

is supposed to yield the owner good returns in fruit, is not only contrary to common sense, but opposed to every law of nature. It is most unreasonable to expect land to produce two crops at one and the same time. Either dig up your fruit trees and leave commercial orcharding alone, or plough up your grass and let the trees have the full benefit of the soil. More under-sized, poorly flavoured fruit is produced by attempting to make a hay field out of an orchard than probably any other means.

G. B. Brackett, United States Pomologist, says:—

"Thorough and oft-repeated stirring of the soil is absolutely essential to success. Such culture as is needed to produce a first-class crop of corn or potatoes will keep an orchard in good health and vigour, provided the ground is sufficiently fertile. As already stated, in no case should small grain or grass be grown in an orchard. This mistake is often made by thoughtless or inexperienced planters.

"The ground having been properly prepared before planting, a two-horse cultivator frequently run between the rows will keep it in good condition during growing season. Each spring the surface should be well stirred with a two-horse plough, using a short single-tree pext to the row of trees to avoid danger of bruising the trunks of the trees. In ploughing, the furrows should be alternately turned toward and from the trees. Such culture should be continued from year to year, at least until trees come into full bearing, and even then it is questionable whether it should be discontinued. If it should be, red or crimson clover is the only crop allowable, and that should be turned under as often as once in every two years. As a rule, continuous cultivation gives the most satisfactory results."

DRAINAGE.

Intimately connected with cultivation is the subject of drainage, for badly or imperfectly drained land cannot be successfully cultivated. To land with clay sub-soils this remark more particularly applies, as it is on such soils that water will lie longest on account of the retentive nature of the sub-soil. In such localities, as soon as the roots of the trees have penetrated to the clay, there is a suspension of growth, with a consequent deterioration in the health of the tree, rendering it susceptible to the attacks of insect pests, fungous diseases and parasites in the shape of lichens and mosses. As a rule, the appearance of mosses and lichens is a pretty sure indication of an undrained state of the land, and whilst the application of washes of different kinds are useful for the removal of the effect, the true remedy lies in the removal of the cause. Therefore, if draining has been neglected, no time should be lost in immediately proceeding to remedy the defect by a thorough system of surface and under-draining. No orchard can survive any length of time where stagnant water lies, either on the surface or in the soil, and, therefore, all surplus water, either from excessive precipitation or any other cause, should not be allowed to remain on the land. By draining the surplus water from the soil the air is allowed to circulate through the soil. This has the effect of rendering the soil warmer and decomposing those elements of fertility in it which otherwise would remain unavailable as plant food. Well drained land is also less susceptible to drought than land where surplus water lies.