

## New Votes for New Brunswick.

International, of New Brunswick, extension to St. John river, between Grand Falls and Edmundston, thirty-three miles.

Beersville Coal and Railway, from Adamsville to Beersville, seven miles.

York and Carleton, extension westerly, five miles.

## New Votes for Nova Scotia.

Mabou and Gulf, from the mines to I.C.R., four miles.

Nova Scotia Eastern, from Dartmouth to Musquodoboit Valley, one hundred and twenty miles.

Midland, from Truro, N.S., to Brule, thirty-two miles.

St. Peter's to Louisburg, N.S., fifty miles.

Halifax and South Western, line to Barrington Passage, thirty-nine miles.

## New Votes for the West.

Kootenay Central, from Golden to international boundary, one hundred and six miles.

Kettle River Valley, from Grand Forks up Kettle river, fifty miles; from Wellington to Union Bay, B.C., fifty-five miles; from Midway to Vernon, B.C., one hundred and fifty miles.

St. Mary's River Railway, Spring Coulee to Cardstown, and also to Irrigation Canal, thirty-two miles.

Dawson City to Stewart River, eighty-four miles.

C.P.R. for a branch from Elkhorn to Pheasant Hills, one hundred and thirty-six miles; from Medicine Hat to the new coal fields, eight miles.

## Aid Towards Bridges.

Subsidies are also granted to the following bridges: Bridge over Nicolet river, at Nicolet, \$15,000; bridge over the St. Francis river, in Yamaska County, \$50,000. To the Canadian Bridge Company, of Walkerville, to improve bridge over the St. Francis river, on the South Shore Railway, \$35,000; to the Chateauguay and Northern Railway Co., for bridge at Bout de L'Isle, \$50,000.

By provinces, the figures are thus apportioned:

Renewals—Ontario, 171 miles; Quebec, 332 miles; New Brunswick, 195 miles; Nova Scotia, 401½ miles; British Columbia, 45 miles; Manitoba, 35 miles; Northwest Territories, 50 miles.

New Subsidies—Ontario, 632 miles; Quebec, 1,005 miles; New Brunswick, 49 miles; Nova Scotia, 243 miles; British Columbia, 361 miles; Manitoba, 32 miles; Yukon, 84 miles; Northwest Territories, 144 miles.

Totals—Ontario, \$2,569,600; Quebec, \$4,278,400; New Brunswick, \$780,800; Nova Scotia, \$2,060,800; British Columbia, \$1,299,200; Manitoba, \$214,400; Northwest Territories, \$620,800; Yukon, \$268,800; total, \$12,092,800.

Bridges, \$150,000.

Grand total, \$12,242,800.

The conditions upon which the subsidies are voted are much the same as in the past, but a new clause provides that the Governor-in-Council may make it a condition that the company shall lay its road with new steel rails made in Canada, if they are procurable in Canada, of suitable quality upon terms as favorable as other rails can be obtained, of which the Minister of Railways shall be the judge.

## NEW YORK STATE CANALS.

On the 3rd November, the question of constructing a 12-ft. canal to accommodate 1,000-ton barges will be decided by the voters of New York State. The proposal includes the deepening of the Erie Canal to the Hudson, with branches to Lake Champlain and Lake Ontario, and the cost is estimated at \$101,000,000. In order to lay before the voters facts and opinions on which to arrive at an unbiased conclusion, the Engineering News, of New York, has published a symposium of opinions from eminent engineers, who have made a study of transportation questions, and who are not officially connected with the State canals, or with the trunk line railways. The great majority of the replies were against

a 12-ft. canal, but in favor of a deep waterway of such a size as would accommodate steamers that would go direct from the Great Lakes to the Atlantic seaboard, thus avoiding the cost of transshipping. Some of the authorities thought the proposed 12-ft. canal would be too expensive for local purposes, and too small for interstate transportation. Gardner S. Williams, of Cornell University, in his letter, referred to the plans by which Canada would have a 22-ft. canal from Georgian Bay to Montreal, which would enable a cargo to reach Montreal from Duluth in a space of time greater by only a day than would be required for the same cargo to reach Buffalo from Duluth. This would divert the traffic from New York to Canadian and New England ports. The opinions of the experts were, however, not unanimous, and among those in favor of the canal was W. T. Jennings, C.E., Toronto, past president of the Canadian Society of Civil Engineers, and a member of the Institution of Civil Engineers of Great Britain and of the American Society of Civil Engineers. Mr. Jennings thought the 12-ft. canal would be a benefit not only to New York City and the interior states, but to the local towns along the route. At the same time he gave his opinion that a grain route from the West through Lakes Superior and Huron thence by rail or ship to Montreal could be constructed to do grain carrying on a large scale, and at perhaps less expense than by any route to New York. He also thought that the Welland Canal and St. Lawrence route could be remodelled to do the work in the same economical way.

A surprising judgment just rendered by the United States Supreme Court declaring the Erie Canal to be a federal work, though built by the State, will no doubt affect the vote on the 3rd.

## DRYING COAL.

The very successful application of coal-dust firing to the burning of cement in rotary kilns and the extensive use that this system is now finding in the American cement industry direct attention, says the Engineering and Mining Journal, to the means for pulverizing the coal to the required degree of fineness. In order to pulverize coal economically and satisfactorily, it should not contain more than 1 per cent. moisture. The pulverizing capacity of a mill is nearly twice greater with coal containing only 1 per cent. moisture than with coal containing 2 per cent. This subject was discussed by C. O. Bartlett in a paper read at the recent meeting of the American Mining Congress at Deadwood, S.D. The moisture must be expelled from the coal without causing the coal to lose any of its volatile combustible. Two lots of coal will rarely dry alike, some coals giving up their moisture easily and freely, and others with difficulty. It appears that coals in which the ash is composed largely of silica dry easily and thoroughly, while those of which the ash is high in lime or clay are difficult to dry. It is very important to handle the coal in such way that warm air in large quantity be brought in contact with every particle of it, which is best accomplished by passing the current of air from the dried material through that which is wet. It is never safe to pass the fire-gases through the drying coal. The ignition temperature of coals is variable, as is also the temperature at which they will give off their volatile combustible. In general, coal can be safely delivered from the dryer at about 150 deg. F. without loss of gas. At 225 deg. F. there is likely to be a small loss of gas, and that temperature cannot be recommended as good practice. It is necessary to use a fan blast to produce a sufficient current of air to carry off the moisture. This will carry off 3 to 5 per cent. of coal dust, which should be saved by passing the current into a brick-dust settling chamber, the walls of which will retain sufficient heat to prevent the moisture from condensing.

R. Dobie, mechanical superintendent of the Canadian General Electric Company, Montreal factory, has been appointed to a similar position at the Peterboro factory. Before leaving he was presented with a travelling case.