MEN AND MOUNTAINS

Excerpts from “Of Men and Mountains”

By William O. Douglas

Mountains have a decent influence on men. I have never met along the trails of the high mountains a mean man, a man who would cheat and steal. Certainly most men who are raised there or who work there are as wholesome as the mountains themselves. Those who explore them on foot or horseback usually are open, friendly men.

When man ventures into the wilderness, climbs the ridges, and sleeps in the forest, he comes in close communion with his Creator. When man pits himself again the mountain, he taps inner springs of his strength. He comes to know himself. He becomes meek and humble before the Lord that made heaven and earth. For he realizes how small a part of the universe he actually is, how great are the forces that oppose him.

If man could only get to know the mountains better, and let them become a part of him, he would lose much of his aggression. The struggle of man against man produces jealousy, deceit, frustration, bitterness, hate. The struggle of man against the mountains is different. Man then bows before Something that is bigger than he. When he does that, he finds serenity and humility, and dignity, too...

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Canadian Peat Producers Association
1116 Vancouver Block, Vancouver, B. C., Canada
November, 1950

THE GREEN THUMB

Colorado Forestry and Horticulture Association
Organized in 1884

"To preserve the natural beauty of Colorado; to protect the forests; to encourage proper maintenance and additional planting of trees, shrubs and gardens; to make available correct information regarding forestry, horticultural practices and plants best suited to the climate; and to coordinate the knowledge and experience of foresters, horticulturists and gardeners for their mutual benefit."

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DEAR GREEN THUMBERS:

Did you know that your subscription to the Green Thumb also makes you members of the Colorado Forestry and Horticulture Association "with all the rights and privileges thereunto pertaining"? One of these is the program of open meetings which have been held at Horticulture House on Friday evenings. Now, your program committee would like to find out just what you members would like to see, hear or do at those meetings. We would really appreciate it if you would drop us a card at Horticulture House answering the following questions:

1) Do you attend the Friday evening meetings?
2) Do you think another night would be better than Friday?
3) Would you prefer another time to evenings?
4) Do you check the calendar of events in the Green Thumb each month and mark dates that interest you on your own calendar?
5) Do you have any preference as to type of program you enjoy (e.g., practical programs of garden help, travel programs, picture programs, or what have you)?

Your committee wants to give you the programs you like best and find most helpful, so answers to these questions and any suggestions you may have will be most gratefully received.

Your Program Committee.
ALTHOUGH frost has put an end to outdoor gardening activities, we can still pursue our gardening hobbies indoors. To be successful indoor gardeners we should recognize that for plants, at least, conditions within our homes are far from ideal. Most homes are too hot and the air too dry to suit plants. Often we put the plant where the light is inadequate and then wonder why it doesn’t grow. Sometimes minute amounts of gas fumes unrecognizable to us keep the plant from being healthy. If we are honest enough to recognize the faults of our homes we can compensate by either modifying the unfavorable conditions or by choosing plants which will grow and be beautiful in spite of them. The latter course is by far the easiest to follow.

We should all be familiar with a few general principles of plant care. The rest of these is watering. Frequently we are asked, “How often should I water my plants?” There can be no definite answer to that except to say that plants should be watered when they need it. Rather than watering your plants every day, or every other day, examine them at regular intervals and water only those which need water. There are several ways of determining this. An excellent method for clay pots is to tap the pot with your knuckles—a hollow sound indicates need for water; a dull thud indicates the soil is moist enough. Another good method is to take a pinch of soil between the fingers—you can soon learn to recognize the feel of dry soil, moist soil, or too wet soil. Another method is to note when soil changes color from dark (moist) to light (dry). When the plant needs water it should be saturated but never permitted to become waterlogged. A good soaking once a week with a chance to dry out between waterings is better than a light watering every day which may leave the plant either too dry or too soggy.

Some prefer to water from the top, others advocate only watering from the bottom, allowing the plant to stand in water until the soil at the top of the pot is moist. Either method can be satisfactory. Dangers of top watering are that water may merely run down between soil and pot without really soaking the soil, or water may stand around the crown of the plant and cause rot, or splash on the leaves and cause leaf spots. Careful watering from the top eliminates these difficulties, so use the method you prefer. Just remember to water when water is needed, giving enough to thoroughly moisten the soil, but not permitting the plant to stand in water so that it has “wet feet”.

House plants benefit from an occasional washing—not only from the esthetic value of removing unsightly dust, but also because plants carry on an exchange of gases in the air through minute openings in the leaves. If these openings (stomata) are clogged with dust it interferes with the normal life processes of the plant. The common practice of wiping the leaves of plants with oil to make them shine is frowned upon, since the oil clogs the stomata.

Leaves may be easily washed with a small rubber syringe, a shower bath or faucet spray, or by wiping each leaf gently with a soft cloth or sponge. Soapy water applied with a soft cloth and thoroughly rinsed off will aid in the prevention of insect pests.

Spraying foliage will to some extent compensate for lack of humidity in the air. Grouping plants together or setting the pots in trays of moist sand helps create a humid atmosphere in the vicinity of the plants.

In selecting soil for your plants, avoid either heavy clay or light sand. A good general purpose potting mixture is equal parts of garden soil, sand, and peat. This formula may be modified depending on the texture of the garden soil available; a light soil may need little or no sand, a heavy soil may need more. Leaf mold or compost is a good substitute for peat.

House plants will benefit from the addition of fertilizer from time to time as the plant in its manufacture of food exhausts the supply of nutrient materials in the soil. Well-rotted manure is always satisfactory but not always easy to obtain. Bone meal is safe to use as it is slow-acting and there is no danger of “burning” the plant. Two or three tablespoons may be mixed with soil for an eight-inch pot at potting time, or one-half teaspoon to a six-inch pot or one teaspoon to an eight-inch pot may be sprinkled over the soil. There are many excellent commercial fertilizers which most of us find convenient to use. Be sure to follow the manufacturer’s directions, for it does not follow that if a little is good, more will be better.

There has long raged a controversy between the clay pot advocates and the glazed pot enthusiasts. Plants can be grown satisfactorily in any kind of a pot—even in tin cans—if we use good judgment about watering and...
take precautions to provide drainage. In buying any kind of a pot, it is best to select one with a drainage hole in the bottom. Glazed pots or jardinières with no drainage holes are dangerous, for the plant may become waterlogged. It you use such a container, put a good layer of coarse pebbles in the bottom to aid in drainage. If you use a large jardinière in which you set another pot, raise the pot up on something such as an overturned pot-saucer. Frequently remove the pot and pour out any water that is in the jardinière so that the pot never stands in water. Clay pots have many advantages and for the amateur are probably the best bet. New clay pots should be soaked before using so as not to draw too much moisture from the soil.

