

south approach close to the Great Wall, thus giving them a breadth of more than 100 versts. For the most part the sand is built up into hills, some of them half covered with vegetation, others entirely covered; but in certain localities there occur patches of more or less bare sand-dunes (barkhans), generally irregular in outline, this being a consequence of the unevenness of the surface. As a rule they turn their steep faces towards the east and east-south-east, and reach altitudes of 3 to 4 sashen, seldom 6 or 7. The sand of both the barkhans and the hills is greyish yellow, and fine-grained, though in the hollows between the dunes it is somewhat coarser. The hills that are in part overgrown with vegetation show plainly the outlines of the barkhans, with their steep slopes looking towards the east or east-south-east. In those that are entirely clothed with vegetation the slopes generally exhibit everywhere the same degree of steepness, and the hills are arranged in no sort of regular order. In certain places there are ridges 1 to 2, seldom 4 to 5, sashen high, entirely or one-half covered with vegetation, and extending from north to south, or from north-west to south-east, with their steep slopes turned towards the east and north-east, while those that are in part bound together by vegetation are covered with a layer of fresh sand.» Then he goes on to speak of terraces 1 to 2 arshin high, of depressions, large basins $\frac{1}{2}$ to 1 verst in diameter, and of pits 1 to 2 arshin deep, into which the water apparently gathers after rain. »The depressions are as a rule drawn out from east to west, but are irregular in outline, penetrating like bays amongst the dunes. Their bottoms are strewn with sand or consist of sandy clay, and show in places patches of crystallized salt.»

Obrutscheff, continuing his journey through the same sandy desert, writes (Dec. 13): »The sand-hills that are in part overgrown with vegetation often have a cauldron-shaped indentation in the gentle slope that looks towards the north-west, rounded by the wind into a semi-oval or semi-circular shape, so that that face of the dunes generally assumes the form of a horse-shoe-shaped wall, the outer slope of which is still steeper, while the inner slope has a more gentle descent. The steep south-eastern flank of the dunes is frequently buttressed as it were by low ramparts of sand, formed of material blown out of the cauldron-shaped indentations just described. In some places the steep sides of these sandy ramparts have a fall of 40° , the sand being bound together and kept in position by grass and bushes.»*

From these descriptions it is evident that the sand in southern Ordos is low, not exceeding 15 m. in height, irregularly arranged, capricious, dependent upon winds blowing from various quarters, different winds being predominant at different seasons so that the position of the dunes relatively to the points of the compass varies several times in the course of the year. This however, as we have seen, is never the case in the Desert of Tschertschen. Obrutscheff speaks of as many as three different stages or »storeys» of drift-sand, each possessing different characteristics. The small depressions are probably equivalent to the bajirs; the larger sand-free spaces remind us of similar features in the Takla-makan proper, between the Jarkent-darja and the Chotan-darja. The terraces are probably similar formations to the jardangs.

* *Op. cit.*, p. 259.

Hedin, Journey in Central Asia. II.