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HOW TO PLANT TREES AND PLANTS

BY JOHN R. BARNES



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YALESVILLE, CONN.**

HIGH GRADE FRUIT AND ORNAMENTAL NURSERY STOCK

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How to Plant Trees and Plants

By **JOHN R. BARNES**

I HAVE prepared this little booklet because I feel sure that many planters of Fruit and Ornamental Trees and Shrubs do not know just how to do this work. Some practical instructions are needed in many instances in order that the plants and trees may be properly cared for on arrival from the nursery, and planted in a manner to secure the best possible success.

I have seen large bales of trees simply placed in the ground a foot or two until convenient to plant. Now, it was impossible for the earth to be packed properly about the roots of the trees in the center of these large bundles so as to exclude the air and prevent drying out, and the probability is that the nurseryman who furnished these trees was blamed because many of them died.

Once we sold a large quantity of trees to a city man who was about to plant an orchard, depending on hired help to do it. A few days after the trees were delivered we got a "tip" that the trees were not cared for properly. We sent a man at once to see about it and he reported that he found that they had plowed trenches in turf land and stood the bundles of trees upright in the trenches 3 ft. wide. The turf was piled up about the outside of the trenches, leaving the bundles in the center entirely exposed to sun and wind. They had begun to shrivel, but as we were able to show them how to care for the trees so quickly no great harm was done.

Doubtless there are hundreds of similar cases where nurserymen are blamed for the

failure of stock to live where the real fault was in not knowing how to care for and plant properly on arrival.

Dangers from so-called Expert Gardeners

Look out for the "expert" gardener or planter, for they are likely to cause more loss than those who are ignorant. Those gardeners who are really experienced and who work for the public by the day or job are connected in some way with some nursery concern. If the stock comes from some concern he is not interested in, he takes no pains to have the stock live, knowing that the next time the customer will buy of a concern he recommends and he will get a "rake off."

Others are men who really know little about planting, but put up a bluff so as to get a few day's work at an increased price. We have had customers bring these men to the nursery to select stock for them when they could not tell a Norway Spruce from a White Pine.

If the purchaser will study these instructions carefully, he will know whether or not his work is being done properly.

Care of Stock

If stock is frozen when received, bury the package, unopened, in well drained ground, or place in a cool dark cellar, so that it will thaw out slowly and gradually without being exposed to the air. Be careful not to open or expose to the light until frost is entirely out.

If stock should appear dry or shriveled when received, through delay in transit or any other cause, take from the package and plunge into water. Do not allow it to remain more than 36 hours or the buds will become injured, and the bark slimy. The better way is to bury the stock in the ground, root and branch, thoroughly soak

with water and let remain for twenty-four hours, or more until a fresh, plump appearance is regained. Then the stock may be planted.

If not ready to plant the stock the day it arrives, or if you have more than you can plant within a few hours, it **should at once be heeled in**. Select a well-drained spot, dig a trench about 18 inches deep, sloping on one side. Spread out the trees in the trench so that the earth will come in contact with every root, leaning them against the sloping side, sift fine dirt in among the roots, fill the trench partly full, and press firmly with the feet. Fill up level with the top of the ground and press again with the feet, covering with loose dirt. If there are too many trees for one trench, in covering the roots in the first, a second trench can be dug, and the operation repeated as often as necessary; or in heeling in a large quantity, a furrow can be opened with a plow.

STRAWBERRIES

Strawberry Plants on arrival should be given different treatment from trees. If land is not ready to plant them on, **Heel them in in this manner**:

Select a small piece of sandy, well-drained ground, thoroughly pulverize and fine it. Level it and cut a V shaped trench across one end. Place the plants an inch apart against the bank, the crowns being on a level with the surface, the roots hanging down toward the bottom of the trench. Press about an inch of earth against the roots and fill up the trench. Make another trench four or five inches from the first and put in plants as in first row. After plants are all in, water the bed thoroughly and cover thinly with loose straw until they become established. They may be left in this bed and at your convenience, transplanted with a little earth with the best of success.

