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The Green Thumb

Vol. 7 SEPTEMBER, 1950 No. 9

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Planting for WEATHER CONTROL

For centuries people have complained about the heat of summer and the cold of winter, but until recently have felt that there was little that could be done about it. Now weather conditioning inside of houses and offices is becoming more and more common and this matter of weather control is extending out into the lawns and gardens.

Windbreaks of evergreens properly placed to turn aside the cold fall and winter winds prolongs garden pleasures for weeks and sometimes months. Frost pockets can be drained off thus lengthening the blooming season of your flowers into the autumn.

Shade trees around a patio make the temperature as much as 25 degrees cooler in summer and how much more enjoyment, health and happiness you get from the use of comfortable, well arranged home grounds.

There are many problems of planting for weather control that members of the Colorado Nurserymen's Association have studied and their knowledge and experience is yours for the asking.

COLORADO NURSERYMEN'S ASSOCIATION

See the February issue of the Green Thumb for list of members.
THE LITTLE RED SCHOOLHOUSE
AND ITS OFFSPRING

There may be quite a bit of sentimentality attached to the "little red schoolhouse," with its "hickory stick" and its "good old-fashioned rule days," but—would we really go back to it?

You know better! And so do our children! In June, vacation sounds like a most desirable time: there are so many things to be done, so many out-of-school activities! But there is a feeling cropping up, now and then, that it would be fun to go back, see the other children, say hello to the teachers, feel the atmosphere of the school, and all it stands for.

When September comes there is a real hankering for school; but it is not the old type of little red schoolhouse, that causes the hankering! Our modern schools have a "pull" that is far removed from the impression which the barren, unattractive and severe buildings used to make upon the young minds. No wonder they are glad to get back to a surrounding that often makes up for the everyday drabness of many a home. Denver is fortunate in a tradition of attractive schools and attractive schoolgrounds.

Twenty-five years ago Denver was actually leading in its well-landscaped schoolgrounds, as it was in many other educational activities. That was the time when plans of Byers Junior High school were requested by foreign countries and when its schoolground plans were publicized in foreign literature. It was a time when Lake Junior High was known as the "most beautifully located Junior High school in the United States." And South High school was pointed out as a sample of what education can derive from such intangibles as tree and shrub collections and from surroundings that provide the proper atmosphere for a receptive mood in education. National school magazines, like the School Board Journal and The Nation's Schools requested magazine articles on "How Landscaped School grounds attractively planned and planted may do more than simply set off a nice building; they may be educational, with a variety of plants suitable for use in the community or for study by biology classes.

Grounds Satisfy Educational Needs." Let me take you to the grounds of South High school today and let me show you what a wealth of plant material is found there. It is a veritable showground of unusual trees and shrubs.

Our capitol grounds boast of such trees as the Ginkgo or Maidenhair Tree, and the large Hackberries and Kentucky Coffee Trees. All are found at South High. And in addition you'll find such rarities as Hickory, Yellowwood, Goldraintree and even a Redbud tree.

A number of different kinds of hawthorns are in evidence, different kinds of maples, and even an English Oak. Do you want to know the distinguishing marks between Ohio Buckeye and Horsechestnut? Both are rare; this very desirable shrub is fragrant enough to be noticeable for almost a block as you pass along the street.

Well, you may say, that is interesting enough, but just what is the educational value of having a tree and shrub collection on a schoolground? After all, few students will go in for nursery practice, or for landscaping. Why bother other children with such things? They have there. So are ashes, elms, lindens, poplars, locusts.

A trip around the South High grounds, in other words, means a condensed study of the majority of dependable trees growing in Denver.

The same thing holds true of the best shrubs used for home planting. A few, like Viburnum carlsl, are rare; this very desirable shrub is fragrant enough to be noticeable for almost a block as you pass along the street.

Schools are intended to teach a better way of living—how to get more of life's necessities and how to enjoy the finer things of life. Schools should set the pace for coming generations and demonstrate as well as teach the fuller and richer life.

South High School Denver.
mean by "education." True enough, the three Rs can be taught—and were taught—successfully in the old little red schoolhouse—provided always that a good teacher was inside.

And yet, we now have up-to-date school buildings along with the good teacher. And we find that said good teacher can do an even better job in these improved surroundings. But in the meantime we have come to expect more than the fundamental teachings.

Does anyone doubt that a child gets a more wholesome attitude toward education if his school is a pleasant place to go to, and is located in a pleasant surrounding? Landscaped schoolgrounds do much to make a child want to go to school. As between the hickory-stick and the hickory tree I can’t help but feel that the tree is the more effective. Don’t you?

Now for a different angle. We often hear the complaint that we do not identify ourselves with our government, that we think of the government as "they" instead of "we." I have seen many an example where a clever teacher and a live school principal were able—through the schoolgrounds—to instill this idea of making a child feel as part of his school, of being part owner of it, of feeling a personal responsibility for "our" school and "our" grounds. Citizenship became a real experience, not merely a big word (and too often a dull, unpleasant one).

This is one of the "intangibles" of good education. Shall we touch upon a few others?

To many of us one of the most important attitudes to be instilled in a growing child is his relationship to man and to nature. You may use the religious terms if you prefer; the proper relationship to God and Man is the essence of religion, and that kind of religion has the sanction of practically everybody to be taught in school.

