seen the White Pines along Seventh Avenue Parkway and at Third and Downing should visit these areas at once.

The Seventh Avenue Parkway also furnishes fine specimens of the Austrian Pine (Pinus nigra) and the Larch (Larix). The sharp, white
buds of the Austrian Pine and its stiff, dark green needles in bundles of two make the tree a distinctive one always. It has no place about the small home, however. Its coarseness and rapidity of growth restrict its use to parkways and large estates.

The Larch however, can be used on both the small and the large estate. It is one of the two trees usually classed as “Evergreen” which sheds its needles every winter. By cutting the new shoots in half each Spring, Mr. Frank Harris has restrained a Larch to rock garden proportions for a number of years.

The Black Hills Spruce (Picea glauca densata) shown on the opposite page is coveted by all who have seen it. Slower growing and of finer and denser texture than the Colorado Spruce, our neighbor from South Dakota has won a definite place in Colorado landscaping.
HOW TO PLAN YOUR PERENNIAL BORDER

By ALICE WOOD

PLANNING a border first on paper is the most satisfactory way of creating a harmonious and lovely picture. This does not require expert technique, and even the most informal garden needs forethought.

In our perennial borders we want succession of bloom from early spring until the frost touches all herbaceous perennials, so let us plan with that in view. On tracing paper rule the desired area using a scale of ¼ or ½ inch equals one foot. By using tracing paper the summer plan may be placed over the spring plan, and the fall plan over the summer one. Make a list of the plants you wish to use with their blooming dates, heights and color, taking into consideration the cultural requirements of the plant, and those who are to be back of the border but not in one long row. Vary the size of the groups and let some come forward to meet the medium sized ones. Avoid circles and half moons. We want natural drifts of flowers after the fashion of links in a chain. It is more interesting to have bays of low plants among the taller ones and not confine oneself to low edging plants at the front of the border. An entire edging of the popular Sweet Alyssum gives too insistent a line. Consider the form and texture of the plant, and do not have too many composites together or too many spikes. If the background is an evergreen hedge use bright colors which will stand out. Solid masses of color are much more effective than mixed. Color is a matter of individual taste, but one should avoid strange contrasts. Gertrude Jekyll in “Wood and Gardens” says, “Treat reds and yellows in graduated harmonies and the cool colors in contrasts.” I quote also from Louise Beebe Wilder’s “My Garden”.

“Opaque white flowers are not pleasing in close proximity to strong red or blue flowers but should have an admixture of softening foliage or some intermediate shade. Dark rich colors—garnet, purple, very dark blue, and the dark green of evergreens for they tend to lower their tones instead of heightening them.”

What lovelier sight is there than Daffodils “dancing in the breeze,” so plant them in drifts with a clump here and there of Phlox divaricata. The irregularly shaped groups should be so spaced that the border seems full of bloom, and yet room should be saved for those which are to follow.

May brings the Tulips, to be followed by Iris, Peonies and the gorgeous Oriental Poppy. The border is complete without the stately and beautiful Lilies and Delphiniums, the valuable Hemerocallis which is seldom pleasing. The English use Daylilies, some of the pinks and carnations, and delphiniums from fall-sown seed.—Merry Mack.

No August bloom except from annuals? Then put buddleias in your border. They are available now in snowy white and all the color-range of French lilacs. Of course you do have the hardy phlox; but you might add the hardy scabiosas, both caucasia and fisheri, the improved pentstemons, daylilies, some of the pinks and carnations, and delphiniums from fall-sown seed. Mussini, Violas, Campanula carpatica and the fragrant Dianthus.

In a large border it is interesting to add flowering shrubs as accents. As one becomes more experienced, try bolder effects, remembering that repetition of small units is monotonous but repetition of important groups gives a strong effect. As in architectural design, one wants balance as well as interesting details creating an harmonious and charming composition.

DON’T BOTHER WITH SOURPUSSES IN PLANTS

By M. WALTER PESMAN

If you must experiment with rhododendrons, try Rhododendron hirsutum, it thrives with a pH from 6.0 to 8.0. All of which means that it does not have to have a acid soil. Practically all the other rhododendrons do. A sour soil, or acid soil, is expressed in terms of 4.5 pH to 7 pH. Most of our soils run from neutral (7.0 pH) to strongly alkaline (from 7.0 pH to 9.1 pH). Only one gardener in ten knows just what pH stands for, but we all have adopted this system of expressing acidity in soils.

Different plants must have different soil acidity; Michigan State College has collected data for some 1700 plants (special bulletin 306). The results are significant for Colorado with its predominance of non-acid, alkaline soils. All blueberries, for instance, want acid soil; so do a great many of their relatives, such as the heaths, Kalmia, Andromeda, Azalea, and Rhododendron. We’ll always have difficulty growing them in our natural soils. By the way, Kinnikinnick belongs there, and we all know how difficult it is.

Camellia, holly, many orchids, pitcherplants, pyrola, sundew, trillium, linnaea — they all start below 6 pH and seldom reach over 6 pH. It would seem like a waste of good garden energy to try and grow them.

