THE WEEK-END GARDENER

The cool breeze this morning reminded me that fall is here and that we may have severe weather any time. The light frost a few nights ago did not harm anything around the house but it will not be long now until all tender things are killed. I noticed some rather small and young-looking petunia plants in the border that I believe I will pot up and bring into the house. Possibly there are other things like larkspur and sweet alyssum that will also bloom in the house throughout the winter. I'll try several things. I'm going to fix up a little better place in the south window where I can take better care of my house plants. I'll arrange a shade to cut off the severe sunshine at times, and I'll also arrange places where I can keep quantities of moist peat moss to keep up the humidity.

While I am bringing in peat to use indoors I'll also arrange to get another load to use outdoors in the garden. I believe that it is good mulch for tender plants and that next spring I can cultivate it into the soil and improve its texture. The Oldtimer tells me that I should not fertilize much until all the plants are completely dormant, as it might induce them into an unnatural growth which would not mature before severe weather. He told me to hold off on the water and fertilizer until after the plants lost their leaves.

Mom, come here, there are insects of some kind all over these leaves on the dogwood. What they are doing here just as the leaves are ready to fall more than I can figure. I'll have to call the Oldtimer. He says that this is a common, but almost unknown occurrence. These are aphids which have a sudden spurt of activity at this time, then lay a lot of eggs which are dormant until just as the sap begins to flow in the spring. Then they come to life and do a great deal of damage to the new leaves before anyone is looking for them. He says that now is the time to spray them and prevent them from leaving any eggs. He also says that aphids will work like this in the Snowball bushes and Euonymus shrubs. I thought that our insect troubles were all over for the season. Maybe I'd better look at the junipers and see if there are still aphids on them. We should be able to put our garden to bed for the winter soon.
JOHN Y. BROWN'S MONUMENT

In the May, 1947, issue of the Green Thumb we told of our trip through the Arkansas Valley in September, 1946. In this story we told of some of the things that John Y. Brown had done when he was mayor of Lamar to make that community a better place in which to live. We were gently sent some clippings from the Lamar paper telling of his death on the 23rd.

The development of Willow Creek, Fairmont Cemetery, the sand dune plantings, the many fine homes at he helped build and the beautifully landscaped grounds of his own business establishment will all be onments to the memory of a man who loved his home town. The good influence of John Brown's work will felt in Lamar for many years to me.

Part of an editorial in this Lamar paper very appropriately says, "This community today mourns the passing one of its outstanding citizens, a man on whom three occasions was a vice of mayor, but who, or out of public office, labored to make his community a better place which to live. Mr. Brown had id that he wished to be buried beneath the pines in Fairmont Cemetery, because he felt he could not sit where there were no trees. John loved growing things, and to him a shrub or tree was something to be cared for and protected from use."

John Brown's body lies a moldering, but his spirit goes marching on....

OCTOBER SCHEDULE


Oct. 5—Tuesday, 7:45 P.M., Horticulture House. Program by experts for leaders of youth groups and any others interested in teaching nature.

Oct. 7—Thursday, 8 P.M., Evans School, 11th Ave. and Acoma. Dr. R. C. Allen of the American Rose Society will speak on "Modern Trends in Rose Growing." The Denver Rose Society is very proud to have secured Dr. Allen to talk at this month's meeting. Everyone, even remotely interested in roses is invited.

Oct. 8—Friday, 7:45 P.M., Horticulture House. This will be the first session of our fall course in Landscaping the new home. Jack Harenberg will talk and illustrate with pictures the proper design of new homes.

Oct. 9—Saturday Afternoon. Trip to Red Rocks Park to study geology. One of the series for leaders of youth groups. Conducted by Professor Arthur Markman.


Oct. 22—Friday, 7:45 P.M., Horticulture House. The third session of the series, conducted by Gilbert Pike and others from the Alameda Nursery, on "Planting the Home Grounds."


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Rocky Mountain Horticultural Conference

Reserve February 7 and 8 for the second Rocky Mountain Horticultural Conference to be held those days in the Silver Glade room of the Cosmopolitan Hotel, Denver. Some of the favorites from last year will be back and there will be many new speakers. Watch for further announcements.

ORCHIDS TO MILTON J. KEEGAN

Several years ago Milton J. Keegan prepared for the "Green Thumb" one of its most outstanding numbers, "Lilacs for Colorado" (the Green Thumb, Vol. 1, No. 7, December, 1944). Mr. Keegan is no mere "armchair" expert, as his own lilac collection is the outstanding one of this area.

Recently Mr. Keegan's achievements and standing in the horticultural field were recognized in his being selected by Editor John C. Wister to prepare the Rocky Mountain Section of the Woman's Home Companion Garden Book. This excellent new book was reviewed in the Green Thumb last March, 1948.

With all the encroachments of his hobby, however, Milt has found time to be President of the City Club, the Denver Bar Association and the Colorado Bar Association.

It is hoped that Green Thumb readers may again be favored by one of Mr. Keegan's brilliant articles.