Is there any easier way to create love of nature than by surrounding a child with an attractive bit of nature itself? We like people whom we can call by name and whose day-by-day life we know. So do we like other living things whose names we know and with which we grow up. Is it any wonder the "old swimming pool" has taken on a glamour far beyond its merit? We knew it intimately.

There is no question in my mind but that ex-pupils of lovely Lake Junior High school will carry a pleasant memory of their school with them. It is said that nobody can ever be quite unhappy if he has stored within himself a "picture-gellery" of pleasant experiences to which he can turn at will all through life. Now, if a simple thing like attractive schoolgrounds can furnish some of those mental pictures—isn’t that a good investment in education—education from the broader viewpoint?

Other intangibles are those of health, preparation for worthy home membership, learning a worthy use of leisure (by contact with nature), instilling proper citizenship in the care of schoolgrounds—we might continue in many objectives of modern education.

All this may impress some "practical" people as the more or less harmless ravings of an enthusiast for school landscaping. The killing argument against landscaped schoolgrounds, especially in our arid climate, is always: "How can you make things grow with hundreds of youngsters romping around them?"

Much of the work and expense of landscaping schoolgrounds may often be done by the pupils themselves or their parents and they all may have a real picnic doing the work.

Well designed grounds may give visual evidence of the art theories which are taught inside.
ing all over the place?” and “Who is going to take care of things in vacation time, when school is not in session?”

This is not a dissertation on how to landscape schoolgrounds. It is not too difficult to plan schoolgrounds in such a way that both playground and ornamental ground have their proper place. It means cooperation with the architect from the very beginning. It means the proper location of the buildings. It means a sufficiently large amount of ground; it means proper

The average small community schools are, from the outside especially, the most dreary and uninspiring places in the district. This is not necessary.

are not playground. After all, a mother puts a stop to playing baseball in front of the mirror; justly so. The old gag still has merit: “there is a place for everything, if you keep everything in its place.”

Maintenance in a dry climate? Perhaps the answer can be found in what has happened to Colorado’s roadside plantings. Due to the war, among other things, little or no maintenance has been given to various hardy native plants around a school, a few ponderosa pines, a few sumac or skunkbush, mountain mahogany, wild roses, chokecherries or coralberries.

Till, don’t be surprised if you find that help comes from most unexpected places: an interested school child helping along in their care, a mother donating some of her choice tulips, iris, spirea bushes, even a father—bless him—providing a blade or team for a few days to do the proper grading or cultivating.

Perhaps such unexpected results are part of the educational function of a school in the larger sense.

M. WALTER PESMAN.

NO, ‘TAINT SO!

Is Colorado a combination of Maine, Michigan, Maryland and Mississippi?

According to so-called “hardiness maps” dividing the United States in so many zones of like plant material, we are finding ourselves in the same zones as the states mentioned above.

And according to some well-meaning “experts” we ought to be able to grow rhododendrons and azaleas, because they “grow as far north as Massachusetts.”

In reality such maps with beautiful lines, called isotherms (lines of equal temperature), have little meaning for us. Colorado’s plant growth is not primarily limited by the average annual minimum temperature, on which such zone maps are based.

If a map could be made showing the acidity of the soil (the pH factor), the moisture content of the air, and then combined with such an isotherm map—we’d have something more dependable. Even then, the character of soil and the rainfall amount would have to be taken into consideration.

All of which should teach us that not only gold is where you find it, but that the best way to discover what plants will grow where, is to give them a try and decide on the basis of the try. Simple, isn’t it?

SAWDUST MAY INCREASE SOIL ACIDITY

The acid content of wood sawdust varies with the species of tree from which it comes, according to a report made by M. M. McCool in the Boyce Thompson Institute quarterly. Numerous trees were tested including yellow pine, red pine, larch, locust, spruce, white-, red-, black- and pin oak, birch, elm, hemlock, redwood, maple and cypress. It was found that cypress had the lowest pH value, and the highest was that of hemlock. It was also found that the values of some of these became higher upon leaching with distilled water; hence the pH value in a soil is likely to increase with time as some sawdusts placed in the soil are leached by rain water. In some cases, addition of sawdust to the soil was proved to raise the soil’s pH value, increasing the soil’s acidity. Thus, the unfavorable results often obtained after adding sawdust to the soil may be due to its subsequent increase in acidity.

From the Shade Tree Digest, May, 1950
NATIVE FLOWERS OF GARDEN VALUE

L. J. HOLLAND

It is almost impossible to pick up a garden magazine that does not have an article about some plant that has been introduced from the Old World, but seldom a paragraph about American natives that respond reasonably well to average garden conditions.

True, a great many plants were originally native to this continent, but were first grown in gardens by Europeans and brought back to this country as garden subjects from there. A couple of examples are the Marigold and Dahlia, both from “South of the Border”, and there are some of our own State that have fared likewise. It reminds me of the Biblical statement that “A prophet is not without honor, save in his own country”.

