

of Census Sub-enumerators' maps, but as it was found impossible to finish the work in time, authority was obtained to have it done in overtime. Diagrams were placed on 43 Crown leases in quadruplicate, 11 in triplicate, and 26 in duplicate, and on 227 certificates of title in lieu of grants in triplicate. Thirty-two schedules in duplicate were prepared for expenditure of "thirds" by local bodies. The number of maps, lithographs, &c., mounted was 565.

I was pleased to find opportunity to complete the blocking-out of the survey districts, several of which, many years since, had been only partly blocked. The block lines have now been placed on the working-plans, record and application maps, and any future dealings with the surveyed lands will be at once reliable and exact. I have also had in view the desirability of lithographing the whole of this district on the mile-to-the-inch scale, and during the year three of the interior districts—Eyre North, Mavora, and Black Hill—have been drawn with this object, and published at Head Office. The general map of Southland and Wallace Counties on a scale of 4 miles to an inch has also been revised and re-published. This map has been much appreciated by the general public, and is of the greatest assistance to strangers who visit this district with the serious intention of settling, and also to the tourist.

Among the larger duties performed must be mentioned the preparation of a map of the colony, intended for information of visitors to the Christchurch Exhibition later in the year. I am pleased to speak in terms of praise of this map, which is being prepared as a pictorial map at your request, and is well forward towards completion. It shows the various sanatoria, mountain features, trade centres, railways, main roads, and, I believe, every accommodation-house and track known to the Tourist Department. Placed before the public in a pictorial form this piece of work will at once invite attention, and the visitor will not pass it without adding considerably to his knowledge of the geography and the many engaging features of the colony. I trust that this map may be reproduced prior to, or at the close of, the Exhibition, for it furnishes just what a stranger to this country would wish to know, and it would be a pity if prints were not obtainable by scientists and travellers visiting the colony.

I am again pleased to place on record my best thanks to all the officers, and my appreciation of their willing co-operation at all times in furthering and carrying out the many duties connected with the year's work.

Before concluding this report I very much regret having to record the sudden and untimely death of Mr. District Surveyor L. O. Mathias in his camp at Orepuki on the 18th April of last year—a sad and severe shock to his near relatives, to whom the Department offered its sincere condolence and sympathy. He was a most proficient and capable officer of long and varied experience, one who will be greatly missed, as by his sudden death the Department sustains the loss of an able officer and gentleman, whose place is not readily filled, and one who had many friends and relatives, to whom his absence leaves a void which time alone can assuage.

JOHN HAY,
Chief Surveyor.

APPENDIX II.—GLACIER MOVEMENTS.

REPORT ON MOUNT COOK GLACIERS BY MR. DISTRICT SURVEYOR T. N. BRODRICK.

HEREWITH I forward plans of the Mueller and Tasman Glaciers, on which are recorded the results of the latest measurements. I have added a table of rates to the plan of the Mueller stones. I did this because I am so often asked what they are, that I am led to believe that for every ten tourists who see the plan perhaps only one gets a chance of reading the report accompanying it.

The measurements taken in summer between the 6th February, 1898, and the 16th April, 1898, show a very distinct increase of speed over the average rate, which, of course, includes the winters. The only exception to this was stone No. 10, which was doubtless retarded by some local condition.

The variation of the rates in different seasons is compared in the following table. The stones mentioned in the first column advancing between the years set opposite to them in the second column passed the course traversed by the stones in the fourth column between the years stated in the fifth column, and the rates are given in the third and sixth columns:—

Second Passage over Course.			First Passage over Course.			Remarks.
No.	Years.	Rate per Diem.	No.	Years.	Rate per Diem.	
8	1899–1901	In. 6·3	6	1889–90	In. 8	Almost the same course. No. 15 being nearer the centre than 9 should have been faster instead of slower.
15	1901–6	7·3	9	1889–90	8·2	
14	1898–1906	8·9	8	1890–93	7·9	This is in a rapid part of the glacier, and 14 is nearer the centre than 8, so the comparison is not a fair test.
4	1895–1906	2·6	{ 3 1889–95 3·9 1 1889–95 3·9 }			4 flows between stones 3 and 1, so this is an excellent comparison.

From this comparison it is obvious that the ice was flowing about 1 in. a day slower between 1895 and 1906 than it was between the years 1889 and 1895. It is therefore surprising to find that instead