In potting, provide for drainage by putting a few pieces of broken pot or several large pebbles in the bottom of the pot. This applies to any pot, whether or not it has a drainage hole. Then add moist soil to bring the plant to the right height, set plant, fill the pot and firm the soil around the plant with your fingers, taking care not to pack the soil. Strike the pot on a table a few times to settle the soil. Leave half an inch or an inch at the top for watering.

A plant grown in the same pot for some time may become pot-bound; that is, the root system has become so extensive that the roots are matted and twisted and tend to form a ball around the earth. If the plant is to increase in size or produce vegetative growth, it must be repotted. A plant grown too large to be attractive in its present container also needs repotting. Such plants can be put in the same size pot if the roots and top are both pruned; if the large plant is desirable, use a size larger pot and disturb the roots and top as little as possible.

Plants can be prevented from reaching too large a size or a scraggly appearance by pruning or “pinching back”. This involves taking out buds at the tip when they are very small, or cutting back a branch to the point

where it joins another, or to a point just above a leaf, thus leaving no ugly stub.

House plants benefit from occasional cultivation with a stick or a fork, taking care to keep such cultivation shallow so as not to injure the roots.

Fortunately, house plants have few pests, and most of these can be prevented by washing plants and keeping them healthy. Plant lice or aphids do sometimes occur, but can be easily controlled with nicotine sulfate. Mealy bugs, those fuzzy white bits of “cotton” so fond of coleus, can be disposed of by dipping a match in rubbing alcohol or kerosene and touching each bug. Red spider is a pest in hot, dry houses, and is especially fond of ivy. Frequent washing usually prevents red spider. If it gets a start, try nicotine sulfate, dusting sulfur, or a commercial red spider spray. Scale insects may occur. These brown “scales” can be removed by washing. An old toothbrush is helpful in loosening them, and a thumbnail is even better. Don’t mistake the symmetrical rows of brown spots on the underside of your fern leaves for scale; these are reproductive structures of the fern and quite harmless.

We should not forget that light is essential to a plant. Some plants require sun, while others will live with little or no sun, but all must have light. If you use a plant for decoration on a table where it receives little light, set it near a window part of the time. To rest the plant, place in partial shade, give it no fertilizer and less water. The pot may be sunk in the ground outside. In the fall, bring the plant in, increase the water and fertilize as needed, and it will resume active growth.

House plants need a rest period. Summer is the ideal time for this. To rest the plant, place in partial shade, give it no fertilizer and less water. The pot may be sunk in the ground outside. In the fall, bring the plant in, increase the water and fertilize as needed, and it will resume active growth.

There are many beautiful plants which will tolerate the adverse conditions to which we subject them. Some of these are so hardy that they will stand almost any abuse, and even a rank amateur can raise them successfully. With such plants to choose from, anyone can have growing plants to brighten the winter months. Among these easy to grow plants are:

Nepthytis—This is a handsome foliage plant with arrowhead-shaped leaves. It can be trained to be vine-like or it can be pruned as a low pot plant. Nepthytis is very tolerant of little light, and is one plant which can be grown away from a window if it visits that window occasionally. Easy to root from cuttings, it is a simple matter to start over if the plant grows out of bounds.

Peperomia—The Peperomias have shiny, rather thick spatulate leaves and may be variegated or plain. If given room to expand they become very large, but they will tolerate crowding in a small pot where they grow slowly and with a little pruning can be confined to a small container for a long time. They are easy to root from cuttings.

Aglaonema or Chinese Evergreen—This is a foliage plant with glossy green leaves. It will grow in water or soil, and will tolerate lack of light extremely well.

Sansevieria or Snake Plant—Variegated, sword-like leaves characterize this hardy plant. When attractively potted and shining clean, Sansevieria is a very attractive addition to the winter indoor garden.

Pandanus or Screw Pine—The Screw Pine has striped or banded sword-like leaves usually bordered with spines. The leaves grow from a center crown which should be kept dry to avoid rot.

Aspidistra—The names of “Cast Iron Plant” and “Saloon Plant” indicate the hardiness of this old standby. When very dark green foliage is needed, this plant is a good choice.
There is also a variegated variety.

Coleus—Coleus plants with their leaves of many hues provide a spot of color. Fast growers, they need pinching back to keep them shapely. Too much water causes the leaves to drop. These plants can be set outside in the summer to brighten the border, and new plants for winter use started from slips.

Philodendron—The "Devil's Ivy" is a wonderful vine for adverse conditions. It grows well in soil or water, will tolerate lack of light, and is subject to few insect pests in contrast to English Ivy which may get red spider. As it grows, it tends to become long and stringy. Then it is a simple matter to cut the long bare branches off and start over with fresh slips. The plant roots well, although slowly.

Tradescantia or Wandering Jew—These viney plants do well in water. There are plain green and variegated varieties, the most handsome being silvery green and purple. They may bloom with tiny lavender or bluish flowers.

English Ivy—There are many kinds of ivies to choose from. While they are not as fool-proof as Philodendron, they are not difficult. Red spider will attack English Ivy, especially if it is grown where it is hot and dry. Frequent washings usually prevent these pests from getting a start.

Begonia—Begonia semperflorens is the common small flowering begonia with which most of us are familiar. It is a good choice for blooms in the indoor garden, and may be had in white, red, or pink. There are double varieties available. It likes some sun and must not have wet feet. Other than that, it requires no special care and will bloom all winter.

Geranium—If you have a sunny place, you will want at least one geranium. Give it rather heavy soil, and keep it pinched back to make a bushy plant. Slips taken in the spring are sure to give you winter bloom, but fall slips may not bloom until towards spring. Geraniums which have bloomed all summer in your outdoor garden can hardly be expected to bloom all winter, too. Start over with slips.

Impatiens or Sultana—This delightful old-fashioned flower with its translucent stems and pink blooms is easy to raise and will bloom all winter. It is best started from cuttings in the fall, as it grows rapidly and will soon be a blooming plant.

Bulbs—The addition of a few paper white narcissus bulbs should not be overlooked. Unless you have a cool dark place to start them, they had best be omitted.

Novelties—A few novelty plants always add interest to the indoor garden. Among these plants may be mentioned the rooted yam which can be pinched back to keep it from becoming too long and stringy and which will be a lovely vine for a long time. Grapefruit seeds planted in a low copper bowl make a lovely centerpiece. The lowly carrot, beet, horseradish, or even turnip will make an attractive short-lived plant. Cut the top off, leaving about an inch of flesh, and place in a shallow dish with water. The leaves will develop and stay pretty for some time. Interesting arrangements can be developed around these.

Annuals—You might bring in some of your favorite annuals for bloom in a sunny window.