This existing condition can be traced to several causes. Primarily, our forefathers were European immigrants, and brought seeds and plants from the “Old Country” that they grew in their gardens. Although the native flowers were considered very pretty, the ones they introduced were a sort of a tie binding them to the homeland. As the march of civilization swept westward housewives took with them seeds from “back home”, and thus a tradition was established. It is not at all improbable that the early settlers of this region admired our wildflowers, but regarded them as pretty weeds. That this attitude is still existent today is proven by a lady, who, upon seeing a Plains Evening Primrose growing in a border said, “Oh, that’s just a weed, grows everywhere”. Weed it may be, but it is worthy of a place in almost any flower garden. Along about the close of the eleventh century Omar Khayam wrote that “Full many a rose is born to blush unseen and waste it’s fragrance on the desert air”; Yes, were Omar here today he could repeat those words.

Growing wildflowers in the garden is not as difficult as some would think. Most of them do better under cultivation than where they have to compete with larger and more aggressive plants for the available moisture and nutrients. Of course, the needs of each particular plant should be studied before attempting to grow them, but as a general rule plants of the Plains region prefer a neutral to slightly alkaline soil, while those from the mountains do best in a soil that tends toward the acid side of the scale.

Probably the most important factor is obtaining material for the wild-garden. Under no consideration dig a plant and transplant it to your border. It might be argued that where there are a great many of a certain species, one or two less would make no difference. Just suppose that everyone felt the same way, then how long would there be any for display. Too, all too many would dig a plant while in full bloom when the chances of its survival would be small, in fact, almost zero. Some of our natives may be bought from dealers, but most of them will have to be started from seed. Here, again, let me add a word of caution; do not gather seeds of our native plants unless they are quite common. If there is the slightest doubt concerning the frequency of their occurrence, give the plant the benefit of the doubt and allow the seeds to remain to self sow. However, since seeds of most of the plants mentioned in this article may be purchased, this offers no serious difficulty. Seeds of the perennial sorts had best be sown as soon as obtainable, some will germinate quite readily and get a good start before cold weather sets in; others will lie dormant until the next Spring before they begin growth, but nearly all will give some bloom the second season. The annual varieties can either be planted early in the Spring while the soil is still cool, or late enough in the Fall so that growth does not start. The more common kinds and those that have a long tap-root should be sown in the open ground, but the rarer sorts should have a cold-frame that can be shaded, or some similar provision.

Now for what and where to plant:

For moist situations try the following.

Iris missouriensis: Our only native Iris often grows in several inches of water in full sun, but does well in a moist location in average soil. Best in partial shade.

Blue-eyed Grass; Sisyrinchium angustifolium thrives under the same condition as Iris, but will tolerate a drier locale.

Snow Lily (Dogtooth Violet) Erythronium parviflorum

Shooting Star, Dodecatheon redieatum

Tulip Gentian, Eustonia andrewsi

Our favorite of the Gentian family, seems to absolutely demand that its feet be in water. Good for pools.

Trout Lily; Erythronium parviflorum definitely should have shade from mid-day on. How I detest the inappro-
priate common names—Dogs-tooth Violet and Adders' Tongue.

Violets: The best for the home are probably Canadensis, white; biflora, yellow; pedatifida and retusa, blue, and palustris, light blue. V. nuttali is of open plains and hillsides and likes sun and not too much water.

Shooting-star, Dodecatheon redicatum: Enjoys light shade. Not so large as D. media, but excellent.

Springbeauty, Claytonia rosea: Fairly difficult, but worth the effort. Has to have plenty of moisture and shade.

Now for those that revel in average to dry situations.

Columbine; Aquilegia coerula, our State-flower, needs more moisture and a more acid condition than most of its clan. Fades badly in full sun. The yellow variety, A. chrysantha, is much more amenable to cultivation.

Monkshood, Aconitum: Both the blue and the yellowish-white varieties, (A. columbianum and A. ochroleucum) prefer a little shade and some acidity. Often found together in the wild.

Chiming Bells; Our Mertensia ciliata is smaller and later than M. virginica, but has about the same requirements. I grow them together.

Leathercup, Viorna jonesi: in my opinion easily the best of the Clematis family. Sometimes called "Old Man" because of its seed pods.

Pentstemon: Some authorities list thirty-seven species native to Colorado, almost any of them suitable for the garden, but the two outstanding species are both indigenous to the part of the state lying south of the Arkansas River. P. grandiflorus is superb; up to four feet tall, with large azure blue to purple flowers. P. ambiguus is the Sand Pentstemon and about the baby of the family; almost procumbent, with almost thread-like leaves and small, up-facing, Gilia-like flowers in pastel pink shades. Dainty and lovely. All pentstemons are of very simple culture, thriving in ordinary garden soil and full sun or semi-shade.

Golden Banner, Thermopsis montana of the mountains and T. rhombifolia of the plains are yellow pea-shaped flowers that should be better known. Lupinus platensis makes a nice foil for these.

Evening Primrose: There are two closely related plants that carry this same common name that are easily grown. The Plains Evening Primrose (Anogra albicaulis) has white flowers about 2 to 3 inches across, while the Trumpet Evening Primrose (Lavauxia brachycarpa) has golden-yellow flowers 3 to 4 inches across. Both delight in a rather dry, sunny situation. Both are low growing.

