GREEN THUMBS

Mrs. Lewis Bliss Shelby

Mrs. Shelby has for many years been known as one of Denver's best sm tree gardeners. Although she has
ways been an amateur gardener her knowl edge of plant names and how to
ow plants is as good, if not better, an
most professionals. She was nong the first to grow the Christmas
e in Denver and has made large co
tions of eastern acid-loving plants which grow in the woods such as
roses, Rock plants, Ferns, Fra
ant Pelargoniums (Geraniums) and
ng hybrid Chrysanthemums.

All of Mrs. Shelby's friends and
ighbors love gardening and flowers;
 she is always willing to give them
me plant for their garden or friendly
vice as to the best way to grow
er flowers. Her enthusiasm is very
igious.

When Mrs. Shelby entered the busi
world as buyer and manager of the plant department of Woolworth's big
town store she made use of her wide and thorough knowledge of
iculture and has made her depart
ent one of the best in the store.

She does not have as much time to
arden now as she did but she gives
tice and inspiration to many a
ower lover and she still has a very
green thumb.

BOTANICAL TRIPS

For the last two years we have con
ducted botanical exploration and c
lection trips to various parts of the
te. These trips have been primarily
ork trips but the ones who have par
cipated in them have enjoyed them
mensely. We are now get
ting together information to decide on the
aces where we will go in 1949 and the
dates. If you would be interested in
helping on such a trip please let us
ow at once, giving your pre
ences as to time and place.

FEBRUARY SCHEDULE

Friday, Feb. 4, Horticulture House, 7:45 P. M.
Bill Bullard will show Kodachromes of Mexico.
Monday and Tuesday, Feb. 7 and 8, Rocky Mountain Horticultural Con
ference, Cosmopolitan Hotel.
Thursday, Feb. 10, Horticulture House, 8:00 P. M.
Rose Society.
Friday, Feb. 11, Horticulture House, 10:30 A. M.
Mrs. John Newman will demon
strate corage-making.
Wednesday, Feb. 16, Horticulture House, 8:00 P. M.
Commercial Men.
Friday, Feb. 18, Horticulture House, 7:45 P. M.
Harold Roberts will show Kodachromes of "The First Wildflow
ers."
Sunday, Feb. 20, 9:00 A. M.
Meet at Horticulture House for trip to Hogback for first wildflowers.
Led by Geo. W. Kelly.
Thursday, Feb. 24, Horticulture House, 8:00 P. M.
Iris Society.
Friday, Feb. 25, Horticulture House, 10:30 A. M.
Planning the New Home Grounds.
Discussion led by Maurice Marshall.
We are planning a series of wild flower study classes throughout the
spring and summer. Kodachromes and pictures will be shown once a month
Friday evenings. This will be fol
owed on the next Saturday or Sun
day by a trip to the hills to see these
flowers as they appear. These classes and trips will be led by the leading
botanists of this area.
THE GREEN THUMB

SOME THOUGHTS ON TREES

FRED R. JOHNSON—U. S. Forest Service

THE discovery of the Dutch elm disease in Denver and the possibility that it may at some time kill any of our fine American elms raises number of questions in the minds of tree lovers. There are more American elms in Denver than any other species—100,000 according to an estimate made for the American Forestry Association some years ago.

Some one remarked recently, “It might be a good thing for the City if we have the Dutch elm disease kill a few of them. There are too many trees in our residential areas.” However at is a drastic method of thinning which we cannot agree. It is true that in the past many trees were lanted too closely. On some streets the trees are only about a rod apart. They look fine for the first ten years. Then they begin to crowd each other, and what a lot of missapen, sickly looking trees we have. Too many property owners do not trim or spray their trees, and they become fertile fields for the elm scale, the elm beetle and eventually, perhaps, the Dutch elm disease.

In the older sections of the City, the occasional death of a tree, as it completes its natural cycle, has thinned out their number to a reasonable spacing. However in a district, like Park Hill for example, where much of the street tree planting was done 30 to 40 years ago the trees are very close together. Moreover on many of the narrow residential streets they form a canopy in which the older trees overtop those more recently planted on both sides of the street. A virulent attack of the Dutch elm disease, such as has occurred in the East would play havoc. There would be some sad looking streets.

Of course there is a mixture of other species a heavy loss of elms would still leave a sprinkling of soft maples, green ash, hackberry, cottonwood, and others. Too often, however, the individual property owner planted all elms or all maples, so that the tree lover might have to start from scratch in case an epidemic kills his trees.

Several years ago in connection with a survey of the prevalence of the elm scale, I tallied all of the trees in 12 blocks in Park Hill (a block in this study means one side of the street since on certain blocks both sides of the street were tallied and in others only one). The tally showed 133 American elms, 82 soft maples, 17 Chinese elms, 7 green ash, 6 Carolina poplars, 2 Bolleana poplars, 1 box elder, and 1 Russian olive—a total of 249 trees. Thus for the 612 feet of street frontage covered, the trees were just about 21 feet apart, a spacing entirely too close for the proper development of the individual trees.

Suppose we have a heavy loss of elm. What species should replace it? In addition to the tried and true species mentioned above, I am strongly in favor of thornless honey locust—not the thorny kind. The latter are an abomination and a real danger and should be ruled out. The thornless variety is a beautiful tree, easily shaped, if a little skillful pruning is done before the tree grows too tall. The foliage is not too dense. In other words, it gives shade but not too much. Some persons object to the pods, but they add a little variety to the winter landscape, as they gradually fall. One housewife objected because of the tiny leaves which stick to your shoes and are readily carried into the house. But that does not last long.

