

the town. Thus ample time was left for a thorough inspection.

The first thing inspected was the bins in which the beets are put when brought to the factory. From the bins the beets are carried to the main building through sluice-ways. On entering the factory proper the first thing confronted is the washers, through which the beets pass and have all traces of dirt removed. Leaving the washers the roots are then elevated to the top of the building, where they pass on to automatic scales which dump them into the slicers, which cut them into small pieces. The sliced beets now pass down a long tube and enter the diffusion batteries where the juice is extracted from the pulp. The pulp, now being no longer needed, is conveyed outside; while the juice, which contains the sugar, is passed through a number of appliances to remove the coloring matter and to extract the mineral salts. Once purified in this manner, evaporation is begun. When evaporated down the residue has the appearance of thick, black molasses, and is altogether different from the beautiful white crystalline substance with which we are commercially familiar. To remove this "black molasses," therefore, the syrup is run into centrifugals which revolve at a high rate of speed. Here, upon the principle of gravitation, the black molasses is thrown out, and what is left is comparatively white. From the centrifugals the sugar is conveyed to the drier, which is in the form of a long cylinder, 7 to 8 feet in diameter. It is in a slanting position and as it revolves the sugar passes down through it. A current of hot dry air is drawn

through which effects the drying. Leaving the drier the sugar passes through sieves, after which it is ready for the barrel. All the sugar is not secured yet, however, for the so-called black molasses which we saw thrown out of the centrifugals, is rich in sugar content. It is therefore reboiled and a second crop obtained and sometimes a third crop. These crops are in turn treated with the centrifugal, and so on as before, while the molasses from them is put through an osmosis process which removes the salts preventing crystallization; or else it is subjected to a process of fermentation and distillation which converts the contained sugar into alcohol. The waste is often rich in different kinds of salts, especially potash. Consequently a valuable potash fertilizer can be manufactured from it; and at the present time a factory is being erected in Toronto for that purpose.

We see that from the time the beets leave the bins into which they are dumped from the wagons, until they are reduced to purified sugar, not a hand is touched to them. Everything is done by labor-saving machinery. Hundreds of tons are consumed each day and the amount of labor required is reduced to a minimum. This factory has an average daily output of 400 barrels.

About 5.45 the party left the factory and returned to the town where supper was obtained. As the train for Guelph did not leave till 9.15, plenty of time was had to view the town and several availed themselves of the opportunity. When 10.30 o'clock arrived all were again safely at the O. A. C. Everyone has reported a good and profitable time spent, and all thanks are due Prof. Harcourt, our chemist, who secured the outing, and who so ably escorted us and explained things at the factory.