

of territory rich in natural resources of various kinds. Northern British Columbia and the Yukon Territory contain, by careful estimate, sufficient arable land to support a million people by agriculture. The Alaskan Agricultural Bureau, after careful investigation, has reported that "the total tillable and pasture land of Alaska is estimated at 64,000,000 acres," and adds, "all the crops that can be raised in Sweden, Finland and the northern provinces of Russia—potatoes, root crops, barley, oats, carrots, beets, turnips and celery—can be raised there." The bureau also says that "there is more agricultural land in the Lanau Valley than is now under cultivation in the corresponding regions of Norway, Sweden, Finland and the four northern provinces of Russia." The mineral wealth of the whole region is enormous. This imperial area, which is almost equally divided between Canada and the United States, is at present absolutely cut off from land communication with existing railway systems, and can only be reached by a sea voyage of several days' duration, which militates very greatly against its development. There are already between five hundred and six hundred miles of railway, either constructed or in the course of construction, in this great and only meagrely exploited region.

**Montreal, Que.**—The financial stringency will have little effect, it is expected, on the city's programme of public works for the summer. No attempt has yet been made to raise the new \$13,000,000 permanent loan, for which authority was secured some time ago. The city is not now in actual need of the money, and to place a new loan on the market at a time when it is not likely to meet with success, would, it is felt, only damage the city's credit unnecessarily. "We shall have no difficulty in raising any money we may need on temporary loans," J. Pelletier, City Comptroller and Auditor, said recently, "and then when the market improves we can float a permanent loan and pay off the temporary ones. We have not enough money actually in hand to meet the year's programme, because we naturally borrow money as we need it to save the interest. Besides, it is impossible to say beforehand how much of the work will be done. A few week's rain, for instance, might interfere with the programme very materially. But there is no danger of work being held up for lack of funds, so far as Montreal is concerned. We can always secure all we need on temporary loans." The city, however generously inclined, it was stated by a city official, has no authority to give financial assistance to outside municipalities, where work has had to cease for lack of money.

**Montreal, Que.**—The duties of a road engineer in Montreal are no sinecure—according to John R. Barlow, the city road surveyor. Montreal, according to Mr. Barlow, is built on a strange geological formation and is subjected to extraordinary climatic conditions which make the construction of roads very difficult. "Running right under the city," he said, "are great belts of blue clay and quicksand. During prolonged rains, these belts expand forcing the surrounding earth outwards. When the hot weather comes, they contract and there is a subsidence of the surrounding earth. If this occurs under a roadway, it does not take an expert to see what will happen. Every street in Montreal has to be built according to its own peculiar conditions. Permanent paving is to my mind the only solution of the street problem in Montreal. There should be a good foundation of concrete to prevent the roadway from sinking. Just to illustrate our difficulties. We sometimes find in repairing a permanent pavement, that the earth underneath the concrete bed has been completely washed away, leaving a concrete

bridge from side to side of the street, and this has to support the full weight of the traffic. The macadamized road cannot last long in Montreal. You may build a road as well as you like, but if you have a keen winter the frost will sink into it as much as six feet and when that frost comes out in spring it will break up the road. There has been some criticism lately with regard to the stone we use on our macadamized roads. We are charged with wasting money on limestone. As a matter of fact we have never used limestone, except perhaps on a back street or two near a quarry. The greater part of the stone we use is scissel, which has a closer grain even than granite and has been pronounced by experts to be one of the best macadamizing stones on the continent.

**Quebec, Que.**—The necessity of completing the work of dredging the north channel of the St. Lawrence below Quebec as soon as possible is receiving the attention of the Marine Department. For this purpose in a very short time an additional dredge, one of the largest in the world, which will be capable of discharging into barges or its own hoppers will be put into commission. The work will thus be completed in a shorter time. Representations for the early completion of the work have been made by the Quebec board of trade on the ground that as new and larger vessels are being continually added to the St. Lawrence route the north channel should be finished. In order to obtain a 35-foot channel at extreme low tide with a width of 1,000 feet by way of the north channel below Quebec from St. Jean Island of Orleans to Goose Cape, 18,000,000 cubic yards of material will have to be removed. Of this amount 3,000,000 cubic yards have been dredged up to date. With the new plant it is expected that all the work will be concluded in four more years. The completion of the dredging of the north channel will greatly enhance the value of the St. Lawrence route for it is much superior to the south channel. With the proposed aids to navigation the north channel will be easier to navigate than the south. It will have a very short length of 35 feet and will not require buoys and lightships as the present long and tortuous channel. It will also be easy to navigate in the winter months.

**Ottawa, Ont.**—Fairly satisfactory is the way Mr. Joseph Race, city bacteriologist, sums up the results of the tests made of the city water during June. During the month 904 samples were examined, this number being made up as follows: Water city supply, 187; wells, general, 72; well, Ottawa Dairy Co., 19; water from carts, 14; water, miscellaneous, 15; milk, 462; cream, 6; hypochlorites, 120; sputum, 5; diphtheric swabs, 4; total, 904. The bacterial contents of the ward samples of water has been above the average during the past month but it is now again normal. No adequate reason can be found for this. The city samples, on the whole, have been fairly satisfactory. The only change made during the month as to hypochlorite was to increase the amount added at Queen Street from 100 to 150 lbs. per day. The private wells examined during the month have generally shown a marked increase in quality but a number of those previously reported as contaminated still contain organisms indicative of past pollution. In connection with the bacteriological examination of well water or any description of water, Mr. Race points out that the tests employed in the direction of the detection of organisms of farcal or escremental origin and that the presence of such organisms does not necessarily imply that the sample containing them is injurious to health. If the organisms are derived from a healthy person or animal no ill effects would be observed, but if the sewage is that of a person suffering from typhoid