Above in simple form are the objectives of this bulletin. At present we will not attempt to cover more than those subjects which are particularly applicable to Colorado Horticulture. Subjects of general interest will be left to some of the older garden and Forestry magazines. As this bulletin is about the only publication devoted to horticultural subjects written especially for Colorado conditions, we will not have room for repetition of information found elsewhere.

For the present we plan to put out an issue every other month. It is now up to the Horticulturists, Foresters and plant lovers in this area to decide if this publication might fill their long-felt need; and if so to get behind it and help make it worthwhile. To make this bulletin self-supporting and assure its continuance and improvement we should have a membership in the Association of a thousand or more. If each present member will tell his horticultural friends about this and urge them to send in their dues to the treasurer, we can easily reach our goal.

(Continued on page 16)
WHY WATER?

Another one of my pet peeves, as I drive around town, is the man (or woman) with a hose “sprinkling.”

As this series is intended to make us think why we do things instead of doing them mechanically, let us review the reasons for watering or not watering in Colorado. By eliminating the needless or even detrimental practices we will have more time for the really necessary gardening chores.

Water, of course, is the only thing that makes most of our state anything more than a desert. But too much water, or water at the wrong time, or improperly applied, is not only waste, but many times actually does damage.

For instance take the person who believes that his lawn MUST be sprinkled EVERY day. This is a nice time killer for the business man to use after supper. He sprays water all over the lawn and flower beds. Before it has soaked in an inch the surface looks nice and muddy, so he goes in feeling that he has done a good deed for his yard. What has actually happened? The lawn has been freshed up a bit, but the water has not gotten down deep where the roots are (or should be) and by the middle of the next afternoon that water has all evaporated and the lawn is as dry as before. When this is repeated every day the grass and plants depend on this shallow water and do not develop deeper roots. Then when hot dry weather comes in fall it is impossible to keep the plants growing vigorously.

A better practice would be to water a third or fourth of the yard each day (if you must play with the hose every day) and water that part THOROUGHLY. By thoroughly we mean in such a way that the water soaks way down. This will encourage deep roots, and for several days after a thorough watering there will be subsoil moisture to keep the plants growing. A sprinkler of some sort to suit the size of yard will eliminate much of the time killing “hose holding.” The only way that the ground can be soaked deep is by a slow spray or going over the same place several times.

Around shrubs, flowers and vegetables where the surface of the ground is bare, this daily sprinkling tends to form a crust which helps the moisture in the soil to evaporate and retards the soaking in of water when applied.

Some plants definitely do not like too much water. Two good examples are elm trees and Colorado cedars. The soil underneath should never be allowed to become really dry, but to keep it soggy all the time is equally bad. Many plants are killed by kindness. The only way to KNOW whether the soil is wet enough or too wet is to occasionally dig down and find out. Some people instinctively know when to water and when not. We say that these people have a “Green Thumb.” With a little study almost any of us may develop a little greenish tinge on our thumbs. (If you want to literally have Green Thumbs try pulling weeds for a while).

Protect Your Evergreens

by William H. Lucking, Jr.

Evergreens make a permanent planting if taken care of properly. Most all Evergreens have some insects or diseases which attack them. Aphids, Red Spider, Pine-borer, Scale and Spruce Gall are the most common insects that attack Evergreens.

Aphids and Red Spider give the most trouble. These two insects can be controlled very easily if dusted or sprayed in time. The Rocky Mountain Juniper or Cedar (Juniperus scopulorum) seems to give us the most trouble. Aphids surely love this Evergreen. One should begin dusting or spraying with nicotine early in May, then repeat every three weeks. Do not wait until your evergreens are all brown. The same treatment will take care of Red Spider, although if there is Red Spider only, often one can take a good force of cold water and wash it out. Next spring, when the trees are dormant and new growth has not started, lime-sulphur will be in order. A good siring now and then will help keep all Evergreens healthy.

The Pine-borer is a most troublesome pest at times. A Moth early in the spring lays eggs in the tips of the Pine; then as the new growth starts, these eggs hatch into light brown worms called borers. They will bore down through the new growth which we call the candle. The Pine-borer can be controlled by spraying with arsenate of lead spray just before the new growth starts; then repeat again in about two weeks. In most cases, this treatment takes care of the Pine- borers.

Scale is a little white insect that attacks Spruce, Pine and Fir trees. This insect gets on the needles, and if not controlled will cause all the needles to drop off. Scale can be controlled by spraying with Lime Sulphur either in the spring. Be sure when spraying with Lime Sulphur that it is done only when the Evergreens are dormant. Remember that the white spots on the needles of the Bristlecone Pine (Pinus aristata) usually are not scale but exudations of pitch. As was stated in last month’s Green Thumb, the Bristlecone is the only pine that has this peculiarity. It is easy to tell whether or not the white substance on a Bristlecone’s needles is pitch by rubbing a little off and smelling it. If you haven’t sprayed with Lime Sulphur while the tree is dormant, then you can help somewhat by spraying with nicotine when the aphids emerge from their white scale covers and start feeding. It is necessary to examine daily with a magnifying glass to catch them.

