

The Glacial Cause of Changing Climates

By M. B. COTSWORTH, F.G.S., New Westminster, B. C.

British Columbia and Canada generally are becoming warmer every year.

The ice-cap in Greenland is causing a gradual movement of the earth's crust, which is changing the climate of every country in the world.

Nearly 40,000 acres of land have been uncovered during the last seventeen years by the retreat of one group of glaciers in Alaska.

Change of climate has deteriorated the races of Southern Europe and is increasing the vigor of the people in China and Japan.

Records of the movements of British Columbia glaciers prove that this province is benefitting by the change of climate.

EDITOR'S NOTE—We are once more indebted to Mr. Moses B. Cotsworth for a most interesting and scholarly article. This time he deals with the improving climate of Canada, due to certain movements of the crust of the earth caused by the ice-cap in Greenland.

Mr. Cotsworth's investigations into glacial action and the general geology of the world have led him to some very important conclusions, which affect the climate of the whole of Canada and particularly of this province. Most of the maps and other illustrations have not been published before and we thank Mr. Cotsworth on behalf of our readers for the time and trouble that he has taken to give us this valuable information.

PROBABLY the most important, and yet the least understood, natural force moulding the destinies of mankind, may be expressed by the words, "Gravitational Changes of Climate," as briefly described and illustrated herein. Simple inspection of Plate I will convince thoughtful readers of the reality of the great climatic change that is most forcibly evidenced by those photographs, which demonstrate the fact that those extensive glaciers in Southern Alaska are receding at the rate of about half a mile per year, as the ice melts back at that rate beyond the regular daily flow of the ice down the Muir and Grand Pacific Glaciers.

Plate II proves by its black areas on the chart of the glaciers surrounding Glacier Bay that around that typical Alaskan bay about 2,054 acres of land per year have recently been released by the "climatic change" from the Alaskan ice-grip. It will be shown on later pages how that sheet of disappearing ice is being wafted over to Greenland by the great forces of Nature,

which unite to bring about that marvellous change, by which the various parts of the world are during the course of ages rested and renewed for fertility, as the thousand leading geologists of the world will better be able to explain when the Geological Congress visits Canada in September, 1913.

Meantime, readers may rest assured of the facts Plates I and II prove, because both the photographs and plan were prepared jointly by the best surveyors and draughtsmen the United States and Canada could produce, whilst the International Boundary was being delineated by them between Canada and Alaska. The originals were most considerately supplied to me by the departments of the United States and Canadian Governments.

2. The limited space available for general description in this *British Columbia Magazine* precludes the possibility of dealing with more than the general aspects of this vast subject, but as it can be studied and verified with more practical advantage in British Columbia than any other country, and will benefit British Columbians more