

The step-like formation in the horizontally deposited clay soil is an effect of the wind similar to the *jardangs*. It is however uncertain whether there was any sand intermingled with the clay, for I took no specimen for the microscope; moreover arenaceous layers alternated with non-arenaceous, as they do in the Lop-nor and Kara-koschun.

Under the conditions that now obtain it is only quite an insignificant part of the sand-covered soil that is exposed to the winds. Setting aside the Desert of Lop, the dunes of the Takla-makan receive but an infinitesimal accretion of sand through the agency of the wind's erosion. In fact this is confined to the areas that are still free from sand, e. g. the *bajirs* in the Desert of Tschertschen, the depressions of which I consider to have been excavated by the wind. If now the sole sources of the dunes were the sand in the bottom of the former sea and the alluvial sand of the rivers, the distribution of the sand over the basin of the Tarim could not possibly be such as it now is. In that case the whole of the Desert of Lop would to all intents and purposes be quite free from dunes, and the dunes of the Desert of Tschertschen would be only of infinitesimal size, for they would be unceasingly swept westwards by the winds. Were the force of the wind not so terrific as it actually is, one or two unimportant sand-sources would in the course of time be able to give rise to stupendous dune-accumulations; but, the wind relations in the Desert of Tschertschen being what they are, any such combination is quite absurd. At the first onset it is, I admit, tempting to conceive a re-deposition of the desert sand through the agency of the river. But if the river manifests, as we have seen, a decided tendency to shift to the right, and thus brings its right bank into immediate contact with the northern edge of the forest, which it is eating away, as indeed it quite manifestly does from two or three of the photographs in the first volume, then fresh masses of sand are being incessantly swept down from e. g. the mouth of the Ak-su-darja to Karaul and the tracts below, and these masses, when the river along this latter section again shifts its bed, will again be swept west or rather west-south-west by the wind. If the influence of the east wind really does extend as far as to the Chotan-darja, the sand is driven into that river, which then step by step and bit by bit transports northwards the masses of sand which annually accumulate in its bed, that is to say to the region immediately below the mouth of the Ak-su-darja. There the revolution begins again, with the eastward movement of the sand, and theoretically there exists no reason why it should not continue to revolve in this way for ever. The sand which in the course of this revolution enters the Kerija-darja is carried by its temporary floods down to the point where that stream dies away in the desert; but this only amounts to a small interruption or gap in the elliptical orbit, the theoretical paths of which are represented on the accompanying little sketch-map.

It is indeed conceivable, that milliards upon milliards of particles of sand have already described similar paths once or it may be twice. But they are certainly infinitesimal as compared with the immense masses of sand that are carried by the prevailing wind to regions in which variable winds blow, and where they become stationary, oscillating within strictly circumscribed limits. Add to this, that the volume of the water bears no sort of reasonable proportion to the volume of the