

EXHIBIT M.

TABULATION OF VARIOUS PARTICULARS OF ALPINE AND OTHER LONG RAILWAY TUNNELS.

[Handed in by Mr. Murdoch McLean.]

Name	Place	Date	Double or Single	Length in Miles	Time occupied (Years)	Approximate Number of Cubic-Yards Excavation per Yard Run, or Area in Square Yards	Material penetrated.	Actual Wages of Common Labourer per Day.	Per Yard Run of Completed Tunnel.			Authority.
									A. Actual Cost.	B. Estimated Cost if Tunnel had been same size as Ostra.	C. Estimated Cost if Tunnel same Size as Ostra and at Ostra Wages.	
Mont Cenis	European Alps	1875	D.	7.5	13	72	Schist	2s.	£ 213	£ 118	£ 275	Encyclopædia Britannica; Simm's "Tunnelling"; Engineering-Contracting, 10/5/1911-19/7/1911.
St. Gothard	"	1881	D.	9.0	7½	72	Gneiss, granite, schist	Allow 2s. 6d.	142	76	152	
Arlberg	"	After St. Gothard	D.	6.5	3½	72	"	" 3s. 4d.	95	48	80	
Simplon*	"	About 1906	Twin	12.4	6½	40 each	Gneiss, mica-schist, limestone	" 3s. 4d.	74 each	61 each	102 each	Encyclopædia Britannica.
Loetschberg†	"	1906-11	D.	9.0	5½	...	Granite, gneiss, limestone	Actual 3s. 4d.	...	...	...	Engineering News, 5/1/1911; Engineering Record, 17/12/1910; Engineering Contracts, 10/5/1911-19/7/1911.
Wochein	Austrian Alps	1901	D.	3.9	3½	72	Limestone, schist, slate	Allow 3s. 4d.	115	60	100	Engineering-Contracting, 4/1/1911-10/5/1911.
Karawanken	"	to 1910	D.	4.9	...	72	Limestone, schist	" 3s. 4d.	170	92	154	
Tauern	"	1910	D.	5.3	6	72	Granite, gneiss	" 3s. 4d.	140	75	125	
Bosruck	"	1876	S.	3.0	5	40	Limestone with water	" 3s. 4d.	73	60	100	Drinker's "Tunnelling."
Hoosac	United States	1876	D.	4.7	...	72	Mica-schist, and rotten rock	7s.	239	...	...
Lyttelton	New Zealand	...	S.	1.6	...	...	Very hard sandstone to shaley slate	8s.	68	...	...	Contract 61
Otura	"	1912	S.	5.3	...	34		10s.				

* The Simplon Tunnel consists of a pair of single-track tunnels side by side.

† The Loetschberg Tunnel was estimated in 1899 by the consulting engineers, for single track: A, £66; B, £54; C, £90 (Engineering-Contracting, 19/7/11).