

of active advance. The Rgyong-la also was granite. The right bank of the Chulungcañon was granite and the left was of slaty schists. At one place phyllite underlies the prevalent granites. From Gharkun granite walls are again reported.

Beside the Pastan stream, a tributary to the Shayok, the following petrographic observations were made:

The commonest rocks represented are hornblende and other granites, but I also found conglomerate, calcareous schists, quartz, with chrysocolla, calcite with a little malachite, and red jasper. The bed rock forming the sides of the nala turned out to be metamorphic, a highly silicious greenish limestone.

Granite trenches prevailed in the Saloro region. Regarding the formation of the valleys he expresses the following opinion:

It is evident that the valleys of the Nubra and the Shyok, like the Indus valley, are tectonic. Drew observes that the rocks on the east side of the Nubra are of light brown granite, while those on the west are of a different and much darker crystalline rock. Glaciers have left their marks in these valleys, but the rivers were antecedent. —

Approaching the Nubra-Shayok junction relatively recent moraine stuff with perched blocks were continually passed. The rocks were polished and scratched for hundreds of feet above the river.

The striæ showed that the glacier had swung round the corner into the Shyok valley without any alteration of level, just as the river does now. This more than confirms Drew's surmise that the great Nubra glacier must have extended as far as the Shyok valley.

Of the Nubra river near Charasa he says:

Its very size might have led us to expect that the Siachen glacier was much larger than is shown on the Survey map. For though the Nubra river has a course of only 45 miles, and receives no tributaries of any importance, the water was sweeping down with a very rapid current through numerous channels covering about a mile in width, and in some of these with a minimum depth of over 4 feet.

This is a very good illustration of how a river is born in these high regions, and it should be remembered by those who make the Tsangpo rise in the longitudinal valley, while it comes from and is fed by mighty glaciers.

Longstaff mentions the earlier visitors in the upper Nubra valley. MOORCROFT visited it in 1821, VIGNE about 1835, THOMSON and HENRY STRACHEY in 1848; DREW gave an excellent description of it, and so did HERMANN SCHLAGINTWEIT.

Having received letters from YOUNGHUSBAND and BURRARD assuring him that it must have been some upper head of the Siachen which he had called the Terem Glacier, Longstaff decided to solve this problem, instead of carrying out his original plan upon the Kara-korum Pass. The Terem proved indeed to be identical with the upper Siachen Glacier. The snout of the Siachen was at 11,600 feet: the official *Gazetteer* of Ladak gave 11,700. »If these two figures are accurate, they would represent an advance of the ice since 1862». The right moraines of the Siachen consisted of grey granite, the left of black schists with slate, limestones and