Spruce Gall is that brownish-looking Burr you see on the tips of the Spruce. It is caused by an aphid which migrates from the Douglas Fir. The large eastern nurseries recommend nicotine just as the buds are starting to break in the spring. A prominent Colorado expert states that Lime Sulphur before growth has started, helps.

So in growing Evergreens one must watch for these pests, as great harm can be done in a very short time. Once an Evergreen is damaged, it is usually impossible to bring it back to its original beauty. There is just no more Pest that is very harmful to Evergreens, and that is the Dog we’ll call Squirt. That fellow can do more damage than all other pests put together. About the only thing here is to put wire around the Evergreens to keep Mr. Squirt away.
HAWTHERNS FOR COLORADO
By GEORGE W. KELLY

Results of our survey of Hawthorns (Crataegus) used for landscape effects in Colorado are not as conclusive as were the results of Flowering Crabs. Hawthorns have always been difficult to identify, and authorities seldom agree on characteristics and nomenclature, so only the foolhardy would attempt to say anything definite about them.

Of 75 requests for information, only 22 returned their questionnaires. This included most of those in the state who had done much work with Hawthorns. Many were evidently afraid to stick their necks out on this difficult subject.

The species receiving most mention was Crataegus coxinc, or C. intricata, the Thicket Thorn. This is usually a rather dense, stiff, thorny, many-stemmed shrub. Most of the reports showed this as an especially good plant and very hardy in Colorado. Nine people voted for this tree, representing a total of 187 years experience.

Next in popularity was the Colorado Hawthorn, C. coloradensis. It is found growing along rivers and streams at lower altitudes and is very effective either in the wild or as a cultivated plant. It is perhaps the most attractive of our native Hawthorns. In the spring the flowers are massed, and in the fall with loads of bright red berries. The leaves are glossy green and the bare stems in winter are a shiny brown as though varnished. While its character is naturally informal it can be easily trained in small tree form. This is a slow-growing shrub or a small low-headed tree, or sheared in formal shapes. It is one of the hardiest and fastest-growing in this area. The blossoms are good, and the fruit is large, bright red, and does not hang on long after it is ripe. Many of the Hawthorns, the Downy has been hybridized with other species until a great variation of forms can now be found.

The following native Hawthorns are: the Cockspur Thorn, C. crus-galli. This is a distinctive type of tree, usually low, roundheaded and spreading. The flowers are profuse, and the bright red fruit, while small, is numerous and hangs on all winter. Wonderful specimens are seen along several of Denver's parkways.

Next came the English Hawthorn, C. oxycanthca (also C. monogyna). Almost as many voted against this tree as for it. It is a distinctive tree when it does well, is slow-growing and more delicate in texture than many others. The flowers are beautiful and the fruit is very attractive and persistent. Its chief fault is that it is subject to blight and is rather unreliable in growth. Most reports indicated it as worth planting in protected places, but that it is not a tree to depend on.

The double-flowering red variety, Paul's Scarlet, was mentioned by almost everyone who reported, but all warned that it was very tender and subject to blight. When a tree of this variety does make a showing it is a thing of wonderful beauty, but only a small number of those planted ever pay for their keep.

The Washington Thorn, C. cor-data (C. Phaenopyrum) was rated highly by many users. It is a shapely tree, intermediate in size between the Thicket and Downy Hawthorn. Flowers, fruit and leaves are all attractive and it is generally reported as dependable.

Another native, the Small-leaved Hawthorn, C. saligna, rated next. It is also called the Willow Hawthorn because of its narrow leaves. It is found in west-central Colorado, and is generally a rather loosely growing small tree or large shrub. Many reported it as worthy of greater use.

The Western Hawthorn, C. occidentalis, is usually found on the Eastern slope in the same locations as the Colorado Thorn. It has most of the characteristics of the latter except the shiny brown bark, which is probably the only reason it rates lower.

The following native Hawthorns are: a good showing of clusters of (usually white) flowers, fruit of various sizes and persistence, a habit of slow growth, deep rooting, and difficulty in transplanting. They really cross with adjoining species making any particular specimen very difficult to positively identify. They are in general (as with most slow growing trees) real aristocrats of plants. In Colorado, where trees of bold effect and showy flowers are scarce, we could well plant many, many more Hawthorns.

FOREST APPRAISAL

The American Forestry Association, founded in 1878 and publisher of the monthly magazine “American Forests” has a long history of progressive leadership in the field of conservation of our natural resources. It has recently launched a nationwide appraisal to determine the war’s effect upon the country’s forests and forest lands. The cost of doing this important job is estimated at $250,000 and the money is being raised by contributions. The Association states that two-thirds of this amount has been promised and the work is already well organized and under way. Additional underwriting is necessary and the Association writes those interested may make a cash contribution, a pledge, or buy a Series F or G bond in the name of the American Forestry Association and mail it to 919 17th Street, N.W. Washington, D.C.

