

## **Pruning – Not a Mysterious Art**

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### **Introduction** (*Maintaining the Past for the Future*)

Good design, with good quality site preparation and installation followed by intelligent maintenance are the essential parameters for a garden to reach its full potential. There are few maintenance practices that can be more beneficial or more harmful to a residential, commercial or public garden landscape than pruning. Proper pruning helps preserve the vigor and health of shrubs and trees, allowing them to live to their full life expectancy. One important element to remember – we prune shrubs to retain their beauty in flowers and foliage, while we principally prune trees for safety. Proper pruning literally preserves the past while shaping the future of the landscape!

### **Reading** (*Going beyond these Notes*)

*An Illustrated Guide to Pruning* (third edition) – Edward Gilman  
Published by Delmar Cengage Learning

### **Why we Prune** (*Reasons for Pruning*)

1. Sanitation. Removal of dead, diseased or insect infected wood. If diseased, tools should be dipped in a 10% bleach solution to prevent further contamination. Sanitation also includes the removal of crossing and rubbing branches; the constant abrasion from rubbing maintains an open wound and allows a port of entry for insect and disease.
2. Beauty. Many plants will produce water sprouts (vigorous growth from the stems) or suckers (vigorous growth from the roots) that detract from the ultimate attractive form of the plant. Many plants also have attractive branch patterns that can be enhanced by judicious thinning of branches. Removal of spent flower heads also falls into this category.
3. Rejuvenation. Best recommended for shrubs and hedges. The removal of old branches, stems or canes that are losing vigor due to the development of tyloses, or vascular clots. Plants such as Forsythia, Lilac and Deutzia benefit from a periodic thinning every 1-3 years. Other plants such as borer ridden Rhododendrons, overgrown Boxwood and Taxus benefit every 20-50 years! The new shoots that are produced yield larger and often more flowers as the result of the young and more efficient vascular system.
4. Height Control. Selective shortening of upright branches on small trees or shrubs. Can also refer to the removal of lower limbs of a tree, allowing one to walk or see beneath.
5. Balance. Either the shaping of a plant to maintain a uniform appearance unto itself, or with neighboring plants.
6. Reduce Transplant Shock. Originally, it was considered beneficial to remove up to 1/3 of the 'head' of a tree or shrub in order to reduce the amount of transpiration, compensating for the root loss during transplanting. It has now been proven that most plants benefit from not being pruned, since the carbohydrates produced from the unpruned foliage helps to redevelop a stronger root

system more quickly. However, if a tree has very dense foliage, such as a Linden, thinning the canopy will allow the wind to pass through the plant and reduce the likelihood of the plant tipping over in heavy winds. Removal of co-dominant leaders is also good to complete as early as possible.

7. Special Effects. Includes hedges, espalier, and topiary.
8. Safety. Shade and street trees pruning should be completed primarily for reasons of safety, removing dead, decaying or even branches with poor structure and are subject to breakage in strong winds. It also sounds odd, but at one time on the Rutgers campus they would remove the lower branches from shrubs so that people hiding or lurking in the shrubs would be noticed. Doc Hamilton once called this pervert pruning. Very apropos!

## **Tools** (*With What to Prune*)

Although it should go without saying, always pick the right tool for the job and make certain that the tools are sharp. Not only does it provide a smoother cut and less damage to the plant, it makes it much easier for the operator as well!

1. Bypass pruners.

Probably the best all around tool. Operating much like a pair of scissors, the cutting blade actually passes past the anvil blade, ensuring a good, smooth cut. By



reducing the impact upon the phloem and the delicate cambium cells that are located beneath the phloem, cell damage is reduced to a minimum and the wound can heal properly. Once you feel the need to 'wiggle' the pruners in order to make the cut, the stem is too large and it is best to use a saw. The action of 'wiggling' the pruners actually harms the pruners. Typically 3/8" to 1/2" is largest diameter of a stem suggested for hand pruners. The blade of bypass pruners is flat on one side and beveled (angled) on the other. To properly sharpen, dismantle and place the blade flat on a sharpening stone, moving it back and forth numerous times. Turn the blade over and pass the beveled side over the stone to remove any burrs and the blade is sharpened!

