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Woody Ornamentals and Their Use

Victor J. Miller



Extension Service
University of Nebraska College of Agriculture
and U. S. Department of Agriculture
Cooperating
W. V. Lambert, Director

WOODY ORNAMENTALS AND THEIR USE

Victor J. Miller 1/

Woody plant species serve the following purposes:

1. Landscape development. Woody plants are the basic permanent materials in every landscape planting. Each plant should serve a distinct purpose and hence should be chosen for its mature size, shape and other growth characteristics.
2. Comfort. Man and beast enjoy the comfort provided by shade trees and the protection from winds which comes from properly constituted and located windbreaks and shelterbelts. These make Nebraska a better, more comfortable place in which to live.
3. Conservation. The soil saving effects of woody plants are widely appreciated. Plantings made now will benefit future generations. Wild life is also encouraged and protected by plantings, particularly of the shrubby type.
4. Decorative effect. Greenness is always restful and the varying texture of foliage adds interest. Colorful blossoms, berries, foliage and twigs are useful in developing landscape effects.
5. Community pride. A well planted home or community attracts favorable attention and serves as a stimulus to further neighborhood development.
6. Financial reward. An effective windbreak improves the value of a farm and a well planned landscape planting around the residence increases the desirability and value of any home.
7. Personal satisfaction. Many homeowners or members of their families develop special interests in particular plant species. Relaxation comes through working with living things. Where inclination leads and space permits, woody species may be the type chosen.

1/ Assistant Professor of Horticulture.

Recommended Lists of Woody Ornamentals ^{2/}

The lists on pages 5 to 24 have been prepared to help you select kinds of trees and other ornamentals that are reasonably certain to succeed in your area. The regions for which they are recommended are given with each kind. The extent of each region is shown on the map on the following page. Although many plants may be found growing outside their recommended areas, their success in such places is generally due to exceptionally favorable sites or superior care. The average grower should confine his main plantings to species that are known to be adapted. It is always interesting to try new things, but try new plants in a small way and expect the worst until they prove themselves to be adapted. Many of the plants listed require good care, including supplemental water, in order to thrive.

The zones shown on the map indicate large areas in which certain groups of trees and shrubs may be planted with reasonable assurance of success. These large zones differ in temperature, rainfall, elevation or soil type. Within all zones there are small local areas where environmental conditions may be more severe or more favorable than average. These small areas may differ from their surrounding zones in soil type, fertility, moisture supply or exposure.

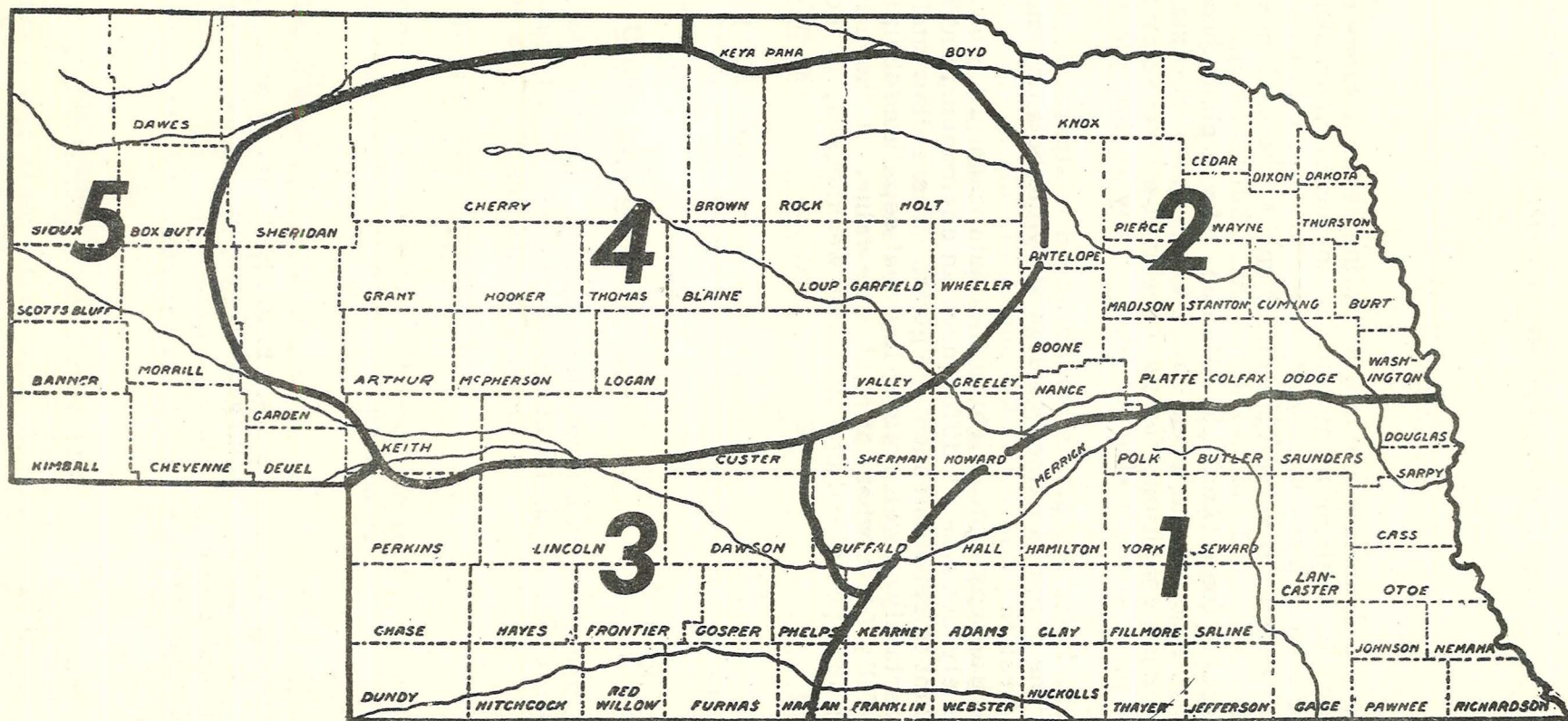
In eastern Nebraska high, dry ridges, gravelly soils or steep slopes with rapid runoff of rain produce growing conditions resembling those in the western part of the state. Plants on claypan soils have their root system and moisture supply limited by the impervious subsoil. In all such cases, drouth-tolerant species of trees such as hackberry, Chinese elm, honeylocust and green ash should be used. Swampy, poorly drained areas, including basins where water collects and stands, should be planted with water-loving species like willow and poplar.

In the sandhill region, conditions are generally more favorable for plants than in the surrounding hard lands. This is because drouth effects are less severe. The soils there vary from sterile dune sands to highly fertile soils in the valleys. In the low-fertility dune sands, such tree species as pines, junipers, hackberry, green ash, black locust, boxelder and cottonwood can be grown. Shrubs that succeed in this poor soil are sand cherry, gooseberry, lilac, spirea, sumac, tamarix and cotoneaster.

Exposed ridges and open plains are subject to drying winds which may injure or kill plants. Protection afforded by shelterbelts and by the buildings of cities sometimes makes it possible to grow plants that might be too tender for the open field. This increases the list of plant material that can be grown in Nebraska.

Over most of Nebraska there are areas with high concentrations of calcium and magnesium carbonates and soluble salts. In the east, these areas are small, but in the west they are sometimes very large. These are the alkali soils that cause the yellowing of leaves and other symptoms known as iron chlorosis. For such sites, choose the salt-tolerant trees and shrubs marked in the lists with an asterisk (*). Even these plants may suffer from chlorosis under extreme conditions.

2/ The plants recommended in this list were selected in cooperation with representatives of the Nebraska Association of Nurserymen. The Nebraska Association is sponsoring a "Plant Nebraska" campaign as a part of the "Plant America" movement of the American Association of Nurserymen. Figures 6, 7, 8, and 9 were drawn by Mort Cooper, Plumfield Nurseries.



Approximate boundaries of Nebraska's five plant-growth regions.

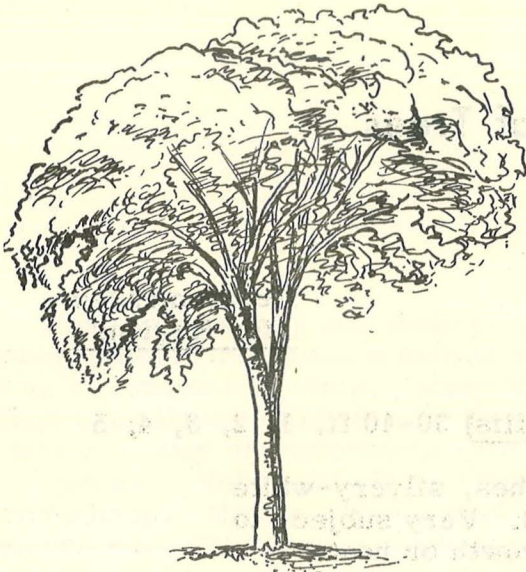
Certain diseases and insects are now afflicting several kinds of trees. For example, phloem necrosis is killing many elms in southeast Nebraska. Oak wilt seems about to invade our state. Many hackberry trees are dying in Lincoln. Although the Dutch elm disease has not yet been found in Nebraska, the bark beetle that transmits it was recently discovered in Lincoln and Omaha. European elm scale is present in many areas of Nebraska, from Omaha to Alliance. If you plant these trees, use them with caution. Entire streets and even entire towns are sometimes planted with one kind of tree. This makes conditions for the spread of a disease or insect much more favorable. Always plant several kinds of trees in any sizable planting.

