Schedule of Activities

Sept. 5. Friday evening, 7:45 at Horticulture House. HERBS AND HERBALS, by Mrs. C. Earl Davis.


Sept. 13. Saturday afternoon, 2 P. M. Denver Parks and Gardens. Robert E. More will conduct a study trip, especially emphasizing evergreens.


Oct. 3. Friday evening, 7:45 at Horticulture House. TULIPS. A discussion by several gardeners.


In Appreciation

Last fall Mr. Lester E. Varian carefully examined a quaint and old, but quite dilapidated, structure at 1355 Bannock Street. It had practically no foundation, little basement, was cut up into small impractical cubbyholes, and plumbing was almost non-existent. But Mr. Varian sensed the possibilities of this rude building, and under his masterly touch the metamorphosis progressed until Horticulture House finally emerged in its final perfection. Mr. Varian has refused to accept any compensation whatsoever for these months of professional service.

With friends like Mr. Varian, the Colorado Forestry and Horticulture Association cannot fail to achieve its objectives.

Thank you, Mr. Varian.

Botanical Reserves Established

Our dream of a state-wide system of botanical reserves is beginning to be realized. Through the efforts of George Carlson, superintendent of parks at Colorado Springs, and other members there, there have been set aside three areas of unusual botanical interest. One will be called the ONESEED JUNIPER AREA. This is located in the Garden-of-the-Gods and includes a number of ancient trees of the Juniperus monosperma, or Oneseed Juniper. These have been accurately estimated to be from 500 to 900 years old. In this same area are to be found many specimens of the Pinyon Pine and also the typical dry ridge shrubs of this area.

The second area will be known as the WHITE FIR AREA. This is a short distance up North Cheyenne Canyon, in a beautiful pocket in the valley. In addition to some outstanding specimens of the White fir, there are unusually fine specimens of most of the native trees and shrubs of this altitude. These include the Ponderosa Pine, Douglas Fir, Lodgepole Pine and Colorado Spruce. The native Mountain Birch, Pin cherry, Chokecherry, Rock spirea, Hazelnut and low Ninebark are all found here in especially vigorous growth.

The third area is in Palmer Park, and is known as the YUCCA AREA. This is a rather striking nob hill in the center of the park which is entirely covered with plants of the Yucca glauca. This area is entirely surrounded by the park roads and makes a spectacular showing when the plants are in bloom.

Plans have been made for a large delegation from Denver to meet with the Colorado Springs members August 27th and officially dedicate these areas as the first three units of the eventual state-wide series. Other communities which have suitable areas in their vicinity should tell us of them so that they may be appraised and checked to see if they are suitable for inclusion in the state-wide series.

We hope that this will be just the start, and that before many months we may have many similar areas of outstanding botanical interest set aside for the benefit of Colorado's citizens, her visitors, and future generations.

Alice Wood.

One of the 900-year-old Junipers in the Garden of the Gods
THE GREEN THUMB

Industrial Landscaping
By Maurice N. Marshall

There has been a rather recent awakening by leaders of industry to the importance of industrial landscaping as a factor in good community relations and as a general morale builder for the employees.

A recent survey among eastern industrial concerns brought out the astonishing fact that in their opinion industrial landscaping ranks right up with good factory and office housekeeping in importance. This same survey also revealed the fact that most factory executives are keenly aware of what their competitors are doing along this line, which means that the present trend toward industrial landscaping is very apt to continue.

At present, this trend is most noticeable in the industrial centers of the eastern half of the United States where the outstanding examples of extensive landscaping are to be found. But the trend is reaching westward, with some good examples in the Denver area.

Today, because of the ever widening realization of the importance of landscaping, most new industrial establishments are designed to include attractive grounds. Also, most old factories are being renovated and improved so as to include lawns, trees, shrubs and flowers.

Everyone interested in the beauty created by the artistic and proper use of trees and plants is pleased to note this trend. It reflects a progressive attitude on the part of management and adds beauty to the community as well as value to their property. It brings with it a higher appreciation on the part of the employees of the necessity of orderliness and cleanliness inside the plant. It appeals to the sense of pride of employees and management alike. They become proud of their work, their plant, and their product.


Below—Excellent treatment of otherwise ugly space on Main Street, Florence, Colo.
SOMEBODY in the world there are two acres of land that are keeping you alive. They may be fine fertile, productive acres or they may be skimpy, eroded acres, but whatever they are, they're yours. And they're all you'll ever have. Two for you, two for me.

Only 11 per cent of the world's land can be used for food production—a total of 4,000,000,000 acres. The world has 2,000,000,000 inhabitants, hence the two acres per person. It is not enough.

Before the war two thirds of the world's people didn't get enough to eat. Today more than two thirds don't. The reason is simple: Today people don't know how to produce enough food to fill their own stomachs.

As things now stand, they're not learning how, either. Your two acres are not producing more food and fiber for you each year; they're producing less. All over the world men are fighting hard to make their acres produce more. Their weapons are scientific developments to provide better crop varieties, better production methods, better machines. But working against them are powerful destructive forces—accelerated erosion, depletion of soil fertility, man's ignorance and neglect. Slowly, but with an awful certainty, the destructive forces are winning.

Originally your two acres—and everyone else's—had an average of about seven inches of topsoil. Those seven inches were all that stood between you and starvation. They still are—the only places where the earth the seven inches have been reduced by erosion and neglect to five or three or zero. Extend the zero area to all the productive acres of the earth and man would die. The zero areas are being extended.

It took Nature several hundred years to build each inch of top soil. Man and Nature have been destroying it recklessly. Three-fourths of the world's productive acres are subject to erosion, and all to fertility loss. Meanwhile the world's population is increasing. It has gone up half a billion in the last forty years. So pretty soon you won't have two full acres. A dramatic description of what happens when land is abused is contained in David E. Lilienthal's book T.V.A.: Democracy on the March:

"The 'played-out' farm lands of the South, now in the process of rebuilding, were 'mined' to grow a single crop of cotton: they are one more illustration of the remorseless arithmetic of Nature. Here once-lookly manor houses stand seedy and deserted because their foundations, the soil, has been exhausted, Rot-ted away; the old farm's elegant monuments to a national tragedy of waste. And the great towers of Manhattan and Chicago, the modern business streets of Omaha on the prairies, all rest on the same foundations as the old plantation manor— the land, the waters, the minerals and the forests. We are all in this together, cities and countryside."

We have more than two acres of productive land per person in the United States, of course. That is why hungry people everywhere look to us for part of their food. But for how long may they do so? Even in the United States, the forces of destruction are winning. We began with the richest resources on earth and have produced more abundantly than any other country. We have also destroyed our resources with greater abandon than any other people.

Since our forefathers first began conquering America, more than 280,000,000 acres of crop and grazing land have been destroyed or impoverished by reckless use. Two and a half times that many acres have been damaged.

Croplands have, of course, suffered most. About 100,000,000 acres of once good cropland have been essentially ruined for further production, another 100,000,000 acres have been badly damaged, and still another 100,000,000 acres are eroding.

As you by the United States, you can see the results of generations of wasteful land use in the colors of the fields. You see the sickly yellows and pale browns of eroded, bare soil cutting into the lush green of fields that still support growth. You see gullies, those walls caving in, some of them in the exact pattern of great river systems.