The Green Thumb
A Bulletin of the Colorado Forestry and Horticulture Association
Organized in 1884

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

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Urban children are avidly hungry for nature lore and outdoor experiences firsthand.

OUTDOOR EDUCATION

ROBERTS MANN, Superintendent of Conservation, Forest Preserve District of Cook County, Illinois.

Condensed from a paper presented before the NATIONAL SHADE TREE CONFERENCE, August 26, 1948, at Milwaukee, Wisconsin.

YOU folks have two jobs. One is concerned with the propagation, planting, and care of woody plants. The other, equally important as the first, has to do with public relations—the education of the public.

We, in Cook County, have found that nature appreciation—including appreciation of trees—if engendered by nature lore acquired firsthand, is the key to the door opening upon a concept of the broad field of conservation. That concept is essential to good citizenship, wise use of public property, and wise use of all our natural resources. An intangible byproduct for the individual will be a richer, happier life. Conservation must be taught in all the schools, at all levels, as a cultural subject. Biology and can be taught as a fundamental cultural subject: as a fascinating dramatic story of all life, accompanied by rich emotional experiences out-of-doors to bridge the wide gap between the classroom and things they exist in nature: not just scientific names and anatomical structures.

We’ve got to teach conservation in terms of the interdependence and the interrelationship of all things on earth, including man himself. For so many earnest souls, conservation means no more than absolute protection and optimum habitat for ducks, deer, or trees, or songbirds or wildflowers. And the long-haired pansies babbling about the little birds and bees have plastered such a la-de-da label on “nature study” and “nature lore” that many of us prefer the term “Outdoor Education for Outdoor Living.”

For many years following the White House Conference on Governors, called by Theodore Roosevelt in 1908, the symbol of conservation was “The Tree.” Among too many agricultural thinkers it means, now, soil conservation—period. Conservation of the biota, including the soil and of the biota, including the soil and the plant layer that rests upon it, and the insect layer that rests upon that, and so on up to the top of the biotic pyramid where stands the arch predator—man himself—has been something for the theorist and the biota to worry about. But now foresters are planting earthworms as they plant trees, and have gone from the “cabbage brand of silviculture” back to mixed woods of native species, populated with wildlife including predators.

The basic defect in the teaching of conservation—which, after all, is a way of living; a way of living that looks to the future—was best phrased by Aldo Leopold, that great forester, professor of wildlife management, ecologist and conservationist, whose tragic death this spring saddened us all. He said: “We have not asked the citizen to assume any real responsibility. We have told him that if he will vote right, obey the law, join some organizations, and practice what conservation is profitable on his own land, that everything will be lovely; the government will do the rest. This formula is too easy to accomplish anything worthwhile. No important change in human conduct is ever accomplished without internal change in our intellectual emphases, our loyalties, our affections, and our convictions.”

“The practice of conservation must spring from a conviction of what is ethically and aesthetically right, as well as what is economically expedient. A thing is right only when it tends to preserve the integrity, stability, and beauty of the community, and the community includes the soil, waters, fauna and flora, as well as people.”

An effective program should help the child to realize that besides being responsible for his own property he owes a similar responsibility to others; that he is part of a balance which, for his own happiness and that of others of this and future generations, must not be upset. Conservation of our resources should be the personal concern of everyone. There is a personal as well as a social obligation to conserve. No one has the moral right to waste or use unwisely.

There are two bottlenecks; (a) the necessary revision of existing courses and textbooks to include the desired conservation materials; (b) teachers who have a broad conception of the subject and the requisite training to teach it. In the great metropolitan area which includes Chicago, we have found an almost universal hunger for Outdoor Education, on the part of both children and adults. We have made some significant contributions toward supplying that need.

For years we viewed with dismay the unintelligent use, the misuse and the vandalism in our preserves. As the population of Cook County grew and the number of annual visitors in our areas skyrocketed, we found ourselves unable to adequately maintain those areas and their facilities.

We found that about all the management needed by the flora and fauna of a naturalistic area, even in a county of 4,500,000 people, is rigid protection from fire, from automobiles, and from hunting, trapping and other molestation. Left alone, Mother Nature does the best job of working out her own problems, her own system of checks and balances.

The quantity and condition of the recreational facilities provided are seriously affected by the misuse of those facilities. The same applies to wildlife—the flora and fauna. Unintelligent use and failure to use on the part of the public, means that the people are not enjoying what they pay for. We began with the conviction that Outdoor Education—nature education—at all age levels, would increase the capacity of the people for intelligent use, appreciation and enjoyment of the forest preserves and accomplish a fuller, richer life for the individual.

