with the first complete turn, then bind upward until past the cross incision, where two half hitches are made. Such binding should also begin below the bud.

It will be found that raffia which has been soaked in water before use will be stronger and also far easier to tie securely. It is not necessary to use a sealing compound after budding.

Rubber bands which are specially made for tying buds will also be found satisfactory and easy to use. These bands expand as the stocks increase in size and do not cut in to the same extent as the raffia. Only bands specially made for this purpose should be used, as they are made to rot and fall away within 3 to 4 weeks. The second method of tying described should be used with rubber bands.

Treatment after Budding

At the time of the year when budding is carried out the stocks should be growing strongly and increasing in circumference fairly rapidly. This rapid growth makes it necessary to examine the stocks 10 to 15 days after they have been budded to make sure they are not becoming strangled. If this is occurring, the raffia should be cut on the back of the stock with a sharp knife, but the ties should not be removed, as they assist in shading the bud. The ties should not be cut until at least 10 to 12 days have elapsed from the time of budding.

The portion of leaf stalk left on the bud shield is quite a good indicator as to whether the bud has taken. If these stalks shrivel and adhere to the bud when not supported by the binding material, the bud has failed. Another bud may be inserted in a fresh position on the stock, provided the stock is still in a suitable condition.

Rootstocks on which buds have taken should not be cut off until the end of the winter after budding. The stock can then be cut off either 4in. to 6in. above the bud or immediately above it; in the latter method the cut should slope away from the bud to run rain off. If the stock is cut off immediately above the bud, it may be necessary to support the young growth from the bud with a stake to prevent wind damage. If a stub is left, the young growth can be tied to it, but when the stub is finally removed, the cut does not callus as quickly as one made earlier. (See illustrations on this page.)

The treatment of the resultant growth depends largely on how it develops, and this is influenced by soil, climate, and other factors. If under favourable conditions strong growth is made early in the season, this can be pinched back at about 15in. from ground level, causing the stem to branch. Three strong, well-placed branches are retained to form the basic framework of the future tree.

Where only weak growths are made it is better to grow a single stem in the first season, all side growths being removed as they appear. In the winter this stem is cut back to about 15in., care being taken that the top three buds are sound and well spaced. In the following growing season three main arms should develop.

Grafting

In the grafting of nursery trees the whip and tongue graft is used. The operator will require a supply of tree-sealing compound as well as a knife and some raffia. The best sealing agents are those specially prepared for grafting. These are the least likely to be harmful to the bark of the tree and they remain pliable, thereby excluding air and moisture from the wound made in grafting.

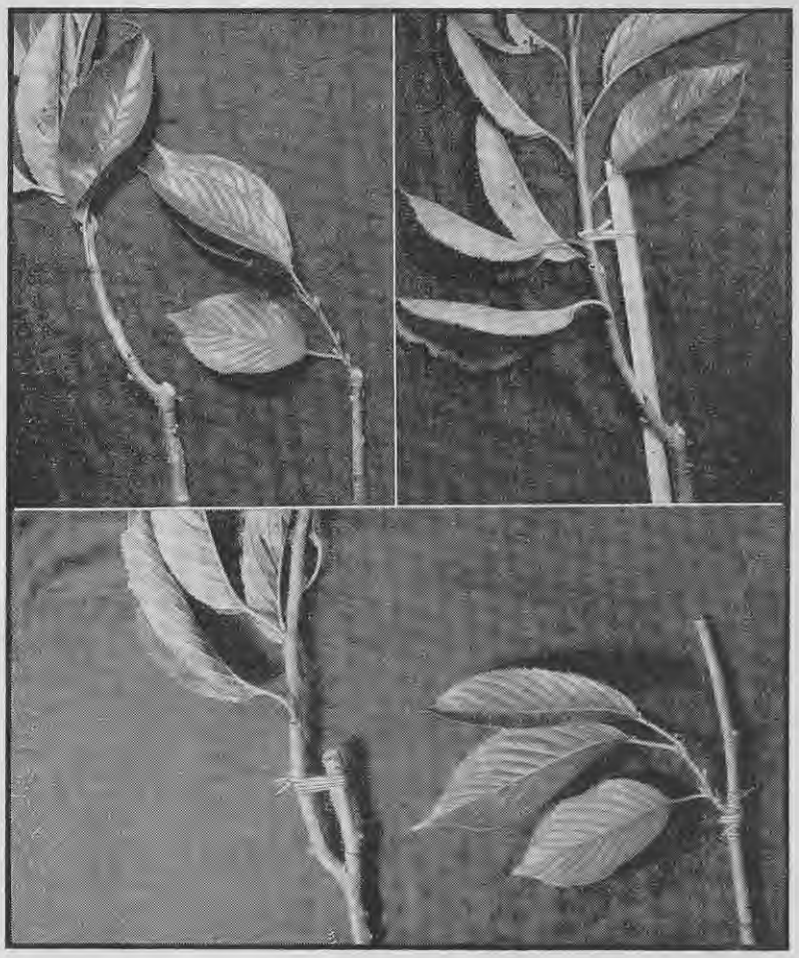
Grafting is done in spring, but as it is necessary for the stock to be in a more forward condition than the scion, the grafting wood is collected while it is still dormant. When a source is being selected the same precautions should be taken as when choosing budwood; the trees selected must have been carefully examined during the growing season to make sure that they are healthy and carry good crops of fruit which is true to type. The trees should be clearly marked.

Neither rank, sappy growths nor spindly twigs are suitable as scions. Well-grown shoots of the previous season's growth, showing good bud development, should be selected and cut off at their bases. Wood of each variety should be bundled up separately and labelled; the tips of the shoots should not be cut off.

The wood must be stored so that it will not dry out, and the most suitable place is in the shade of a building or beneath a tree, where the soil will remain moist without waterlogging and where there is no likelihood of the wood becoming frozen.

A trench should be opened deep enough to take one-third of the length of the shoots. Care should be taken that the bases of the shoots touch the bottom of the trench before the soil is filled in round them. It is immaterial whether the shoots are upright or at an angle.

Grafting can usually be begun when stocks are at the advanced green-tip stage, and normally can be done over a period of 2 weeks or 3 weeks. It is useless starting before the sap in the stock is flowing sufficiently for the bark to be lifted readily from the wood, for if grafting is done too early, the scion will dry out and die before a union is made. The stocks should be tested by making a cut and lifting



Growths from buds. Upper left—Stocks cut off close to the buds. Upper right—A small stake is used to support the bud shoot when the stock has been pruned close to the bud. Lower—Stubs left for tying bud shoots for support.