In the following lists, the plants are arranged in alphabetical order under their common names. The common name is followed by the botanical name. The botanical name is given first only when it is the one commonly used, or when necessary to avoid confusion. The approximate height of the plant when full grown is given in feet. This may vary widely because of differences in environment. The districts of the state where the plant is recommended are given. These districts are only approximate, for there is certainly no well defined line that separates the place where a plant will grow successfully from where it is of little value. A short description of each plant, together with any special cultural needs or weaknesses, is included.

Deciduous Broadleaf Trees

SHADE TREES

<u>Species</u>	<u>Recommended for Regions</u>
Birch, Cutleaf Weeping (<u>Betula pendula gracilis</u>) 30-40 ft.	1, 2, 3, 4, 5
Deeply cut leaves, drooping branches, silvery-white bark. May winterkill in dry years. Very subject to attack by borers if weakened by drowth or heat.	
Elm	
American (<u>Ulmus americana</u>) 60-100 ft.	1, 2, 3, 4, 5
The most widely planted shade tree. Wide spreading, arching branches. Plant with caution, because of Phloem necrosis Dutch elm disease and European elm scale. Caution: Do not plant in solid blocks!	
Moline (<u>Ulmus americana Moline</u>) 60-100 ft.	1, 2, 3, 4, 5
Variety of American elm. Narrow, pyramidal, rapid growing tree, subject to the same pests as the American.	
*Chinese (<u>Ulmus pumila</u>) 40-50 ft.	1, 2, 3, 4, 5
Rapid growing, quite drowth resistant. Not recommended as a lawn tree except in the drier portions of the state. Chlorosis resistant.	
Christine Buisman (a hybrid) 80 ft.	1, 2, 3, 4, 5
Selection from Holland. Immune to Dutch elm disease and resistant to Phloem necrosis.	
Ginkgo (<u>Ginkgo biloba</u>) 60 ft.	1
A "living fossil." Attractive foliage, consisting of fan-shaped leaves, quite different from common broadleaf trees. The foul-smelling fruit is produced only if male and female trees are planted near each other. Slow growing.	
Green Ash (<u>Fraxinus pennsylvanica lanceolata</u>) 50-60 ft.	1, 2, 3, 4, 5
Shapely round-headed tree with slender, spreading branches. Shaded twigs may die and drop off, making some litter under the tree.	



A



D



B



E



C



F

Variations in shape of shade trees. (A) vase, (B) weeping, (C) round-topped, (D) columnar, (E) pyramidal, (F) spreading.

Hackberry (Celtis Occidentalis) 50-60 ft. 1, 2, 3, 4, 5

Good street tree, but relatively slow growing. Berries provide food for birds. Drouth resistant.

Honeylocust (Gleditsia triacanthos) 40-60 ft. 1, 2, 3, 4, 5

Light shade cast by relatively thin foliage makes this excellent for lawns. Podless and thornless selections are now available. Drouth resistant. Moraine or Beatrice are good varieties. Chlorosis resistant.

Kentucky Coffeetree (Gymnocladus dioicus) 40 ft. 1, 2, 3, 4, 5

Very hardy. Wide, flat pods hang on all winter.

Linden All drouth resistant.

American (Tilia americana) 75 ft. 1, 2, 3, 4, 5

Spreading tree, fragrant flowers in spring.

European (Tilia europaea) 65 ft. 1, 2, 3, 4, 5

Somewhat smaller and less hardy than American.

Redmond (Tilia euchlora Redmond) 65 ft. 1, 2, 3, 4, 5

Pyramidal linden, excellent shape.

Maple

Norway (Acer platanoides) 60 ft. 1, 2

Round-headed tree makes dense shade. Trunks of young trees subject to sunscald can be prevented by wrapping.

Schwedler (Acer platanoides Schwedleri) 50-60 ft. 1, 2

Same as Norway but foliage is red in spring, becoming reddish-green in summer.

Soft (Acer saccharinum) 60-80 ft. 1, 2, 3, 4, 5

Rapid growing, not very long-lived. Plant in moist locations. Various varieties, such as Blair and cut-leaf, are available. Subject to ice storm damage unless properly shaped.

Sugar (Acer saccharum) 50-70 ft. 1, 2

Leaves turn bright orange or scarlet in autumn.

Oak

Pin (Quercus palustris) 70-80 ft. 1, 2

Pyramidal form, rapid growth. Foliage turns orange-scarlet in fall. Very susceptible to chlorosis.

Scarlet (Quercus Coccinea) 70-80 ft. 1, 2

Similar to pin oak, brighter red foliage in fall.

Red (Quercus rubra) 70-80 ft. 1, 2

Good city tree, resistant to smoke; rapid grower.

Bur (Quercus macrocarpa) 70-80 ft. 1, 2, 3, 4, 5

Wide spreading, massive tree.

Poplar

White (Populus alba) 60 ft. 4, 5

Leaves lobed, white beneath. Sometimes mistaken for maple. Suckers badly on moist soil.

Other species and varieties, including cottonwood. 1, 2, 3, 4, 5

Some are wide spreading trees, others such as Lombardy and Bolles are narrow and upright.

*Russian-olive (Elaeagnus angustifolia) 20-25 ft. 1, 2, 3, 4, 5

Silvery-gray leaves, grayish-white berries. Chlorosis resistant.

Sycamore (Platanus occidentalis) 75 ft. 1, 2, 3, 4

Bark smooth, colored olive-green to almost white on young parts but flaking off from old trunk. Subject to leaf blight.

Tuliptree (Liriodendron tulipifera) 80 ft. 1

Orange-yellow flowers in spring the size and shape of tulips. These furnish a good source of nectar for bees.

Willow, Golden Weeping (Salix: Niobe) 30-35 ft. 1, 2, 3, 4, 5

Weeping form with light green leaves and golden-yellow bark.

FLOWERING TREES

The trees in this group are grown more for their flowers or fruits than for their shade. Those marked "tender," although apt to suffer winter damage occasionally, are interesting enough to justify planting in spite of occasional loss.

<u>Species</u>	<u>Recommended for regions</u>
Chinese Pagoda-tree (<u>Sophora japonica</u>) <u>Tender</u> 25 ft.	1, 2, 3
Long panicles of yellowish-white flowers in late summer. Used occasionally for variety.	
Flowering Crab (<u>Malus</u> species) 10-25 ft.	1, 2, 3, 4, 5
White, pink or red blossoms in spring, some species with ornamental fruit large enough to use. Avoid varieties such as bechtel's flowering crab that are very susceptible to cedar rust.	
Flowering Dogwood (<u>Cornus florida</u>) <u>Tender</u> 15 ft.	1
Shrub-like, large single white flowers, red fruit. Foliage turns various shades of red in the fall.	
Flowering Plum (<u>Prunus</u> species) 8-18 ft.	1, 2, 3, 4, 5
Pink flowers in the spring. Several species and varieties available.	
Goldenrain-tree (<u>Koelreuteria paniculata</u>) <u>Tender</u> 35 ft.	1, 2, 3, 4
Yellow flowers in broad, loose panicles in summer.	
Hawthorn (<u>Crataegus</u> species) 15-30 ft.	1, 2, 3, 4, 5
Many species and varieties. Flowers in spring. Orange or red fruits in fall. Get variety that is resistant to cedar rust when possible.	
Mountain Ash (<u>Sorbus americana</u>) <u>Tender</u> 25 ft.	1, 2, 5
Clusters of bright orange-red fruits in fall. Sunscalds in exposed locations.	
Magnolia (<u>Magnolia soulangeana</u>) 20 ft.	1
Tender in other areas. Large pink and white blossoms in early spring.	

Redbud (Cercis canadensis) 30 ft. 1, 2, 3, 4

Pink, pea-like flowers in spring before leaves appear.
Does best in a protected location.

Tree Lilac (Syringa amurensis japonica) 25 ft. 1, 2, 3, 4, 5

Large clusters of small white flowers in June.

Deciduous Shrubs

LOW GROWING, 1 1/2 TO 4 FT.