2. Anvil pruners. The cutting blade comes down upon the anvil, and does not sweep past as in the bypass pruners. These are not ideal, since they actually crush and damage the cambium in the process of removing the stem or branch.
3. Loppers. Can either be bypass or Anvil, the longer handles allow you to penetrate further into a shrub, before the shrub can reach the operator. Ideal for plants with thorns or for thinning multistemmed shrubs. Dependent upon the density or hardness of the stem, they are typically appropriate for stems of 3/4" or less in diameter.
4. Hedge Shears. Unless a very formal appearance is desired, hand pruners actually produce a healthier plant.
5. Handsaws. Most come with tri-edge saw teeth, which cut on both the push and pull stroke of the cut. This type of blade produces a very smooth cut, again reducing the amount of cell damage and minimizing the introduction of decay agents. The smooth cut also allows



rainwater to sheet off faster, further reducing the chance of decay. They are useful on stems ½ - 2+” in diameter.

6. Pole pruners. Complete with bypass pruners, saw blade, or both, these allow you to cut material that is up to 10’ off the ground without the need for ladders or climbing the tree

## **When to Prune** (*Best Times of the Year to Prune*)

The following are four rules that apply, but are not always to be followed. Personal judgment, alias common sense, should always prevail!

1. Prune when the shears are sharp. Not a bad rule, since breakage and small problems can be corrected at any time.
2. Avoid heavy pruning in late July through September, since new growth will commence shortly after pruning, only to be killed back by frost.
3. After flowering. It is important to distinguish which plants bloom on old wood (flower buds are set the previous fall for spring bloom) or on new wood (flower buds develop on wood produced in May and June). Flowers produced on previous year’s wood cannot be pruned in winter dormancy without loss of flower buds. The rule applies best to broadleaf evergreens, such as Rhododendrons and Azaleas and most plants that bloom from early spring through June. According to a colleague, the best time to prune a Rhododendron is when they are in bloom (they make good cut flowers said she!).
4. During winter dormancy. Late June through fall blooming shrubs can be pruned back heavily and still bloom since they produce flower buds on new wood. Examples include *Vitex*, *Buddleia*, and *Hydrangea paniculata*. Spring blooming shrubs and small trees are best thinned or given a ‘Rejuvenation’ pruning. It is much easier to see the structure of a plant in winter and remove rubbing and unnecessary wood.
5. Spring pruning is best. On narrowleaf evergreens, a heavy pruning in March, followed by a June pruning to control and slow rampant growth. The best time for renewal pruning of older and discolored stems of red and yellow twig dogwoods and willows, since you had the opportunity to enjoy the last ‘bit’ of stem color during the winter.

## **How to Prune** (*I have the tools and plants, now what?*)

### **A Thought on Thinking**

When considering how to prune a plant, I have always found it helpful to quickly walk about the plant and – I know this may sound odd – become ‘one’ with the plant. In other words, if you were the plant, what would you be feeling, and what pruning would make you feel better? In essence, think of it as removing a poor fitting piece of clothing! We all need to determine how best to approach pruning, and maybe this will help you arrange your thoughts. Below is the order of thinking in which I approach a plant; this is certainly not a science, just a thought process:

- How much of the plant has dead wood, and where is the dead wood located? On Threadleaf Japanese Maples (*Acer palmatum* var. *dissectum*), the inner branches naturally die from lack of light. This is normal. If there are major limbs that are dead along the outside of the plant, there are other problems that need to be addressed.
- What is the natural branching habit and shape of the plant? This is obviously something that you wish to enhance. If there is a branch that is distorting or altering an otherwise attractive or natural habit, it should be removed.

