Water-power available for Electrical Purposes in Westland.

["Heads of water = lowest quantity running during year.]

No.	Locality.	Heads of Water.	Height in Feet.	Nearest Town.	Direct Distance from nearest Town.	Horse-power.
					M.	
1	Coal Creek	6	35	Greymouth ...	5	19
2	Upper Ahaura Valley	6	370	Ahaura ...	18	202
3	Lake Brunner (Mitchell's)	4	80	Kumara ...	15	29
4	Lake Brunner	8	100	" ...	11	73
5	Poerua	6	72	" ...	18	39
6	Upper Teremakau Valley	5	100	" ...	27	45
7	Jackson's...	7	67	" ...	21	42
8	Inchbonnie	9	160	" ...	13	131
9	Taipo	6	70	" ...	12	38
10	Otira (Barrack Creek)	10	210	Otira ...	0½	191
11	Otira (Wesley's Creek)	9	140	" ...	2	114
12	Lake Kanieri (Dorothy Falls) ...	7	70	Hokitika ...	14	45
13	Hokitika River (Doctor's Creek) ...	12	40	Ross ...	8	44
14	Hokitika River	12	25	" ...	9	27
15	Upper Hokitika	6	60	" ...	11	33
16	Upper Mikonui	6	150	" ...	7	82
17	Tuke River, Mikonui Valley... ...	27	90	" ...	9	220
18	" "	27	70	" ...	11	172
19	Kakapotahi	35	60	" ...	9	191
20	"	35	60	" ...	10	191
21	Duffer's Creek, Waitaha	8	40	" ...	14	29
22	Totara River	20	30	Okarito ...	12	54
23	Upper Callary Valley	7	110	" ...	15	70
24	Kaiser Fritz Falls, Franz Josef Glacier	14	1,209	" ...	17	1,539
					Direct Distance from Coast.	
25	Balfour Valley	70	40	...	15	254
26	Karangarua	7	85	...	8	54
27	"	6	90	...	12	49
28	Makawiho	14	370	...	10	471
29	Karangarua	7	80	...	14	51
30	Upper Paringa Valley	33	40	...	14	120
31	Upper Clark Valley	20	70	...	20	127
32	Upper Macfarlane	16	50	...	15	73
33	Haast Valley	25	450	...	14	1,023
34	"	10	115	...	13	104
35	Staircase Valley	30	90	...	10	245
36	"	35	1,115	...	8	3,548
37	Turnbull Valley	20	400	...	7	727
38	Lower Awatere Valley	7	350	...	7	222
39	Waipara Valley	45	70	...	17	286
40	"	25	80	...	21	182
41	"	20	60	...	22	109
42	Upper Arawata Valley	15	800	...	23	1,091

WAIMAKARIRI.

It has been proposed by Mr. A. D. Dobson, M. Inst. C.E., to use part of the Waimakariri water by a race starting from the lower gorge near Sheffield. The idea was to take part of the water without building any weir, as the configuration of the gorge appears likely to insure a constant flow of water against and past the cliff where the intake would be located. The conduit would be nearly five miles and a half long to get 86 ft. of fall. Somewhat less than 4,000 b.h.p. would be got by taking about a quarter of the low-water flow of the river. The cost for hydraulic works for this scheme would be very low, by Mr. Dobson's estimate. A low-water flow of the river was got by Mr. Dobson in August, 1899, and found to be 1,955 cubic feet per second. The gaugings were taken after watching the river for some time, and are therefore of value. The drainage-area above the gorge is 927 square miles. The length of the Alps drained is twenty-seven miles. The flow measured gives about 2·1 cubic feet per second per square mile, but part of the drainage-area is not likely to be any better than the Coleridge basin, and the strip of the river-basin lying along the eastern side of the Alps will be relatively the best. Rainfall-records are available for some years at the Bealey. If the rainfall over the Waimakariri basin follows in a general way that at the Bealey, the year 1895 would be likely to have furnished a lower flow than 1899. The rainfall in those two years at the Bealey was 23·81 in. in 1895, and 50·46 in. in 1899, and there were some months of very low rainfall in the winter of 1895. It is therefore probable that 1895