AUTUMN COLOR

MRS. M. J. WEBBER

SINCE blossom time the little old plum tree, looking out from under the branches of the Blue Spruce, has gone unnoticed, until, in early September, its gay red leaves beckon to say we are at the threshold of another Autumn. The Alert Signal!

This season, which is known as Autumn, covers approximately, so far as colors are concerned, the months of September and October—the season of warm days and cool nights.

With the beginning of coloration in the plums, the changes come rapidly, and if we would enjoy to the utmost this colorful season, it is time to begin our fall pilgrimages. Thoreau once said he traveled a good deal, mostly about Concord. We too, travel a good deal, but our travels do not take us far afield. It is fortunate that none of us need go much beyond our own doorstep to enjoy some of the loveliest scenes which nature has provided.

As the hours and the days pass, each path and highway is bordered with color—not all vivid—but a change from summer's green. Purples and reds, yellows and browns; from ground covers to grasses, to Cat-Tails, to Willows and Cottonwoods. The fences and hedgerows are draped with Ampelopsis and clematis and wild cucumber. However, some pilgrimages are directed to shrines of special significance.

Knowing the habits of the Ginnala Maples, they come early on our list and we give them preferred attention. Following a devious path for some distance, we are not disappointed, for through the intervening growth we glimpse them, arrayed in all their glory! From bronzy red to wine—all equally vivid. One of the sensations of the year!

Because of the rapidity of change, it is difficult to follow in sequence.

One can hardly omit Sumacs (Rhus) in speaking of color. They are omnipresent, in variety, and add much to the brilliance of our Autumns.

Viburnums in general form one of our best sources of colored foliage.

The fruit of V. Lantana commands early attention as it changes from green to white to red to black—where it remains as an accent when the foliage changes to varying shades of red.

We would not miss V. Cassinoidea, when its white veined leaves are variegated red and green and the clustered fruit is pink.

V. Lentago is second only to the Ginnala in its brilliance and volume of color.

Though the change occurs later, mention of Viburnums in connection with autumn color would be incomplete without V. americana, the Cranberry of our gardens. The fruit ripens early and remains in place throughout the winter, as it is not to the liking of the birds. On the sunny side, the leaves show the usual bronzy red, but in the protected locations they vary from delicate pink to rose. There are other plants—such as Viburnum molle and Kolkwitzia which produce good fall color in shades of pink, but nothing else gives quite such good pinks as the Cranberry. They are clear and varied in tone—less interrupted by the veining.

Berberis Thunbergii gives us a true red in both leaf and fruit—
the latter remaining in place throughout the winter.

Evonymus in variety, but especially alata, should be mentioned. The latter assumes a color close to cerise.

Peteliot trifoliata has an attractive leaf, and becomes a clear, bright yellow.

Spiraeas are not always considered as autumn subjects. Van Houttei is universally planted for its abundance of white flowers in spring, but in October the bush is of a rich coloring—yellow to mahogany.

Though frost may prevent the freedom of flowering of S. prunifolia, its later gown of red satin warrants its presence in the garden.

S. Thunbergii too is an early bloomer, but the main red of its feathers, there is one of the last bits of color we see before freezing weather.

While shrubbery is invaluable, for landscape, for background, for scenic effect, we must turn to the trees.

As we look across the fields, the pure gold of the Cottonwoods lends character to the scene. If there were nothing else, it would be a noteworthy landscape. But there is so much beside.

The Cottonwood’s near relative, the Aspen — the tangible gold of the foothills. And the Birches in variety.

However, not a few of our trees in cultivation have been grown in sufficient numbers to give an appreciable effect.

The Hawthorns — Crataegus coccinea — mollis is one of the most decorative in foliage and fruit. C. crus-galli is of distinctive habit of growth, orange to scarlet in color, with small, darker red fruit while they are valuable decorative subjects.

We owe much to the Maples. They are beautiful at all times, but as the color changes, each species has something special to commend it.

As these trees assume their brilliant hues we make some of our most enjoyable pilgrimages.

Our steps turn instinctively to that lovely spot where the drooping branches of the American Birches, with their thin, restless yellow leaves, partially conceal the bright colors of the Sugar Maples growing among them.

If from the top of the hill we see color among the maples below, we walk down through the aisles of the tiny grove, looking to see the sun shine through the vaulted ceiling. The walls and the carpet are of such colors as only the Sugar Maple can produce.

Frequent visits are made to the Norway Maple grove—from the time the first trace of yellow appears. Each day we note the effect of the recession of the chlorophyll until it has disappeared entirely and the leaf becomes pure yellow. Some of the trees produce leaves creamy white and from that to a fairly bright yellow. A few have leaves of a pale, slightly mottled pink. The foliage is dense and deliberate in falling—making a thick carpet at the end of the season.

In early October we commence to take note of the Oaks. Because of the number of species and the tendency to individuality among the trees, the period of coloration is prolonged. The trees vary greatly in color—from light reds to dark shades, and they are of such substantial texture that they retain their appearance for some time. From the time the first Oak begins to assume its brilliant dress to the close of the season is a period of weeks of uninterrupted beauty.

