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SHORT GUIDE TO CARE OF THE GARDEN DURING WAR TIME

Pruning

Many people will have to do their own pruning this year. For some this may be the first time they have ever attempted it themselves. Pruning is not difficult once the general fundamentals are understood, and it may be well to devote this issue of *Arnoldia* to the general rules for pruning trees and shrubs which are commonly found on the home grounds, as a "refresher," especially for those who are not experienced or who have never attempted to do their own pruning.

Reasons for pruning

1. To cut down water loss at time of transplanting. Since many roots are unavoidably cut off or injured in the transplanting operation, a certain number of the branches must be removed to make up for this loss. If such pruning is not done at transplanting time, a larger number of leaves will be produced than can be properly supplied with water by the roots. As a result, the branches or even the whole plant may die and in any case the plant will be weakened. If proper pruning is done at the time of transplanting, thus permitting time for the formation of new roots to support the new foliage, the new growth will make a vigorous start. This is one of the most difficult points for the amateur to understand, but it is vitally essential. Naturally one always dislikes to cut off what appear to be normal branches. Clearly, if nurserymen would prune their plants before they sell them, far better results would be obtained by the average gardener.

2. To cut out dead, diseased or scale-infested limbs.

3. To remedy structural defects and other faults such as unnatural growth. Sometimes a branch takes the lead in vigorous growth and must be restrained for the general good of the others. Frequently a bad crotch forms, that is, two branches of apparently equal vigor form at the same height on the trunk but on

opposite sides of the tree. Splitting of the trunk at this place may result later, especially in fruit trees which bear heavy crops, hence it is always advisable to prune one branch back, or in certain cases to remove it altogether.

4. To increase density of windbreaks, screens and hedges. Usually this is a mere clipping operation to force the growth of many small branchlets.

5. For utility purposes. Often a branch obstructs a view, hits the house during windy weather, partly blocks a driveway, or unnecessarily bars the path of electric light wires. Such branches should be removed, if possible. In this connection it should be remembered that there is much more space available for service wires through the wide arching limbs of an American elm or the wide spreading branches of a white oak than there is through the rather dense branching system of a Norway maple. Hence, when a tree must be planted where it may interfere with service wires, it is advisable to select a tree with an open branching system, rather than one like the Norway maple, which is dense in habit.

6. To promote flowering and fruiting of certain specialized plants. It is here emphasized that all pruning is a dwarfing process. Vigorous young shoots may develop after a large limb has been removed, but careful experiments have proved that, other conditions being equal, the plant which is pruned grows less (usually measured in total amount of leaf area) than the plant which is unpruned. The leaves of the plant are the food manufacturing organs. Water and mineral nutrients taken in by the roots, associated with sunlight, heat and carbon dioxide from the air, are the raw materials from which the leaves manufacture foods, through the action of chlorophyll. Any pruning would decrease the total leaf area of the tree, and this decreases the total amount of food manufactured. Therefore, total growth would be decreased also. This is a very important fact to keep in mind whenever pruning is contemplated.

Time for pruning

Pruning can be done now, for tests made in the northeastern United States show that wounds heal quicker when made between February 1 and May 1, than when made at any other time of year. If a plant, like early flowering forsythia or the flowering dogwood, is to be pruned for some justifiable reason, pruning might best be put off until after the flowering, so that one will obtain the full benefit from the flower buds now on the plants. If flowering this year is not a factor, prune at once. On the other hand, for plants which flower on the current year's growth like the rose of Sharon, the time to prune is now. A few trees, among which are the birches and the yellowwood, are best pruned in the summer, for they "bleed" profusely when pruned early in the year.

Wound dressing

Various types of commercial wound paints are on the market, and those made from asphaltum are satisfactory. Wounds over two inches in diameter should al-

ways be painted. Wounds less than two inches in diameter may be left untreated, but it is always safer to paint all wounds. Orange shellac has been used as a paint but it is difficult to obtain now and the color is objectionable. White and red lead paints are also objectionable in color and are slightly injurious to the cambium, but they do form effective wound dressings. If neither asphaltum paint nor orange shellac can be used, then these paints may be used. Wounds may be repainted annually if necessary.

Methods of Pruning

Fruit Trees

Obviously the method of pruning varies with the type of plant. Apple trees, for instance, are an example of fruit trees. There should be a fairly prominent central leader and great care should be taken so that there are no bad crotches; i.e., branches of equal size and vigor originating at the same height on the trunk but on opposite sides. On old trees, there is a tendency for the formation of "water sprouts"—vigorous young shoots originating from the older branches. These are often profuse and much too vigorous, acting as a drain on the tree and most of them should be removed. Then, too, air and light should be allowed in the center of the tree to allow the fruits to develop properly, and this frequently necessitates the removal of many small limbs in the center of the tree. Too many flowers and fruits on an apple tree are undesirable because the fruits will remain small and frequently too many will fall before maturity. The ideal is to obtain a tree with sturdy, well-spaced branches, strong enough to carry a heavy crop of fruits without breaking, and with sufficient light and air available in the center of the trees so that fruits will be produced there as well as at the ends of the branches. If fruits are produced only at the tips of the branches, too much weight occurs at the ends and breakage may occur.