Conduct of the Forest Appraisal is under the direction of Mr. John B. Woods. In the 5 Rocky Mountain states, Colorado, Wyoming, Utah, New Mexico and Arizona the appraisal will be under the direction of Dr. Deen of Fort Collins, Dean of the Division of Forestry and Range Conservation at Colorado State College. Dr. Deen will be assisted by Professor J. C. H. Robertson, Associate Professor of Forest Management on the faculty at Fort Collins. It is expected that this work will begin in Colorado on July 1, 1944.
CHLOROSIS

DO YOUR PLANTS HAVE YELLOW LEAVES?

Cause and Cure

By A. M. BINKLEY, Horticulturist
Colorado State College, Fort Collins, Colorado

When something happens which prevents the formation of green coloring matter, known as chlorophyll, or something destroys it in the leaves, plants turn yellow. This "sick" condition is called chlorosis.

The small chloroplasts in the cells of leaves obtain their energy from the sunlight for combining carbon dioxide and water to form sugars and carbohydrates. A plant is largely made up of products manufactured by the chlorophyll, and when plants are very yellow there generally is not sufficient chlorophyll present for good growth. Severely affected plants may die. Chlorosis is associated with a series of very complex chemical relations of the plant. In brief two general relations should be considered: (1) those processes involved in plant development, such as, intake of water and minerals, respiration, transpiration, storage, photosynthesis and the formation of protoplasm; and, (2) the conditions under which the plant lives, or environment. Here such factors as temperature, light, soils and quantity and availability of nutrients present, water supply, and other factors. The nutrient requirements of different plants will vary with different species, varieties or temperature or other environmental conditions. The interrelation of environmental factors and plant development can become very complex.

A Few Causes of Chlorosis

Conditions which interfere with the normal assimilation or distribution of nutrients in the plant may cause chlorosis. A few of the conditions related to chlorosis are:

1. Deficiencies of certain elements in the soil, such as nitrogen, potash, magnesium, manganese, zinc and copper.
2. The fixation or lack of solubility of certain of the elements such as iron, or phosphates.
3. Excesses of certain elements in the soil such as lime. When the proportion or ratios of certain elements to others are unbalanced, poor growth may result.
4. Virus diseases.
5. Winter injury.
6. Insufficient light.
7. Excess application of water or soil containing high calcium carbonate.

The degree of chlorosis may be affected by cool temperatures which emphasize the yellow color of the foliage.

Of this various types of chlorosis, one of the most common in Colorado is the one where iron is lacking or is not soluble or available in a form in which it can be readily absorbed or used by plants. This trouble occurs where soil alkalinity is high. Sodium, potassium and calcium salts may accumulate in soils to increase alkalinity of soils. High calcium carbonate is the one soil most commonly associated with chlorosis. Apparently some plants growing in excessively alkaline soils cannot take up or utilize the iron necessary for chlorophyll formation.

Control of Iron Deficiency

1. Plant injection and spraying methods, used for diagnosis and as temporary control measures.
   (a) Spray the foliage, trees, shrubbery, or perennials with ferrous sulphate. Use a two per cent solution or about one pound to ten gallons of water. Do not use the Ferric sulphate salt. Apply where possible in early stages of growth.
   (b) Use of dry iron salts by injection method. Drill ½ inch holes in the main lateral roots of ornamental trees in the early spring or winter when trees are dormant. Drill holes with brace and bit deep enough to hold the iron salts and the size of drill hole should be made according to size of the tree.

Treatment when trees are growing rapidly may result in partial or complete defoliation of the tree. New green leaves may come out. Use one to two ounces of ferrous sulphate per tree and apply to the soil. For small trees use one pound to ten gallons of water, for larger trees, use two pounds to fifty gallons of water. Do not drill too close to the trunk of the tree. After filling the hole with the iron salts, seal with grafted wax or asphalt emulsion. Drill as many holes as is necessary to hold the measured amount for the tree. Drill holes on different sides of the tree. Do not drill holes in trunks of ornamental trees. This treatment is not always successful on all types of trees, or conditions.

2. Soil treatments.
   (a) Any practice that will maintain or increase organic matter content of the soil. Turn under legume, green manure crops. Heavy addition of well rotted manure (do not use fresh animal manures), peat moss, compost of leaves, decomposed lawn clippings, turned under will help make iron more available.
   Prepare your soil for planting trees and shrubs by heavy applications of well rotted organic matter before planting time.
   (b) One pound of ferrous sulphate per square yard of soil, washed in with water, has been of value on some soil types, but generally is not satisfactory.
   Under some conditions adding a mixture of equal parts of ferrous sulphate, aluminium sulphate and sulphur to the soil has been helpful.