Plains Coneflower, Ratibida columnaris: The "cone" or disk flowers are purplish, cone about 1½ inches long, less than half that broad; the ray flowers, or as most folks call them "petals" are golden yellow. Variety "pulchella" has dark maroon petals. Very nice, about two feet high, or a little more.

Spiderwort. I cannot recommend the ordinary variety, but Tradescantia occidentalis var, rubra deserves a lot more attention. Rosy pink flowers that are quite a bit larger than the common blue sort. Foliage a darker green. Good.

Now let us examine the natives that are suitable for the rock garden in full sun. Plenty hot and a little dry, if you please.

Easter Daisy; Townsendia spp: These are for the most part low growing plants that, as their name indicates, bloom in early Spring. T. excapa has white flowers while T. exima has purple. Both are practically stem-
A TIRED SOIL
M. WALTER PESMAN

A GOOD carnation grower changes his bench soil after the crop has been harvested. In many cases fresh soil is brought in from the prairie. Where that is not feasible, the old soil may be worked over, aired, sterilized, and "put back in Condition".

And yet, that very same soil discarded is excellent for garden use, and can grow most things to perfection.

But it is tired of carnations. A rose bed after a number of years gets tired of roses.

A street tree may "poison" the ground to such an extent that it is tired of the particular tree that grew there for years; a new tree of the same species is apt to have difficulty starting.

If you "know it all" you’ll have an answer in explanation. "Diseases and insects," you’ll say, "remain in the ground, and will attack the new plant of the same kind. Quite simple!" Is it? Then why will the addition of nothing but charcoal,—carbon,—often suffice to overcome the difficulty? There is little or no fertility in carbon, and it is not an insecticide.

As long as forty years ago this problem caused a controversy between fertilizer experts and honest doubters. Merely adding the necessary chemicals does not "unite" a soil, mere sterilization does not restore it. In addition to fertility problems, in addition to insect and disease worries, in addition to bacterial activity,—something happens to a soil that is cropped to one thing only.

Some authorities claim that a definite poison is given off by a growing plant that will stop future growth of the same kind. Much experimentation and research is needed in this field before the final answer is found. The "know-it-all" often knows very little.

In the meantime the practical gardener wants to find out what to do about it. A few useful hints can be given.

Such annuals as asters, sweet peas, tomatoes and potatoes are almost sure to "poison" their soil. If at all feasible it is best to change their location from year to year or at least every two or three years. The same spot may be all right again after some other crop has been grown on it.

A rose bed that "runs out" can be renewed by changing the soil to a depth of two feet if possible; it may be easier to place it in a different spot for the continuance of first class roses.

If a new shade tree is to be planted in the place of one that died, it is definitely best to change the soil, giving the newcomer a fair chance. The same thing holds for renewing certain choice flowering shrubs; others seem to have no difficulty.

Chemical fertilizer alone will seldom restore a "tired" soil; organic fertilizers and soil "ameliorators" may be more effective.

If you know of remarkable "cures" in such cases, do not keep them to yourselves, sometimes even "wild" ideas may be found to have merit or may give a hint for further experimentation. Who would have thought that certain garden practices of the past were based on supplying growth hormones, discovered later?

Many of our older gardens in Denver have that forlorn look, not only due to overgrown plant material, not a result of lack of fertility, but partly a consequence of "tired" soil. It will take the combined efforts of scientists, practical gardeners and inquisitive persons to find out what can be done to give it new youthful vigor or even to supply the "rest that refreshes".

(Commercials are invited to contact us for an appropriate plug).

Questions and Answers

Question: I should like to try an herb garden. Please give me the names of about a dozen herbs which I can raise from seed. Then too, I am not familiar with their use.

Answer: Anise—Used as a cordial, also for garnishing and flavoring. Seeds have an agreeable, aromatic taste.

Borage: Has star-shaped blue flower. Leaves and flowers have a cucumber-flavor. For salads and cold drinks.

Sweet Basil: For soups, stews and highly-seasoned dishes.

Caraway—Used for bread, pastry, etc.

Catnip: Used for flavoring.

Chervil: (Annual) Parsley-like leaves for flavoring salads.

Chives: Leaves used for salads. Also for flavoring soups and stews. Fine to flavor fresh-fried potatoes, good for top of cooked rice.

Coriander: The seeds are used for flavoring and confectionary.

Horehound: For flavoring candies, etc.

Sweet Marjoram: The leaves and the ends of the shoots are liked for seasoning in summer and also dried for winter use.

Broad-leaved Sage: Perennial, for seasoning.

Summer Savory: A hardy annual. The dried stems, leaves and flowers are used for flavoring in dressings and soups.

Herbs are divided into at least three groups—aromatic herbs for fragrance; culinary for flavoring in cookery; the medicinal herbs which still play an important part in today’s medicine; and also those grown for coloring which still give us some of our best dyes.

H. F.
A MOST UNUSUAL GARDEN

The pictures used here were taken in the most unusual garden of Ramon Kailey. Late and early hours make up his garden story—he lives in two worlds; always in his garden before seven and often after eleven at night, he spends the time in between running a direct mail advertising business, the Miller Mimeo Mart, in Denver.

