

along their sides would probably occur gravel-covered erosion terraces.

The continuity of conditions of erosion was suddenly broken by the advent of the Glacial Period. There was no general Cordilleran glacier in this district with a motion southeastward or northwestward parallel to the trend of the mountains, but the country was heavily glaciated by local glaciers that flowed down from the mountains into the great valleys. On the side of the mountain north of the valley of Lightning Creek near Stanley, and 1,000 feet above the stream, a quartz ledge was seen to be scored by glacial markings trending northwestward parallel to the course of the valley.¹

After existing for a long time, and in some cases extending far out over the plateau, even to the banks of the Fraser River itself, the local glaciers retired and disappeared, leaving behind them extensive sheets and deposits of boulder-clay, and large moraines; the latter dammed many valleys and diverted streams into other channels, thus adding to the intricacies of a drainage system which was already quite complicated in pre-Glacial times.

Most, if not all of the valleys had beds of pre-Glacial gravel of varying thickness covering their rocky floors. As the glaciers moved down the valleys they in many cases rode over this gravel and left it, with its cargo of gold, comparatively undisturbed, and at the same time they brought down a certain quantity of material from the hills on each side and formed ground moraines of hard massive impervious boulder-clay, which, on the retirement of the glaciers remained as watertight covers of varying thickness over the underlying gravel. Existing streams usually flow on the top of this bed of boulder-clay. In some narrower and swifter places in the upper reaches of valleys they have doubtless cut through it to the underlying gravel or bedrock, and many of the earlier mining operations were probably carried on in places where this had occurred. In these places all the gravel down to bedrock, as well as the upper part of bedrock

¹ "Was there a Cordilleran Glacier in British Columbia," by J. B. Tyrrell, *Jour. of Geol.*, Vol. 27, No. 1, 1919, pp. 55-60.