3. Plant crops, trees, shrubs and perennials and varieties of plants which are tolerant to alkaline soils and are not susceptible to lime induced chlorosis.

Treatment of deep-rooted trees for chlorosis is always difficult and any attempt to change alkalinity of soils in any large acreage to any great depth is a very slow and expensive process.

Since there are many causes of chlorosis in plants, and in some cases it is not due to iron availability, do not make large scale treatments until the trouble has been diagnosed. Try out treatments on a small scale first. Do not invest money in treatments of your plants until you have the necessary information on the cause of the condition from a reliable source.
Many Colorado people lament the fact that Rhododendrons, Azaleas, Dogwood, Laurel, Arbutus and many other beautiful flowers do not grow there. Many regions of the United States have flowers which are famous and one thinks of them as being associated with certain states or areas of the country.

The high elevation areas of the Rocky Mountains particularly Colorado, as it has the most high mountains, should be known the world over by its Alpine flowers but for some reason these rare and exquisite flowers have missed their share of publicity. It is on the very tops of the Rocky Mountains, in a land flowers grow. If you have climbed in this high country up next to the sky, or if you have gone to the top of Pike’s Peak by automobile or by the little old cog train, you have had at least the opportunity of seeing some of these hardy little plants. They flower in a world of snow and burning sun, rain and drought, avalanches and blizzards, and many of them are exactly the same species as those growing within the Arctic Circle.

In the towering rocks of the Rocky Mountains between 11,000 and 14,000 feet above the sea, the traveler finds it difficult to breathe enough of the rarefied air to keep from gasping for breath and upon the slightest exertion is conscious of his pounding heart. Strong icy winds blow; snow, hail, and sleet fall in the summertime; snow banks and glaciers remain all the year round and freezing temperatures prevail nearly every night.

Rocky Mountain sheep and marmots live up there; there is grassland or tundra; there are meadows and rock fields with environment growing steadily more severe until on the highest peaks (over 14,000 feet) Arctic conditions are experienced.

As the snow recedes, these dwarf, rich-colored flowers burst into blooms give to the drab background of rock, and if you stop to think about it, you will be interested in the miracle of these little plants wrestling in their struggle for life on these inhospitable mountain tops. Surely after knowing the Alpines, Coloradans will realize that we have flowers which should make our state botanically famous. Perhaps they would not trade them for those of any other state. When adequately publicized, people may make pilgrimages from all over the world to see Colorado’s flowers above the clouds.

**CANADA’S ARBORETUM AND BOTANIC GARDEN**

By M. Walter Pesman

Does a Botanic Garden Pay? Are rubber and quinine important? The Kew Botanic Gardens started the commercial growing of these plants. Are windbreaks important in Canada? Thousands of Siberian Pea Trees (Caragana) now growing as windbreaks in the Canadian west and the northern United States have their origin in seeds from the Dominion Arboretum on the outskirts of Ottawa, the capital city of Canada.

Right now this same Dominion Arboretum is carrying on extensive experiments with Milkweed plants, because the rubber and the floss that comes from them. (Oh, yes, we have milkweeds in Colorado, but no Botanic Garden!) A certain percentage of Milkweed-rubber added to Buna S. (synthetic rubber) makes it usable for heavy duty tires. What is being done now, is to breed a variety of milkweed with a higher rubber yield and of uniform quality.

In the meantime the milkweed floss has been found to be an ideal substitute for kapok, used in life preservers and life rafts. It is particularly important because it is extremely light, (having hollow fibers) and because it is coated with a sort of oil, impervious to water. Many other native plants or introduced plants may be found to be of future importance once they can be studied from the commercial and scientific angles. We may be able to produce substitutes for gasoline and alcohol,—we may find important fiber plants, food and medical plants, that can be particularly well grown in Colorado. Do you know that extensive experimentation is going on now in Colorado on the culture of pyrethrum?

The Dominion Arboretum and Botanic Garden is also trying out the Russian kok-saghyz dandelion for rubber. It was introduced from eastern Russia near the Chinese border. Seed exchanged with other countries was initiated by Dr. H. T. Gussow, the Arboretum’s botanist-director, soon after his arrival from England in 1911. The United States and the U. S. S. R. particularly were interested because of the similarity of climate. Russia furnished Canada with many forage and pasture grasses.

At the beginning only about two hundred varieties of trees and shrubs were grown at Ottawa, now the Arboretum has 1,400 completely hardy specimens. Four years ago herbaceous border plants were added. Over three thousand species of woody plants were tested since the time the Arboretum was started in 1886. A beautiful park shows how these trees, shrubs and perennials can best be used.