For two years, our naturalists conducted experimental field trips for selected groups of children from Chicago and from suburban towns—groups of different ages, nationalities, races, and economic statuses. We also took groups of teachers, and groups of youth leaders, on similar field trips. We confirmed our thesis that urban children are avidly hungry for nature lore and outdoor experiences firsthand; that they are not getting them and that Chicago children, particularly, are utter strangers out-of-doors; that too many teachers and too many youth-group leaders are also strangers out-of-doors and lack either the knowledge, or the training, or the ability—or some combination of the three—to teach the sciences and outdoor living; that there is a wide gap between the classroom and things as they exist in nature which should and can be bridged. We set about to bridge it.
One of the most interesting botanical areas in the state is the outcropping of sandstone cliffs locally known as the White Rocks, situated about seven miles northeast of Boulder. Because of the peculiarities of soil condition, exposure and various climatic factors, this area is somewhat of an island of native vegetation in a highly agriculturalized area. Some of the plants to be found at White Rocks are relics of a once more widespread Great Plains grassland; some are plants of eastern North America which have been eradicated from most of Colorado by the severe climatic conditions obtaining in our region. One species, the fern, Asplenium adiantum-nigrum, is found only in about two other locations in the western hemisphere.

White Rocks forms the southern edge of Gunbarrel Hill, a gently sloping mesa undercut by Boulder Creek, which flows east through the area. Here, a prominent rock ledge consisting of massive sandstones of Laramie and Fox Hills age is exposed. On the surface the sandstone weathers into peculiar polygonal blocks, commonly described as turtlebacks. Cultivated fields and pastures encroach very closely upon the natural area which is about three miles long and one-fourth mile wide. The outcrop supports a rather luxurious vegetation because of water seepage at the foot of the rocks. This slight amount of moisture, together with the shade provided by the ledge, provides ideal conditions for the growth of many plants not found for miles around in any direction. Barn Owls, Great Horned Owls, Cliff Swallows and many other birds make this oasis...
DUTCH ELM DISEASE CIRCULAR

The Extension Service of The Colorado A. & M. College at Fort Collins has recently published a bulletin entitled, "The Dutch Elm Disease and Its Carrier, the Smaller European Elm Bark Beetle." This is Circular 155-A and may be obtained from your County Agent or the college. W. J. Henderson, Extension Plant Pathologist, and Gordon Mickle, Extension Entomologist, have together prepared this material from all known information available.

In view of the widespread distribution of this beetle and the finding of a few cases of the disease in Denver it is very important that every owner of elm trees read this circular and take the preventative measures recommended there. Authorities all agree that the most important action at the present stage of the disease is to destroy or spray EVERY recently dead limb or trunk of elm in the city or surrounding country before the time of emergence of the first brood of beetles in the spring.

We may ignore this serious threat now and pay dearly for it later, or we make the effort to clean up possible breeding wood now and keep this disease in check.

THE WEEK-END GARDENER

I walked around the garden before I went in to lunch today and noticed quite a few trees and shrubs that needed trimming. Some had dead branches and others were lopping down over the walk. It's nice invigorating weather this afternoon, so I guess I'll get my clippers and saw and spend the afternoon cleaning up.

I read that new bulletin about the Dutch Elm Disease last night and it emphasizes the need of EVERYONE removing and burning all the recently dead limbs in their Elm trees. This also would indicate that elm logs or firewood cut last summer might provide ideal breeding places for the beetles which spread the disease. This bulletin indicates that this wood should all be completely barked, burned or sprayed with DDT in fuel oil. It seems that the most serious spread of the disease is liable to happen when these beetles fly soon after the leaves appear on the elm trees next spring.

I stopped in at Horticulture House a few days ago and read some recent bulletins about trimming. According to them it is important to make all my cuts close up to the trunk or larger limb so that the flow of sap next spring can heal these wounds over.

There seems to have been some controversy as to the advisability of painting larger wounds, but I believe that much of this doubt has been because of using unsuitable paint. These articles indicate that a suitable paint should stick tight and remain flexible for many months. In spite of our drier climate, which discourages fungus growth on the surface, these experts recommend that all wounds on trees be treated with a disinfectant to kill spores of fungus growth which might start decay inside the tree where it is continually moist.

When all my trimming is done I am going to fix up that old picket fence in the rear and give it a coat of paint while the vines are not covering it.

Mom wants me to get a load of fertilizer and spade it into the ground where we will plant the garden next spring. That is a good idea but a little hard on my back.
LOW SHRUBS FOR COLORADO LANDSCAPING

GEORGE W. KELLY

ONE of our greatest needs at the present time in landscape material for Colorado is good low shrubs. Up to the present time there have been many shrubs planted which soon grew much too large for their location. This has led many gardens to look overrun and ragged in a very few years.

Not all of those mentioned below are suitable for every situation, but selecting suitable material from this list the possibilities will be considered.

The first part will include those shrubs which will usually stay under 3 feet high. This is the size here a greater variety is most badly needed.

lochcarpos mollis, LEADPLANT AMORPHA 1½-2'. Fine gray foliage and small spikes of violet-colored flowers in August. Blooms when little else is showing color. Enjoy sun and dry places. Loose irregular growth which is inconspicuous except when in bloom. Very useful.

morpha nana, DWARF INDIGO AMORPHA 2-2½'. Much like A. canescens, but green-leaved and not as showy.

Berberis thunbergi, Cl. MENTOR BARBERRY. 2-3'. Leathery, almost evergreen leaves. Stiff, compact habit of growth. Needs some shade, and prefers heavy rich soil.

