

# ALASKA PIONEER FRUIT GROWERS NEWSLETTER

Autumn 2000

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## Editor's notes:

I couldn't make it to the first 2 orchard tours this summer, but I made it to Pat Carney's in July. He has a huge batch of very healthy trees and makes his own planting medium by composting all the neighborhood leaves and grass clippings. The trees around which he had spread a few inches of compost a few weeks before the tour had new growth with decidedly larger leaves than those produced earlier in the season. He also had a beautiful greenhouse and flower beds in the yard, plus some very nice trellises and arbors he had built himself.

Per request, I have included in this issue an enrollment form for Apple Notes, the newsletter from the fruit growers in Edmonton, Alberta.

On a final note, I sure would like some more input from you members. Let me know how your season went - even just a sentence or two on something you are proud of. Or, maybe a recipe for our Featured Fruit section. I plan on another issue Jan 1<sup>st</sup> or so, so drop me a note!

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## Why Fruit Trees Fail to Bear

Your fruit tree normally will begin to bear fruit soon after it has become old enough to blossom freely. Nevertheless, the health of your tree, its environment, fruiting habits, and

the cultural practices you use can influence its ability to produce fruit. Adequate pollination is also essential to fruit yield.

If just one of these conditions is unfavorable, yields may be reduced. Perhaps the tree will not bear fruit at all. As a grower, you can exercise

some control over most of the factors contributing to fruit production.

### **Bearing Age**

When you purchase nursery-grown fruit trees, their tops will probably be from 1 to 2 years old. The length of time from planting to fruit bearing varies with the type of fruit. Trees that grow at a moderate rate generally bear fruit sooner than those that grow either too quickly or too slowly.

The ages (from planting) when trees can be expected to bear fruit are as follows:

<b>Variety - Time in Years</b>	
Apple - 2 to 5	Apricot - 2 to 5
Citrus - 3 to 5	Fig - 2 to 3
Peach - 2 to 4	Pear - 4 to 6
Plum - 3 to 6	Quince - 5 to 6
Cherry, sour - 3 to 5	
Cherry, sweet - 4 to 7	

Dwarf apple and dwarf pear trees usually begin to bear 1 to 2 years earlier than standard-size trees.

### **Tree Health**

Healthy trees produce good quality fruit. Weak or diseased trees produce fruit of poor quality or no fruit at all.

Pest problems involving insects and diseases if not detected early and managed properly can influence fruit production and weaken a fruit tree's overall health.

When fruit trees are not sprayed properly or left untreated, diseases and insects may restrict the size and quality of the yield, although the tree itself usually continues to bear fruit. Pest management guides for commercial and home fruit trees are available through your local WSU Cooperative Extension office. Recommended product applications are important in preventing or controlling pest problems.

### **Climate and Weather**

Most hardy fruit trees need a certain amount of cold winter weather to end their dormancy and to promote spring growth. When winters are too mild, spring growth is delayed, irregular, and slow. These factors extend the period of blooming, thereby increasing the possibility of frost injury.

On the other hand, extreme cold during winter dormancy may kill the fruit buds. Winter weather rarely threatens hardy apple, pear, plum, and sour cherry varieties. Sweet cherry trees, however, are relatively sensitive to cold until they become dormant. Peach trees are very vulnerable to cold weather. Their buds can be killed by midwinter temperatures around -10°F.

As the fruit buds grow and open, they become more susceptible to injury from frost. The exposed buds can usually withstand temperatures near 24°F. However, the open blossoms of

practically all fruit trees may be killed if the temperature drops below 27°F.

When a heavy frost is expected, covering the trees will sometimes prevent bud or blossom injury, provided temperatures do not fall too low and the cold weather is of short duration. Protective coverings may be effective, such as floating row cover material or old bedsheets.

During spring frosts, some commercial growers heat their orchards, but this method is impractical for home gardeners. Overhead irrigation provides effective frost protection when temperatures drop to 32°F. Ice that forms on buds provides an insulating effect until temperatures rise above freezing. After a severe frost, injured blossoms may appear normal; however, if the pistils (center part of the blossoms) are killed, the tree will not bear fruit.

### **Pollination**

Most fruit trees need to be pollinated. Pollination is affected by cold weather and reduced pollinating insect activity. Without sufficient pollination, trees may blossom abundantly but will not bear fruit.

Some species of fruit trees have "perfect" flowers. Both the anthers, which contain pollen, and the pistils, which develop into fruit, are located in the same blossom. Trees that bear fruit through self-pollination, or set fruit without pollination, are called "self-fruitful."

However, many types of fruit trees that have perfect flowers cannot produce fruit from their own pollen. These require pollen from another variety and are called "self-unfruitful."

Some species of fruit trees do not fit conveniently into either category. Persimmons and dates have male trees that produce pollen and female trees that produce fruit. To grow them successfully, it is necessary to plant at least one tree of each gender near each other.

Almost all citrus trees are "self-fruitful." Other self-fruitful types include quinces, sour cherries, apricots (except Perfection and Riland), figs (except the Smyrna type grown in California), peaches (except the J.H. Hale and a few others), and European-type plums such as the Stanley, Green Gage, and Italian prune.

"Self-unfruitful" types include most apple, pear, sweet cherry, and Japanese and American plum trees. To pollinate adequately, plant two or more varieties near each other. The following planting practices are recommended:

**Apple.** Plant at least two varieties of apple trees near one another. Golden Delicious, a self-fruitful type, is one of the few exceptions to this rule. Poor pollen-producing types, such as Gravenstein, Jonagold, Stayman, and Winesap, need to be planted with at



least two other varieties to insure adequate pollination.

**Sweet Cherry.** Bing, Lambert, and Napoleon (Royal Ann) cherry trees do not pollinate one another. Plant a pollinating variety such as Black Tartarian or Republican, Stella, Van, or a sour cherry such as Montmorency nearby.

**Pear.** Many varieties of pears are completely or partially self-unfruitful. For adequate pollination, plant at least two varieties together. Note: Bartlett and Seckel pears will not pollinate each other, and Magness cannot be used as a pollinator.

**Plum.** Since most varieties of Japanese and American plums are self-unfruitful, plant two or more varieties together.

### **Biennial Bearing**

Occasionally, certain fruit trees such as apples bear heavily one year and sparsely the next. This is called "biennial bearing." The spring-flowering buds of most hardy fruit trees have actually been formed during the previous summer.

