

Grand Lake, where the coal appears to have the greatest thickness, it has been mined for nearly a century. The main seam is 20 inches thick; but in places where two seams unite a thickness of two and one-half feet is observed. The annual output amounts to about 40,000 tons. Boring operations have been carried on throughout the coal basin for over sixty years without finding any seam better than this.

At various points in New Brunswick, outside the limits of the principal coal basin, small seams of coal are found, some of which belong to a different horizon. Among other sources of fuel supply in this Province must be mentioned the Albert shales and the associated mineral, Albertite. Rich beds of oil shale, styled Cannelite, also occur as interstratified beds in the mass of this shale. The Albert shale formation has a thickness of over 1,000 feet. The strata are usually highly inclined, and there are numerous faults and occasional overturns. The Albertite occurred in the mass of this shale near the axis of the anticline, as the filling of a true fissure having a width varying from a few inches at the ends to about seventeen feet in the centre, decreasing in depth to the bottom of the deposit about 1,500 feet from the surface. The vein showed several faults, the mineral being thrown from side to side. It was mined to a depth of over 1,200 feet, when it assumed a brecciated structure, fragments of shale being cemented by the Albertite. These shales are regarded as of Devonian age.

Massive bands of grey and black oil shale from three to twenty feet thick, interstratified with the bituminous shale, yield from thirty to eighty gallons of oil per ton. They are readily inflammable, and though the ash is very high (45 to 60 per cent.) they evolve a great heat. In case of extraction and in percentage of oil contained, these shales are superior to those mined in Scotland. The main vein was worked for twenty years. It yielded 204,000 tons before exhausted.

Comparing the beds of Cannelite with true cannel coals, it may be remarked that with the exception of the large amount of ash in the former there are strong points of resemblance. The associated Albertite is a highly altered petroleum, analysis showing the merest trace of ash.

Coal does not occur in Quebec in commercial quantities, but the development of the peat industry in this Province, as well as in Ontario, bids fair to furnish for certain purposes a fuel which will to some extent supply the absence of beds of true coal. The development of the peat bogs in the country between St. Johns and Farnham, and also near Bulstrode, Arthabaska County, was begun about forty years ago. Being uncompressed, the peat was not suitable for railway work. But now peat, after extraction of the contained moisture down to 12 or 15 per cent., is compressed into small cylindrical blocks having almost the hardness and consistency of coal. Peat bogs are extensively developed in many portions of the Province, and the manufacture of the compressed fuel has reached the stage where the demand exceeds the supply, and it readily sells at a good profit on the cost of manufacture.

In Ontario true coals are nowhere found; but deposits of anthracolite and lignite occur, the latter in large quantities in the area south of James Bay. This lignite of the Moose River basin is found in Post Tertiary deposits of sand gravel and boulder clay, instead of in solid rock formation, as is the case with the lignites of the west. The seams are of considerable thickness and the lignite when dry burns readily. It is of brownish-black color, and burns freely in an open fire. It cannot, how-

ever, compare with the Tertiary lignites of the west. The lignite and peat deposits have not as yet affected the importation of coal.

Petroleum was first discovered in Ontario in 1860. The subsequent finding of immense quantities of natural gas added largely to the light and fuel resources of the Province. The original field from which Ontario petroleum was first obtained is still a producer, though the supply in recent years has materially decreased. The discovery of natural gas about fifteen years ago in the place where petroleum was first known, and later in the Niagara Peninsula, has largely affected the coal consumption in some districts. Not only have local requirements been met, but immense quantities of gas have been piped to Buffalo and Detroit, on the American side.

In the western half of the Canadian section, beginning with the great plain of Manitoba and extending across to the shores of the Pacific ocean, many of the rocks over large areas comprise Cretaceous and Tertiary sediments. In these the greater part of the coals of the western division are located. In Manitoba and throughout the great plains east of the Rocky Mountains, and extending northward down the valley of the Mackenzie River to the Arctic Ocean, the rocks are largely of Cretaceous age. The district is underlaid in many places by large beds of lignite. Outcrops are seen as far east as Turtle Mountain in Manitoba; and along the North Saskatchewan as far as Victoria these lignites are seen, sometimes in beds of great thickness.

Passing west into the foothills of the Rockies, as at Banff and as far south as Crow's Nest Pass, the lignites change their character and pass into lignitic coals, bituminous coals and anthracites. Of this wonderful series of coal beds, which at Crow's Nest is 200 feet in thickness, many seams are large and of superior quality.

(To be Continued.)

The Hon. the Minister of Mines has authorized the preparation of a report on the mining and metallurgical industries in Canada, embodying the following information: Name of company, date of incorporation and charter, authorized capital, value of shares, directors and officers, head office, Canadian office, number of men employed, wages, transportation facilities, market and prices. The following additional information is sought regarding the mining industry: Mining land owned and controlled, class and character of ore mined, average quality of ore (analysis, method of mining, treatment of ore, if any cost, cost of mining, drilling, explosives, hoisting, transportation, general expenses), total cost per ton of ore raised. For the metallurgical industry the following information is asked: Location of plant, ore treated, quality of product, method of treatment, description of machinery and apparatus used, source of supply of raw material, composition of raw material, cost of production. It is proposed to report only upon producing mines, mines under development and established metallurgical plants. The present rapid progress in and the changing conditions regarding such factors as labor, market and prices will necessitate supplementary annual publications to bring the information of the original report up to date until the changes and new material call for the issuance of a complete new report.