<u>Species</u>	<u>Recommended for regions</u>
Alpine Currant (<u>Ribes alpinum</u>)	1, 2, 3, 4, 5
Dense, shapely shrub. Flowers inconspicuous. Does well in shade. Avoid sunny locations.	
Barberry (<u>Berberis thunbergi</u> and var. <u>atropurpurea</u>)	1, 2
Several species, but ones listed are most common. Species <u>thunbergi</u> , Japanese Barberry, has green leaves; its variety <u>atropurpurea</u> has red leaves. Both are a brilliant red in the fall.	
Coralberry (<u>Symphoricarpos orbiculatus</u>)	1, 2, 3, 4, 5
Red berries in fall and winter. Stands shade. Holds soil on steep banks. Use in lawns with caution, for it suckers profusely.	
Cranberrybush, Dwarf (<u>Viburnum opulus nanum</u>)	1, 2, 3, 4, 5
No flowers. Used as low hedge or foundation plant for small size, not over 2 feet.	
Flowering Almond (<u>Prunus glandulosa</u>)	1, 2, 3, 4, 5
Pink or white double flowers close to the branches in spring.	
Forsythia, Dwarf (<u>Forsythia</u> species)	1
Useful because of small size.	
*Gooseberry (<u>Ribes</u> species and hybrids)	1, 2, 3, 4, 5
Can be used as an ornamental as well as for fruit. Chlorosis resistant.	

Hydrangea Snowhill (Hydrangea arborescens grandiflora) 1, 2, 3, 4, 5

Large, flat heads of double white flowers in June.
Plant in a shaded location on the north or east.

Japanese Quince Dwarf (Chaenomeles japonica) 1, 2, 3

Orange-scarlet flowers in early spring. Dark, shiny green leaves.

Pigmy Caragana (Caragana pygmaea) 3, 4, 5

Small, pea-like yellow flowers in late spring.

Potentilla (Potentilla fruticosa) 1, 2, 3, 4, 5

Golden-yellow, strawberry-like flowers all summer.

Sand Cherry (Prunus besseyi) 1, 2, 3, 4, 5

Semi-prostrate plant, dark green glossy leaves, and white flowers. Black fruits are astringent but edible. Very susceptible to chlorosis.

Snowberry (Symphoricarpos racemosus) 1, 2, 3, 4, 5

Relative of coralberry, but more refined. Grows well in shade. White fruits on plant all winter.

Spirea, Anthony Waterer (Spiraea bumalda var. Anthony Waterer) 1, 2, 3

Upright growing, flat heads of rosy crimson flowers. Cut back to ground every year or two.

Spirea, Froebel (Spiraea bumalda var. Froebeli) 1, 2, 3, 4, 5

Slightly larger than Anthony Waterer with flowers more pink than red.

Spirea, Blue (Caryopteris incana) 1, 2, 3, 4, 5

Not a true spirea. Numerous clusters of powdery blue, fringed flowers in the fall. It may kill back during winter and should always be cut to near the ground each spring. Hybrids such as Blue Mist are best.

Spirea, Thunberg (Spiraea thunbergi) 1, 2

Arched branches, white flowers in very early spring. Leaves may become yellow in summer.

MEDIUM-SIZED, 4 to 6 FEET.

- Barberry, Mentor (Berberis mentorensis) 1
Upright growing, dark green foliage.
- Buddleia (Buddleia species and varieties) 1, 2, 3, 4, 5
Summer lilac or butterfly bush. Large lilac-shaped spikes of white to red and purple flowers in late summer and fall. Kills back in winter, but should be cut back anyway.
- Buttonbush (Cephalanthus occidentalis) 1
Coarse shrub. Unusual white, globular flower heads in summer.
- Cotoneaster divaricata (Spreading Cotoneaster) 1, 2, 3, 4, 5
Upright with spreading branches. Pink flowers, red fruits. Glossy green leaves turn red in autumn.
- Cotoneaster integerrima (European Cotoneaster) 1, 2, 3, 4, 5
Flowers pale pinkish, fruit bright red in fall.
- Euonymus alatus compacta (Compact winged Euonymus) 1, 2, 3, 4, 5
Corky wings along branches. Foliage bright red in fall.
- Hydrangea, Peegee (Hydrangea paniculata grandiflora) 1, 2
Large heads of sterile white flowers turning pink and then bronze green. Prune heavily each spring.
- Japanese Quince (Chaenomeles lagenaria) 1, 2, 3
White, pink, rose or scarlet flowers in early spring.
- Jetbead (Rhodotypos kerrioides) 1, 2, 3, 4, 5
White flowers all summer, black fruits in winter.
- Mock-Orange Lemoine (Philadelphus lemoinei) 1, 2, 3, 4, 5
Free-flowering, sweet scented, compact growth.
- Ninebark, Dwarf (Physocarpus opulifolius nanus) 1, 2, 3, 4, 5
Clusters of whitish flowers in May or June, reddish seed pods.

Privet, Regel (Ligustrum obtusifolium var. Regelianum) 1

Dense growing, horizontal branches. Clusters of black fruits in winter.

Rhus trilobata 1, 2, 3, 4, 5

Sumac with 3-parted leaves, spreading. Clusters of reddish, hairy fruits and red leaves in autumn.

Spiraea arguta (Garland spirea) 1, 2, 3, 4

Slender arching branches. Small white flowers in spring.

Spiraea prunifolia (Bridalwreath) 1, 2, 3, 4, 5

Flowers white, fully double, early spring. Growth very upright.

Spiraea vanhouttei (Vanhoutte Spirea) 1, 2, 3, 4, 5

Most common spirea. Clusters of white flowers in May. Does well in partial shade or full sun. Often called Bridalwreath.

Viburnum carlesi 1

Blossoms fragrant, white or pink in early spring. Fruits in fall blue-black.

Weigela, small varieties (Weigela species and var.) 1

Hardy in other regions if planted on the north or east of a building. Spreading plant. Flowers of most varieties some shade of red, but some are white. Flower in late spring and intermittently through summer if pruned following first bloom. Vanicek and Bristol Ruby are good varieties.

TALL SHRUBS, OVER 6 FEET

Aronia melanocarpa (Black Chokeberry) 1, 2, 3, 4, 5

Abundant black fruit and good red foliage in fall.

Beautybush (Kolkwitzia amabilis) 1, 2, 3, 4, 5

Upright center growth with arching branches. Many small pink flowers in May or June. Not dependable in regions 4 and 5.

*Caragana arborescens (Siberian peashrub) 4, 5

Upright shrub, many stems. Yellow pea-like flowers in June. Chlorosis resistant.

Cornus species (Dogwood) 1, 2, 3, 4, 5

Several species and varieties available. Consult nurserymen. Prefer shade and moist soil.

Cotoneaster acutifolia (Peking Cotoneaster) 1, 2, 3, 4, 5

Rather erect plant. Dark shiny leaves. Clusters of bloom in May or June produce conspicuous black fruits.

Euonymus alatus (Winged Euonymus) 1, 2, 3, 4, 5

Corky wings on branches, bright red foliage in autumn.

Euonymus atropurpurea (Wahoo) 1, 2, 3, 4, 5

Leaves and 4-angled fruit capsules red in fall. Sends up root sprouts.

Forsythia species (Golden Bell) 1

Yellow flowers in April before leaves appear. Prune severely after bloom.

Hazelnut (Corylus species) 1, 2, 3, 4, 5

Dense shrubs. Occasionally produce nuts if more than one variety is planted.

Juneberry (Amelanchier alnifolia) 1, 2, 3, 4, 5

White blossoms early in spring. Purplish fruit edible, but rather tasteless.

*Lilacs (Syringa species and varieties) 1, 2, 3, 4, 5

Clusters of purple, red or white flowers in spring. Double and single flowered varieties available. Very hardy. Common lilac more apt to sucker than French hybrids. Chlorosis resistant.

Maple, Amur (Acer ginnala) 1, 2, 3, 4, 5

Red leaves in the fall. Small tree or large shrub.

Mock-Orange (Philadelphus species and varieties)

White flowers in May or June. Flowers, double or single, fragrant or scentless, according to variety.

Nanking Cherry (Prunus tomentosa) 1, 2, 3, 4, 5

Pink buds, white flowers and ornamental red fruits which are quite tasty. Makes an excellent windbreak for the south side of a garden.

Prunus triloba (Flowering Plum) 1, 2, 3, 4, 5

Double, rose-like flowers appear before leaves.
Leaves are green.

Prunus cistena (Red-leaved plum or Purple
leaf Sand Cherry) 1, 2, 3, 4, 5

Red foliage, pink blossoms in spring.

Other species and varieties of plums are available.

Rhus species 1, 2, 3, 4, 5

Some species, the sumacs, have clusters of reddish-brown fruits and brilliant red autumn color. Fragrant sumac is one of best species. Some may sucker abundantly.

Rose of Sharon (Hibiscus syriacus) 1

Shrub Althea. August blooming, upright growing plant with hollyhock-like flowers, either single or double, ranging in color from white to rose and purple. Many varieties.