Berberis thunbergi, Cl. STRONG PURPLE, REDLEAF JAPANESE BARBERRY. 2-3'. Not as vigorous in growth as the regular green leaf barberry. A little more leathery and as to soil and protection. Spectacular red-green leaves all summer.

Its thorns make it respected by boys and dogs.

Berberis thunbergi, Cl. BOX BARBERRY. 1-2'. Very slow of growth. More difficult to grow than other barberries. Keeps low.

Berberis thunbergi, Cl. TRUE-HEDGE COLUMNBERRY. 2-4'. A very valuable plant for semi-formal hedges. Its ordinary habit of growth is much higher than broad. Neat, compact growth which needs little trimming to keep in bounds.

Caragana aurantia, DWARF PEA-SHRUB. 1½-3'.

Caragana pygmaea, PYGMY PEA-SHRUB. 1½-2½'. These dwarf shrubs have neat, small leaves and compact habit of growth. Yellow flowers. Ragged in winter but very neat in spring. May be sheared for hedges.

Ligustrum vulgare, Cl. LODEN'S PRIVET. 1-3'. One of our most useful low shrubs. Very slow growth. May be sheared to take the place of boxwood, or can be left informal. Compact growth and dark green leaves which remain on very late in fall.

Lonicera japonica halliana, HALLS JAPANESE HONEYSUCKLE. 6-12". Usually classed as a vine, but useful for covering banks and bare ground. Holds its leaves well into winter. Fragrant, cream-colored bloom.

Lonicera heckrotti, GOLDFLAME EVERBLOOMING HONEYSUCKLE. 6-12". Almost evergreen. Often in bloom and leaf until after Thanksgiving day. Fragrant colored flowers. May be trained as a ground cover or low shrub.

Lonicera species, HONEY-SUCKLE VINES. 6-12". Several other species may be used as ground covers. L. periclymenum, L. sempervirens, L. tellmaniana, and others.

Mahonia aquifolium, OREGON-GRAPe. 1½-3'. Our best broad-leaf evergreen. Usually winter-burns some unless well shaded. May be cut back each year for best effect. Should be used more.

Physocarpus monogynus, MOUNTAIN NINEBARK. 1½-3'. Open spreading shrub for naturalizing in part shade. Spirea-like bloom.

Potentilla fruticosa, BUSH CINQUEFOIL. 1½-2'. Small yellow flowers all summer. Grows in a variety of situations. Subject to attacks of spidermite. There is also a white flowered variety which is neater in shape and less subject to spider damage. A little ragged looking in winter, but beautiful in summer.

Pruus tenella (nana) RUSSIAN ALMOND. 1½-3'. A striking shrub in early spring when the bright, red buds break into pink flower. Very slow growing and a little irregular in habit.

FLORIBUNDA ROSES. 1½-2½'. While not strictly classed as shrubs, Floribunda roses are filling a need for neat low plants which will bloom all summer. They come in a great variety which should be used more.

Ribes setosum, REDSHOOT GOOSEBERRY. 1½-2'.

Ribes inermes, WHITE-STEM GOOSEBERRY. 1½-2½'. Spreading natives, useful for covering banks or bare ground. Need some shade and moist soil. Edible fruit.


Symphoricarpos occidentalis, WESTERN SNOWBERRY. 1½-2½'. A common native useful for covering banks and bare ground. Suckers out and forms dense patches.

Symphoricarpos oreophiles, MOUNTAIN SNOWBERRY. 2-3'. Neat native shrub. The type from near Georgetown makes a nice cultivated shrub.

Viburnum opulus numan, DWARF CRANBERRY BUSH. 1-2'. Very slow growing. May be sheared or left informal. Dense growth. Likes good soil and some shade.

MEDIUM LOW SHRUBS, 3-6 Feet Tall

There are many more good shrubs available in this height class than in the lower size. Many of these should be in more general use to take the place of shrubs which eventually grow too large.

Artemisia abrotanum, OLDMAN WORMWOOD. 2-3'. Tolerates heat, cold and alkaline soil, so is used where nothing else will grow. Gray foliage and rather loose habit. Berberis koreana, KOREAN BAR-BERRY. 3-5'. Of rather vertical habit. Good flowers, fruit and fall color. Suckers some but may be kept in bounds. A very useful and attractive shrub.

Berberis thunbergi, JAPANESE BARBERRY. 2-4½'. An old standby. Should have rich, heavy soil to do well.

Cotoneaster divaricata, SPREADING COTONEASTER. 2-3½'. Sometimes kills back at the tips, but makes an attractive shrub where it has some protection.

Cotoneaster integerrima, EUROPEAN COTONEASTER. 3-5'. Beautiful persistent red berries.
Very hardy. Nice spreading habit. Should be better known.


**Ribes alpinum, ALPINE Currant. 2-4’.** Very neat, slow growing and compact. May be clipped for a formal hedge or can be left as an informal shrub.

**Rhamnus alatus, WINGED Euonymus. 3-5’.** Neat, compact, slow-growing shrub. May be sheared for formal use. Good fall color, and some pink fruit.