With the city a too-restricted locale, he felt the need of a piece of ground where he could satisfy a tremendous urge to grow things. He wanted a garden so he began to do something about it when he left his home in the city and took over 10 acres on Evans Avenue, west of Ar-
BARBERRY

THE VILLAINS OF THE BARBERRY FAMILY

By E. A. LUNGREN

There are some 150 known species of barberry bushes. Of this number there are 106 species which are susceptible to the stem rust fungus. Stem rust is a disease of small grains caused by a tiny fungus and can cause disastrous losses in grain crops. This disease can develop each spring on susceptible barberry and spread from there by wind-borne spores to wheat, oats, barley and rye. It is controlled by the eradication of barberries. In Colorado there are only two kinds of barberry of major importance in spreading stem rust. The common variety, Berberis vulgaris, and the native species, Berberis fendleri. The common barberry was introduced from Europe by the colonists and was brought west by early settlers. From these plantings it escaped from cultivation and established itself as a wild plant in woodlands, pastures and other uncultivated places.

Barberries are harmful. There are several varieties of the Japanese barberry commonly grown as an ornamental bush and sold by most nurserymen. They are the red, green and purple varieties of Japanese barberry. The mentor barberry is also resistant to the stem rust fungus. The leaves of the Japanese barberry and its horticultural varieties are small with smooth edges. The outer bark of the stem is reddish-brown and the inner bark is bright yellow. Spines are usually simple, and bright red oval berries are produced singly or in groups of two or three. The sale of these harmless barberries is regulated by state and federal quarantines.

The common rust spreading barberry, B. vulgaris, is easily recognized. It is an erect bush commonly six or more feet high when mature. The outer bark of the stem is grey, the inner bark yellow, and the edges of the leaves are saw-toothed. Usually there are three or more spines under each group of leaves. The red berries hang in bunches as currants do in the fall.

Eradication of the rust-spreading barberry helps control the destructive stem rust disease and protects the food economy of the nation. Since the beginning of the control program in Colorado, over 95 per cent of the state is now on a maintenance basis. Even in the areas where first treatment has removed immediate danger to the crops, periodical rework is necessary until there is no danger of barberries reappearing. The barberry seed has been found to remain viable in the soil for a period of 12 years. As areas have been cleared and re-worked with no evidence of reappearing barberry bushes, the territory is placed on maintenance.

Common Barberry, Berberis vulgaris
THE NEED FOR STATE PARKS

By Harold Lathrop

This region has been graciously blessed with the grandest of mountain ranges, superlative peaks and wonderful mountain streams and lakes. They are surrounded by great forests. All such natural characteristics afford a multitude of opportunities for recreation with rod, gun, camping equipment or just a picnic basket. In the National Parks and Forests, camping and picnic facilities have been provided.

The National Parks have been established to perpetuate some superlative example of God’s Handiwork which we all recognize as the fundamental philosophy of the National Park Service. Even in the preservation of the Rocky Mountain peaks in their pristine glory or the Geysers and Hot Springs of Yellowstone or the great underground rooms of Carlsbad or the kaleidoscopic colorings on the walls of the Grand Canyon, there has been the necessity for some development of facilities such as campgrounds, trails and accommodations by which the public might better enjoy such wonders of Nature.

You might ask why these Mountain States should acquire and develop areas for state parks when the Federal Government controls such vast amounts of recreation wilderness in the states such as National Parks, State Park Areas and Monuments.

The entire Nation recognizes the Rocky Mountain Empire because of its outstanding recreational opportunities, but too much emphasis has been placed on expecting the Federal Government to do all the providing. However, since state parks can and do play a very vital part in providing for state-wide recreational opportunities throughout the nation generally, it seems only reasonable that the states in this vast Empire should recognize their short-comings and demand more in the way of state park developments which would furnish a part of the sorely needed expansion of facilities for healthful outdoor recreation.

It is true that the National Parks and National Forests in this great Rocky Mountain Empire are providing many facilities, but they are only a fraction of those which are being demanded. During the height of the vacation season last summer, accommodations were grossly inadequate to meet the needs of tourist campers and visitors. Consideration must be given the demands of people who expect to find recreational accommodations for from one day to several weeks at a time such as are provided in state parks of their own states. What about the people of the Rocky Mountain Empire who live too far from the recreation areas which have been established by the Federal Government or the limited developments by some of the states? How can they take advantage of the recreational opportunities for that holiday picnic or that weekend camping trip without having to make a long drive?

Perhaps I should define for you the term “state park.” In my mind, it is a typical portion of the state’s original domain of adequate size, whereby a small portion may be provided for concentrated use and the remainder preserved in a primitival condition accessible only by a system of foot trails and waterways by which the present and future generations may study the flora, fauna and geological structure of a beneficent nature “unspoiled, unimproved and unbeautified” by man’s attempt to improve on the work of God.

In Oregon where an even greater area has been dedicated for National Parks and National Forests than is the case here in Colorado, over 180 State park areas have been established totalling more than 42,000 acres and for which they will expend $764,000 for maintenance, operation and improvements during the current year of 1950. The state of Washington with approximately two-thirds as much Federally-owned land as Colorado, has developed a state park system comprising 54 units with over 60,000 acres and with a budget for the current biennium of two and one-quarter million dollars for operation, maintenance and expansion. Montana with more Federally-owned land than any other state in the region, established a new state park system during the past biennium and the 1949 legislature voted the largest appropriation in its history for state parks. Why have these states done this? The answer is simple—to provide more outdoor recreational facilities of a type not generally provided by municipalities and so distributed as to be within easy reach of the greater portion of their citizens.

