

glacier passes in these high regions have fallen in recent times is too frequent an occurrence. He is rather looking for changes in the glaciers themselves, although not necessarily an advance or increase of the ice. For in another region he had previously seen an example of how the recession of a glacier might in particular circumstances close a route, for instance when a secondary glacier by its recession gave cause to rock-falls which had not occurred at a time when it joined a main icestream.¹ In 1848 THOMSON was unable to find anyone having crossed the Saltoro Pass.

In June 1909 Longstaff went up the Saltoro River. Opposite Paro sheer spires of granite rise to a height of 5,000 feet. »The rocks on the north side of the valley appear to consist exclusively of granites, but the high splintered crest on the south is of slate.» Through the Ghyari nala he turned towards the Saltoro Pass. Three glaciers on the right side of the nala were all found to be actively advancing. The natives asserted that this had been going on for ten or twelve years. »As the snouts are approximately in the position shown on the G. T. S. map (1861), it is evident that there has also been at least one period of local retreat since that date.»

The snout of the Bilafond Glacier was found at a height of 12,400 feet. This glacier had been joined by the Chumik Glacier about fifteen years ago. »Comparison with the old survey indicates an advance of about 2 miles of the combined trunk stream.» The moraines of the glacier, and so far as he could see the two confining ridges, consist entirely of granite.

The Saltoro Pass was found to be 18,200 feet high. The upper portion of the Siachen Glacier was believed to be a glacier of which the coolies said that it would lead eventually to Chang-tang, by which Longstaff concluded they meant the country north of the Kara-korum Pass; and he christened this supposed new glacier the Teram Glacier. Later on he became aware of the mistake.

Four or five medial moraines were seen; those on the right half of the glacier appeared to consist entirely of granite, which was in accordance with the character of that range of the Kara-korum across which they had passed. From the moraines of the left half specimens of hornblende schist, mica schist, dark slate and marble were obtained.

The Teram Kangri Peak proved to be one of the mountain giants on the earth, supposed to be approximately 27,610 feet high.²

The end of June they went up the Chumik Glacier around which the rocks also consisted of granite. The snout of the Rgyong Glacier was found about a mile below the point marked on the Survey, and the glacier had all the characteristics

¹ *A mountaineering Expedition to the Himalaya of Garhwal. Geographical Journal.* April 1908. Vol. XXXI, p. 382.

² *Vide infra.*