Heritage Horticulture Workshop  
Thursday 15th January 2015

Planting and initial training of young fruit trees

Notes

Introduction to market gardens and fruit growing
Our volunteer researchers spent a long time looking through relevant documents on market gardens. Among the information they found was a quote that suggests by 1790 ‘from Kensington to Twickenham both sides of the road was mostly fruit for supplying London’. Nearly all orchards near London had crops growing underneath such as thyme, sage, rhubarb, soft fruit and flowers for cutting. Most of the fruit trees would have been grown free-standing in orchards but where there were walls, they would have been utilised.

If you were living in Twickenham during the early part of the 20th century you would most certainly have known the Poupart name. The family had over 160 acres devoted to market gardening by 1899, and an orchard area between Third Cross Road and Trafalgar Road. The William Poupart jam factory opened in Third Cross Road in 1911 and closed in the late 1950s.

Pears were the main fruit tree to be grown on walls in market gardens and they could sometimes be seen trained over the top and down the other side. They were occasionally trained as espaliers.

Plums were grown chiefly as standards and dwarf bushes.

Buying your trees
Buy your tree/s from a suitable nursery. I would recommend Keepers Nursery in Kent; Chris Bowers in Norfolk; Reads Nursery in Suffolk and Crown Nursery in Suffolk. All fruits tree are grafted on to different ‘rootstock’. The rootstock will govern the final height of the tree and the age at which it bears fruit. For wall-trained trees dwarfing or semi-dwarfing rootstocks are more suitable as they will not grow too vigorously. The ‘scion’ is the grafted part of the plant that will produce the plant’s shoots, leaves, stems, flowers, and fruits.

Fruit trees are grafted because:
• If they were grown on their own root system, many would be too vigorous
• Cultivars will not usually come true from seed
• A fruiting plant can be produced in a shorter period of time
• A weak-growing cultivar can be invigorated

Apple trees fit into various pollination groups and you will need to check whether you have chosen ones that will pollinate each other. The RHS or the nursery will have that information.

The RHS website gives great advice on all aspects of the different cultivars.
One-year-old trees are called ‘maidens’ and are sold as ‘feathered’ or ‘unfeathered’. Feathered maidens are trees that develop side shoots from the main stem. These trees may be more expensive than unfeathered maidens. Unfeathered maidens (maiden whips) are trees without sideshoots, forming just a single stem. They are often cheaper than feathered maidens and almost as satisfactory. Some cultivars do not produce feathered maidens.

Most nurseries also sell 2 or 3 year old trees that have been partly trained as fans or espaliers. Obviously, these will be more expensive.

Bare-root trees are available in the dormant season – November to February – and it is best to plant them then when the trees aren’t growing. Plant the trees as soon as you can. If you can’t plant them straight away, heel them in - dig a trench and place the roots of the trees into the trench. Cover the roots well with soil and shake to ensure the soil get all around the roots. Firm the soil. Do not plant into frozen or waterlogged soil.

Support – wires and spacings
Many fruit trees can produce crops for 20 years or more, so the structure should be strong and durable. Use heavy-duty galvanised fencing wire, pulled taut between straining bolts. On a wall, use vine eyes to support the wires. Get the longest you can – 15cm if possible – so air can circulate behind the trees to reduce disease problems. In the event of walls not being accessible you can put in a post and wire structure to train the trees along.

- Cordons traditionally have the first wire at 75cm from the ground then at 60cms intervals and trees 60-100cm apart
- Espaliers traditionally have wires at 45cm intervals and trees 3.5m apart
- Fans traditionally have wires at 45cm then 15cm intervals and trees 3.5m or more apart

Plant trees 15-22.5cm away from the wall or fence, sloping slightly towards it. When planting beneath walls, take care to avoid foundations.

Preparing the ground and the hole
In the late 19th/early 20th century, A W Smith of Feltham had a fruit plantation of 400 acres. Planting was precise – holes were dug 2ft square and 2ft deep. They were quarter filled with loose soil. The roots were spread out and covered with a light soil, two good forkfuls of manure were added then spread. This again was covered with soil and then trodden down firmly to give a small depression that attracted rainwater. The ground around the trees was kept very clean and weed-free. The trees were thoroughly pruned when necessary often including the roots.

Current advice:
- Do not dig the holes until you are ready to plant
- Dig a hole that will accommodate the roots comfortably with room to spare in every direction. Loosen the soil at the bottom of the hole with a spade or fork
- Prune back any excessively long roots
- If you have reasonable soil you should use the soil that you have dug out to fill in the hole. If your soil is very heavy you should mix in sharp sand and peat or compost. If it is very sandy you should mix in peat or compost
- Plant trees at the same depth as they had been before being lifted. The soil mark should be easy to see. It is usually not more than 5 cm above the highest roots. Avoid planting the tree too deep. In any event the union between the rootstock and scion (which is usually clearly visible as a kink in the stem and about 15cm above soil level) should never be buried under the soil
- When filling in the hole make sure that the soil gets round the roots and treads in well after planting
- Mulch around base with well-rotted manure ideally. Don’t allow the mulch to actually touch the tree as this may cause the stem to soften and rot
- Current advise is against adding fertiliser to the soil around the roots so they are not encouraged to stay near the surface
- Watering in is only necessary if the soil is very dry

**Planting and training a 1 year apple or pear cordon**

Cordon training is suitable for all pears and apples that bear fruit on short sideshoots. The term ‘cordon’ simply refers to a single stem with short sideshoots (the fruiting spurs). Cordons can be allowed to reach a height of about 1.5-2m so take that into consideration when planting.

