

deeply gorged. The country is generally well wooded. Returning to Fort Pelly, Mr. Spencer proceeded to descend Swan River from the crossing to Swan Lake, a distance of 230 miles. In this distance were found 448 rapids. The average width of the river is 100 feet. For the last 85 miles it is free from rapids and navigable for boats drawing two feet of water. The country west of Swan Lake is low and generally wooded. Sander's River is a branch of Swan from the south, joining it about 50 miles from its mouth. The country is similar to the Swan River Valley. Pieces of lignite were found in the bed of the stream, and lignite is said to be found in beds from a half to two feet thick higher up the stream. Swan Lake is 30 miles long, receiving several smaller streams besides Swan River. The shores are low and swampy, and the lake very shallow, averaging about 6 feet. Shoal Lake is between Swan Lake and Lake Winnipegosis. It is from 2 to 4 feet deep, and 150 to 250 feet wide. The banks are low, and the current swift. Porcupine Mountain rises about 800 feet above Swan Lake. Between it and the lake are about 12 miles of low ground, muskegs, tamarac swamps, &c., and the rest of the interval is densely wooded. Balsam poplars, 6 feet in diameter, and spruce, 4 feet, are found on the slope of the Mountain. Lake Winnipegosis is 100 miles long, studded with islands and submerged reefs. The beaches of almost every island and point are made up of Laurentian boulders and fragments of Devonian limestone, overgrown with trees, behind which are swamps and small lakes. The north end of the lake is very low, and only a swamp, 3 to 5 miles across, intervenes between it and Cedar Lake. The highest elevation between these lakes is only 44 feet above the waters of either lake. Lake Winnipegosis is of considerable depth, the water clear and good, but from its sudden and frequent wind storms, navigation in small boats is unsafe. Water Hen River and Lake, both shallow and muddy, with extensive swamps around them, connect it with Lake Manitoba at a distance of 25 miles. Lake Manitoba is 130 miles long, a shallow, muddy lake, with many reefs and few good harbours. From Oak Point, on this lake to Winnipeg, the distance is 90 miles over open prairie, with here and there a grove of trees. Forty miles from Winnipeg on this route, is Shoal Lake, whose waters have no outlet, and are saline. In the neighborhood of the lakes the soil is mixed with much gravel, but about 20 miles from Winnipeg assumes the black loamy character. Clay iron stones are abundant in many places along Swan River, and in the Porcupine Mountains, one specimen yielded 12.30, and the other 18.70 per cent. The lignite on Sander's River gave—

50.00	of fixed carbon,
28.22	volatile matter,
4.15	ash,
18.63	hygroscopic matter.
100.00	

Beds of peat were found on Swan River, a few miles below the crossing. The salt springs at the south end of Lake Winnipegosis have been worked in a rude manner for a long time. It is of a light brown tint and coarse-grained.

Mr. James Richardson conducted the explorations in British Columbia. Two distinct areas were examined. The first, a number of channels, inlets and islands between Gardner Channel and the Stikkeen River, and the second, the S. E. portion of the Nanaimo coal basin, as well as detached portions of probably the same basin on the mainland and various islands. The shores of all the channels, sounds and passages examined, present nearly the same features. Around the shores on the lower parts of the mountains the rocks are overlaid by a thin layer of black vegetable soil, which supports a forest of white spruce, white pine and cedar, many of the trees, 2 to 3 feet at the base, and running up from 40 to 60 feet without a branch. At elevations of from 1,500 to 2,000 feet, the trees are stunted, and bare, rocky surfaces extend upwards to where they are covered by fields of ice and snow, from 3 to 7,000 feet above the water. Around Kitimat Inlet there are a few spots of level land, and a belt of level land extends along the Kitimat River. It is from 4 to 7 miles wide, and about thirty miles long, covered by a thick growth of white spruce and some hemlock.

At Belle-Belle, on Campbell Island, there are a few acres under cultivation, as also at Metiah Callah and Fort Simpson. Cabbages, onions, carrots and potatoes are grown with success, but it is said grain will not ripen for want of sunshine. The crystalline rocks present a wonderful uniformity in character, wherever examined through 7 degrees of latitude, from New Westminster to Fort Wrangel in Alaska, and through 6 degrees of longitude, from Vancouver to Cariboo and Tete Jante Cache. They are the gold-bearing rocks of B. Columbia, and will probably be found to contain other minerals. The work on the Nanaimo coal basin is not yet completed. Coal was observed on an island of the Sucin group on the beach at the entrance to Sooke harbour, on a small stream, 7 miles west of Sooke, and at English Bay near the entrance to Burrard Inlet.

Two boring parties were employed in the N. W. Territory, with a view to ascertain the eastern limit of the Cretaceous coal bearing rocks, and whether Artesian wells, affording good water, could be made on the prairies. These operations were carried on at Rat Creek, 66 miles west of Fort Garry, at Fort Ellice, and near Fort Pelly. The results, as far as the work has gone, lead to the conclusion that no difficulty will be found in obtaining a supply of water, and that coal is not likely to be found on the level country constituting the first prairie steppe.

SALT WORKS.

Mr. J. Lionel Smith, visited the Salt Works of Ontario. Only 3 wells have been sunk since 1868 that are productive, or in operation. The competition with English salt has been too great. Vessels are often laden with salt for ballast, and English salt can often be bought cheaper in Montreal than in Liverpool, but since 1870 there has been an annual displacement of English by Canadian salt. Canadian salt had also to compete with U. S. salt, admitted here duty free, while 68