Therefore, an especially heavy crop one year may prevent adequate bud formation for the following year.

Biennial bearing is difficult to alter or correct. However, you can induce a return to normal yearly fruit production by early and heavy thinning during the year in which the trees are producing their large yield.

About 30 to 40 healthy leaves per single fruit are needed to produce good quality. Within 30 days after bloom, thin remaining fruit to leave a single fruit every 6 to 8 inches along the branches.

### **Cultural Practices**

Fruit trees need full sunlight for best production. Avoid placing fruit trees where they will be shaded by buildings or by other trees. Leave adequate space for fruit tree root systems by planting away from shade or forest trees.

A good watering and fertility program is also essential to maintaining a tree's vigor and fruiting capability at its best. Water fruit trees deeply but at infrequent intervals. Do not over fertilize, especially with nitrogen, since overapplications can cause abundant foliage growth at the expense of fruit production.

Reduce competition from weeds or grass by cultivation, mulching, or weed product application around the base of the tree. Do not spray the trunk wood.

Good pruning practices are important. Excessive upright growth will delay fruit bearing and reduce the quantity of fruit produced. Prune young apple trees to develop a strong framework with a central leader and horizontal branches. Use the open-center approach with a well-spaced branching pattern or similar method

for most stone fruits (cherry, peach, nectarine, apricot, prune and plum).

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## Orchard Reports

### Peters Creek, Alaska

**Dwight Bradley, Sept. 1, 2000**

It's finally starting to look like an orchard. Without a doubt this has been the best apple year since we planted the orchard in 1992. Most trees survived last winter with very little damage. Bloom lasted from June 3 to somewhere around the last week of June; a few trees put out some very late blossoms. May and June were dry, as usual, but somehow we managed to keep everything well enough irrigated. We were gone for much of July but rumor has it that it was wet and cold. The apple trees seemed to like it, though. August has been pretty typical (wet and cold). Out of 100 apple trees, 76 bloomed and 67 have fruit. We thinned in early July, taking out about 60% of the apples. In hindsight, 70% would have been better-especially any apples on the shady underside. Growth this year has been extraordinary: many trees have put on 24 to 30" of fat growth. Next year I'll actually have

scionwood that looks like it came from the Lower 48. Here are a few comments on particular varieties.

Norland. Twenty six trees are bearing. The tallest trees, between 10 and 12 feet, are absolutely laden. I suspect that a bit more thinning might have helped. All but 3 out of 30 Norlands are thriving. For some reason, three consecutive trees in the front row of the orchard are struggling. They are not the first trees to have had trouble with that spot.

Parkland. Twenty Parklands have fruit. The tallest trees are slightly shorter than the Norlands of the same age. Despite fairly intense thinning, I wish now that I'd been more ruthless. Parkland seems to have much weaker branches than Norland; many are sagging from the weight of the apples. A few Parklands and Norlands are already edible, but they should be fully ripe and ready to pick around Sept. 20.



Trailman. We have five bearing Trailman trees, counting one that was planted as a Norda but now obviously is a Trailman. This year, like last, Trailman was the first to leaf out, and the first to bloom. Again, many apples are splitting open from too much rain. This could be turn out to be a real drawback in Anchorage, where every August seems to be wet. Two of our trees suffer from pendulous branches, but the other two trees are nice and upright; I don't see a pattern.

Rescue. We have two Rescue trees, both loaded. A big scaffold branch on one tree broke off from the load; it had a very narrow crotch with a bark inclusion, so I guess this was inevitable. Last year, one of the trees bore elongate fruit, while the other bore round fruit. This year, strangely enough, both are bearing round fruit. I had thought that one or the other of the trees was an imposter but I guess I was wrong.

Other varieties: Heyer 20 is our nicest tree, a reliable bearer of fairly large apples. Unfortunately, they have only ripened on time once in the past 6 years. Morden 359 (is this the same as Vick's Pick?) is still alive (planted 1992) and still bearing a few apples, but the tree is not happy and the apples have never ripened. Crimson Beauty is a similar case: the tree (also planted in 1992) is struggling but not dead; it has set only about 15 apples in the past 5 years. The few apples that have ripened have been excellent, and a bright red. Centennial is a

really nice, reliable, yellow apple-crab. I have one tree planted in 1995 and a couple of much younger ones. The 1995 tree was missing its tag and until this year I called it the "B-1 Unknown Apple-Crab", after row B, aisle 1 in the orchard. Now I have a younger Centennial coming along, grown from scionwood from the grafting workshop, and it is obviously the same thing as my B-1 tree. Two Westland trees will bear fruit for the first time this year. The Hugh Harris mystery apple, Collett, Novosibirski Sweet, Arbor Dale, and Heyer 12 are also bearing.

### **Peters Creek, Alaska Tami Schlies, Sept. 1, 2000**

I myself produced my first apple this year, on a Norland tree I grafted last year on baccata rootstock, and my kids are dying to try it. My Rescue crab of the same age flowered, and was likely the pollinator for this tree, but it did not set fruit. Both of these trees are still in five gallon pots, though I hope to get them into the ground before freeze up.

My 3 year old tree in the back yard (which I think is a Parkland on ranetka, but lost the tag) has yet to flower, so I got out there and tied those vertical branches down with panty hose. Maybe it will liven things up!

The nine trees I grafted on ranetka this spring all took, though some grew

better than others. This winter will tell on them. Five Evans cherry trees in pots all put on major growth this summer, as well.

My Ozark Beauty and "over the fence" strawberries produced very well this year, with less of a root weevil problem than in the past. I

used beneficial nematodes that also work on the root maggots that eat our broccoli, but am unsure of whether that helped with the strawberry root weevils. It sure worked on the broccoli, though!

I'd love to hear how your tree(s) or other fruit did this year, too! Happy Harvesting!

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## **Featured Fruit**

American Red Currant (*Ribes Triste*)

These , straggly, thorn free shrubs grow 1 1/2 feet to 5 feet high with reddish brown shreddy bark. The smooth leaves have 3-5 toothed lobes, and may or may not be hairy underneath. The fruit is ready in late summer, drooping in clusters from the stems just below the leaves - a lovely, translucent red, that makes wonderful jelly with many uses. You can find red currants, as well as other varieties of less edible currants, in cool woods, swamps, and ravines in many parts of Alaska.