When all of the leaves have fallen it is like the rolling away of a curtain—the mountains come into view and the winter etchings appear.

We always salvaged great armloads of the blossoms, trying to select those not too badly damaged by frost. They were more precious to us now that they began blooming in midsummer for it seemed that we were miraculously given an extra bit of summer after winter had taken over. But we always wished that our chrysanthemums could bloom twice or three weeks earlier so that we might see them in full beauty unmarred by frost and snow.

So it was with a good deal of interest that we began hearing about the new early-blooming chrysanthemums of the azaleum variety. Many began blooming in August and of the Korean hybrids that were being introduced by Mr. Alex Cumming.

Several American and European plantmen had worked for years to improve greenhouse chrysanthemums but no one had ever given a thought to chrysanthemums for the garden. Most if not all chrysanthemums grown in gardens were originally greenhouse varieties. Many of these were perfectly winter hardy but were unsuited for garden use in other important ways. They bloomed too late to escape freezing weather. They grew too tall and top heavy, so were easily blown over and broken in fall storms. They set too many buds and required expert disbudding and training to produce acceptable sprays of good sized flowers. Flowers and foliage were too easily damaged by light frosts.

Mr. Alex Cumming, recognizing these faults of greenhouse chrysanthemums for garden use, was the first seriously to turn his attention to the development of good garden varieties. He succeeded in producing a strain much better adapted to garden conditions. These chrysanthemums became known as the Korean Hybrids. The use of the Korean Daisy and later of the Arctic Daisy gave the group greater winter hardiness, earlier blooming, more frost-resistant flowers and foliage and new brilliant, sparkling colors. Among the dozens of these hybrids that have been introduced, Lavender Lady is one of the most famous. Mrs. P. S. Du Pont, Eugene Wander, Burgundy and Red Velvet are other fine ones.

Many others have followed the lead of Mr. Cumming and are working today to develop garden chrysanthemums. The University of Chicago has introduced a strain famous for winter hardiness. Polar Ice, Robert Brydon, and Barbara Small are among the first introductions in this group. The University of Minnesota is working for earliness of bloom and winter hardiness. We consider Chippewa and Red Gold their best varieties. Mr. De Petris of Grosse Point, Michigan, has developed plants with especially healthy, frost-resistant foliage.

Most of these new introductions can be grown satisfactorily in the
Denver area. The ideal chrysanthemums for Colorado must first of all be early blooming. They should be in full bloom by October 20. Many people plant only those that come into bloom in September thinking that these will more surely escape the hard frosts. It has been our experience that those in full bloom in late September are often blighted by the first hard frost which usually comes about the first of October. Those that open their buds a little later enjoy the benefit of the Indian Summer lull which follows the first killing frost. Another advantage of later blossoms is that colors are deeper and more brilliant when the sun’s rays are not so strong.

Chrysanthemums for Colorado should be of low or medium height—from one and one-half to two and one-half feet. Taller varieties require staking and even then nearly always are broken by our fall winds or perhaps an early snowfall.

Our chrysanthemums must be fully winter hardy and have foliage and flowers that can withstand successive light frosts. Most chrysanthemums can take lower temperatures than we ordinarily have but our plants must be able to stand long winter months with little moisture. Often the lack of a snow cover causes alternate freezing and thawing which only the hardiest chrysanthemums can survive.

We will now discuss some of the varieties that measure up to these requirements to some degree. None of them are perfect in all respects. But all the varieties we mention have been in our garden at least one winter and we have had many of them for several years.

The azaleamums or cushion mums are very popular. Their low mound habit of growth, profusion of flowers and long period of bloom make these suitable for borders, massing in front of evergreens and other landscape uses. Many colors are obtainable. More and more of the new introductions in recent years are of the cushion type.

There are so many fine varieties among the taller, larger flowered group that we can mention only a few favorites. Among the whites Silver Moon is the most frost resistant. It is a large semi-double showing a yellow center. It has an unusual nut-like fragrance that is very pleasing. It is a wonderful cut flower. Avalanche is a new white that flowers in lovely graceful sprays. September Cloud and Boreas are two good whites that bloom early enough to escape frosty nights.

Many of the pinks carry lavender tints and Lavender Lady is one of the finest mums grown. Jean Treadway is a real pink with a wine colored center. It is a little tricky to grow into a nice plant. Early Wonder is a very delicate ball-shaped pink. Mrs. P. S. Du Pont is a wonderful peach pink and Peachblow is a semi-double of much the same color.

Chrysanthemums that bloom in the true autumn colors — rich bronzes, reds and yellows seem especially to fit the season. Fine bronzes include Indian Summer, Cydonia, Ember, Ruth Cumming, September Bronze and Goblin. Red Velvet and Ruby Pompon are good reds. Burgundy and The Moor are wine shades that are lovely but they reliably escape winter hardy with us. Good yellows are Algonquin, R. Marion Hatton, King Midas and Yellow Dean Kay. I should like to include Eugene Wander among the yellows for it has fine large blossoms that open early and a nice habit of growth, but it definitely is not winter hardy here.

