

plan would show tree distances of 30 by 15. This distance would be sufficient to allow the filler to bear for a number of years, providing it was an early and heavy bearing variety.

#### FILLERS.

There is a difference of opinion among growers as to the advisability of using fillers. Their main argument against them is that there is a danger of leaving them too long, and thus doing permanent injury to the standard trees. This is a problem which depends largely on the orchardist himself for an answer, for, if he believes that he will not remove the fillers soon enough, he had better not plant them. A competent orchardist would remove the fillers before they encroached on or did damage to the main orchard. The proper time for their removal is easily ascertained by the growth of trees and the grade of fruit being produced. If the standard trees are producing a poorer grade of fruit each year, even under the same careful attention to cultural operations, the grower can, generally speaking, look to his fillers for the remedy. There is no reason why they should not be profitable, where the soils are rich and deep and plenty of water is available, providing a proper system of cultivation and pruning is practised. Many growers have met all running expenses, and in some cases paid for their land, from the fruit produced by the fillers during the early years of the orchard.

#### MIXED PLANTING.

It is not a good practice to plant stone-fruits with apples and pears. Stone-fruits may be mixed together, likewise the pome fruits, as orchards are always most successful and profitable when the same kinds of fruits are planted as standards and fillers. Stone-fruits require more early and less late cultivation than is practised with pears and apples. On this account, if we cultivate and irrigate to suit the stone-fruits, it would not suit the apples and pears, and vice versa.

#### LAYING OUT AN ORCHARD.

It is expected in planting out an orchard, especially of apples, pears or cherries, that it will remain for twenty-five years or longer, so that it is desirable from the standpoint of appearance, and also for convenience for cultural operations, to have it laid out in straight lines. It is a simple matter to lay an orchard out in this manner, providing a proper start is made.

#### HOW TO FORM A RIGHT ANGLE.

Select first your best base-line. It might be a boundary fence, road, or ditch. To form a right angle from this base-line, proceed as follows:—

With the use of a measuring tape, line, or wire (any line that will not stretch will do), measure off from the point (*a*) from which you are starting the right angle, a distance of 75 feet along the base-line to a point (*b*). Place a stake at both these points. Next take 100 feet of line, placing one end at each stake (*a*) and (*b*), and draw out the line at the centre tight (50 feet from each end) towards the field, and mark this line with a stake (*c*). Leaving the line as it was at stakes (*b*) and (*c*), take the end at (*a*) and stretch it in a line with (*b*) and (*c*), and mark the point with a stake, calling it (*d*). A line drawn from (*d*) to (*a*) will be the right angle on the base-line. There are several other methods of obtaining a right angle, among which is the use of the common T-square, and a right angle is obtained with this instru-