### **Chicken with Currant Glaze**

6 skinless, boneless chicken breasts.

1/3 cup red currant jelly

2 T. lemon juice

1T. butter

1/4 t. salt

dash ground cinnamon

1T. cold water

2 t. cornstarch

Preheat oven to 375 degrees. Bake chicken, uncovered, for total of 35 minutes, or until juices run clear (may take up to 55 if using frozen chicken). In a small saucepan, stir together jelly, lemon juice, butter, salt, and cinnamon until the jelly melts. Combine water and cornstarch, then stir into jelly mixture. Cook and stir over medium heat until thickened and bubbly. Spoon thickly over chicken for the last 15 minutes of baking. This is great with rice.

I promised everyone an article on espalier this issue, and while doing research I came across an article in my Kitchen Gardener magazine that says it very well, so I received permission to simply reprint the publication.

I really like my Kitchen Gardener magazine because it is not filled with advertisements. It's main focus is on edible gardening, including recipes, diagrams of garden layouts, and other useful information. It is published bi-monthly.

If anyone is interested in a subscription or wants to renew their current one, Tauntaun offers a group discount of 20% off if we order subscriptions as a group of 10 or more. Current subscription price is \$24 a year, which means we would each only pay \$19.20. Plus they will give us one free paid subscription with the order, which we could use as a door prize etc. at our annual meeting. Please give me a call if you are interested!

I hope you enjoy this article as much as I did.

Tami Schlies, Editor  
688-5711





Imagine reaching down instead of up to harvest and thin fruit from a tree, and you will see just one of the benefits of espalier.

# DEMYSTIFYING ESPALIER

Training fruit trees simplifies management

BY RON CLANCY

Living on a small lot in a big city, I always thought growing fruit was an impossible dream. I had a couple of strawberry plants and raspberry bushes, but I wanted the real thing: tree fruit. Were a few apple trees that would pollinate each other and produce enough fruit for fresh eating, pies, and apple sauce too much to ask of my circumstances?

In visits to public gardens over the years, I saw beautifully trained trees, which I learned are called espaliers. They seemed exotic and complicated, decorations requiring expertise and

considerable work. These trees often had fruit, but it looked ornamental rather than edible. Still, looking at the control imposed on the trees, I saw possibilities for my own garden and decided to research the subject.

First I discovered that you can find espaliers potted up in a nursery. They were very expensive and often were those grafted oddities that produce 27 kinds of apples, but all varieties ill suited to your climate. Instead, I consulted a few pruning books and decided to test myself with this type of training. What I discov-



ered was that espalier was definitely within my reach, and I don't even speak French. You will see how simple a technique it really is. You will see that you can make an espalier dream come true in any garden, or even on a patio, deck, or balcony.

## THE ADVANTAGES OF TRAINING ARE MANY

Technically, an espalier is a trellis or lattice used for training a tree flat against a wall. The practice has been around since the Middle Ages. Today the term is more commonly used to describe the method used on the trees themselves. Espaliers are an efficient and space-saving way to grow fruit. They take very little time to maintain and make pest control, especially organic methods, much easier. On top of all that, they are decorative and fit in with any gardening style. If you also consider that they have a number of different uses as architectural elements, you will be sure to find a place for at least one in your garden.

Look in most pruning books and you will find basic instructions on how to train and prune an espalier. Unfortunately, there is a bewildering array of choices and some pretty obscure terminology. You might think you had wandered into some rare subject practiced by a select few. In fact, the basics are the same no matter what shape you pick for your completed espalier. The technique is also adaptable to most types of fruit.

So where do you start? First, remember throughout this process that an espalier is nothing more than a different way of pruning and training. All of the other rules about growing fruit apply. Apples still require pollination, peaches still have a chilling requirement, and birds will still try to eat your cherries. The dif-



**Fruit borne on an espalier is as large and delicious as any you will find on a full-size tree.**

ference is that most maintenance chores are a lot easier, and most won't even require a ladder.

If you are a beginner, the easiest fruits to espalier are apples and pears. These popular fruits also happen to be the easiest to prune in tree form. The most critical part of an espalier is to start with a 1-year-old tree, or, to use the nurseryman's term, a "whip." A whip is a tree that has been grafted on rootstock, but is still so young that it has not had a chance to branch out. Whips are small, unimpressive, and often much cheaper than larger trees. You will, however, have to search out a wholesale or specialty nursery to find whips, as the de-

mand at most retail and mail-order nurseries is for fully branched-out trees a few years old.

Research the varieties suitable for your area before deciding on one for your first espalier. For instance, 'Red Delicious', which thrives in most parts of the country, is not a good choice for the Pacific Northwest, where I garden. Variety is much more important than rootstock. Ideally the whip should be grafted on a dwarfing rootstock (M9 is a common one), but a good espalier can be created on any rootstock. Don't simply go with whatever variety is available in your nursery. Trees have become just another commodity and are often produced at a central location and then shipped widely.

## BASIC DIRECTIONS: KEEP THINGS SIMPLE

Having chosen a suitable variety and found a source of whips, you are ready to start. Here is where most directions get complicated. In simple terms, you want to force the whip to produce side shoots where you want them and not to grow unhindered



**A supple apple shoot can easily be trained to follow a designated course.**

Providing basic training for this apple tree from the time it was no more than a single stem enabled it to grow into a handsome espalier.



**This apple tree, which is espaliered along one side of a deck, is so accessible the author can blast aphids from the comfort of a chair.**

into a full-size, branching, three-dimensional tree. This training will determine the final shape your espalier will take.

To keep things simple, I'll illustrate one of the most common and adaptable tree shapes (especially for apples and pears), the multi-tiered horizontal cordon. Think of a pole, with you in charge of its height and the number of crosspieces it has and their length. The simplest would be a T, a pole and one crosspiece at the top. Adding more crosspieces would necessitate increasing the height of the pole.

