

abutments the approaches would be in constant danger of being washed away. There is therefore no alternative line of crossing, and the only protection I can see is to have the spans as wide and as high as the circumstances of the case will admit.

This river, unlike that of the Kowhai, is in no way connected with the seaward Kaikoura Range, but takes its rise from among a group of low hills covered with timber and contiguous to the sea: hence the absence of any "periodical" floods caused by the melting of the snow on the high ranges. There has been no flood in the river for over twelve months, nor does every flood bring down timber with it. The rains therefore being entirely local that affect the river, there would be no difficulty in anticipating a flood, which, on that account, would enable the bridge to be closely watched at the time. There would be no difficulty in protecting the piers from the floating timber, and the height of the bridge will probably not have to exceed that shown upon the trial section.

The remaining $2\frac{1}{2}$ miles are comparatively easy. The only place of any importance is at 23 miles 50 chains, where the line crosses for a short distance over a rather high spur.

An alternative line was surveyed around the end of the spur (as shown upon the plan) which gives a better section, but, as the cutting through the spur is but short, I think it would be scarcely worth while to divert the course of the line for that purpose, as the difference in distance would entail other expenses, that would, in amount, equal if not exceed the first cost of cutting through the hill. This survey, as will be seen by the plan, ends on a terrace at the beach, around which the course of the line will be continued.

Lengths of principal Bridging.

Rivers.						Ch.	lk.
Conway ...	...	...	...	...	...	7	0
Charwell ...	...	...	...	...	...	5	50
Kahautara ...	...	...	...	...	...	10	50
Big Linton ...	...	...	...	...	...	10	0
Cribb Creek...	...	...	...	...	...	13	50
Kowhai ...	...	...	...	...	...	18	0
Hapuka ...	...	...	...	...	...	17	0
	Total	...	...	...	...	81	50

I have, &c.,

THOMAS M. FOY,

Resident Engineer

By Authority: GEORGE DIDSBURX, Government Printer, Wellington.—1878.