

33, 34, and 38 of vol. I will be sufficient to convince the reader, that those 90 m. high dunes do not owe their origin to the river. On the contrary, the river is engaged in an instant desperate struggle for existence against them. But might it not be, that the river formed them during the period in which it flowed eastwards into the Lop-nor; that the prevailing wind subsequently blew them towards the west-south-west; and that the Tarim, after assuming its present course, overtook them, and then began to annihilate its former creation? No, for if so, it becomes absolutely impossible to explain, why it is that the highest dunes in all the desert happen to exist just in those parts of the river's course in which the volume has decreased by one-fourth or one-fifth of what it is at the mouth of the Ak-su-darja (at high-water period), and in which consequently the fall, the velocity, and the power to transport sand and silt are incomparably less than they are at the mouth of the Ak-su-darja. The masses of sand which the river does transport from the mountains are deposited not far below the last-named position — the sedimentation being evident from the shape of the river-bed, its breadth, and the extent of its alluvia. The sand which occurs lower down in the bed of the river is derived partly from these same alluvial deposits, and in this way advances step by step down the stream; but the greater part of it is filched from the dunes that overhang the river, and is deposited again very near to the place whence it is obtained. Moreover the quantity of sediment from the mountains of the Jarkent-darja, which travels down as far as the delta of the Tarim and its terminal lakes, is exceedingly small. A much greater quantity is derived from the mountains of the Ak-su-darja; but the greatest amount of all is picked up by the current, on its way down, from the river-bed itself, from the containing banks, and generally from those parts of the course in which its current is most active. If we consider the Jarkent-darja alone, we notice how rapidly its power of transportation decreases as it approaches the mouth of the Ak-su-darja. On 23rd September 1895 I crossed the deep valley (*thalweg*) of the river at Tong: immense masses of water were still rolling on, between banks that were often vertical; the level was however already $3\frac{1}{2}$ m. lower than it is during the summer; the water was only semi-transparent; and it would have been able to move pretty large pieces of rock with ease. The finest gravel that the river is able to displace does not travel farther down than to Jarkent, and at Lajlik the bed is composed entirely of soft material, including a large quantity of sand, the consequence being that the river there is broad and has an abundance of alluvia. How far the river is able to transport sand of the ordinary size, 0.1 to 0.3 mm., it is difficult to say, though the distance varies of course according to the season, that is to say with the volume. The shape of the river-bed in the tracts above the mouth of the Ak-su-darja makes it probable, that virtually no sand is deposited so far down as that; at any rate in the autumn the water there was especially clear, and the current so sluggish that even the finest particles of sand (0.05 mm.) would very soon have settled to the bottom.

Finally, I may adduce yet one other argument that weighs in the balance for the view I am upholding, namely that the contribution which the river makes to the formation of the sandy desert is extremely small in comparison with the other two factors I have mentioned above. Even though we did admit that the gigantic masses of sand in the Desert of Tschertschen owed their origin to the river, we