In spite of the variable climate, from forty below to ninety-five degrees above, the Dominion Arboretum and Botanic Garden has proved its worth many times over. What unforeseen commercial values it may bring out in the future no one can tell. Its sixty-five acres, with 660 additional acres of the University Forest, Ontario, for milkweed experimentation, promise great things.
**Is Our Colorado Landscape In Danger?**

**SCIENCE vs. BEAUTY**

This association, long active in conservation, is now faced with the need for a new kind of conservation—the protection of scenery and other natural values from the ravages of a busily planning mankind. In this new thinking completely enough to save the things it treasures most.

We know that big things are being planned for Colorado after the war. These include new highways, irrigation and power projects, strip coal mining, and oil shale quarrying. Frequently mentioned are the monies to be spent, employment provided, and increased populations. But we are not told that nearly every industrial and population gain entails the loss of scenery, the diminution of uncrowded and unmarred out-of-doors, and the destruction of other natural values.

With these generative losses we shall suffer if many of our projects are consummated, please do not consider me an obstructionist seeking to prevent progress. If we want these things enough, let us consider the consequences, for the same thing that benefits us may obstruct the down country migration of elk and deer, ruin the last extensive range upon which the original fauna now cited as evidence of unspoiled primitiveness. Without such precautions we may sometime find more tourists to brag to, but have less to brag about.

We have too many poorly planned roads which have ripped the heart from canyons—either through the process of their construction or by shedding great quantities of water into streams already inclined toward disastrous floods. Finally in respect to roads, we have missed some implications. Few realize that some highways make big cities greater and villages smaller. This is not good, for we realize that small communities are desired. There are, of course, four recognized advantages:

1. During wars, greater populations are desirable. There of, course, four recognized advantages:
2. The largest and best known stores and factories—whether devoid of either land or water vegetation. In depresions upon the plains, reservoirs are not objectionable, but when placed high in the mountains they kill trees with their backs against mountainsides with incisions incidental to their use, and spoil much that is fresh and beautiful.

Colorado's duck shooters should remember that early season shooting depends upon resident ducks, and that all ducks can nest at lakes with greatly fluctuating levels. Fishermen, nature lovers, and tourists should remember that more reservoirs and transmountain diversions will dry many streams—in some places seasonably, in others for as long as such works remain. An aimlessly growing civilization may demand more of these dammed projects, and short-sightedly fail to realize the destruction involved.

Then someone can always think up a new highway project. Fishermen are still trying to catch up with the trout, just now beyond their reach, by building faster roads to it—and the good fishing moves on. There are just three ways to obtain superior fishing:

1. Buy a place, fence it, stock it, and post "keep out" signs.
2. Climbing, pack, or fly into inaccessible places the other fellow can't reach.
3. Spend more time traveling to and from fishing than the average fisherman can spare in his week-ends off.

Time rather than distance is the determinant of good fishing. If better fishing is wanted near Denver, let the roads deteriorate. Then one need not travel so far, but the good fishing will still begin beyond where Tom, Dick, and Harry can reach during days off. Or, if we double Denver's population and make Colorado's roads faster and more numerous, we can chase the good fishing clear out of the state. Before we do, we'd better make sure that neighboring states are saving some for us.

Circle drives advocated by planners in tourist towns should be scrutinized. If improperly located these may obstruct the down country migration of elk and deer, ruin the last extensive range upon which a band of bighorn sheep depends, or break the remaining wilderness the region can boast. Before such roads are built, land speculators should consider the natural beauty threatened and biologists should weigh their effect upon forest types and wildlife. Without such precautions we may sometime find more tourists to brag to, but have less to brag about.

We have too many poorly planned roads which have ripped the heart from canyons—either through the process of their construction or by shedding great quantities of water into streams already inclined toward disastrous floods. Finally in respect to roads, we have missed some implications. Few realize that some highways make big cities greater and villages smaller.

Indeed, most problems we are considering result from the wishes of great populations or from steps taken to attract more people to this state. Many believe that great populations are desirable. There are, of course, four recognized advantages:

1. During wars, greater populations can produce larger armies and more military equipment than less populated areas can provide. Hereafter, after this war, we may succeed in ending wars.
2. The largest and best known stores and factories—whether

FROM WHICH THE COAL HAS BEEN REMOVED. UNWEATHERED PARENT SOILS AND ROCKS ARE PLACED UPPERMOST, USUALLY IN ROUGH WINNOWS. TO REPLACE THE SOIL IN ITS ORIGINAL ORDER REQUIRES ADDITIONAL WORK WHICH THE OPERATOR CAN'T AFFORD. ONE MAY WONDER HOW SOON ANYTHING OF VALUE CAN BE GROWN AGAIN.

COMPARABLE ARE PROJECTS FOR QUARRYING MOUNTAINS OF OIL SHALE IN WESTERN COLORADO. THUS FAR WE HAVE BEEN TOLD ONLY OF THE WEALTH TO BE SQUEEZED FROM THE SHALE, AND OF MORE FUEL FOR OUR MOTORS. WE HAVE NOT BEEN TOLD OF FUELS WHICH CAN BE DISTILLED FROM REPLACEABLE PLANTS. WE HAVE NOT BEEN TOLD WHICH BEAUTIFUL MESAS AND CANYONS WILL BE LEVELLED INTO JUMBLING UGLINESS AND OF OTHERS WHICH MIGHT BE SPORED. UNMENTIONED IS THE FACT THAT WITH MORE FUEL FOR OUR MOTORS, THERE WILL BE FEWER PLACES WORTH DRIVING TO.

