

J-41-1 XJ-44-2

# Journal of Commerce

OF CANADA

VOL. XLVIII, No. 43 GARDENVALE, P. Que., OCTOBER 26, 1920 PRICE, 10 CENTS

## Electro-Chemical Development

Vast Industries, both Chemical and General, created by War Demands, Continue to Expand in Times of Peace.

By A. R. R. JONES

As was pointed out a fortnight ago, there are certain chemical industries that can be carried on satisfactorily only where there is an abundance of cheap electric power. Owing to its favorable situation in respect of power, Shawinigan Falls is attracting world-wide attention as the electro-chemical centre of Canada. Numerous electro-chemical industries are located in the town, all of them, with one exception, lying in what has become known as the "electro-chemical district." This district is situated about two miles up the river from the power houses.

Here is located the Canada Carbide Company, a subsidiary of the Shawinigan Water and Power Company. It occupies some fifteen acres of land, conveniently located between the Canadian Government Railways and the Canadian Pacific Railway, with sidings to each, and gives employment to some 400 men. The plant contains buildings for the storage of coke and carbide; kilns for the burning of lime; two main furnace buildings, where the carbide is produced in furnaces ranging from 3,000 to 10,000 horse-power capacity, and other buildings containing auxiliary machinery for handling, crushing, sorting and packing carbide; and a factory for the manufacture of steel drums, with a crating plant, where wooden crates are manufactured for the protection of the steel drums.

On account of its large output — thousands upon thousands of tons of carbide are produced annually at the plant at Shawinigan Falls—as well as by reason of the favorable location, this company competes in the world's markets with any other concern of a similar kind. The chief officers of the company are as follows: President, Mr. Julian C. Smith; vice-president and general manager, Mr. R. A. Withersoon; Treasurer, Mr. W. S. Hart; Secretary, Mr. James Wilson.

### One Of The Largest Industries.

A considerable part of the carbide produced in the plant just mentioned is converted into acetylene gas and sold to the Canadian Electro-Products Company for the manufacture of acetic acid and acetone. The plant of this concern was built during the years 1916 to 1918. The war created a demand for chemicals that had been previously in comparatively little use and which had in any event, up to then, been probably imported from Germany. In particular, the demand for acetone for the manufacture of cordite, the propulsive charge used in the British army, became urgent. It had to be met and the meeting of it became one of the big problems of the war. The Canada Carbide Company made extensive additions to its plant and apparatus. For to get acetone in large quantities one must first have carbide in much larger quantities as it requires about five tons of carbide for the production of two and a half tons of acetic acid, and about that amount of acetic acid is used up in producing one ton of acetone.

The Electro-Products Company turned out at its newly-erected plant and shipped overseas 1200 long tons of acetone. Then when the demand for acetic acid, for use in the production of cellulose acetate for coating aeroplane wings, became acute, as it did in the

latter part of 1917, owing to the great aerial expansion, the plant was used to produce acetic acid only, and turned out, and shipped overseas, in the space of less than a year, about 10,000 long tons of this. This chemical plant occupies more than twenty acres of ground, comprising more than twenty-five brick and concrete buildings, housing different chemical and electrolytic processes, gas plants, plants for the necessary auxiliaries such as steam, compressed air, refrigeration, direct current and alternating current electricity, work shops, store-houses, shipping rooms, waterworks, gasometers, offices and chemical laboratories.

The process of producing synthetic chemicals from acetylene is likely to open up a favorable field for a large industry in organic chemistry as well as a greatly increased outlet for the products of the Canada Carbide Company. It is in a position to manufacture glacial acetic acid in large quantities both for export and for use at home. Especially is this so by reason of its close connection with the last named company,—for like that, it is a subsidiary of the Shawinigan Water and Power Company. Mr. Julian C. Smith is the president of the company and the other chief officers are: Vice-president and treasurer, Mr. W. S. Hart; Secretary, Mr. James Wilson; and Works manager, Mr. P. H. Falter.

### An Industry Called Forth By War.

The operation of the Carbide plant is very largely dependent on a good supply of large carbon electrodes. This fact was brought out very clearly by the war which created a large demand for electrodes, and especially for the large amorphous carbon electrodes which are used in the manufacture of electric steel, carbide, ferro-alloys and so on. It became obvious that an additional industry was required at Shawinigan Falls, and so the Canadian Electrode Company, another subsidiary of the Shawinigan Water and Power Company, was formed to produce electrodes for the Carbide Company

and for other electric furnace plants in the town. In fact, though there is a certain export trade in electrodes, the major portion of the output is used in Shawinigan itself. The plant is located close to that of the Carbide Company and the officers of the two companies are the same men.

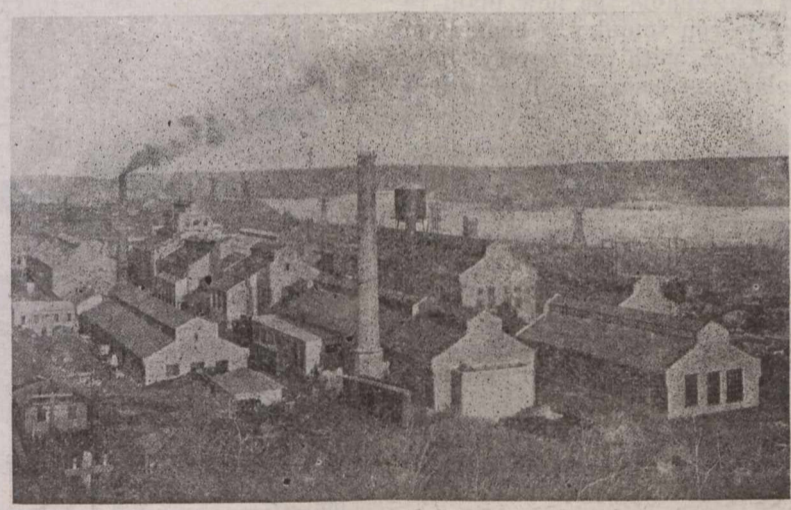
It was in the spring of 1916 that, directly called into being by the exigencies of war, construction of the Electrode Company's plant was commenced. The building then put up was of steel and brick. It housed the transformers, calcining furnace, coal bins, crushing and grinding machinery, mixer, tamping machine, three baking ovens and the works office. By January of the following year the plant was in steady operation, in the following August, another oven was built, and in April

1918 construction was commenced of a new steel and brick building abutting on the former one. The enlarged works are now capable, one is told, of turning out 600 tons of finished electrodes a month.

Thus liberal provision had been made for all increased demands which may be rendered probable in the tolerably near future, either by the establishment of new industries at Shawinigan Falls or by the growth of industries already located there. The possession of an electrode works capable of meeting all needs marks a great step forward, on the part of Shawinigan Falls, towards the fulfilment of its destiny of becoming one of the largest centres on this continent of the electro-chemical and electro-metallurgical industries, and, at the same time, it marks an appreciable step forward in the commercial development of the Dominion.

### The Northern Aluminum Company.

What was formerly called the Pittsburgh Reduction Company, and is now known as the Northern Aluminum Company, was one of



Plant of the Canadian Electro Products Co., Shawinigan Falls.