Smoketree, Common (Cotinus coggygia) 1

Masses of plumy purple or green flower stems in July or August. Hardy in zones 2, 3, and 4 if protected from wind.

*Tamarix (Tamarix species and varieties) 1, 2, 3, 4, 5

Airy heads of pink blooms from early summer to fall according to species. Cut late flowering sorts to ground in the spring when they become ungainly. Chlorosis resistant.

Weigela florida 1

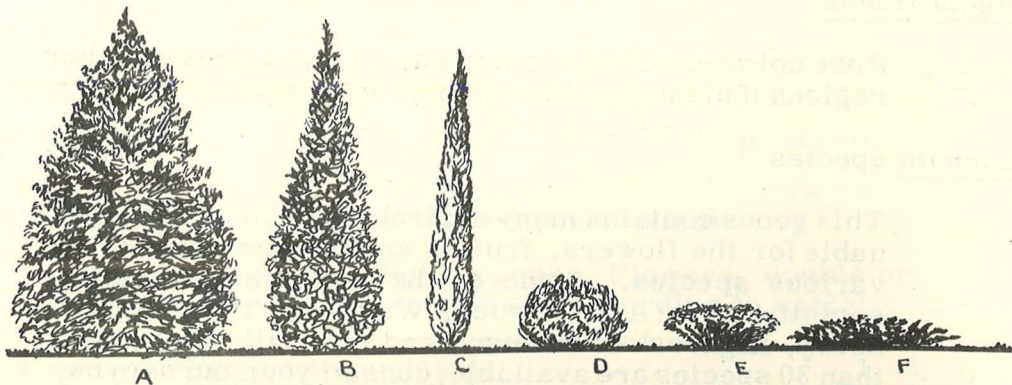
Rose colored flowers in May and June. Hardy in other regions if planted on the north or east side of building.

Viburnum species 1, 2, 3, 4, 5

This genus contains many desirable shrubs. It is valuable for the flowers, fruits, and autumn color of the various species. Some of the better known representatives are: Arrow-wood, Wayfaring Tree, Nannyberry, Highbush Cranberry, and Snowball. Since more than 30 species are available, consult your nurserymen for one to fill your special needs.

Coniferous Evergreens

<u>Species</u>	<u>Recommended for regions</u>
Arbor-Vitae (<u>Thuja occidentalis</u> and <u>orientalis</u> var.) 2-40 ft.	1, 2, 3
Foliage in flat sprays. Shape varies from globe to pyramidal. May suffer or be killed some winters.	
Fir	
Douglas (<u>Pseudotsuga taxifolia</u> var. <u>glauca</u>) 70 ft.	1, 2, 3, 4, 5
Rapid growing, retains lower limbs in old age. Foliage dark green or soft blue. Not a true fir.	
Concolor (<u>Abies concolor</u>) 70 ft.	1, 2, 3, 4, 5
Horticultural selections should have a decidedly bluish color.	
Balsam (<u>Abies balsamea</u>) 50 ft.	2, 4, 5
Needles fragrant, shiny, bright green. Short lived except in cool, moist locations.	
Hemlock (<u>Tsuga canadensis</u>) 70 ft.	1, 2
Seldom over 25 feet under cultivation. Regular conical form, slow growing except in cool, moist locations.	
Juniper (<u>Juniperus</u>)	1, 2, 3, 4, 5
All varieties hardy in Nebraska. Regardless of ultimate height listed, they can all be trimmed and kept small for many years.	



Variations in the forms of evergreens. (A) tall-growing pyramidal, (B) medium-sized pyramidal, (C) columnar, (D) globe, (E) spreading, (F) prostrate.

Upright forms:

*J. virginiana varieties (Red-Cedar) 75 ft.

Large trees with green foliage. Not recommended in the 7 counties along the Missouri River from Washington County south because it serves as an alternate host for cedar rust, which damages apples. Chlorosis resistant.

J. scopulorum varieties (Colorado Red-Cedar) 30 ft.

Most have a conical shape and silver colored foliage.

J. Chinensis varieties 20 ft.

Foliage light green with slight bluish cast. Form varies from broad and bushy to very narrow and upright.

Bush forms:

Pfitzer (J. chinensis pfitzeriana) 6 ft.

Spreading plants with green or slightly bluish foliage. Used principally in foundation plantings. Several similar varieties.

Savin (J. sabina) 6 ft.

Spreading, but branches grow rather upright. Widely used in foundation plantings. Several similar varieties.

Prostrate forms:

Andorra (J. horizontalis plumosa) 2 ft.

Spreading plant with gray-green foliage in summer changing to purple-bronze in autumn.

Carpet varieties (J. species and varieties) 1 ft.

Many varieties of this creeping type are available. Branches lie flat on the ground. Foliage color and type varies with variety.

Larch, European (Larix europaea) 60 ft.

1, 2

Conifer which loses its needles in winter. Pyramidal type of growth. Light green needles in clusters.

Pine

Ponderosa (Pinus ponderosa) 60 ft.

1, 2, 3, 4, 5

Straight trunked, long heavy needles. Coarse appearance. Drouth resistant. Also called Western Yellow or Bull Pine.

*Austrian (Pinus nigra) 50 ft. 1, 2, 3, 4, 5

Long, rigid, dark green needles. Drouth resistant.
Chlorosis resistant.

White (Pinus strobus) 75 ft. 1, 2

Rapid growing, straight trunked. Soft, pale green
needles. Grown as a specimen tree.

Limber (Pinus flexilis) 30 ft. 1, 2, 3, 4, 5

Clusters of dark green needles twist different direc-
tions. Branches are extremely flexible.

Scotch (Pinus sylvestris) 50 ft. 1, 2, 3, 4, 5

Tops of older trees often become flat and irregular.
Bark is cinnamon colored.

Pinyon (Pinus edulis) 30 ft. 1, 2, 3, 4, 5

Slow growing, produces edible seeds.

Mugho (Pinus mugo var. mughus) 4 ft. 1, 2, 3, 4, 5,

Dwarf pine, round topped. Used extensively in founda-
tion plantings.

Spruce - All kinds have a pyramidal type of growth.

Colorado (Picea pungens and varieties) 60 ft. 1, 2, 3, 4, 5

Horticultural varieties are prized for their bright blue
color. Used mostly as specimen trees.

Black Hills (Picea glauca var. glauca) 60 ft. 1, 2, 3, 4, 5

Very symmetrical tree, foliage green to bluish. Used
for specimen trees. Slow growing.

Norway (Picea abies) 75 ft. 1, 2

Dark, somber green color. Branches on older trees
quite drooping.

Yew - Plant all varieties in a location protected from the sun on 1, 2, 3,
the south or the west. All have very dark green foliage 4, 5

Capitata (Taxus cuspidata capitata) 25 ft.

Upright with a single stem.

Cuspidata (Taxus cuspidata) 10 ft.

Low, spreading bush type.

Hicks (Taxus media hicksi) 15 ft.

Many upright-growing branches make a rather columnar plant.

Browns (Taxus media browni) 10 ft.

Rather vase-shaped, but ordinarily kept trimmed in a globe form.

Broadleaf Evergreen Shrubs and Ground Covers

All of these are rather tender plants and can be expected to survive only in Region 1.

Species

Euonymus

E. coloratus (Purpleleaf Wintercreeper) 3 ft.

Foliage green in summer, changing to blood-red in winter in the sun.

E. patens (Spreading Euonymus) 5 ft.

An erect-growing shrub. Leaves may turn brown before spring. May be hardy over a wider area.

E. radicans (Common Wintercreeper) 4 ft.

A vine with rose-red berries. Grown as a shrub by keeping it trimmed back and allowing it to pile up.

E. radicans vegetus (Bigleaf Wintercreeper) 4 ft.

Similar to E. Radicans but has larger leaves.

Mahonia

M. aquifolium (Oregon Hollygrape) 4 ft.

Leaves shiny, leathery and spiny-toothed. Mature leaves turn red in autumn. Fruit is purple-black.

M. repens (Creeping Mahonia) 1 ft.

Spreads by underground stems and is used principally as a ground cover. Hardy over a wider area if planted in the shade.

Shrubs and Trees for Hedges

Hedges may be of two types.

1. Unsheared. In unsheared hedges, the plants are allowed to grow more or less naturally. Pruning usually consists of removing old stems at the ground. The plant material is chosen for its ultimate height.

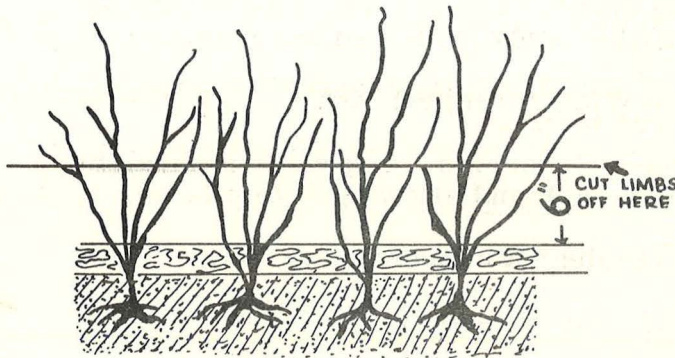
2. Sheared. Almost any species of tree or shrub can be grown successfully as a sheared hedge. The proper method for deciduous plants is to set the plants close together and cut them off a few inches above the ground.