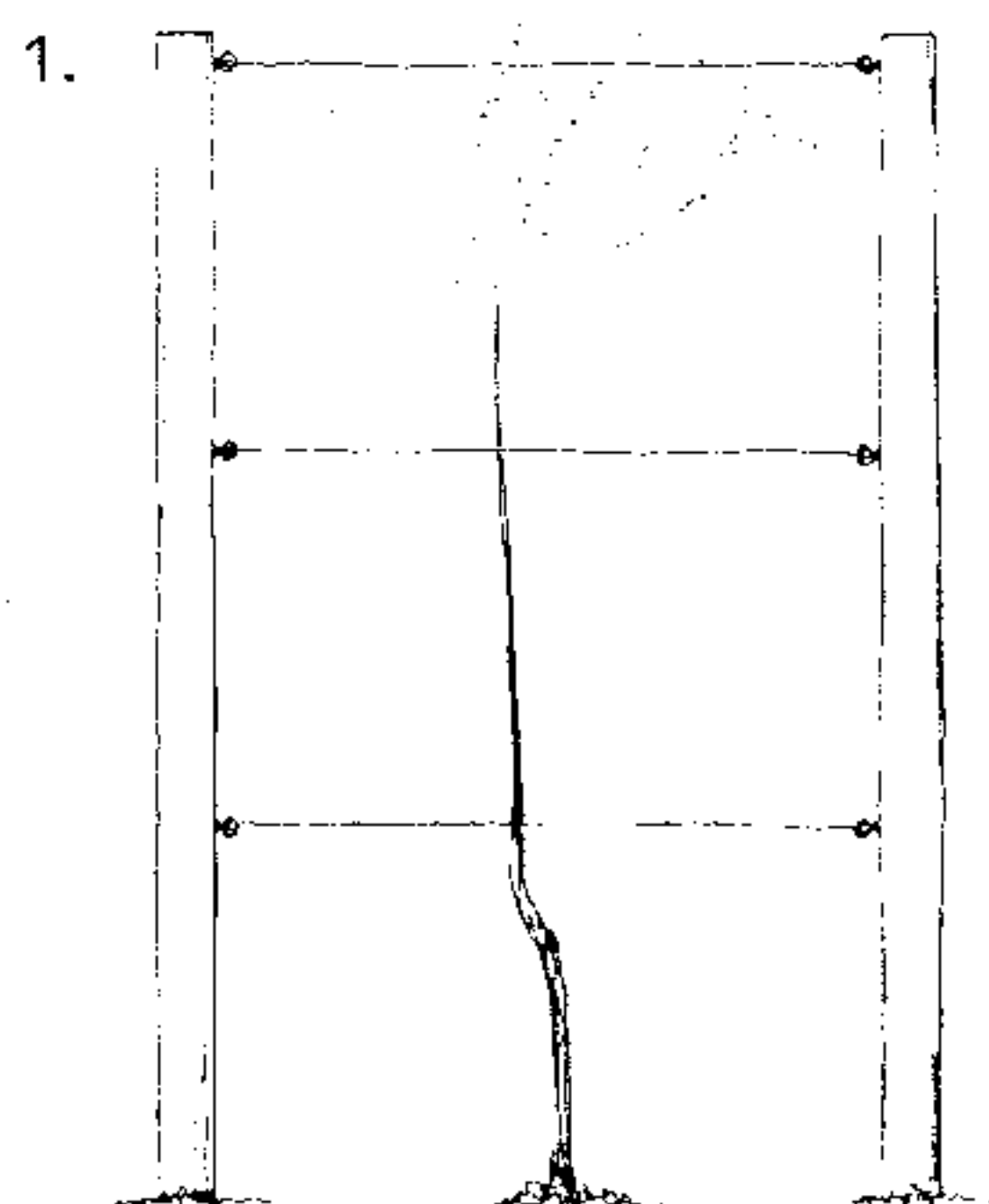
You start by planting your whip. As with all tree fruits, you need a good sunny spot. The whip is planted following standard fruit tree practice. To support the fledgling espalier, you need to

string horizontal wires that will guide the branches as they grow. For a horizontal cordon, place the first wire about 2 feet off the ground. Place additional wires at 2-foot intervals, up to 6 or 8 feet, depending on the final height desired. Attach the wires directly to a wall or fence using eye-bolts. For a freestanding espalier, string the wires between two posts. The support doesn't have to be especially sturdy, as it mainly serves as a guide for your training. Many mature espaliers have trunks and branches sufficiently thick that they can stand on their own. You should provide at least 6 feet for the width of the final espalier, but extending it as far as 12 feet will result in much more fruit production.