- What portion of the plant is putting excess stress upon the plant? Perhaps there is a cluster of branches, co-dominant leaders or poor branch structure that is compromising the health of the plant.
- How does the plant fit into the garden? What pruning would make this individual plant, or a group of these plants fit the scale and context of the garden. I should note that if the plant genetically wishes to grow far beyond the scale of the garden, a different plant might be the preferred choice, rather than pruning.

### **How the Plant ‘Thinks’ (The Physiological Response)**

The pruning of a plant has far greater physiological repercussions than most may think! Going hand in hand with pruning is plant health. Pruning will help maintain plant health, but also try to keep plants healthy and vigorous through proper watering and placement. First some definitions:

- Xylem – non living tissue that forms the core of stems, branches and trunks of woody trees and shrubs. Typically it is ‘banded’ with light and dark growth rings, which illustrate periods when it was growing fastest (the light rings) in a given year and when slowest (the dark rings). Its function is for support and is the medium through which water passes up the stem.
- Phloem – located under the bark, it consists of living tissues and allows nutrients to pass from the leaves to the roots and chemicals (hormones) produced in the roots to travel to the upper portions of the plant.
- Cambium – Undifferentiated cells, meaning that they have not specialized into any particular function. This is essentially an area of radial growth and is located between the xylem and phloem.
- Callus – undifferentiated cells created to heal wounds.

The action of cutting a branch or stem is in essence a wound to the plant – with a wound being defined as any penetration or disturbance to a protective layer. Any wound increases stress levels to the plant, as well as stimulates a change in hormonal levels within the plant. When a small branch is partially cut back or the ‘tip’ of a Coleus plant is removed to make it ‘fuller’, the apical bud is removed in the process. The plant hormone auxin is produced in the apical buds, and it has a suppressing affect on the lateral buds of the stem located immediately below. The apical bud also has a direct connection to the phloem and xylem. Cytokinins, hormones produced in the roots responsible for cell elongation, are transported via the xylem to the apical bud. Interestingly, the lateral buds do not have a direct connection to the phloem and xylem, and therefore do not receive large amounts of the Cytokinins. Thus, when we remove the apical bud:

1. The source of auxin production and resulting apical dominance is removed.
2. The lateral buds develop connectivity to the vascular tissues.
3. The lateral buds begin to receive Cytokinins and begin the production of auxins.
4. They break dormancy!

### **Pruning and Physiology of Branch Removal for Trees and Large Shrubs**

Broadly speaking, there are two types of branch attachments.

1. Those that appear at a 45-90 degree angle from the stem, and there is the development of a swollen area or a ‘collar’ at the point of attachment
2. Those with less than a 45 degree angle to the stem and very often appear as two leaders or codominant leaders. There is typically no branch collar present at the point of attachment.

### Type 1

When removing branches from trees, as well as from large shrubs, the branch should be pruned back to just above the swollen region where the branch meets the stem. This swollen area is called the branch collar, and it contains the necessary hormones to ensure that the bark will heal over the wound. In other words, the collar ensures that the living tissue will rapidly cover the bare wood and prevent long-term decay. If the branch is cut back to a point above the collar, that portion of the branch left above the collar will die back, losing connectivity to the phloem and xylem, and begin to decay. Since it is still present, it is blocking or preventing the collar from expanding and healing over the wound. Dr. Alex Shigo was the first to introduce this theory to the gardening world.

Trees and other advanced plants enter into a process of compartmentalization after being wounded. A material called suberin is exuded over the wound. Suberin is a waxy material and helps to prevent water loss to the atmosphere as well as bacterial infection from penetrating deep into the heart of the plant. The xylem plugs itself to prevent decay from moving up or down the stem while the denser and darker growth rings slow or stop the progression of decay into the center of the plant. The collar then starts to 'grow' or expand over the wound and eventually seals off the wounded surface. Once sealed, oxygen can no longer reach the wound preventing the decay from spreading further. The decay that has occurred is essentially contained and compartmentalized. Unfortunately, it will be present in the plant for the remainder of the plant's life and could potentially act as a point of weakness in the future during a strong wind storm!