This makes the plants branch very low, which is necessary for a nice looking hedge. They should be kept trimmed so the top is always narrower than the base of the hedge. This allows light to reach the base and keeps it producing foliage clear to the ground. Evergreens are allowed to grow about as high as the hedge is wanted before their tops are cut off.

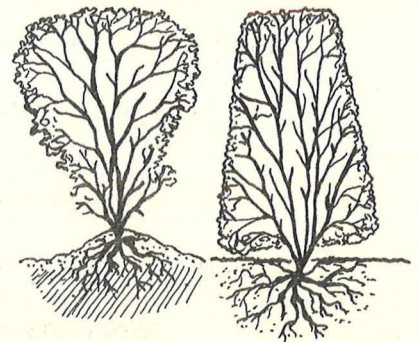
The most common plants used for hedges are;

Japanese Barberry
Cotoneaster
Chinese Elm
Lilac
Honeysuckle

Russian Mulberry
Spirea Vanhoutte
Privet
Red-Cedar



Proper method of pruning
a hedge at planting time.



End view of trimmed hedges, showing
correct shape (right) compared
with incorrect shape (left).

Vines

Vines are grown for beautiful flowers, fruit, or foliage; arbors, screens for privacy, ground covers, and for shade and appearance on houses.

<u>Species</u>	<u>Recommended for regions</u>
Baltic Ivy (<u>Hedera helix baltica</u>)	1, 3
Clings to masonry. May sunscald if planted on the south side of a house.	
Beta Grape (<u>Vitis</u> species)	1, 2, 3, 4, 5
Excellent for covering trellis. Fruit good, but smaller than most other cultivated grapes.	
Bittersweet (<u>Celastrus scandens</u>)	1, 2, 3, 4, 5
Twining vine, bright red berries with orange husks in fall.	
Boston Ivy (<u>Ampelopsis veitchi</u>)	1, 2
Rapid growing, clings to any surface.	
Clematis, large flowered (<u>Clematis</u> species)	1, 2, 3, 4, 5
Large, lovely colored blossoms according to variety. Blooms mostly in summer. Support on trellis.	
<u>Clematis paniculata</u> (Sweetautumn clematis)	1, 2, 3, 4, 5
Great profusion of small, white, fragrant flowers in autumn. Support on trellis.	
Engelmann Ivy (<u>Ampelopsis engelmanni</u>)	1, 2, 3, 4, 5
Vigorous, clinging vine. Brilliant fall color.	
<u>Euonymus</u>	
<u>E. Radicans</u> (common wintercreeper)	1
Evergreen clinging vine with ornamental rose-red berries.	
<u>E. radicans vegetus</u> (Bigleaf wintercreeper)	1
Variety of preceding species, larger leaves. Slow growth keeps it from being a nuisance by growing over windows, doors, etc.	

- Halls Honeysuckle (Lonicera halliana) 1, 2, 3, 4, 5
Rapid growth, fragrant bloom all summer. Good for covering a porch, or ground cover for steep banks.
- Scarlet Trumpet Honeysuckle (Lonicera sempervirens) 1, 2, 3, 4, 5
Half climbing shrub, dark green foliage and orange-scarlet, tubular flowers.
- Silver Lace Vine (Polygonum auberti) 1, 2, 3, 4, 5
Fast growing, twining vine. Light green leaves and fleecy white flowers.
- Trumpet Vine (Bignonia radicans) 1, 2, 3, 4, 5
Strong growing, twining vine found principally on fences. Large, orange-red trumpet-shaped flowers.
- Virginia Creeper (Ampelopsis quinquefolia) 1, 2, 3, 4, 5
Clinging vine, very hardy. Leaves a beautiful red in autumn. Also called woodbine.
- Wisteria (Wisteria species and varieties) 1, 2, 3, 4, 5
Long clusters of lilac purple, white or pink flowers in early summer. Used mainly on arbors and trellises. Flowerbuds may winterkill.

Windbreaks

Windbreaks are valuable around farmsteads for the comfort they give to both man and livestock. They lower fuel consumption. Windbreaks are used around fields for the protection of crops, soil, and livestock. They add much to the beauty of a farm.

A windbreak should include fast-growing, broad-leaf trees for quick effect, and evergreens for the more permanent planting and year-round protection. For information on planting a windbreak, see Nebraska Extension Circular 1721, "Tree Planting on the Farm." Most of these species are described in more detail in the preceding ornamental lists.

<u>Species</u>	<u>Recommended for regions</u>
TALL DECIDUOUS TREES	
*Chinese Elm	1, 2, 3, 4, 5
Fast growing, temporary tree. Drouth resistant. Chlorosis resistant.	
American Elm	1, 2, 3, 4, 5
Plant where moisture is abundant. Use caution be- cause of phloem necrosis, Dutch elm disease and European elm scale.	
*Honeylocust	1, 2, 3, 4, 5
Hardy, does well in western Nebraska. Chlorosis resistant.	
Hackberry	1, 2, 3, 4, 5
Relatively slow growing.	
Cottonwood	1, 2, 3, 4, 5,
Rapid growth. Plant on moist, well drained sites.	
Green Ash	1, 2, 3, 4, 5
Hardy, rapid growth. Some trouble with borers.	
MEDIUM TO SHORT DECIDUOUS TREES	
*Russian-Olive	1, 2, 3, 4, 5
Hardy, rapid growing. Do not plant next to evergreen row. Chlorosis resistant.	
Russian Mulberry	1, 2, 3, 4
Bushy, suitable for outside row of windbreak. May freeze back near northern and western limits.	
Boxelder	4, 5
Fairly rapid growing, hardy.	
Wild Plum	1, 2, 3, 4, 5
Shrub row in shelterbelt, erosion control, wild life protection.	

SHRUBS, DECIDUOUS

- *Caragana 2, 4, 5
Upright, narrow shrub useful for garden windbreak.
Chlorosis resistant.
- Cotoneaster 1, 2, 3, 4, 5
Provides food and protection for wildlife, and is ornamental.
- *Lilac 1, 2, 3, 4, 5
Very hardy and also ornamental. Chlorosis resistant.
- Nanking Cherry 1, 2, 3, 4, 5
Excellent for low, garden windbreak.
- Tatarian Honeysuckle 1, 2, 3, 4, 5
Very bushy.

EVERGREEN TREES

- *Red Cedar 1, 2, 3, 4, 5
Plant on windward side or as a single-row windbreak.
Do not plant in Otoe, Cass, Sarpy, Washington, Nemaha, Douglas, or Richardson Counties. Chlorosis resistant.
- Ponderosa Pine (Western Yellow or Bull) 1, 2, 3, 4, 5
Hardy, drouth-resistant, rapid-growing after establishment.
- *Austrian Pine 1, 2, 3, 4, 5
Same characteristics as Ponderosa pine. Chlorosis resistant.
- Douglas-Fir 1, 2, 3, 4, 5
Seems satisfactory. but suitability not yet proved.
Holds limbs to the ground. Suggest trial plantings in place of red-cedar, especially in counties where red-cedar should not be planted.

Landscaping

Landscaping involves the planting and arrangement of a homestead for maximum use and beauty. Although beauty is the primary aim, you must also provide for such utilitarian objects as drives, walks, clotheslines, garbage cans, etc. Figures 6 to 9 illustrate the types of arrangement that may be made on various sizes and shapes of properties. No kinds of plants are specified in the drawings. These should be selected from the lists in the preceding section.

The five principles you should follow to achieve good landscaping effects are:

1. Simplicity. Keep your plantings simple. When shrubs and trees are small, there is a tendency to plant too many of them. This leads to overcrowding when they get bigger. Do not clutter open expanses of lawn with such things as shrubs, flower beds and iron dogs.
2. Scale. Select shrubs and trees that will be the right size for your home. Tall shrubs and large trees can be used around a large house and in large areas; but low-growing shrubs and smaller trees will be in better proportion with a low house.
3. Sequence. Arrange plants in sequence according to their height. Flank taller shrubs with lower growing ones.
4. Focalization. There should be a focal point for any view, that is, some central feature to which the eye is drawn. From a distance this would be the home itself. When viewed from nearby, the front entrance of the home would be the focal point.
5. Balance. Balance means arranging plants to give the impression that there is as large a bulk of plant material on one side as on the other. You may use different kinds of plants on either side of an area; but the impression of bulk should be the same.