Grapes

There are several methods of pruning grapes, but one popular method is sufficient for this article. This is known as the four-arm Kniffin system. Presupposing the grape vine is to be grown on wires, posts are erected 8 to 10 feet apart, and two heavy wires strung between them, one at $2\frac{1}{2}$ feet from the ground, the top wire about 5 feet from the ground. The first year the grape is planted, it is allowed to grow at will. The next year the strongest leader is selected and tied to the top wire perpendicularly. The idea now is to obtain four main branches which will grow from either side of the main leader on the two wires. The third spring, select these four branches, tie them carefully to the wires, cut them back to about 8 to 12 buds (this depends on the variety and the vigor of the plant). All other branches can be cut off except a short branch bearing a few buds near where each main branch joins the central leader; for these short branches are to grow into the long branches which will bear the fruit the following year. In

the grape, fruit is borne only on one-year-old wood. After the four branches have fruited, they should be removed in the spring, thus permitting the four new one-year-old branches which have been growing during the past season to be used as the fruit bearing branches during the current year.

Raspberries

Raspberries are usually pruned immediately after they are through fruiting for the simple reason that once a cane has fruited, it does not fruit again and usually dies. Hence, as soon as the canes have fruited, cut them out and leave only the new suckers which have come up during the current growing season. Experienced growers know that the best way to produce raspberries is to limit the height of the canes to about $4\frac{1}{2}$ or 5 feet and grow them in a row about two feet wide between a few strands of wire which will help hold them upright.

Blackberries

Blackberries are slightly different in that their fruits are not borne on the main cane as is the case in raspberries, but on lateral branches. These laterals should be pruned back somewhat, but the amount of pruning depends on the variety. With the Eldorado, the best variety for Massachusetts, laterals should be left 18 to 24 inches long since most of the flower buds are produced at the ends of these laterals.

Blueberries

Severe pruning in the dormant season is of the utmost importance with blueberries in order to produce a good crop of large fruits. A few of the older main branches are cut back or removed each year in order to insure an ample supply of vigorous growing young wood. The slender weak growth throughout the plant should be removed annually. Those branches which are allowed to remain should be cut back to 3 or 4 flower buds. However, varieties differ in the amount of cutting back required. Cabot, for instance, should be cut back more heavily than Rubel.

Vines in general

Ornamental vines, like bittersweet, clematis, honeysuckle, bower actinidia and the like, need little pruning except the regular removal of any dead wood. Wisteria, on the other hand, frequently requires heavy pruning in order to induce it to flower well. This pruning is frequently done during the period (usually June) when the shoots are elongating, the idea being to cut them back continually so that food will be available for the formation of flower buds and will not all go into vegetative growth. If a wisteria vine blooms satisfactorily without any pruning, it might be left alone, but if few flowers are produced, then a continual pinching back or cutting back of the elongating young shoots is very much in order, and will probably result in profuse flowering the following year. Also, pruning or cutting back some of the roots of a non-flowering wisteria may aid it in producing flowers the following season.

Hedges

Young deciduous hedges should be pruned heavily when planted (many to the ground) in order to make the hedge more dense at the base. After this initial pruning the plants should grow unmolested the first season in order to grow vigorously and develop a strong root system. Another heavy pruning may be necessary the second season, after which frequent trimming, to promote denseness, is desirable until the hedge reaches maturity.

Mature deciduous hedges need to be trimmed but once a year, except a few of the most vigorous ones such as California privet, osage-orange, or honey locust. This may be done at any time of the year but probably for best results the hedge should be trimmed just after the first growth has stopped in the late spring or the early summer; if trimmed at this time the hedge will have a fairly even, uniform appearance for the rest of the year. The plants may grow some after this trimming, but not enough to spoil the uniformity of the hedge, unless they are the unusually vigorous types above mentioned. If the pruning is delayed too late in the summer, new growth may result which will not have sufficient time to mature properly before freezing weather.

On the other hand, if trimming is done in the fall or very early spring, the hedge will remain even for a short time only, for when growth starts in the spring it will have a decidedly uneven appearance for the rest of the year. A little careful observation and practice will give the home owner a better knowledge of when he may trim his particular hedge under his particular conditions and get the best effect for the longest period of time.

Since evergreen hedges are slower in their growth, they do not need to be pruned so much nor so early as deciduous hedges. However, each year's growth can be made much more dense by one or two trimmings early during the growing period.

The amount of growth to be removed depends on the present size of the hedge and on the permanent size desired. If it is to grow no larger, only about one inch of the current year's growth should be left after trimming. In fact, it may be necessary to cut back to three- or four-year-old wood at intervals in order to keep the plants within bounds, but only a very little of such trimming should be done at first in order to determine whether or not this method is feasible for the type of hedge being grown.

If a hedge has a considerable amount of growth to make before it reaches the proper size, then more of the current season's growth can be left on. Sometimes several clippings can be given a young hedge during the growing season, simply to remove a small amount of the terminal growth and so promote the branching of side shoots.