Fly over the Western Great Plains: Here is the vast area that saw the buffalo give way to the cattle herds up from Texas, the enormous operations of the great cattle companies of the seventies and eighties, and the closing of the range by the barbed wire of the homesteaders. You see below you a farm in western North Dakota where the homesteader tried to produce corn and general crops. His sons shifted to wheat, for that promised more profit. He kept this up until drought, dust storms from the angry land, and low prices drove him west. Then, just as World War II began, the rains came. A new, hopeful settler arrived to take a try at wheat and corn.

The habits we developed in pioneer days still persist. Indeed, the greatest waste has occurred during the last fifty years. Since the turn of the century a fourth of the cultivated land in Nebraska, Kansas, and Oklahoma has already been essentially ruined, and more than that has been severely damaged.

During World War I, the physical frontier disappeared. There was no more need to move to. Logically, our attitude toward basic resources should have changed then, but it didn't. Stirred by the slogan, "Plow to the fence for national defense," farmers produced to capacity, regardless of consequences. They plowed up the grasslands of the plains and reaped disastrous dust storms. They plowed up and down the hills all over America and loaded the streams of the nation with millions of tons of topsoil.

During World War II, our soil experienced new indignities. War demands caused overuse nearly everywhere. Fields that should have been left to lie fallow were continuously planted. Sound rotations of crops were forgotten. Thirty million acres suited best to hay and pasture were brought into cultivation. Fertility losses doubled in some areas.

Erosion of the land injures more than agriculture. It damages highways and railways, sits up costly reservoirs and navigable streams, and causes more frequent floods to roar across our cities and lowlands. The annual damage by erosion in the United States is nearly $4,000,000,000.

Seventeen years ago, agricultural experts, led by Hugh Bennett, pointed out to Congress that production science can not provide the benefits it should unless it is matched with good land management by the farmer himself. If the farmer would plow around the hill, instead of up and down it, they said, if he would use strip cropping, terraces, soil-building rotations, and other practices where needed, then scientific discoveries of the past three quarters of a century could bring great benefits to all the people.

Congress responded. The federal government and the land-grant colleges immediately initiated research to discover how to prevent soil loss.

They made some startling discoveries. Of the 1,000,000,000 acres of farm and range land in the United States, only 70,000,000 can be safely cultivated without some precautions. More than 400,000,000 acres can be cultivated safely only if proper conservation practices—contouring, strip cropping, terracing—are applied. Most of the remainder is suitable mainly for grass and trees, and much of this needs reseeding, liming, fertilizing, and controlled grazing.

The multitude of public farm aids we have today should be co-ordinated locally by the soil-conservation district, for that...
agency is managed by the farmers themselves. The framework of such coordination should be a specific farm plan which, when completely adopted, will result in highest possible production consistent with soil conservation. Each local district should insist upon this coordination. It should yell loud and long before federal and state legislators and administrators until the job is done. And every piece of federal and state agricultural legislation should be so amended as to make this type of local coordination possible.

Even if every public agricultural agency and every farmer works toward this common goal, we shall succeed none too soon. We haven’t too much good land left. We haven’t enough left if we think, as we must today, of the oneness of the world. Our American acres must be saved, not only that you and I may eat well from our two acres now and in the future, but also that we may ship surpluses to lands now hungry.

Scientific practices applied to all the lands of the world would provide just about enough food for a moderately good diet for everyone. But no more than that. As things stand today every man’s two acres are producing less and less while more and more men arrive in the world to eat from them. There are very few things among the concerns of men which are more important than that single fact.

**The Gothic Botanical Trip**

**Sixteen** people spent the full 8 days on our second botanical collection trip. Five people came over to spend July Fourth with us. Dr. and Mrs. Shubert with 12 of their students in botany from Denver University, Mrs. Anna Timm who supervised the cooking and George W. Kelly comprised the main party. Denver University furnished a large bus which accommodated all the passengers, their equipment and food.

The party left Denver early the morning of June 28 and returned July 6. The first regular camp was on the shores of beautiful Lake Irwin near Kebler Pass, and the last few nights were spent under the trees near Gothic. Snow still covered much of the ground above 10,000 feet elevation so little could be done with the alpine flowers, as was originally planned. We found the flowers at lower elevations in excellent shape, and several hundred species were collected and pressed.

This region has not been thoroughly botanized so many species were collected which were not listed in the Colorado botanies.

Dr. John Johnson, director of the Biological Laboratory at Gothic, was most cooperative and helpful. We were all invited to their party the evening of the Fourth, making the largest crowd to assemble in the old town of Gothic since 1884.

The weather man was also cooperative, furnishing a full moon most of the time and producing only one real rain. Most of the party slept in army pup tents. Two expeditions were taken across country by a small party of hardy hikers. The backpack trip over Swampy Pass will be long remembered by these people.

A few days after the trip Dr. Shubert brought his class down to Horticulture House and spent the day identifying and mounting the specimens collected. For many years to come the Association will benefit from the material collected on this trip.

George W. Kelly.
THE GREEN THUMB

A Dream Come True


"Horticulture House," headquarters for Colorado's Green Thumb enthusiasts, was officially opened July 11th with a reception for Mr. and Mrs. John Evans, donors of the house, and others to the house, library, and grounds. The house and grounds were purchased by Mr. and Mrs. Evans for the use, without charge, of the Colorado Forestry and Horticulture Association.

On that day, as I sat in that attractive living room I heard that expression over and over again, "A dream come true," and my thoughts went back to the beginning of the Garden Club of Denver. The spring of 1916 Mrs. J. F. Welnborn asked a few garden loving friends in to discuss "garden affairs" and form a study group for the winter. From that beginning the club is now thirty-one years old and flourishing, with thirty-four working members. This year that small group joined the Denver Society of Ornamental Horticulture and that fall under the direction of Mrs. Henry Sewall took charge of the tea at their Flower Show at the Auditorium. Out of $40.00 profits we gave them $25.00.

The fact of our joining the Denver Society of Ornamental Horticulture was an incentive to "practice what you preach," and in 1918 Mrs. S. B. Walker, a wild flower specialist, was consulted, and at her suggestion a place of two acres on Genesee Mountain was selected and later fenced. Three hundred dollars was collected from members, and seeds of columbine and red lilies were planted. It was thrilling but impractical, and later given up. Mrs. Walker died, the place needed much care and at that time the Garden Club didn't care to employ a caretaker.

Perhaps it was the "seed" of a future Arboretum. We hope so.

The DSOH had flower shows up to 1923, and we took charge of the "Teas." In 1920 the Auditorium was not available, so there was no Flower Show. How-ever, on May 10, 1920, they erected a tablet to the "memory of John Berry, Colorado Pioneer Horticulturist." in Washington Park and two small oaks were planted at the stone by our Garden Club. By 1920 the Garden Club of Denver, then four years old, became a member of the Garden Club of America, enjoying all its rights and privileges since that time.