WINTER PROTECTION OF ROSES

By A. E. ALBRECHT
President Denver Rose Society

ACTUALLY, there has been very little research done on cold hardiness in roses and most of what we know is drawn from analogy. Most cold injury is believed to be due to desiccation of the plant tissue. Occasionally cases may swell and burst. We do know that once a rose is thoroughly frozen, even though it lives, it has been greatly devitalized.

Hybrid tea roses are semi-hardwood plants that are a mixture of a great many strains and no two varieties are exactly alike in their resistance to cold. Roses commonly spoken of as hardy, which are actually hardiest to frost, are apt to prove tender in climates with great extremes of heat and cold occurring alternately, where spring or fall freezes are followed by warm days. They are unable to bear the fluctuations of climate when it occurs intermittently.

Since hybrid tea roses are not entirely winter hardy it would seem in a region where we have protracted periods of subzero weather, followed by occasional warm days, the practice of hilling earth 8 to 10 inches high around the base of the plants is the correct method. While many prefer to pile leaves, straw, and various other materials between and over the earth mounds, in an attempt to protect the upper structure, little is gained by this extra work. Any materials capable of compaction, such as manures or peat moss, should not be put in the beds for winter protection. In the winter when these materials remain moist for long periods of time they are apt to become more injurious than beneficial. Evergreen boughs piled over the earth mounds are often recommended. They serve the purpose of retarding, to a certain extent, freezing and thawing.

If for no other reason than to protect the base of the canes from the drying winter winds and to help retain moisture, all semi-tender roses should be covered with clean earth. Clean up as much fallen rose material as possible before hillling. Soil used to cover roses should be free from partly decayed organic matter. It is safer to use earth from the shrub borders, or better still, subsoil, rather than to scoop earth from the beds.

It is not necessary to apply any manner of protection until the plants are dormant, or a few weeks after the first killing frost. It is also good advice to water the beds thoroughly about the time of hillling.

Unless the plants have grown exceptionally tall and are in danger of being loosened in the ground by winter winds, it is not advisable to remove any wood until spring.

Questions and Answers

How deep should I plant Lilies?

S. R., Cheyenne.

The depth of planting is dependent on the habit of growth. There are some kinds with roots at the base only and others with roots on the stem as well. The Madonna is a good example of the former. Plant about twice the depth of the bulb. It should be mentioned here that this lily does not require rich food. The better known stem-rooters are auratum, regale, philadelphicum, speciosum—all needing deep planting. Lilies do not like being crowded, so when setting in a bed with other plants, see that these neighbors are not of the quick-spreadng, strong-growing types. H. F.
JUST CALL ME SPINELESS
By Elizabeth Nixon Eckstein

WHEN it comes to spines, I have no backbone! That is, if the spines are on a cactus. There's no middle ground about liking cacti. (That's the plural, to be used when referring to more than one of the darn things.) You either do or you don't. If you do, you are on the way to becoming a cactophile. And for that, friend, there is no cure. All you can do is seek out others likewise afflicted—and save the time of your life! Once cactus spines prick your interest instead of just your hand (or some other part of your anatomy) you are committed to collecting, buying, trading and growing these most fantastic of all plants.

It is hard to tell just when my case of cactusitis began, but in retrospect it appears that the symptoms had been evident for some time before I actually broke out. Soon after we were married, my husband and I were browsing through the dime store. As we passed the flower counter, the clerk was just unpacking a shipment of cacti. The queer, angular arms of an especially green specimen made me gasp.

"Do you like cacti?" queried my horticulturally-inclined spouse, beamingly.

"Yes, I do," I confessed.

"So do I," he dictated jubilantly.

And that was it! We left with the angular one and two more—a round woolly ball and a flat-pad with cinnamon colored spines. A simple beginning. But the spark that had smoldered so long now leaped into flame. Thereafter, we haunted the five-and-ten flower counters and became familiar figures in every florists' shop. For two years our cactus collection expanded like the national debt. Practically everything else was moved from the glassed-in south porch, where tiers of shelves from floor to ceiling held scores of cacti—every size, shape, color, and kind.

Then we began coming home empty handed. We had exhausted all the local markets, so our collecting pace slackened. But only temporarily, for we discovered the amazing catalogs of the specialized dealers. We hankered for a few "Specimen Plants"—mature showpieces—to add zest to the collection.

Reading the catalogs made us aware for the first time of another fact—the widespread existence of other cactophiles. So-o, others had the bug! There was an active group right in our own city: THE DENVER CACTUS AND SUCCULENT SOCIETY, part of a nation-wide organization holding regular meetings and biennial conventions. In fact, Denver's bid for the 1971 conclave has been accepted, and the Mile-high City hopes to give the spine-lovers a sharp time next July.

Europeans scooped us by a hun-

Back right: Opuntia vestita; Old Man Op-
tonia. Front, right: Rhipsalis cereuscula; Rice Cactus. Back, left: Carnegiea gigan-
tea; Saguaro. Front, left: Mammillaria elongata.

dred years in glorifying the cactus. But American interest is now growing by leaps and bounds. Thus another prophet gains belated honor in his own country, for cacti are 100% Americans, in the best sense of that expression. They have cousins in other parts of the world—other succulent or drought-resistant plants, often with spines, too. But all true cacti are natives of the Western Hemisphere. They are believed to have originated in the West Indies, later spreading to the mainland. Now cacti are at home from Canada to Tierra del Fuego, and from Atlantic to Pacific.

The jungle types may trail among the trees like vines and produce flowers a foot in diameter, rivalling the orchid in exotic beauty and fragrance. Others, on the desert, may be so insignificant that only the most practiced eye can distinguish them from the surrounding sand. A cactus may be so minute as to resemble a tiny pebble, or like the giant saguaro, it may attain a height of fifty feet, a weight of many tons, and a venerable age of two hundred and fifty years.

Mexico can boast more native varieties than any other country. In the United States, all but three states have some native cacti. But the great Southwest region really hit the jackpot. Colorado is among the leaders, with twenty-six known species, distributed from the towering Continental Divide to the eastern plains and the dry mesas of "Four Corners."

Cacti, although rugged individuals, are marvels at adaptation. If you decide to entertain one of the harder types as a house guest, it will be equally content on an apartment window sill with scant sunlight, or in a spacious conservatory. If you water it conscientiously once a week, or leave it without a drop for a month seems to make little difference.

In nature, if a cactus is exposed to strong sunlight for long periods, it develops heavy spines closely interlaced to form a protective covering that prevents excessive loss of moisture. It tends to be globe-shaped, to provide maximum storage space for water and minimum surface for evaporation. Instead of being smooth on the outside, the sun-loving varieties of cacti have ribs or tubercles which contract in time of drought and expand like an accordion when moisture is available.

If "variety is the spice of life," the cactus is nature's spicest species. Their shapes are more varied than a roomful of club women.