I would like to see more oaks planted in Denver. Have you seen a prettier tree than the red oak in the triangular piece of ground formed by the intersection of 17th and Park Avenues and Downing Street? This tree has a beautiful green foliage all summer and the brownish red coloring this fall has been a joy to behold. This particular tree, I am told by S. R. DeBoer, was given to the City by George Van Law, an early member of the Denver Park Board and prominent in City beautification. Another beautiful red oak specimen is growing in City Park near 17th Avenue and Garfield and not far from the lily pond. Then you are familiar with the red oaks in Washington Park, near the entrance at Marion and Virginia.

To wind up these rambling thoughts on trees, have you ever thought what the new residential sections will look like in years to come in contrast with our forest-like city, as viewed from the air? I am referring of course, to the new look in City landscaping—narrow side walks next to the curb, planting consisting mostly of shrubbery, and an occasional blue spruce, silver cedar, or deciduous tree. I wonder if these home dwellers are not going to miss the shade trees for which Denver has been noted among Western Cities. It’s the occasional hot days we have in Denver, when temperatures register over 90°, when shade trees are appreciated. Personally I would like to see a medium between the very dense shade tree growth we have in some sections of Denver and the open lawns characteristic of the newer residential areas.

American Elm Tree in City Park—Photo by C. J. Ott.
NATURE EDUCATION DRAMATIZED FOR CHILDREN AT THE MORTON ARBORETUM

Helen Bosworth

In a recent trip to the Morton Arboretum at Lisle, Illinois, I was fascinated with the educational program which was described to a Garden Club group by Mrs. Raymond Watts, the head of the Educational Department of the Arboretum. These asses are free and open to all ages. Naturally those for small children are separate but even these are vitally interesting as Mrs. Watts demonstrated them. Huge cardboards were displayed, known as dioramas, with the outline of a forest sloping to a meadow. On these, the youngest students such as Campfire Girls, Bluebirds, or Cub-Scouts, have the fun of placing the proper paper birds and flowers as they appear during the spring, summer, etc. (Some special instance makes these papers stick or come off at will.) A class of adults might well have difficulty in getting all these in their proper order and naming them also!

While I was there two young people, 12 and 14, came and, unrehearsed, demonstrated the pruning of a small tree. This tree was balled and put in a pot for convenience. Both children seemed delighted with the prospect and were working hard at the tree, explaining why they did this or that, when I had to leave to take my train back to Denver. I was so fascinated by the pruning lesson that I almost missed the train!

Another most interesting feature at the Arboretum is a permanent exhibit of the educational work. Particularly striking were the "Farm Scenes" made by young people from cardboard and placed in boxes about 18 to 24 inches square. The houses, barns, etc. were to scale and the backgrounds were painted in to demonstrate the good and bad ways of farming. They showed where contour planting should be done with crops or fruit trees, erosion controlled, etc. It was a very practical example that the students who did them could certainly never forget.

The most popular exhibit in the room was something resembling a pin ball machine—at least it was as popular as one! It was a glass case that stood against the wall, with about 20 different compartments. Each had a leaf or leaves in it. At the corner of each compartment was a small hole. A list of the correct names of the trees from which the leaves came was attached to the side of the case, with a similar hole by each name. Also attached were two pointed sticks with metal tips. When, with these sticks, one punched the right name at the same time as the right leaf, a light went on and anyone knew he had hit the Jack-Pot! It would be a fascinating game for all ages and I am sure that no one could forget the look of a birch leaf or a special kind of evergreen after the thrill of identifying it correctly and seeing the light go on.

With Denver's great increase in population, new streets with new houses are springing up everywhere. This means new plots of ground to be developed. Since trees contribute something to the garden which nothing else can, they should be considered first. Because they are big and of a lasting character, they are often considered expensive; but their first cost, including that of planting, pruning, spraying, and feeding when necessary, is far less than a lawn, a perennial border, or almost any other garden feature. Trees will stand neglect for years, but after even two seasons without care, a garden becomes a wilderness.

—HELEN FOWLER.

Don't forget the Rocky Mountain Horticultural Conference, Cosmopolitan Hotel, Denver, February 7 and 8, 1949. Two days devoted to latest Horticultural Information.

Mrs. Evelyn Johnston's group of Campfire Girls learn as they work on the Beaver Brook Trail.
GARDEN INTEREST

Jack Harenberg

A GARDEN can be interesting. Too often in landscaping our homes we stop with planting a few evergreens, shrubs, and trees, neglecting the finishing touches that make a garden outstanding.

Sculpture pieces—fine garden companions—are used only rarely in Denver gardens. The use of such objects can do a great deal to enhance the design of the garden.

For striking garden-effects in silhouette, artificial lighting can be used to advantage. The related shadow patterns are quite pleasing.

Unusual lamps, designed with a particular architectural style or garden scheme in mind, are always "comment-causing."

Gateways, means of entrance and exit, can be decorative as well as useful. With just a little thought for design, the gate can be made attractive, and again, add a point to garden interest. Iron gates especially give strength to the garden.

The use of well-planned bird baths, pools, rock gardens, barbecues and dry walls will further help to make our gardens pleasantly unusual.

It is well to keep in mind that unusual things must be skillfully handled to avoid making simply a museum of a garden.

As with all worthwhile permanent plantings attention must be given to soil preparation. While the ground can always be improved gradually around established plantings, it is far more desirable and easier to provide the best possible soil in advance. Deep working and the introduction of a generous amount of humus are essential.

Helen Fowler

COLD FRAMES AND HOW TO MAKE THEM

So many questions on cold frame construction come from gardeners who want to raise their own plants—perennial as well as annual. Begin by putting frames in place. Spade deep and smooth soil off with a rake. For each square yard of area included, dump in about one and one-half bushels of good soil. If soil is heavy add the same amount of sand and about a bushel of good soil. If soil is heavy add the same amount of sand and about a bushel of good soil. (Humus is ground peat moss, rotted vegetable matter from the compost pile or soil found under trees in woods.) All should be screened and very fine. Use no fresh fertilizer nor commercial fertilizer in seed beds. Work humus thoroughly into the soil before planting seed. Flatten with a board and cover with burlap. When plants are about 3 inches high, transplant to a bed, 6 inches apart in the row, allowing 12 inches between rows. Cultivate (I use a large nail) and care for all summer, and in the case of perennials you will have fine plants by fall. Try to have plants ready to transplant by June 1st. Add a little commercial fertilizer and manure, (old and well-rotted) to the soil in the bed to which you move seedlings.