Among the new types the Spoon Chrysanthemums are of interest. The petals of these flowers are long slender tubes that are flattened at the tip in a spoon shape. White Spoon and Orchid Spoon are especially appealing.

The Northland Daisies are singles in many brilliant colors. They make fine garden plants and are very hardy. Brunhilde with lovely peach-colored blossoms made a fine showing in our garden last fall.

The new English chrysanthemums are being much talked about. They are said to have come from England by way of Canada to growers on the Pacific coast. They are gradually being distributed over the country. This race of mums has much larger flowers than other garden chrysanthemums. They have a very early blooming habit, many of them opening in August and September. They vary greatly in winter hardness and frost resistance. A good deal of experimentation and selection remains to be done to find those varieties that are suited to our section.

Just a few words about the culture of chrysanthemums may not be amiss. They are not too difficult to grow to perfection but their requirements must not be neglected.

Chrysanthemums need a very rich soil. Plenty of barnyard manure should be dug in each spring. In addition we find it beneficial to give each plant about a tablespoonful of commercial fertilizer once or twice a season to keep it growing continuously. The plants should be watered thoroughly every week or ten days and cultivated after each watering.

The clumps should be divided and reset every spring. If it is not convenient to do this some of the plants or stools should be removed from the clump so that those remaining will have a chance to develop.

It is advisable to pinch back tall growing varieties early in the season to make them grow into stocky, bushy plants.

After many years of growing chrysanthemums we are convinced that no other flower can give the gardener more satisfaction. Early and late varieties give a long season of bloom in a fine color range and there are types to fit any spot in the garden. Best of all to keep up interest there are dozens of new introductions every year.

Maybe, some day, plants will receive a horticultural classification indicating the conditions and locations under which and where they will thrive best, but even so there will always be those who like to do their own experimenting and see if they can get a Gardenia florida to survive the winter. So maybe it is the customer who ought to be classified and not the plants.—ERNEST HEMMING, in “Am. Nurseryman.”
OUR survey shows that all of the trees listed previously for zone 4 are equally suitable for this zone. Below are listed a few trees that should be added to the zone 4 lists. These are also suitable for most of zone 5.

Lists "A" and "C", recommended trees for zone 4, also apply to zone 5. The added trees below are all in the "will also grow" classes.

Additional Trees For Zones 4 and 5.

Class B. Less Useful Large Trees.

Acer saccharinum, Cl. Skinny Maple—A weeping maple similar to Cutleaf weeping maple.

Castanea dentata, AMERICAN CHESTNUT — Very rare, but a few specimens are found in the area.

Fraxinus nigra, BLACK ASH—Occasionally found. Not as hardy as others.

Populus petroskyana, Cl. PETERSKY POPLAR.

Populus alba richardi, Richards WHITE POPLAR — Occasionally found in the area. All the faults of the poplars.

Class D. Less Useful Small Trees.

Acer campestre, HEDGE MAPLE—Neat small tree or larger shrub. A little tender.

Acer tataricum, TATARIAN MAPLE—Similar in growth to A. ginsala, but not as good fall color.


Cercis canadensis, EASTERN REDBUD—Small tree or large shrub. Will sometimes survive in these zones and occasionally will surprise you with their beautiful blooms early in spring.

Eucalyptus atropurpureus, EASTERN WAHOO — Probably the best of the eucalyptus. Very attractive fruits and fall color. Usually grown as a large shrub.

Juglans regia, TEXAS BLACK WALNUT — Rapid growing hardy tree. Nuts are very small.

Robinia neomexicana, NEW MEXICAN LOCUST — Very attractive clusters of pink flowers. Slower growth than black locust. Also bothered by borers.

"The land — that is where our roots are. There is the basis of our physical life. The farther we get away from the land, the greater our insecurity. From the land comes everything that supports life. The land has not collapsed or shrunk in either extent or productivity. It is there waiting to honor all the labor we are willing to invest in it, and able to tide us across any local dislocation of economic conditions. No unemployment can be compared to an alliance between man and a plot of land." — Henry Ford.

BOULDER enjoys unique horticultural advantages which make it possible to grow a larger variety of the fine trees of the east than probably any other place in the state. While the Grand and Arkansas valleys are of lower altitudes and the southern corners of the state have longer seasons these areas generally have other disadvantages which restricts their list of suitable trees.

There is a nice combination of factors which make Boulder’s climate so favorable. There are more cloudy hours in the year, more rainfall, more humidity in the air, a less all. Have soil, better drainage, and the tempering and protecting influence from the near-by hills. The list of trees compiled for Denver will all grow in Boulder. In addition to the recommended trees, practically all the “will also grow” trees will not merely survive but will grow quite happily in the town. Most of the oaks, maples and lindens are growing there as well as in the east. There is sometimes a noticeable lack of flowers and fruit due to our late frosts, but the tree itself does fine. In addition to the lists of trees for zone 4 and the additional trees for zone 5 the following trees are found growing in Boulder.