"But they are ALL sticky things," you say. Well, not necessarily. Some cacti have no spines at all. Others have spines that are more like feath-
The main thing is to make the first move toward becoming acquainted with the cactus family through one of its members—ANY one of them. Choose a little feathery one, a gangling prickly pear, or a fierce-spined devil claw—whatever strikes your fancy. At first you will be literally "stuck with it," but that horrid exterior harbors beauty and personality that does things to you. And who knows but you, too, may soon be admitting that "when it comes to cactus, I have no back bone. Just call me spineless!"

**TURN YOUR THUMB GREEN THIS WINTER**

**By Rebecca Enos**

**SUMMER** flowers blooming indoors in the dead of winter! Could any thing be more cheerful? Why not try growing them yourself, and see how easy it is. Everyone has at least one window they could use. Plants shouldn't be too much trouble if their care is simplified to the minimum of effort on your part.

I grow flowers in a low bench that was made to fit into a large bay window. The legs of the bench are made of old stairway spindles cut off, and the front is faced with walnut. Its three sections are screwed together for convenience in moving. The three galvanized trays hold eighty-five-inch pots, which sit on an inch of gravel. I pour water into the pans with a bucket. It is always warm water for everything including the African violets.

Occasionally I sprinkle everything in the benches with a bulb spray, holding a newspaper at the far side to keep the water off the floor. I spray for insects the same way. Fishing worms sometimes come in with a few stakes for wandering plants; twistums, which are little wire ribbons that help to hold plants to the stakes; the bulb for spraying; a bug bomb, and a sponge. The right kind of bug bomb, used right, has never injured anything for me. The sponge is used to soak up excess water.

As for the flowers themselves, I never bring in old plants, because transplanting sets them back too far. Younger ones bloom much quicker. Late in the summer I dig up seedlings, or plants that have been slow in starting and aren't too large. Sometimes I plant seeds in the middle of the summer directly in the pots. Plants that grow spindly I cut off, one side at a time so the other side is blooming right along. Petunias do well this way. The geraniums are grown from slips taken from the succulent ends of old plants. I allow them to grow tall during the summer to make broken shade for the tuberous rooted begonias and African violets.

Coleus are nice for color, impatiens is good, balsam, hardy larkspur blooms chance. Just use a lot of common sense with flowers. Don't be afraid of transplanting a sick flower. It would probably die anyway. Turn it out of its pot and find out what is making the trouble. You will learn that way and will be surprised some day if you notice that your Thumb has turned into the brightest of Greens.

**WANT TO KEEP FALL LEAVES THROUGH WINTER?**

Eleanor Ross, New York writer, gives the following formula for preserving leaves:

"First, spread the leaves and press them in a pan with alternate layers of fine dry sand which has been heated as hot as the hand can bear. After the sand cools, the leaves are removed, smoothed with a hot iron, dipped in a special varnish and allowed to dry. "To make the varnish, soften eleven ounces of gelatine by soaking it in cold water, then dissolve it in nine ounces of pure glycerin which has been heated to 212 degrees F. When properly prepared this varnish is colorless, pliable and wax-like."

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WITH talk of war on every side, all of us are thinking again of the values and freedoms that we have fought for before and may fight for again. There are the familiar freedoms of speech, religion and actions that are rather tangible and readily realized, but I feel that there is another freedom, that though less apparent, is one of the essential things that we have, and would fight for. This is the freedom to go to unspoiled and natural places where we may observe Nature as she has worked since the beginning of time, unchanged by the action of man.

The fall of once great nations has been attributed to the exhaustion of the soil, to the elimination of the forests and destruction of the “blotter” of vegetation that held the life-giving soil in place from the effects of wind and water erosion. No one can deny that these have been the obvious reasons, yet I am sure that there was in each case a less obvious, but equally important reason, the destruction of the natural beauty, and wilderness effects from the whole country side. We are learning more and more the truth of that great statement that “man can not live by bread alone.” Man must have inspiration and beauty and an occasional feeling of closeness to Nature and the infinite. Without this inspiration and beauty and an occasional feeling of closeness to Nature, man becomes almost an animal, living for eating and reproduction alone. Such is the case in many of the over-populated areas of the world, and they are on their way out.

We, in this United States, feel that we want more than merely enough to fill our stomachs. Wars would be not worth the effort for just that— we want something inspiring to live for as well, and I believe that by planning with vision for the future we can have both.

Colorado is increasingly being recognized as a place to come to enjoy the wild unspoiled places, that other states, in their intensive commercial development, do not have or have let become destroyed. Those who have vision for the future should now begin to preserve this natural heritage of ours, which may become our greatest asset. And, while we preserve these wilderness areas for our citizens’ benefit and for the pleasure of our visitors from other states we will be, incidentally, building up a permanent business which well may become our greatest—the tourist business.

Our existing National Parks are becoming so crowded that there is great need of additional places where people can go for the enjoyment of the out-of-doors.

I am concerned about the proposal to build dams in Dinosaur National Monument not only because I feel that it will be destroying irreplaceable attractions, but because it will establish a precedent which will allow none of our scenic attractions to be immune to commercial development.

Many of the arguments in favor of the dams are misleading as to the values affected. The facts are that Dinosaur’s chief attraction is in the Wilderness effects—the deep canyons and rushing waters. These will be destroyed by building of dams and cannot be replaced by lakes of still water. The necessary development of roads and construction mechanics will destroy much of the character of this area even though it will give greater access — access to what — to a lake which would be like hundreds of other lakes, rather than an incomparable natural canyon.

If, as some would have us believe, there were no other sites for power and irrigation dams, we might concede that this area should be destroyed to provide a mere living to a few people; but there are plenty of other places to build dams for storage of water and irrigation, while there is no other Lodore canyon.

Secretary Chapman has passed the buck in this controversy between his two departments, and now it is up to Congress to approve and appropriate. It is up to us to tell our congressmen that we do not want this canyon, which belongs to all of us in this state and these United States, to be destroyed for the benefit of a selfish few.
The American Forestry Association invited me to lead one of their annual rides into the Maroon Bells-Snowmass Wilderness Area this year, from August 2 to 14. While I had been into this country several times and had climbed most of the 14,000 foot peaks there was much of the route taken which was so inaccessible that I had not seen it.

The U.S. Forest Service people modestly describe this region as “in eluding some of the most picturesque and interesting country in the state.” It is almost impossible to give an adequate impression of the wildness and beauty of this magnificent country. The mountains are so high and rugged, the valleys so deep and carpeted with multicolored flowers, the distances so great, the colors of rock and tree and sky so vivid that one must see it to comprehend it.

This trip is one of the many arranged by the American Forestry Association into the wild and little known areas of our country. This is a non-profit service planned to acquaint more people with the value of these areas and the importance of preserving them. Arrangements for horses, food and camping are done by competent local people; in this case the now famous Mrs. Rich Thompson, who, after the first day, is known as “Tommie” by all.