Helen Fowler.

No "Green Thumber" will want to miss the Rocky Mountain Horticultural Conference, Cosmopolitan Hotel, February 7 and 8.
THE DYNAMICS OF RENEWABLE RESOURCES

In the November number we gave the first of a series of three conclusions from the outstanding talks given at the Inter-American Conference on Conservation of Renewable Natural Resources, held in Denver, September 7-20, 1948. This issue will include extracts from section IV, having to do with the Dynamics of Renewable Resources.

H. H. BENNETT,
Chief, Soil Conservation Service,
U. S. Department of Agriculture
Washington, D. C.

"The paramount issue before the world—and the Americas—today is continuing peace. Peace treaties are written at the council table, but they may be broken all too easily on the eroded hillsides of nations who do not have enough productive land to supply the basic wants of their population. The most dependable means we know anything about for attaining this goal (of food and peace) is the use of practical, scientific soil conservation.

"Good land—or lack of good land—always has been a vital factor in the progress or decline of nations and civilizations. The Americas have awakened to the danger of what is in store for us, if we do not turn away from past policies of exploitation and waste of our life-sustaining natural resources to a common policy of their wise use and conservation. Productive land is our most critical resource. Soil erosion is probably a greater threat to peace than even the atomic bomb. If in the past we had paid more attention to the world's land problems as a factor in permanent peace, international relationships today in all probability would be much better.

"Today we are faced with the dilemma of a limited and diminishing supply of land, on one hand, and a rapidly increasing population, on the other. Modern soil conservation is the prevention, control, or correction of all causes of soil decline. It is my opinion that erosion outlasts all other causes of malnutrition, hunger, and famine—which are the prime contributors to disturbance of world peace and good will."

FAIRFIELD OSBORN,
President, New York Zoological Society, New York, N. Y.

"From Canada to Patagonia there are too many evidences of land deterioration. The tempo of land misuse is quickened by rapidly increasing populations throughout the Western Hemisphere, as in truth throughout the world. Unfortunately, we are not dealing with a problem that is static. Its factors are constantly changing, in large part because of these growing population pressures. Consequently we are forced now to recognize one cardinal fact, namely, that the question of the preservation and wise use of our life-supporting resources must be dealt with in direct recognition of growing numbers of people. The population of the Western Hemisphere has increased in the last 2 months, by more than 500,000 people. Half a million more people to be clothed and fed from the products of a diminishing land base, even within the last two months! No wonder we are face to face with a situation of utmost gravity.

"Time is running against us. Action must be taken.

"I emphasize and lay great stress upon one paramount fact, namely, that it is more and more evident that our life-supporting resources must be thought of as a unity rather than in entirely separate categories. The most important concept that we need to hold in mind is that each resource is dependent upon one or more of the others. It is even more accurate to say that each resource is dependent upon all of the others.

"Another result of urbanization which, as far as I am aware, has received extremely little consideration is the continual removal of organic matter whether in the form of lumber, crops or animals, from the land to the centers of consumption, either for industrial use or for food supplies. Thus immense quantities of organic materials are forever lost either through disposal plants or being channeled as refuse or sewage into streams and rivers. As a result these materials are never returned to their places of origin. As we are well aware the processes of natural production follow a fixed cycle whereby dying organisms, whether plant or animal, return to the earth thus supplying the organic base up on which new life is created. In effect we are hacking at the organic circle that is life itself. In order to offset this drain that we are placing upon the land's productivity we manufacture chemical fertilizers which are widely accepted as substitutes for the organic materials that have been removed from the land. Herein lies a major illusion for it must now be recognized that these chemical fertilizers cannot by their very nature be considered as such substitutes, but are no more than supplements that restore to the land only some of the ingredients of which it has been depleted. The major point of interest, however, that I would like to stress that methods be developed whereby at least a considerable part of the urban and industrial organic wastes be not destroyed or lost but be returned to the land in order that as a functional part of our present day civilization, the productivity of the land may not be permanently impaired."

WALTER P. COTTAM,
Professor of Botany, University of Utah, Salt Lake City, Utah

"No organism or group of organisms since life began has so dominated the world as does man today. It is doubtful whether any cosmic event, including the recent ice age, has produced such catastrophic changes in the earth's mantle as has this intellectual biped whom Shakespeare characterized as being God-like in apprehension. When we see man annihilating time and space with his gadgets of communication, or unlocking the very secrets of matter, we must agree with the bard in ascribing to man some attributes of deity. But when we witness 'man's inhumanity to man,' or observe what reckless abandon he dissipates the resources of earth that support him, we can only marvel at his paradoxical stupidity. What new doors to the mysteries of both inorganic and organic nature man will soon unlock will surprise none of us. But with all these wonders of discovery and invention, there is not the slightest evidence to relieve us of the terrifying thought that in the future, as in the past, billions of human beings and countless hordes of animals and plants must continue to live by the soil.

"The slowness with which man comprehends his place in nature and, if he comprehends it; the reluctance with which he acts to preserve his niche in the universe remain mysterious peculiarities of his intellect. For nations of the Old World, whose attainment in the cultural arts has never been surpassed or perhaps equaled, flowered and decayed never again to rise. Whatever factors or combination
factors led to the decay of em-
res need not concern us here, for
simple fact remains that they can
ever again assume a bright spot in
family of nations because their
dl is gone.