In compiling this list we are very much indebted to Miss Maud Reed, and Dr. Edna Johnson of Boulder and Mr. Edwin A. Congdon formerly of Boulder. Anyone desiring to locate any of these rare trees may obtain a list from these people or the editor.

Acer palmatum, Cl. Bloodleaf variety of JAPANESE MAPLE.

Acer negundo interius, INLAND BOXELDER.
Populus tacamahaca, TACAMAHAC POPLAR.
Populus deltoides, EASTERN POPLAR.
Prunus domestica, COMMON GARDEN PLUM.
Prunus padus, EUROPEAN BIRD CHERRY.
Prunus persica, PEACH.
Prunus persica plena, FLOWERING PEACH.
Prunus, Cl. SWEET CHERRY.
Prunus sargentii, SARGENT CHERRY — Japanese Flowering.
Pyrus communis, COMMON PEAR.
Ptelea trifoliata, COMMON HOPTREE.
Quercus andrewsii, ANDREWS OAK — A native hybrid scrub oak.
Quercus bicolor, SWAMP WHITE OAK.
Quercus havardii, HAVARD OAK — Dwarf.
Quercus imbricata, SHINGLE OAK.
Quercus alba latiloba, WHITE OAK.
Quercus ilicifolia, SCRUB OAK.
Quercus utahensis, UTAH WHITE OAK.
Quercus borealis, NORTHERN RED OAK.
Quercus montana, CHESTNUT OAK.
Quercus muehlenbergii, CHINKAPIN OAK.
Quercus pungens, SCRUB OAK.
Quercus prinoides, DWARF CHINKAPIN OAK.
Quercus undulata, WAVY-LEAF OAK.
Quercus velutina, BLACK OAK.
Sambucus cerulea, BLUE-BERRY ELDER — Tree Elder.
Sassafras albidum molle, SILKY SASSAFRAS.
Tilia neglecta, QUEBEC LINDEN.
Tilia Maximowicziana, MAXIMOWICZ LINDEN.
Tilia platyphyllos, BIGLEAF LINDEN — Basswood.
Tilia platyphyllos rubra, Cl. REDTWIG LINDEN.
Ulmus alata, WINGED ELM.
Ulmus carpinifolia, SMOOTH-LEAF ELM.
Ulmus campestris, CAMP-ERDOWN ELM — Weeping.
Ulmus hollandica, DUTCH ELM.

TREE FARMS

The term “tree farm” may be applied to a forest area managed and protected for the production of repeated crops of timber. It refers to the application of sound principles of forestry to privately owned timber lands. Although the tree farm movement is comparatively new as a planned program, many forest owners have been operating under its principles since the turn of the century. Their continuance in business long after their lands were expected to be “cut out” is evidence that crops of trees can be maintained on a continuous basis. Certification of additional thousands of acres as tree farms awaits the initiation of the program and inspection of the properties in other states.

Montana has now ten “tree farms.” Texas has seventy-six. Colorado, none. Such a “tree farm” program can be started in Colorado.
An item in a recent issue of the "American Nurseryman," gives us something to think about, and indicates an awakening appreciation of street trees. This article says in part:

“Prof. L. C. Chadwick (Ohio State College) recently completed a survey of the street trees in the city of Upper Arlington, Ohio, a suburb of Columbus. There are thirty-three miles of streets in the city. Data were recorded on the kind, number and location of all trees on street property. Recommendations were made for removal of dead, dying and unsatisfactory types of trees. Also recommended was a planting plan, to be carried out over a period of twenty to twenty-five years, completely to replant the streets. Uniform street plantings were recommended, and in most cases only one species of tree was specified for a single street. The survey was accompanied by a new city ordinance and complete arboriculture specifications for planting and maintenance.”
DENVER'S FIRST ARBORETUM

IN the March issue of the Green Thumb Miss Olive Hensley reviewed the fascinating horticultural accomplishments of William Newton Byers. Reference was there made to a “Paper on Shade Trees” which Mr. Byers read at an early meeting of Denver’s first Horticultural Society. The recent survey of Denver’s deciduous trees (July issue of Green Thumb) makes the views of Denver’s pioneer arboriculturist especially interesting at this time. A brief review of the “paper” read by Mr. Byers will be made, therefore. It is to be regretted that available space does not permit publishing the article in its entirety.

The trees discussed by Mr. Byers were the following:

**Western Broadleaf Cottonwood** (Populus sargentii).

Mr. Byers says:

“The first trees planted in Denver were set in the spring of 1865, if I remember correctly, and were cottonwoods. That was the first year we had any water upon the townsite for irrigation purposes, and we had but little at that time. A little ditch was dug by Surveyor General Pierce from Cherry Creek, leaving the creek at the Broadway bridge and coming out on the townsite. Surveyor General Pierce, Judge Steck and Mr. Tritch planted a few trees, and possibly a few others planted some.