LET US CONSIDER PROPOSED AUGMENTED IRRIGATION FOR EASTERN COLORADO, USING WATER Brought FROM ACROSS THE CONTINENTAL DIVIDE OR EVEN FROM THE MISSOURI RIVER. FARMERS ALREADY WITHIN THIS AREA HAVE TOO LITTLE WATER DURING DRY YEARS. WE FAVOR GIVING THEM MORE WATER, BUT DO WE WANT MANY MORE IRRIGATED LANDS? WE CAN HAVE THEM, BUT WE CANNOT AT THE SAME TIME REBUILD EASTERN COLORADO'S ANTELOPE AND SAGE GROUSE POPULATIONS TO NUMBERS AGAIN PERMITTING REGULAR HUNTING. THERE WILL BE MORE PLEASANTS, BUT WE MAY LOSE ORIGINAL FAUNA AS EVIDENCE OF UNSPOILED PRIMITIVENESS.

GREAT DAMS AND RESERVOIRS ARE PROPOSED TO STORE WATER FOR IRRIGATION AND POWER PRODUCTION. WE ARE TOLD THAT THESE MAKE BEAUTIFUL LAKES. THEY DO SO BY HAVING WATER LEVELS, BUT WHEN DRAINED THEY REVEAL UNGRATIFYING MUD FLATS AND BROAD BEACHES.

WE KNOW THAT BIG THINGS ARE BEING PLANNED FOR COLORADO AFTER THE WAR. THESE INCLUDE NEW HIGHWAYS, IRRIGATION AND POWER PROJECTS, STRIP COAL MINING, AND OIL SHALE QUARRYING. FREQUENTLY MENTIONED ARE THE MONIES TO BE SPENT, EMPLOYMENT PROVIDED, AND INCREASED POPULATIONS. BUT WE ARE NOT TOLD THAT NEARLY EVERY INDUSTRIAL AND POPULATION GAIN ENTAILS THE LOSS OF SCENERY, THE DIMINUTION OF UNCROWDED AND UNMARRRED OUT-OF-DOORS, AND THE DESTRUCTION OF OTHER NATURAL VALUES. WITH THESE GENERATIVE LOSSES WE SHALL SUFFER IF MANY OF OUR PROJECTS ARE CONSUMMATED, PLEASE DO NOT CONSIDER ME AN OBSTRUCTIONIST SEEKING TO PREVENT PROGRESS. IF WE WANT THESE THINGS ENOUGH, LET US CONSIDER THE CONSEQUENCES, FOR THE SAME THING THAT BENEFITS US MAY OBSTRUCT THE DOWN COUNTRY MIGRATION OF ELK AND DEER, RUIN THE LAST EXTENSIVE RANGE UPON WHICH THE ORIGINAL FAUNA NOW CITED AS EVIDENCE OF UNSPOILED PRIMITIVENESS.
locally owned or part of a chain — grow with populations; and the top positions in such enterprises grow in consequence and remuneration.

3. Great cities can build and maintain more imposing public buildings and monuments than are found in smaller communities. Such structures are admirable, but they may explain why many city folk, impressed with the works of man, forget the greater natural forces at work in the world.

4. Large communities near others of great size attract and enjoy great artists of music and the theatre, great art collections, and great libraries.

And yet large cities have disadvantages. They attract increasing numbers of thoughtless people against whom "keep out" signs are erected upon our countrysides. Sordidness unalleviated by nature becomes more common, as do criminals and other undesirable folk. Finally, the very people who advocated making our towns larger consider them unfit places for living, and move to the edge of town or adjacent villages.

Increasing populations change states from producing to consuming areas, and prices of foods and other commodities rise until distress increases among the resident poor and gains among the more favored are nullified.

Residents of growing cities must travel increasing distances to still enjoyable scenes and ride perforce in long queues of motor cars upon our highways. The inevitable haste resulting explains the bad public manners common to many residents of great cities. Fish and game populations become inadequate for sport except upon a restricted or artificially basis. Yet how often Western cities entice more residents by telling of the rich outdoors nearby, even though each new resident diminishes the favorable balance between outdoor resources and users? How often those who do not understand Nature speak of creating a new Pittsburgh of the West and in the next breath boast of western outdoor wonderlands! Who will tell these ignorant people that Nature cannot forever withstand anything and all abuses?

Great cities imitate the metropolitanism of larger cities more than they seek to preserve or accent the culture of the region they dominate. Names rich with local meaning become submerged among names made common by national advertising or among theatre, restaurant, and other names aping in a meaningless fashion those found in even more metropolitan areas.

