

Guidance Notes for

GRAFTING AND BUDDING FOR TRADITIONAL ORCHARDS

TRADITIONAL ORCHARDS

Traditional or old orchards are a distinctive feature in the local landscape consisting of apple, pear, cherry, plum and damson which are at least fifty years old. Cobnuts (Hazel), which are grown in orchards known as platts are also included and are very much a distinctive part of Kentish countryside. These orchards do have a finite life and at some stage will require new trees to replace those that have succumbed to the ravages of age, pests or disease.

Increasingly, new orchards are being planned that are planted to recreate a traditional orchard.



Like most plants, fruit trees could be raised from seed but in majority of cases each seedling would be a unique variety and have different characteristics from the original fruiting variety. To perpetuate the characteristics of the variety trees must be raised by budding or grafting.

A rootstock is used as the host for the bud or graft and gives the tree its root characteristics and helps govern the potential size of the tree. Some rootstocks have been selected so as to restrict tree growth, others to produce large trees or survive in certain soil types, pests or disease. Traditional orchards tend to use more vigorous rootstocks, capable of growing into larger trees, giving a height that enables livestock to graze underneath.

ROOTSTOCKS THAT HAVE BEEN USED FOR TREE FRUITS:

APPLE

Most orchards planted from the mid 1940's will be grown on one of the Malling series of rootstocks; MVII; MIV; MII or MXVI. Today MM111 and M25 are the two most often used to produce trees for traditional orchards.

PEARS

Seedling pear has often been used as rootstock for pears in the past. Other stocks have been tried like hawthorn, but discarded. Since the 1940's most have been propagated on quince stocks with selections Quince A, Quince B and Quince C available. Now only A and C are available with A more suitable for traditional orchards. **BEWARE** - incompatibility between variety and rootstock occurs in some combinations. This is overcome by double working. This involves the use of an intermediate variety between the rootstock and the main variety.

PLUMS

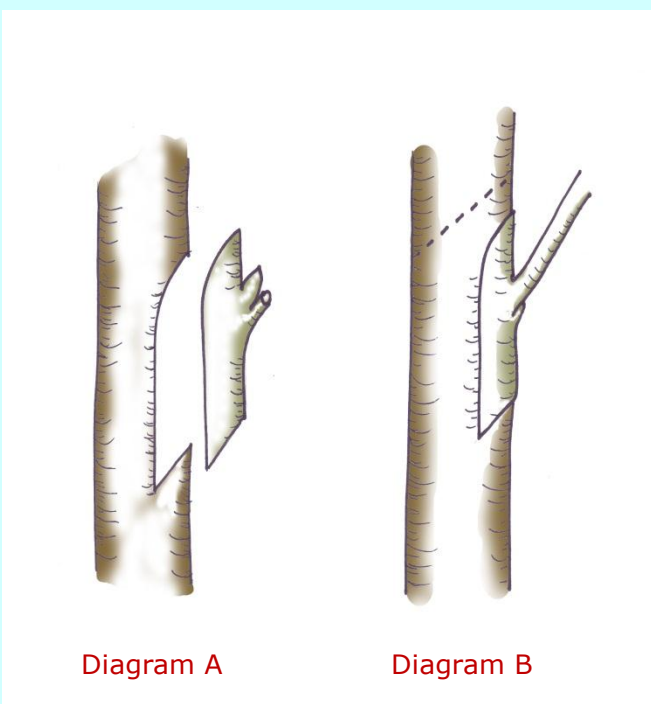
In the past a range of stocks have been used for plum; Myrobalan B; Brompton, Damas C; Common Mussel; Marianna; Common Plum; the variety Pershore and the more recent St. Julien A. Some varieties can be propagated from cuttings and were often grown on their own roots, particularly Damsons and Gages. St. Julien A is the most suitable stock today.

CHERRIES

Prunus avium seedlings were often used and known as Mazzards, Gaskins or Geans. The rootstock F12/1 is a selection from a seedling population and now preferred for traditional orchards. Most modern rootstocks produce too small a tree for the traditional orchard.