From Glenwood Springs we took a bus to the old town of Marble for our first camp and the adjustment of everyone to a suitable horse and saddle. About every other day was a rest day so that there was ample opportunity to botanize, fish, take pictures or just enjoy the country. The route led up the north fork of the Crystal River, by Geneva Lake, over Trail Rider Pass to Snowmass Lake, over Buckskin Pass to Crater Lake and Red Mountain near head of Crystal River.
at the foot of the Maroons, over West Maroon Pass to Scofield Basin, by the old ghost town of Gothic to Copper Lake and over Triangle Pass to Conundrum Hot Springs.

Some of these Passes were around 13,000 feet in elevation, so that some of the Eastern “flatlanders” found it difficult to keep their eyes open while crossing. On this trip there were 29 guests and 16 crew members, which required a total of 84 horses for riding and packing. This took some expert managing to keep all humans and horses happy.

The geology of the country was fascinating. Evidence of great upheavals and glacial action was everywhere. Two impressions are always gained here: the looseness of the rocks and their vivid colors, red and white mixed with no apparent rhyme or reason. There was plenty of evidence of wild life, but naturally with such a large group, few of the larger mammals stayed around for close observation. Small parties saw deer, elk, and mountain sheep. Marmots, chipmunks, camprobbers and conies were seen frequently. Some of the valleys at about 11,000 feet elevation were a riot of color with wildflowers of a great variety.

Evidence of overgrazing was not so apparent over much of the route as the sheep men plan to keep their herds away from this route so that their damage can not be so readily observed. Some members of the party did hike over the hills and saw the contrast in the areas which had been grazed. Lessons in conservation of forests, grass and soil were learned at first hand.

All who have been into this almost unspoiled country are enthusiastic boosters for the plan of the U. S. Forest Service to keep areas such as this in as nearly natural and unspoiled condition as possible.

**OUR VANISHING BUNCHGRASS**

E. D. Sandvig

Chief, Division of Range and Wildlife, U. S. Forest Service, Denver, Colorado

Many of our early western explorers have described the abundance, quality, and beauty of bunchgrass. When Lewis and Clark reached the Upper Missouri River country, they said: “This is a fine country; good water; good grass; plenty of buffalo. With this region free from snow, the country looked not unlike fields of yellow grain ready for the reaper’s hook.”

Granville Stuart was also deeply impressed with the grass cover he saw. He records in Forty Years on the Frontier: “We crossed the Rocky Mountain Divide on the tenth day of October, 1857. As soon as we had crossed . . . a wonderful change appeared in the country. Instead of the gray sagebrush covered plains of Snake River, we saw smooths rounded hills and sloping benchland covered with yellow bunchgrass that waved in the wind like a field of grain.”

What has happened to these wonderful bunchgrasses? Have they, too, disappeared from the foothills and the mountain grasslands like the buffalo? To an important extent, the answer is “yes”.

In Colorado, Wyoming, Utah and northern New Mexico, a special kind of bunchgrass grows, commonly known as Thurber fescue. Its scientific name is Festuca thurberi, in honor of its discoverer, Dr. George Thurber, a professor of botany and horticulture at Michigan Agricultural College. Many other western plants bear his name.

Thurber fescue thrives best at elevations between 7,500 and 12,000 feet, in rather rich, sandy loam soil. It grows in large bunches and sometimes reaches heights of over three feet. Almost pure stands of this grass were not uncommon at the turn of the century: for example, photographic records made by Dr. Sudworth in 1898 on the Grand Mesa National Forest show its prevalence. In 1908 and again in 1915, pictures taken on Owens and West Divide Creeks of the same Forest irrefutably testify to its abundance at that time. There are spots where good bunchgrass cover is still in existence. In Beaver Park, near Norwood, a good stand of Thurber fescue is maintaining itself on cattle range. And, in the shadows of Mt. Wilson on the San Juan Forest, a group of ranges used by sheep, support good stands of this valuable grass. There is a sprinkling of other areas where, because of conservative use of the range, or its inaccessibility, the bunchgrasses have held their own.

Over too wide an area, however, the bunchgrasses have disappeared, and are replaced by plants less valuable both for the production of livestock forage and watershed purposes. On the Grand Mesa areas indicated, it is difficult to find, today, bunchgrass growing in solid stands. There remain remnants, only, of the species, and these are most often hidden under the protective mantle of big sagebrush, snowberry, or shrubby cinquefoil. These plants are less relished by grazing animals and, therefore, Thurber fescue has found safe refuge from foraging animals among their woody stems. Fortunately, too, the pioneer miners at Black Hawk and Central City fenced in their burial grounds and saved many members of the bunchgrass family from almost complete extinction in that area. At Dory
conservative grazing pays rich dividends in more pounds of beef per animal, more cash per acre of land, and improved watershed cover. Within the fence at Dory Hill Cemetery, water is absorbed into the ground in less than a third of the time it takes on the heavily-grazed range outside. The rich, fibrous roots and root hairs of the healthy bunchgrasses, together with the residue of leaf blades and seed stalks that form mulch on the ground surface, capture the moisture much the same as an ink blotter. As the ground becomes saturated, water is slowly released over the surface and to underground sources. Thus is the water "walked downhill" for municipal uses, for farms, orchards, and industries, instead of tearing its way unimpeded down each stream course, carrying with it top soil, plant nutrients, and a good portion of the brush growth and aquatic vegetation that are essential for stream-bank stabilization.

It should be obvious, then, that the bunchgrasses can do a job for us in steadying our stream flows, in giving us clean, clear water, in holding soil in place on steep mountain sides, in supplying needed forage for livestock and game, and in keeping our country productive and strong. But, it should be just as obvious, to the knowing ones, that these things are no more than paper possibilities so long as our bunchgrasses continue to vanish.

A GREAT FRIEND FACES DESTRUCTION

By W. D. THOMAS, JR.
Colorado A & M College, Ft. Collins, Colorado

WITHIN the memories of most of us remains the pleasant taste of chestnuts roasted in our fireplace on cold winter nights. But these remain only memories, for the chestnut, itself, is little more than a memory. Shortly after the turn of this century Chestnut Blight entered our country from Asia and made short work of the chestnuts we treasured so highly.

In 1932 the revered elm's turn came with the introduction of Dutch Elm Disease into Ohio from Europe. In ten years' time the ravages of this disease left thousands of stump spec- tres along the pavings of hundreds of city blocks throughout the Midwest and New England. Our reservoirs of elm lumber have been seriously depleted.

Now another old friend, with a grand history of sturdiness, is threatened with similar destruction. Who of us has not played with acorn cups when we were kids? And certainly we all have borrowed the motto, "Big oaks from little acorns grew." But, at the rate the oaks are going, this motto will soon be an echo from the past!

