

him to deliver his products, from day to day, fresh to consumers.

Now it seems to me that too many small fruit-growers have, within a few years, come to adopting the methods of the agriculturist rather than those of the horticulturist. They have planted their fruits in fields instead of gardens; they have manured as if for farm rather than garden crops, and they have cultivated after the manner of farmers rather than as gardeners cultivate. Moreover, many have located remote from town, subjecting themselves to quite a tax in transporting their fruits to market and in transporting their laborers to and from their labor. Let the farmer stick to farm crops, and they who are fitted by nature, tastes and training for horticulturists grow small fruits. This, I think, is the natural order of things, and to this, I believe, we shall be obliged to come.

#### ARE MICHIGAN APPLES DETERIORATING?

President Lyon—They are deteriorating. Probably there is not more than one in 20 growers but are impoverishing their land.

Prof. Bailey—The increasing age of the orchards may account for it.

E. H. Scott—The apples certainly are deteriorating. We can no longer grow Esopus, Spitzenberg, Fall Pippin, Newton Pippin or Bellflower.

President Lyon said many reasons conduced to this. Growth from year to year in untoward conditions, the increasing age of trees, tend to deterioration. Yet in some particulars there is improvement, as increase of age of trees gives better flavour and keeping qualities, and it is a question where the balance of gain or loss would fall.

A note from H. W. Steere, of Adrian, stated that he did not agree with those who attributed the deterioration mainly to insects, but thinks exhaustion of the soil the exciting cause.

Deep, black, strong clays are rare in Michigan, and our light sands and gravels cannot stand the exhaustion for forty or fifty years from grain, grass and root crops and fruits all on the same ground. He theorized that the soil has been relieved of the lime and ashes existant in it originally, and intimated that restoration of these would cure the existant evils. Use of stone-lime, a bushel to a tree, has been known to restore Newton pippins that had become small and scabby. Instead of letting go such valuable kinds as this and the Spitzenberg we should take steps to restore them.

W. K. Gibson—If the first apples were good, and the climate is not different, we should seek the adverse influences in the soils, and there we may find why apples deteriorate, if they do.

S. M. Pearsall would set Spitzenbergs were he to plant an orchard today. Insects are more numerous, and we cannot expect as good results from old trees, but when proper care is given we can do as well as ever.

S. D. Willard—It is well known that quick-lime is in no sense a manure, but, like salt, it sets free and makes available certain elements. With destruction of the forests, and other causes, fungoid diseases have wonderfully increased. The thin-skinned sorts were the first to suffer. The wheat, sheep and cattle that Michigan has sent to market have carried off the phosphoric acid which the fruit so much needs. The needed elements have been taken from the soil. Restore these and you will again be able to grow fine apples, even of the thin-skinned kinds.

#### STOCK AND SCION.

Replying to a question, Mr. Bailey said it was undecided as to the effect of stock upon the fruit of scions. There is often a mechanical influence, dwarfing