and a knowledge of the country. No attempt was made to contour the hills. The sections, therefore, in these two sheets are not grades for the railway, but of the ground passed over by the straight lines. With the exception of the immediate banks of the St. Lawrence, this is expected to prove one of the easiest portions of the line.

When the line reaches the mouth of Eel River, it cannot proceed direct on to Dalhousie, but must turn up the valley of that river.

Two courses are afterwards open to it, one to turn off through a valley, by which it can soon gain the Restigouche, the other to proceed on to the head waters of Eel River, and then turn down to that river. Which is the best of these two routes can be better determined when the detailed surveys of the route are made.

The most formidable point of the line is next to be mentioned,—this is the passage up the Metapediac valley.

The hills on both sides are high and steep, and come down either on one side or the other, pretty close to the river's bank, and involves the necessity (in order to avoid curves of very small radius) of changing frequently from one side to the other. The rock, too, is slaty and hard. From this cause, 20 miles of this valley will prove expensive, but the grades will be very easy.

About fourteen bridges of an average length of 120 to 150 yards will be required up this valley. There is also a bridge of 2000 feet long, mentioned in the detailed report as necessary to cross the Miramichi River.

But bridging in this country is not the same formidable affair that it is in England. The rivers are nearly plways shallow, and the materials wood and stone, are close at hand.

The bridges in the United States, on the best lines, are built of wood on the trusswork principle, with stone piers and abutments.

On the Boston and Albany lines, and on many others in the New England States, the bridge generally used and approved of is known as "Howe's Patent Truss Bridge."

The cost of this kind of bridge, as furnished by the parties who have purchased the patent is as follows:

			Dollars.						£	s.	d.	
For spans	of 60	feet,	single	track,	11	per fe	oot.	=	2	5	10	Sterling.
	100	feet	77		18	* ??	•		3	15	0	"
	140	fect	,,		21	21	2		4	7	6	77
	180	feet			27	27			5	12	6	27
	200	feet	22		30	,,			6	5	0	77

The cost for double track would be about 55 per cent. additional.

The price includes the whole of the superstructure ready for the rails, but not the piers and abutments.

The bridge over the Connecticut River at Springfield, is built on this principle; it has seven spans of 180 feet each, and the sill of the bridge is 30 feet above low water. On other lines the same kind of bridge is used, but no ironwork is permitted (the unequal expansion and contraction of this metal is objected to), and the addition of an arch is introduced.

A bridge built on this principle on the Reading Railroad, 1800 feet long, cost 40,-000 dollars, equivalent to £8,330 sterling.

Soon after passing the valley of the Metapediae, the great obstacle of the St. Lawrence chain of mountains is got over, and the line may range away towards Quebec. Having, however, occasionally a river or a ravine to cross, whose passage requires consideration.

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