**Lonicera syringantha, LILAC HONEYSUCKLE. 4-6’.** Spreads to dense rounded shrub of eight feet wide. Masses of fragrant lilac-colored flowers in May and a few all summer. Useful where there is room for it to spread.

**Philadelphia lemoinei, LEMOINE MOCKORANGE. 3-4’.** A neat rather formal little shrub. Flowers small and single, but covering the plant. Perfectly hardy. May be used in place of larger shrubs such as Bridal Wreath Spirea.

**Physocarpus opulifolia, CI. DWARF COMMON NINEBARK. 4-6’.** Has all the good features of the Bridal Wreath Spirea and several more. Good fall color. Usually smaller in scale than the Spirea. An all-purpose plant.

**Rosa species, WILD ROSES. 1'/2-3’.** Good for naturalizing on banks or in waste places. Combines well with native snowberry.

**Salix purpurea, Cl. DWARF PURPLEOSIER WILLOW. 3-5’.** Small delicate leaves and stems. Very neat if left natural shape or may be sheared. Tolerates a great variety of soils, but occasionally blights badly.

The above picture is of Robert E. Ewalt gloating over his fine crop of Polly peaches on the tree by his back door. Ten to fourteen bushels of fine peaches from your own back yard is something to gloat about. More people might follow his example.
REALIZE that I am sticking my neck away out in attempting to compile a key to the Oaks found in Colorado, but such a key is needed, and wiser men than I hesitate to tackle it, so, here goes, "for better or for worse." If it enables someone to identify the Oaks they come into contact with, the effort will be worthwhile. I would appreciate any corrections or suggestions. Parts of the descriptions used here have been taken from the key prepared by May T. Watts of the Morton Arboretum, some from Rehder's "Manual of Cultivated Trees and Shrubs," the native scrub types from Dr. John B. Hartwell, and some from other sources and personal observation. All known existing keys included either too much or too little for practical use in Colorado.

OAKS IN COLORADO

Oak trees in Civic Center, Denver.

Picture on opposite page of Quercus velutina on Mapleton hill in Boulder, Colo.

Other keys include either too much or too little for practical use in Colorado.
**EASTERN RED OAK**
Quercus borealis
maxima
well-drained upland

**WHITE OAK**
Quercus alba
on well-drained upland

**BUR OAK**
Quercus macrocarpa
on rich bottomland

**PIN OAK**
Quercus palustris
in moist... lowland

**NORTHERN PIN OAK**
Quercus ellipsoïdalis
on well-drained upland

- Smooth upper parts
- Acute-angled branching
- Dark ridged bark
- Horizontally branching leaves persistant in winter
- Scaly whitish bark
- Gnarled branches
- Corky ridges
- Gray, ridged bark
- Straight, winged shoots
- Pyramidal shape
- Leaves persistent in winter
- Deflected dead lower branches
- Smooth upper parts
LEAF KEY TO THE OAKS FOUND IN COLORADO

Leaves with bristle-tipped lobes, or unlobed. Acorns bitter, maturing second season. Bark dark, ridged, not scaly, smooth on younger parts. Buds pointed.

**BLACK OAK GROUP.**

**AA.** Leaves without bristle-tipped lobes. Acorns sweet, maturing first season. Bark usually gray and scaly. Buds usually rounded. **WHITE OAK GROUP.**

**BB.** Leaves lobed or pinnatifid.

**CC.** Leaves lanceolate-acuminate, thick, shiny above, pubescent beneath, rounded base, acute lobes or teeth. Slender petiole. Branchlets glabrous or nearly so.

**Quercus muenlenbergi,** **CHINKAPIN OAK.** *(Yellow Chestnut Oak)*

**DD.** Petioles 1-2½ cm. long, leaves usually triangular at base.

**E.** Leaves glaucous beneath, 10-16 cm. long, 3-4 pairs of regular lobes, usually cut half way or more to midrib. Bark white-scaled. **Quercus prinus,** **SWAMP CHESTNUT OAK.** *(Basket Oak)*

**CC.** Leaves lanceolate-acuminate, thick, shiny above, pubescent beneath, rounded base, acute lobes or teeth. Slender petiole. Branchlets glabrous or nearly so.

**Quercus muenlenbergi,** **CHINKAPIN OAK.** *(Yellow Chestnut Oak)*

**BB.** Leaves lobed or pinnatifid.

**C.** Leaves glabrous or slightly pubescent beneath.

**D.** Petioles less than 1 cm. long. Leaves wavy-lobed, usually eared at base. Dark ridged bark, similar to the Black Oak group.

**Quercus coccinea,** **SCARLET OAK.**

**EE.** Longest lobes almost equaling the broadish middle portion of the leaf. Leaves often dull above. 12-22 cm. long. Lobes narrowing toward margin. Acute-angled branching habit. Dark ridged lower bark and smooth upper limbs. Acorn 2-2.5 cm. high, cup saucer-shaped.