Forty-seven of the forty-eight states of this Nation have taken steps to establish state parks systems embracing outstanding areas of scenic, historic or scientific value. They might have taken for granted that the superlative scenery of sections of their states would always be available for healthy outdoor recreation. They might have assumed that there was little need for reserving portions of their commonwealths because of their scenic, historic or scientific values. However, being mindful that progress is constantly on the march, steps were taken to establish state park systems in order that future generations might enjoy some of the same recreational privileges and opportunities as existed then or now. They might have foreseen how selfish interests are quick to realize commercial advantages of many God-given spots, or others, desirous of keeping such for their own selfish enjoyment, or that esthetic values are too often disregarded in this constant march of civilization.

Most states have considered it their duty to acquire and develop outstanding recreational areas in the name of the state and for their people’s enjoyment and use, now and for posterity. They have not expected their Federal Government or their larger communities to do the job. The complexities of modern life itself create the need for recreation in God’s Great Out-of-Doors. The strain of urban living and its quick pace in business and social activities makes escape necessary to a person’s well being. This is an age in which individual recreation is coming into its own, when crowds are dispersing and individuals or small groups are seeking rest and play. It is the age when that mysterious renewal of spirit which comes from carefree pursuit of the outdoor activity which suits one best is mandatory upon our citizens. This is truly a new era for it marks a chapter in the growth of American culture and the development of American life.

Theodore Roosevelt said, “There is nothing more practical than the preservation of beauty—that the preserving of anything that appeals to the higher emotions of mankind.” How very true this statement is and to that end we must train our sights. The impetus apparently must come from organizations and groups of people who recognize such needs.
THE USEFUL FAMILY OF BELLFLOWERS

MVRTLE ROSS DAVIS

The Campanula (Latin for little bell) or bluebell family is very large. There are said to be as many as 250 species and many of the species have several varieties. L. H. Bailey in his "Cyclopedia of Horticulture" lists about fifty cultivated kinds. He says, "The genus Campanula is extraordinarily rich in flowering plants of merit. The alpine section is distinguished by a charming grace both in character of growth and size and bearing of flowers. The peach-leaved class, C. persicifolia, is characterized by the noble and beautiful form of single and semi-double blossoms carried by thin erect stems 2 to 3 ft. high. The luster and clearness of the tints of the bushy biennial medium and calycanthema type are remarkable while the rambling habit and the marvelous floriferousness of the varieties C. isophylla and its descendant, C. mayii, indicate the wide range of ornamental usefulness of bellflowers. Considering the good lasting qualities in a cut state and the great popularity of the flowers of the long stemmed sort for indoor decoration it is safe to say that campanulas will steadily gain in importance as material upon the florist counter as well as for garden planting."

As in all large families there are always some black sheep. One of the most undesirable members of the family is Campanula rapunculus or Rampion bluebell. It is really quite beautiful with its tall spikes of lavender flowers but it is surely a pest for it spreads so rapidly that it will choke out most other vegetation in the area. None of the modern 2,4-D weed killers will affect it in the slightest. It has large radish-like roots and the only way one can get rid of it is to dig up all the soil and sift out the roots.

One of the finest members of the family is the Carpathian bluebell. It is a dainty medium height perennial with roundish leaves and many clear blue bells borne on very slender stems. It is one of the best for the perennial border.

Campanula rotundifolia is another good member. One would think it was misnamed for the leaves are very long and narrow but the root leaves in the early spring are round. It also has many blue bells on slender stems but its habit of growth is not as neat as the Carpathian bluebell as it sometimes falls over and becomes a bit tangled. It is commonly known as the bluebell of Scotland.

Some very fine dwarf forms are C. portenschlagiana, C. isophylla and C. mayii. All are very fine for the rock garden or rock wall. C. isophylla will be completely covered with light blue star-like flowers all during the month of June. The leaves of C. mayii are soft and wooly. It is very choice. C. portenschlagiana is darker blue and not as unusual looking but it is very hardy and a very good rock garden plant.

Campanula persicifolia or Peach-leaf bluebell has blue or white bell-like flowers and peach shaped leaves. They grow quite tall and are very showy. Sometimes they have a tendency to fall over and have to be staked. A new variety called Grandiflora has larger flowers and it quite an improvement over the old varieties.

Campanula glomerata is a very common and easily grown species. It has dark purple flowers which come in dense heads at the end of the flower stalks. Sometimes the flowers are lighter colored or even white but the typical common one is deep purple.

Probably the best known member of the family is Campanula medium or Canterburyle. It is the one which graced the gardens of our grandmothers. Being biennial it must be grown one year to bloom the next and then it is through. If it is allowed to self-sow it will keep coming year after year. The double and the cup and saucer varieties are very lovely and make excellent cut flowers.

One of the best, C. pyramidalis, is known to be too tender for our climate but it makes a splendid hot house plant, good for cutting. Blue flowers are always in great demand for gardens so we should look into the bluebell family and try more of them.