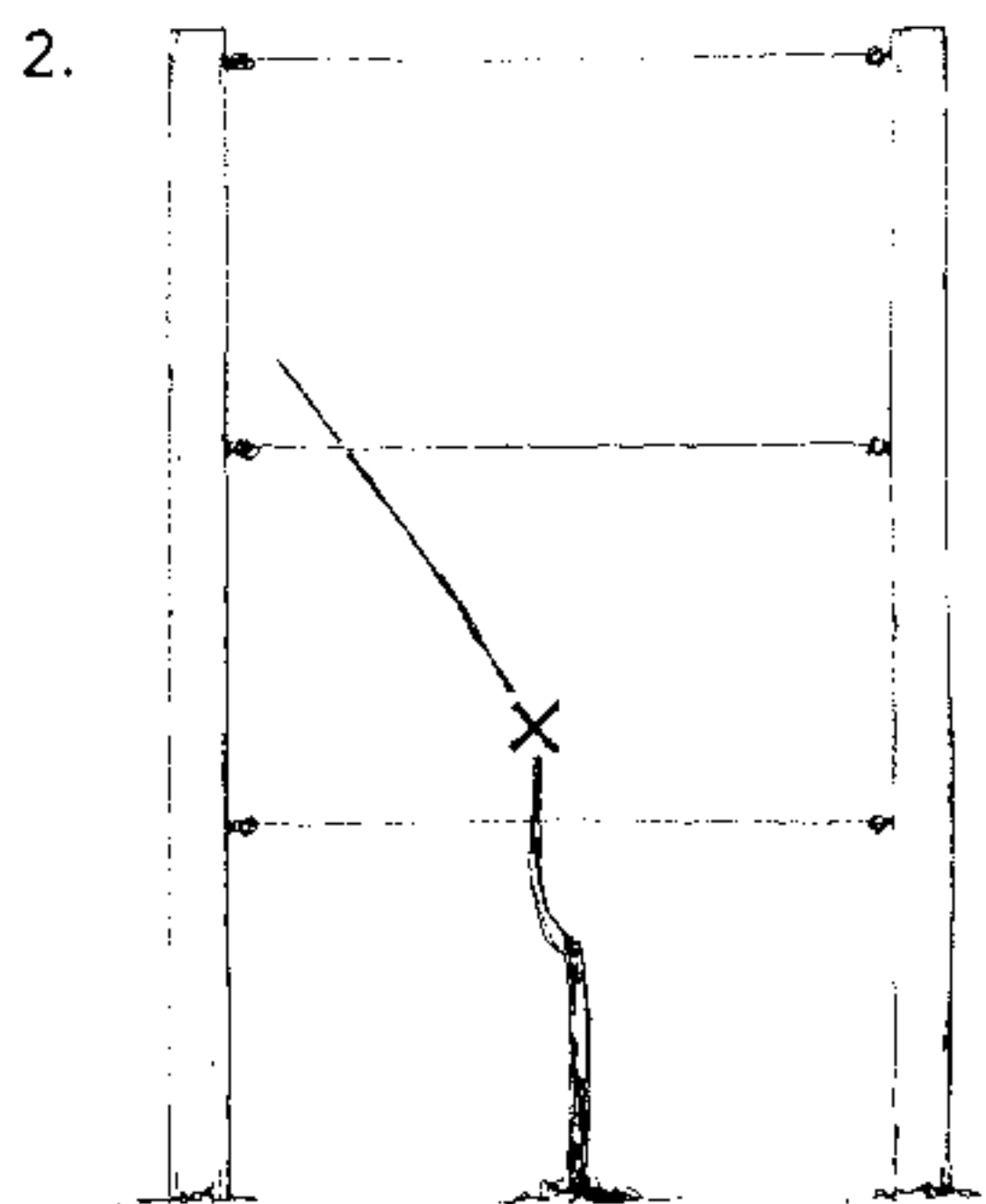
Once you have planted your whip, it's time to follow the patterns in the illustrations below. You cut the whip back so it is just above your first wire, about 2 feet off the ground. Make sure you don't cut below the graft junction where the scion joins the rootstock. You want the variety of fruiting wood to develop, not the rootstock. This initial pruning will cause side shoots to develop. Choose two of these shoots to bend down horizontally and tie to the wire. The ties should be loose enough not to strangle the branch as it grows. You can also use a piece of bamboo as a guide to tie the shoots down and keep them straight along the wire. I have also spiraled pliable young shoots around the wire as a way to help hold them in place. But they still need to be secured.

Remove all other shoots, leaving one pointing skyward. From this point on, your technique consists of repeating this first procedure with the central shoot or "leader" every 2 feet until the desired height is reached. The result will be the shape illustrated in the final illustration below. The horizontal branches are allowed to grow to the desired length (usually 5 or 6 feet in each direction) and then pruned to stop further spread. In the top

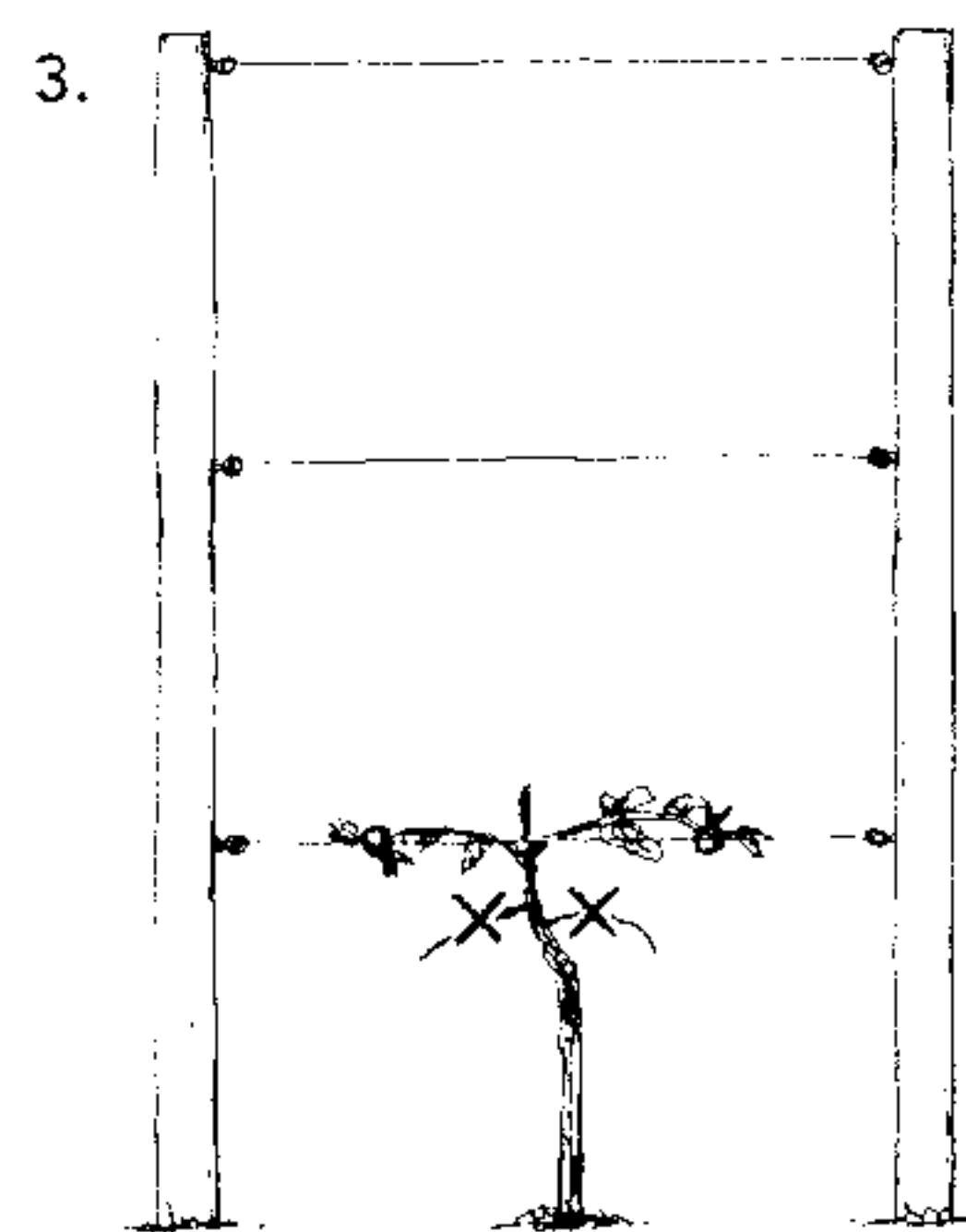
## STEPS TO SUCCESSFUL ESPALIER



1. Start your espalier by planting a young fruit tree between two posts strung with training wires, the first about 2 feet off the ground.