Keeping these principles in mind, make a landscape plan to scale on paper before starting your actual planting. Draw an aerial view of the lot and house, including the floor plan of the first floor. If the present plan is being revised, draw in the outlines of existing shrubs, trees, and flower beds. If permanent features such as drives and walks are present, draw them also. Draw additions or changes on the plan before any actual plantings are made. Divide the home grounds into three separate areas according to use. These are:

The public area. This, as the name implies, is the area to the front of the house which the casual passer-by sees. Its arrangement is similar to that of a painting. A good uncluttered lawn furnishes the foreground of the view. The front walk of homes being built today is generally laid from the front door to the drive rather than to the public sidewalk. Shade trees should frame the house. Plant them well in front of the corners of the house and, if possible, slightly to the side. This is impractical on a narrow city lot. In such a place, each yard should have one tree that helps frame both its owner's house and his neighbor's house. Each house is thus framed with two trees.

The foundation planting in front of the house should help blend the house in with its surroundings and focus the gaze on the front entrance, the center of interest. Upright formal shrubs are used on each side of the front entrance and usually larger ones at the corners of the house. Lower-growing shrubs are planted along the foundation.

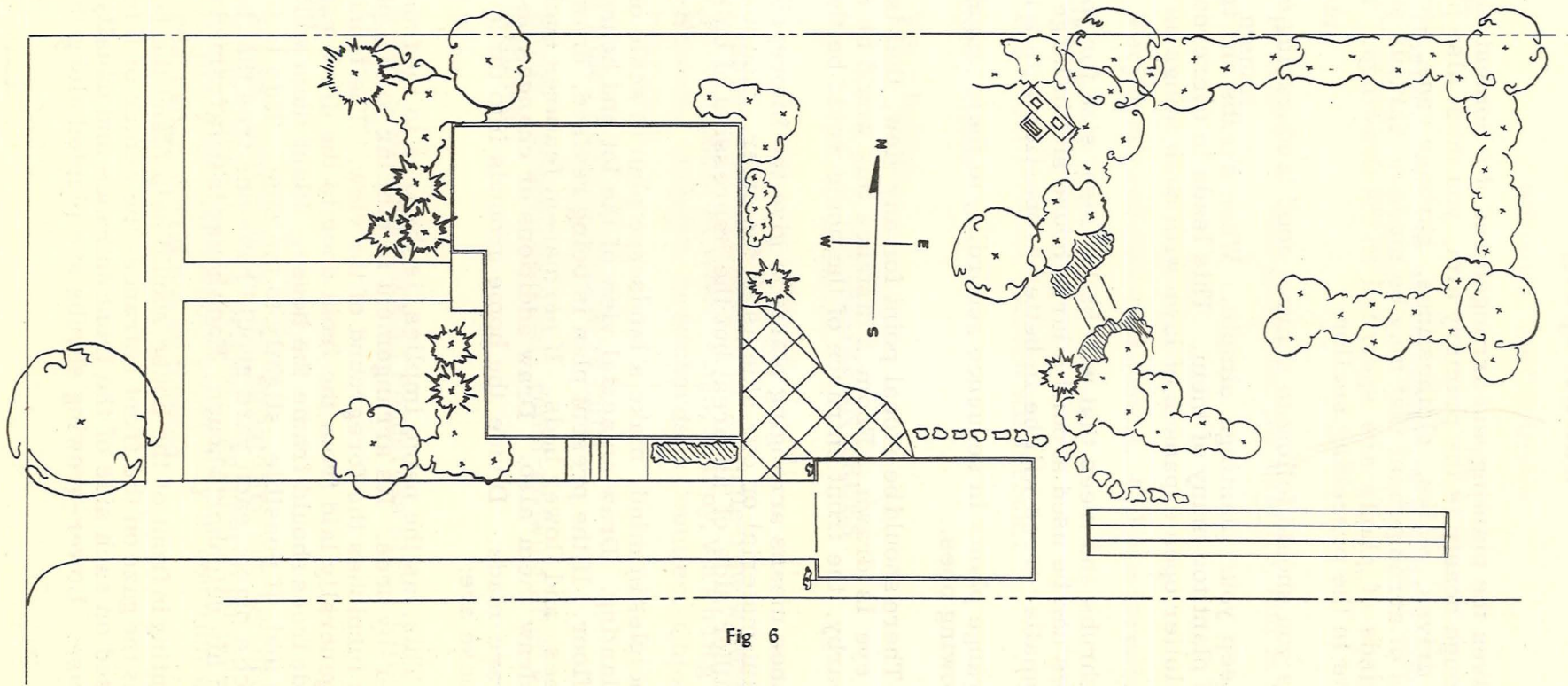


Fig 6

Figure 6. --The landscaping of a city home on a small lot.

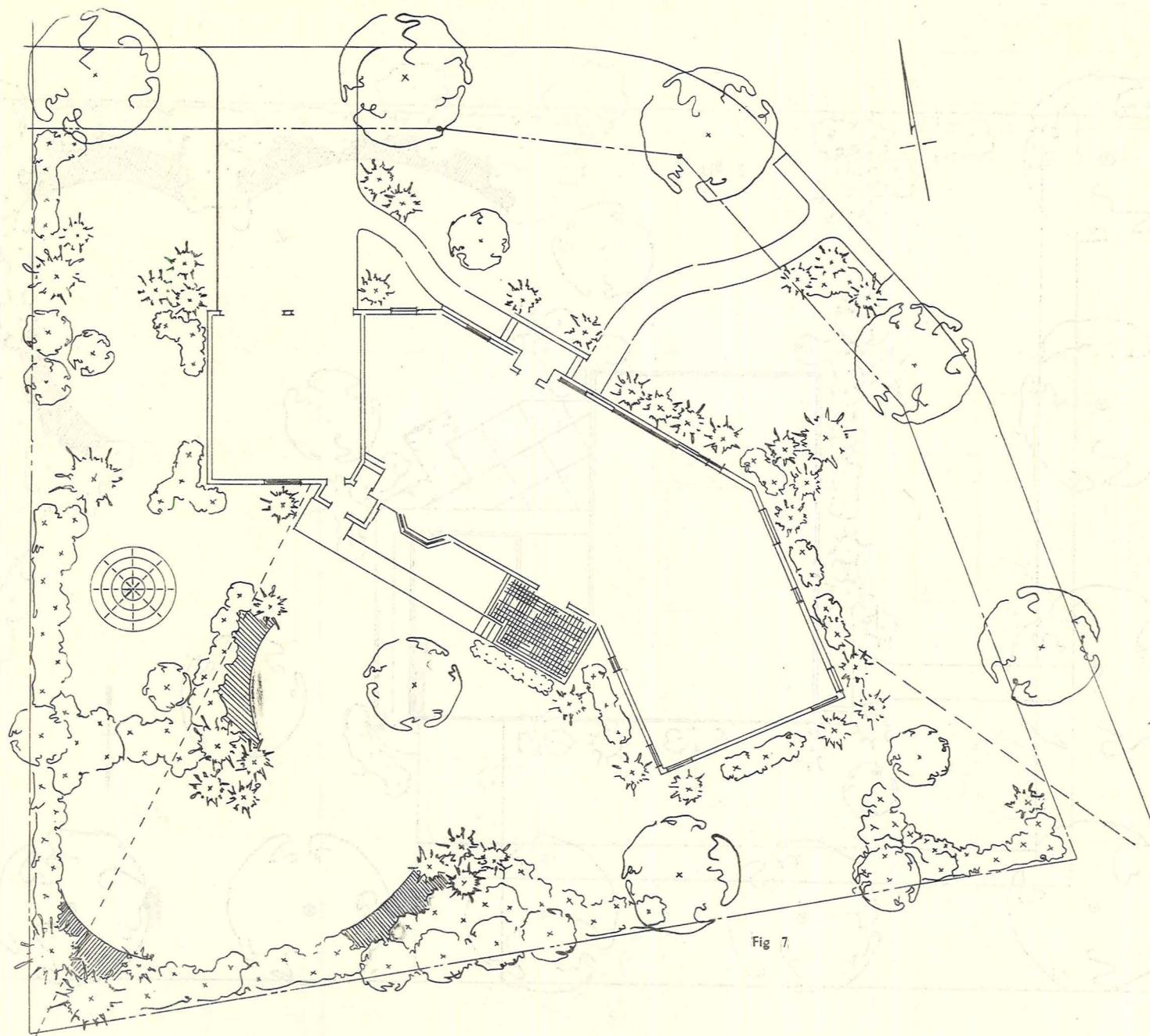


Fig 7.

Figure 7. --The landscaping of a city home located on a curving street.

