Prof. SAUNDERS.—A great many farmers seem to be in darkness as to fertilization. One day a farmer, knowing I kept bees, said: "We will never be able to produce a crop of buckwheat so long as bees are allowed to be kept in the country; they invariably, by visiting the flowers, destroy them, and the result is we get no grain." (Laughter.) These principles ought to be understood by every lady particularly. Our flowers and vegetables can be wonderfully improved by assisting nature. If different varieties of cabbage seed, for example, are planted together they spoil the whole affair, because the pollen is carried from one to the other, and the result is a bad mixture. I would like to hear the result of Mr. Dempsey's crossing between the apple and the pear.

Mr. DEMPSEY.—The seeds were failures, and the whole thing was a miserable failure. The whole interior of the fruit would be black and rotten. There would be nothing but a shell. The apple was the pistillate plant in that case.

Prof. SAUNDERS.—One of the laws of fertilization is that in almost every instance the plant used as the male—that is, from which the pollen is collected—has the power of impressing its characteristics on the female in regard to the form and character and color of the fruit or seed or flower; whereas the characteristics of the plant itself—its figure and method of growth, and habits of propagating, are usually in the hybrid—they usually follow those that are possessed by the female form. I made a cross some years ago which illustrates this law. Taking a Clinton grape as the female, and the Buckland Sweet Water—a large white grape growing under glass—as the male, the result resembled the Clinton in form, character and appearance, foliage and growth, but the fruit was a large, loose bunch of white grapes very much resembling the Buckland in form, and to some extent in character, but possessing more or less of the acidity of the Clinton. I might cite from another class of experiments on the raspberry, where the Adelaide Black Cap was taken as the female and the Philadelphia as the male. In one instance the plant propagates from tips, in the other from the suckers. The hybrids all propagated from the tips, although they did not propagate so readily as the female plant did, or so invariably. Occasionally a sucker would be sent up, which was a very rare thing, showing that the law with regard to the characteristics which the female plant has is about as strongly impressed in nature as the contrary law that the male affects the fruit. I cite these instances as one showing the operation of the law on one side, and the other on the other side. Hybridization cannot be accomplished without a great deal of care. People have succeeded occasionally by tying a branch of one sort in among the flowers of another variety and intermingling, and then showing those seeds as hybridized seeds. There may be a few instances of hybridization occurring in that way, but they never can be calculated on with certainty, because you are never sure whether hybridization has taken place or not. In crossing such flowers as the grape, where the stigma is very tender and easily injured by the fine forceps that you use to tear off the corolla and the calyx, you will find that the flower will be injured in nineteen cases out of twenty. In one of the old reports of the association I published my failures in hybridization, and any one will see that out of thousands of trials there were very few successes. By persevering you can get results that will be satisfactory to you and a benefit to the community; and this process is beneficial not only in the immediate results you get from a good cross, but by sowing the seed obtained from these crosses. A starting point is obtained in a case of that kind that has been compared to the wheel of a cart—the hybrid being the starting point. Your varieties extend in different directions, one upwards and one downwards, and one sideways and one below; and you have varieties that run back to the