but, taken as a whole, I believe there are few ice-falls equal to it in Switzerland or New Zealand, the only finer one that I know being the Haast, flowing into the Tasman Glacier. The northern side of the ice-fall is less broken than the southern, as the Almer, a fine glacier, comes in, and, as usual, where two glaciers join, the crevasses and "seracs" are small. Our object was to reach point L, and bivouac there, and make the head of the glacier next day; but, after four or five hours' of very interesting ice-work, we were stopped on the lower *névé*, which is fearfully broken, at Cairn XXIII. We could find no way on to the spur at L, though only a few chains away, and ahead of us the ice was too bad to attempt, though the *névé* would have given us good going if we could have forced our way for another 10 chains. My photographs sent up may not be a success, owing to the weather, for it was raining hard while on the ice-fall, and the fog came down on our return.

I believe that from August to October no difficulty would be found in making the upper *névé* by the route on the ice, as the winter snow would bridge over the crevasses which stopped us. When I say "no difficulty," I, of course, apply only to men who have experience on glaciers. It would be most dangerous for an inexperienced party to go on the glaciers at all.

We returned to Camp No. 2 before the weather cleared, so I fear my photographs of the upper part of the glacier and the Unser Fritz Fall may not come up to the mark. The constant changes on the surface of the glacier, caused by its quick motion, rough bed, and low altitude, are very noticeable, and sometimes may be troublesome. For instance, a three days' absence from camp No. 2 gave sufficient time for our "get off" at Cairn VII. to be quite changed, and a week or ten days might be sufficient to cut off a party's retreat altogether. This activity is perceptible all over the glacier. One hears and feels cracks frequently, and, after two or three days' absence, new crevasses are often found, even on the "dry ice." The changes due to the melting of the ice near the terminal face are immense, as is only natural at an altitude of 692ft. The level of the top of of the ice at the face fell, between the 1st November and the end of January, about 70ft. by simple melting, and the retreat during that time was in some places above 2 chains at the terminal face, while along the sides the rocks were in some places exposed about 50ft.

In spite, however, of these instances, a slight advance was noticeable for a short period, followed by retreat, notably behind the Sentinel Rock, where an ice-cone of 40ft. in height was thrown up in five weeks, considerably in advance of the rest of the glacier, lifting with it river-bed stones. On the whole, we decided that the glacier was not retreating to any great extent, as from marks on the rocks at the sides and face it seems certain that there is as great an advance in winter as retreat in the summer. This is borne out by the fact that between the Barron and Mueller Rocks there was in November a fine ice-cone 110ft. high, and perfect in shape, covered with river-bed wash, and evidently caused by a large winter advance. This has now, at the end of February, almost melted away, having lost all shape, and collapsed into a small heap of broken lumps of ice some 30ft. high, besides retreating a chain from the front, and half a chain from the rock, against which it originally rested, to a height of 25ft. From sketches taken from the flats, about twenty years ago, at the terminal face, it would seem that there has been a steady but slight annual retreat, for they do not show the Barron or Mueller Rocks. This may be, and I think is, an oversight; but there is little doubt that twenty years ago the ice came well on to the back of the Sentinel. Until, however, winter measurements can be taken, there can be no certainty as to the correctness of our theory of a great winter advance, though many things point to it, in the shape of recent terminal moraines, obviously disturbed lately; and on the rocks between Cairn VII. and Arch Creek there are very distinct marks.

To estimate the motion of a glacier one needs more perfect tools than we had; at the best only rough and approximate figures can be obtained with a compass; however, we put a line across of rods at a bearing of 250° from Cairn VII., one from F D to a point between K and K K, and also fixed the movement of Cairn I. The results of our observations are astonishing, and we almost doubted their correctness; but, when it is possible with the naked eye to see a difference in the position of a mark after twenty-four hours, there is little doubt that the figures are not far out. The side-motion must be almost exact, as we used marks on the rock immediately off the ice. The following is a list of results returned as only approximate, being result, as before mentioned, of prismatic compass-bearings. The figures are marked in red on the map, and the directions being bearing of compass:—

Station.	Number of Days.	Total Movement.	Daily Rate in Inches.	Direction.	Remarks.
Line I.—M 1	7	35in.	5	320	15 yards from rock.
2	20	600in.	30	335·30	About 5 chains.
3	4	531in.	132·75	300	
4	4	408in.	102	352	
5	4	212in.	53	314	
6	4	...	...	...	No return.
Line II.—KM 1	3	460in.	153·3	286	8 chains from side.
2	3	474in.	158	308	
3	3	600in.	200	285·30	
4	3	621in.	207	260·30	
5	3	...	...	...	Crevasse opened and swallowed peg.
6	3	71in.	23·6	242·30	6 chains from side.
Side motion below Cairn V. ...	7	57in.	7·28	335	8ft. from side.
Cairn I. on moraine ...	56	198yds.	127·28	351	