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## OUR VICTORIA NUMBER.

The Victoria number of the DOMINION ILLUSTRATED has been unavoidably postponed from the 14th to the 21st inst, owing to delay in the receipt of illustrations and other material.



It is not in far-off foreign lands alone that the sons of Canada have had their mettle tested during the last few years. Less conspicuously but not less usefully, and certainly with no less devotion, fidelity and fortitude have some of them been labouring in the cause of geographical discovery within the limits of our own grand Dominion. Some results of these labours have already been placed unostentatiously before our readers in a contribution from the pen of Mr. W. Ogilvie, D.L.S. The Yukon and Mackenzie expeditions were, indeed, undertakings worthy of comparison with some of the greatest exploring enterprises of our day, and we have already given some indications of the impression which they made in English scientific circles. In the last Report of the Department of the Interior, the Hon. Mr. Dewdney writes: "Perhaps the most interesting feature of this report is the account given by Mr. Wm. Ogilvie, D.L.S., of the surveys, observations and explorations which he conducted in the Yukon and Mackenzie country, and which will be found in one of the appendices hereto. Mr. Ogilvie was absent from civilization for nearly two years, during which time he made instrumental and track surveys covering a total distance of 2,700 miles in a wild and almost unexplored country, some portions of which, it is certain, were never visited by a white man before. The energy, enterprise and intrepidity of Livingstone, Stanley and others who have explored the wilds of Africa have received at the hands of the public of all civilized nations the acknowledgment which they merited. In simple and unpretentious language Mr. Ogilvie tells the tale of an expedition of great magnitude and importance, conducted so efficiently, so unexpensively and so rapidly, and involving such dangers as I think will fairly entitle him to rank as one of the first, if by far the most modest, of the explorers of the nineteenth century." And surely this praise is well deserved.

The Report of the Commission appointed in May, 1888, by the Government of Ontario, to inquire into and report upon the mineral resources of the Province of Ontario, which has recently been made public, contains a mass of valuable information bearing on the whole range of subjects to which the Commissioners gave their attention. Mr. John Charlton, M.P., was chairman; Mr.

Archibald Blue, secretary, and the other members were Dr. Robert Bell, F.G.S., of the Geological Survey; Mr. Wm. Coe and Mr. Wm. Hamilton Merritt. After conferring with the Government as to the nature and scope of their duties, and agreeing to a scheme for dividing the labours of the enquiry, the Commissioners held sessions, at which they took evidence from one hundred and sixty-four witnesses at thirty-seven places in the province, from Ottawa to Rat Portage. These witnesses, who gave their evidence under oath, comprised explorers, prospectors, miners, mine and quarry owners, mine captains and superintendents, mine brokers, mining engineers, civil engineers, land surveyors, geologists, assayers, chemists, metallurgists, scientists, iron founders, brick makers, tile, terra cotta and pipe manufacturers, iron makers, copper and nickel smelters, mechanics, lawyers, bankers, merchants, capitalists and speculators. Mines, mining locations and works in the vicinity of places where the Commission met were examined, and careful enquiry respecting them was made.

Several other important districts and places were also visited by members of the Commission, with the object of procuring special or desirable information. The extensive magnetic iron ore range in the region west of Lac des mille-lacs and the Black Bay lead region on Lake Superior were explored by Dr. Bell, while Mr. Coe, Mr. Merritt and the secretary made a journey to the iron ranges in northern Minnesota, near the Ontario boundary. Mr. Merritt also visited the Michigan School of Mines at Houghton. The chairman and secretary in the latter part of 1888 visited the Columbia School of Mines in New York, the office of the Geological Survey at Washington, and furnaces and steel works at Pittsburg, Pa., at Chattanooga, Tenn., and at Birmingham, Alabama. Another object of the visit to Birmingham was to enquire into the merits and witness the operation of the Henderson process for eliminating sulphur and phosphorus from iron and converting it into steel, a careful test and report upon which by Mr. Garlick, of Cleveland, Ohio, a metallurgist whose experience in the manufacture of iron extends over a period of twenty-five years, is published in the appendix. The secretary also visited during the summer of 1889 the laboratory of Mr. Edison at Orange, N.J., to witness the operation of an electrical machine invented to purify and concentrate magnetic iron ores, the Sheffield Scientific School at Yale College, and several iron furnaces and mines in the vicinity of Port Henry on Lake Champlain.

