

require underdraining. I said the high red clay did not require underdraining; and that is so. It may rain for weeks and weeks, and if you dig down three and a-half feet into the red clay you will never find a drop of water there. It is true that underdraining does render the land slightly more porous where the underdrains are not laid too deep; but it is a question whether it pays to do it. High red clay requires no underdrainage for apples or any other fruit. As to quality, my experience is that it will bear shipping, and will keep long, and has a very fine color. There is no comparison in the results between clay and sand in the same locality. As to earliness of crops in our section, the red clay is from ten days to two weeks earlier than the light soil in almost any variety.

Mr. PETTIT (Winona): Coming from Mr. Pattison's neighborhood, I cannot agree with that statement. No doubt you can get them earlier, but there is a great falling off in quantity.

Mr. CASTON: The term "sand" is quite indefinite. A sandy loam is the best for the most fruits. Next to that we like a clay loam. The best soil for the apple is the light loam. I think Mr. Pattison's description may be accounted for from the fact that the locality in which he is has been settled for a long time, and had been wrought for a long time with grain before they turned their attention to fruit; and I think the clay there is very probably an alluvial deposit. I have no doubt that Lake Ontario was up to the top of the mountain at one time.

The PRESIDENT: There is another question that would come in here very well for discussion—one of the topics on the programme: "What is the proper way of caring for an orchard after it begins to bear fruit?"

Mr. THOS. A. GOOD (Brantford): The fruit growers of this section have reason to feel gratified for the information that is being imparted to them. I think the fruit growers in the Dominion understand fruit culture better than any in the world. We have various soils in this county, but none that water will not penetrate. I should not like to grow fruit where water would lie on the surface. In our part of the country we have the best success with Fameuse apples, and I think with cherries on clay land. The next best land is clay loam; and the worst for apples, and pears especially, is what we call sharp sand. It is almost like building sand. If you go down two or three feet you would get sand fit for making mortar; whereas a few rods off you get a soil entirely different. In some sections that sharp sand is no good for fruit at all, except small fruits, such as currants and strawberries—and they can be grown to perfection. An orchard on this sharp sand, within half-a-mile of my house, has not produced in sixteen or seventeen years more than sixteen or seventeen barrels in three years. It has been our plan to let an orchard run to grass after the trees got to bearing size. A neighbor of mine who has made his orchard successful attributes it to the thorough cultivation he gives it. Another orchard near me on a sandy loam, well sheltered by a row of trees along the west side, which thoroughly protects it from the west winds, has been a success the last two years, but orchards near it have not been successful. I would like to know why you consider wind-breaks in such a season as this a protection to the apple. In my own and other orchards there was hardly a perfect apple, while in the shaded orchards they were nearly all first-class, and brought \$1.60 a barrel, having been sold as Extra No. 1 apples. The windbreak was the only thing I could see to account for the difference. I cannot agree with the statement that poverty of the soil causes scab. We have raised the snow-apples to perfection for years. Last year they were very good, and this year they were perfectly worthless. If it was poverty of the soil, how could you account for that? There must be some other cause. The Baldwin and Northern Spy and Greening were also cracked and scabby, whereas in those former years they were almost perfect.

Mr. A. McD. ALLAN: The impression that poverty of the soil causes fungus is no correct. Poverty of the soil has a great deal to do with any disease, because the "constitution" of a tree—so to speak—grown in an impoverished soil cannot be strong enough to bear the burden of a crop of fruit, which will weaken a tree. There must be sufficient food to provide for the life of the tree, and also for the bearing of the fruit and for the production of healthy and strong wood. You are thus growing two crops on