The Denver Society of Ornamental Horticulture has been, and always will be, close to those who ask its help. Mrs. Walker has often spoken of our club, giving us practical help from his knowledge and years of experience. Mrs. Evans has been a member of the Garden Club of Denver since 1916, and we are more than proud of her achievement in giving Denver a chance to further and sustain the great work, "Horticulture House," which their support will be able to do.

The project our club has in hand is the garden between the Teller House and the Opera House in Central City under the direction of Mrs. Marriage who supervised the planting at Horticulture House. We are in constant touch with that organization.

Go down to 1335 Bannock Street and see for yourself what vision, work, taste and a firm belief in the future of horticulture in Denver has been made possible to every one. Three thousand members are needed to sustain this greatут. If each member asks a friend to become one too, the task will be simple.


Giant In The Earth

A sympathetic glimpse into the prodigiously busy life of the plain ordinary earthworm, true friend of man.

By JULI F. ALSTAD

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PERHAPS no creature is more worthy of our respect and veneration than the earthworm, for in the whole mass of earth there's not a granule of fertility, not one crumb of seed-sprouting nurture, that hasn't been compounded and enriched by percolating through the long alimolic of its body.

The earthworm is an underground test-tube in which potash, calcium, magnesium, nitrates, phosphates, and other solid chemicals are assayed and broken down into easy portions for the tender appetites of seedlings; acids and alkalies are blended into suave neutrality, and the whole mass of earth is gently churned into rich and fragrant humus and deposited in little mounds—called castings—upon the surface of the earth. In one year one worm produces about eight pounds of castings in which plant-growth elements are from three to eleven times more abundant than in the top six inches of soil. So exhausted earth, worn with the monotonous demands of greedy crops, revives under the tonic of the worm's ministrations to feed succeeding generations.

Its life is not, therefore, merely a stretch of extended indolence. A live worm, like a live wire, is a source of power. Slowly this patient digger tunnels through the soil, pushing aside the loose lumps and eating its way through closer packed particles to depths varying from five to twelve feet. By this channeling it excavates the world's basement, brings up the nutrients buried in the lower strata, and distributes them within reach of the hungry roots of plants. It circulates the soil bacteria which stimulate the upward struggle of timid plantlets; it plows, harrows, and cultivates the earth, drills air passages so that roots may breathe, and sinks reservoirs which store moisture long after the upper surface is dried out. Thus this little giant overturns the earth and so succeeds in doing what Archimedes only dreamed of.

It is estimated that an acre of average garden soil contains from 25,000 to one and one-half million earthworms, and that these churn and enrich from seven to eighteen tons of soil a year. To a gardener, therefore, an acre of worms is worth ten tons of organic fertilizer a year plus the continuous efforts of three skilled laborers each working an eight-hour shift every day. And worms demand no salary, no overtime pay, and no bonuses, never go on strike, and take no vacations.

Though all earthworms may seem as much alike as—well, what could be more alike than worms?—yet there are more than 1,000 species. However, scientists have grouped all species another to produce several distinct new types: long, thin emotional wrigglers with sleek red necks and an inherent restlessness for working garden soil; thick, meaty worms predesignated for fish hatcheries, chicken coops, and birdhouses; and short, fat, oleaginous specimens which are pressed into the service of medicine for these are squeezed to make the modern "snake oil," a penetrating fluid advertised as an anodyne for earache and rheumatism.

The earthworm is a regular stick-in-the-mud without the least trace of wanderlust. Nevertheless it may travel on the roots of plants exported to almost all countries. But the world is its apple: it is equally at home in the Tropics and in regions of subzero cold. And once introduced into foreign lands, it digs in
to stay, often supplementing the native species which retreat farther inland in their efforts to avoid these foreign interlopers.

In its domestic life it is unapproachable—it lives alone and likes it. All day it hangs in its solitary burrow, clinging to the dripping walls by its feet—short rods or branches projecting from tiny openings spaced around its body—for it has no eyes, it avoids the light. Sensitive cells strung along the surface layer of its skin respond to light intensities and indicate the source of the illumination. Its perception is so keen that it feels the modulating tones of day light and can tell when dusk deepens and darkness covers the earth.

Then, shielded by night, it stretches forth in search of vitals. With its tail spread flat within the threshold of its tunnel to snap back the long elastics body like a rubber band at the least touch of danger, it pivots and zows back and forth and, extending its muzzle to explore the grasses, it puckers its pointed lips like a connoisseur of rare wines as it sniffs its next victim.

Almost anything furnishes it sustenance: fallen leaves, decayed roots, and other vegetation; bits of wool, scraps of nest dismantled by the overfed house dog and crumbs fallen from the suspended feedbowl of birds. These tidbits it snaks up, snapping its lips with little kisling sounds like the kissing down of a leaky tap in the quiet night. Human senses are not aroused by such delicate kiskings, however, for these guatitative snacks are superionic and so audible only to the finer perception of inferior creatures.

At night, too, it meets its fellows extruded from their tubes and often joins with one of these in the rites of reproduction. The distinction of sex is wholly superfluous to the worm for, endowed with the double endowment of such efficient creatures, each is both male and female. It discharges its fertilizing juices from sacs located on its under surface and pours them into the other's spermatheca—receptive wells near the anterior tip—and at the same time receives its mate's reciprocal contributions.

When the first sharp blades of sunlight begin to cut through the lid of night, the worm reels in its sinuous length and descends again to its submurity. There, immersed against the vigorous pecking of bird nibbles and the jellings and confusions of day, it nibbles the morsels it has retracted for lunch. Sometimes it may draw down a seed which, thus embedded in the creamy soil, sprouts into a tree. So the worm not only prepares the earth, but also perpetuates its own.

In a week or ten days its eggs are ready for delivery. At this time it looses its belt—a secretion of the dilloturnus, the yellowish band encircling it near the midddle—and slides it headward. As the belt coasts past, the worm discharges into it, from tiny openings behind the spermatheca, its load of eggs—usually from two to five—which, gliding through these sperm reservoirs, becomes fertilized. The caudal tail barbs in the air to form a neat pouch—the capsule—which the worm plants in the topsoil to incubate. The earthworm's reproductive mechanism is, therefore, a sort of incubator, with conveyor belt, recipient of a temperature, and incubator, as are the other animals.

Or three or four weeks later from three to many as 20 tiny, agile, white worms begin to wriggle out of each egg—little wavy hairlike wormlets that go off immediately with a convulsive wriggle to make their own way through the world. A young worm matures rapidly, growing somewhat like modern packaging machines, in which a carton, placed on a conveyor belt, is automatically filled, sealed, and packed away.

We propose that a few people be trained eye see any of our parks or the yards around public buildings, the action is always this: "Why spend such a lot of money and effort and not achieve some beauty?"

We are not advocating more public expenditure. If just one-third of one per cent of our present budget were taken away from what we are now doing and used in obtaining advice, Littleton would become famous.
Ignorance In Leaf Burning

By BRUCE HUTCHISON.

in the Winnipeg, Ont. Free Press

FOR Christopher Morley I have always held a special sort of reverence as the man who "blows from the slippery suds of life his bubbles of fragile glee," and yet in his spare time has laid down many solid bricks of art with a talent as many-sided and opaline as a well-cut prism. A prism, yes, of many gleaming facets, but with a flaw. Alas, I find Morley is a leaf burner.

