Passing further north we crossed a comparatively low country, studded with small rounded hills and intercepted by short ridges with easy slopes; the average height was between 12,000 and 13,000 feet. This undulating high plateau proved to be one of the head-quarters of the *Kulja* (*Ovis Polii*), chiefly on account of the very rich grass vegetation which exists here. For this the character of the soil fully accounts. The entire ground was shown to consist of limestone gravel and pebbles of rather easily decomposing rocks, mixed with the ashes and detritus, evidently derived from the proximity of the volcanic eruption. Only rarely was an isolated basaltic dyke seen, or the tertiary sandstone cropping out from under the more recent deposits.

Viewing the country from an elevated position near our camp at Turug-at-bela, the conglomerate and gravel beds, well clad with grass vegetation, were seen to stretch far away eastwards, and in a north-easterly direction across the Turug pass; while on the south they were bounded by a continuation of the somewhat higher basaltic hills. Towards the west I traced them for about seven miles, across a low pass at which a tributary of the Toyan rises in two branches; while on the other side two similar streams flow west by south to join the Suyok river. To the north the proximity of a rather precipitously rising range shut the rest of the world out of view. For this ridge the name Terek-tagh of Humboldt's map may be retained; its average height ranges between about 16,000 and 17,000 feet. In its western extension it runs almost due east-west, composed at base of a tough limestone conglomerate of younger tertiary origin, followed by white dolomitic limestone, and then by a succession of slaty and dark limestone rocks, the former occasionally showing distinct signs of metamorphism, and changing into schist. All the beds are nearly vertical or very highly inclined, dipping to north by west, the older apparently resting on the younger ones. North of Turug-at-bela the range makes a sudden bend in an almost northerly direction, and continues to the Chaderkul, where it forms the southern boundary of the lake-plateau. By this time the white dolomitic, and afterwards the slaty beds, had entirely disappeared, and with them the height has also diminished. A comparatively low and narrow branch of the range which we visited consists here entirely of dark limestone, which in single fragments is not distinguishable from the Trias limestone of the Koktan mountains, but here it does not contain any fossils. The ridge itself, after a short stretch in a north-east-by-north direction, gradually disappears under the much younger conglomeratic beds.

Across the Chaderkul plain the true Thian Shan range was visible, a regular forest of peaks seemingly of moderate and tolerably uniform elevation. The rocks all exhibited dark tints, but most of them, as well as the hills to the west of the Chaderkul, near the sources of the Arpa, were clad in snow. The lake itself was frozen, and the surrounding plain covered with a white sheet of saline efflorescence.

Brief sketch of the geological history of the hill ranges traversed.—In order that the preceding remarks may be more easily understood, I add a few words regarding the changes which appear to have taken place at the close of the kainozoic epoch within the southern offshoots of the Thian Shan which we visited.

Short as our sojourn in the mountains was, it proved to be very interesting and equally instructive. Humboldt's account of the volcanicity of the Thian Shan, chiefly taken from Chinese sources, receives great support; but we must not speculate further beyond confiding in the expectation that both meso and kainozoic rocks will be found amply represented in it.

As far as our present researches in the physical aspect of the country extend, we may speak of three geologically different ranges: the *Terek range*, which is the northernmost, the *Koktan* in the middle, followed by the *Artush range*, below which begins the Kashghar plain. All three decrease in the same order in their absolute height, the last very much more so than the middle one. The first consists of old sedimentary rocks, the second of similar rocks in its southern parts, while younger tertiary and basaltic rocks occupy the northern portions, the third is entirely composed of young tertiary deposits. The general direction of all the ranges is from west to east, or nearly so; this direction evidently dating from the time when the whole of the Thian Shan chain was elevated. The undulating high plateau