### Type 2.

Plants with a codominant leader typically do not exhibit the presence of a collar. Consequently, the branches do not heal over as rapidly and decay penetrates further into the trunk, potentially compromising the integrity of the remaining stem. This type of branch arrangement is also poor since the stems push against each other as the diameter of both stems increase, ultimately resulting in one of the branches breaking away during heavy winds or rain storm. Ideally, codominant leaders need to be removed as early in the life of a plant as possible to minimize later complications.

## **The Cut**

Always try to remove the branch as early in the life of a tree as possible. This will keep the exposed surface area of the cut to a minimum; the smaller the surface the quicker the healing response and the less potential for decay. As mentioned above, for branches make the cut right at the branch collar. Or, if cutting back a stem or branch to encourage a denser plant, try to make the angle of the cut as close to 90° as possible to the central axis of the stem. This will minimize the central portion of the stem exposed to the elements and speed healing. On smaller stems, cut back to about 1/8" to 1/4" above a bud which is pointing in the proper direction. By proper direction, one needs to consider if the stem that results from that bud will grow into the center of the plant and lead to further stem crossing and bark wounding or will it grow to the outside of the plant and enhance the appearance and health of the plant.

If pruning a relatively large branch, or at least one that is difficult to prevent from dropping by holding it with the hand not making the saw cut, it is beneficial for the tree and the person to proceed with a 3-cut technique! First make a cut under the branch; approximately 8"-12" from the collar. Then, finish cutting through the branch at a point 2 or 3 inches further away from the trunk on this branch. The undercut will prevent the bark from tearing and potentially harming the collar and the bark on the trunk. A third cut can then be completed next to the collar, removing the remaining branch stub.

## **Ornamental and Small Trees**

### Late Winter Pruning (February and March)

1. Sucker shoots are stems that result from dormant or adventitious buds located at or near the soil line. They normally grow straight up through the plant, compromising both the appearance and the physical structure of the plant. For grafted or budded trees, these shoots usually originate from the understock and may indicate graft incompatibility. The plant may not be able to deliver adequate carbohydrates through the graft union to the roots, resulting in the roots producing stems and foliage to produce the needed carbohydrates. Avoid buying these plants if this is evident at a nursery. Otherwise, they should be removed since these shoots will overpower the desirable cultivar. Try to prune the sucker as close to the root or below ground stem as possible in order to prevent reoccurrences.
2. Remove most watersprouts from branches. Watersprouts are similar to sucker shoots, except they arise from stems or branches in the canopy of the shrub or tree. Similar to suckers, they look unattractive and typically result in rubbing of stems. The plant often generates these stems because there is a need to produce more carbohydrates. If the watersprout will not compromise the beauty of the plant or create a future rubbing issue, some of the watersprouts should be left to produce the desired sugars. It has also been shown that watersprouts enhance the strength of branches; the production of carbohydrates enhances the radial growth or diameter of the branch, thereby increasing its strength.
3. Eliminate crossing and rubbing branches. Rubbing branches wear away the bark and allow decay to enter into the branch, ultimately compromising its health and strength.
4. Shorten disproportionately strong upright growth by pruning back to a lateral bud or possibly an upright oriented branch.
5. Remove branches that may be visually unappealing to the winter outline of some plants.
6. Remove branches with potentially weak crotches or the smaller diameter stem(s) of co-dominant leaders. The earlier obviously the better.

### Summer Pruning

1. Remove sucker shoots and thin upward growing water sprouts.
2. Remove growth which has extended into walks or side shoots that have made branches more 'weighty' and caused them to droop lower.
3. Remove lower branches or limb-up younger trees as they continue to gain height. Gives the plant a more attractive appearance and allows for more light to penetrate beneath the plant. On younger trees, initially leave the lower branches for several years since research has shown how the carbohydrates produced by the lower branches, creates a stronger and stouter trunk. Once these lower branches become 1-2" in diameter, they can be trimmed if desired. Try not to wait until the branch exceeds 2" since it will require a longer period of time to heal, potentially increasing the likelihood of decay.

