work on the under side of the leaves, on which they spin a delicate web which protects them and their eggs. The rate of increase is very rapid.

Control measures must start as soon as the mites appear. Satisfactory results have been obtained by using a very fine dry sulfur at the rate of from one-sixth to one-third of a pound to a tree. Some growers who use a power duster prefer to dilute the sulfur with about 50 per cent of air-slaked or hydrated lime to prevent injury to the foliage. In case of severe infestation, dusting should be continued at intervals of from ten days to two weeks until it is apparent that the insect has been controlled. In young orchards or in windy locations the use of dry sulfur has not always been successful, because the fumes liberated by the sulfur do not remain concentrated enough to kill the insects.

Where dusting cannot be employed, lime-sulfur, sulfur paste, or some form of "wettable" sulfur will have to be used as a spray. Lime-sulfur solution ordinarily should not be used stronger than 1 gallon to 75 gallons of water. Even this dilution sometimes causes injury to the foliage, particularly if the spraying happens to be followed by a period of high temperature.

In late years the highly refined commercial oils diluted to from 1 to 2 per cent have given remarkably good results in the control of red spiders on fruit trees. At this time they are preferred to all other sprays for this purpose.

Scale Insects.—Two scale insects are of special concern to the prune grower, the brown apricot scale and the Italian pear scale. The former is a rather large hemispherical scale easily seen on the twigs and smaller branches. The latter is not so conspicuous, but is much more harmful. It is about the size of a pinhead, and is usually found on the larger limbs and branches, where it is often afforded protection by lichens and moss. By scraping away the moss, the small white, flat covering of the scale can be easily seen. Under this are the red or dark red bodies of the insects themselves. The presence of this scale is generally shown by the flattened appearance of the branches and limbs. This condition will be found principally on the north side of the limbs, where the moss is thickest. This scale causes the death of many limbs in badly infested orchards.

The brown apricot scale is easily controlled with a 5 per cent distillate emulsion, a miscible oil, or a 12 per cent crude oil emulsion. On young trees the first two sprays are usually preferred, as there seems to be some tendency to sunburn when the heavier oil is used.

The Italian pear scale is best controlled by the use of any of the heavier dormant oil sprays. A 12 per cent emulsion is found satisfactory in most localities, but a few are still using a 15 per cent emulsion. Where moss and lichens are troublesome, the addition of from 6 to 8 pounds of caustic soda will easily remove them. Lime-sulfur at the rate of 1 gallon to 9 gallons of water is still used in some orchards, but it is not quite so effective as the oils. Where lime-sulfur is constantly used, however, the Italian pear scale seldom becomes serious.

December to February is the best time for spraying for scale. Spraying too early in the winter, when the trees are dry, is often the cause of oil injury to the buds. Trees must not, however, be sprayed when wet, as immediately following a rain for example, for the spray will run off and not kill the scale. Ideal conditions are when the trees are slightly damp. If spraying is thoroughly done, it is not necessary under ordinary conditions, to spray oftener than every second or third year.

Thrips.—The thrips or pear thrips, as it is often called, is in many ways the most serious insect pest with which the prune grower has to contend. In its different stages, this insect is often responsible for the scabbing of the fruit or the loss of the crop.

The adult thrips is a winged insect, very small, slender, and almost black. It appears late in February or early in March when the prune buds are beginning to swell and open. If the thrips are numerous, many buds may fail to open, or, if they do open, the flowers appear scorched. They do further injury by inserting their eggs in the stem of the young flower. This injury may cause the flower to fall or the fruit to drop before maturity. The young thrips or white thrips hatch and are most abundant during the early part of April. This form of the insect, in feeding on the young fruit, causes what is known as "scabby" prunes. The thrips later drop to the ground, where they work into the hard soil below the surface mulch and remain there until the following spring. Pupation begins about September and continues until all have changed to the adult or black form.

Thrips may be combated with a liquid spray, usually a 1½ per cent oil emulsion, to which is added 1 pint of 40 per cent nicotine sulfate to every 200 gallons of spray, or with any of the new highly refined oil sprays, or by dusting with a 5 per cent nicotine dust. Applications of sprays or dusts should be made when the first black thrips appear in the spring. Ordinarily from 5 to 8 gallons of spray and from one-third to one-half pound of dust will be sufficient for an average prune