



FIRST LESSON IN FRUIT GROWING-1.

IN the general round of his work, the fruit-grower has to deal largely with trees, vines, bushes or plants. That he may at all times care for and manage these intelligently, he must know something of their structure, and of the functions which the different parts of the tree or plant have to perform.

Roughly speaking, we may say that a growing tree is made up of roots, trunk, branches, buds and leaves, and that under certain conditions it produces flowers and fruit; but for our purpose it is necessary to study these parts more closely that we may notice the various forms which they present, and if possible learn the objects which they fulfill in the economy of tree growth.

THE ROOT.

Where the root joins the trunk, just at or about the surface of the ground, is what is known as the *collar*. This is not a fixed point, as its position may be raised in young trees by banking earth about the trunk, new roots being formed above the older collar.

The first root formed is the *tap root*, which usually goes straight downwards from the collar. In some trees, particularly the nut

bearing trees, such as the walnut, hickory and oak, the tap root becomes very large and strong. In fruit and ornamental trees, which are taken up and transplanted when quite young, this downward growth of tap root is checked, and development of lateral roots takes place.

The *lateral roots* may be said to be branches from the tap root. They grow more or less horizontally, and usually spread a good deal farther in the ground than the branches of the tree spread in the air above them.

The tap and lateral roots are the largest roots, but associated with them is usually a greater number of smaller thread-like roots known as *rootlets* or *root fibres*. In some kinds of trees they are much more freely produced than in others. They are most abundant in trees having a thick, branchy top. The quince and peach has usually lots of fibrous roots, while in the apple and pear the laterals are more or less bare of root fibres. The more frequently a tree is transplanted, the more fibrous its roots become.

To complete the root system, there is still another class of roots known as *root-hairs*. These are very delicate, hair-like roots, so small that they can hardly be seen without