According to the climatic hypothesis this difficulty disappears. During a fluvial epoch a decrease in evaporation or, still more, an increase in precipitation, would cause ungraded mountain slopes to become graded and covered with vegetation. The material washed down from such graded slopes and deposited in the valleys and plains would be relatively fine, whether it happened to be deposited in valley bottoms, in playas, or in lakes. When an interfluvial epoch ensued, vegetation would become scarce, floods would be more frequent and violent, and it would be but a short time before the slopes would assume their present ungraded condition. During this process the streams would at first be heavily loaded with the products of previous weathering, which they would deposit in widespread beds of gravel; but ere long the supply would fail, and the streams would begin to deepen their channels and form terraces. This process might be repeated a number of times in rapid succession and thus a series of terraces would be formed. In parts of its flood-plain where a stream happened to be flowing at the time of a change from wet to dry conditions, the transition from silt to gravel would be gradual and there would be no unconformity. Elsewhere the change would be marked by a sharp unconformity. Both of these conditions are found, but, as might be expected, unconformability is the rule.

At the northeastern end of the basin of Bajistan, not far from the city of Turbat-i-Haideri, there are again four terraces, which must be due to a highly specialized warping of that particular basin, unless they are due to changes of climate. The tops of the reddish silts, previously described, are beveled by an old grade plain covered with from 5 to 15 feet of gravel (fig. 162). Below this are traces of a second grade plain forming a second terrace which is almost consumed. At the base of the second terrace lies the broad plain of Bajistan, in which are cut two more terraces. There are thus four gravel-covered terraces separated into two groups. The same phenomenon is noticeable at Kogneh Lake and elsewhere. There seems to have been a long interval between the formation of two groups of terraces. The fact that this division is observed in widely separated places makes it probable that the cause of the terracing was of such widespread application as to affect enormous areas in precisely the same way. This would be true of climate, but not of warping.

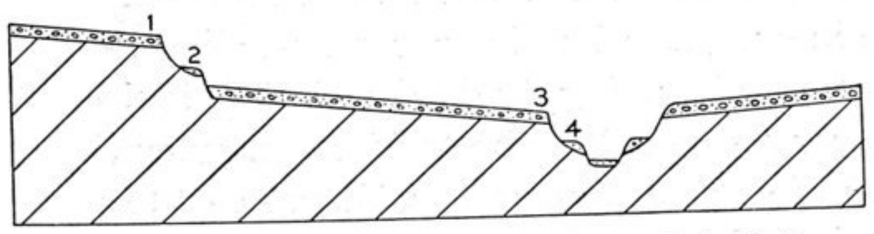

Fig. 162.—Terraces at the Northeastern Corner of the Bajistan Basin.

SUMMARY.

The part of Central Asia touched upon in this report and in the preceding report on Turkestan embraces 22 degrees of longitude and 12 degrees of latitude in the heart of the arid portion of the continent. Between the extreme limits of Kizil Arvat on the west and Issik Kul Lake on the east the distance is 1,200 miles, while from north to south the distance is 800 miles. Throughout this large area, wherever young or mature mountains have been observed, the valleys contain terraces composed in whole or in part of gravel which must have been brought into them after they had reached nearly their present condition.