- Fix bamboo canes diagonally to the wires for the trees to be trained on (at 45 degrees)
- Plant trees at an angle of 45 degrees. Plant the cordon with the union above the ground and the scion uppermost
- Tie the cordon to the diagonal bamboo cane with a soft string
- After planting, cut back all laterals (sideshoots) longer than 10cm to three buds, leaving the leader and any short laterals unpruned

**Subsequent pruning and training:**

- Summer pruning is carried out in July or August
- Look for sideshoots over 22cm long (length of a pair of secateurs), which grew earlier in the summer directly from the main stem, and cut them back to three leaves beyond the basal cluster (cluster of leaves at the base of the current season’s growth). Those stems that grew from existing sideshoots or spurs can be pruned harder - to just one leaf beyond the basal cluster
- Leave shoots less than 15-22cm long until mid-September and then shorten to one leaf beyond the cluster of leaves at the base
- Tie the leading shoot in to the support until it reaches the required length. Thereafter, prune it back and treat subsequent growth as for other laterals
- Winter pruning only involves removing older and unproductive sections of the spurs when it starts becoming necessary
Once the leader has reached its full height the cordon could be lowered to extend the stem and reduce vigour.

Planting and training a 2 year apple or pear espalier
An espaliered tree is one whose branches are trained to grow flat against a wall, supported on a lattice, most often with horizontal, symmetrical tiers.

**Ideally use an unfeathered maiden:**
- Fix two bamboo canes diagonally to the wires at 45 degrees, in a V shape from where the tree will be planted. These are for the branches to be trained on. A third cane can be placed vertically for the main stem to be tied on to.
- Once planted, cut back the main stem to about 3cm above the lowest horizontal wire, at approx. 45cm from soil level, making sure there are 3 good buds near the top.
- Allow the three buds to grow out in spring, train the top one vertically, the other two to the canes at 45 degrees to the main stem.

**Subsequent pruning and training:**
- In November, lower the canes carefully until they are horizontal, tying them in to the wires with soft twine.
- Cut back the vertical stem to within 45cm of the lower horizontal branches, leaving two buds to form the next horizontal layer and the top bud to form the new leader. If growth is weak, prune back the horizontal branches by one-third to downward facing buds.
- The following year train the second tier in the same way as the first. Cut back competing growths on the main stem and sideshoots from the horizontal arms back to three leaves above the basal cluster.
- Repeat the process until the trees have produced their final tier and grown horizontally to fill their allotted space.
- It is best to remove the blossom in spring for the first three years, so all of the energy goes into plant growth.

Planting and training a 2 year plum or cherry fan
This form of training involves the tree having a short central trunk with several radiating branches growing from the crown.
Choose either an unfeathered maiden, a feathered maiden (with two branches suitably positioned to be the main arms of the fan) or a part-trained fan. All pruning of cherries and plums should be carried out in the growing season to reduce the risk of silver leaf disease. Initial pruning and training of young trees is best carried out in spring, just as the buds are breaking. Other pruning to correct problems and encourage fruiting should be carried out in summer.

**Starting with a feathered maiden or untrained two-year-old tree:**
- Erect two canes at 45 degrees where tree to be planted
- Once planted, tie in branches where possible but do not prune
- In spring, cut back the main stem to about 40cm to two well-placed branches to form the main laterals
- Now reduce each lateral by two-thirds to an upward-facing bud

**Starting with a part-trained tree:**
- Part-trained trees will need their vertical, leading shoot removed; cut right down to strong, low, 45-degree-angled branches or laterals. Leaving the leader will result in a congested bush, not a fan
- Now reduce all the laterals by two-thirds, if they are weak, less if they are strong and already branching

You should then have a short, balanced tree with two strong laterals (or possibly more in the case of a part-trained tree)

**To produce a fan:**
- In summer, choose four shoots from each lateral: one at the tip to extend the existing lateral, two spaced equally on the upper side and one on the lower side. Tie them in at about 30 degrees to the main laterals so they are evenly spaced apart (using canes attached to the wires if necessary)
- Rub out any shoots growing towards the wall and pinch or cut back any others to one leaf
- In the following spring, cut back each of the four branches on each side by one third, cutting to an upward-facing bud if possible
- During the growing season, tie re-growth from the tips of these branches into the framework to extend the main branches
- Any side-shoots that develop where there is space within the framework can be tied in