The poverty of the Old World,
rendered partly at least by an in-
vershed soil was no mean factor in
rapid settlement of the New
world. The invasion of an unspoiled
intention by an intelligent but unen-
lightened civilization led to a psy-
ology of abundance that lies at the bot-
om of our resource woes today.

The resources of the earth in
hose conservation the science of ecol-
y can and should play an important
le are those that are supported by
soil mantle: our water supply,
ith surface and underground; our
arms, our flocks; our forests; our
wildlife.

While much research is still needed
all phases of conservation of re-
newable resources, the failure to main-
tain the soil in this country is due not
t much to ignorance as to an apa-
etic public and to a lack of intelli-
et political leadership. It would
sem that public education in the gen-
ral ecological factors that maintain
ur renewable resources, and in the
resent serious state of their deple-
tion is the only answer to these prob-
ems of conservation in a democracy
hese groups can
way the judgment of politicians.

With the world population surpass-
ing the power of the soil to feed us,
t is high time that the renewable re-
ources be managed in compliance
our accumulated scientific knowl-
edge.

ROYAL W. DAVENPORT,
Hydraulic Engineer, Geological Sur-
vey, U. S. Dept. of the Interior,
Washington, D. C.

"Fresh water, as a renewable re-
source, is viewed in relation to the
supremely dominant and pervasive
role of water in Earth processes and
life. Fresh water has almost limitless
utility for domestic, irrigation, indus-
trial and recreational purposes. The
advancement of civilization is closely
linked with the quantity of water that
is used by the people."

JAMES P. POPE,
Director, Tennessee Valley Authority
Knoxville, Tennessee

"There is now a great movement in
the world to provide economic oppor-
tunity and a better standard of living
for people of many lands. All nations,
to achieve progress in this direction,
are dependent upon the development
and use of their resources. Of pri-
mary importance to the unified re-
source development of any area is the
control of water. Through every pe-
riod of history its control and utiliza-
tion has had a direct bearing on the
standard of living of the people.

It happens that most of the basic
resource development problems are so
closely related that they should be
dealt with together. The water re-
sources of a region predominately af-
flect the kind and character of its ag-
culture and forestry. The river,
when converted to electric power, can
furnish abundant energy that facili-
tates the development of industry to
process local minerals and products of
the land alike. The industrial econ-
omy of a region, the character of its ag-
culture, its transportation, are all
tremendously influenced by these fac-
tors. They cannot effectively be dealt
with as separate resource problems,
since the manner in which any one is
developed vitally affects others.

The fact that the best way to pre-
sert siltation of reservoirs is to conser-
ve the soil and forest cover, and to hold
the soil and water on the land is a
fortunate circumstance. It is clear
that in the carrying on of these func-
tions, unified operation is of much
importance if best results are to be
obtained.

"Abundant, well-distributed rain-
fall, one of the most desirable re-
sources of the world, had become a
serious threat to the land resources in
the Tennessee Valley region. When
the intense annual rainfall occurs on
land without forest or cover, destruc-
tion starts at once, especially on the
hills and slopes. Carried away in its
swift runoff are the elements of soil
fertility—elements which mean health
or sickness, plenty or poverty, for peo-
ple living on the land. With ade-
quate soil and forest cover on the
slopes the runoff slows down. Water
seeps into the soil to promote plant
growth. It does not flow so rapidly
into the river as to contribute to the
devastating floods, but rather it is fed
into the streams gradually. Thus, it
is readily seen that on the successful
control and development of the water
resources of the Valley depends the
welfare of its people.

"This movement toward the de-
velopment of natural resources by the
nations is a solid factor for peace in
the world. Such development will re-
quire a long, hard and continuous ef-
fort. Yet, it is constructive effort—
effort that will provide a firm founda-
tion for the future. On such a foun-
dation rests the hope, aspiration, and
welfare of people the world over."

HONORIO PEREZ SALAZAR,
Chief, Lands Division, Ministry
of Agriculture and Livestock-Rais-
ing, Bogota, Colombia

"Water, woods, soil, forage and
wildlife comprise a biotic whole in
relative equilibrium, the loss of which
may result in the ruin of any or all of
its constituents.

"Soil is formed through the action
of man, animals, wind, water, ice and
plants and its fertility derives primar-
ily from organic matter and clay. For-
est protect the soil from erosion and
contribute to its renovation. The man-
agement of forest wildlife is made
possible by a knowledge of plant asso-
ciation and the habits of economically
important animals.

"Forest land use, best managed on
basis of multiple use and their
values, can be preserved under a sys-
tem of sustained yield. Watersheds,
wildlife and timber can be managed
by proper harvesting, planting and
protection from disease and fire. The
use and growth of forests must be
kept in balance or regulated accord-
ingly to restore depleted land.

"Forests have a motor function in
creating hydroelectric power for in-
dustry. The replenishment of ground
waters and maintaining the flow of
streams are dependent upon stabilized
and forested watersheds. The estab-
lishment of hydroelectric projects
should be accompanied by the refor-
estation of areas where they are lo-
cated.

"The burning of plant growth ster-
ilizes the soil, destroys its humus con-
tent, and reverses the constructive pro-
besses by which fertility is built. Fire
can also serve as a useful tool if prop-
ly employed. In some situations it
aids the control of plant diseases and
influences plant succession in a pre-
dictable manner."

NEWTON B. DRURY,
Director, National Park Service
Department of the Interior
Washington, D. C.

"Some lands are so unique and
precious that they should be reserved
for public inspiration and enjoymen."

E. R. KALMBACH,
Wildlife Research Laboratory, Fish
and Wildlife Service, U. S. De-
partment of the Interior,
Washington, D. C.

