

General Remarks and Conclusions.

It is somewhat difficult to connect the various observed facts of the glaciation of British Columbia in a general theory of glaciation, owing to the complexity of its physical features and their marked character. Several conjectural schemes were advanced in a former communication; but, abandoning the seemingly untenable theory of a great polar ice-cap, two probable hypotheses appear to remain. A general north-to-south movement of ice is indicated by striation in a number of places in the central-plateau zone, extending now for a length of over 400 miles. This region, from elevations exceeding 5000 feet downward, is also covered thickly with drift-deposits requiring, by their character and mode of arrangement, the action of water. To account for these facts it was thought that either the flow of strong arctic currents bearing heavy ice during a period of great submergence might be supposed, or that the whole region may have been buried under a massive confluent glacier, the drift-deposits being laid down as it retreated in the water of the sea during a period of subsidence, or in that of a great lake held in by glacier-dams in the valleys of the several mountain-ranges.

It was presumed that the gaps of the Peace and Pine rivers in the Rocky-Mountain range might have sufficed for the entrance from the north-east of such currents and masses of ice as would be required by the first theory; but the examination of the region, with this supposition in view, has convinced me that, notwithstanding the general decrease in elevation and width of the Rocky Mountains, the valleys of the rivers are too narrow and indirect, and the surrounding mountains too high, to allow the inflow of sufficient currents with the degree of subsidence which would be required by most of the localities of glaciation and by the superficial deposits. Neither is there any evidence of the passage of drift-material in this region across the mountains either from east to west or in the opposite direction.

It therefore appears to remain as the most probable hypothesis that a great glacier mass resembling the inland ice of Greenland has filled the region which may be called the Interior Plateau, between the Coast Mountains and the Gold and Rocky Mountain ranges, moving (though perhaps very slowly) southward and south-eastward from the region of great precipitation and high mountains of the northern part of the province*, and discharging by the Okanagan depression and through the transverse valleys of the coast range. It still appears to me most probable, however, that this stage of the glacial period was closed by a general submergence, during which the deposit referred to as Boulder-clay was laid down in the interior plateau, and that as the land again rose it assumed its present terraced character. Conditions may be suggested to account for the temporary existence of a great lake in the interior

* Explorations in the northern part of the province in 1879 have shown that the mountains here are even higher and more extensive than had been supposed, several ranges exceeding 8000 feet in great portions of their extent.