

On the eastern side of the main range the area simply includes the Waimakariri watershed down to the plains. It is a moot question as to what is the southern boundary on the western side, for there is no break in the general character of the country. The land was temporarily reserved from sale down to the Waiho, sixty miles south of Hokitika. I think, however, that this is too far away, so I have fixed the limit at the Poerua, thirty-five miles south of Hokitika. The eastern boundary follows the main range to Mount Franklyn, then strikes north-east to the ocean, along the watershed between the Awatere and Wairau Rivers. The northern boundary runs up the Little Wanganui to its source, then follows the watershed between the Motueka and Takaka Rivers to Mount Richards, where it strikes direct east to the sea. In the extreme north-east the area affected by the railway is assumed to terminate about midway down the Sounds.

The total area of the country that will be benefited by the proposed railways, and within the boundaries above described, is about 10,550 square miles, or 7,750,000 acres. The following table shows the general character of the country, the figures being of course approximate:—

				Open.	Bush.	Total.
				Acres.	Acres.	Acres.
Arable flat lands	...	...	...	298,700	663,000	961,700
Arable hilly lands	...	...	...	237,800	292,800	530,600
Open pastoral lands	...	...	...	1,220,500	...	1,220,500
Mountainous bush lands	...	...	...	...	2,968,700	2,968,700
Mountain-tops and other rough country of little value	...	...	...	964,000	...	964,000
Lakes, river-beds, and other waste lands	...	...	...	105,000	...	105,000
Totals	...	...	...	2,826,000	3,924,500	6,750,500

Topography.—The main range of mountains which divides the Middle Island longitudinally extends in one unbroken chain from Otago to Nelson. The range is comparatively narrow and compact between Canterbury and Westland, but in Otago and Nelson it has numerous branch-ranges running in all directions to the sea. There is, however, one well-defined and tolerably straight backbone, parallel with the West Coast, all the way from the Haast Pass to Tophouse. These two places are respectively 1,847ft. and 2,395ft. high; but there is no other pass in the whole distance of about 240 miles that is lower than 2,870ft., and all the principal passes are within 400ft. of the same level. At Arthur's Pass—the route adopted for the East and West Coast Railway—the line crosses the range at an altitude of 2,530ft., and the lowest elevation on any of the surveyed lines—that by the Hurunui—is 2,360ft.

The portion of the main range between Canterbury and Westland has few long spurs, but there is a subsidiary range on the eastern side running parallel with the main one. It extends from the Mackenzie country to the Amuri, and all the main-range rivers run through it in precipitous gorges. There is a similar subsidiary range for a short distance on the western side—the Victoria and Brunner Mountains. It forms the watershed between the Maruia and Inangahua Rivers, and extends from the Grey to the Buller. There is also a second subsidiary range near the coast between these rivers—the Paparoa Mountains. The Maruia Plain lies between the main range and the Victoria and Brunner Mountains; and the flat country about Reefton occupies the space between the latter and the Paparoa Range. South of the Grey right down to Okarito there is no subsidiary range nor long spurs: the slopes of the main range run sharply down to the low country in a line approximately parallel with the coast.

The watershed between the Awatere and the Wairau—the boundary of the country affected by the railways—is a branch range leaving the backbone near its northern end. The main range as such terminates at Tophouse, but is continued in two principal branches: one runs north-east to the Sounds between the Wairau Valley and Tasman Bay; and the other, turning sharply westward, is lost in the mass of mountains north of the Buller. The first of these branches has a long spur, the Spooner Range, which forms the watershed between the Motueka and the Waimea Rivers. It is an insignificant feature in the topography of the country, but is important in this connection, as it determines the route of the railway from Belgrove to the Buller Valley.

The main range between Canterbury and Westland is only about twenty-five miles from the west coast, whereas it is about seventy-five miles from the sea on the opposite side. In this and the absence of lateral spurs lie the difficulty of taking a railway across the Middle Island. It is quite easy to get good gradients on the eastern side on any of the surveyed routes; but the western slope is too steep to admit of flat gradients without heavy works.

The country between the two ranges on the Canterbury side is open, but considerably broken up by hills and deep ravines. On the western side there is a long strip of low, flat country all along the coast, from the Poerua to Greymouth, and continuing up the Grey and down the Inangahua to the Buller. The strip is about 120 miles long, and varies in width from 5 to 20 miles. The country is generally flat, but interspersed with a few isolated mountains and a considerable extent of hilly land. So easy, however, is it that a railway could probably be taken all the way with not more than 30 chains of tunnelling.

There is another run of low country back from the coast, between the Teremakau and Buller, close to the main range. It goes through by the Brunner and Haupiri Lakes, and the Nancy and Mary Rivers, to the Maruia Valley; thence by the Warwick to the Matakītaki, and down that river to the Buller; also across by Lake Rotoroa to Tophouse.