

Kaslo and Slocan.—Col. N. W. Brayton, of Kaslo, B.C., announces that 12 miles of line from Crawford Bay will be built this fall. The Co. has a charter to build 76 miles from Crawford Bay, on Kootenay Lake, to Fort Steele.

The Kettle River Valley Ry. Co., which was incorporated at the last session of the Dominion Parliament, is being organized by the same persons who are constructing the Grand Forks-Republic line. Surveys will be made on the lines authorized by this act this year, but it is not expected that construction will be commenced before next spring. (May, pg. 155; this issue, pg. 227.)

The Kingston & Pembroke Ry. is said to be contemplating an extension of its line from Sharbot Lake, 40 miles, to Palmer's Rapids, to open up the townships of Olden, Palmerston, North and South Canonto, Clarendon, Miller, Denbeigh and Ashley, in the county of Peterborough. A route through this country was granted a Dominion bonus in favor of the Brockville, Westport & Sault Ste. Marie Ry., but it was not taken advantage of. (June, pg. 174.)

Kootenay Railway & Navigation Co.—The recently completed Bedlington & Nelson Ry. extends from Kuskonook wharf, on Kootenay Lake, to the International boundary at Bedlington, connecting with the Kootenai Valley Ry., running to Bonner's Ferry, Idaho, 25.56 miles, where it connects with the Great Northern Ry. (U.S.A.) The B. & N. Ry. has a total length of 15.49 miles, and has running powers over 8.49 miles of line owned by the B.C. Southern Ry., and operated by the C.P.R. as part of the Crow's Nest Pass line. The B.C. and U.S. sections of the line were constructed under local charters by the Kootenay Ry. & Navigation Co., which has been absorbed by the Great Northern Ry. (U.S.A.)

The maximum grade is 0.80 per 100, excepting a gain of 500 ft. of 1 per 100 on tangent. The sharpest curve up the maximum grade is 4 degrees. The distance on curves of various denominations is: Under 6 degrees, 3.58 miles; over 6 degrees, 4.19 miles; total on curvatures, 7.77 miles; total distance, 15.49 miles; total on tangent, 7.72 miles, or practically 50% of the line in B.C. on curvature. The sharpest curve used is 10 degrees, excepting 300 feet of an 11 degree. The road-bed in the cuttings has been constructed to a uniform width of 20 ft., and on all the embankments is in no case less than 14 feet, and for the most part exceeds that width. Ballast is dressed flat to rail surface of tie and extends 8 ins. beyond either end, from this sloping $1\frac{1}{2}$ to 1 to foundation level or sub-grade. Height of tie is generally 12 ins. above sub-grade. Rock cuts have been excavated to a depth of 6 ins. below foundation level. The general depth of ballast under tie is placed at 6 ins., but this has been greatly exceeded over the greater part of the line. "A good deal of ingenuity," says H. P. Bell, who inspected the line for the B. C. Government, in his report on the line, "has been exercised in regulating and protecting channels in rapid waters. Structure no. 1, counting south from Kuskonook, has been built with the lower sills placed upon raised pediments of stone, has a wide, rough, stone invert with an overflow below to stop the velocity of the water and a training wall upon the north side for some hundreds of feet in length, to prevent high water from finding its way into adjacent hollows on the up stream side of embankment. Altogether it is an effective, economical and ingenious piece of work."

The total length of bridging is 3,680 ft., of which 3,232 ft. is on piled trestles and 448 ft. is on framed trestles; all are 16 ft. centres, and the highest bridge is 36 ft.

The ties are of a high standard, the local

timber insuring this, and are 8 ft. in length, 6 in. thick, with a minimum face of 6 in. They are placed 2,640 to the mile. The rails are 60 lbs. to the yard, fastened by suspended joints of double angle bars with 4 bolts. Besides the 60 lbs. steel, the Co. has laid about 4,000 ft. on tangent in Goat River bottom, of second-hand rails weighing 56 lbs. per yard, fastened with $1\frac{1}{4}$ lb. angle bars and 4 bolts. The Co. proposes at once to put on pressed steel track braces accurately fitting the section of rail, and fastened to tie by three spikes. Three braces to each rail to be fixed to a 6 and 7 degree curve, and 4, 5, and 6 braces to each rail on an 8, 9, or 10 degree curve, respectively. Split or point switches, working through iron switch stands having high vanes are used on the main line and stub switches on sidings. The switches, Mr. Bell points out in his report, are an excellent article, of the European fast-travel pattern, the character of which has been proved by use over a long period of time. The switch rail is bent for 10 ft. to 12 ft. back from the point for half the width of its lead, the effect of which, when put in the planing machine is to make a pointed switch with a truly straight entrance from toe to heel upon the gauge side of the rail. The frogs, which are no. 9, on both main line and sidings, are well made and appear to answer all purposes.

The signal apparatus at the junction of the B. and N. with the Crow's Nest Pass line, was installed under instructions from the Dominion Department of Railways. It consists of a tower, in which is placed, besides the ordinary telegraph apparatus connected with both lines of railway, nine levers, which work three switches and seven signals. The signals are: 2 distant, 1,750 ft. from tower, and 2 home, 550 ft. from tower; there being placed one of each upon either line of railway approaching the point of junction. Fifty feet towards the tower from the home signal on both approach-

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