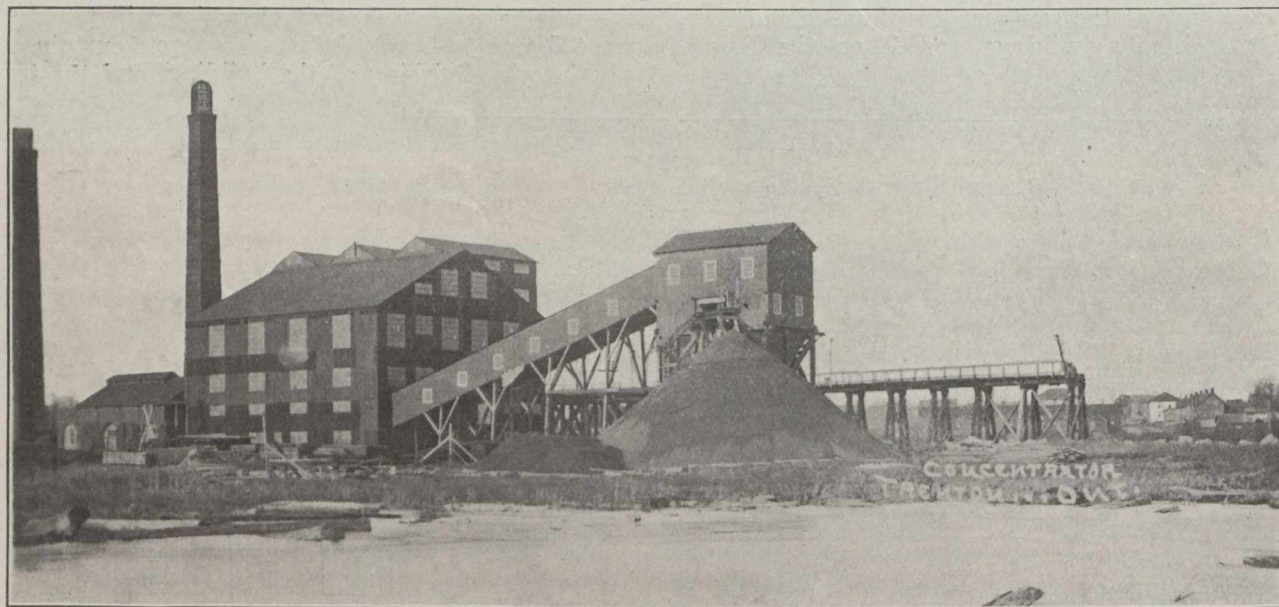


The undersize from the shaking screen, which is material $\frac{3}{4}$ inch in diameter and smaller, falls into its bin. This is a duplicate of the above-mentioned oversize bin. These are steel bins, lined with oak. The undersize is delivered from its bin by another oscillating feeder directly to the above vertical elevator. The entire crushed and fine product is discharged into the trommel.

The trommel or revolving screen is 48 inches in diameter by 12 feet long. It serves to grade the crushed ore in accordance with its sizes, in order that the magnetic separators will have the advantage of a sized product to treat. The first section of the trommel is punched plate five feet long with holes 5-16 inch by 1 inch. The second section is woven wire screen four feet long with $\frac{1}{2}$ -inch square holes. The third section is woven wire screen three feet long with $\frac{7}{8}$ -inch square holes. Wash water is added to the chute between the elevator and the trommel and also over the first section of the trommel.

mixes with the fresh ore entering the rolls. The treatment of the three different sizes in the separator bins is identical, the only difference being in the adjustments of the separators. The material is drawn from the bins by roll type feeders, which distribute it across the face of the drums of the separators. These are single drum Ball-Norton magnetic separators. Owing to the method of wiring used on these machines it is possible to make a three-part separation. The three products consist of clean tailings, clean concentrates and middlings, or particles containing both magnetite and gangue or rock. The tailings fall to the coarse tailings conveyor and are carried out to a car loading bin. The concentrates fall onto the concentrates conveyor. The middlings fall onto a short inclined middlings conveyor, which carries them to the No. 2 or reerushing rolls. These are duplicates to the No. 1 rolls, being 40 x 15 Anaconda rolls, but they revolve at much higher speed. They are set to crush to 3-16 inch. The reerushed middlings enter the sys-



Concentrating Plant, Canada Iron Mines Limited, Trenton, Ont.

The material passing through the first section is delivered to a No. 2 "Newaygo" wet screen. This has a screening surface of woven wire with 1-16-inch or 1.6 mm. holes. This screen makes two products, an undersize and an oversize. The former is carried in a wet launder through a wooden feed box to "B" magnetic separator. This is a Grondal wet separator, and makes concentrates and tails. The latter are discarded as fine tailings, being used to make land.

The concentrates from the Grondal separator pass through a dewatering machine, which drains off most of the free moisture, and delivers them to the concentrates conveyor.

The oversize from the "Newaygo" screen is discharged into the bin over No. 1 separator. The undersize through the second and third sections of the trommel is discharged into bins over separators Nos. 2 and 3 respectively. The oversize from the trommel is material that will not pass through a $\frac{7}{8}$ -inch square hole, and is returned to No. 1 rolls to be crushed again. It

tem again in the boot of the vertical elevator, to be re-screened and retreated.

The concentrates conveyor collects the concentrates from all the magnetic separators and conveys and elevates them to a small pocket over the concentrates bin. It is then drawn off either into the concentrates shipping bin or a small tramcar to the stockpile. Railway cars are loaded from the concentrates shipping bins for rail shipments. A tail rope haulage system will convey the concentrates to the docks for water shipments.

The coarse tailings are also a marketable product, and the entire supply has been contracted for for several years. The revenue derived from their sale will amount to a considerable figure when the plant is running at its full capacity.

Although the plant was designed for a capacity of 330 tons per unit, in operation it can treat over 300 tons per ten-hour shift, and its capacity is from 500 to 600 tons per unit per day of twenty hours. The present ratio of concentration is about one and one-third