

Spraying at such times with arsenical poison may have the effect of killing bees, but the Lime-sulphur Wash is not an arsenical poison, and is not sprayed while the trees are in bloom, and therefore bees are not killed by any spray used for this purpose."—(Signed) H. A. Surface, Economic Zoologist of Pa.

For San José Scale, fruit growers may use oils, soaps, or caustic washes, such as the Lime-sulphur Wash, which we consider best and cheapest. The bees would not touch the soap solutions or oil substances. We have had a kettle of the Lime-sulphur Wash standing near our bee hives for weeks, and not one bee has been seen to attempt to drink it, nor have any been killed by it. We have sprayed bushes and trees around and over the hives during the past year, and have had hives covered with the spray in an experimental orchard, two or three different times, to such an extent that they were yellow in color, and the liquid dripped from them. None of the bees were killed by the process excepting those that were accidentally injured while actually in the act of flying through the cloud of mist or spray as it left the nozzle. A few of these may have been killed, but if so, it was only by external contact, and not by their voluntarily sipping the liquid.

It is to be remembered that in making such a statement a professional naturalist values his own scientific reputation too highly to permit himself to make an error that can be avoided either by practical test or by careful study. We are certain that bees have not been killed by spraying trees before they blossom, and no one sprays for the San José Scale after the buds burst. In general, no fruit grower, who knows how, when and why to spray, ever sprays anything while the blossoms are open, and this is the only chance by which bees could be killed, excepting in the rare conditions of bees being quite thirsty and deprived of their natural water, sipping a little spray liquid from the leaves, where it may remain for a short time after spraying for the codling moth or leaf-eating insects later in the season.

Emphasis should be made of the fact that the Bordeaux Mixture is not an insecticide, would not kill bees nor other insects, and is used only as a fungicide or preventive of certain plant diseases. If, however, Paris

Green or some other arsenical poison, such as London Purple or Arsenate of Lead, were added to Bordeaux Mixture or used as a spray, and the bees could be induced to sip the liquid through its falling into widely opened nectar-yielding blossoms or through excessive thirst of the bees, sipping it from the leaves where it temporarily remains, it is possible that these beneficial insects might be killed by such means and at such times. However it is my opinion that if water be placed in the apiary regularly, as it should be, the bees will learn to get it, and will not seek the drops of poisoned spray liquid that may remain temporarily on the leaves in spraying for the codling moth. Finally, on this particular point it may be said that this codling moth is the only pest for which arsenical sprays are recommended as a regular annual practice, and for it the spraying should be done soon after the petals fall, and again within a week or ten days. But few bees are flying in the tree tops at such time.

Though it is fairly well known that bees do not puncture fruits, yet further observations and proof are needed to convince some persons on this point. Not long ago a friend reported to us that our bees were puncturing and destroying his grapes. I sent an assistant to investigate this, and he reported to me that the bees were in the grapes, but were sipping the juices only of those of which the skin was punctured, either by the Grape-berry Moth, the Curculio, Yellow Jackets or the Brown Rot germ. They were unable to break or puncture the skin of their own accord.

Last summer I found a few bees sucking the juices and removing the pulp from beneath the skins of plums hanging from a tree over their hives. To test the ability of the bees to work at very small punctures and make punctures for themselves, I placed six plums on an old pan, and set this on the frames in the top of the hive. I here exhibit the same after it had remained there nearly two months, and in fact was taken from the hive no earlier than the thirtieth day of last month. The two plums marked "A" were starting to decay with Monilia or Brown Rot; the two marked "B" were sound and ripe, and were placed on the pan with their skins unbroken; the two marked "C" were merely punctured with four or five direct pricks of a pin in

each. It moved the pair because points at the second pair simply dried skin having and with the first pair or received some in my opinion that part of decayed, finished skin at the An examination of this pan shows indicates that on the frames accept this as bees do not cut fruits which t

Concerning and deadly germs to establish themselves often appears bees, and that means the so-called dissemination growers are not the bee and de their orchards action as bees recently told of some fruit growers and pro their pear assumed these responsible for Blight. Mr. E. went with them and showed the present in numbers convinced them blight germs by other agencies ability of preventing the bees be excluded. An illustration regard is to be for some fruit growers Redbreast or other persons have raised, demanding for its destruction carries upon it José Scale, so does the facts are that carried or disseminated other means besides birds, and in the