Tree lovers in the Upper Mississippi Valley have been concerned for several years about the dying of the oak trees in that region. The disease was first called to the attention of foresters in 1881 in Wisconsin by State Forester J. A. Warder. But little attention was given to this report in an obscure local horticultural society's journal. Again, in 1912, Dr. Carl Hartley made an official report to the Division of Forest Pathology of the U. S. Department of Agriculture concerning the disease. Yet it was allowed to continue taking its insidious toll of black and red oaks in Wisconsin. Not until 1937, when Rolland C. Lorenz and Dr. Clyde Hill Cemetery, a few miles above Black Hawk, not far from Denver, an excellent cover of Thurber fescue, mixed with California oatgrass, sheep fescue, and other survivors of the lush, bunchgrass days, can be seen.

In California Park on the Routt National Forest, only a few "museum" specimens of the once abundant bunchgrasses remain. Within the fences of the cemetery along the banks of Little Snake River near Savery, Wyoming, vigorous representatives of the wheatgrasses and bunchgrasses are again on display. Immediately outside the fence, however, that exotic European invader, Bromus tectorum commonly called "cheatgrass", has captured the ground surface.

Students of grass, it would seem must, sometimes, go to the burying grounds of the dead to find live, vigorous, healthy grass, because so much of the grassland outside is in weakened, deteriorated condition over our range country.

Fortunately, however, uncontrolled grazing of cattle and sheep has not occurred uniformly over all of the West. The bunchgrasses can be restored by starting now to practice conservative grazing. In the words of Forrest Shreve of the Desert Laboratories, Carnegie Institution, Tucson, Arizona: 'The need for the application of remedial measures in restoring or saving our grazing lands is urgent. We must do as much as we can as soon as we can. So great is our concern that we would like nothing better than to be able to restore them over- night. We are in much the same position as a man who felled a 200-year-old oak in his lawn and then, regretting the loss of its shade and beauty, has decided that he would like to have it back again.'

Repeated experiments in bunchgrass range types prove conclusively that
November, 1950

The Green Thumb

M. Christensen, forest pathologists at the University of Minnesota, mentioned the occurrence of the disease in the Lake and Central States, did many people take notice.

During the ensuing six years the disease made serious inroads on the oak forests of Wisconsin, Minnesota, Iowa, Illinois, and had entered Missouri. Teams of plant pathologists rallied to the emergency in Wisconsin and Iowa in an attempt to learn more about the disease, and to try to find some means for its control.

By 1943 fine oaks were missing in lawns and parks throughout the area. The public was becoming aware that something was amiss with the oaks. Moreover, the cost of removal was being felt in the dollar column of the losses. State forests and parks were being riddled with bare skeletons of once-majestic oaks and the bronzed ghosts of trees recently dead but still clinging to their wilted leaves.

Farmers were beginning to feel the blow of the epidemic by now, for their woodlots were important sources of income. In Wisconsin alone Walter Ebling, Statistician for the Wisconsin Department of Agriculture, estimated that the annual income from farmers' woodlots averaged about 14 million dollars, and oaks averaged about 80 per cent of the woodlands in production. Consequently, in just Wisconsin the average annual income from oaks was approximately 6 million dollars. Since much of the reproduction in oak forests is through the growth of sprouts from old stumps, once a tree became infected its potential production was lost completely. Undoubtedly oak wilt had become the most important disease of oaks in the United States, and surely one of the most threatening disease problems facing forest pathologists.

But what was the cause of this wilt of oaks which suddenly flared up in unprecedented proportions? Was it the weather? Was it some mysterious virus? Or was it fungus or mold? Dr. B. W. Henry, with his team of pathologists in Wisconsin, separated the disease agent from the oak in 1943, and described it as a fungus, Chalara quercina. This gray-green mold thrives in the blood stream of the oaks, known by plant scientists as the vascular system, causing the area between the bark and the wood to become brown. As the brown color develops the fungus chokes off the supply of food between the roots and the leaves by blocking the flow of sap, and destroying the tubes carrying the sap.

The appearance of dead trees was found to be slow at first, the wilted trees heralding epidemic being evident at the edges of woodlands. From here the disease spreads in a circular manner, a few more trees dying each year. But by the time the pathologists had learned something about the fungus enemy of the oaks bronzed, distorted and drooping leaves were evident on twigs and entire trees scattered generously about an area of thousands of square miles.

No respector of individuals, Chalara makes its way into all oak trees. However, Dr. Henry and his team have found that white and bur oaks were better able to withstand the attacks by this villain than were other kinds of oaks.

Two very important questions remain to be answered: how does this disease spread, and how can it be controlled? The first question thus far remains unanswered. The solution to the second question is in part dependent on the first. Still, first aid can retard the spread of the malady through the removal of badly infected trees, and by pruning or topping of trees which are only partly infected. But these sanitary measures are only stopgaps in the fight to slow down the march of this most relentless foe of the oaks, Chalara quercina, the firing pin of oak wilt!

Although its spread is comparatively slow, it is relentless. If the sweep of oak wilt through our Midwestern oak forests is not stopped in the near future, the oak will join the chestnut and elm riders in the sky as ghostly reminders of the potential havoc lurking behind every tree in the forests of North America.

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COLORADO ROADSIDES

In the mountains of Colorado the roadsides have been landscaped by Nature, and wonderful many of them are. Here our main problem is to prevent these places from being destroyed or marred.

Over many of our main highways, especially in the east and west borders, we have many miles of level or rolling, almost barren country which is not particularly interesting in itself. Mile after mile of fence posts and telegraph poles are the only objects above the ground level to be seen. This aspect is certainly not very inviting to the thousands of visitors who come each year to enjoy this wonderful recreation state of ours. In all this plains and desert country, however, there is seldom a stretch of ten or twenty miles where there is not some small stream which gives water for a grove of cottonwood or willow trees. For little expense these little oases along the road could be purchased and established as roadside parks where citizens and visitors alike could stop and rest, or eat. Where else could this effort and expense be put that would bring in more good will and also actual dollars. The garden clubs have kept up the interest by planting things as the Blue Star Memorial Highway, but these efforts are as a drop in the bucket compared to the work needed.

THE GREEN THUMB

November, 1950

GRASS CLIPPERS AND PROFANITY

Mowning the lawn isn’t too unpleasant a task; it gives one the joy of accomplishment and is in the nature of a walk-a-thon against time. But then comes that infernal trimming with the grass clippers! It is even too tedious a job to admit of soul-relieving profanity.

Some young boys do it sitting down, ladies fighting avoidpoo stoop over in what is far from a graceful posture, men with a background of the cowboy manage to hop along on their haunches, dragging a basket as they squat and hop.