The general shape should be wide at the base and narrower at the top. Styles differ. Some like a rounded hedge while others prefer one more or less triangular with only a very narrow flat surface at the top. The hedge with the rounded

top tends to shed the snow much better than the one with a flat top, and this is important in sections where the snowfall is heavy, particularly if the plant used is weak-wooded.

The following points about trimming hedges cannot be over emphasized.

1. Always trim so that the base of the hedge is wider than the top.
2. Do not be in a hurry to force growth in height at the expense of denseness and width.
3. In an old deciduous hedge that is scraggly and open at the base, it will usually pay to cut the plants to within a few inches of the ground now and let the new growth develop again from the base, rather than attempt to correct the growth in other ways.

Lawns

Actually, the cutting of grass on the lawn is a pruning operation. This year especially, when little or no fertilizer is available for use on the lawns, it is essential to let the grass remain on the lawn after cutting. Do not rake it off. Grass should be cut so that what remains is about $1\frac{1}{2}$ inches high, and it should be cut frequently enough, so that the clippings will dry up in a day or two. If the grass is too thick or too long, the clippings will mat and may injure or even kill the living grass underneath. This may be avoided by mowing the lawn frequently enough so that the clippings will not mat down, but will quickly dry up. The amount of rain, kind of soil, fertilizer, and the amount of moisture in the soil, all govern the speed with which the grass grows and each person will have to decide for himself exactly how frequently the mowing of his own lawn should be done. Clipping must be done more frequently in the late spring than in the summer. The accumulation of dried clippings over the course of one year not only acts as a mulch to the grass roots, but eventually adds considerable fertilizer to the soil in the form of much-needed nitrogen.

SPRAY PROGRAM IN THE HOME GARDEN

Woody Plants

Scale insects	Miscible oil	1-15	Feb. 15 to early April Applied when temperature remains 40° F. and above until oil dries	
Euonymus scale	Miscible oil	1-15	Feb. 15 to early April (If applied to an evergreen species, defoliation may occur)	
	“ “	1-50	In the summer	
Pine leaf scale	Miscible oil	1-30	Early April	
Spruce gall aphid	Miscible oil	1-30	Early April	
Larch case bearer	{	Arsenate of lead	2 lbs.	As soon in spring as young appear
Spring canker worm		Calcium caseinate	1 lb.	
Willow leaf beetle		Water	50 gal.	

NOTE:—For the willow leaf beetle the spray should be applied to the undersurface of the leaves in early June.

Elm leaf beetle and Japanese beetle	{	Arsenate of lead	3 lbs.	Early June for the Elm leaf beetle and early July for the Japanese beetle
		Calcium caseinate	1 lb.	
		Water	50 gal.	

NOTE:—If the Japanese beetles are profuse on garden produce or fruits, spray with Rotenone, 3 lbs. in 50 gal. water.

Lace wing fly of Rhododendrons	Sunoco oil	1-70	As the insects appear in spring
		1-60	In summer on a cloudy day when temperature is not over 80° F.
Red spider on evergreens	Sunoco oil	1-100	Applied in summer as a fine mist on a cloudy day when temperature is not above 80° F.

Roses

Rose bugs	Arsenate of lead	4 lbs.	Apply when beetles first appear and at intervals of one week if infestation is severe
	Molasses	1 gal.	
	Water	50 gal.	

Black spot of Roses	Finely ground sulfur dust 9 parts lead arsenate 1 part	Applied weekly, preferably before a rain rather than after it
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NOTE:—Some commercial dusts are available that are dyed green and are not so conspicuous as pure sulfur dust.

Grapes

Bordeaux Mixture (4-4-50)

NOTE:—Usually four sprays will suffice if applied at the proper time:—

1. When new growth is $\frac{1}{2}$ -1" long
2. When new growth is 4-6" long
3. As soon as blossoms fall
4. Just before berries touch in the clusters

Apples

Dwarf apples are ideally suited for the home garden especially because they make insect and disease control very simple. Though there are many insects and diseases infesting apples, usually the following dust applied every week or ten days until mid-July or early August will prove a satisfactory control, especially on dwarf apple trees.

Fine sulfur dust	8 parts
Arsenate of lead	2 parts

Vegetables

Cutworms	Heavy paper or cardboard collar around young plants, 2" below ground and 4" above	during late May and June				
Cabbage maggots	6" square of heavy roofing paper on surface of soil over plant roots	in May and June				
Cabbage worms	Rotenone dust	Weekly from time worms first appear				
Mexican bean beetle	Rotenone or Pyrethrum dust	apply to undersurface of leaves every week or ten days				
Striped cucumber beetle	Calcium arsenate 1 part talc 9 parts (or dust with Rotenone)	weekly from time beetles first appear				
Potato bugs and Potato blight	<table> <tr> <td>Bordeaux Mixture</td> <td>9 parts</td> </tr> <tr> <td>Arsenate of lead</td> <td>1 part</td> </tr> </table>	Bordeaux Mixture	9 parts	Arsenate of lead	1 part	dusted on from 2-6 times from time plants are 6-8" high, or as needed
Bordeaux Mixture	9 parts					
Arsenate of lead	1 part					

DONALD WYMAN