BUDDING

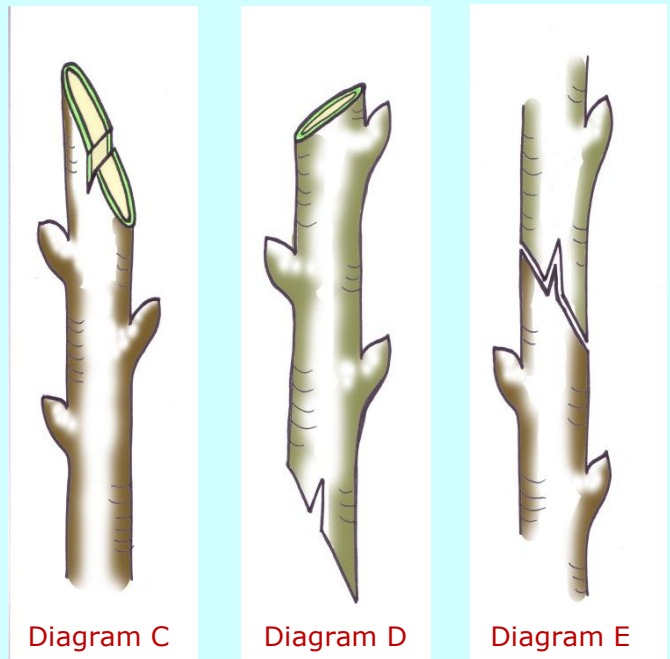
Budding is carried out in the summer, usually late July and uses a small amount of propagation material – a single bud. The most successful technique is chip budding. A shoot of vigorous new growth from a variety is selected. Leaves are trimmed back to a short petiole, the stalk portion of a leaf. A single bud chip cut with its lower edge sloping down and into the stem as shown in Diagram A. A matching cut is made in the rootstock about 15 to 30 cm from the soil level. For traditional orchards this can be at a height of 1.5m and the bud is then carefully slid into position (Diagram B). The bud is secured with polythene budding tape and tied in. It will take 4 to 6 weeks for the bud to “take” i.e. heal into the stock after which time the tape should be carefully removed before it begins to cut into the stem. In the following Spring the stock must be cut back to a sloping cut just above the bud. The bud grows out during the season and produces a first year (maiden) tree. This can be planted or grown on for a further year before planting in the orchard.



GRAFTING

Grafting is carried out during the dormant season, usually from February to March. A rootstock and variety scion, which is a detached shoot or twig containing buds from a woody plant of similar diameter, is used.

The whip-and-tongue graft is the most successful. The whip is a slanting cut across the

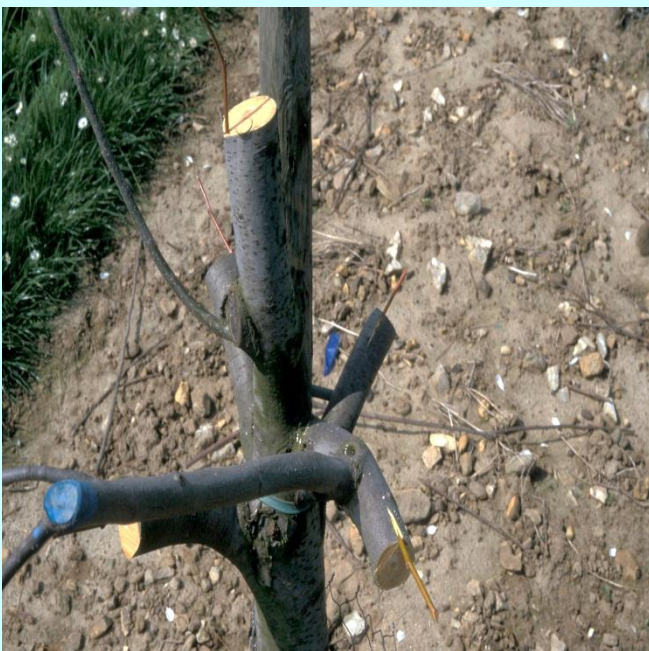


wood of each part. A downward pointing tongue is then cut in the variety scion (Diagram D) and upward pointing tongue in the rootstock face (Diagram C). They can then be fitted together so that the tongues interlock with the cambial area (this is the ring round the outside of the twig shown on the diagram in light green) of both in contact as much as possible (Diagram E). The graft is tied using raffia or grafting tape and cut ends sealed with grafting wax. Grafted plants can be potted or planted in the ground to grow on. After about three months, when the graft is growing out well, the raffia or tape is carefully cut to prevent it cutting into the stem, and the graft allowed to grow on for the rest of the season. After one season's growth the tree can be planted out in its final position.