Snap! Snap! Off come three blades of grass; then a pull, and a bunch of weeds comes out. At the steps it requires a dexterous twist of the clippers to cut those persistent August grasses and keep them from going to seed. Along the shrub border and the flower border, after each cutting, the grass edges in a little closer and a decision is to be made: to clip or not to clip, whether it is easier on the mind to suffer the encroachment of the grass or to take spade against it and by opposing end it? (At least for a week or two.)

In order to avoid utter frustration in gardening let me pass on a few hints that will reduce grass clippers and possible profanity—or boresomeness—to a minimum.

Simplicity in design will help much. Every tree or shrub, planted in an open lawn means so much more edging, every bay increases the length; every walk invites untidy separation of lawn and cement.

Where lawn and other planting do join, a definite line of demarcation is indicated. Grass roots in shrubs or plants are an eternal drain upon maintenance funds and mainte-

nance patience. Clean cultivation among shrubs looks neat, and is good gardening. Sometimes even cultivation can be reduced by a good, clean mulch, such as peatmoss, or even short grass clippings.

Metal strips separating grass from border can be installed and are a great help in keeping the line just where it is wanted, instead of four inches beyond its original location.

Carefully placed stepping stones make it possible to mow over them instead of having to trim around them. After about four or five years, however, they may need to be raised up to the new level of the lawn.

Along walks and curbs a neat little edger will avoid the use of grass clippers, if the lawn mower cannot do a good job.

Incidentally, when and where clipping is unavoidable, at least you can save your temper by having the best type of mechanical clipper; the old-fashioned relative of lamb-shearing handclippers have nothing in their favor except sentiment. And sentiment does not help much in a question between live grass and dead gardening ambition!

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CHLOROSIS IN ROSES

F. B. WANN,
Utah Agricultural Experiment Station
Abstract of talk before American Rose Society, Salt Lake City, Utah, October 1, 1949

CHLOROSIS is the term used to designate the condition in plant leaves when the normal green color is replaced either wholly or in part by a yellow color. In many instances the chlorotic condition is characterized by more or less regular patterns of yellow distributed through the green color. These patterns may be of considerable aid in diagnosing the cause of the chlorosis.

A number of different factors may be responsible for the development of a chlorotic condition in plants. Basically, however, the destruction of the green leaf pigment, chlorophyll, is involved in practically all cases. The disappearance of the chlorophyll merely exposes the yellow color which is always present in leaves. Among the conditions which may induce chlorosis are certain environmental factors such as low temperature, excess moisture and particularly certain nutritional conditions of the plant. In this latter class are the mineral deficiency diseases caused by a lack of nitrogen, magnesium, sulfur, zinc, manganese or iron. In Utah and other western states the most important type of chlorosis is that caused by a disturbance in the iron nutrition.

Iron is used in the leaf in the production of chlorophyll. This pigment in turn is apparently used up in some of the food manufacturing processes which take place in the leaf so that new chlorophyll is always in demand if the leaf is to remain green. If the supply of iron in the leaf is too low, or if the iron present is in an inactive form, chlorophyll cannot be produced and the leaf becomes chlorotic.

Iron chlorosis is very generally associated with soils which are high in lime. The effects of such soils on the iron supply in the plant leaves appears to be twofold: first, the high lime content seems to make the iron in the soil less available to plants, probably by precipitating it from the soil solution. Second, plants growing in high-lime soils are unable to maintain the iron in the leaves in an active condition. Either or both of these effects results in the failure of chlorophyll production and chlorosis.

Attempts to control iron chlorosis have included among others the following practices: 1. Treatment of the soil by acid forming substances in an effort to counteract the effects of the lime. 2. Artificial increase in the iron supply in the plant by spraying with iron solutions or by injecting iron salts into the trunks of woody plants. 3. Grafting susceptible plants on chlorosis resistant root stocks.

Soil treatments in Utah have not been very promising. Favorable responses to acid forming chemicals have been produced only occasionally in orchard soils. The spray and injection treatments on the other hand have been very successful in bringing about recovery in chlorotic plants of all kinds. However, these effects are only temporary and must be repeated frequently. The use of chlorosis resistant rootstock appears to offer a permanent solution to the chlorosis problem in the case of grapes. In areas of severe chlorosis, however, even this method of control may not be completely successful. Many growers have suggested that Ragged Robin can be used as a chlorosis resistant stock for roses.

THINLEAF ALDER

THINLEAF ALDER

ALNUS TENUIFOLIA

This large native shrub has not been used as much as it deserves. It is neat in appearance all throughout the year. The effect in winter is as shown in the accompanying picture. In early spring the new bloom catkins expand and become beautiful pink tassels.

This shrub grows naturally along the streams in the lower mountains, in association with the native Birch and Willows. It is a large shrub and should only be planted where it has room to develop. It can also be trimmed to make a single-stemmed tree.

YOU CAN HELP GET STATE PARKS

The Roadside Improvement and State Parks committee of this Association have prepared legislation suitable for setting up a system of state parks in this state. This will be presented at the next legislature. Now is the time for each of you who think that Colorado should have state parks to contact your legislators both present and prospective. Read page 22 in the September Green Thumb and also the July, August and October issues of 1948.
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BOOK REVIEW
By M. Walter Pesman
Gradually Colorado is coming into its own in having both attractive and scientific plant information available. In the past anybody willing and able to dig out scientific data in austere floras and musty herbariums could, it is true, acquaint himself with our local ferns. But it was far from easy.
Now we have, in "Colorado Ferns," a comprehensive and pictorial account of ferns and fern allies. It has very complete descriptions, plant locations, and, best of all, pen drawings that make it possible for plant lovers to become familiar with a group of plants that has, thus far, kept too many people at a distance, since they were thought to be "all alike and impossible to tell apart, not having flowers." A total of 63 species and varieties (or subspecies) of Pteridophytes are listed.
The authors warn not to try and match plants with the drawings without the aid of keys and descriptions; all the same, what a relief it is to be able to tell at a glance what a Selaginella, a Quillwort, or a Clubmoss look like and how, in general, the Moonworts (Borrichium) differ from the regular Ferns (Polypodiaceae). Try to get this basic information out of the older botany keys, which dare you to decide whether the vernation is, or is not, spirally coiled, and whether the sporangia are leathery and ringless, or membranous, provided with a ring.
What I particularly like is the matter-of-fact combination of everyday distinguishing marks with a frank use of botanical terms where they are needed for adequate descriptions. Locations are indicated in straightforward manner, sometimes drawing attention to the scarcity of collected specimens, sometimes indicating possible mistakes. The reader feels as if the authors take him in their confidence rather than lording it over him in an aloof manner.
All in all, here is a ninety-page booklet that endears itself immediately to plant lovers and that, I am sure, will be a reliable guide for botanists for a long period to come.