### Pruning Conifers and Other Broadleaves

1. Strong central leader evergreens such as spruces or Leyland Cypress can be thinned or have their lower branches removed (elevated), but severe pruning is to be avoided. Removal of the top will destroy the form and a new leader will generally not form or it will be a greatly distorted leader. Removal of too many bottom branches will leave a cone of upper branches on a stick. Not very attractive! In addition, the remaining lower branches will often droop down to fill in for the removed branches. On branches, never prune beyond the point where the needles appear, since dormant buds will fail to break. Unlike





many shrubs, dormant conifer buds remain dormant! In order to keep the plants more dwarf, use the technique called Candle Pruning. A candle is the new growth before the needles have begun to elongate. Candle pruning is the concept of breaking this candle to the desired length (as seen at right). New buds will then properly form for the following year and the tree will not appear misshapen, but merely much more dwarfed and compact.

2. The height of a multi-stemmed (shrub scale) evergreen can be controlled with annual pruning in March with a follow up pruning in June. Plants that fall into this category include *Ilex crenata* (Japanese Holly), *Ilex pedunculosa* (Longstalk Holly), *Taxus* (Yew), *Juniperus chinensis* (Juniper), etc.
3. *Ilex opaca* (American Holly) and *Ilex aquifolium* (English Holly) can successfully undergo the technique of being ‘hatracked’ in late February and March. This is a process whereby the branches are cut back to within several inches or several feet of the central trunk to restore the proper scale. The plant will literally look like a hat rack after the process. Dormant buds located along the cut-back branches will break dormancy by late May. It will take upwards of 3-4 years for the plant to once again assume a more normal appearance. The plant will be full and shapely, but much narrower. Some corrective pruning will need to be done during the regrowth period, since many of the shoots will initially try to grow straight upwards and not outwards. This process does not work on Pines, Spruce and Firs!
4. Rhododendron and Azalea, *Kalmia* (Mountain Laurel) and *Pieris* (Andromeda) can be pruned back lightly to a leaf or a branch, or pruned back harshly to within 18” of the ground. For the later treatment, the plant will respond by breaking dormant buds along the stem and reflush. It will take two to three years for the plant to regain its normal appearance once again and conceal the large cuts. Large plants can be reduced in size gradually by removing the central portion of the plant the first year and the remainder the second. Light pruning can be done just as the flowers are fading, but for substantial renewal cuts, it is best to prune the plant in late February and March.

## Pruning Shrubs

Know the shrub! As mentioned before, is it spring blooming or summer blooming? In other words, does the shrub bloom primarily on last year’s wood or current wood? If it blooms on last year’s wood, such as the Japanese Hydrangea (*Hydrangea macrophylla*) and the Oakleaf Hydrangea (*Hydrangea quercifolia*), removal or cutting back the stems during winter will also remove the flower buds for the current year. Therefore, it is imperative that only the oldest canes be removed. This is best performed in the winter, while the dried flower heads are still clinging to the tips of the stems. Plants that bloom on current year’s wood, such as Butterfly Bush (*Buddleia*), Panicle Hydrangea (*Hydrangea paniculata*) and Smooth Hydrangea (*Hydrangea arborescens*), can be cut back more severely in late winter without any impact upon flowering the following summer.

### Specific types of Shrub Pruning

1. Rejuvenation Pruning – For many multi-stemmed shrubs, rejuvenation pruning is beneficial, which is the removal of stems that are typically three years or older. This is effective for multi-stemmed shrubs like *Syringa* (Lilac), *Deutzia* (Slender Deutzia) and *Philadelphus* (Mock Orange). For Forsythia and *Weigela florida* (Old Fashioned Weigela), the plant will root where the tip of a stem touches the ground. For this reason, it is important to look about the plant to make certain that the branch tips are not rooting and the plant is not spreading beyond its intended boundaries. For plants with red winter stems, such as *Cornus sericea* and *Salix alba* ‘Britzensis’ or *Salix* ‘Swizzlestick’, removal of 1/3 of the stems at the end of each winter will encourage new, brightly colored stems to appear. This is the best treatment if there is deer predation, as the existing stems will prevent deer from getting to the young shoots. Otherwise, the plants can be cut back annually if desired.