**Quercus borealis,** **NORTHERN RED OAK.** *(Quercus Borealis Maximia, EASTERN RED OAK.)*

**BB.** Leaves without lobes, entire.

**C.** Leaves more than 2 cm. wide, leathery, under side glabrous, persistent in winter. Tree with drooping lower branches.

**Quercus imbricaria,** **SHINGLE OAK.

**CC.** Leaves less than 2 cm. wide, under side pubescent. Twigs fine.

**Quercus phellos,** **WILLOW OAK.

**AA.** Leaves without bristle-tipped lobes. Acorns sweet, maturing first season. Bark usually gray and scaly. Buds usually rounded.

**WHITE OAK GROUP.**

**BB.** Leaves saw-toothed or wavy-toothed.

**C.** Leaves obovate or obovate-oblong.

**D.** Leaves saw-toothed or wavy-toothed.

**E.** Leaves 6-12 cm. long, with 4-7 pairs of veins, and usually acute teeth. Low shrubs. **Quercus prinoides,** **DWARF CHINKAPIN OAK.**

**EE.** Leaves 10-20 cm. long, with 6-8 pairs of veins, thick, firm, coarsely wavy-toothed, shining above, pale tomentose beneath. Numerous small branches from large limbs. Branches peeling. **Quercus bicolor,** **SWAMP WHITE OAK.**

**DD.** Leaves with 10-17 pairs of veins.

**E.** Leaves yellow-green above, minutely downy beneath. Lobes rounded. **Quercus montana,** **CHESTNUT OAK.**

**EE.** Leaves dark green above, tomentose beneath, wavy-margined, wedge-shaped base.

**Quercus prinus,** **SWAMP CHESTNUT OAK.** *(Basket Oak)*

**CC.** Leaves lanceolate-acuminate, thick, shiny above, pubescent beneath, rounded base, acute lobes or teeth. Slender petiole. Branchlets glabrous or nearly so.

**Quercus muenlenbergi,** **CHINKAPIN OAK.** *(Yellow Chestnut Oak)*

**BB.** Leaves lobed or pinnatifid.

**C.** Leaves glabrous or slightly pubescent beneath.

**D.** Petioles less than 1 cm. long. Leaves wavy-lobed, usually eared at base. Dark ridged bark, similar to the Black Oak group.

**Quercus rubra,** **SPANISH OAK.

**DD.** Petioles 1-2½ cm. long, leaves usually triangular at base.

**E.** Leaves glaucous beneath, 10-16 cm. long, 3-4 pairs of regular lobes, usually cut half way or more to midrib. Bark white-scaled. **Quercus alba,** **WHITE OAK.** *(Quercus alba latifoba)*
THE GREEN THUMB

EE. Leaves usually green beneath, 3-12 cm. long, usually cut more than half-way to the middle, with 3-5 pairs of acutish lobes. Medium to large shrub. (Our native shrub Oaks).

F. Leaves large—at least 6 cm. long.

G. Leaves thin. Direction of lobes lateral.

Quercus submolis.

GG. Leaves thick. Direction of lobes forward as well as outward.

H. Terminal lobes distal to the distal deep sinus make a sort of scalloped, semi-circular fan—or under surface notably pubescent.

Quercus utahensis, UTAH WHITE OAK.

HH. Terminal lobes trifoliate.

I. Tips of lobes rounded.

J. Sinuses cut half way to midrib or less (Surface Dull)

Quercus gunisonii, GUNNISON OAK.

JJ. Sinuses cut more than half way to midrib.

K. Sinuses outlining terminal lobe, cutting as deep to midrib as more proximal ones.

Quercus vreelandii, VREELAND OAK.

KK. Sinuses proximal may be more deep than terminal sinus.

Quercus gambeli, GAMBEL OAK.

LL. Tips of lobes acute.

Quercus novomexicana, NEW MEXICAN OAK.

FF. Leaves small—less than 6 cm.

G. Leaves with undulant margins or dentate with prickles.

Quercus undulata, WAVYLEAF OAK.

(including Quercus pungens)

GG. Leaves coarsely dentate with prickles. Distal margin of the lobes practically at right angles to the midrib.

H. Base of Leaves rounded.

Quercus venustula.

HH. Base of leaves cuneate.

Quercus fendleri, FENDLER OAK.

CC. Leaves pubescent or tomentose beneath, green above.

D. Leaves 6-12 cm. long, light green beneath, deeply pinnatifid. Petioles 1 cm. or less long. Branchlets pubescent or tomentose Large shrub to small tree.

Quercus utahensis, UTAH WHITE OAK.


Quercus macrocarpa, BUR OAK.

Double-page cuts of oak trees on preceding pages loaned by Morton Arboretum, Lisle, Ill.
The Rocky Mountain region is well adapted to the growing of tulips.

TULIP TRENDS

MRS. F. S. MATTOCKS

GARDENERS of today have come to realize the value and usefulness of tulips when planning the masses of colors in the garden. There are so many different varieties which can be used effectively in clumps and groups, in beds and borders, and so has added enjoyment in the cheerfulness and brightness of the color armony of the garden.