2. Cut back the tree to the level of the first wire, making sure you don't cut below the point where the scion wood is grafted to the rootstock.



3. After the first growing season, choose two shoots, bend them down, and attach them to the training wire. Leave one vertical shoot and prune off others.



tier, only the two horizontal arms are left to grow; the leader is removed. A full espalier will take about four years to develop, but once in place, it will continue to produce fruit for many years.

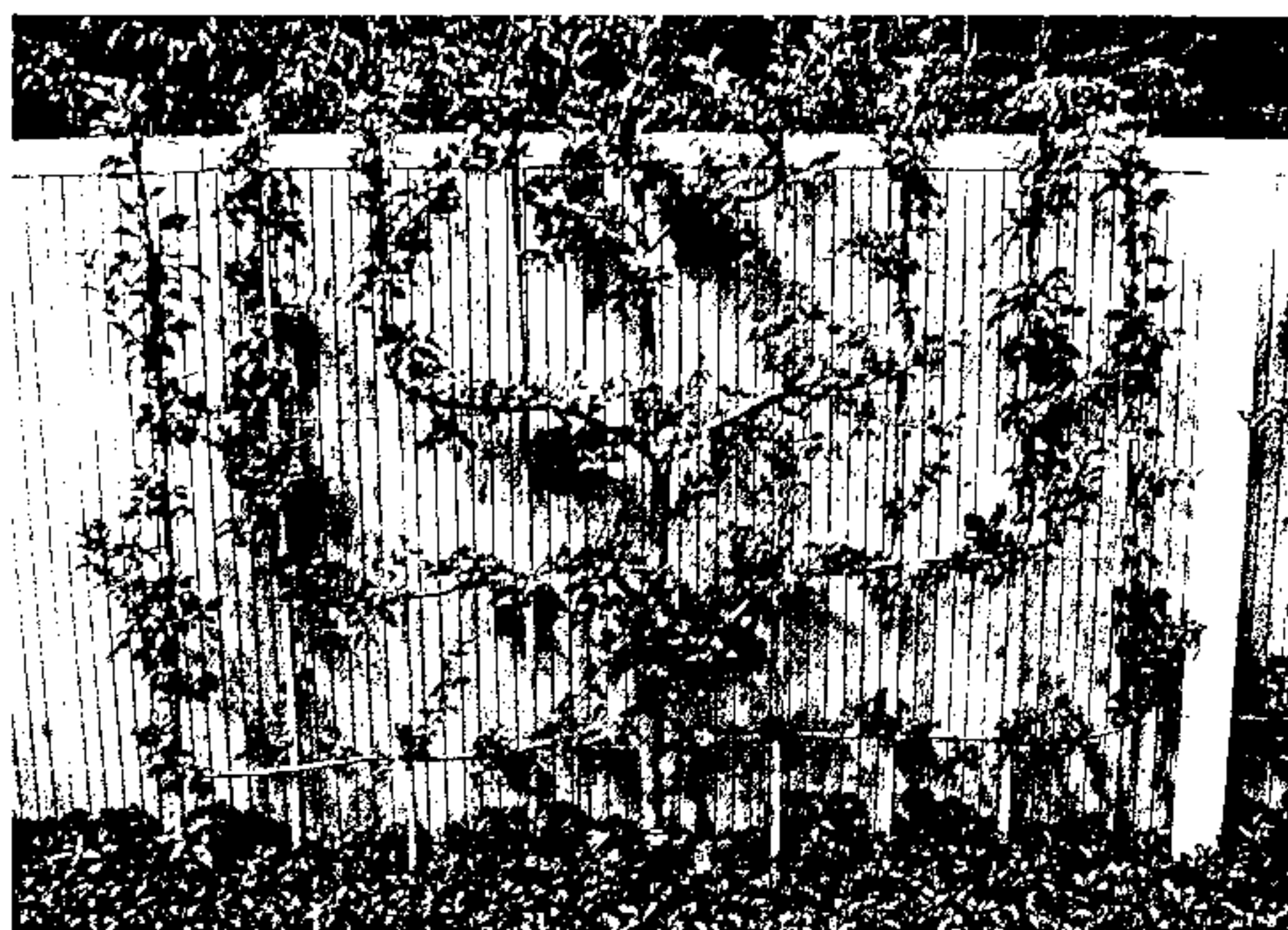
### WITH THE TREE SHAPED, UPKEEP IS EASY

Once your espalier has reached its final size, regular maintenance consists mainly of cutting back strong, vertical growth to direct the energy of the tree into fruiting spurs. This pruning can be done on a relaxed basis throughout the year or in more frenetic bursts in spring, summer, and winter. Because the tree is in two dimensions, most of it is in easy reach, not even requiring a ladder if the final height chosen is 6 feet.

Of course, your tree will still attract pests, but here's the best part about espaliers. Because the whole tree is so accessible, pest problems can be seen and acted upon much earlier than if they were hidden behind remote branches and leaves. It's possible to pick off caterpillars, cut out diseased or crossing branches, and watch for other signs of insect damage up close. The job of thinning fruit is simplified, and picking is an effortless joy.

Once you have built up your confidence with this basic type of espalier and have seen how much fruit a single tree can produce, you will no doubt want to do more. Espaliers can be used as fences or hedges, as screens for patios or work areas, or even to define a path or a border. Espaliers make a practical choice for containers if all of the tree's requirements are met and a large container and dwarfing rootstock are used.