If strawberries are to be planted soon, they may be unpacked, the roots dipped in water to one half the length of roots and placed on a damp cellar bottom where they will not be exposed to any draughts. Never dip the leaves in water or throw water on the plants in the package as this will cause them to heat and spoil.

Raspberries and Blackberries

Raspberries and Blackberries may be heeled in similar to the way described for strawberries. Black Raspberries are the most delicate of plants and should never be exposed to sun or wind for a moment, but should be heeled in at once.

The main point in heeling in is to have each root in close contact and entirely covered with moist soil.

Handling stock in freezing weather is sure to ruin trees or plants. Great care should be exercised that the roots of trees or plants should not be exposed to any temperature lower than 32 degrees. Otherwise the roots of the trees are sure to be ruined. Be sure that any trees taken out for planting are planted, heeled in, or placed in some place secure from frost or any draughts of air during the night.

Wintering Trees When Procured in the Fall

Procuring trees in the autumn for early spring planting is recommended, when the purchaser is not prepared to plant in the fall or prefers spring setting, or where the winters are too severe to set out young trees and plants in the fall. The greatest advantages derived in doing so are that when the roots have been cut or pruned, it will be found upon taking them up in the spring, that a callous has been formed, ready for the producing of new rootlets. If the trees are planted without much exposure, as

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soon as the frost is out of the ground, they will become thoroughly established the first season, and should make twice the growth of late planted trees. The labor of planting is over before the rush of spring work sets in.

Select a spot where no water will stand during the winter, with no grass or other material near to attract mice. Heel in as described on Page five, being sure to raise the earth high enough so that no water will stand among the trees, but will drain quickly away—after cold weather sets in. Cover with evergreen boughs.

We prefer to slant the tops of the trees toward the south. Many times the sun, shining on the bodies of trees when frozen hard, does severe injury, but if the tops are leaned towards the south at an angle of at least 45 degrees, it cannot do any injury.

If trees are planted in their permanent places in the fall, bank up with earth to the height of 8 or 10 inches and remove in spring. This practice of banking up should be continued for several years. It tends to prevent injury from mice and prevents water standing and freezing about the trees.

A Table Showing the Number of Trees or Plants to the Acre

Distance	No. of trees
1 foot apart each way.....	43,560
2 feet apart each way.....	10,890
3 feet apart each way.....	4,840
4 feet apart each way.....	2,702
5 feet apart each way.....	1,742
6 feet apart each way.....	1,210
7 feet apart each way.....	888
8 feet apart each way.....	680
9 feet apart each way.....	537
10 feet apart each way.....	434
11 feet apart each way.....	360
12 feet apart each way.....	302
13 feet apart each way.....	257
14 feet apart each way.....	222
15 feet apart each way.....	193
16 feet apart each way.....	170

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Distance	No. of trees
17 feet apart each way.....	150
18 feet apart each way.....	134
19 feet apart each way.....	120
20 feet apart each way.....	108
25 feet apart each way.....	69
30 feet apart each way.....	48
35 feet apart each way.....	35
40 feet apart each way.....	28

RULE:—Multiply the distance in feet between the rows by the distance the plants are apart in the rows, and the product will be the number of square feet for each plant or hill, which, divided into the number of feet in an acre (43,560), will give the number of plants or trees to the acre

Suitable Distances for Planting.

Apples, Standard.....	30 to 40 feet
Apples, Dwarf.....	8 to 10 feet
Pears, Standard.....	18 to 20 feet
Pears, Dwarf.....	10 feet
Peaches	16 to 18 feet
Cherries, Sweet.....	16 to 20 feet
Cherries, Sour.....	15 to 18 feet
Plums	16 to 20 feet
Quinces	10 to 12 feet
Grapes	8 to 10 feet
Currants	3 to 4 feet
Gooseberries	3 to 4 feet
Raspberries, Red.....	3 to 4 feet
Raspberries, Black.....	4 to 5 feet
Blackberries	4 to 6 feet
Strawberries, Rows.....	1 by 3½ feet
Strawberries, in Beds.....	1½ by 1½ feet
Asparagus, in Beds.....	1 by 1½ feet
Asparagus, in Field.....	1 by 4 feet

General Directions for Planting Apple, Pear, Peach and Other Fruit Trees

SYSTEMS OF PLANTING

There are almost as many ways of laying out and planting an orchard as there are people that plant them.