During the 19th Century tulip cultivation received its greatest impetus, due to the expansion of the railways, and so facilitating distribution. It was in 1837 that the first collection of Breeder hybrids was introduced. There were only fully recognized then the Cottage and Darwin tulips became more popular, because it was found that the breeders contributed a wider range of color, especially with their art shades of bronzes and browns, so lacking in other varieties of long-stemmed tulips.

Cottage tulips were, for the most part, to be found in the old cottage gardens of Britain, and it was the National Tulip Society of England the first sponsored the uniformly colored tulips such as T. Gesneriana, Elegance, and many others for border planting.

The Darwin tulip originated in Holland and was grown by the same family for over 100 years, and was named for this family by the late Mr. Krelage & Son of Holland, this firm having purchased all rights to the original growers. Darwin tulips are general favorites because of their stronger stems and tones of pinks and salmons which are not found in the Cottage variety. Parrot tulips were first discovered in 1660, but Fantasy, which is still most popular was introduced in 1910. Since the advent of Fantasy from Clara Butt, two dozen new Parrot varieties have been formed, about seven or eight of these varieties are now available at moderate prices.

No gardener is complete or has real beauty without early bulbs for color, which brings a realization that winter has ended and the garden is waking from its long sleep. There are the minor bulbs which are the real harbingers of Springtime, then the single and double early tulips, joined by the daffodils, the Triumph tulips, and the May-flowering breeders, Cottages and Darwins which complete the cycle of Spring, and extend into the beginning of the blooming of the perennials and roses.

It has been found that for best results a deep planting should be followed. Planting from 12-15 inches is recommended, the plant takes longer to make its growth, and in so doing, is not so apt to be hurt by the early frosts, which so often follow a warm period and which are so prevalent during the months of February and March. Bulbs planted deeper have stronger and longer stems.

For flowers of larger size, a later and longer blooming period, plant in a north site. East and west plantings are quite good, but a south location should be avoided, as our warm February and March weather causes too quick a growth, with the result the stems are short and the flowers small and stunted.

With plantings at different depths, say 15 inches, 12 inches, 8 inches, 6 inches, one can be sure of a rotation of bloom over a longer period of time. If the same beds are to be used for annuals as well, it is best to lift the bulbs when the foliage turns yellow and becomes flabby, and to replant them in November. Otherwise you may lose your bulbs unless they are planted quite deep, say 15 inches.

Our Colorado soil is generally heavy and clayey, and the frequent watering of the annuls or other plants causes the bulbs to disintegrate and disappear, and the gardener is often at a loss as to why the tulips do not come up the following season.

The bulbs should be lifted for drying as soon as the foliage has turned yellow and flabby and the stem can be bent near the bottom of the plant without breaking it. When dug, place in the shade immediately or cover with burlap, for if exposed to the sun or wind while moist a destructive action takes place and the interior of the bulb becomes a gelatine-like mass.

To dry the bulbs cut off the leaves to about four or five inches, place in a semi-darkened room where there is a circulation of air. Spread them out about four inches in depth, sprinkle with tobacco dust for aphis and with sulphur for mildew. Turn weekly and in this climate in from four to six weeks they should be dry enough for cleaning and storing. You can tell if they are ready by the crispness of the roots and outer skin. Remove the roots and they will usually fall apart, so enabling one to separate the large bulbs from the small before storing, making it easier when ready for replanting.

Place the bulbs in perforated sacks and dust again with tobacco and sulphur and hang in a darkened room with a temperature of about 55 degrees. Usually November is the time for replanting but when the winter is open and warm as we often find it in this region, they can be planted as late as the middle of December.

That tulip growing is becoming more popular in America is proved by the popular demand which has brought into being the newly organized National Tulip Society, Inc., of America, and by the many tulip shows which have been held this year in various parts of America. Outstanding among these held this year was the Atlantic Tulip Show, April 8th-9th. At this time 100,000 tulips were in full bloom throughout the city.

Boston held its Tulip Show on March 15th and Dallas, Texas, staged their Tulip Show on March 6th-12th, while in Holland, Michigan, their annual festival nationally known as "Tulip Time" extends for four days in May, wherever the blooms are at their best. Pella, Iowa, has its Tulip Festival, May 13th-15th. Orange City with its 2,000 inhabitants puts on a Tulip Festival each year, when the entire population appears in Dutch costume.

Colorado is planning to organize its local Tulip Society chapter in the very near future, and then we, too, can plan for our annual Tulip Show.

The National Tulip Society has presented a very comprehensive list of judging points for a standard of tulip judging, which embraces "Specimen or Cultural Judging Points," "Standards for Arrangement," in several classes as Tulips Predominating, Niche or Shadow Box, Table Arrangements, Period Decoration. Also rules to govern a tulip display.

These official standards will be published in the National Council of State Garden Club Handbook of Flower Show Judging, and will replace the schedule originally promulgated by the Royal Horticultural Society of Great Britain many years ago.
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A MAYOR APPRECIATES TREES

A Talk by Hon. Frank Zeldler, Mayor of Milwaukee, Wisconsin, at the National Shade Tree Conference, August 24, 1948.

