

rain, ending with a heavy fall of snow. I visited the glacier again in the summer time; but, owing to the incessant bad weather and the short time at my disposal, I regret very much that I was unable to take further observations of the rate of flow. One of the stones marked with paint at flag K⁶ was found cast up amongst the *débris* on the south side, but no sign was found of any of the other marks.

The glacier, with the exception of some half mile or so at the terminal-face, was remarkably free from *débris* at both visits, although the scarred faces on the hill sides show that large slips have occurred in former years. The Victoria Glacier, on the other hand, was entirely covered with *débris*, some of the stones being of immense size.

On my first visit, in 1894, the trunk of the glacier was very largely crevassed; but, in the summer of 1895, after an exceptionally severe winter, the crevasses were all closed except at the edges of the glacier.

On the whole, very few changes were noticed during the eighteen months' interval. In July, 1894, the whole of the river rose in one stream from the southern side of the terminal-face, falling in a beautiful cascade over a ledge of ice; but in 1895 the ledge had disappeared, and the stream boiled up from more than one opening close to the 1894 aperture. The ice had fallen away in a hollow from the south side of the terminal-face towards the centre of the glacier at a point some twenty chains back from the extreme face, and indications pointed to the formation of an ice-arch at the outlet in the near future.

The Fox Glacier has a large advantage over the Franz Josef, in the natural facilities afforded to tourists for the ascent on to the clear ice, there being no difficulty, as the track up the creek-bed on the south side of the cone lands the traveller on the smooth ice some two miles from the terminal face; and from there, with the exception of a little difficulty at an ice-fall some half-mile in length, where the ice has to be left and the moraine at the side clambered over, travelling is easy to the foot of the main ice-fall, which runs along the greater part of the Chancellor Ridge, an immense rocky ridge dividing the Fox and Victoria Glaciers.

The north side of the glacier is much steeper than the south side, and the old ice-lines, extending in almost unbroken lines from the terminal face to nearly the top of the main ice-fall, can be easily traced with the eye. On the south side the country is more broken by creeks and slips, and the marks can only be noticed at intervals along the side. However, on the south side, between the top end of the conical ridge at cairn K and the outlet of Boyd's Creek, the more recent morainic accumulations are very plainly marked, consisting of a series of flat ledges: first come the heaped-up boulders, which are continually in motion, and are piled up on each other in an almost incomprehensible fashion; then a ledge of settled-down ground, with little or no vegetation; then another covered with broom, akeake, and small scrub, gradually extending back to a line of large birch and rata trees.

The top of the cone-ridge is covered with numerous boulders and the roots of the large ratas on the summit spread over these rocks. The side of the cone facing the glacier is a perpendicular face of rock, worn smooth by ice action and extending nearly to the top of the ridge, while the Mills Creek side is more sloping, and the bush extends down nearly to the creek-bed.

One of the most interesting features of the Fox Glacier is the presence of a belt of koromiko scrub at the foot of the terminal-face. This patch is completely isolated from other vegetation on either side, and is growing on an irregular mass of piled-up *débris*. The belt is gradually getting smaller year by year, as the boulders fall into it from the terminal-face at the back, and the river flowing past it in front carries away a small portion occasionally. The presence of the shrubs prove that the ice does not extend for any distance under the boulders of the river-bed, as the enforced continual motion would prevent any vegetation thriving on the surface. Patches of similar character are found growing on the islands further down the Fox River.

The water from the Victoria Glacier runs into the Fox Glacier on the north side, just below the foot of the main ice-fall. There are two small streams which run around a large rocky knob, heaped up with old *débris* from the Victoria, and join again just before running under the ice of the Fox. The trunk of this glacier is very flat, and almost entirely covered with masses of moraine. The terminal-face of the Victoria is over 900ft. higher than the ice of the Fox at the Victoria outlet, and from the level appearance of the valley the ice travels at a much slower rate. Other features of interest are entirely covered by Mr. Douglas's report.

WM. WILSON, Assistant Surveyor.

SCHEDULE showing Direction and Rate of Movement of Fox Glacier for Twenty-eight days, 6th July to 3rd August, 1894.

No. of Flag.	Position South and West from Initial Station H1 on 6th July, 1894.		Position South and West from Initial Station, 3rd Aug., 1894.		Direction of Movement, True Bearings.	Total Movement, in Feet.	Average Rate per Day, in Inches.	Set of Flag on 6th July, Watson's Mean Sea-level.	Set of Flag on 3rd August.	Rise or Fall, in Inches, in 28 Days.	Remarks.
	S.	W.	S.	W.	° ' "						
K ¹	215186.2	86363.4	215170.1	86394.5	297 22 23.1	9.9	1465.0	1464.6	4.8	Fall.	On lower edge of flat ice in centre.
K ²	216135.1	85115.0	216121.5	85151.8	290 17 25.9	10.8	1529.3	1527.5	21.6	Fall.	On lower edge of undulating ice.
K ³	215339.8	85374.1	215327.3	85404.8	292 09 21.8	9.4	1506.0	1505.8	2.4	Fall.	On smooth ice.
K ⁴	214935.2	85269.7	214924.9	85301.5	287 57 22.0	9.5	1515.7	1516.2	6.0	Rise.	On smooth ice on north side.
K ⁵	217541.7	84678.0	217529.8	84717.9	286 36 31.5	13.4	1549.0	1547.1	22.8	Fall.	On undulating ice toward south side.
K ⁶	217609.7	85842.7	217607.6	85852.9	281 38 6.9	3.0	1465.0	1466.1	18.2	Rise.	Close to south side of glacier.