I planted some trees along Arapahoe street near Fifteenth in the spring of 1865, and I watered them with a bucket, carrying the water from the Pierce ditch. That was the beginning of tree planting, and it was successful, so that the next year a good deal of tree planting was done. Our trees were mostly cottonwood, and since that time the cottonwood tree has been abused a great deal. Some people complain that it is not neat and handsome, and even that it is a nuisance. I think it is an unjust charge. While the cotton does fly from the trees during a certain short period of the summer, and is somewhat disagreeable, yet it is seldom so, for it is what some people term as clean dirt. There is nothing unhealthful about it and not much that is disagreeable. It is a native of the country. It makes a shade tree quicker than any other, and I still think a good deal of the cottonwood shade tree, as most old timers do.”

**Boxelder** (Acer negundo).

“The next tree planted was the Boxelder; that, too, has since come in for a great deal of condemnation because it is infested with worms. That condition did not exist in the early days, and does now only in places. The pest began, according to my observation, along Champa street in 1889 or 1890, and it has spread gradually from that point in a southwesterly direction pretty well throughout the town.”

Worms and beetles make the Boxelder unattractive to many people today, but not so, with this optimistic pioneer, who added, “It will certainly have a tendency to encourage bird life in Denver.”

**Black Locust** (Robinia pseudoacacia), was entirely free from worms,” in these days, and the two magnificent specimens near Grant Avenue in the Capitol Grounds attest this fact.

Our native **Western Locust** (Robinia luxurians) was liked by Byers, though not as much as the Black Locust, or the Common Honeylocust (Gleditsia triacanthos) both with and without thorns.

**Russian Olive** (Elaeagnus angustifolia) is today frequently planted to encourage bird life in Denver. Mr. Byers, though not as much as the Black Locust, or the Common Honeylocust (Gleditsia triacanthos) both with and without thorns.

**Russian Mulberry** (Morus alba) “a little subject to being broken from a strong wind or a snow.” Byers preferred the slower growing **Norway Maple** (A. platanoides), “a good sturdy tree.”

**Oaks** formed a prominent part of the Byers collection. The **Bur Oak** (Quercus macrocarpa) was his favorite, and the noble specimen at Byers Junior High School furnishes today tangible evidence of the great value of this tree. Another Oak, with brilliant fall coloring (possibly **Q. coccinea**) did very well, but his **Swamp Oak** (Q. folcata pagodaefolia) and **Pyramidal Oak** (Q. folcata pagodaefolia) makes the views of Denver’s pioneer arboriculturist especially interesting at this time. A brief review of the “paper” read by Mr. Byers...
In the spring they break down the trees to get the blossoms, and if there is a stem left in the fall they will break down the trees to get the fruit."

As is pointed out by Mr. Pesman in Trail and Timberline for June, 1931, Mr. Byers also grew successfully American Chestnut (Castanea dentata), Common Hackberry (Celtis occidentalis), Kentucky Coffeetree (Gymnocladus dioicus), American Linden (Tilia americana), Sugar Maple (Acer saccharum), Sycamore (Platanus occidentalis), and Cutleaf Weeping Birch (Betula pendula).

Truly Byers Junior High School has a rich horticultural heritage from the man whose name it bears.

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WALTER J. ISE

Walter J. Ise, a member of our present board of directors, died at the Presbyterian Hospital in Denver on June 29, following a short illness and an operation. He had been a member of the Association for many years and for six years he was its secretary-treasurer, giving to the duties of that office gratis many valuable hours of service.

Walter was a native Kansan, having been born at Downs, Kansas, January 22, 1882. A graduate of Kansas State Teachers College, the University of Kansas, and Yale University Law School, he was admitted to the bar in 1912 and practiced law for two years at Coffeyville. Then from 1913 to 1918 he was land law examiner in the Department of Interior, Washington, D. C. In 1919, he transferred to the Department of Agriculture, and moved to Denver in 1921 as law officer in the regional office of the Forest Service. He was admitted to the Colorado bar in 1931. At the time of his demise he was assistant regional attorney in the office of the solicitor, U. S. Department of Agriculture.

Walter was also a member of the Unitarian church, the Acacia Fraternity, Phi Delta Phi honorary law fraternity, and the Masonic Order, and leaves in each, as in our own organization, a host of friends who extend sympathy to his surviving relatives. These are his wife, who resides at 2620 Ash street, Denver, a daughter, two sons, his mother, who lives at Lawrence, Kansas, three brothers and four sisters.

L. C. SHOEMAKER, Treasurer.

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Planing the grounds does not fall so easily into a system of plans and pictures as does home building, but it is certain that a carefully thought-out plan is needed if the home grounds are to be an attractive and useful part of that home. Each home, and the family there, is an individual problem and must be treated as such. The planting of small home grounds is no longer a fad. It is an essential factor in good living. A new fashion, however, must be developed in the design and planting of small homes from now on, so that each home will noticeably reflect these efforts. Such a fashion is long overdue, but surely not impossible to achieve.—LAURENCE G. HOLMES, in "Am. Nurserymen."

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WHY SPRAY?