Although apples and pears are the easiest subjects for espalier, the technique can be applied to just about any tree fruit, as well as to bush fruits, such as currants. The trick with all fruits is to meet their standard pruning needs, such as pruning peaches so they grow new wood each year to produce the following year's

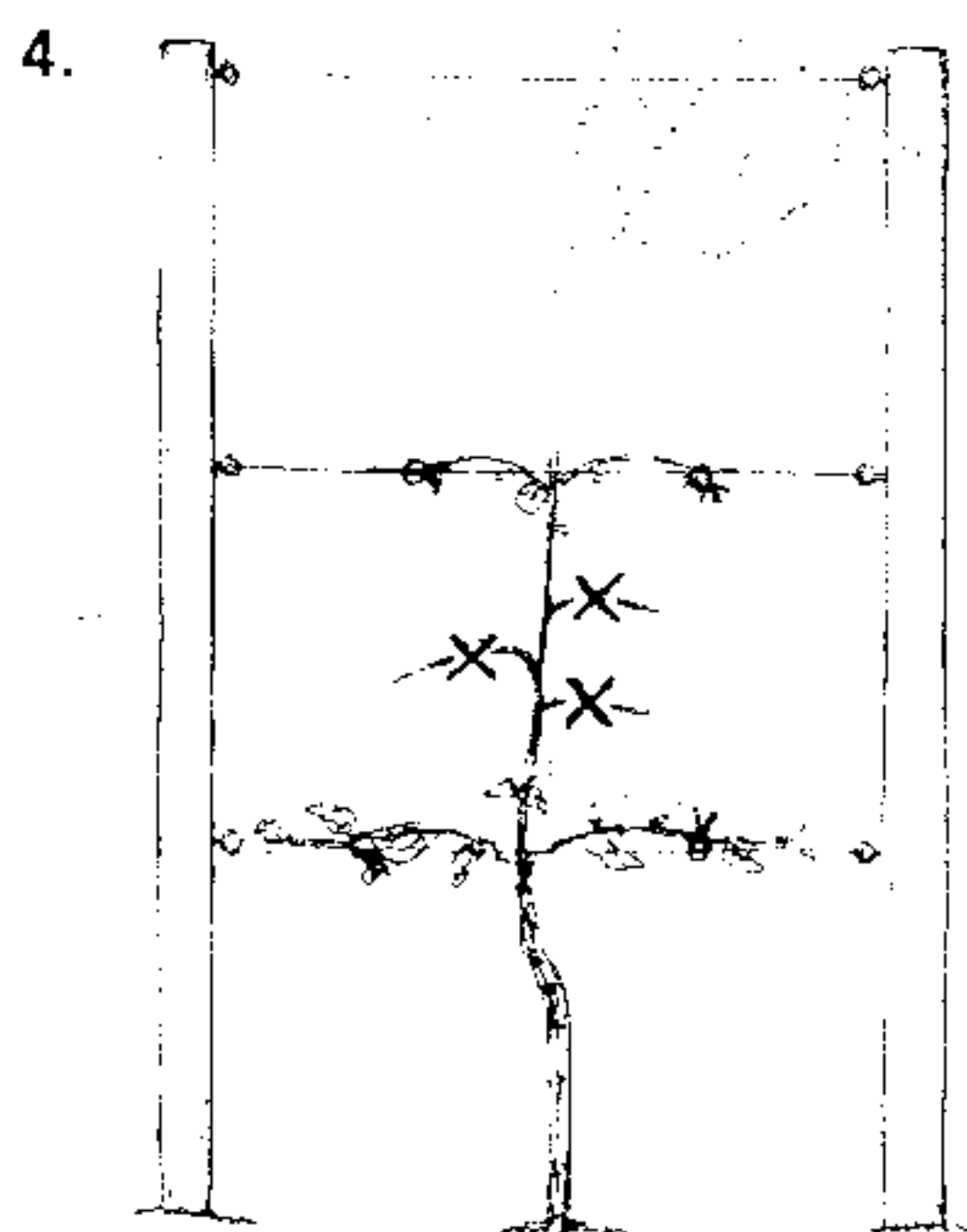


Once you have mastered the basic form, a world of variety awaits, including designs such as this candelabrum at the Minnesota Landscape Arboretum in Chanhassen, Minnesota.

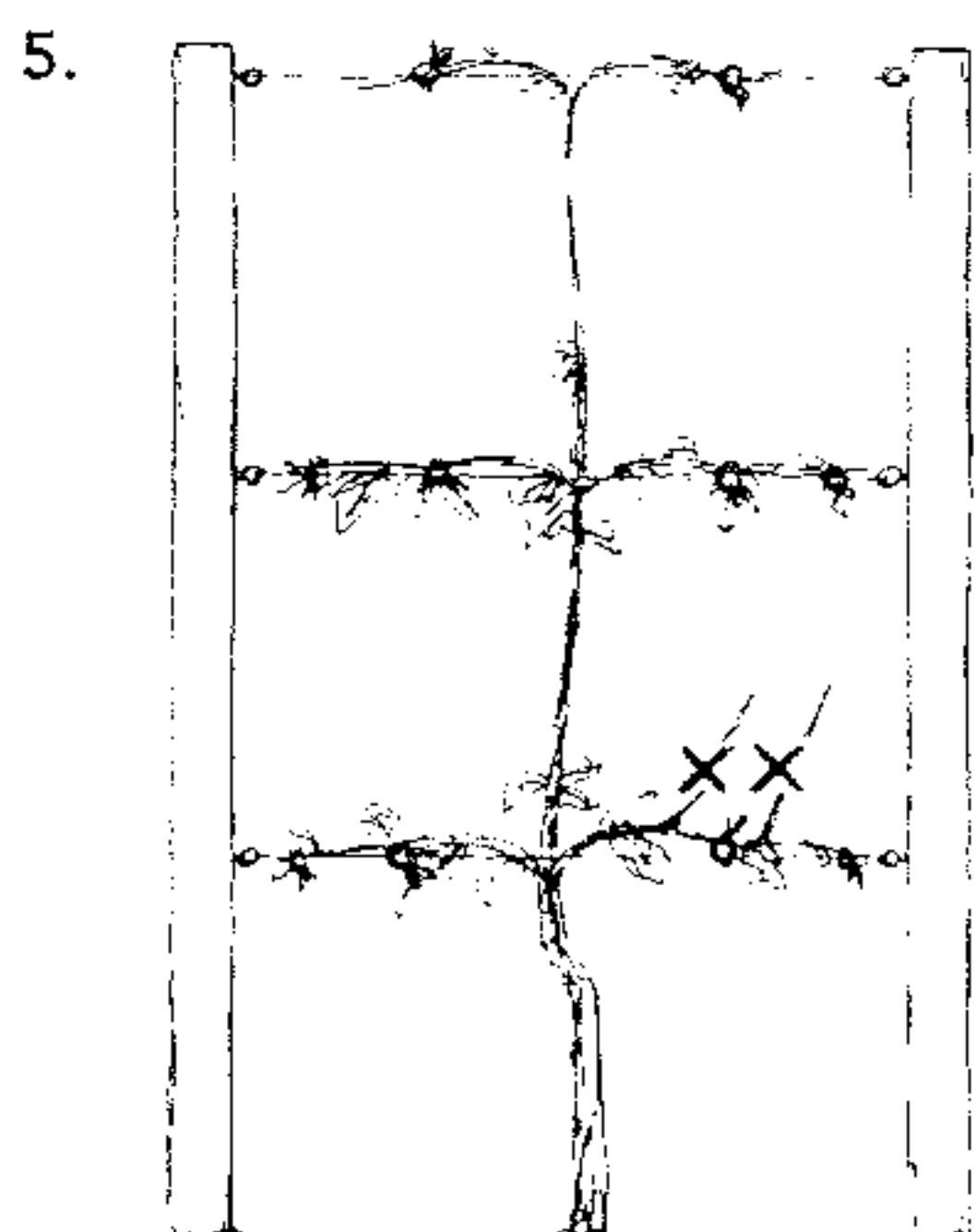
crop. Specific fruits can benefit from espalier in different ways. For example, you can grow peaches under an overhang to avoid leaf curl, easily cover cherries with netting to keep birds away and, in cold climates, grow fruits with high heat requirements against south-facing walls.