Provide for room to turn team outside of last row of trees. Also provide for driveway for the convenient hauling of fruit, etc., from the orchard.

The most common method of planting is the Square or Rectangular system which

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is illustrated by the following diagram, which permits the removal of trees as they begin to crowd at different periods.

“	x	“	x	“	x	“	x
x	o	x	o	x	o	x	o
“	x	“	x	“	x	“	x
x	o	x	o	x	o	x	o
“	x	“	x	“	x	“	x

“ represents permanent trees.

x Represents Temporary fillers.

o Represents Trees that may be left considerable time before having to be removed. Thus, for example “ might represent Baldwin apple trees.

o Wealthy or Wagner might be planted and should bear many crops of fruit before the Baldwin trees would need the room.

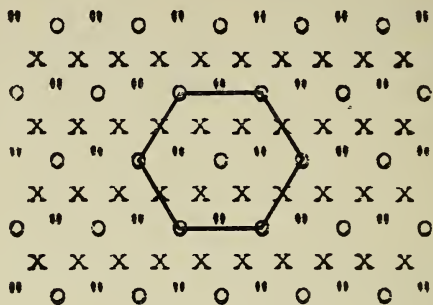
x might be planted with peach or plum or even apple trees of some early bearing variety.

The Hexagonal system has the advantage of each tree being equally distant from another. On this account, more trees may be planted to the acre and the land more fully utilized than with any other system. Suppose you wished your permanent trees 35 feet apart and wanted to use fillers to get as much returns as possible in the early years of the orchard. It might be planted according to the diagram on next page.

“ represents permanent trees, say 35 feet apart.

o represents trees planted in the center of each Diamond and which would make the rows 35 feet apart and trees $17\frac{1}{2}$ in the row, these may be left this distance for quite a number of years without injury.

Temporary fillers may be planted as represented by x making each tree $17\frac{1}{2}$ feet apart from each other.



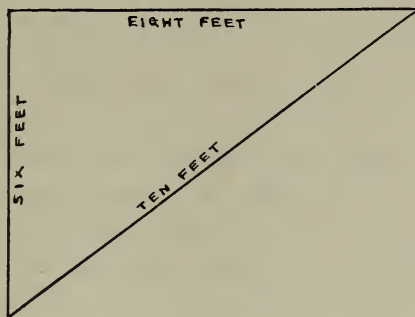
In planting an orchard it is best to be careful to get the trees in line each way as it assists very greatly in the future cultivation. There are a great many ways to do this and space will not permit of going into this thoroughly.

One of the common methods is to set a line of stakes where each row of trees is to be planted and run out the row with a heavy plow. Then cross check in the same way in the opposite direction. The crossing of the furrows is where each tree will stand and the loose earth at this point may be cleaned out and leveled to receive the roots in their natural position. A No. 12 telephone wire to which has been soldered a piece of wire or tin the proper distance apart may be used instead of cross marking with plow.

Another method is to set a small stake where each tree is to stand by stretching the wire across the side of field, setting stakes the proper distance apart along the wire. Then stretch wire and another line of stakes at right angles to first and so on around the field. The intervening stakes may be set by wire or sighting.

To Make Sure Rows are Square

Measure 8 feet from corner stake and make a mark. Measure 6 feet at right angles and make a mark and the distance between the two should be 10 feet.



HOLES MAY BE DUG one to each stake letting the stake represent the center of the hole. Dig deep enough so that tree may stand two or three inches deeper than it stood in the nursery and broad enough so roots may be planted in their natural position. Throw the top soil on one side and the sub soil on another. Let the holes be as large at bottom as at top.

Pruning Trees Before They are Planted

Prune off all broken or bruised roots to sound tissue by holding tree in left hand. Prune the root in a slanting direction from the under side so that after the tree is planted, the cut surface will rest flat on the ground.

At least three fourths of the previous year's growth should be removed from the tree at planting. The lower branches should be the longest; each cut should be made just beyond a bud. Should the top be spreading, cut to an inside bud, and if it is upright, cut to an outside bud. This is of great importance, and should be carefully followed.