The fact that so many supposedly intelligent, educated, "Christian" people fell for Fascism, Nazism and other "isms" closer home demonstrates that a large majority of people prefer to have others think for them. So, in Horticulture, we have many who would have certain rules for certain success so that they are assured of wonderful results without the necessity of their thinking or working too hard.

The trouble with making rules is there are so many exceptions. It would not take us long to state the important rules for success in growing things, but it would take a lifetime to begin to tell how to handle the exceptions.

So, in spite of the clamor for exact rules we still think that it is the mission of this organization and its bulletin to tell Colorado gardeners the WHY'S and compel them to exercise their own brains to work out the applications to fit their particular problems. This series of "Why" articles is planned to make you think WHY you do some of the common operations around a garden. So many things are done unnecessarily just from habit. If you know the reason for these jobs you will be able to determine whether your efforts are accomplishing any real good or not.

The reasons for spraying are still rather hazy in many gardeners' minds. One of the most frequent questions asked nursery and seedsmen is, "When should I spray my plants," as though a spray of any thing at one time would control any insect damage for the season. This indicates an ignorance of the purpose in spraying.

First, a gardener must find out whether it is actually an insect which is doing the damage. Mr. Kreutzer told us at our last meeting of simple ways to determine whether plant damage was caused by insect, disease, soil conditions or other causes. The next step is to examine the plants and determine what kind of an insect is doing the damage, and then find out what spray or dust is best used for control. Just to "spray" at any time, with anything, is usually a waste of time and materials. There is no magic spray available as yet which will kill all objectionable insects with one application. The reports of the new DDT chemical seem to indicate that it approaches that efficiency, but even that would seem to have serious kickbacks. Until such a chemical is proven out, we should find out what insect is doing the damage, determine the best control to use and learn the best time and method of application.

Damaging insects may be roughly classified in five groups depending on the control methods necessary.

1. The aphid or plant lice. These are soft-bodied sucking insects and are usually controlled by a "contact" spray. They do not chew, but stick their sharp beaks through any poison that might be on the surface and live by sucking the plants sap. Since they are soft-bodied they are "burned" by some chemical strong enough to do this without injuring the plant. It is necessary that each insect be hit by the spray or dust. Preventative spraying can seldom be done, except that sometimes a "dormant" spray used for scale insects may kill some eggs or dormant adults. So, you can see why spraying at any other time than when they are feeding is usually wasted effort. Nicotine sulphate
(Black leaf 40), rotonone, and pyrethrum have been the most common chemicals used.

2. The chewing insects, such as beetles and caterpillars. These are controlled by covering the foliage that they are eating with a “stomach” poison so that they must eat some of the poison when they eat the plant. This coverage of poison must be done before or at the start of the damage to be effective, and usually must be repeated at intervals as new unprotected leaves appear or rains wash it off. Various chewing insects are controlled with a variety of chemicals used in a variety of ways, but the most common used in the past are Paris green and Arsenate of lead. Some chemicals such as pyrethrum have both a burning effect when used as a contact spray and also a stomach poison effect.

3. Slugs. These are slimy little snail-like insects which feed on the green parts of the leaves. As they are both chewing and soft-bodied they may be controlled by either method, or dry dust thrown on them will kill them. The thing which makes them difficult to control is the fact that they grow so rapidly. In a week's time they may do a great deal of damage. They are especially fond of cherries and plums.

4. Red spider, spider mites and such. These may not be scientifically classed as “insects,” but they do not know that and go ahead and do as much damage as any other “bug.” They are very tiny and difficult to see. Their presence is usually indicated by a faded appearance of the leaves and a brown webby appearance on the under side of the leaves. They are discouraged by frequent strong sprays of cold water, but are most frequently controlled by the application of some form or combination of sulphur applied as a dust or spray. They operate chiefly during hot weather.

5. Scale insects. These are related to the aphis, but instead of moving around as they feed, soon after hatching they crawl to a fresh location on the plant, stick their sharp beaks through the bark, shed their legs and grow a hard scale over themselves. They then have food and lodging provided for life. (This is real “social security,” but who wants to be a louse.) The problem in controlling them is that any spray strong enough to penetrate their shell and kill them would also kill the leaves. The solution then is a “dormant” spray, when the leaves are off in the fall or spring. The common dormant sprays used are lime-sulphur and miscible oil.

Don't just “spray.” Find out:
1. If it is insects, or something else, which is doing the damage.
2. If it is insects, what kind of insect.
3. What spray or dust is most effective for their control.
4. When and how to apply this chemical.

Detailed advise as to proper spraying methods can be obtained from any good local seedsman or nurseryman. Or, send to the Extension Service of the Colorado State College for advise and bulletins. Popular garden magazines have published complete and well illustrated articles on identification and control of common insect pests. Packaged spray chemicals usually have directions for their use. The particular chemical used for a particular insect depends very largely now on what is available.

GEORGE W. KELLY.
(The opinions expressed here are my own and do not necessarily mean that the Association endorses them.)

WHAT DO YOU KNOW?

Check what you think is the correct answer to the following ten questions. Correct answers will be found on this page. Rate yourself ten for each question you have answered right. If you are above 80 per cent you are pretty good, or you have read and remembered all the articles in this issue. The questions are all answered in these articles.


