

TERRACES AS A RESULT OF CLIMATIC CHANGES.

Let us see if the other theory, that of climate changes, is more satisfactory. Starting with a climate and topography similar to those of to-day, what would be the effect of successive epochs of glacial and non-glacial climate or of colder and warmer climate? Judging by what has been found true in other parts of the world, the effect would be just what we find in the terraces of Central Turkestan. During the epochs of colder climate aggradation would take place in all the valleys where the streams had already attained a graded condition; and that condition would soon be established in those valleys where the slope was relatively gentle,

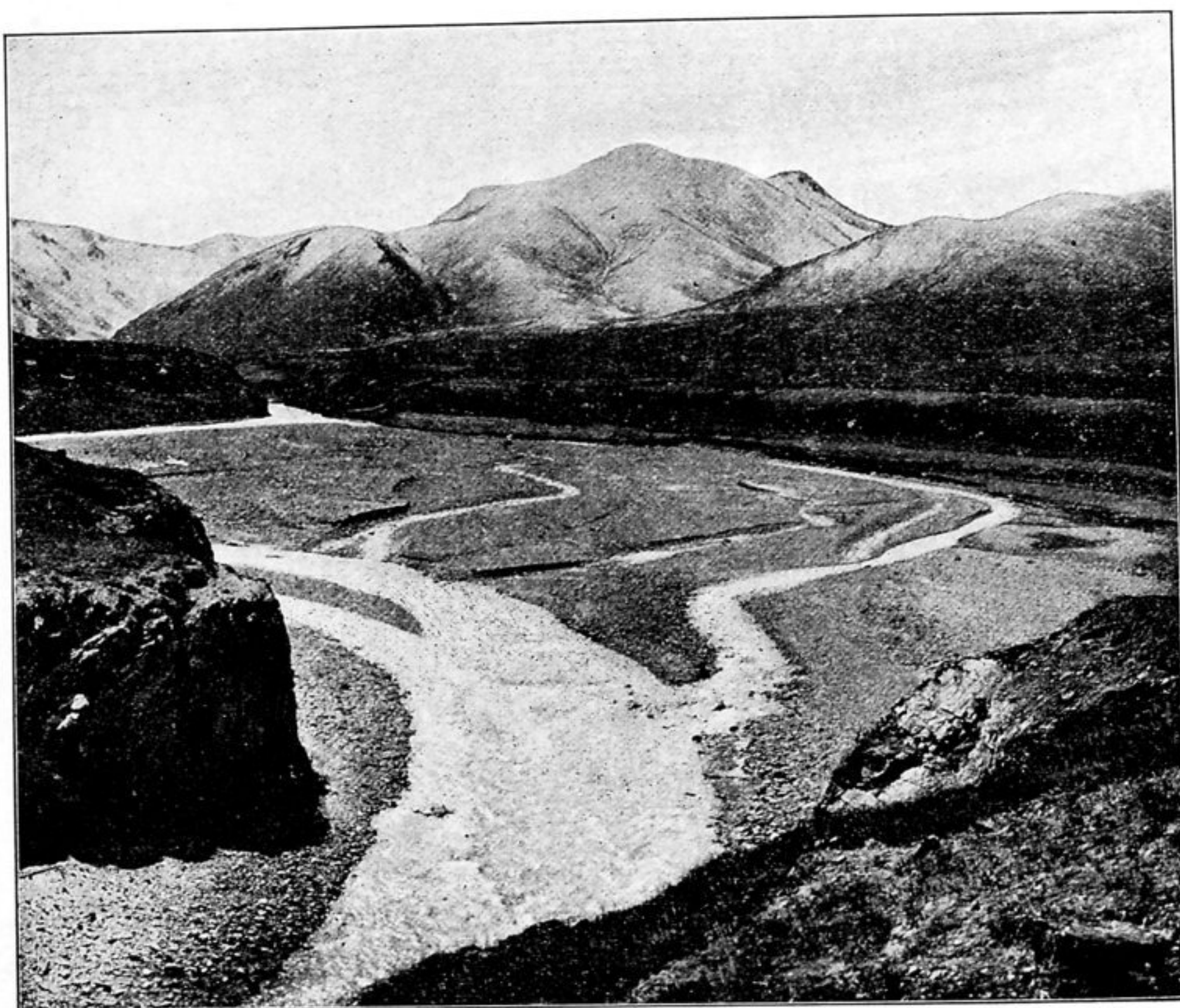


Fig. 143.—Terraces of the Kok Kiya, on the Tian Shan Plateau, at an elevation of 11,500 feet. In the foreground and in the middle distance the stream has been caught upon limestone and has cut merely a narrow gorge, while in the gravel between it has excavated a broad flood-plain with terraced sides.

though the streams were not previously graded. The graded streams would then swing sidewise, and very broad flood-plains would be formed. When warmer conditions again prevailed the streams would once more begin to cut downward; the few streams that had already reached grade previous to the period of aggradation would cut into the gravel till a new grade was reached, and then, if time allowed, they would broaden their flood-plains once more. Of the other streams, the majority would soon cut through the gravel coating of their flood-plains and intrench themselves in the solid rock beneath. If another cold epoch ensued, the previously graded streams would begin to aggrade and would fill their valleys in the same way as before; the others would become graded and would open their valleys and form flood-plains once more. Thus, by a succession of alternations between