One year trees may be cut back to the proper height for forming the future top of the tree. Peach trees in the small grades, trim to whip and cut back to required height. In the large grades, leave the branches an inch or so long, where you wish the top to be.

Planting the trees is best done by just setting a row of stakes around the field, another across each way near the center, each stake to be where a tree is to stand. Three persons should work together; one to place and sight the trees and two with shovels. The one that holds the tree, first sights accurately its alignment with the center and end stakes, while one shoveler sights across the center and end stake at right angles. The tree properly placed, shovel the black or surface soil in among the roots. It is very important that each root be thoroughly encircled with soil, which should be pressed firmly against it. As the soil is shoveled, the man holding the tree uses his feet to press the soil firmly over the roots. Use nothing but the best top soil for filling the hole. The sub-soil from the hole may be scattered about the field.

Trees should be planted two or three inches deeper than they stood in the nursery, as may be readily determined by the mark upon the bark, but no deeper, except in case of Dwarfs when the union of stock and cion may be slightly beneath the surface.

Never put any leaves, manure or anything of a strawy nature in the hole. If this must be used, put it on top of ground around the tree as a mulch. Fertilizers if used should be put in just after roots are covered, but before the hole is completely filled.

Raspberries, Blackberries, Gooseberries and Currants

Land that will produce good corn will be suitable. Water must not stand on it at any time of the year, yet it must be able to supply sufficient moisture during the ripening period. Do not use sod land if land that has been worked one or two seasons can be had.

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Currants and Gooseberries will thrive on a damper soil than raspberries and blackberries—one that has been liberally manured to attain the best success.

Currants and Gooseberries start into growth so early in the spring that it is best to plant in fall or very early in the spring. Blackberries and red raspberries may also be planted in the fall, but black raspberries should be planted only in the spring, as the young plants are not sufficiently strong to transplant until late in the fall.

The roots of these plants are very small and fibrous and especial care should be taken not to expose to sun or wind. This is particularly true of black raspberries which are the most perishable of all fruit plants to handle. These should be unpacked, dipped in thin mud and heeled in or planted at once.

PLANTING. For field culture, plant in rows 4 ft. apart and 2 or 3 feet apart in row. In garden culture they may be planted much closer, according to the amount of land available. Blackberries may be planted a foot further apart each way with profit. Furrows about 4 or 5 inches deep for raspberries and 6 or 8 inches for gooseberries and currants should be plowed the proper distance apart. Carry the plants in a receptacle containing water sufficient to cover the roots. Drop them the proper distance just ahead of the planters who follow. The latter should draw in the mellow earth with their hands sufficient to cover the roots which should then be well firmed with the feet. Cover raspberries and blackberries to depth of about 3 inches and press the soil firmly about the root with the foot. The balance of the row should be filled in with a hoe as the plants grow. Currants and gooseberries should be filled in around so that all the roots are covered to the depth of at least 3 inches.

PRUNING. Raspberries and blackberries are usually pruned sufficiently before they leave the nursery, but if they are not the canes should be shortened to at least 15 inches. Gooseberries and currants should be pruned by thinning out all the weak branches and leaving only those strong and vigorous.

Grapes

Grapes should be planted on high, dry, sandy or gravelly soil; they will not thrive on low, wet soils. An eastern or southern exposure is preferable. Any dry soil, fertile enough to produce a good crop of corn or potatoes and of suitable exposure will be all right for vineyard planting. If naturally poor, a large application of manure should be plowed in previous to planting the vines. If sod land is chosen, it should be plowed in fall and cross-plowed in spring.

PLANTING. Grapes may be planted in fall or spring, as most convenient, in rows 8 or 10 feet apart and the same distance in row. For vineyard culture the field should be plowed in lands the width the rows are to be apart, so that the vines may be planted in the dead furrow and thus save expense of digging much of the hole which should be dug sufficiently large to receive the roots without bending and a foot in depth.

