

A VALUABLE DISCOVERY.

It was said that what took Henry M. Whitney, president of the Dominion Coal Company, last week to Nova Scotia, was the further development of the Cape Breton coal fields. It is now said, however, that his visit also has direct connection with the discovery in Cape Breton of extensive deposits of ore, from which specular pig iron, or speigel, is manufactured. Speigel is largely used in the manufacture of Bessemer steel and is of great value. The Cape Breton deposit is said to be worth as high as \$400 per ton. Samples of the ore were sent to Hamburg to be tested and reports sent back show it to be of the best quality. It is placed by Hamburg experts at 80 pounds per ton. The discovery was made some time ago and so carefully has it been guarded that outside of three or four persons interested nobody knew anything about it. An expert was taken to Cape Breton to give an opinion as to the value of this discovery. Since that time the party who discovered the deposit and two or three capitalists have been quietly looking the matter up, and the result is the deposit is soon to pass into the hands of a company now being formed. The gentlemen who are interested in the scheme to establish an iron works in Cape Breton are the parties most interested.

RECORD RAILWAY CONSTRUCTION.

Past records in the way of railway construction are beaten. It is one of the marvels of the age, the fact that the Crow's Nest Pass railway has been completed from Lethbridge to Kootenay Lake, a distance of about 300 miles, within a period of fourteen months. It is all the more wonderful when it is considered that even the engineering work was hardly commenced fourteen months ago. Yet this railway has been built through two ranges of mountains, the Selkirks and the Rockies, and will before the close of the year be complete in every respect as to side tracks, bridges, water tanks, section houses, and all other accessories. The steel-laying machine, under the charge of Engineer J. Turnbull, has been for some time past putting down rails at the rate of four miles per day. The transfer slips at the foot of Kootenay Lake, being built for the purpose of transferring the cars and carrying merchandise from the present terminus of the railway to Nelson, now look like a forest of piles. Freight will in a short time be able to go straight from Winnipeg to Rossland without transshipment.—Rossland Miner.

BELFAST FIRE BRIGADE.

For the year ended 30th June, states the report, the number of calls received to fires or supposed fires was 190; of this number 183 were fires, 21 of which were classed as serious, that is, where more than one-sixth of the property (regardless of extent) within the risk was either damaged or destroyed; 162 were slight fires, and eight were false alarms. The department also attended to fourteen chimney fires. The total loss from fire was estimated at £60,987 12s. 7d., and the value at risk £722,480 7s. This information was obtained either from the owners of the property endangered or from the assessors who adjusted the settlement. The distance travelled by machines journeying to and from fires was 514 miles, or an average of 2¼ miles for each fire. There were two lives lost at a fire in Little Patrick street, and one (a child) at a fire in the Albertbridge road. The steam fire engines were required to assist the pressure from the mains on five occasions. The

water supply of the city is good, there being—Inside city boundary, July, 1898, 5,820 hydrants; inside harbor commissioners' property, July, 1898, 202 hydrants. The local journals speak highly of the efficiency of the brigade.

OPENING OF THE CATARACT POWER CO.

The formal opening, on Saturday last, of the Cataract Power Company's plant near DeCew's Falls, commenced a new chapter in the industrial history of Hamilton, the ultimate outcome of which is still one of the dreams of the believers in electricity, but immediate practical benefit of which cannot fail to greatly increase that city's prestige as an industrial centre. In the Times on Monday are views of the power-house, the pipe-line and cuttings; also a map showing how the old Welland Canal is utilized for power purposes.

The company was formed in the fall of 1897. It has a subscribed capital of \$1,000,000 with \$250,000 paid-up. Work was begun on construction in October of the same year, and completed in August last. Two units of 2,000 horse-power each have been installed, and the power-house and all hydraulic arrangements have been designed to allow for doubling the capacity, should the necessity arise.

To-day Hamilton factories and Hamilton's electric lights are being operated by power, generated thirty-four miles distant, and at a far cheaper rate than that of the product of steam. General-Manager Leyden is authority for the statement that the waste in transmission is only eight per cent. Another way in which the greatness of the Cataract Power Company's achievement can be realized is when a comparison is made with the work of the big power concern at Niagara Falls, which has yet been unable to make the transmission of power to the City of Buffalo, twenty-one miles distant, a paying venture. Another feature of the new power scheme is that its projectors and stockholders are for the most part Hamilton men, who have invested their money and their time in the project, strong in the faith that it was a good one.