Some have insisted that populations are bound to increase, and that we can never stem the rising tide of people, but we now know that the rate of increase is dropping. I dare prophesy, too, that we shall eventually pay more attention to great populations than to merely keep in mind that they vote.

Some endangered natural values must be treated individually. For example, 18 miles northwest of Ft. Collins is a northermmost pinyon grove meriting mention in Sargent's TREES OF NORTH AMERICA. This unusual in a charming country grows upon a low limestone mountain. The limestone is necessary for use in sugar factories and cement plants, for which it is being quarried. This is State land — a school section — and its exploitation has been arranged between the factories concerned and those who handle our State lands. No general attempts have been made to preserve remnants of this pinyon grove as a state forest, park, or monument.

What shall we do about these things? It is easy to rant about something needing improvement, but do we want action? Does this newly combined association want a program which will make it vital? Then listen.

Colorado has state planning committees upon agriculture, industry, and forests. Some of these deal with recreation and outdoor assets. But what we need is a committee which will, as its sole purpose, catalog and evaluate the natural values of scenery, wildlife, pioneer relics, and traditions which attract a tourist business ranking high among state incomes and, more important, which make life here worthwhile.

Just as some committees are asking how many people Colorado agriculture and industry can support, a committee upon natural values should ask how many people can live richly in Colorado. From such studies should come publications listing the natural values of Colorado, stating what uses the various ecological types can support without diminution, naming the activities which threaten to destroy our natural values, and listing specific areas and projects needing detailed analysis and preservation.

Then, once we all are acquainted with the whole picture, we should make some intelligent choices. We can expect opposition to such a program, just as the conservation organizations which questioned the transmountain diversion through Rocky Mountain national park were criticized. But, as the result of questioning concerning this project, safeguards were provided. The level of Grand Lake will not fluctuate. Tunnel exits and entrances are located outside important park areas. Every precaution not to mar the surface of the park has been taken.

All proposed projects must be studied before plans for them are completed. Engineers work with obstacles, and once a project is planned will toss aside all hindrances, including those who question project design. To be effective we must be in on the planning, before estimates are made.

The tempering of all engineering projects with provisions protecting natural beauty will not please those whose fetish has been the greatest sum of money derivable from any scheme or efficiency for efficiency's sake. They may ask us to point to any civilization which has prospered by sacrificing maximum mechanical efficiency and money-making for love of countryside beauty and traditions. I can think of a very gallant ally which has done just this, and am sufficiently American and tinted with bloodstreams other than English that I dare point to England without prejudice.

Many people have condemned England for not having materials with which to fight, but no one can honestly accuse her of not having things worth fighting for. And seriously, Ladies and Gentlemen, I would prefer to fight with inferior weapons than to have nothing very much worth fighting for.
RE-LANDSCAPING THE SMALL HOME

Editor's Note: We are happy to announce that we have secured a new contributor who writes for us with time to time. His name is Quercus (pronounced Querr-Cuss) and he is somewhat of a landscape gardener, very much interested in things botanical, distinctly a fussbudget, and occasionally fairly interesting. Articles signed by him express his opinion and do not necessarily represent the policy of the Association. Let us know how you like his writings.

Thirty years ago most novels ended in the promise to marry on the part of the theretofore capricious heroine. Once she gave her consent, apparently all interest in life ceased, all problems ended. The current books on "Landscaping the Small Home" (and they are legion) approach the subject much as did the novels of 1910—once the home is landscaped, the story might as well end. A trip through any fifteen or twenty-five year old residential section, however, establishes that problems continue to arise. With the new place everyone is so eager to get a "quick showing, and the average nurseryman is so anxious to turn his stock before it gets too large, that most small places are overplanted. Once the material takes hold and starts growing vigorously, the overcrowding becomes critical. But the owner either doesn't notice the place any more or, if he does, he can't bear to take anything out that is growing nicely. So year by year the trees and shrubs get larger, the grass gets thinner, the flower beds get poorer and the shade, instead of being an aid to comfort, becomes an instrument of gloom.

With the gardening book nor horticultural magazine seeks to arouse the complacent householder from his lethargy and start him anew on that most fascinating of all pursuits, the planning of an attractive and restful yard. (If I ever speak of the "Outdoor Living Room" or "plunging pots" may I be shot dead!) Strangest of all, why do not the nurserymen see the possibilities in this most promising field? Had I a nursery, I should leave the doorbell of the recently constructed home strictly alone. The chances are ten to one the owner has already spent fifty per cent more than he can afford on the house. But the place that needs RE-landscapeing! Ah! that is a different story. The owner has recovered from the financial shock of building; he is older and probably better to do; he is just the right height for real benefit from gardening; and he perhaps has more appreciation of beauty, if stimulated, than your younger chap.