When most men approach the autumn chore of raking leaves it is a dull labor, usually postponed until the leaves are moist and heavy, all the crisp spirit soaked out of them, all the magic sodden in decay. As one would expect of such a joyous, bouncing spirit, Morley rakes his leaves not only with sheer physical pleasure but with a philosopher's understanding of this autumn rite:

That is what I like about raking leaves—
It is wine and opiate for the mind:
The incessant skirmish of the wits is calmed,
And as you rake and burn
And dodge, with smarting eyes
The pomp of winter reek,
You fall into a dull easy muse
And think to yourself,
After all, what is writing
Books but raking leaves?

This is charming rhyme and rankest heresy. For by his own confession, this poet who deeply understands and passionately worships nature commits the great autumnal crime against her—he burns the leaves. How many millions of North Americans have burned with him this autumn, and how many billion innocent leaves?

Food for Plants.
The most illiterate gardener, learned in matters more important than letters, knows that leaves piled up in autumn, packed down by winter snow and distilled by summer sun, make an unequaled food for plants of every sort.

Why, if Morley were here today I could show him a poem written in oak leaves, a very saga of heaped-up compost—nay, a history in sublimest form, layer on layer to mark the passing years of my gathering, each layer heavy with recollection, and now all crumbling in the rich fibrous stuff of growth. All this, in due time, when it is mellowed like old wine, will be poured gently on my garden. Morley's plants will be fed on printed verse. Robust and spicy as that verse will be, it is food for men, not plants. My plants, I warrant, will thrive better.

Lost to the Planet.

But, of course, the chemistry of this process is the least part of it. A man may rob the soil every autumn, he may abduct and burn the tree's fluttering children, the posterity on which its life depends, but he can replace it, perhaps, by importing new earth and spreading expensive chemicals, though with a net loss to the productivity of this planet. I do not wish to press the charge of wantonness and theft too far. The real indictment of the leaf burner is something deeper, and when I come to consider this I must confess I am disappointed in Morley. Ignorant men may not understand this matter, but a poet of subtle and parabolic insight should know better.

Once the thing is explained to him, I am confident Morley will write another poem to elucidate it, for prose will not serve. I can only outline this matter in the rough and hope that some day, in better hands, poetry can give it voice.

Processes of Nature.
The point, then, which Morley's poem approaches but does not quite grasp, is that the man of nature must always, for his own inward health, submit himself to the processes of nature. His life is a constant surrender to a higher law which he cannot hope to understand.

How well Morley knows this is proved a thousand times in verse, of a lusty, earthy smell like the deep brown smell of autumn itself; but what he fails to see, what all the tribe of leaf burners fails to see, is that the law demands the preservation of the leaves and forbids their destruction, save by nature's own slow method.

Burning is for wood and witches. Applied to leaves, it is a crime against the gods of Morley's own worship, a high crime and unnatural, a slaughter of innocents.

Leaves Should Be Raked.

All men should rake leaves, as Morley says, and hear the peculiar music of them, that swish and sweep which exactly duplicates the sounds of gentle waves on a sandy shore.

All men should recapture one of youth's highest moments, the feeling of dry and cracking leaves underfoot, most precious because it foretells the end of summer.

But, for a brief delight of scented smoke and leaping flame, a man surrenders the true satisfaction of leaves when he burns them, the pleasure of seeing them turn month by month to loamy richness, the reward of their fertility in his garden but, above all, the knowledge that he is living within the law, that he deserves the physical bounty of nature and its abiding presence in his spirit, its intimations of immortality all through the barren winter, because he has earned them.

How depressing to think, therefore, that smoke is rising from backyards all over America today, how very sad to hear that a man who understands all other facts of nature is burning leaves in ignorance and rhyme.

Horticulture

"It may be useful to reexamine the meaning of the word 'horticulture.' A number of rather different activities are called horticulture. In some parts of the world, the growing of vegetables especially is called horticulture, in other parts vegetable growing is considered something belonging to agriculture rather than horticulture. The same can be said of pomology. With ornamental horticulture there is less doubt.

The word horticulture, however is also being used in a wider sense. A broader concept of horticulture is gaining its way all over the world. The efforts of groups to which I have recently referred, are nothing but symptoms which we find in some form or another all over the world, symptoms of a feeling that there should and could be a stronger band and link between those who grow plants, who play with plants and even those who make the rules of those activities and who are responsible for the conservation and development of natural resources as far as they concern plant life.

This feeling, this wide new concept, truly worldwide, as ill-defined as it still is in its immediate objects, may well become something of great international value, both in horticultural science and practice in human relations generally."

DR. FRANS VERDOORN,
Waltham, Mass.
Denver Parks Flower Trail

THE Denver Park Department has many places where the summer flowers are unusually attractive. On the accompanying map a route has been suggested which we have called the Denver Parks Flower Trail. By following this route, one can observe the most interesting flower displays of the city.

The Trail begins at Horticulture House (1355 Bannock St.), and ends at the same place. The following gardens are of interest. Unusual varieties for 1947 are:

1. Civic Center:
   Beds on Bannock and 14th Avenue—Draceanas, Begonia Carmen, Lantana M. Schmidt, Geranium Salmon Ideal, Snapdragon, Amber Gem, Dwarf Blue Agastat, Verbena Venosa, Centaurea candidissima, Giant mixed Zinnia, Centaurea gymnocarpa.
   Beds on Bannock and Colfax—Mixed Verbena and White Alyssum, Salvia with Centaurea gymnocarpa. The circles are filled with Draceana, Salmon Ideal Geraniums and white Alyssum.
   In front of City Building—American Beauty Geraniums with White Geraniums.

2. Sunken Gardens:
   Between 8th and 11th Aves. on west side of Cherry Creek.
   In cross—Geranium Mme. Landry. Small circles—Intermediate White Snapdragon.
   Beds at foot of cross—Snapdragon Orange King and Snapdragon Carmen. Verbena venosa and mixed Verbena bordered with dwarf Marigolds.
   The irregular beds are bordered with White and Lilac Alyssums and Coleus Maria and Green and White.
   The beds are filled with colorful patches of Marigold Robert Biest, Candytuft, California Pinks, Gomphrena, Weeping Lantana, Zinnia Lilliput, Statice, yellow Cosmos, tall orange Mari-
7. Washington Park Perennial Garden:

Going into Washington Park by a bed of mixed zinnias giant, bordered with Zinnia Lilliput.

The Perennial Gardens in this park afford the biggest riot of color to be seen in the Denver Parks Flower Trail. There is a great variety of flowers, both annual and perennial and colors, usually in large quantities — yellow perennial Coreopsis, annual Chrysanthemum, purple Petunias bordered with light pink ones, either Pale Amaranth Pink, or Cheerful, Geranium Better Times, Carnation Napoleon, Coleus Green Goddess bordering seedling Dahlias, two varieties of Heliotrope, Nierembergia Purple Robe bordering a bed with purple Statice, and mixed Snapdragons filling in around Peony plants, a showy bed of Geranium Salmon Ideal with Dracaenas bordered with white Alyssum, an interesting combination of tall Iceland Poppies, with Violas under them, Pink Larkspur with Dahlias, bordered by Nierembergia Hippomaneica, the lighter colored Nierembergia.