There are many variations of the simple horizontal cordon described here. They range from the practical to the fanciful. Try one in your own garden and you'll soon discover the pleasure and benefits of espalier.

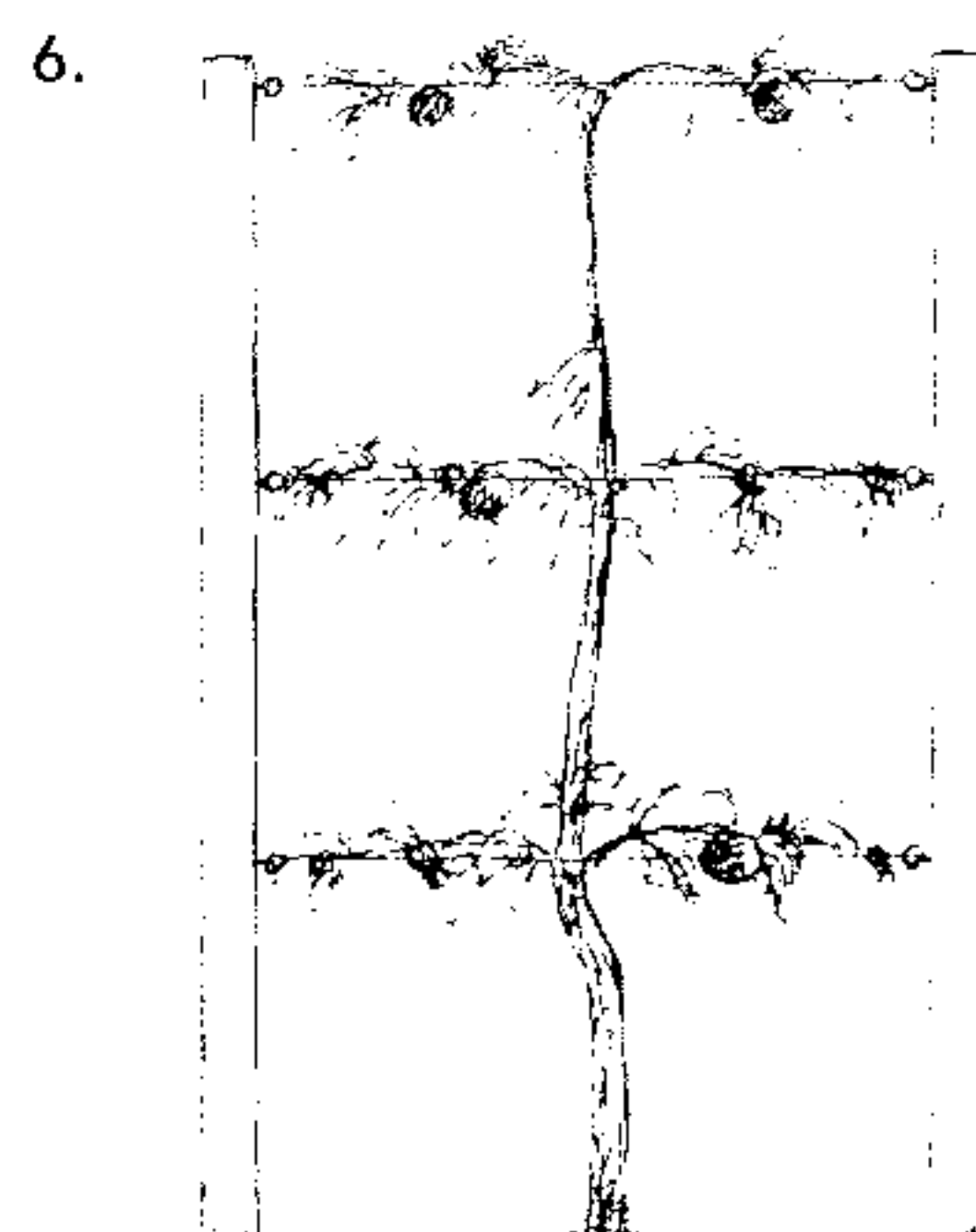
*Ron Clancy grows garden espaliers in Vancouver, British Columbia.* 🌿



4. The vertical shoot will be allowed to grow to the next wire, where the pruning and training procedure can be repeated.



5. The third tier is reached using the same procedure. Strong vertical growth on horizontal branches should be pruned.



6. It will take about four years to form this basic espalier of a single leader, with three levels of side branches.



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Continue to receive your Apple Notes publications (3 to 4 issues annually) plus an invitation to our Sept. 16/2000 (in house) meeting at the Devonian Botanic Garden featuring speakers, club discussions, catered lunch and evening social . . . . .

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