SPECIAL GRAFTING TECHNIQUES

FRAMEWORKING

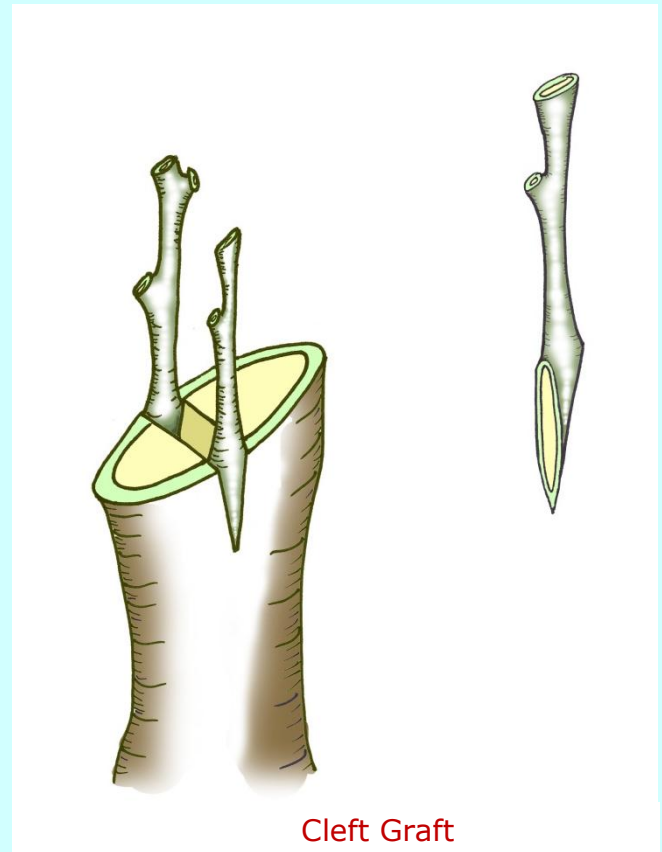
It is not unusual for varieties grown in an orchard to go out of fashion or not perform as well as anticipated. To change to another variety without the time and trouble of grubbing and replanting it is possible to graft a new variety into an existing tree. Anything from one graft to grafts on each limb of the tree framework is possible.



Best done in late February to late March using a cleft graft with wood collected from donor trees and held in cool damp conditions – a sand pit in the shade is ideal. The limb to be grafted is cut diametrically with chisel and held open with a wedge. The graft, usually of 3 to 4 buds in length, is prepared by two slanting cuts at the base to form a long tapering wedge. This is then inserted into the cleft near the edge of the limb so as to line up as far as possible with the cambium layer of the limb.

A second graft is inserted at the other end of the cleft and the wedge removed.

The limb is then bound round its circumference using grafting tape to hold the grafts in place and the whole sealed using grafting wax. In summer as the grafts are growing away the tape is carefully removed.



STADDLE WORKING

Some rootstocks have higher levels of natural resistance to problems than some varieties. This attribute has been exploited in the past by allowing the rootstock to grow for much longer than is usual. When this happens the tree is pruned to give the initial framework of the tree. The variety is then framework grafted onto the branches that form the initial structure of the tree.



RESTORING OLD ORCHARDS



Remember when restoring old orchards that some trees may have been grafted in the past. There is often a distinctive swelling around the main stem at the height where the main branches begin to form the framework of the tree. This is typical in old cherry orchards that has been staddle worked at a height round 1.5m.

In these circumstances it is not unusual for some grafts to have died out over the years and either the old variety or the rootstock grown out. In a neglected orchard these trees will have been allowed to grow unchecked. This can also result in more than one variety growing on a tree.

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