3. New lumbering methods have been developed which utilize 60 per cent of the timber cut. Our present lumbering methods utilize: 50 per cent? 20 per cent? 30 per cent?

4. Proper treatment for the control of slugs on cherry trees is:

A contact spray? A stomach poison? Dry dust?

5. G. A. Klaiber was Denver City Horticulturist for 9? 16? 27 years?

6. Ailanthus altissima is the scientific name for: Tree of Heaven? Black Walnut? Black Locust?


8. The first tree planted in Denver was: Boxelder? Elm? Cottonwood?

9. The first trees planted in Denver were set out in: 1875? 1865? 1860?


ANSWERS — 1. Water; 2. Early flowering, low growing, winter hardy; 3. 30 per cent; 4. Any of the three; 5. 27 years; 6. Tree of Heaven; 7. More cloudy hours, neutral or acid soil, better drainage, more rainfall, proximity to hills; 8. Cottonwood; 9. 1865; 10. Ginnala maple, sumacs, viburnums.
G. A. KLAIBER RETIRES

Mr. G. A. KLAIBER, for 27 years Denver City Horticulturist, has retired and now lives with Mrs. Klaiber at Spring Brook Gardens on the South Fork of the St. Vrain river, near Lyons, Colorado. Spring Brook Gardens is one of the beauty spots of Colorado and well it should be with its marvelous natural surroundings, together with Mr. Klaiber's outstanding ability to get the most out of everything that grows.

Denver wasn't much of a place back in 1912 when Mayor Robert W. Speer first came into office but he had visions of Denver's being a magnificent city ornamented by the finest of parks, trees, parkways, lawns and flowers. Mayor Speer sought out men of proven ability and technical skill who could help him make his dreams come true.

It was logical that he should choose as one of these men, Mr. Klaiber, who was then operating his own fruit farm near Longmont and was Horticulturist for Boulder County. That this choice was fortunate for Denver is evidenced by the fact that Mr. Klaiber carried on the fine work during eleven city administrations indeed long after Mayor Speer had passed on.

Mr. Klaiber's love of Denver was natural as he came to Denver from Cincinnati in 1876 with his father and mother and family. He was then six years old and was the youngest of seventeen children. Klaiber was a doctor and practiced in Denver for many years. As a boy he drove the horse and buggy for his father as he made his regular calls on his patients and thus saw many unusual incidents in Denver's early history. He attended Arapahoe Street School, Stout Street School and later Gilpin. Aaron Gove was superintendent and Helen Coy was principal of Arapahoe. After graduating from Gilpin, Klaiber attended a private school run by Professor Tarbert and MIllegan.

Klaiber's interest in the outdoors was evident at an early age. His father owned a ranch north of Denver and he encouraged the boy in his natural tendencies. As a young man he was manager of Judge B. F. Harrington's Thoroughbred Horse farm north of Denver, and from there he bought his own fruit farm near Longmont which he operated until he was appointed Denver City Horticulturist.

Mr. Klaiber married Ada Dell Large, a daughter of one of the early Longmont pioneer families.

They recently celebrated their fiftieth wedding anniversary.

In connection with the Denver job Klaiber was the United States Plant Quarantine Inspector, being appointed by Dr. Marlott, Chief of the Horticultural Board, Washington, D. C. Klaiber also worked in close cooperation with Professor C. P. Gillett, Colorado State Entomologist, Colorado State College at Fort Collins.

WHAT ABOUT FORESTRY IN THE ROCKIES?

SGT. G. W. CARLSON

J. Lee Dean, dean of the Division of Forestry and Range Conservation at Colorado A. & M. College, Fort Collins, Colorado, writes of the author: "Carlson is a graduate of forestry from this institution in the class of 1943. He is now with the 10th Mountain Infantry, and the last I knew of his whereabouts he was in Italy. During his spare time in this country and in Italy he wrote this article about forestry in the Rockies. It shows that boys in service are thinking about what is going to happen to our forest resources in this country when the war is over."

As the forests, in general, in the Rocky Mountain Region managed so as to obtain their greatest utility? Would it be possible to obtain a higher standard of utilization and thereby reduce waste materially? Or is it necessary to reduce waste?

First of all, this region has a vast supply of timber which is only partially used, and which does not notice a little waste. If an area is cut off and then the demand is not satisfied, there is always more of the same to fall back on. But we know this cannot go on forever; look back on the plight of the East Coast Region, the Lake States, and now the West Coast.

We know the West Coast is still operating and will be able to for some time, but it is also very evident that it does not have the supply it did have at one time. It is possible that this region can prevent a catastrophe in the lumber industry by proper application of management, but so far this has not been done, and it's questionable if it will be done in time to maintain a sufficient supply.

To come back to the Rockies. The region has scarcely been touched, but with a depletion of other regions it will be necessary to draw on our resources. If this were to happen, it would be a necessity that we be prepared. We cannot carry on with destructive logging methods, carelessness with fire, and little protection against insects and disease, if we want to be prepared for a disaster in some other area. When the time comes that we are called upon, we want to be able to give a ready answer. Now is the time to begin our preparation.