On arriving at St. Catharines, hacks, band wagons, and every available conveyance in the city, carried the party, of 150 Hamilton people, on the two-mile drive to the power-house. This was found to be built on the bank of Twelve-Mile Creek, just east of DeCew's Falls ravine. The party was met by the General Manager, Mr. H. R. Leyden, with his staff of assistants.

The plan of the company has been to obtain a water supply from the old Welland Canal, at Allanburg, and carry it by means of an artificial channel, four and one-half miles in length, to the brow of the mountain overlooking Twelve-Mile Creek, just east of DeCew's Falls, and about two miles from St. Catharines. Three very large reservoirs have been constructed between DeCew's Falls and Allanburg, so as to provide an abundant supply of water. The water is carried to the power-house, from the reservoir, through pipes eight feet in diameter, the fall being 275 feet.

The old and new canals come together near the village of Allanburg, and it is near the junction that the tap is made to permit of the water being utilized for the driving of the power generators at DeCew's Falls.

From the head-gates the water is conducted through an artificial channel or canal. About two miles from Allanburg a large aqueduct has been erected for the purpose of carrying the water across the creek. This aqueduct is a wooden flume 600 feet in length, with an inside diameter of 8 x 8 feet, and is supported by a steel truss. The company has provided three

large storage reservoirs, which will contain sufficient water for two days' operations, and the danger from frazil or small particles of ice getting into the water-wheels is thus provided against. There is also built at the brow of the mountain a concrete wall, 600 feet in length, and 15 feet high. A cutting 38 feet deep and 14 feet wide was made in the rock at the top of the bank, in which the pipe line was placed. The distance from the top of the mountain to the base of the power-house is 900 feet, the vertical height being 275 feet. This gives a head nearly double that of Niagara Falls, and a pressure of 135 pounds to the square inch.

The foundation for the pipe line is made of stone, with a pier and drain every 12 feet. At the top of the line the pipe is three-eighths of an inch in thickness gradually increasing to one inch. It is a circular steel tube, the first section being nine feet in diameter, and then it diminishes to eight feet six inches, eight feet, and finally seven feet six inches.

The power-house is 175 feet long by 40 feet wide, the walls being 30 feet in height. The framework is of steel filled in with bricks. The roof is covered with lap seam metal and the floors are of concrete, three inches thick, but where the generators and turbines are located are laid to a depth of 12 feet. Two generators of 2,000 horse-power each have been placed on the north side, as well as two exciters. The water-wheels are of special design, and have steel fly-wheels, weighing 7½ tons each, the total weight of case and turbine being 30 tons, generated by a pressure of 2,400 volts, transformed to 22,000 volts by means of step-up transformers, delivered to the city transforming station, 34 miles distant, over four copper wires, and there, by means of step-down transformers, reduced to 2,400 volts. The hydraulic plant was furnished by the Stillwell, Bierce & Smith-Vale Company, of Dayton, Ohio, and Wm. Kennedy, of Montreal, is the hydraulic engineer. Thos. Hillman, of Hamilton, was the engineer in charge of the construction.

There are two engineering features in connection with the plant that are new. One is that it is the highest head in America using the reaction turbine. The high heads elsewhere use the impulse type of turbine.

The other is the high pressure at which the current is transmitted, only 10,000 volts being used at the Niagara Falls plant.

AN EASY WAY.

Probably there can be no easier way for a property-owner to assure himself of the character and responsibility of a fire insurance company than to consult the advertising pages of a reputable insurance journal. We do not hesitate to guarantee to property-owners the good character and solvency of companies advertising in this journal, and while it is true that at times a reliable company doing business here may advertise only occasionally with us, it is equally true that wildcats and under-grounders doing business on this Coast cannot get their "cards" into this journal. What is easier and safer for the policy-holder to do than to consult our advertising pages, and to investigate the affairs of a company whose card does not appear?—Coast Review, San Francisco.

From his point of view.—"How was the county fair this year?" "Best that ever was held in the county." "Were the exhibits larger than usual?" "The exhibits? I don't know. I didn't see any of them." "The horse racing was better than any they ever had before, I suppose?" "I don't know. I didn't see any horse racing." "What were you doing?" "I was taking in money. I'm the treasurer."