FRIENDS of the National Shade Tree Conference: I happen to be by profession a civil engineer and I have often recognized that there seems to be some conflict between the engineering profession and those of you who are engaged in tree culture and tree preservation. The average city engineer or highway engineer has a definite destination. He wants to put through a road. He knows the nicest way to put through a road is to follow his transit lines and his investigations in the field and put it through irrespective of what obstacles, such as trees, may be in the way. You know, of course, very often the community protests and wants to save the trees in the path.

I happen to be, however, an engineer who favors also the tree side of the question. I say that for this reason: The value that trees give to property, the value that they give to city life, is not easily measured. Oh, yes, it is very fine to put through a nice new paved street, clean, bright, shining sidewalks on both sides and pavement in the center but if there are no trees there I can assure you from my observation in the city of Milwaukee that that street will eventually become a slum street.

The only way you can really preserve property values is not by piling brick on brick or building the most clever masonry artifice you can build, nor by building fine buildings, no matter how beautiful they may be architecturally but by seeing that they are landscaped properly and, of course, the key feature of any landscape job is appropriate and proper placing of the large-size trees.

Interestingly enough, early this spring I called upon the city nursery.
These, indeed, are grave problems. But I am confident that organizations such as yours will solve them to the benefit of our cities and in solving them you will make for all of us a better life. So whatever I can do as mayor of a town such as this to encourage you to think of the problems of trees in cities, let me do so at this time because trees are important to healthful and clean city life—almost as important as clean human beings. That, of course, you understand is no exaggeration. Take out the masses of trees and the masses of green matter and you will have a city that denatures into slum areas very rapidly.

So while you think of the other problems you have, the problems of rearing trees of their diseases, of how to handle them, how to transfer them, and so forth, I hope there is some portion of your program which will hink of trees in relation to cities and will come up with a sound problem of development that all cities may follow in order to maintain that balance of life that is so necessary.

VERDANT VERSES
THE TREE
A tree has so much dignity—
Does not react emotionally.
Its leaves may flutter in the wind,
But one could hardly say it sinned
Because they waved to you and me.

It likes to shelter us from sun
Or from a rain that’s just begun.
It’s such a friend in time of need—
All that big tree from just a seed;
To tell it secrets is such fun!

KATHERINE PAULL,
Littleton, Colorado.

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AS FOR HOUSE PLANTS, TRY A LITTLE PIONEERING

By ALLEN H. WOOD, JR.
Reprinted by Permission from Horticulture

It is time to think about house plants again. Old standbys that were plunged in the garden all summer, collected scads of fresh air, health and innumerable insects of one kind or another should now be taken in. No, this is not City Park in Denver. It is Franklin Park, Columbus, Ohio. The picture was taken in 1946 when only a few trees had died. Now all the elms are gone, and this means half of the trees. Think what this would mean to our parks. We must become more conscious of the value of our trees and take every precaution to preserve them. This will require trained men on the job to discover pests and disease before they get out of control.

A bit of inspecting and spraying will pay now—for insects enjoy a nice warm house, too. Some of the annuals have left the garden for the living room, too. You are planning on petunia, snapdragon and ageratum flowers for months more. Keep them cool and clip them.

It is proper that you keep and coddle the old friends in the window garden, yet new interest is added by acquiring a few new and different potted pets.

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THE WEEK-END GARDENER

The cool breeze this morning reminded me that fall is here and that we may have severe weather any time. The light frost a few nights ago did not harm anything around the house but it will not be long now until all tender things are killed. I noticed some rather small and young-looking zinnia plants in the border that I believe I will pot up and bring into the house. Possibly there are other things like larkspur and sweet alyssum that will also bloom in the house throughout the winter. I'll try several things. I'm going to fix up a little better place in the south window where I can take better care of my house plants. I'll arrange a shade to cut off the severe sunshine at times, and I'll also arrange places where I can keep quantities of moist peat moss to keep up the humidity.

While I am bringing in peat to use indoors I'll also arrange to get another load to use outdoors in the garden. I believe that it is good mulch for tender plants and then next spring I can cultivate it into the soil and improve its texture. The Oldtimer tells me that I should not fertilize much until all the plants are completely dormant, as it might induce them into an unnatural growth which would not mature before severe weather. He told me to hold off on the water and fertilizer until after the plants lost their leaves.

Mom, come here, there are insects of some kind all over these leaves on the dogwood. What they are doing here just as the leaves are ready to fall more than I can figure. I'll have to call the Oldtimer. He says that this is a common, but almost unknown occurrence. These are aphids which have a sudden spurge of activity at this time, then lay a lot of eggs which are dormant until just as the sap begins to flow in the spring. Then they come to life and do a great deal of damage to the new leaves before anyone is looking for them. He says that now is the time to spray them and prevent them from leaving any eggs. He also says that aphids will work like this on the Snowball bushes and Euonymus shrubs. I thought that our insect troubles were all over for the season. Maybe I'd better look at the junipers and see if there are still aphids on them. We should be able to put our garden to bed for the winter soon.