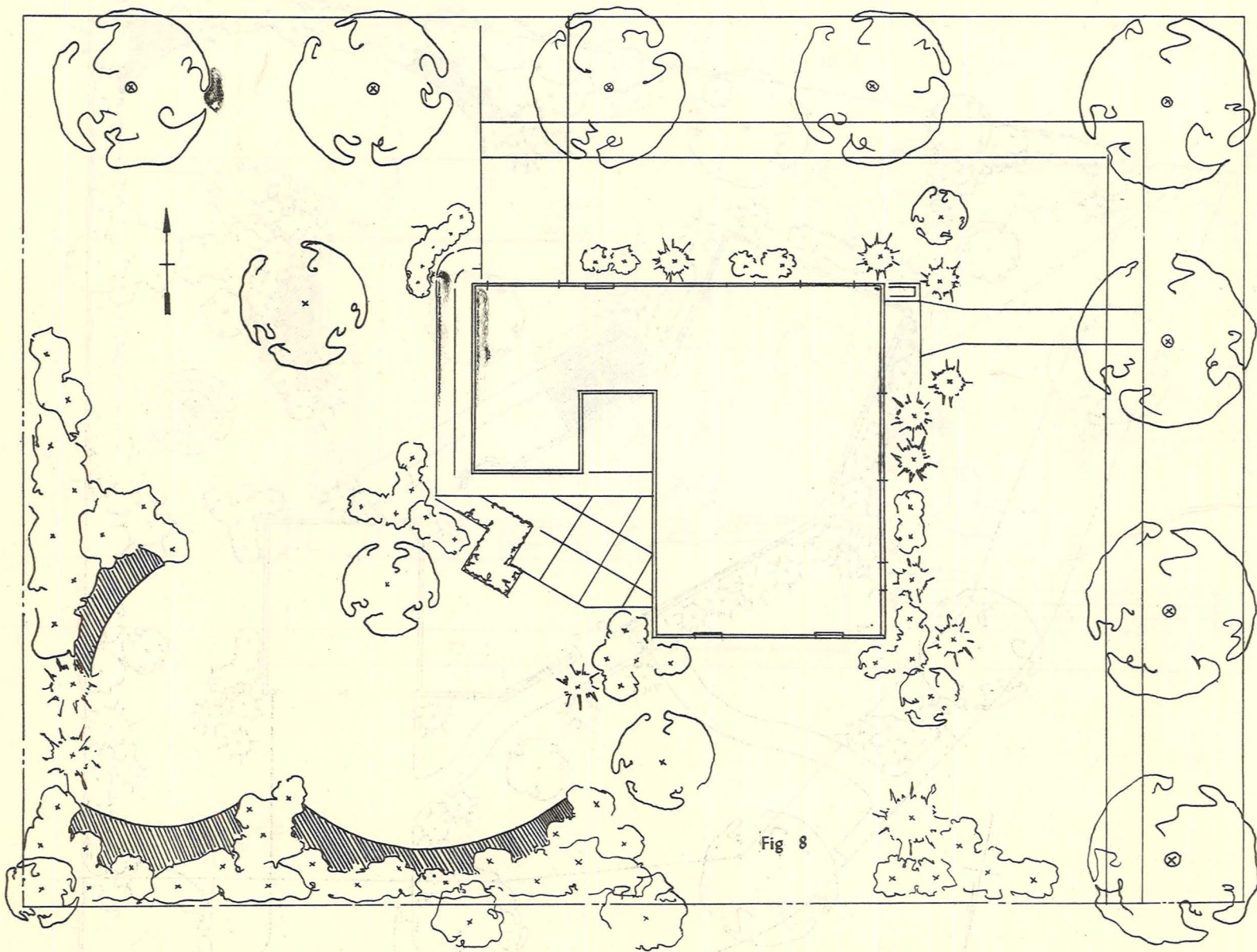


Fig 8

Figure 8. --The landscaping of a city home on a corner lot.

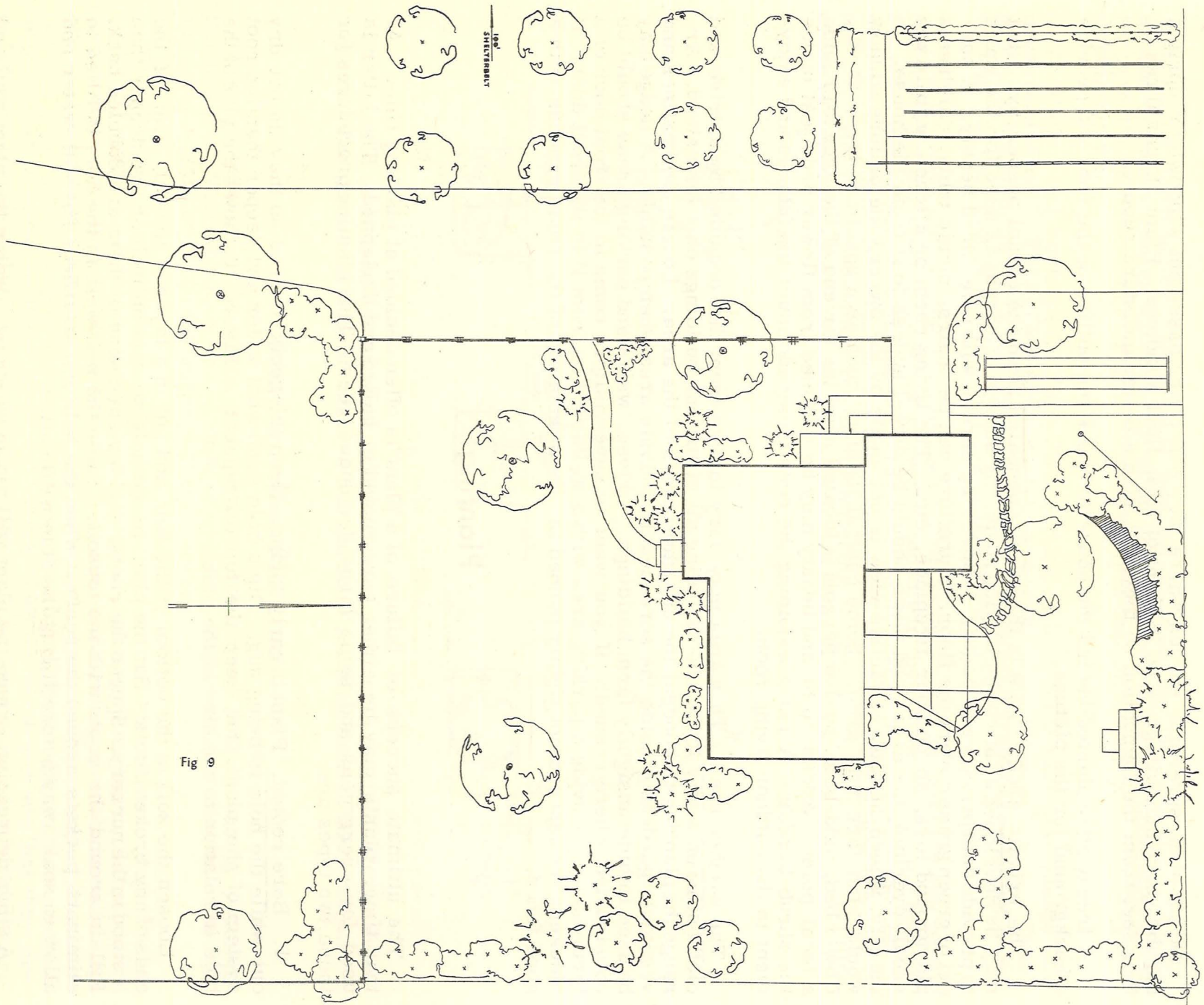


Figure 9. --The landscaping of a farm home.

Do not plant spreading shrubs where they will cover basement windows or upright shrubs where they will grow up in front of first-floor windows. Plant shrubs three or four feet from the foundation so they will have a better moisture supply.

A tree is often planted behind the house to break the outline of the roof and provide a background for the picture.

The private area. This is the area, concealed from the casual passer-by, that may be developed as an outdoor living room. A screen of shrubs is used for the walls to provide both privacy and beauty. Flowering shrubs will give added beauty. A carpet of green grass covers the floor. Furniture can be chairs, picnic table, children's playground toys, an outdoor fireplace, etc. The living room or kitchen window should overlook this area, and there should be direct access to it from the house. In the city, where the only attractive view is one made by the owner, the picture window would also face this area. Some central feature, such as a specimen tree, shrub, flower bed, bird-bath, pool or pergola is located near the far end of the area to provide a focal point. Added color and beauty may be obtained from flower beds just inside the shrub border. A patio adjoining the house may add much usefulness and enjoyment to the outdoor living room.

The service area. This area may vary in size from that occupied by a drive and clothesline on a city lot to one including all of the out-buildings on a farmstead. Arrange the planting to conceal the unsightly parts of the area. Locate clotheslines and vegetable gardens outside the screened-in private area when possible. A hedge may be used to hide unsightly farm buildings. Drives, walks and parking areas should be constructed where needed. If you want to have visitors come to the front door of a farm home, provide a parking area with a walk leading from it to the front door. If chickens are kept and not tightly penned in, keep them out of the home grounds with a good fence.