2. Coppicing or Stooling – Cutting of the plant back annually to within 12” of the ground. It is very effective for plants with foliage color other than green, and will result in tall whips (upwards of 10’) of colorful foliage. Such plants include many with purple or yellow foliage, such as *Cotinus*, *Catalpa*, *Physocarpus* or *Cercis*. For other plants that have green foliage, such as Empress Tree of China (*Paulownia tomentosa*), the leaves the size of diner plates on stems up to 15’ tall in one season is the result! The major drawback to stooling is the added avenues of decay from the severed stems will normally shorten the life span of the plant. For other plants, such as *Buddleia davidii* (Butterfly Bush), or *Callicarpa* species (Beautyberry), which flower and fruit on new wood, it allows the plant to develop new stems that provide a clean attract habit.
3. Renewal Pruning – The cutting back of overgrown hedges or plants that have gradually exceeded the desired size. Although not possible with some plants like *Pinus* (Pine) and *Picea* (Spruce), it is very effective for many shrubs.

### **Pruning Vines**

Once again, know the vine and the response to pruning. Some of the major vines that benefit from pruning:

1. *Clematis*. There are three general types of clematis and techniques for pruning, which are divided into Type A, B and C. For type A, the flowers bloom on last year’s wood, and they can only be pruned just after bloom in order that flowers are not removed. An example would be *Clematis montana*. Type B blooms on both last year’s wood as well as that of the current year. At the end of winter, these plants should be pruned back to just about two large and vigorous appearing buds, roughly 3-5’ high on the vine. An example is *Clematis* ‘Nelly Moser’. Lastly, Type C blooms entirely on new wood, such as *Clematis terniflora*, Sweet Autumn Clematis. These vines can be cut back hard or just remove any wood that died during winter.
2. *Hydrangea anomala* (Climbing Hydrangea) and kin. *Hydrangea anomala* subsp. *petiolaris* (Climbing Hydrangea) and *Schizophragma hydrangeoides* (Climbing Hydrangea Vine) produce flowers on stems that project 12-24” out from the wall or tree they are growing on and these stems should not be pruned to ensure bloom.
3. *Wisteria*. All too often Wisteria vines do not bloom because they are pruned too heavily throughout the growing season. The plants respond by producing more vegetative foliage, but not any flower spurs. Wisterias should not be fed heavily, nor should they be pruned heavily during the summer. Once the plant has bloomed, take note of the flower spurs (they will have a bean-like fruit pod attached). During the late winter, remove all or part of the stem above the spur in order to ensure flowering for the coming year.

### **Pruning for Special Effects (*Look Ma, see what I can do!*)**

- Hedges – Many plants can be successfully pruned into a hedge. They should be wider at the bottom than at the top in order to prevent ‘shading out’ of the lower part of the hedge. Although hedge shears are typically used and are appropriate for where one wishes to bring the hard lines of architecture out into the garden, hand pruners have several advantages, both to the plants and to the gardener.
  - The process is nearly as quick and the clean-up is faster, since the gardener is discarding the cutting into a barrel as he or she proceeds
  - The hedge is much looser, and is able to bend rather than break under heavy snow loads
  - A loose pruned hedge allows more light to penetrate into the hedge. As a result, it has more foliage, creating more carbohydrates and a healthier plant.



