the tiny four-winged parasites like the one shown in figure 16. These little creatures in their larval stages feed both upon the insect itself under the scale and upon the eggs, and when full grown come out from tiny round holes which they make near the centre of the scale, and which can easily be seen with a hand lens. There are several species of these parasites, but the only one I know of at present in Ontario is shown in figure 16. In some localities as high as 50 per cent. or more of the scales have these small holes, and though they do not destroy all the eggs beneath a scale they must be of considerable aid in keeping down the rate of increase.

MEANS OF CONTROL.

The lime-sulphur wash, properly applied, will readily control this scale. Two sprayings should be given for the best results, the first at the strength of 1.030 specific gravity hydrometer reading, or about one gallon of the commercial lime-sulphur diluted to ten gallons with water and applied shortly before or as the buds are bursting; the second at the strength 1.009 specific gravity, or the commercial diluted one gallon to thirty or thirty-five with water and applied just after the blossoms have fallen. Two pounds of arsenate of lead should be added to every forty gallons of the mixture for this application, as this is the proper time to spray for the Codling Moth, Plum Curculio and Lesser Apple-worm. Of these two applications the first is far the more important, but does not always give uniformly good results. Sometimes it will destroy almost all the eggs or prevent the larvae if they hatch from escaping from the covering scale, at other times a large number hatch, though most of these soon die, killed apparently by the spray mixture that remained on the tree. There is no doubt that this one application repeated each year will itself soon free the trees from the pest, but the results are accomplished more quickly by the aid of the second application at the time stated above. This will kill most of the larvae that are already hatched, and will leave the bark covered and so repulsive to any that may hatch a few days later. The great point, however, in favor of using lime-sulphur in preference to any other known remedy is that this wash not only destroys the Oyster-shell Scale, but many other things as well; for instance, the first application before or as the buds are bursting will also control San José Scale, Blister Mite, Tent Caterpillars—these must be hit soon after hatching—but also helps to ward off such diseases as Scab and Black Rot Canker. The second application, combined with the arsenate of lead, is always required to control Codling Moth, Plum Curculio, Lesser Apple Worm, Scab and Leaf Spot. For this spray lime-sulphur has proven itself even more satisfactory than Bordeaux mixture as a fungicide, because it keeps off the Scab on the fruit without causing the serious russeting and even cracking of apples commonly resulting from Bordeaux mixture. It is clear, therefore, that these two applications with these mixtures should be given even if there were no Oyster-shell or San José Scale to combat. In addition to these, our best growers give an intermediate application just before the blossoms burst, and most of them use the weak lime-sulphur here, too, along with two or three pounds of arsenate of lead. Bordeaux, however, may be used in place of the lime-sulphur, and is possibly even more effective at this stage as a fungicide. This application is important for the destruction of early-feeding caterpillars and for the control of scab.

As in the case of the San José Scale, old trees should be pruned before spraying and the rough bark scraped off. If the trees are not vigorous, a liberal dressing of barnyard manure or cultivation in May and early June will help them to recover more quickly from the effects of the scale.