

Only one solution was used—Bordeaux mixture—according to the following formula:

Copper sulphate.....	4 lbs.
Fresh lime.....	4 lbs.
Water.....	40 gallons.

To this, in every case, was added four ounces of Paris Green.

On account of the law, which forbids the spraying of fruit trees while in full bloom, and on account of rain, many applications were omitted, and numbers of applications were discounted or lost by being closely preceded or followed by rain. However, the results were highly satisfactory, in some cases the full 100% of clean fruit being obtained. These trees and their fruit were absolutely perfect.

A great deal of interest was taken in the work and the gentlemen in whose orchards we sprayed, did all in their power to assist us. The attendance during the season reached almost to the 3,000 mark. In one case I know of a man coming forty-three miles to see the work done and obtain information. Thirty thousand sixteen-page bulletins, entitled "Instructions in spraying," containing also a short paragraph on each of the more common insect enemies and fungi, with illustrations, were issued by the department and distributed gratis; many applications were made for these by mail. Numbers of requests were received to have the work done at points we were unable to serve. In one instance a town clerk wrote that he was instructed to inquire upon what terms the spraying could be secured for that locality. The people are gradually waking to the fact that spraying is indispensable to the up-to-date orchardist, and every year the experimental, or more properly now, the instructional spraying of fruit trees is attracting more and more attention. The attendance this year was 60% greater than last year, and inquiry by mail was ten times as great.

In a recent report by the entomologist of the State of New York, three hundred and fifty-six species of insects which commit depredations on the apple are catalogued, and each is known at times to feed upon the apple from choice. Many others will feed upon it when other plant food is lacking, and he adds: "The least harmful among them may at any time, through such sudden and inexplicable multiplication as is often witnessed in the insect world, become a serious pest." Add to these the injurious fungi, and you will have some idea of the phalanx of enemies the apple grower has to face. I believe the most effective artillery we have is the spray pump, but to be effective the proper ammunition must be used at the right moment. With every insect there is a time when it is most vulnerable with same treatment, which can only be successfully applied for a few days in the season. For this reason some have objected to the loss of the time during which the trees are in bloom, claiming that to be handicapped at that season is unjust. Professor Lintner has prepared a list of seventeen common insects which feed upon the apple while in bloom, for which arsenites are the proper treatment; and our agents who did the spraying found the following insects at work while the blossoms prevented spraying: Curculio, bud-worms, leaf crumplers, cankerworm, tent-caterpillars, leaf-roller, eye-spotted bud-moth, and case-bearer. However, we found no difficulty arising from the regulations, and were able to observe the law to the letter and successfully deal with these insects by spraying before and after blooming.

In the report of a series of careful experiments, covering several years and published last year, Professor Webster, of Wooster, Ohio, demonstrates conclusively that spraying with Paris Green while tree are in bloom is fatal to bees. He has found arsenic in the abdomens of the dead bees and in the larvæ of a colony which died suddenly without apparent cause. The interests of the horticulturist and the apiarist are allied, and it would be a mistake to destroy bees as they perform so important a part in the fertilization of our fruits.

I want to give you a few of the actual results obtained in our work this year. In calculating the percentage of perfect fruit the following plan was adopted. A part of