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BOOK REVIEW

Greenhouse Gardening for Everyone.

Ernest Chabot, M. Barrows & Co., New York City, 1949. $4.00.

"Greenhouse Gardening for Everyone" is a very timely addition to the Helen Fowler Library. With the great interest in greenhouse gardening, this book will answer many questions whether your hobby is orchids, chrysanthemums, carnations, geraniums or camellias. Mr. Chabot describes in detail the various kinds of greenhouses, the best and most economical methods of heating, ventilating and automatic watering. The book contains calendars and tables for planting both in the greenhouse and garden frames.

It lists the many kinds of plants which can be grown under glass, gives instructions on how to force bulbs into bloom in midwinter. All this, plus other facts one needs to know to run a greenhouse successfully, makes the book the ready reference for all greenhouse gardeners.

Janet Chapman

The best plants for the perennial border are not only listed at the end of the book, but described individually in an alphabetical list. There are eight drawn border plans—All-Season, Double-sided permanent, Town garden, Two-sided, Late, Special Color drawings and one very valuable for shade.

After finishing reading this book, I wondered if there was another word to be added for help to the builder. It is full of interesting history. We are told it was not until 1890 that we hear the herbaceous border referred to by its now everyday appellation, George Nicholson Curator of the Kew Gardens, advised that in planting out, "the best results are obtained when the border is mainly made up of hardy herbaceous perennials.”

If I were making a special study of the hardy border, I should want to possess this small volume.

Your Trees

WOUND TREATMENT. It never pays to take chances with tree wounds. Broken branches are unsightly, dangerous and potential sources of decay.

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LEAFY EXPANSE

How many leaves does a tree have, and what is its total leaf surface area? Here are some figures gleaned from various sources: an apple tree, 50,000 to 100,000 leaves; a sugar maple 50 feet high, 162,000 leaves with total surface area of 14,930 square feet; an oak, 700,000 leaves, and a mature American elm is said to have over 5 million leaves. Edward A. Connell, arborist, Stamford, Connecticut, made some measurements of leaf areas of several tree species, and in Trees magazine reported the results as follows: Norway maple, 25,875 sq. in.; red oak, 19.09 sq. in.; ash, 7.47 sq. in.; dogwood, 5.79 sq. in.; elm, 5.57 sq. in.; hickory, 17.51 sq. in. If these figures are correct, an elm has enough leaves to cover more than four acres of ground or nearly one mile of a 40-foot highway. No wonder we have leaf-raking troubles in the fall! From The Shade Tree Digest, May, 1950.

We are sorry to announce that Earl Sinnamon has left the position of City Forester. His work in that capacity has been of the highest quality and he has done a great deal towards setting up a modern forestry program for the City of Denver. However, we feel confident that Mr. Sinnamon will be a valuable asset in the new enterprise that he is about to take up. As of the first of September, he will be working with Jack Harenberg at The Garden Shop on 140 Cook Street. Mr. Harenberg will be able to concentrate all his efforts on the designing of gardens. Mr. Sinnamon will specialize in perennials, potted plants and so forth as well as shrub and tree maintenance. We most certainly wish the very best of good fortune to them both in their new venture.

A STAR PROGRAM

Have you ever stroked a porcupine? Or fed one a carrot? Mrs. Donald Spencer will be "Presenting the Pin-cushion of the Forest" on September 15 to open the Fall series of Friday evening programs at Horticulture House. Every one who has read the fascinating article which Mrs. Spencer and her husband have prepared for the August number of The National Geographic Magazine will want to be on hand when she introduces some of her little pets in person, and shows her color movies of their activities. This is a program which the young fry would enjoy especially.

Mrs. Spencer really knows her porcupines, for she has assisted her husband for several years in his work as Biologist in the Wild Life Research Laboratory of the U. S. Fish and Wild Life Service. Her experiences in catching, raising, and studying these little-known residents of our forests can only be matched by some of her tales about her mercy missions from their startling and unwelcome visits. September 15 promises to be a fine large evening so don’t miss it.

Horticulture House plans to have a slight change in time schedule for these meetings. The program will begin at eight o’clock sharp, but Horticulture House will be open at seven-thirty, so that any one who wishes to come early for a visit with other green-thumbers, or to settle horticultural problems may do so. There will also be opportunity to ask questions and to visit after the program.

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TIMBERLINE

Black pillars hold up the sky,
And in the mountain meadows below
The columbine and the aster grow.
'Tis a giants' playground,
Where boulders ridged and gray
Are strewn about
Like massive croquet balls
The players had dropped one day,—
And gone away.
Like skyrocketets in July,
Blaze red elephants, snow balls, paint
brush,
Violets, marigolds—o'er the hush
Whines the wind on the cliffs
Above with their shelving of
Eternal snow
Like layer-cake frostings.
Is it the birthday of Jove
They celebrate?

The wind moans through the scrub pine
and cedar.
The wind wails past the timberline height—
Dwarfs in a playground of giants,
Life that is caught up in twilight.

Glacial lakes reveal a world as deep as high
And the mountains in them fall into the sky.

Cloudy veils creep through the mountain
spurs and archways
Like ghosts through cathedral windows.
The wind shrieks through the chasms and
ice-fields, sounding the
Pipe-organ of the universe.

