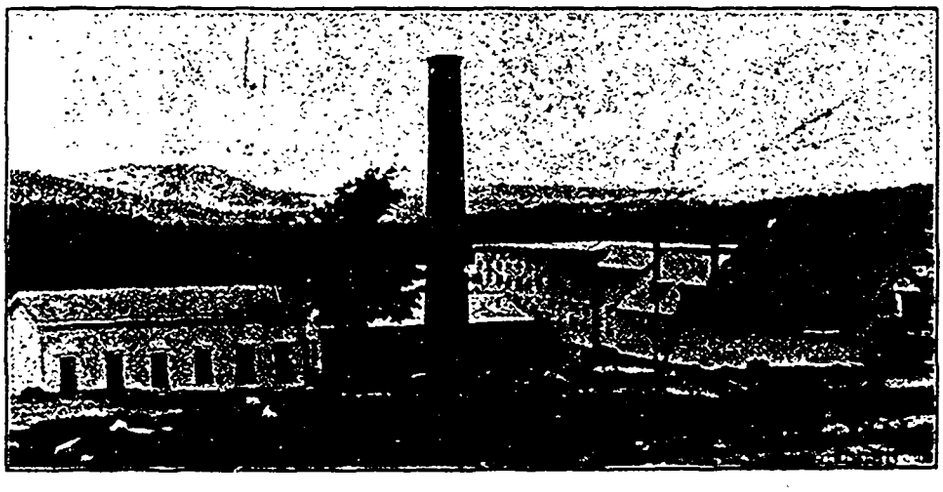
ago—fell away, and finally the mines were closed. The present company was formed, and last year opened it up as before stated, and to-day it is one of the most promising industries in the Province of Quebec Though the asbestic branch of the business is in its early infancy, they are already putting up from 200 to 400 tons of this material a week, and there are lying around the mines between 8,000,000 and 10,000,000 tons of rock, which had during the last quarter of a century been carted off as worthless, but can now be converted into the new wall plaster As to the future supply, both

Danville Asbestos and Slate Co.'s Works—Distant View showing Hill of Asbestos.

of the pure long fibre and the asbestic producing rock, it is impossible to form an estimate. That it is enormous, may be gathered from the fact that the mines here underlie a surface of 75 acres, and of the five large pits now worked some are 300 feet across and excavated to a depth of 100 to 140 feet, with no sign of diminished quality or quantity. Six hoisting engines are at work lifting rock, one of them having just been put in at a cost of $2,000 Steam power is used, the engine room containing a battery of four boilers of 120 horse power, each, the main engine being 700 horse power, with a fly-wheel of 18 feet diameter Rope transmission is used to distribute power, the farthest pit being 600 feet away. For reducing the rock there are 14 stone crushers some weighing 48 tons and taking in a piece of rock of a ton weight at a time.



New Asbestos Wall Plaster Factory.

The building in which the asbestic is manufactured is 250 feet long and five stories high, and is so erected on the hillside adjoining the mine that stone laden wagons can drive straight to the doorways of all five stories to deliver their loads. Special machinery has been designed to manufacture the asbestic. After the rock has gone through the big crushers it is further reduced and carried on through a series of carriers, blowers and separators, till it is delivered automatically into bags in some cases, and in others into large rooms in which the atmosphere is charged with a constant storm of snowy fibre, which steadily deepens on the floor till it is waist high. The company have erected, and are now enlarging, their own machine shops, and, though but little over a year in operation, now employ 200 hands. The careful plans and excellent equipment of these works reflect the highest credit on the organizers, and if the province of Quebec, with its great water powers and other natural advantages, had a few more men like the Messrs. Boas, its industrial progress would be greater than it is.

Garson & Co., St. Catharines, Ont., has been awarded the contract for the Petrolia water works at $131,945. This is exclusive of the pumping plant.

ACETYLENE GAS.*

BY GEO BLACK.

Calcium carbide and acetylene gas have been known to scientists for many years, but that it had an industrial future and commercial possibilities of the highest order is the discovery of Thos. L. Willson, a Canadian.

Sir Humphrey Davy observed that when carbon and potassium were heated sufficiently to vaporize the potassium, a carbide was formed. In 1836 Brezelius announced that the black substance formed in small quantities as a by-product in producing potassium from potassic carbonate and carbon, was carbide of potassium. Wohler in 1862 made carbide of calcium by fusing an alloy of zinc and calcium with carbon. He ascertained that it decomposed in contact with water, forming calcic hydrate and acetylene. Berthelot in 1866 described sodium carbide or acetylene sodium. He discovered that the high temperature of the electric arc within an atmosphere of hydrogen would unite with carbon of the charcoal terminals and form acetylene gas In 1888, Willson, in trying to form an alloy of calcium from some of its compounds in an electric furnace, noticed that a mixture containing lime and powdered anthracite acted on by the arc, fused down to a heavy semi-metallic mass, which, having been examined and found not to be the substance sought for, was thrown into a bucket containing water near at hand, with the result that violent effervescing of the water marked the rapid evolution of a gas, the overwhelming odor of which enforced attention to its presence, and which on the application of a match burned with a smoky but luminous flame and numerous explosions. It was acetylene gas. To Willson is due the credit of discovering how to make calcium carbide, at the price of about one cent a pound in unlimited quantities, instead of the rare laboratory product obtained in grains, at the rate of about $10,000 per pound, thus producing not only a new light, but for manufacturing and commercial purposes opening up a vast range of new combinations of hydro-carbons at a much cheaper rate than ever existed before. The possibilities of cheap carbide for light or chemical combinations places Willson in the front rank of the scientific men of the age.

Calcium carbide, Ca C2, is a dark brown, dense substance, having a crystalline metallic fracture of blue or brown appearance, with a specific gravity of 2.262. In a dry atmosphere it is odorless, but in a moist atmosphere it emits a peculiar smell, resembling

*A paper read before the Canadian Electrical Association.