Planting

The ultimate success or failure of a plant is often decided at planting time. At that time, plants may be either bare rooted or balled and burlapped. The latter is used for evergreens and some large deciduous trees. The planting procedures for these two types are:

1. Bare rooted. Plant in early spring. Keep the roots covered so they do not dry out while the hole is being dug. Dig a hole somewhat wider and deeper than the root system of the plant, but keep the topsoil separate. Figure 10 shows the size of the hole in relation to the size of the plant.

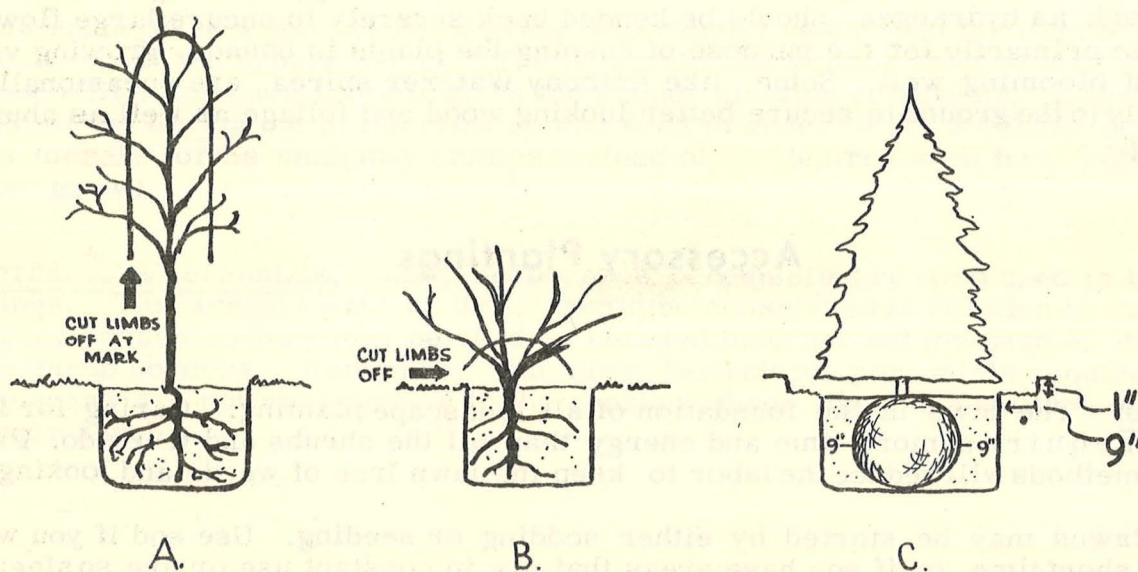
Loosen the soil in the bottom of the hole and put in a layer of topsoil. Cut off the ends of any broken roots. Set the plant in the hole so it is an inch or two deeper than it stood in the nursery. Spread the roots, making sure none of them are doubled back. Fill in around the roots with the topsoil. Tamp the soil well as the hole is filled to eliminate pockets around the roots. When the hole is half filled, fill with water and allow to soak away before filling the hole with soil.

A slight depression around the plant will aid in watering. Water the plant well and as often during the first year as may be necessary.

Since so much of the root system was cut off when the plant was dug, it will be unable to supply enough water for all of the top. To overcome this difficulty, prune the top of the plant severely. Figure 10 shows how a tree and a shrub should be pruned at planting time.

2. Balled and burlapped. Many feeder roots of balled and burlapped plants are preserved intact. This gives greater assurance of success in transplanting. Evergreens are planted in early fall or in the spring. Deciduous plants are planted in the spring, but they can be planted later than bare-rooted trees.

For a balled and burlapped plant, dig a hole as described for bare-rooted stock and as shown in Figure 10. Place a layer of topsoil in the bottom of the hole and set the plant in the hole, burlap and all. Tamp soil well around the ball until the hole is nearly full. Then loosen the burlap around the plant stem and fill the hole the rest of the way. Leave a depression at the top for watering as shown in figure 10. No pruning of the top need be done.



Size of hole to dig and how to plant (A) a deciduous tree, (B) a shrub, and (C) an evergreen. The pruning of a deciduous tree and shrub at planting time is illustrated.

Pruning after Planting

You can determine the shape and ultimate size of trees and shrubs by pruning. Pruning also affects the quantity of bloom on shrubs. Vary the treatment with the age and type of plant and also the purpose it is to serve.

3. Shade trees. Prune shade trees the first few years to develop strong, well placed scaffold branches. Remove one or two of the lower limbs each spring until the lowest limb is eight to ten feet above the ground. You can obtain strong scaffold branches by leaving the branches which make wide angles with the trunk. Sharp-angled branches tend to grow quite upright and often make weak crotches. Space these scaffold branches at least two or three feet apart up and down the trunk and see that they are well distributed around the trunk. With species such as the pin oak, few branches are ever removed until the lower ones die because of shading.

Pruning in later life consist only of removing dead, diseased, or broken branches. Always cut these off flush with the trunk or back to another limb. If a stub is left, it will die and never heal over. Cover large pruning wounds with an asphalt emulsion paint every year until they have healed.

Shrubs. Prune shrubs to keep them neat and compact in appearance, for good bloom, and attractive twigs. In some cases, shrubs are pruned to keep them small. Vary the time and method of pruning with the habit of blooming. Some shrubs flower early in the season on old wood, while others bloom in the summer or fall on wood of the current season's growth.

The spring-blooming shrubs may be pruned some in early spring while the plants are dormant. This pruning consists of cutting out some of the older stems. Some of these stems, as forsythia, may be forced into bloom in the house. Immediately after blooming, cut off about half of the one-year-old wood to encourage the growth of new, strong shoots that will flower the following spring.

Prune the later blooming shrubs in the dormant season by removing older stems. Some, such as hydrangea, should be headed back severely to secure large flowers. Pruning is primarily for the purpose of keeping the plants in bounds, growing vigorously and blooming well. Some, like Anthony Waterer spirea, are occasionally cut completely to the ground to secure better looking wood and foliage as well as abundant flowering.

Accessory Plantings

Lawns. The lawn is the foundation of all landscape planting. Caring for lawns usually requires more time and energy than all the shrubs and trees do. Proper cultural methods will reduce the labor to keep the lawn free of weeds and looking nice.

New lawns may be started by either sodding or seeding. Use sod if you want a lawn in a short time, or if you have areas that are in constant use or are so steep they would wash badly. Sodding may be done from early spring to late fall.

You may seed either in the fall or the spring; but early fall seeding, about September first, is best. Break up the soil very fine before seeding. The soil may be tested for acidity. Most soils are alkaline enough; but if lime is needed it should be worked into the soil. Manure to furnish both organic matter and nutrients may be worked into the soil, or a complete chemical fertilizer may be used instead of manure.

Spread the seed evenly over the lawn with a seeder or by hand. Kentucky bluegrass is the most satisfactory lawn grass in Nebraska. Sow it at the rate of two or three pounds to 1,000 square feet of lawn. The new strain, Merion bluegrass, seems to be superior to ordinary bluegrass. Mixtures containing other, faster growing grasses as well as bluegrass are also satisfactory. After seeding, roll or lightly rake the lawn to cover the seed. Seed must be very near the surface, and kept moist in order to germinate. The best way to insure that the seed remains moist is to mulch the surface of the soil lightly with either straw or peat moss. Daily sprinkling is essential during dry periods.

Mowing is seldom necessary the first fall, but should be done if the grass grows over three inches tall. Set your mower to cut two to three inches high. Mow the lawn often enough that not over an inch of grass is cut off at each mowing. Then it is immaterial whether the grass clippings are left on the lawn or removed. If the grass has grown so tall that the clippings are unsightly or so heavy that they might smother the grass, they should be removed.

Apply fertilizer in both early spring and early fall. A third application, in early summer, will help keep the lawn green during the late summer. Nitrogen is the main element that lawns need. Apply one to two pounds of actual nitrogen to each thousand square feet each time you fertilize. A good fertilization with phosphorus every two or three years is sufficient for that element.

Whenever you water, do a thorough job--but water only when needed. Frequent waterings which wet only the surface inch or so of the soil encourage shallow rooting of the grass and maximum germination of crabgrass seed.

Lawns that have a poor stand of grass will usually respond to fertilization, water, and mowing at the proper height. The bluegrass spreads by underground stems and will soon fill in any bare spots if given the proper growing conditions. Lawns are not improved by letting the grass grow up and seed in order to get a thicker stand. The grass merely forms unsightly clumps instead of the desired even turf, and the seed seldom grows.

Herbaceous perennials. Many herbaceous perennials are also used in landscape plantings. The arrangement of these should be considered in relation to the shrubs and trees present. They may be used as isolated beds around the base of shrubs, or inside shrub borders. Remember that most herbaceous perennials require a sunny location and are not apt to thrive in the constant shade, or in competition with roots of larger shrubs.