- Hedge shears cut foliage as well as stems. The cut leaf edges turn brown, creating an unattractive brown cast to the hedge
- The appearance is often easier to blend into garden designs than the architectural forms created by shearing
- Fruit tree production – By thinning the head of the tree and removing upright shoots in favor of horizontal branches, more fruiting spurs are created and more fruit is exposed to sunshine, which improves ripening and eases harvesting.
- Espalier – Plants trained to two dimensions. They can be formal, informal, attached to a wall, or a freestanding in front of the wall. Espaliers can serve as a wall decoration, a freestanding barrier or small space fruit production. It is a fun technique that is not adequately employed in modern gardens.
  - The technique was developed in the 16th century, out of the practical need for growing fruit in more marginal climates of northern France and southern England. The early French and English discovered that if they bent apple-tree branches horizontally, they could direct energy away from vigorous vertical growth and into producing spurs (stubby lateral branches that flower and produce fruit).
  - For fruit trees, generally the first year's growth is foliage, second year's growth produces flower buds and the third year fruit production begins.
  - Fruit tree espaliers should have the new growth cut back to approximately ½" above the previous year's growth in late June or July, allowing light to both reach and enhance the ripening of the fruit.
- Topiary – Pruning plants into a geometric shape, an animal form, or some other form not found in nature. This dates back to Roman times.
- Bonsai – A Chinese art form that was developed further by the Japanese. The concept is to dwarf the plant in containers through root and canopy pruning.
- Pollarding – can take several forms, but it is the cutting back of branches to the trunk. It can create tall hedges or dense overhead canopies, or odd looking trees with little canopy.
- Pleaching – the interlacing of tree branches, typically in a two dimensional form, creating a very narrow hedge-like form.
- Brambles – Raspberry and Black Raspberries are divided into two types: summer bearing (Floricanes) and everbearing (Primocane). Primocane plants fruit on current season's wood while Floricanes bloom and fruit on the previous seasons growth. Floricanes types should have the current years wood pruned to the ground after fruit production (late July to mid August), while those that are Primocane should be cut to the ground in the spring to produce heavier crops at the cane tips later that season.

### **Flowering Shrubs for Which Annual Pruning is Suggested**

*(May be Cut Back Severely)*

*Buddleia*

*Callicarpa*

*Caryopteris*

*Ceanothus*

*Cornus* (red stemmed forms)

*Elsholtzia*

*Genista tinctoria*

*Hydrangea arborescens*

*Hydrangea bretschneideri*

*Hydrangea paniculata*

*Hydrangea radiata*

*Hypericum patulum*

*Lavendula*

*Lespedeza*

*Rosa* (Shrub, Hybrid Tea)

*Salix* (red stemmed forms)

*Sorbaria*

*Spirea*

*Tamarix*

*Vitex*

### Prune by Thinning Old Wood Every 2 or 6 Years

<i>Deutzia</i>	<i>Kolkwitzia</i>	<i>Symphoricarpos</i>
<i>Exochorda</i>	<i>Philadelphus</i>	<i>Weigela</i>
<i>Forsythia</i>	<i>Stephanandra</i>	
<i>Hydrangea macrophylla</i>	<i>Syringa</i>	

### Seldom Need Pruning, Perhaps Corrective Thinning

<i>Acanthopanax</i>	<i>Cytissus</i>	<i>Lindera benzoin</i>
<i>Aesculus parviflora</i>	<i>Diervilla</i>	<i>Lonicera</i>
<i>Amelanchier</i>	<i>Edgeworthia</i>	<i>Lycium</i>
<i>Amorpha</i>	<i>Elaeagnus</i>	<i>Myrica</i>
<i>Aronia</i>	<i>Euonymus</i>	<i>Potentilla fruticosa</i>
<i>Berberis</i>	<i>Forsythia suspensa</i>	<i>Rhus species</i>
<i>Chaenomeles</i>	<i>Hamamelis</i>	<i>Ribes</i>
<i>Clethra</i>	<i>Hypericum</i>	<i>Robinia</i>
<i>Corylus</i>	<i>Ilex (deciduous)</i>	<i>Rosa, species</i>
<i>Cotoneaster</i>	<i>Itea virginica</i>	<i>Viburnum</i>
	<i>Ligustrum</i>	