There is a big bed of Sedum Spectabilis, and a bright bed of intermediate snap in solid patches of yellow, maroon, purple, orange and white. Dianthus deltoides, a perennial, small and bright pink, covers a patch of garden and perennial Chrysanthemums are beginning to bloom nearby.

All this was up near the north end; in the middle of the area there are beds of mixed Verbenas, bordered by dwarf red Verbenas, Petunia Velvet Ball, bordered by Petunia Pale Amaranth Pink and Coleus Green and White. Geranium Mme. Landry is bordered by Petunia Sulphur Yellow, nearby and at the south end, there are beds of Vinca rosea, California Pinks, Geum Mrs. Bradshaw (A perennial), Pentstemon Senation (also a perennial, but very tender), Alaska Daisies (Perennial) Scabiosa (the perennial), Gaillardia (perennial), Foxglove, Campanula, and many other varieties.

8. Mount Vernon Garden:

For such old fashioned flowers as hybrid Nicotiana, Heliotrope, mixed Vinca, mixed asters, Amaranthus, lavender Stocks and Helichrysum.

9. Alamo Placita (at Ogden on 3rd):

In the beds near the playground notice the President Ganna and the bright pink Geranium Mme. Landry. Across the street the Verbena venosa around the four corner Silver Cedars is beginning to make a show of purple, along with the beds of mixed Snaps.

10. Cheesman Park (8th and Williams):

At the end of the south side of the Memorial there is a beautiful bed of Talisman roses and below it Better Times Geraniums with standard tree Buddleias spotted in the beds. Elsewhere around the Memorial are beds of Teplitz roses, Petunia Glow and mixed Snaps.

11. 7th Avenue (between Williams and Colorado Blvd.):

There are many bright beds along this avenue, especially those between Vine and Gaylord, with Pink Geraniums, mixed Verbenas, Verbena venosa and mixed beds between Fillmore and Milwaukee, with Canna President, Phlox Eclaireur, seedling Dahlias, bordered by Coleus. On Jackson, a large planting of Snaps, yellow, purple, pink and orange, is now beginning to show.

12. Clermont Street and Mountain View Park:

On the center parkway on Clermont Street between 3rd and 4th Avenues, the whole block is designed with big, very bright and showy flower beds. There is a bright patch of Petunia Glow, 30 feet square, and a smaller one of purple Petunias. There are long beds of Begonia Carmen, bordered with white Alyssum and Nierembergia Hippomaneica, alternated, and Red Galvia and Sulphur Yellow Petunia, bordered by Pyrethrum aureum. There is a long drop shaped bed of lemon yellow marigolds, bordered with Centaurea gymnocaarpa. The outer bordering planting all around the block is of various perennials, the Iceland Poppies and Sweet William being most prominent and now beginning to fade.

13. Richtofen Place at Monaco

There are Petunia Velvet Ball and Cheerful, Begonia Carmen, Verbenas, dwarf single Dahlias, Calvia Firebrand, giant Zinnias, tropical Water Lilies in main pool, water Hyacinths in small pools.

16. Small Lily Pond (City Park):

Notice Petunias varieties Glow, Dienes Blue, General Dodds; also big masses of other flowers.

18. At Burn's Monument (City Park):

Where is found the largest group of annuals in this park, there are many small beds with a large variety of flowers: Snapdragons Cloth of Gold, Apricot and Purple King, lilac Alysum with blue Lobelia, California Pinks with Grevillea specimen, Verbena venosa with Centaurea candisissima, Petunia Cheerful with Pyrethrum aureum, dark Marigold Robert Biet, with white Alyssum, dwarf single Dahlias with Pnrythrum aureum, dwarf red Verbena (Venus) with yellow Snaps, Heliotrope Crown Hill and Gomphrena, pink Petunia Glow and White Cloud, with golden Bedder Coleus, Cuphea, Mixed Snaps, white Marguerites, with dwarf Rose Snaps, yellow Supreme Marigold and Verbena venosa, Amber Gem Snaps and many other varieties.
Plant Diseases, Their Causes and Prevention

By W. A. Kreutzer,
Formerly of Colorado A. & M. College

The importance of plant diseases need not be stressed for the plant lover, nurseryman, or garden enthusiast. Diseases of one sort or another are responsible for huge losses annually. Many of the diseases which distort or destroy your plants are preventable. In order to control these diseases we must know something of their causes, we must be able to recognize a disease and we must know what to do to prevent diseases and their spread. The following outline merely constitutes a rough picture of the situation. However, it should prove helpful to growers of plants.

1. The causes of plant diseases

Plant diseases are caused by living things such as bacteria, fungi (molds), insects, and nematodes (eelworms); and by non-living things such as viruses, and environmental agencies (mineral salts, toxic gases, alkaline soil, etc.). For a more complete understanding of these causes of disease they are described as follows:

(a) Bacteria. Microscopic organisms composed of single rods or spheres which live in the soil and in diseased plant parts. Plant disease-producing bacteria enter plants principally through wounds and natural openings (stomata in leaves for example). Bacteria cause rots, wilts, and leaf spots. To prevent bacterial disease (1) disinfect pruning tools as they are used; (2) use seed from healthy plants; (3) avoid over-watering; (4) avoid overhead sprinkling; (5) spray plants for leaf lesions or leaf spots (use sulphur for mildews and any fungicide containing copper for other leaf diseases); (6) where necessary and practical steam sterilize or disinfect soil patches. In disinfecting use tear gas (chloropicrin) or formaldehyde.

(b) Viruses. Believed to be chemicals (toxic proteins). Spread from plant to plant principally by insects, handling, and wounding. Not soil borne. Virus diseases can be recognized by leaf mottling (dark green and lighter green to yellow mottlings), and distortion of new growth. To control virus diseases: (1) remove and burn all suspicious plants; (2) keep the weeds down; (3) use recommended insecticides to keep plant lice from increasing.

(c) Viruses. Insufficient nitrogen, potash, and phosphorus will cause weak and stunted plants. Leaves frequently are sickly green to yellow. High lime in soil may bring about a deficiency of iron. Iron deficiency causes leaves to become chlorotic or yellowed. For plants showing symptoms such as those just described add a complete fertilizer. For spots with high lime content add manure.

Don't overwater. Keep soil in a good moisture condition. This is a general recommendation.

2. For detailed general information on plant diseases and insect control write to the Colorado A. and M. College at Fort Collins, Colorado, for the free bulletins as follows:

- Insects (bulletins D-39 and D-6), and Plant Diseases (bulletins D-8, D-9, D-10, D-11, D-21, D-43, D-44, D-45, D-46, circular WFA-G5, No. 481, No. 484, and 385-A).

More Magazines

We received a very interesting letter from Mrs. G. M. Jorgensen of Dell Rapids, South Dakota, secretary of the South Dakota Federation of Garden Clubs, which we print here for your information.—Ed.