Behind some dusky spire does the earth
drop sheer,
Ice-mists tumbling down to the darkness
vast
Sometimes, does the knotted, straining
hand appear
Of Atlas, on whose back the load is cast?
If so, I will stop here—
I know that I should fear
To look
Over.

DORA LU HILL.

September, 1950  THE GREEN THUMB  31

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SOME REFERENCES ON
ROCKY MOUNTAIN BOTANY
Compiled by RUTH ASHTON NELSON

DURING the eighteen years since the booklet, Plants of Rocky Mountain National Park was prepared much critical work has been done in systematic botany covering different groups of plants occurring in this area. Also during these years the two manuals on which we depended for an understanding of the classification of Rocky Mountain plants have become out of print. Some of these papers are more technical than others but all hold some interest for the lovers of Rocky Mountain plants.

BAKER, MILO S.
1936. Studies in Western Violets II, Madrono 3: 232-238. (This paper deals almost entirely with violets of the Rocky Mountain National Park area. For a key to western violets see Madrono 3: 51-56. 1935.)

BOISSEVAIN, CHARLES, and DAVIDSON, CAROL

BRAND, L.

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PESMAN, M. WALTER
1942. Meet the Natives, an easy way to recognize Rocky Mountain Wildflowers, Trees and Shrubs. Publ. by the author. Denver.

PRESTON, RICHARD J.

SMITH, E. C.

SMITH, E. C., and DURRELL, L. W.

SPOTTS, ALICE MARIAL

WILLIAMS, L. O.
September Gardening

Frost can be expected sometime in September. It will put a stop to the growing of all tender plants. It is then time to begin to harvest and clean up for the season. There is still much gardening work to be done. Don’t let your interest lag now. To make it easy for you to plan your fall work we have arranged an easily remembered list below.

STUDY If you would like to develop a Greener Thumb plan now to take up some phase of horticulture for study this fall. While the successes and failures of this year are fresh in mind, decide that you will learn more of the “why” of growing things. It may be that you are most interested in roses, or evergreens, or insect control, or fertilizers. Get all the literature available on the subject and “go back to school” this month.

ENJOY The most strenuous work of spading, weeding and watering is now about over. Take time to straighten up your back, look around you and enjoy the results of your season’s work. Arrange convenient seats where you can sit and see your garden. Look over the gardens of your friends and neighbors. Arrange for a picnic of several Green Thumb friends and their families.

PLAN Now is a good time to make notes ON PAPER of things that you want to improve another season. When the gardening fever hits you next spring it will probably be too late to move plants. Now is the time to make definite plans for new plants and new arrangements of existing material.

TRANSPLANT Many perennials should be moved now. Such rampant growers as shasta daisies and iris can be divided now before they crowd out nicer things. Many other perennials have bloomed and can be moved to more appropriate locations. If it becomes necessary to move peonies, oriental poppies, bleeding hearts, rhubarb or asparagus it should be done in the fall. Some shrubs and evergreens can be moved now if it is necessary and if they are carefully handled. It is much better, however, to wait until they have become dormant. If tulips, narcissus and other fall bulbs have been in for several years and need dividing, now is the time to do it. They may be planted right back in their new locations.

ENLARGE Fall is a good time to make arrangements for larger areas to accommodate those features which are most wanted. Take out a useless poplar and make more room for garden. Add a strip of lawn where weeds once grew. Lay a good flagstone walk, or add a needed platform, wall, pool or fireplace. Put up some bird shelters and feeding platforms. New lawns may usually be successfully planted between Aug. 15 and Oct. 15.

MULCH Vegetable and perennial tops will soon be dead and may be cut off; tree leaves will soon begin to fall and lawn clippings will accumulate. Unless full of insects and disease save all these. Use what is necessary to mulch around perennials and shrubs, and pile excess in an odd corner for future use. The decomposition of the compost pile will be hastened by keeping it moist, by turning it over every few weeks and by allowing ventilation under the pile through an old pipe or tile. Proper mulching will do much to correct our two greatest gardening difficulties in Colorado: plants drying out in winter, and the lack of humus in our soil.

BURN The smell of burning leaves is always the sign of fall. We all get the urge to clean up now, but consider carefully before burning any leaves or plant tops. If they are infested with disease or insects, burn them, but otherwise save every scrap for mulch and compost. Don’t forget the few seeds like dandelion, dock, wild lettuce and parley which have been missed and are now in seed. Digging them out and burning them will prevent a lot of weed seedlings next spring.

EXCHANGE Revive the old gardening custom of swapping. Take a newcomer some of your surplus perennials, and learn new tricks in gardening from him. Exchange some seeds of your fine zinnias and beans for some of your neighbors’ squash and cosmos. Save seeds of extra nice plants for your own use next year and as trading stock.

RAKE Of course we rake in fall. A little cleaning up now will last all winter. Nothing improves the appearance of a garden more than keeping it neatly raked. Save all leaves and plant tops for the compost heap. A few old dead stems and rubbish look bad, but it is not necessary to keep every single leaf off a lawn or rake everything out of a flower bed. Let the winds scatter and pile a few leaves where they will.

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