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Horticulturist

SURE, you are the one I am talking to. What is for you? This magazine, the library at Horticulture House, the help in your garden problems that the Association offers, the work that is continually done to make a better state in which to live. It's all for you. No one person or group has any profit or glory to collect. Those of us who work around Horticulture House are at your command to do the things that you most want and need.

What can you do to get more benefit from the resources of this association? You can tell us what kind of articles you would most appreciate in the Green Thumb. You can tell us what kind of indoor and outdoor affairs you would like. You can tell us what other activities we might attempt to benefit you more.

And, so long as this is YOUR association you can give definite assistance to it by persuading some merchant that they could profitably advertise in the Green Thumb and reach all the good gardeners in the area. You could get some one that you know to write an interesting story for the Green Thumb. And, above all, you could tell your neighbors about what the Colorado Forestry and Horticulture Association is doing and get them to join so that they might also benefit themselves and help others through its activities. Will you help yourself? It's a good idea, isn't it, but DO IT NOW.
WHEN THE IRRESISTIBLE FORCE MEETS THE IMMOVABLE OBJECT

When I was a young fellow I studied over this problem frequently. The accompanying picture shows what happened in one case over a period of probably a couple of hundred years. The tree shown here probably started from a seed which grew and flourished in the protection of the large rock. Each year as it added its annual ring of growth it crowded closer and closer to the rock. It could not move the rock so it continued to grow around it.

In this case the rock will probably be here long after the tree is gone, but with a lesser rock the tree might have penetrated small cracks with its roots and actually broken it apart.

BOOK REVIEW

LANDSCAPE WITH SHRUBS AND FLOWERING TREES

By Mary Deputy Lamson

For over twenty-five years the author of this book has been building gardens. Mary Lamson is one of America's finest landscape architects with a wide familiarity in creating beauty in a garden with little else than shrubs.

We are beginning to realize the fact that a lot of flower beds does not necessarily make a garden and we have also discovered that even a collection of very beautiful specimens of trees may possibly detract from rather than beautify our grounds. We are far too likely to regard the house and its grounds as being two separate and unrelated problems, hiring one expert to design the house and another to lay out the grounds, without any harmony between the two.

This book is written for the owners of small gardens,—a special guide to the decoration of a small place—you know the kind that is springing up all over America. What a break these people will have if they just get hold of this book. Gardeners continue to exercise their own judgment in gardening as they do in architecture and in decoration with the same fatal results. There is no denying that people with native good taste can plant a garden in the country which may look well for a while or for some seasons but a very technical knowledge of flowers and shrubs is needed if the place is to keep on improving with time. Would you want a carpenter to build your house who simply knows good material? How many gardeners know little of the seasons of flowering or the exact varieties of plants which will yield most profusely or for the longest time? So often we find a place fairly beautiful in the spring, a few blooms in summer and entirely barren in the fall. This book will help us correct these and other faults if we feel we cannot employ an architect.

I cannot understand why members of the architectural profession, talented, brilliant and able as they are do not find the general recognition of the necessity of their services in the building of gardens.

When it becomes necessary to have your trees trimmed, removed or re-arranged call on us. We have the equipment and the experience to give your yard a "face lifting" that will please you.

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WATER. There is little danger now of inducing soft growth by watering, and it is very important that all plants go into winter with moist soil around their roots. A THOROUGH soaking now may hold them until spring, but if the weather continues open and there is bright sunshine for several weeks there may be need of additional watering for the more shallow rooted plants. Soak things until the soil is wet to their farthest roots. This may be 8 inches for lawns, 15 inches for perennials, 3 feet for shrubs or 6 feet for trees, depending on soil conditions and variety of plants. The only way that you can be sure that the soil is wet is to prospect in a few places and see.

TRIM. Any work necessary on trees can be done now. With leaves off it is a little easier to work in trees. Many tree men prefer to leave the work on maples, birch and walnut until they are in leaf, as they may bleed a little when cuts are made during their dormant period.

Irregular stems may be trimmed up on the shrubs, but the bulk of trimming on shrubs should be done just after they bloom so that the blooming wood for the next year is not removed. Hedges should have a final haircut and lawn edges may have a trimming to hold them until spring.

CLEAN UP. Even though the daily routine of water, cultivate, spray and weed is over, a garden may be kept attractive by just a little neatness. Keep the dead perennial stems cut off, the waste paper from the neighbors picked up and the excess leaves disposed of. In this effort for neatness do not go to the extreme that some are inclined to do and try to keep every leaf off the lawn. Some stems and leaves blown around the perennials will help to protect them from extremes of weather. Save all the excess leaves and stems for the compost heap. Our greatest need in Colorado is for more humus in the soil.

REPAIR. This "in between" time is just right for those repair jobs that you could never find time for when the routine of garden chores took every spare minute. The fence may need paint, the walk may need leveling up, the sunken spot in the lawn may need raising or the gate latch need adjusting. These warm sunny days are just the time to do it.

CONSTRUCT. You have long envied your neighbor's outdoor fireplace, platform or rock garden. You have thought that sometime you would build a trellis against that bare garage wall or fix a little ornamental fountain in the far corner of the garden. Now is the time to do the work on those inanimate things. Look around in the really nice gardens and see how great a part is played by the architectural features. Flowers make a short splurge in summer, leaves decorate the plants for a still longer period, but a garden may be interesting and beautiful all the year through if the design and inanimate features are well planned.

STUDY. Then as the occasional "bad" days come along in the fall and winter it is a good time to decide on some phase of gardening that you would like to know more about. Gardening opens up such a vast field of allied arts and sciences. You would like to know more about the associations of plants and insects, more about how fertilizers work, more about the why of plant growth, more about historic gardens or how to lay out a good garden. Let us help you lay out a course of reading that will give you more pleasure in your garden next year.
MEN AND MOUNTAINS
Excerpts from "Of Men and Mountains"
By William O. Douglas

Mountains have a decent influence on men. I have never met along the trails of the high mountains a mean man, a man who would cheat and steal. Certainly most men who are raised there or who work there are as wholesome as the mountains themselves. Those who explore them on foot or horseback usually are open, friendly men.

When man ventures into the wilderness, climbs the ridges, and sleeps in the forest, he comes in close communion with his Creator. When man pits himself against the mountain, he taps inner springs of his strength. He comes to know himself. He becomes meek and humble before the Lord that made heaven and earth. For he realizes how small a part of the universe he actually is, how great are the forces that oppose him.

If man could only get to know the mountains better, and let them become a part of him, he would lose much of his aggression. The struggle of man against man produces jealousy, deceit, frustration, bitterness, hate. The struggle of man against the mountains is different. Man then bows before something that is bigger than he. When he does that, he finds serenity and humility, and dignity, too...