

whole tolerably stationary, as does happen in several sandy deserts, for instance, at all events to a partial extent, in the Desert of Kara-kum in Transcaspia. In the Desert of Lop however the wind, at least the wind that is powerful enough to move the sand, always blows from the north-east. Every tempest that arises signifies therefore an advance or shifting forward of the sand in one and the same direction, a fresh step towards one and the same goal. Once the sand has passed a given point, it will never return to that same point again, and all the sand which happens to be in this part of the desert at a given moment is simply, as it were, a »through traveller»: it flows on in a steady stream, constantly towards the south-west.

(2). The relief of the desert. The presence of the gullies renders the origination of dunes impossible, though this is only true when taken in conjunction with the direction of the prevailing wind, which blows parallel to them. Were this less powerful, it would perhaps permit of the formation of minor dunes in the gullies, and these might in the course of time grow above the tops of the jardangs. But under existing conditions each successive storm sweeps all these gullies pitilessly clean of every particle of loose material.

(3). For the formation of dunes at a given point it is an indispensable condition that there should exist some sort of obstacle, and with natural obstacles of this kind the Desert of Lop appears to be especially ill provided. On the contrary, owing to the disposition of the wind-eroded gullies, it is peculiarly favourable for the unhampered movement of the sand in the same direction as the wind. By obstacles I mean here even such minute irregularities of surface as a few grains of sand or a »ribbing» of sand only one mm. high, for even such diminutive elevations as these have no chance to form in this part of the desert.

The jardangs we passed on 21st March were, as I have said, not more than 2 to 3 m. high; this is therefore a measure of the depth to which the wind-erosion has scooped out the desert. The reason it has not dug down deeper is that it has only been at work since the Kuruk-darja and the Lop-nor disappeared from the region. But the relative difference in elevation between the bottom of a gully and the top or platform of a jardang does not give the index of the full activity of the wind. This is no doubt most powerfully expressed in the gullies, through which the wind penetrates, so to speak, in a compressed form, thereby having its sculpturing force intensified; but it also takes effect upon the summit of the clay ridges, fling and planing them down. In respect of relative height these surfaces cannot exceed a certain maximum, which would appear to be proportional to the breadth and other dimensions of the gullies and jardangs. The greater and broader these wind ravines, the higher and broader also the jardangs between them. In the following pages we shall encounter several varieties of them, varying from a breadth of one foot to 10 m. or more. It would be difficult to discover the laws which determine the different dimensions of the gullies in different localities. I dare say the varying consistency of the soil, i. e. the varying percentage of intermingled sand, has something to do with it; and the amount of sand that is intermingled with the clay does, as an actual fact, vary in different quarters. The clay was deposited in a lake, but has been mixed with larger quantities of sand in the northern part of the desert than in the southern. And then there are of course gullies in a transitional state,