floor, as one goes up-stream, is evidently suggestive of uplift. From the highest hill, a monoclinal ridge of brownish sandstones, 835 feet over Firuza, we could see the modern flood plain, about a quarter mile wide, etched below the dissected gravel bench, which must in its prime have been from half a mile to a mile in width.

It may be noted that about 10 miles southeast of the gorge the monocline of the outer (Markou) limestone range narrows, becomes lower, and ends, and further on the flanks of the main anticline descend to the plains. Northwest of the gorge the front monocline rapidly increases in height for several miles, and its southwest slope exposes great, bare sheets of heavy, steep-dipping limestones. This range is believed to be faulted up along its front, because the strata in the neighborhood of the gorge either dip southwest into the range or lie nearly horizontal. The scarp of the range, much ravined, looks directly upon the open plains. General subaerial erosion can not have removed the forward extension of the strata to any great extent, for erosion has as yet only succeeded in battering back somewhat the steep walls of the gorge; hence the absence of the strata in front of the range can only be explained by faulting. It should be noted that we caught a glimpse, while we were still on the plains, of what seemed to be steep northeast dips in the strata of the front scarp a few miles northwest of the gorge; hence the faulted monocline may there assume the character of a torn anticline.

The treeless hills of the Firuza syncline revealed their structure most clearly. The dip of the strata was distinctly steeper on the northeast than on the southwest side; the lower beds were gray shales, on which subsequent valleys were opened; the upper ones brownish sandstones, which rose in ridges. The total thickness was probably 1,500 or 2,000 feet. The limestone flanks of the main range exhibited many smooth structural slopes of moderate dip, green with vegetation, and deeply gashed by consequent streams. The upper Firuza gorge was seen as a deep chasm, which we followed through the next day. Its stream was only 10 or 15 feet wide, but about a month after our visit we heard that it rose in a destructive flood and swept through the village, doing much damage to the houses and gardens.

The upper gorge is as fine an example of a transverse through-going defile as I have seen. It is 10 miles long, and in that distance the valley floor rises about 2,500 feet. For the first half of the way there is a narrow flood plain between precipitous walls, hundreds of feet in height; then after passing a strong fault, expressed by local deformation and a change in the character of the limestones, the walls are less steep and the floor is more encroached upon by talus and fans. The mountain tops, 4,000 or 5,000 feet above the stream, could not be seen. As the wagon road ended at Firuza, our further progress was on horseback with pack train, and thus we crossed the boundary into Persia. We met a few men in the gorge driving donkeys laden with fagots, but came upon no habitations till we reached the open longitudinal consequent valley where the little Persian village of Serani is situated amid green irrigated fields, at an altitude of about 4,700 feet. The irrigating stream is chiefly supplied from a large spring at the base of the limestone range on the southwest side of the valley. The stream is used to drive a primitive mill near its source.