Having had a shooting day at Turug-at-bela, and one day's halt with the King's obliging officers at the Chakmák fort, we were actually only nine days on the march, during which we accomplished a distance of about 224 miles. It will be readily understood that while thus marching, there was not much time to search for favorable sections in out-of-the-way places; but merely to note what was at hand on the road. I can, therefore, only introduce my geological observations as passing remarks.

Leaving the extensive löss-deposits of the valley of the Kashgar Daria, the plain rises very gradually towards a low ridge, of which I shall speak as the Artush range. It is remarkably uniform in its elevation, averaging about 400 feet, somewhat increasing in height towards the west and diminishing towards the east, which direction is its general strike. This range separates the Kashgar plain from the valley of the Artush river, which cuts through the ridge about eight miles nearly due north of the city. Viewed from this, the entire ridge appears very regularly furrowed and weather-worn on its slope, indicating the softness of the material of which it is composed. One would have, however, hardly fancied that it merely consists of bedded clay and sand, mostly yellowish white, occasionally reddish, and sometimes with interstratified layers of greater consistency, hardened by a calcareous or silicious cement. On the left bank, in the passage of the river through the ridge, the beds appear in dome-shape, gently dipping towards the Kashgar plain on one side, and with a considerably higher angle into the Artush valley on the other. On the right bank at the gap all the exposed beds dip southward, those on the reverse of the anticlinal having been washed away by the Artush river up to the longitudinal axis, and thus exposing almost vertical faces. These remarkably homogeneous, clayey, and sandy beds may appropriately be called *Artush beds*, and although I could nowhere find a trace of a fossil in them, it seems to me very probable that they are of marine origin and of neogene age.

The southern slopes of the ridge are on their basal half entirely covered with gravel, which in places even extends to the top, assuming here a thickness of from 10 to 15 feet. Locally the gravel beds are separated from the main range by a shallow depression, forming a low ridge which runs along the base of the higher one, and from which it is, even in the distance, clearly discernible by its dark tint. The pebbles in the gravel are mostly of small size and well river-worn; they are derived to a very large extent from grey or greenish sandstones and shales, black or white limestone, more rarely of trap, basalt, and of gneiss. With the exception of the last-named rock, all the others had been met with *in situ* in the upper Toyan valley. The pieces of gneiss belong to a group of metamorphic rock which is usually called *Protogine*. It is mainly composed of quartz and white or reddish orthoclase, with a comparatively small proportion of a green chloritic substance. The white felspar variety generally contains as an accessory mineral schorl, in short, rather thick, crystals. I shall subsequently allude to the probable source from which the protogine pebbles might have been derived.

From Artush we marched, as already stated, northwards, up the Toyan river, and for the next 22 miles one was surprised to find nothing but the same Artush—and gravel—deposits, the former constantly dipping at a high angle to north by west, and the latter resting on them in slightly inclined or horizontal strata; while among the recent river deposits in the bed of the valley itself the order of things appeared reversed. The gravels, having first yielded to denudation, were here underlying the clays derived from the Artush beds, thus preparing an arable ground for the agriculturist, whenever a favourable opportunity offered itself. A few miles south of Chungterek the laminated Artush beds entirely disappeared under the gravel, which from its greater consistency assumed here the form of a rather tough, coarse conglomerate. In the bend of the river the latter have a thickness of fully 200 feet, and are eroded by lateral rivulets into remarkably regular Gothic pillars and turrets. It is rare to meet with a more perfect imitation of nature by human art. The general surface of the gravel deposits is comparatively low, from 400 to 500 feet above the level of the river, and much denuded and intersected by minor streams and old watercourses.

At a couple of miles north of Chungterek the Koktan range begins with rather abrupt limestone cliffs, rising to about 3,000 feet above the level of the Toyan. Nearly in the middle