"Man who has done most towards
setting conditions which at one time were in reasonable equilibrium still occupy an influential position. He may accentuate still further that disposition or, with foresight and caution, may make greatest use of a generous, yet exacting Nature. He may little her stubbornly and perennially attempts to gain his ends or he may adjust his activities as to conflict least with an order which is in self-obstinate and self-adjusting. It that simple thought which I wish emphasize—namely to live, as far as it is humanly possible, cooperatively, satisfactorily and enjoyably with the idyl life that is such an essential element of our natural resources.

Olaus J. Murie, Director, The Wilderness Society, Mosse, Wyoming

"The technique of conservation must vary with the nature of the thing to be conserved. First of all there must be agreement that something is worth saving. Without this agreement there will be confusion and lack of purpose.

"We realize today the importance of the soil for human survival. Our biologists have learned much in the field of ecology and are prepared to advise us on the techniques for insuring proper use of range for livestock and game, and for sustained-yield use of our forest resources—so in actice when the public becomes willing to accept them.

"In other words, we have made a great deal of progress in our studies of wise use of our natural resources; the materials of the earth that insure our physical survival and creature comforts. But we know there are other important resources that contribute to our welfare; resources that are less easily perceived; the intangibles qualities of experiences that help to shape for us a pleasant living, and give color to our experience and aid us in our well known 'pursuit of happiness'. These intangibles in our environment are, not as easily conserved or dealt with.

"Consider for a moment the conservation of wildlife. We have been concerned chiefly with providing protection for the birds and mammals, to prevent their mere destruction. Recently, we have become more concerned with preserving also their natural habitat; not only saving their lives, but saving their natural way of life. We are beginning to appreciate the esthetics of the undisturbed operations of Nature in our forests, deserts, mountains and streams.

"Our concept of what constitutes the highest form of out-of-door recreation considers the animal life in its normal relations with forests and other vegetation; it includes unhampered streams and unspoiled lakes; the natural features of scenic mountains, open sage plains or desert cactus; the coastal rain forests, tropical jungles, or Arctic tundra. Each of these and many other features appeal to us and furnish the important elements of the intangible recreational resource we wish to preserve.

"We are beginning to emphasize the aesthetic appreciation of the out-of-doors. Our recreation areas are beginning to hold for us not only the facilities for a certain kind of social vacationing, but an appeal to a certain kind of primitive beauty and adventure.

"We can no longer go out to seek new continents. Even the spirit of adventure is often stifled in us by the ease and comforts of modern life, or by the strife and discord that often interrupts normal living. But appreciation of Nature is not dead. We enjoy reading and contemplating woods and vistas of the long ago. We have already begun to plan for the conservation of wild country where such experience in a more limited measure may be enjoyed.

"We have generally considered recreation a luxury, to be enjoyed by the few who had the means and the time for it. In other words, recreation has been considered incidental in our way of life. This concept is rapidly changing. Managers of large groups of factory workers recognize the absolute necessity of periodic relaxation. Our nervous systems are receiving the impacts of a noisy, turbulent, mechanical age. We are not holding up well under the strain. Nervous disorders are more prevalent. It is becoming evident that we must no longer consider recreation incidental. We must henceforth look upon it as part of our standard of living.

"These are experiences that fill a need in modern man, whom civilization has removed from the opportunity to strive and enjoy in a more primitive world with plenty of space. These experiences that give modern man a touch of solitude and reflection, that take him out of the swarm for a time and imbue him with dignity as an individual. These are not needs of a few 'outside people.' Whether now realized or not, these are real needs of modern man. I believe the future will verify this belief. Medicine and psychology are already propounding it. The urgent question now is Will we act soon enough to preserve these last few wild places which each succeeding generation is bound to appreciate more than the last? The last hour for making this sure in the United States is now upon us.

"In view of this obvious trend, this real human need for beauty and wholesome outdoor recreation in surroundings of inspiration, it has become necessary for us to revise our planning technique. It will no longer do to plan our economic, commercial developments, whether they be dams for power and irrigation, or any other enterprise that changes the face of the land, without planning for the spiritual life of the people.

"But the great problem which comes first is to rescue from too hasty economic planning sufficient public areas for the future needs of our people who will demand a place to go for rest and recuperation. Our civilization has reached the degree of complexity and confusion where mental and spiritual health ranks in importance with the need for food. It will be necessary for the social and medical engineer to work side by side with the construction engineer if we are to achieve the satisfactions we hope for."

Register now for the Rocky Mountain Horticultural Conference, February 7 and 8. Call Tabor 3410 today to register for meetings and banquets.

RECOMMENDED BIRD RESTAURANTS

"The man's queen," the neighbors say, "he's gathering wild seeds all summer." But look what he has on his feeding board now—Juncos, Woodpeckers, Nuthatch and Vesper Sparrows—even a Long-eared Owl comes occasionally. He has bacon rind nailed to a tree and makes sure puddings with oatmeal and corn mush and fat drippings. All kinds of birds seem to like that. Surely if there was an Duncan Hines for bird-feeding stations that one would be recommended.

A. S.

Annual Banquet—Rocky Mountain Horticultural Conference. Make tentative registrations now—call Tabor 3410 or send registration to Horticultural House, 1555 Bannock, Denver 2.
ROCK GARDENS FOR COLORADO

By L. J. Holland

Almost everyone has, or wants, a rock garden, but it seems that a great many people do not have a definite idea as to what plants are compatible to each other in such a project. To me a rock garden should simulate Nature as nearly as possible; in other words, Tulips from the Old World do not harmonize with Columbines from Colorado. With this in mind, may I suggest some plants indigenous to this region, acceptable from the viewpoint of beauty as well as being representative of the conditions we are trying to duplicate.

Before we go into further detail concerning the actual plants, let us consider the location for our material. To get the best results, the size of the stones used should largely be governed by the size of the plot allocated to the rockery; stones that are too small spoil the balance of a large plot, and vice versa. Perhaps the most vital point is to so place the stones that they look as if they had always
been there. Avoid any artificial look if you wish to achieve a gratifying whole. For the plants, let us begin with those that prefer a sunny situation.