I was much interested in your list of periodicals in the May-June issue of THE GREEN THUMB, and find that of the twenty-six named by you, I subscribe to twenty and have access to twenty-one. In addition, the following magazines and pamphlets may be of interest to other garden-minded folks as they are to me:

- NATIONAL PARKS, National Parks Association, 1214 16th St., N.W., Washington 6, D.C., $3.00. Quarterly. Devoted to the preservation or restoration of national conditions in our national nature reservations.
- BACK TO EDEN, DeQueen, Ark., 10c. A few pages monthly with articles written by flower growers throughout the midwest. Homey and neighborly. Printed on newpaper. Many ads.
- GARDEN GLEANINGS, Boring, Ore., 10c. Same as above.
- THE BEGONIAN, 15$ S. Oxford Ave., Los Angeles 4, Calif., $1.10. Monthly. Devoted to begonia growers. A magazine which gives information about a deficiency of iron. Iron deficiency causes leaves to become chlorotic or yellowed. For plants showing symptoms such as those just described add a complete fertilizer. For spots with high lime content add manure.

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- GARDENSIDE GOSSIP, Shelburne, Vermont. Quarterly. Not a magazine, but a price list in magazine form with such inspiring stories and articles about our national parks.
- WISCONSIN HORTICULTURE, Madison, Wis., $1.00. Gardening in Wisconsin.
- NORTH AND SOUTH DAKOTA HORTICULTURE, Sioux Falls, S. Dak., $1.00. Monthly. The magazine which is read by more people than any other magazine published in the states. Interesting stories and nature studies of the north prairie area.
- HOME GARDENING, New Orleans, La., $2.00. The southern gardener's magazine. Wild flowers.
- KANSAS, Missouri and Nebraska also have magazines stressing the horticulture of their states.
- SUNSET MAGAZINE, Lane Publishing Co., 176 Sacramento St., San Francisco 1, Calif., $2.00. Monthly. The Pacific gardener's magazine, but contains much of interest to readers in other states, too.
- PLANT LIFE, American Plant Life Society, Box 2198, Stanford University P. O., Calif. Each issue devoted to one plant family. Technical.
- IOWA GARDENS, organ of Federated Horticulural Clubs of Iowa, $1.00. Monthly containing reviews on Hemerocallis, roses, wild flowers, etc.
Back in the summer of 1903 an early-day forester, W. J. Gardner, who was preparing a report on the need of reforestation on the Pike national forest, took a photograph showing a steep hillside burned over years before which was eroding badly, and on which natural restocking of trees was almost wholly lacking. A few scattered trees which had survived the fire that swept this hillside years before, were left to indicate the area originally covered with timber before fire burned over the area. In the spring of 1913 the area shown in Mr. Gardner's photograph was planted with ponderosa pine by the Forest Service.

Watershed Planting On The Pike National Forest

By Jay Higgins,
Chief of Planting, U. S. Forest Service

Take a look—take a good look—at the two pictures on these pages. Note the bleak and leperous appearance of those hills in the picture on the left. Count the trees—there are so few this should be no task.

Now examine the picture on the right closely . . .

Yes: they are taken from the same spot, of the same hills—but between them lie four decades of time and one part of the story of U. S. Forest Service activity in reforestation, a phase tied in tightly with the vital matter of watershed protection.

Reforestation on national forest lands devastated by early-day forest fires or on lands where the original forest cover was destroyed by excessive logging operations during the earlier settlement of Colorado, was actually started over 40 years ago by the Forest Service. From several small nurseries started but abandoned before 1907, a sufficient number of seedlings were produced to do a certain amount of experimental planting.

The final selection of a nursery site, however, was made in that latter year. That marked the beginnings of the Monument Nursery, at Monument, Colorado, about 50 miles southwest of Denver. Since that date millions of young coniferous trees grown at this nursery have been planted—largely on the Pike National Forest—although each of the other eleven national forests in Colorado have shared in the tree-planting program.

Altogether, on these Colorado forests, some 17 thousand acres have been planted, of which approximately three-quarters have survived. In this breakdown, all plantations on which there is a survival of less than 100 trees per acre, replantings, and areas destroyed by fire, are considered "lost." The Pike National Forest can claim the greater portion of the Colorado-planted acreage, for on that forest have been planted about 42,000 acres, of which over 33,000 acres are now in thrifty, growing stands.

Within the boundaries of Colorado, which has the highest average land elevations of all states, are found the headwaters of four important rivers—the Colorado, Rio Grande, Arkansas, and Platte. For many cities and towns, the waters of these drainages have extremely high values for irrigation, power, and as a water supply. An adequate forest cover is vital to protect the watershed from erosion at the headwaters of these rivers, and to insure a regular and continuous flow of water.

One of the primary objectives of the Forest Service reforestation program is watershed protection; and these plantings, on the Pike National Forest, have been entirely on the watersheds which supply Colorado Springs, Denver, as well as numerous smaller towns, with the greater part of their water. For many years, the planting program on the Pike Forest as a whole, averaged 1,000 to 1,500 acres, annually. Concentrating, between
1912 and 1920, on old burns on the eastern and northern slopes of Pikes Peak, planting was carried on so that, today, between 9,000 and 10,000 acres of successful plantations may be seen growing there, observable from a car traveling on the Gold Camp road from Colorado Springs to Cripple Creek, and along the Pikes Peak auto highway.

The two principal species of trees used on this project have been Ponderosa Pine and Douglas-fir. Plantations established in 1912 or 1913 now fully cover the ground. It is not uncommon to find Ponderosa Pine trees in these areas well over 20 feet in height; with Douglas-fir, usually planted on the northerly or more favorable sites, often over 30 feet tall.

In these earlier plantations, trees were spaced at six-foot intervals, although in certain instances many trees were planted 5 x 5 feet. Even the wider spacing has resulted in an overcrowded stand of trees where good survivals were obtained.

In certain areas, many of these crowded trees were dug and sold commercially for ornamental planting. For example, some of the Douglas-fir plantations, where there was overcrowding, were thinned for Christmas trees about ten years ago. The original cost of establishing these plantations was about $15 per acre. This cost, however, would be considerably higher at present-day wage rates. On several areas the cutting of Christmas trees, after they had reached an age of 30 years, produced a net return of almost $60 per acre. In addition, there was left a better spaced and less crowded stand of trees on the area to continue the job of preventing erosion, preserving the watershed and, ultimately, producing a valuable crop of saw timber.

Hand dusting will be found quicker and easier than hand spraying of many flowers, shrubs and small trees. If the foliage is first wet with a spray from the garden hose excellent coverage and adhesion of the dust will be obtained.

Chas. H. Behse, Jr.

This matter of spraying is a big subject and far too little understood. One thing that has not been said elsewhere, is that your plants can only be as clean as your immediate neighbors permit. If you really want a clean place, you must become a spray salesman and help to spread the gospel of clean gardens.

Copied from ROBERTS REMINDERS, September 1935.

Chlorosis of maple trees, characterized by yellowing of the foliage and eventual dying of the tree, is becoming serious in Denver. Either a soil deficiency or alkalinity of the soil is the usual cause. Regular feeding of the trees with a balanced chemical fertilizer with the addition of iron sulphate will generally materially help the situation.

Chas. H. Behse, Jr.

Do We Need A Shade Tree Service?

By ERNST J. SCHEINER

Courtesy of AMERICAN FORESTS, magazine of The American Forestry Association, Washington, D.C.

