

practically the same as that used by the Dominion Department of Agriculture at Ingersoll last year. The pump is double cylinder, with two speed gear and tank filler, operated by a Coldwater, Michigan, gasoline engine of two and a half rated horse-power. Two lines of hose with 12 nozzles receive ample power from the slow-speed gear. The tank with this machine has a capacity of 200 imperial gallons, which I find rather too much for the hilly orchards around Trenton.

#### THE DEMONSTRATIONS.

Owing to the lateness of the season when the machines were started the first spraying on the dormant trees was omitted. The first application began at Meaford May 5 and at Trenton May 11. After the initial attempts both machines ran smoothly, and at the date of writing have given no trouble. Many of the orchards in both locations are hilly and will furnish splendid tests of the practical value of these machines under trying conditions. The trees in many cases

are only 20 feet apart each way and render the use of a tower almost impossible. The axe could be used to advantage in such cases and every other row should come out.

It is the aim of the Department in this work to interest the fruit growers sufficiently that they may, where already organized as a local fruit growers' association, take up the work thus begun, and having purchased power machines run them from year to year for the benefit of their members. The newly-organized cooperative associations will, it is hoped, make this one of the main features of their cooperation.

With good fruit to sell no association need fear as to the prices. The increase of the apple scab in Ontario seems to have impressed the growers with the absolute necessity of spraying, and this task, for none doubts that it is such, may be done far more thoroughly, profitably and pleasantly by the use of these powerful large-capacity machines than with the still useful hand pump.

## NEW FORMS OF KEROSENE EMULSION

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**I**N regard to the practical use of the new forms of kerosene emulsion, described in the May issue of *The Horticulturist*, we beg to state that although a considerable amount of spraying has been done, both with the lime and flour emulsions during the past month, the season is not yet sufficiently advanced to allow us to make deductions as to the strengths best and safest to use. We may, however, make the following remarks:

**Lime Emulsions:** All these emulsions keep excellently, only traces of free oil showing after five weeks standing. There is, as before noticed, a separation into limey layers, but these on merely shaking or stirring readily become incorporated, making a smooth and uniform emulsion. Of the many lime emulsions under trial we conclude that the most satisfactory is the one made

with freshly slaked lime.

**Flour Emulsions:** These, with the exception of the emulsion made with scalded flour show a separation of oil on standing. Churning for five minutes, as with the Bordeaux mixture is, however, sufficient to again thoroughly incorporate the oil and make a satisfactory emulsion. The scalded flour emulsion (though, as in the case of the lime forms, showing a layer of thin oily paste) gave but slight indication of free oil. This layer very readily becomes re-incorporated and an excellent emulsion obtained.

When properly prepared no difference could be observed in the application of these emulsions, but the whitening effect on the sprayed trees, etc., of the lime forms and the absence of this feature from the use of flour emulsions was particularly noticeable.