**Mariposa Lily, Calochortus gunnisonii.**

Among the first to bloom are the Sandlily and the Pasque Flower, followed closely by Tradescantia, Yellow Violet and Bitterroot. At about this time the fronds of several Ferns that grow among the rocks begin to unroll. Among these are Lip Fern, Cloak Fern, Brittle Fern and Parsley Fern, all of these may be naturalized quite readily and do not require as acid soil as most Ferns do. There are three or four varieties of Calochortus or Mariposa Tulips that are very lovely indeed and are quite at home in the rock garden, although they may require some protection in the colder regions. Harebells and Blue Violets seem to do as well in sun as in semi-shade. For the larger garden Poppy-mallow and Leather-cup Clematis are a welcome addition.

This should bring us up to the blooming season of Mertensia, Penstemon (several varieties of which are suitable) and Gaillardia Golden Evening Primrose and Cone Flower (Ratibida columnaris) are well worth growing, but both behave for me as biennials, although they are perennial in the southern part of the state.

For that part of the rock garden that has some shade and a more moist condition can be maintained, some of the most beautiful natives are at home. Trout Lilies, Globe Flowers and Shooting Stars should be planted more often. Several varieties of Columbines and Delphinium, as well as Monkshood thrive in semi-shade, especially so if well rotted Pine needles are incorporated into the soil.

Late Summer and Fall do not give us such a selection as do the earlier months. Lupines, Wild Sweet Peas and Purple Vetch are very showy. The Asters, Erigerons and Senecios carry on until frost. If space permits, Verbena bipinnatifida provides rosy-purple flowers until freezing weather sets in.

Although it is doubtful if anyone would care to grow all the plants I have listed in a rock garden, it must not be assumed that this covers all the plants that are suitable for a rockery. In fact there are a great many more, possibly some that are more desirable than those mentioned.

**Beardtongue or Penstemon.**

In the spring of 1901 Mr. Long became a clerk in a novelty store in Boulder that had the name of Noah's Ark. The following spring he became manager for the store. Almost from the start Mr. Long introduced the handling of flower and garden seeds. This department under his skillful management continued to grow until he discontinued the novelties and changed the name of the store to The J. D. Long Seed Company.

In 1915 Mr. Long purchased a tract in north Boulder and began growing roots and bulbs. He found the climate and soil ideal for the production of iris, gladiolus and peonies. Through the years he not only purchased new strains and originated many but through the medium of his catalogs popularized their growing throughout North America. His catalogs were always in great demand not only for their offerings of flowers but for the advice that he wrote for their care—and for his “J. D. Sez, Sez'e” column. It was filled with philosophical messages and humor.

Mr. Long was not only a successful business man and gardener but found time to participate in many civic activities.

**DENVER COUNTY EXTENSION SERVICE**

What it Offers to the People of the City and County of Denver

The 1943 EXTENSION PROGRAM in Denver County consisted mainly of work with adults on the Victory Garden Campaign and the control of weeds, pests, and plant diseases. It consisted also of work with juniors in organizing and conducting 4-H Club work on Victory Gardens, poultry, foods and nutrition.

By 1948, the expanded program included work in Agricultural Organization and Planning. All classes of field crops; horticultural crops, fruits, potatoes, commercial vegetables, home gardens, home-gardens improvement; all classes of livestock; soil management and soil conservation; irrigation; agricultural economics; housing and home furnishings; nutrition and home-food production, preparation and preservation; health and safety work; home management; clothing and textiles; family relationships, recreation and community life, and a wide variety of informational service and cooperative work with industrial, commercial and agricultural organizations, and groups.
HIGH ALTITUDE GARDENING

MRS. GEORGE J. BAILEY

I have been interested for many years in experimenting to find what plants will do well in our high altitude. We have a home in Walden with altitude of 8200 and a summer home near Rabbit Ear Pass with altitude of about 8700 and in these two gardens we have successfully grown literally hundreds of varieties of plants from all over the United States, many of the far eastern or western plants doing as well or even better than the native Colorado varieties. We have a very small dolgo crab-apple tree which bore over a half bushel of lovely apples this year from which I made 64 glasses of jelly, preserves and butter. Our young currant bushes also were loaded with fruit and they are in a very unprotected windswept place.

WHAT HUMUS DOES

Reprinted from Western Colorado Horticultural Society Quarterly Bulletin

Humus is useful in the soil because
1. It assists in breaking down rock material.
2. It improves tilth, loosening tight soils and binding loose soils together.
3. It increases the moisture-holding capacity of the soil.
4. It results in better aeration.
5. It reduces soil erosion.
6. It improves the chemical condition of the soil, storing and releasing nutrients.
7. It acts as a buffer in preventing sudden chemical changes.
8. It is a food for soil micro-organisms.

A MORE BEAUTIFUL AMERICA

Reprinted by Permission from American Fruit Grower

Beauty of the countryside should logically originate from the horticultural talent of fruit growers. They are the largest, most prosperous and most influential horticultural group in the United States. To lead the way with attractive plantings around farm homes, with landscaped drives and vistas and with care and maintenance of ornamentals equal to that given the orchard is the natural bent of the fruit grower. Beauty in home surroundings returns contentment and satisfaction, an added joy in the noblest and most discriminating of occupations. Because tasteful gardens and grounds increase the owner's happiness is reason enough for planting them but, in addition, more beautiful country homes contribute to the cause of better living and moral and spiritual improvement.