PRUNING. Prune off the ends of all the roots to 12 inches and shorten tops to 3 buds. Place flat in bottom of hole, spreading them out in a horizontal position seeing that they do not cross each other. Cover with the best of the fine soil to a depth of 3 inches and firm thoroughly, after which put in two or three handfuls of ground bone. Then fill up the hole with earth. Keep well cultivated throughout the summer.

Strawberries

We give decided preference to April or May for planting strawberries and confine our sales and transplanting to those months; the earlier they are planted in the spring, the better.

The strawberry will grow in any well drained soil, but does best in deep, rich moist loam that has been heavily manured and planted with corn the previous year. Never plant on sod land, as it is very likely to be infected with white grubs, which, by eating off the roots, are liable to do great damage to newly planted strawberries.

CARE OF PLANTS ON ARRIVAL

Unpack at once, dip roots $\frac{1}{2}$ their length in water and place in a damp cellar bottom if only a day or two before planting. If they are to be kept a longer period they should be heeled in, which is done as described on page 5.

Those varieties marked "Imp." are pistillate or imperfect flowering. These varieties are among the best in quality and productiveness, but they must be planted with the staminate or perfect flowering varieties so that the blossoms will pollenize and produce freely of perfect fruit. Plant the pistillate varieties between the staminate flowering, having one row of the staminate to every two or three of the pistillate.

DISTANCE TO PLANT

For garden culture a good way is to plant three rows 18 inches apart with plants 18 inches apart in a row, then a space of from 24 inches to 30 inches for a walk, then three rows more as before. Keep all runners cut off and thus make the plants large and full of vigor.

For field culture plant from 15 to 18 inches in rows, $3\frac{1}{4}$ to 4 feet apart and let the plants form a wide matted row.

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PLANTING. To prepare plants for setting, remove all the large leaves and runners, leaving nothing but the bud. Then with a pair of shears or knife, cut off smoothly about $\frac{1}{4}$ from the tip of the roots. New rootlets will start better from this freshly cut surface and it makes the planting easier.

The plants should not be exposed for a moment to sun and wind, but should be protected by dipping in thin mud and dropped along the row to be planted only as fast as they are put in the ground. Planting may be done in various ways, but one of the most rapid ways is to use dibbles with a blade 3 inches or more broad.

A man carries the plants, tops up, in a pail having just enough water to cover the roots, dropping them the proper distance apart along the line, just about as they are planted. The planter follows, thrusting the dibble into the soil at a slight angle and pulls the handle towards him, enough to make room back of the dibble to place the plant in the proper position with the roots straight down. At the same time, he picks up the plant with his left hand and gives it a shake to spread the roots and places it in position back of the dibble. The dibble is then withdrawn and thrust into the ground again 2 or 3 inches beyond the plant in order to press the earth firmly to the plant. This should be followed by pressing the soil firmly to the plant with the feet.

Care should be taken to have the crown of the plant on a level with the ground. If planted too deep, the bud will decay; if too shallow, so that the top of roots show above ground, the plant will dry out and die. After planting, the soil should be cultivated and loosened so as to conserve the moisture by a dust mulch.

ASPARAGUS

Asparagus may be planted in fall or spring. We recommend spring planting as the most satisfactory. Rich, mellow, sandy soil is best for asparagus.

PLANTING. Deep furrows should be plowed out about 4 feet apart; the loose dirt that falls back thrown out with a shovel. The roots should be placed flat in the bottom of trench, crown up, about 15 inches apart, and spread out like the spokes of a wheel. Cover with soil to depth of 3 inches. As the plants start to grow, fill in the trenches gradually until the ground is level, always being sure that the tops are well out of ground. Do not cut for use until after the second season.

For garden culture the roots may be planted in beds a foot apart. We have known many failures to result from covering the crowns 6 inches or more deep at once. The young plants are unable to push their way through this covering, especially when planted in fall and the earth packed by winter rains.

RHUBARB

Rhubarb may be planted either fall or spring, but fall is the better time. The soil should be made very rich, preferably in a warm, sunny location. Plant the roots so that the crowns will be 4 inches beneath the surface and, if planted in the fall, mulch with stable manure. It should be planted about 4 feet apart.