Let us be more concrete. Fifteen years ago John X. Bridgegroom built a seven-room house on a tract 75 x 125 feet in a pleasant part of the city. Across the back he planted a row of Bolleana Poplars that was intended to furnish a "screen". They do. The screen is now forty feet high, no afternoon sun can touch house or back yard, and suppressing, greedy roots cross the entire yard in their never-ceasing search for food and water. The lawn is bumpy with them, the flower beds are robbed by them, and, if in desperation he raises his eyes above the depressing ground, he sees the corroding cankers on the trunk discharging gangrenous pus. The worst is over, but the rest is none too good. The "foundation planting" covers most of the windows, and the shrubs are old and leggy. With the overcrowd­ ing in the parking knock off hats from pedestrians, spread litter everywhere in the spring, and constantly break—but do not die—when their persistent leaves are caught by out-of-season snowstorms. The owner struggles valiantly with these trees, and instead of being ashamed of their ragged shape and ugly scars, tells you with pride that he saved one of them, after tree experts told him to kill it. When he was a gonier, by pouring copious quantities of water into two drain tiles (which, God bless him, don't come even close to any vital root on the tree!). John called on a couple the other day who, curiously enough, had included landscaping in their budget when they built three years before, and who now have, therefore, a lovely exterior. A brilliant Pin Oak gleamed red in the waning October sun, keeping the di­ rect rays from becoming oppressive, but not as yet spreading to propor­ tions that are out of scale. The screen of shrubs, now some five to six feet high, gave privacy, but was neither heavy nor oppressive. The vitile young branches, clothed to the ground with deep green, vigorous leaves, are a pleasure to look at. The foundation planting is a mix­ ture of dwarf shrubs and ever­ greens which (has "tie the house to grounds" already become too hackneyed? Probably so)—keep the house from looking raw and in­ complete.

This strange couple have no parking trees, thereby ensuring an uninterrupted sweep of lawn from street to shrub plantation. (Why do we need parking trees anyhow?). Of course the hosts want to show John and his wife everything, and as John feels his feet sink into the lush turf, and stops to admire the rich flower borders, he suddenly realizes how drab his own place is.

If John and his wife can but have courage, their happiness is secure. They must give up every existing tree and shrub, however. Then let them start from itch (for itch comes before scratch), re-landscape their house, and have for themselves a truly attractive home.

TELL YOUR FRIENDS

Blanch M. Richards, Membership Chairman.

Membership in an organization such as the Colorado Forestry and Horticultural Association is both an honor and a privilege. An honor because this association is one of the oldest, if not the oldest organization in the state for the promotion of correct horticultural information on planting in Colorado's climate through the organization's bulletin "The Green Thumb." Send your membership NOW to the treasurer, Mr. W. J. Ise, 831 14th St., Denver.
The Colorado Pinyon Pine (Pinus cembroides edulis) has a wide distribution in Colorado, coming into the South and West from Utah, Arizona and New Mexico, and extending to Wyoming on the north, and Owl Canyon, near Fort Collins, on the east. At Owl Canyon are found specimens that are, perhaps, the finest in the world. The patriarch shown in the illustration is the largest reported Pinyon Pine. It is about 25 feet high, has a crown spread of 31 to 37½ feet, and a trunk circumference of 11 feet. The Forest Service estimates that it is 600 to 800 years old.

As is well known, the Colorado Pinyon Pine has edible nuts that are prized by confectioners. The wood is used considerably for fuel, and small trees are employed frequently in the Rocky Mountains for informal landscaping effects. The short needles (an inch to an inch and one-half in length) come two or three in a bundle, are yellowish-green on the dorsal side, and somewhat silvery on the ventral, or inner, side, due to the presence of many white stomata or pores. The tree is slow growing, an our smallest pine tree at maturity. Young trees for landscaping can be obtained at most nurseries, either with single stem and somewhat regular form, or multiple stems and informal shape. Small trees can be kept in scale for many years by cutting off the top third of each “candle” after elongation is complete in the spring, just before the needles are ready to “break”. (This same practice on White, Austrian, Mugho and other Pines will prolong their “landscape life” many years and make them more compact and beautiful trees). If exposed to south and west sun and wind in winter and spring, the Colorado Pinyon Pine sometimes scorches somewhat, particularly the first year after transplanting. This is particularly true with stock originating in the Southwest. Probably seed collected from the Owl Canyon trees would produce a much better tree in this respect, as conditions there are very similar to those found in Denver. The tree is thoroughly hardy in any Colorado temperature, and deserves a more prominent place in landscaping than it has heretofore been accorded.

**EDITORIAL**

We would especially appreciate your sending in interesting items on any of the above 7 Ps subjects. Things which interest you might interest others. We would like to have each one of our members send us details of any unusual tree or shrub that they know of. When time permits we would like to compile a list of all these unusual plants so that others might become acquainted with them.

At present all the editorial work and mailing is done by volunteers. If you would like to help please let the editor know.