

wireworm, works a deal of mischief; have seen snow lie till late in the spring, and form into a mass of solid ice, under it the grass would be killed; it seemed to rot, probably from want of air. Would recommend Mr. Craig to dig up the bare spots and incorporate some new soil, resod or sow with lawn seed.

Coal Ashes.

64. Coal ashes are strongly recommended for pear trees, etc. Is it necessary to apply manure also?—W. W. R., *Toronto*.

COAL ashes are of little or no value as a fertilizer. Their chief value for pear trees would be as a mulch, serving to keep the ground moist, and thus promote growth. If the soil needs enriching, certainly coal ashes would not make it so. Wood ashes are a very valuable fertilizer for all orchard trees, including the pear, because it is about one-tenth potash, a substance which constitutes about one-half the ash of the fruit, while the rest of it is chiefly lime and phosphoric acid, elements which also largely enter into the composition of fruits. With wood ashes, there will be no need of any other manure; indeed, the nitrogen of barnyard manure tends to promote too rapid and succulent a growth of the pear, and predisposes it to blight.

Grape Syrup, or Condensed Must.

Reply to Question No. 15.

The Wine and Fruit Grower, a monthly journal published in New York city in the interest of wine makers and vineyardists, replies to question 15 as follows:—

"We presume the inquirer is talking about condensed grape must. Any fruit juice containing sugar can be condensed into a sugar or syrup by the application of heat. But as great chemical changes are wrought by the heat, it is of the first importance that it should be applied in such a manner as to preserve the constituents of the must in their

original relations as nearly as possible. This cannot be done by "boiling," as maple syrup or sugar is made; it must be done by the application of heat in such a way that the temperature at no time exceeds 140° Fahrenheit. If the higher temperature is reached, the constituents are broken down and return to their original elements, and the volatile oils containing the bouquet is dissipated by evaporation. The product will then have a cooked or burnt taste and smell, and become flat and insipid, and the mineral salts only will remain unchanged. It is clear, therefore, that a method should be adopted by which evaporation could be secured at a low temperature, and this has been done. Two processes have been patented—one an Italian invention known as the Yaryan process, and a German known as the Springmuhl process; both are in operation in California, and 1000 tons of grape must was condensed this season and shipped to London.

"Now as to how it may be done by simpler or home-made appliances, our correspondent will see that it will be necessary to have a jacket-kettle, or evaporating pan, so arranged that the must shall be protected from direct fire heat by a column of water, and that a thermometer must be kept in the fluid constantly so as to watch and regulate the degree of heat. The best apparatus would doubtless be a jacket-kettle made of copper, so arranged that the must could be stirred, as the stirring would shorten the operation. This answers the first and second question.

"Now as to where to purchase such an apparatus, we presume it could be got at any copper-worker's shop where distillery and sugar-house utensils are made. Coppersmiths are to be found in all cities.

"The fourth and last question involves several considerations. It may be said there is no regular market demand for condensed grape must. The fact that the must from 600 tons of grapes used