EVERGREENS

Evergreens should be planted in the spring, any time before the growth is too far advanced. They do not start into growth as soon as deciduous trees, so they may be planted later. Early in May is usually the best time. They may also be planted during a wet period in August or fore part of

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September, but there is much risk in shipping them far at this time of the year. After this time it is not advisable to transplant evergreens. Though it is sometimes done successfully, the risk of failure is too great.

Evergreens have fine fibrous roots and should never be allowed to be exposed to the sun or wind for a moment. The better way is to have them removed with a ball of earth tied up with burlap which keeps the roots from drying. If they have not been removed with a ball of earth, the roots should be "puddled," or dipped in a mixture of loam and water of a consistency of thick paint at once upon receipt and planted without delay.

The sap of an evergreen tree is of a resinous nature, and when once dry, water has no power to restore them.

PLANTING. In planting, put the best soil about the roots, tread firmly, and finish by applying a mulch of 5 or 6 inches of straw, coarse manure, or grass to conserve moisture and protect roots from the warmth of the sun in summer. If watered after planting, it should be thrown into the top and let it drip down onto the mulch and in such quantity to wet the earth as deep as the roots extend.

Evergreens for hedges should be planted 2½-3 feet apart; for screens, 6-10 feet according to the size, etc.

ROSES

Roses can be grown in any situation where they will receive sunshine at least 5 hours a day and not so close to trees that the roots will rob the rose bed of its plant food. The soil should be well drained and made rich by having a generous supply of **well-rotted** manure spaded in. Nothing is more likely to cause unhealthy roses than poorly drained soil. Fresh manure is likely to injure the roots if it comes into direct contact with them.

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The best time to plant roses is early spring, but hardy varieties, if dormant and properly protected from the winter's cold, may be planted in the fall.

PLANTING. Plant in holes 18 inches apart dug large enough so that the roots may be spread out in their natural position and deep enough so that when the soil is leveled the union of the bud and stock is 2 inches beneath the surface. The best of the soil should be placed about the roots and firmly packed.

PRUNING. Prune out the weak branches leaving three or four of the strong ones. Cut these back to six buds.

Now mound the earth around each plant four or five inches, leaving merely the top buds exposed; otherwise if planted in spring, the strong, drying winds that we have at that time will be likely to dry out the branches before the roots become established. The earth covering will protect from the wind and prevent this: or if planted in fall will protect from severe cold during the winter. After growth is started, remove the earth and culture up to July 15th to conserve the moisture. Then apply a good mulch of well rotted manure.

Tree roses should be tied to stakes when planted to keep the wind from blowing them about. A piece of moss should be placed in the top and kept continually moist until the plant becomes established. Tree roses should be protected in winter. Remove enough earth on one side at roots so that the plants may be leaned so that the top will come close to the ground. This can then be covered with soil or dry leaves protected by evergreen boughs.

RHODODENDRONS, AZALEAS, KALMIAS

require a shady, damp situation. They do not thrive on a wet soil nor on dry, hard

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ground. A good, deep, loamy soil with partial shade will answer. If it is not deep and full of vegetable matter, (and most soils are deficient in the latter) remove the earth where the Rhododendrons are to be planted to the depth of 18 inches or 2 feet. If the sub-soil is clay or holds water, provide drainage by putting in 8 or 10 inches of small stones so that water will not stand around the roots. Then fill in with a mixture of leaf mold, rotted sods, or swamp muck, and well rotted manure, 1 part of the latter to 4 parts of the former. Make fill-in slightly rounded so that water will not stand about the plants on the surface.

PLANTING. They should be planted the same depth as they were in the nursery. You can readily tell the required depth by the color of the bark on the stem of the plant. If on removing the burlap in which the ball of earth about the roots is usually wrapped, this ball is dry and hard, it should be thoroughly soaked in water before planting. After planting, mulch to the depth of 10 or 12 inches with leaves, or any other vegetable matter, and never remove.

Every fall add a foot or more of leaves about the plants, and put a sufficient quantity of well rotted manure upon the leaves to keep them from blowing away until they begin to decay. Remember the roots of these plants are fine and near the surface and this covering provides protection from the hot sun and drought in summer and severe cold in winter.

