I certainly appreciate the courtesy I have received from the society. This is my first visit to Wisconsin, but I hope, with the permission of the society I can count myself as one of you. I have enjoyed very much being with you and listening to the discussions that have taken place.

Prof. Moore: Just one thing occurred to me, that is this: that Mr. Pratt in his talk did not make quite clear enough, that his comparison was between Scalecide and lime sulphur as dormant spray.

Mr. Pratt: Yes, I think I made that clear. Scalecide is absolutely a dormant spray.

OLD STANDARD VARIETIES OF TREE FRUITS VS. NEW VARIETIES

O. M. McElvain, Illinois.

At this day and age, there are so many Standard Varieties that have been thoroughly tried out that one need not put in the time testing new ones as I will try to convince you later.

When a person decides to plant a commercial or even a family orchard, the first thoughts which usually enter his mind are; what varieties are adapted to this climate and what will suit my local market as well as the general market? What has proven most satisfactory as far as I have been able to ascertain by the experience of my neighbors? Have those varieties which neighbor Smith planted a few years ago come up to his expectations? I understand most of them have proven a disappointment, were not what they were represented to be, shy bearers, not very good quality and a little tender in this latitude.

Neighbor Jones thought he would try some of the old reliable varieties and put in an order with a traveling salesman for several of the old sorts. He was going to profit by Smith's experience and not be caught on that line, but when they began to bear which was from five to ten years later, he found there had been some mistake made in his order, for what he bought for Jonathan proved to be Transcendant Crabs, and those labeled
Wealthy, were Ben Davis and the balance of the orchard consisted of various kinds of which he knew nothing about, only that they were almost worthless except for cider. Of course, he was very much chagrined as well as disappointed, but not discouraged. He had heard about his friend Brown's fine orchard, so he said, "I will go down to Mr. Browns and see how he has worked it." It is quite a distance to his place, but distance does not count much when you have a car or a Ford. Brown told me he was going to "graft" some trees himself, and use scions from some of the trees that had proven themselves to be adapted to his climate, were good bearers, splendid keepers and excellent quality. These qualifications about fill the bill. Two days since I was at Brown's, and say, he has the finest lot of bearing trees I have seen in this county, all loaded with beautiful apples. He had sprayed them five times very thoroughly, once in the dormant state, again when the pink began to show and just after the petal dropped. Another carefully applied ten days later and in about three weeks, another; and he told me he thought it would pay to spray once or twice more, to get ahead of the later broods of Codling moth and the Bitter Rot.

He told me it was a great satisfaction to know his trees were true to name. He had selected and procured scions from trees which he knew to be all right, as to hardiness, bearing, cooking, eating and keeping qualities as well as good sellers.

He told me I could have all the scions I needed to graft for an orchard, and it would take only one or probably two years to grow them. I would then, not lose as much time as neighbor Jones did in finding out that he had a lot of worthless trash on which to try his "stump puller."

I heard that the State had an Experiment Station devoted to the testing of "new fruits" for this latitude, and I have been over there to learn all I could about the new varieties, for since I have seen the mistakes and successes of my neighbors and friends, my eyes have been opened and I will study the situation thoroughly. At the Station they told me they had tested several hundred varieties of new fruits, and they have found four or five varieties that seemed very promising, but they wanted to test them a little more before recommending them to the public, so I concluded it would not be worth while for me to try any of the new varieties yet awhile. I would just wait till
the State went broke at it before I would waste any of my hard earned cash in trying out new varieties.

This may all sound like a lot of far fetched foolishness, but there is much truth in it as many have learned by bitter experience.

I have had the opportunity in the last fifteen years of testing out many new and alleged new varieties of fruits in an Experiment Station on my farm. This station is controlled by the Central Illinois Horticultural Society which is one of the three societies that unite to make the State Society.

During the fifteen years in which we have been running, the station has found very, very few new fruits that have proven better, or even equal to many old varieties. When a new variety of any kind of fruit is at first introduced, the price is usually several times that of the good old tried varieties.

Salesmen knowing the weakness of mankind, take that advantage. Man’s impatience to wait and see it proven, leads him to try for himself like Smith on the one hand and Jones on the other, both trusted to strangers and lost. Solomon said ‘he that is surety for a stranger, shall smart for it.’ And their case is a demonstration of his assertion.