MAN does not live by bread alone.

Over the centuries he has been asking for more—for "a book of verses underneath the bough, a jug of wine, a loaf of bread—and thou beside me singing in the wilderness." Verse, wine, bread, and song are immediately available "something different," combined with ignorance of tree requirements, has cluttered many towns and cities with short-lived trees and with natives and exotics thoroughly unsuited to the growing conditions.

Better shade trees are needed. And they can be developed by scientific selection and breeding. We need trees that can endure the difficult environment of city streets and parks, trees that are disease resistant, trees that can be grown into shape, and trees that will grow rapidly and live for many years. As a rule, fast-growing trees are short-lived, but there is sufficient individual variation to indicate that the breeding of fast-growing, long-lived trees is possible.

Trees such as the ailanthus (the tree that grows even in Brooklyn), Asiatic elms and soft maples, native and exotic, offer excellent possibilities for selection and improvement. The ailanthus has become a spray salesman and help to spread the gospel of clean gardens.

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Chas. H. Behse, Jr.
dozen men engaged in tree breeding before the war, and there was practically a complete lapse for the duration. Tree breeding with many species will serve both the shade tree and forestry fields. The progenies derived from well directed breeding may be expected to include better shade trees and better forest trees; only the selection criteria will differ.

An increasing number of Americans, both urban and rural, are seeking information on planting and care of shade trees. Unfortunately, their questions can seldom be answered with assurance. Tree research, left largely in the lap of the forestry profession, both at home and abroad, has been marred by a serious lack of fundamental research based on trees as individuals. Foresters are primarily "sociologists" interested in the growth and development of trees in stands or communities; as a group they seem to have lost sight of the fact that in the final analysis the success or failure of the forest stand is dependent upon the growth and development of trees as individuals.

There is great and immediate need for extensive collection of existent research findings and for additional but correlated research to guide the home owner, the shade tree nurseryman and specialist, and the city, park and highway forester in the planting and care of individual trees. If the annual private and public expenditures for maintenance and care of shade and roadway trees could be compiled they would total millions of dollars. What better criterion is there of the intrinsic value of anything than the money spent year after year to maintain it?

Public interest in shade trees is largely individual and inarticulate; it seldom finds an outlet for unified expression. Nevertheless, education and research directed toward better shade and roadway trees is definitely a public responsibility that should no longer be postponed.

We need a National Shade Tree Service—a clearing house for tree research, an educational link between research and practice, and a source of information and education for the general public.

Tree research has been going on for many years, in many places, and the published results are very widely scattered. Consequently, there is today a serious need for correlation and integration of widely scattered observations and scientific information on the growth, development, and proper management of trees. Although this need is serious with respect to the sorting out of information that would be immediately useful in practice, it is far more serious with respect to the "fundamental research aspects", the answers to the questions: How does a tree grow and reproduce? What factors affect its growth and reproduction? How can these factors and their effects be accurately measured?

A National Shade Tree Service with a relatively small but able and energetic staff of tree scientists, could serve as such a clearing house.

This Service would require an arboretum for certain phases of both its scientific and educational work. But a single arboretum, regardless of its location, can hardly have national significance either for such scientific purposes as the testing of exotics and new tree types, or from the standpoint of educational value to the public.

We need a network of cooperating arboretums covering all regions of our country if we are to provide a substantial proportion of our people with the educational advantages of an arboretum, and proving grounds for new and improved shade trees.

Do we need a shade tree service? To serve the public interest in trees—the interest of everyone who owns or enjoys shade trees—the answer is obvious.

CHEMICAL TREATMENT TO CONTROL FUSARIUM ROT OF GLADIOLUS

A. O. SIMONDS

HAVE YOU ever had the sad experience of seeing some of your favorite gladiolus plants turn yellow and die just before they reach the blooming stage? And have you noticed that some of the corms, (sometimes mistakenly called bulbs) had redish-brown spots on them when dug in the Fall? Did you know that these redish-brown spots enlarge while the corms are in storage during the winter and frequently all that remains next spring is a shriveled black mummy instead of the healthy corm you expected to plant? These are the symptoms of a common gladiolus disease known as Fusarium rot. This disease, however, need not discourage you from growing gladiolus in your garden. Treating the corms before planting will give good control of the disease.

Corrosive sublimate has been used for many years as a pre-planting treatment for gladiolus and it gave good control of gladiolus thrips. It has been an effective treatment against the bacterial scab disease and Fusarium rot. In the past few years, however, New Improved Ceresan has been used for the control of Fusarium rot by many gladiolus growers in the east and mid-west. Because no information on treatment of gladiolus in Colorado was available, an experiment was set up to compare the effects of using corrosive sublimate and New Improved Ceresan on gladiolus in this area.

One hundred and fifty healthy corms of the Picardy variety were divided into three lots of 50 corms each. One lot was soaked over night in a 1:1000 solution of corrosive sublimate. A second lot was soaked 20 minutes in a solution of 9 grams New Improved Ceresan and a teaspoonful of Drift, to act as a wetting agent, in a gallon of water. The third portion was left untreated as a check. On May 11, 1946, immediately after treating, the corms were planted in a randomized block arrangement in the author's garden in Fort Collins, Colorado. Corms were spaced 4 1/2 inches apart in double rows, the rows being 6 to 7 inches apart. Gladiolus had been planted in the same soil in 1943. All plants were sprayed with D.D.T. three times during the summer to reduce thrip damage.

The effect of the treatment became increasingly evident as the season advanced. Some of the plants wilted and turned yellow, and leaf veins became brown before the plants died. On August 7, 49 plants in the Ceresan treated lot and 47 plants in the corrosive sublimate treated lot appeared healthy. Only 28 plants in the untreated lot appeared healthy.

Certain chemical treatments of corms have been reported to delay blooming in other area. It was apparent that the treatments used in this experiment had delayed blooming to some extent when flowering records were taken August 17. On that date, when the first blooms were open, 6 plants in the untreated lot, 4 in the Ceresan treated lot, and 1 in the corrosive sublimate treated lot were in bloom. However, considering only the healthy plants at that date, 38 or 82.6 percent in the Ceresan treated lot, 28 or 62.2 percent in the corrosive sublimate treatment and 19 or 67.8 percent of the untreated corms had produced viable flower stalks by that time.

Corms were dug October 26 and cured in a dry basement until December 14 when they were cleaned. At that time...
41 corms in the Ceresan treated lot and 40 from the corrosive sublimate treatment showed no evidence of Fusarium rot, but only 17 healthy corms were obtained from the untreated lot.

A noticeable difference in the size of corms was observed at cleaning time so all living corms were weighed. Corms from the untreated lot had an average weight of 42.8 grams, corms from the Ceresan treated lot averaged 41.0 grams and those from the corrosive sublimate lot averaged only 29.9 grams. From these figures it appears that the corrosive sublimate treatment greatly reduced the size of the daughter corms.

The number of healthy corms obtained from each of the treated lots was more than double the yield from the untreated lot. The average size of corms produced was considerably smaller when corrosive sublimate was used than when New Improved Ceresan was used or when the corms were planted without treating. The effect of treatments on flowering was not marked but the corrosive sublimate treatment tended to delay blooming a few days.