The home of an orchardist should, therefore, reflect the horticultural instincts of its owner. But there is more than charm in identifying an orchard with well-selected ornamental plants. Its beauty makes an impression which the highway traveler likes to remember. There is advertising value in a well-planted orchard. Let us lead with the best planted homesteads in rural America!
HASTINGS' REPORT ON STATE FORESTRY

This association in cooperation with the Society of American Foresters has recently mailed to influential people over the state several hundred copies of the abridged report of the Hastings' "Survey of State Forestry Administration in Colorado". Governor W. Lee Knous made arrangements to have this abridged report prepared in quantity for the information of citizens of the state. He writes in part: "The value of our state's renewable resources—forests, orchage, soil and water—cannot be over-emphasized. Intelligent planning or their conservation, improvement and wise use is vitally important to the future growth and development of Colorado. I have asked all members of the incoming General Assembly to give careful study to the findings and recommendations of the survey to the end that the subject may be given proper and advised consideration by our next Legislature."

Any who have not seen this report may obtain a copy at Horticulture House as long as they last. Governor Knous urges everyone interested to inform themselves on these conditions "in order that informed public support will be forthcoming for any program for conservation and development of our renewable natural resources which the 37th General Assembly will formulate."

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WE NEED RESEARCH ON ORNAMENTAL PLANTS

George W. Kelly

Every few days some new pest attacking our ornamental trees comes to my attention. A few years ago we thought that we were very fortunate in Colorado to have the native and introduced trees and shrubs so free of serious pests. Suddenly we are waking up to the fact that when some of the common pests of the east have been established here and they we are not kept in check by their natural controls they may spread very rapidly.

There is no existing agency or group which has the time or money, at present, to follow up these pests as they are discovered and to suggest suitable remedies. The peach growers and potato farmers may exert some pressure and obtain some help in solving their problems, but the growers of ornamental plants have not been organized in a way to demand attention. The Colorado Forestry and Horticulture Association is the nearest thing to such an organization but its most valuable contribution at present is to suggest the needs and the action which should be taken.

The European Elm Scale has established itself in the state in recent years until there are few American elms that are not seriously damaged by this pest. Recently the Cottony Maple Scale has appeared again and is rapidly spreading not only to maple but to elm and many other woody plants. A serious attack of borers in birch and honeylocust has been noted. The Cedar-hawthorn Rust has spread to an alarming extent in recent favorable years. The threat of the Dutch Elm Disease has been very real as the bark beetles which spread this disease have become very numerous. Chlorosis in maples and oaks is very prevalent and there are strong indications of other diseases of the maple. Fireblight in apples, crabs, hawthorns and mountainash is a continual source of worry. Aphids and Red spider have become increasingly serious in Colorado juniper and Colorado spruce trees. A new Borer and a new Caterpillar have appeared to attack the spruce.

There are several agencies already set up which are capable of giving real assistance in this work if they were authorized to spend the time, manpower and money on these problems. The Federal Bureau of Plant Industry and the Bureau of Entomology and Plant Quarantine have been very helpful and are equipped to put the best experts on the problems but do not have the funds available. The various departments at Colorado A. & M. College are very interested but again do not have the funds to do any extended work. The State Entomologist has offered to help if authority and funds are supplied. Commercial tree men and nurseriesmen in the Denver area have indicated a willingness to cooperate in any way possible, even to the point of some financial help. The Denver Public Schools and the Denver Parks Department are anxious to help in this research work. Work is needed in all phases of ornamental plant work as well as just pest control. Testing new plants, breeding improved varieties and finding improved cultural methods are some of the things needed. The state A. & M. College at Fort Collins and the Cheyenne Horticultural Field Station are set up to handle this kind of work if they are authorized to do so.

The paramount need now is enough
interest shown on the part of Colorado citizens to convince some of these agencies that this work is imperative and then continued interest to persuade legislators to appropriate the necessary funds. Organizations such as this association may make these appeals but a few individuals backing them up with requests to their senators and congressmen are necessary to secure action. This is not the other fellow’s responsibility. If you love Colorado’s trees it is up to each of you NOW.

WINTER PROTECTION FOR TREES AND SHRUBS

Reprinted from “Shade Tree Digest” by Swingle Tree Surgery Company

Winter is often a highly critical period of the year for trees and shrubs, since injuries that stem from diverse weather conditions are likely to be severe. While it is not always possible to provide absolute protection against the elements, much can be done to reduce the damage attributable to two of the most common forms of winter injury.

Winter drying, which affects evergreens particularly, results from a deficiency of available water either through freezing of the soil or from actual drought. Transpiration, the release of water vapor through the leaf and branch surfaces, never ceases. The rate of transpiration is normally low throughout the winter months but increases during periods of warm, sunny weather and strong winds. Unless the roots can absorb enough moisture from the soil to replace the water lost during such periods, the leaves wilt, turn brown and die. Terminal twigs on the side of a tree most exposed to the sun and wind are usually the worst affected, though occasionally the entire tree is jured or killed.

The danger of winter drying of evergreens can be reduced by providing a mulch of dry leaves, rotten manure or hay, eight inches to foot in depth and extending well beyond the spread of the roots. This aids to prevent excessively deep freezing of the soil and thus facilitates absorption of water by the roots. To insure an adequate supply of soil moisture during the winter months evergreens should be watered heavily before the ground freezes. With small evergreens the rate of transpiration can be reduced by protecting each tree against sun and wind with a screen of burlap or similar material attached to stout stakes driven firmly into the ground.

Wind, snow and ice storms annually destroy or mutilate thousands of valuable shade trees. Following such storms it is not at all uncommon to see entire trees uprooted, and others with branches so split and broken that repair is almost impossible. Here, an ounce of prevention is certainly worth many pounds of cure, for much of the injurious effects of such storms can be averted. By judicious pruning, unduly thick crown growth can be thinned to provide greater security for the tree in high winds. Abnormally long and drooping branches, usually too weak to withstand heavy accumulations of snow and sleet, can be shortened, or occasionally removed, without impairing the symmetry or beauty of the tree. Branches with V-shaped crotches, which are structurally weak, can be made more secure against storm damage through the installation of cables and braces.