I had a neighbor who was quite old and he had made a financial success in life—considering his opportunities. He was speaking of new fruits and the salesmen who introduce them. He said, ‘‘They want more for these new fruits than for the old standard ones.’’ If every person looked upon it in that way, there would be less loss as well as fewer disappointments in this world. This may have been a key to his success, ‘‘Trade not an old tried and proved friend for a new.’’

The Nursery men may think I am knocking their business, but I do not mean to. We cannot get along without them and I believe most nursery men are trying to run an honorable business, but there are some traveling through the country selling nursery stock who ought to be working for the state, clothes and board furnished.

Speaking of grafting again:—Grafting is so simple and easily done that any one who can use a knife, with a little judgment combined with waxed string, stock and scion, can do it. Budding is also easily done and most any of us know of trees that have proved themselves worthy, and from which scions or buds can be procured and most nursery men will sell you stocks on
which to graft. I suppose in this latitude many of the seedlings would be too tender for the severe winters, but select scions of hardy varieties and use good long ones, so they can be planted deeply and they will soon have roots of their own which are as hardy as the original tree, a little protection to the roots the first and second winter and then the trees' own roots will be sufficiently developed to stand any climate in which the variety or original tree succeeded. I would not recommend budding apples in this latitude, for so many seedlings are tender and would likely perish during the winter.

You can do your grafting in your workshop in winter and sit by the fire while at it. When you have made your grafts, put them in moist soil or sawdust, and put them in the cellar where they will be cool, but not freeze, and in spring as soon as the soil and season will permit. Plant them just so one bud comes above the surface of ground, good rich soil with thorough cultivation will insure a strong growth of all which have made a perfect union of stock and scion. The whole process would take too much time and space here to fully describe all the details.

**DISCUSSION.**

**Mr. Hartwell:** There was quite an agitation in Wisconsin, when I first came to your meetings, on the question of long scions and I am curious to know what practical results have developed from that.

**Prof. Moore:** For four or five years the Department of Horticulture has been investigating the question of root hardiness. In this work we have considered a number of related problems. Our first was to try out the relative hardiness of different kinds of commercial stocks. Among those tried were the so-called "French Crab stock," "Vermont seed stock" and "Native seed stock." Lots of each of these kinds were collected in different sections of the eastern part of the United States from Vermont to Missouri and Nebraska. Our results showed marked variation within any given class and no one class stood out preeminently above the others in root hardiness.

The next phase of the question studied was the comparative hardiness of scion roots and roots produced from the stock. In this work the varieties used were some of those usually considered among our hardiest sorts. So far there is an indication that other things being equal the roots produced by the scions
of hardy varieties are somewhat more resistant to low temperatures than the stock roots upon which the scion was propagated. In fact our work has shown this to be true in practically all cases tried.

Studies have been made of the comparative hardiness of the scion roots of various hardy varieties. The earlier work showed that doubtless there is a difference in the hardiness of such roots but the work has not been carried far enough to warrant definite statement that the scion roots of one variety are under all conditions of culture hardier than those of another.

One of the chief drawbacks to "own-rooted" or "scion-rooted" trees is the difficulty encountered in getting a good scion root system developed. Observations have been made for four or five years on quite large numbers of trees as regards their scion root development. All of these trees were from long-scion grafts and set according to the approved practice of Wisconsin nurserymen. Trees, one, two and three years old were examined for scion roots. Very marked differences were found to exist. In no case did we find one year trees possessing scion roots. In some instances two year trees had a fair number of such roots but in no case observed were there enough to properly support the tree had the stock roots been removed. Some three year old trees of several varieties had good strong scion roots, while others of the same variety and age possessed none.

For two years now we have been studying the conditions influencing the development of scion roots, particularly as it related to depth of planting the grafts and the length of the scion. We hope that this work will ultimately answer the question as to why so few apple trees, as commonly produced in the nursery, possess few or no scion roots even when grown in the nursery for three years.

One other question pertaining to root hardiness has recently come to the fore, namely the effects of different environmental conditions during the growth period. We have not as yet studied this factor. It is clearly evident, however, that growth conditions are an important factor, one which might even outweigh in at least some instances the differences in hardiness due to variety.

The question of root hardiness has so many angles that the solution is very different and it will doubtless require a long period of hard work before it is finally reached.