Suppose other regions are able to carry on with no aid, then why should we bother with any management program? There is still a lot of timber to be harvested before we will be required to supply a great part of the United States demand, and plenty time to get around to it. Perhaps so, but it must be kept in mind that growth is slow in the Rockies, and we not only want the quantity, but the quality. It would be of great value to those cutting now to produce a better-grade lumber, to be able to cut straight trees for poles and mine timbers, and to know that they could go out and find some consistency in the timber they are about to cut.

When the term "forest management" is used, it doesn't ne-
cessarily refer to an increase in timber, although that is one of its great functions. Forests should be managed so as to receive the greatest value from the area on which they are found. Lumber production is of minor importance in Colorado and other parts of the Rockies, but the timber on that land is of utmost importance.

Watershed protection is one of the chief functions of our forests, and it should be stressed. Forests should be conscious of this fact and should pass it right on down the line. It has been known for a long time that forests exert a great influence on water in our streams and lakes, but now a great deal of experimentation is being done along this line, and we are learning more all the time just exactly what these influences are.

Tree spacing, size, and many other factors enter into this great picture, and each individual area must therefore be worked out for itself. Some places are gentle hills, sparsely covered with Pike's Peak Pine, while others are steep slopes with a growth of dog-hair Lodgepole. Chances are the first area is of some value, but the second does little more than retain a little water. It certainly could be improved and be of much value, if not more, for watershed protection. Of course broadleaves and conifers differ greatly in their effects, and each has a variety of differences according to the species present.

Now comes the question of return. Humanity dislikes the idea of doing anything unless it can receive a return. To build up a forest just to watch its effect on the rains which come seems a waste of time, money, and effort, which it is unless worked in conjunction with some other program. To manage a region for watersheds alone will, of course, aid in preventing floods somewhere down along the line, but more than that will be expected. Perhaps a community or several towns will be directly affected by an improvement in the water supply, but the land owners and residents of the managed areas cannot see its value unless they themselves can realize a profit.

It has already been shown how lumbermen can profit by an increase in quantity and quality of produce. In most parts of the Rockies where logging is not practiced (and many where it is), grazing is a very important occupation. This is one of the most important aspects of forest management in the Rockies. At the same time watersheds are being improved, the grazing value of the land can be increased.

Ranging livestock has been a great problem for a long time, and much has been done about it. Overstocking has been reduced, grass has been planted, and the type of stock best suited for certain ranges has been placed there, but we still aren't getting the maximum value from our ranges. The forest type on a land has a lot to do with the grass that will grow there and how well it will grow. Soil acidity, temperature, moisture content, and erosion are a few of the complex number of conditions effected by the type and density of the forest. Some areas with a good covering of grass and no timber sometimes erode badly, taking the grass along, while they wouldn't if there were a covering of trees along with the grass. It is of great importance that the aspect of range management and grazing be considered at the same time our forests are being managed for other purposes.

To convert all the forests to great controlled areas is not the purpose of forest management. Its purpose is to utilize an area for what it is best suited. Many large areas are best the way nature has left them, and our national parks take care of part of these. Some regions are accessible for cutting, and they protect the land well. These areas furnish the aesthetic value which millions of people travel across the country each year to see and enjoy. These areas must be protected to maintain the income of those who depend on tourists for a living, as well as for the interests of the tourists. By cooperating with game and fish departments, conditions can also be improved through forest management for the game which many tourists and residents seek. An improvement in fishing conditions is usually realized with watershed protection through forest management.

Working out a plan which is flexible enough, yet of great enough value to cover the types of management necessary on certain areas is like trying to work out peace plans to satisfy everyone concerned. I do hope, however, that plans can be drawn up for a fairly large area, and that it can be done in the near future. A plan of this type would aid in solving the huge unemployment situation which will inevitably come in the very near future with the fall of Japan. It would give employment both in technical and non-technical lines. Close supervision will be necessary to insure proper results, and a great many men will be pleased to work with a free life in the forest.
BEAUTY IN SIMPLICITY OF LANDSCAPE DESIGN

The picture shows the front yard and residence of Mr. and Mrs. Anthony Sweetman on South Corona Street in Denver. The house is unusual with horizontal lines predominating, a long overhanging roof, and intriguing corner windows. The front entrance is under a porch.

The garden plan is simple and reproduces the lines of the house on the ground. Tree planting is kept to a minimum in order to get the full benefit of the morning light. The garden is hedged in by Lodense Privet, which is also used for the background of the house number. Against the terrace is a planting of some low junipers and flowers. Above them on the terrace are rows of potted salmon colored geraniums. A drooping white birch and flower planting makes the foliage frame on one side, and purple leaved maples form the other side.

The place is on a fifty foot corner lot, and has a garage attached to the building. It is intended to illustrate the point that simplicity is the keynote of modern garden design. The place is friendly and smiling, and adds greatly to the charm of the city block in which it is located.