### LOESS.

The playas of the Kashgar plain are connected with the interesting geological problem of the origin of loess. The deposits of the playas greatly resemble certain older deposits, having all the typical characteristics of loess; and a comparison of the two at once raises the question whether loess may not be in certain cases an aqueous deposit, formed on the flat floor of basins or aggraded valleys where streams laden with the very finest silt spread out into thin ephemeral sheets. In a previous section mention was made of an anticline of very recent date lying south of the village of Artush, near Kashgar. It was stated that this anticline is composed of gravel interstratfied with a light yellow material, which is there termed silt because of its relation to the gravel, but which has all the characteristics of loess. If it occurred without the gravel it would at once be pronounced loess. South of the anticline, near the city of Kashgar, the whole country is composed of what looks like typical loess. It stands in perpendicular walls wherever it is dissected, and deep trenches are worn in it by the roads; everywhere a close examination of the loess walls shows a faint banding; slightly sandy layers and, occasionally, little lenses of fine gravel are found interbedded with the silt. Further west in similar deposits heavy gravel overlies and is interstratified with layers possessing the essential characteristics of loess, although they can hardly be of æolian origin. In two other basins, those of Fergana and Issik Kul, deposits of loess were seen, which included gravel-filled channels. These facts suggest that loess may be a playa formation and that the Kashgar basin may be a place where loess is still in process of deposition.

### THE ALAI MOUNTAINS.

Of the two remaining physiographic provinces little need be said, for in essential features they are repetitions of the Tian Shan plateau and the Kashgar basin. The Alai province includes not only the Alai Mountains proper, which run east and west between Fergana and the Pamir, but also the cross-ridge which runs northeast from the Pamir to the Tian Shan plateau, with some peaks rising to a height of 18,000 feet. The Alai range is a portion of the old peneplain uplifted thousands of feet into an arch. It is round on top instead of being somewhat corrugated like the Tian Shan plateau. Its width is much less than that of the latter, and it lacks the broad upland basins of warped peneplain, which are so characteristic of the Tian Shan plateau. The Alai has, to be sure, a series of small valley basins on the north and the great Alai basin on the south, but these are all chiefly due to modern erosion on weak strata that were infolded before the completion of the Tertiary peneplain. Good examples of the small basins are seen on the Terek Su at Guristan, on the Ak Bura at Bopan, and on the Ispairan at Pum. All of the basins appear to be places where soft strata had been faulted down previous to the completion of the Tertiary peneplain; hence, before the uplift of the peneplain, the down-faulted weak strata were inaccessible to the processes of erosion. Since the uplift, deep valleys with broad flood-plains have been eroded in the weak strata, and the surrounding country has been reduced to the stage of mature relief with thoroughly graded slopes. In the more resistant limestone