

There is, however, another condition that is even more adverse to the supply of wind-borne silts. This is found where the streams have incised their courses in narrow gorges instead of broadly spreading their floods over torrential fans; that is, where the streams are engaged in degrading instead of aggrading their beds. We crossed a degrading stream about 7 miles west of Khojent. It had for some reason cut a sharp and deep trench in the plain, so that it was not seen until we were close upon it. There was no possibility of its overflowing the plain, and so all its silt was washed along its channel. The sprawling and shifting streams elsewhere seen on the fans were in most marked contrast to this secretive river. Hence, in so far as loess is derived from rivers, there can be little question that it comes from aggrading rather than from degrading streams; and this conclusion seems to be applicable to the loess of the Alpine region, as described by Penck, and to that of the Mississippi basin, as described by Shimek and others, as well as to that of Turkestan.

The ride through Fergana was most entertaining from its variety. The great snowy ranges of the Alai rose in the south. Their Alpine crests and snow fields were brilliantly clear in the early morning. By noon they were much hidden under diurnal cumulus clouds. We could see, with our field glasses, many features of glacial origin, further described below. Northeast of Khojent was an excellent example of one of those sharply dissected ranges at whose base a series of digitate spurs interlock with branching valley floors, so as to make a most sinuous base line, in strong contrast to mountain ranges of simple border, like the range south of Jizak. The latter seems to belong to the class of somewhat dissected fault blocks; the former, if it ever had a faulted front, has lost all signs of it. South of Maxram rose a high dissected dome of apparently crystalline core, wrapped around by colored sedimentaries—first, a dark belt that lapped on the flanks of the dome, then a weak gray belt; then more resistant red beds. The colored belts are much narrowed as they curve around the northern base of the dome from east and west, as if they were torn by marginal faulting or tilted to steep dips. Dissected fans stand forth from the larger ravines of the dome; younger and smoother fans are built at their base; then come the gravelly flood plains of the streams, with many dunes heaped on them. Near Marghilan we passed benches of uplifted gravels, probably corresponding to the uplifted and dissected sub-recent ridges that we saw a few days later on a ride south of Andizhan. Here the strata dipped 10° or 15° northward, and fine gray silts alternated with coarse gravels. Similar alternations of gravels and loess-like silts were seen in the borders of the Kugart Valley, where we entered the Tian Shan ranges on June 30.

LOESS IN SEMIRYETSHENSK.

Much loess was seen on the steppe west of Vyernyi at the northern base of the Trans-Ili Ala-tau; it seemed less dissected than the deposits west of Samarkand and south of Tashkent. More remarkable deposits of loess were seen while posting across Semiryetshensk—the Seven-river district—from Vyernyi northward.