Before severe weather in winter Rhododendrons should be protected from the sun and wind by Evergreen boughs. The winter sun shining on the frozen foliage often kills the plant or injures the foliage, hence the importance of protecting from such in winter. The north slope or side of a building, if protected from wind, is a good

place to plant, provided it is not exposed to severe winds.

HEDGES

Planting a Privet Hedge should be commenced by digging a trench about 18 inches wide and the same in depth, putting the good soil one side and the poor subsoil on the other.

PLANTING. If the plants are to be planted in double row, which makes the best and most compact hedge, place the rows 10 or 12 inches apart and the plants 15 inches in the row and they should be so planted that the plants in one row alternate with the plants in the other.

For a single row the plants should be placed about 10 inches apart.

Moisten the roots with water and place in the trench the proper distance apart. Draw in the good soil about the roots and pack it firmly. Then put in 2 or 3 inches of **well rotted** manure, or if this cannot be obtained, use finely ground bone, a quart to 5 or 6 feet of row. Then fill in the trench.

PRUNING. Some may object to cutting back, but it will quickly grow and reach the former height and be much thicker and more bushy than it otherwise would. Privet hedges should be pruned twice a year, once in the spring before buds start and again in July or August.

ORNAMENTAL SHRUBS

May be planted without special care. Is better to plant in good soil in holes big enough to receive roots without crowding and deep enough so that the shrubs may be as deep as they stood before removal. Keep well cultivated throughout the summer. In fall, bank with earth 6 or 8 inches and mulch with manure.

Deciduous Ornamental and Shade Trees should be planted in the same general way

as fruit trees and other trees. Roots, where broken, should be pruned smooth, the top pruned by removing the weaker branches and all those not needed to give a well balanced head to the tree.

PLANTING. Shade trees, such as maples, etc., should be planted 30 or 40 feet apart in holes large enough to receive the roots in their natural position and a little deeper than it stood before removal. After covering the roots with good soil, pour in water till the roots are wet thoroughly. If planted in fall, it is necessary to stake or brace the trees, so that they may not be blown about and the roots loosened by the wind.

Remember that plant and tree roots must have air and water. If planted in pavement sufficient space must be left so that air and water may reach the roots, or else the tree will not thrive. Trees will not grow if planted in coal ashes or other similar filling material.

They must have good rich loam about the roots. A cart-load about the roots of each tree is not too much in such a situation.

Many people do not understand how to water shade trees effectively in summer. Water and enough of it must be applied in such a way that the roots will be thoroughly moistened. This may be done by making several holes about the roots of the tree with an iron bar and keeping these filled with water until the earth about the roots is wet. Iron pipes are sometimes driven in the ground about the trees and water poured in through these. A dash of water with the hose will do no good, for it runs off without soaking down to the roots.

PEONIAS

Peonias are gross feeders and the ground where these are to be planted should be very heavily manured. The best time to

plant is Sept. or Oct. The growth for the season is completed and by this time they become rooted and grow off strongly early in the spring. They may be planted though in the spring with good results.

PLANTING. Peonias should be planted at least 2 feet apart. In many cases 3 feet might be better. Set the roots with the crown at least 3 inches below the surface.

Mulch with manure in the fall before freezing, which should be dug into the soil as soon as the ground has become warm in the spring. Stable manure is the best fertilizer, but it should not be left about the plants in the summer as it is liable to injure them.

HARDY BULBS

Tulips, Hyacinths and other Hardy bulbs should be planted in the fall, but the Japanese Lilies in the spring.

As soon as the bulbs are received remove from the package and place in a cool, dry room till planting time. They should not be kept in a damp or warm room. The last of October is a good time to plant hardy bulbs.

A sandy soil is preferable. It should be deeply trenched and mixed with a liberal quantity of well rotted manure after which it should be raked smooth and level.

PLANTING. Plant Hyacinths, Tulips and Daffodils 5 or 6 inches apart and cover about 4 inches. Snowdrops, Crocus and other small bulbs 2 or 3 inches and about the same depth.

After the ground is frozen, mulch with a covering of leaves or other material. This may be held in place by evergreen boughs or pieces of board. This covering should be removed in the spring.