A systematic, concise and lucid outline of the geology of Ontario, with special reference to its economic minerals, has been prepared by Dr. Bell, whose long connection with the Survey gave him special facilities for discharging the task. A sketch of the progress of mining operations and of mineral industries in the province shows that as early as the year 1822 the late Joseph Van Norman started a blast furnace in the County of Norfolk for the smelting of bog iron ore; that, a little later, another furnace was erected at Marmora, in the County of Hastings, but neither of these enterprises awakened much interest in mining affairs, and for twenty years there was an almost total cessation of activity in this field of industry. Attention having been directed by Mr. Douglas Houghton, State Geologist of Michigan, to the mineral resources of the upper

lake region, Mr. (afterwards Sir) W. E. Logan paid a visit in 1846 to the north shore of Lake Superior, and the Hon. John Prince, the pioneer in this enterprise, and some thirty others applied for licenses to explore the lands indicated as rich in minerals. That was in 1845 and in the following year the number of applicants increased to one hundred and thirty-three—a hundred for locations on Lake Superior and thirty-three for locations on Lake Huron. The records of the department show that from 1845 to the close of 1888 709,335 acres of public land were sold for mining purposes. For this the treasury received \$810,955, an average of 61½ cents per acre in the period before, and of \$1.35½ in the period since, Confederation.

Though the knowledge of the extent of its mineral resources is as yet imperfect, that Ontario contains great mineral wealth cannot be disputed and evidence on the subject is constantly accumulating. It is the only province of the Dominion that yields petroleum and salt. In the central and eastern counties are magnetic and hematitic iron ores, gold, galena, plumbago, arsenic, mica, fibrous serpentine, apatite, granite, marble and freestone. In the Sudbury district copper and nickel mines are being worked on a large scale. In the township of Denison rich specimens of gold-bearing quartz and extensive deposits of copper and nickel are found. Along the north shore of Lake Huron, from the mouth of the French river to Sault Ste. Marie, gold and silver-bearing veins, iron, copper, galena and immense quarries of marble have been discovered. North of the Height of Land and extending towards James Bay prospectors report a mineral region of various promise. North of Lake Superior locations of gold, silver, copper, iron, galena, plumbago and zinc ores have been taken up, besides which there are inexhaustible supplies of granite, marble, serpentine and sandstone. West of Port Arthur is a silver district which, judging from the explorations already made, promises to be an argentiferous region of great richness, and beyond it again are found veins of gold-bearing quartz and ranges of magnetic iron ore said to be extremely valuable.

But notwithstanding the extent and variety of these resources, the development of the mining industry in Ontario, as elsewhere in Canada, is deplorably slow. The value of the metallic and non-metallic mineral products of Canada for 1887 was \$11,896,793, whereas the value of the same class of products in the United States in that year was \$542,284,225, being nearly four times greater in the latter than in the former country per head of population. The increase in the world's production of iron from 1800 to 1888 has been nearly thirty-fold, it having grown from 825,000 tons in the former to 23,194,500 tons in the latter year. Of the product of 1888 Great Britain furnished 34 per cent. and the United States 28 per cent. The world's product of steel for the same year was 9,630,477 tons, and of this amount Great Britain furnished 35½ per cent. and the United States 30 per cent. Yet in the vast movement of industrial forces connected with the manufacture of iron and steel, over three-fifths of which centres in Great Britain and the United States, Canada has relatively an insignificant part, its total amount of wrought and puddled iron in the calendar year 1887 being only 31,501 tons and 7,326 tons, while its make of pig iron in the fiscal year 1888-9 was only 24,882 tons.