On the alkaline side are very definitely Mint, Red Pepper, Sugar Beet, Sweet Clover, a number of grasses, and surprisingly enough such ferns as Cliff Fern (Woodia alpina and Woodia glabella), and Cliff Brake (Pellaea glabella), Transvaal Daisy (Gerbera) and Wall Flower have no use for acid soils.

Many of our most common vegetables thrive best in non-acid soil

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THE CARE OF BENT GRASS LAWNS

By FRANK HARRIS

Frank Harris is one of those rare people who practices what he preaches. He is an expert horticulturist and landscape gardener, and yet finds time to maintain a very beautiful yard of his own, as shown in the accompanying picture.—Ed.

The proper care of a Bent grass lawn is very similar to that required for keeping lawns of other types in top condition. The main difference is in the height of mowing and the frequency of watering. It is not as much extra work, as most people believe, but it is important to have an accurate knowledge of how and when to do a few things if you would keep a Bent lawn continuously beautiful.

In many ways a Bent lawn is less trouble than other types of lawns as weeds are less of a problem. Because of the thick solid turf less reseeding is required and recovery from injury is faster. Unlike most grasses, Bent grass thrives on close cropping. The manner of growth is such that its spreading is encouraged and its texture made finer by clipping as short as ½ to ¾ inches.

After a Bent lawn is firmly established it requires mowing every four or five days in good growing weather. It is well to begin mowing as soon as there is growth in the spring and continue as late as there is any growth in the fall. If the grass should grow tall between mowings the normal height should not be restored in one mowing. Set the mower as high as possible for first cutting, repeat every day or two, gradually lowering the mower each time until the right height is reached. If this is not done the turf will show brown after cutting.

The proper watering of Bent grass differs little from that for regular grasses. More frequent sprinkling is required but the total amount of moisture necessary to keep the grass green is no greater. Moisture is used faster by Bent grass because there is much more stem and leaf growth in the thick solid turf it produces. Except in very sandy soil, Bent lawns should not be watered every day. In extremely hot, dry weather two or three waterings per week are sufficient. For best results sprinkling should be done in late afternoon and evening. Always be certain that the faucet has been turned on from thirty to sixty seconds thus allowing all water, remaining in the hose during the heat of the day, to run out before starting to sprinkle the grass. The water must be applied no faster than the grass can absorb it because flooding is harmful to any lawn.

Bent grass makes such vigorous growth that fertilizing at regular intervals is essential to replace the elements consumed from the soil. Preferably in February or March, before growth begins, and again in September. A light coat of fertilizer may be applied in June if the grass appears to be losing color. Before the fertilizer is applied, however, it is well to spike the lawn with a Spike Roller, using the cross-crop method for complete perforation of the soil. Fertilizer should then be applied evenly and should be washed in well with a light spray.

Bent lawns are improved by an occasional treatment of topdressing, consisting of some form of animal manure and sand decomposed together with peat or bench soil. It is advisable to topdress when the lawn is reasonably dry and best results are obtained if the lawn is mowed just before treatment.

Bent lawns should not be covered in winter with mulch or manure. It is best to let them go into the winter rather closely clipped. After a severe winter some damage may show up in the lawn in the form of spots of dead, matted grass having a rather light, bleached-out appearance. This is the result of an unusual fungus disease called SNOW MOLD, which develops only at temperatures at or near freezing and only where there is excessive moisture, such as melting snows or poor surface drainage. If the dead spots are found to be caused by insect pests such as Beetle Grubs or Chinch Bugs, which feed on the grass roots, these pests may be controlled by suffocation from poison sprays or dusts, of which many kinds may be found on the markets today.

BOOK NOTES

Alpine Flowers — 18 beautiful color plates from watercolors by Paul A. Robert. One of the Iris Books series, printed in Switzerland. The introductory text is by Prof. Carl Schroeter. Oxford University Press. $3.00.

Geraniums, Pelargoniums — by Helen Van Pelt Wilson. M. Barrows & Co. Inc. $2.75. "If geraniums aren't your hobby when you begin this book, they will be when you finish it."

Arnoldia—the publication of the Arnold Arboretum, Harvard University. The May 31st, 1946 issue should be required reading for all members of the Forestry and Horticultural Assn. (Vol. 6 Nos. 4 and 5). Subject: On The History of the Introduction of Woody Plants Into North America. Author: Alfred Redhead.—Kathryn Kalmbach.

For best results plant Willow and Hackberry in the fall.—Scott Wilmore.
PARABLE

Once I saw an aspen wood
Like a cloud of flaming gold,
Holding in a light embrace
All the leaves that it could hold,
When a sudden gust of wind
Scarcely stronger than a breeze,
Swept across the valley's floor,
Rustled through the yellow trees;
And the branches, letting go
Loveliness they held so lightly

Gave their treasures to the air,
Where they whirled and glittered brightly,
Hung above the mountain's breast—
Lifted—fluttered—came to rest.
Calm and white the aspens stood;
Brave and lovely aspen wood!
Long I stood and watched the trees,
Wishing I were wise as these—
For the hardest thing to know
Is the grace of letting go.

By Mrs. Jamie Sexton Holme
From "I Have Been A Pilgrim"
Published by Henry Harrison.