This experiment was not extensive and it has been run only one year, but on the basis of these results and those of workers in other areas, New Improved Ceresan is recommended for the control of Fusarium rot of gladiolus. Thoroughly mix one ounce of the Ceresan with one or two teaspoonfuls of Dreft, then add enough water to make a thin smooth paste and finally add enough water to make three gallons of solution. (Avoid inhaling New Improved Ceresan dust and do not get paste on hands or clothing.) Corms should be soaked in this solution for 15 to 20 minutes and planted immediately after treating. It is not advisable to plant in soil that is too dry.

Q. We have a Chinese Elm in the side yard that is just four years old but it's getting to be quite a large tree. Is there danger of it growing too fast? The top is getting big and heavy and very dense. Is any trimming needed and if so when should it be done?

A. Chinese Elms are dryland trees and when given an abundance of water, make a big, soft growth. In this condition they are very apt to be injured by high winds or heavy wet snows. Withholding water is the best correction but once established in a well watered yard they grow very fast regardless of the water in their immediate neighborhood as the roots extend under quite an area. In other words, this is not a good yard tree.

But your problem seems to be to get the most out of an established tree that is overgrown. Such a condition calls for very thorough, careful pruning. The tree should be thinned by the complete removal of occasional limbs and particular attention given to removing any forking in the leader. Then the entire tree should be headed and shaped, thinning the growth on the heavier branches. All this sounds like a lot of work, and it is. A tree of any size is a job for a tree trimmer rather than an amateur, and an overhaul such as this is indicated about every three years. Failure to keep such a tree within bounds subjects it to the risk of being torn apart when subjected to unusual weather strains.

Copied from Roberts Reminders, September 1935.

Q. What is the proper time to trim Maples?

A. Any time from the first of July to the end of October is the proper time to trim Maples. Trimming during the dormant season causes bleeding which greatly injures or may kill the tree. Once a cut starts bleeding, there is nothing to be done.

Copied from Roberts Reminders, September 1935.
Fall Work

This is the time of year to think about closing up our gardening activities. For better or for worse most of our gardening is now a thing of the past. There are many things, however, for good gardeners to busy themselves with.

Careful watering should be given consideration for the next few weeks. Excessive watering now may cause trees or shrubs to put on new growth which will not have time to properly ripen before frost. All hardy plants should have a ripening period just before growth stops for fall. Then, when the trees and shrubs have properly ripened and the leaves have fallen, indicating that they are dormant, they should have a good soaking so that they freeze up wet. If these two things are done, two causes of "winterkill" will be eliminated.

Before the leaves fall is a good time to take dead wood out of shade trees. It is easily seen then. The more extensive trimming may be left for a winter job. While you are trimming give that hedge a good hair cut so that it will look neat until spring. And, talking about neatness, get out the rake and clean up the rubbish. Remember to save and compost all weeds, grass and leaves which can be made into our much needed humus.

In favorable years lawns can be patched up until the last of September. Grass planted later may grow for a while but it is very likely to winterkill.

Some things must be planted in fall, and a greater number may be. Peonies, some lilies, bleeding hearts and Dutch bulbs are among the musts. Hardy perennials, the tougher of the shrubs and a few quick growing trees may be planted in fall after the leaves fall and the trees are dormant.

Put notes down on paper now about the things that you want to improve or remodel in your garden. By next spring you will have forgotten just what you wanted to do. Look up the firms that can furnish the things you need and get in your order.

Repair tools, fences, walks and furniture. Plan to protect them through the winter.

Plan a definite line of gardening study for the fall and winter. A few minutes in the evening, once a week, can give you a good lot of valuable and interesting information. Let us help you line up a course of study. Plan to take in our regular public meetings at Horticulture House. If several people request a certain line of study we well attempt to line up a series of classes in this subject.

Take time now to enjoy your garden and visit your neighbors who have good gardens. Get acquainted with your fine city parks. Discover what beauty there is in our mountains in the fall. If you have worked hard all year you deserve to take time to enjoy things now.

George W. Kelly.

Only by careful inspection, can you be sure if your maple trees are infested with cottony-maple scale. The color of the foliage may be perfect and still the trees be so badly damaged that serious loss will result.

Paul Bradford.

Somewhere, some one has said something like this—

Two spits. The old English name for the depth of a spade is a spit and the directions for digging with a spade are so gauged. Probably if they called it a spit American gardeners could be persuaded to dig deeper. Scarcely a plant or bulb but is benefited by deep digging and fertilizing. The gorgeous Delphinium, rose bushes, the short-spanned annual, the Lily, the Narcissus—all alike ask a fair chance given them by deep digging, and unless this preparation is made they can't be expected to grow lustily. So we might make up a rule: One spit possible failure; two spits success.

Helen Fowler.

What Does YOUR Membership in The Colorado Forestry & Horticulture Association Mean?

To the Association:

It means your support of a worthy cause, for the Association is pledged to:

- the preservation of the natural beauty of Colorado;
- the protection of her trees and other plant life;
- the establishment of a Botanical Garden or an Arboretum in the vicinity of Denver;
- the publication of a magazine devoted to correct information regarding forestry and horticultural practices;
- plants best suited to the climate; coordination of the knowledge of foresters, horticulturists and gardeners for their mutual benefit;
- a connecting medium between the association and the member.

To YOU the Member:

It means an association with hundreds of other green-thumbed lovers of plant life in the garden, in the city park, on the farm, throughout the plains and mountains, or wherever it may be found;

- a free subscription to the official bulletin, THE GREEN THUMB, published bimonthly and fully complying with the original intent of its existence as outlined above.
- the use of HORTICULTURE HOUSE, rebuilt and charmingly furnished by its sponsors, for members or committee meetings, classes, lectures and displays;
- the use of its Library and Herbarium which contains an outstanding collection of books, current magazines, plates, pictures and specimens, covering every phase of plant life;
- the advice and counsel of a trained horticulturist to help solve your horticultural problems.

Memberships in THE COLORADO FORESTRY & HORTICULTURE ASSOCIATION are:

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<th>Name</th>
<th>Annual Fee</th>
<th>Name</th>
<th>Annual Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supporting</td>
<td>$ 2.00</td>
<td>Patron</td>
<td>$ 27.00</td>
</tr>
<tr>
<td>Sustaining</td>
<td>5.00</td>
<td>Donor</td>
<td>100.00</td>
</tr>
<tr>
<td>Contributing</td>
<td>10.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Privileges and benefits to each class are the same:

- the lower fee goes almost entirely to publication of THE GREEN THUMB;
- the higher fees over the cost of such publication go to the upkeep of salaries and expenses.

All Memberships run thru the calendar year—January 1—December 31:

- those received after January 1 are retroactive to that date and earlier copies of the bulletin will be sent to compensate.

Contributions to the Association may be deducted from taxable incomes, and a legal form of bequest is as follows:

"I hereby bequeath to The Colorado Forestry & Horticulture Association, soon to be incorporated under the Laws of Colorado, the sum of_________".

Requests for further information should be addressed to the Association at 1355 Bannock Street, Denver 4, Colorado.