THE

Railway and Shipping World

With which is incorporated The Western World. Established 1890.

Devoted to Steam & Electric Railway, Shipping, Express, Telegraph & Telephone Interests.

OLD SERIES, NO. 113. NEW SERIES, NO. 31. | TORONTO, CANADA, SEPTEMBER, 1900. | 10 CENTS A COPY. $1 A YEAR.

THE CANADIAN PACIFIC RAILWAY.

From Laggan to Revelstoke, British Columbia.

By William S. Vaux, Junr.

It is to one of the most difficult sections on the road to construct & maintain, lying between Laggan & Revelstoke in B.C., & embracing a mileage of but 147 miles, that I wish to draw your attention in this paper, & to explain some of the features of operation which must appeal to every traveller over the line.

The Rocky Mountain system, as it stretches northward, converges & contracts, until in B.C. it exceeds but little a breadth of 500 miles, being composed of four principal ranges—the Rocky, the Selkirk, the Gold & the Coast. In the construction of the railway it became necessary to cross all four of these ranges. The canyon of the Frazer River where it crosses the Coast Range being used by the railway, a high pass was not necessary at that point, but the other ranges, being greater in altitude & more continuous, required heavy grades & passes in valleys several thousand feet above sea level. A number of routes were surveyed, it being desired to keep at least 100 miles from the International Boundary, & as far south as possible, in order to avoid the severe winters of the far north, & at no place to exceed a grade of 1%. After crossing a wide expanse of prairie the eastern slope of the Rocky Mountain range is ascended without difficulty through the comparatively level valley of the Bow River, almost to its source. The height of land is reached in a narrow valley, 5,296 ft. above sea level, on each side of which great snow-capped mountains stand as sentinels. At no point does the grade exceed 1%, the limit prescribed by the Government in its agreement permitting the construction of the road.

While the actual summit is at Stephen, the nominal one is at Laggan, a divisional point on the railway. Here engines are changed, & the whole train is given a thorough inspection before descending the steep grade of the Kicking Horse Pass. Once over the summit, there is a short space of comparative level, and then the increased grade of 4.4% is reached, down which the train is allowed to move at a very slow rate. Brakemen are stationed at ever platform, & it is amusing to see them at times jump from the cars & run alongside to watch the working of the brakes. Engines specially designed for the heavy grades are used between Field & Hector, & it is not at all uncommon for four of these to be required to take the east-bound express to the summit of the pass. This particular part of the road, nine miles in length, was constructed as a "temporary line" of much steeper grade than that allowed by the Government. The contract route lies upon the almost perpendicular sides of Mt. Stephen to the left, & would involve extensive tunnelling, as well as passing directly beneath the forefoot of a glacier on this stupendous mountain, from which at times great masses of ice fall to the valley below. At intervals on the grade are located blind sidings running up the mountain-side at a steep grade. The switches of these sidings are tended by watchmen, who, on the signal of the engineer, throw the switches & allow the train to pass, when they are again opened. By this means a runaway car would be diverted from the main track before it had gone a sufficient distance to do serious damage.

The snowfall in this pass is heavy, but does not give the trouble experienced in the Selkirk range to the west. One reason for this is the absence of snow-slides across the track, & while the falls at times are very heavy, they can be readily handled by the plows & scrapers. Some extracts from the record of the watchman at Hector Station may be of interest as giving an idea of the amount of snow expected during the winter months. While snow sometimes falls in every month in the year, the records usually begin about the first of November & end the middle of March, the average for this period for the past five years being 27 ft. 4 ins. On Aug. 15, 1890, during a heavy snowstorm that extended over this entire region, 12 ins. of snow fell at Hector. During the winter of 1897-98 the snowfall was 41 ft., while in 1898-99 but 23 ft. fell. It is an interesting fact that when the fall in the Rockies is heavy, the fall in the Selkirks is often light, & vice versa. The amount of snow that may fall in a very short time is sometimes almost incredible, & it is not unknown for 100 ins. to be recorded in two weeks, while in a single week 57 ins. have been observed. (See figure 3, page 261.)

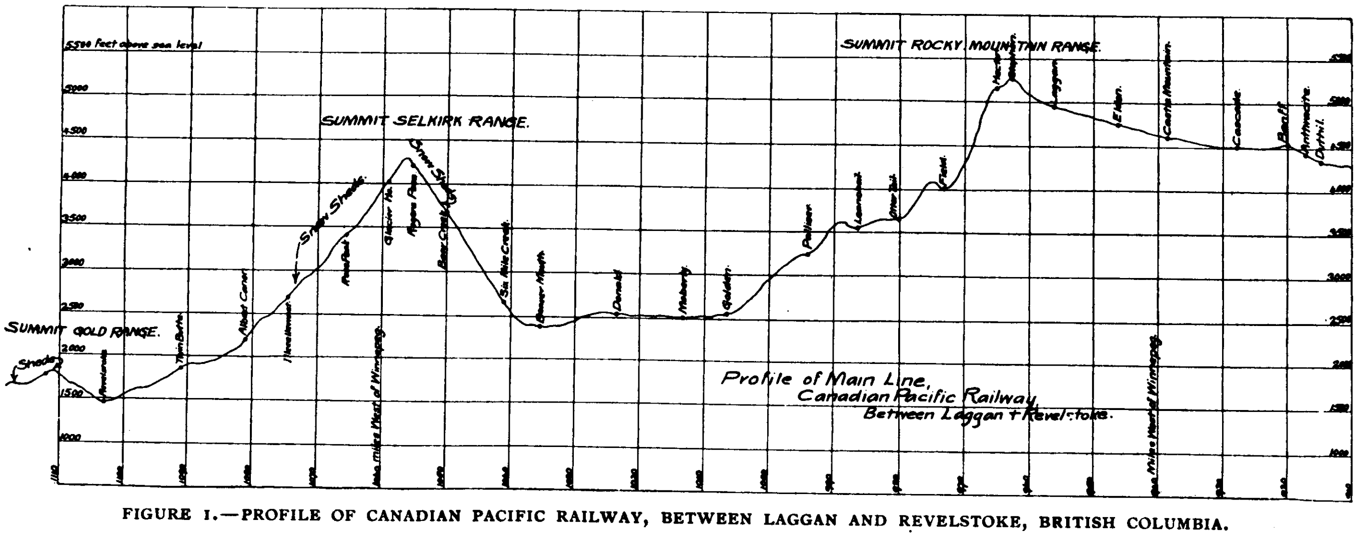

FIGURE 1.—PROFILE OF CANADIAN PACIFIC RAILWAY, BETWEEN LAGGAN AND REVELSTOKE, BRITISH COLUMBIA.

Field, at the foot of the pass, is situated by the side of the Kicking Horse River, which is here a broad, muddy stream occupying but a fraction of its bed. The pass & river, like many other localities of the neighborhood, take their name from a peculiar incident. When Dr. James Hector, a member of the Palliser expedition, traversed the pass in 1858, he was so unfortunate as to be kicked in the chest by his riding horse while trying to catch a pack animal that had escaped. Being partly disabled, the party was obliged to camp for a number of days to await his recovery, & Kicking Horse was adopted as the name of the river & pass where the accident occurred.

After leaving Field several small ascents are encountered, but the general grade is downward until the lower canyon of the Kicking Horse is reached. Hemmed in on both sides by very steep rocky sides, there often is little room left for the railway beside the river, & it is forced to cross & recross on wooden Howe truss bridges, which will soon be sup-