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CARE OF HOUSE PLANTS

DORAS HEDBERG

Probably the greatest cause for the high death rate in house plants is drowning. At least this is indirectly true. If a plant does not actually die from too much watering, it puts forth a spindly, pale, unnatural growth, which causes the owner to become discouraged, and it is committed to the trash heap.

In the cacti and succulent group, one finds the exact opposite taking place. How often does one hear, “Oh, cacti need practically no water.” This is not true. They do need water in moderation. A thorough soaking, clear through the pot, is very beneficial to all plants. A good method being to place the pots in a shallow pan, partially filled with water. In this way it is soaked up from the bottom. Spraying the tops at this time is highly recommended. All plants enjoy a slightly warm bath occasionally, even the very temperamental African violet. Care should be taken to keep the plants out of the sun until all the moisture has evaporated from the leaves, otherwise they will become sunburned.

A humid atmosphere is most highly desired. A humidifier or containers of water set among the plants is very helpful. Ivies or other vines which do well in water are excellent for this purpose.

Each person has to take the time and interest to study the specific conditions under which his own plants are placed. Then only will he know “how often” to water them.

A minimum of water and a maximum of sunshine, for most plants, is a good rule to follow.

In order to give my camellia plant enough humidity I made a cheesecloth tent over it and I spray the cloth at least once a day. I keep the plant in the cool basement and it now has several lovely pink blossoms. It is a great joy on these cold wintry days although I do have to raise up the cheesecloth to look at the blossoms.

MYRTLE R. DAVIS

WILDERNESS SOCIETY

Many of our members will be interested in the objectives of the Wilderness Society.

“The Wilderness Society is a national conservation organization incorporated in the District of Columbia to secure the preservation of wilderness—to carry on an educational program concerning the value of wilderness and how it may best be used and preserved in the public interest—to make and to encourage scientific studies concerning wilderness—and to mobilize cooperation in resisting the invasion of wilderness—There are 77 wilderness, wild primitive, and roadless areas within the national forests. There are 28 primeval national parks. Other Federal areas with wilderness include national monuments, wildlife refuges, and Indian reservations. There also are State parks and preserves where wilderness is protected. The Wilderness Society’s most particular, immediate purpose is to DEFEND THESE AREAS — It’s long-time, broad purpose is to increase the knowledge and appreciation of wilderness. Annual Membership is $2.00. Send to The Wilderness Society, 1840 Mintwood Place, N. W., Washington 9, D. C.
TUBEROUS BEGONIAS

By JACOB V. SCHAETZEL

TUBEROUS begonias should be more often planted in the Denver area, including the mountain area, because they have proven very successful over the years.

The bulbs are generally purchased and planted in January and February. Care must be used in seeing that the concave portion of the bulb is always planted up. One can usually observe the pink growth which starts about this time. Plant this bulb by dressing it down with your fingers in a flat containing about one-halfpeatmold and one-fourth light loam soil. Mix with soil and peat moss as much bone meal as three fingers will hold. Additional fertilizer is not necessary. Place the flat in a dark corner until a good growth is started. This should be about a week to ten days.

When the plants are a few inches tall, plant them in separate pots and you can then put them in a sunny location in the house. Keep them here until all danger of frost is past. Then they should be planted outdoors where they get at least a half day’s shade.

The plants do well in moist soil but, of course, care must be taken to see that it is not too wet. If possible, plant under or around trees which permit the sun to go through them, for example, Honey Locusts. Their leaves like to be sprinkled especially in the summer evenings.

Personally, I like the double types. They are exotic plants which have short stems and when picked and placed on top of water in a flat vase, they ordinarily last four or five days. They bloom from June until frost and have no known insect pests. A light frost will not kill the bulb, but after the first light frost, they should be taken up, dried out by keeping inside for a few weeks and then the dried out top should be removed from the bulb. The bulb is preserved in dried peatmoss in a temperature around fifty degrees. The bulb will last as long as 15 years.

The plants can be divided by taking off small parts of the outer rim of the bulb containing a shoot. The February, 1947 issue of THE HOME GARDEN contains a very fine article on kinds, types, etc.

Are you planning to attend the Rocky Mountain Horticultural Conference? Reserve February 7 and 8 for the sessions of the Second Annual Conference. Call T'Abor 3410 to make tentative registrations or send registrations to Horticulture House.

In planning your garden mulches, keep in mind that the object of covering is not to keep the plants warm but to keep the ground frozen and to maintain an even temperature within the soil. This answers the question of the TIME to apply the covering—after the ground is frozen. Have you covered your roses? It is not too late. I like to use good topsoil for covering. Instead of removing the soil in the spring, it is worked into the bed. The dead tops of the plants should be removed at this time. From the live green of the stem remaining will come the growth which will produce the roses for the year.

HELEN FOWLER.

Have you read ALL the extracts on pages 10-15? They contain the most important statements ever made in this magazine.
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There is an outstanding list of experts on the program. For the first time we are arranging for commercial exhibits. Come and see the latest in tree and garden tools, insecticides and accessories.

ROCKY MOUNTAIN CEDAR
Taken from U. S. Forest Service — Region 2 — Administrative Notes

In 1938, an outstanding specimen of Rocky Mountain cedar (Juniperus scopulorum) was photographed on the Roosevelt Forest. This tree is located in a gulch about 600 yards northwest of the old Eggers post office. It consists of a single massive stem measuring 28.1 inches, d.b.h. and is 39 feet high. The unusual size, development and age of this tree (or any others of its species of equal or larger size) fully justifies its preservation from possible damage or cutting, since it represents probably about the maximum development of Rocky Mountain cedar in Colorado. We may be a little over optimistic about this being the largest specimen of Juniperus scopulorum in the Region. If anyone knows of a larger individual tree of this species, we shall greatly appreciate his reporting it.

Rocky Mountain Cedar referred to is on back cover.