

sand. Consequently its re-depositing power, which is indeed exercised, would never be able to bring about such a powerful effect. Thus the re-deposition alluded to with the assistance of the water is merely an episode, a subordinate phenomenon, which loses all significance when compared with other far more important agencies. At all events the materials with which the river operates are, as I have said, such as exist already, and to which it no longer makes any addition. All the more powerful therefore and all the more active is the energy it puts forth in the opposite direction, that is in arresting the sand, along the stretch between Karaul and Arghan, where it breaks down the dunes that the wind has built up and washes the sand farther down the river-bed.

In view of these facts and observations, I am unable to arrive at any other conclusion than this, that at the present day the wind is almost the only factor, at any rate it is the most powerful factor, in augmenting the dunes in the Tarim basin. And in support of this view I appeal to the distribution of the sand, and its varying thickness. From the locality in the Desert of Lop where the drift-sand stops in order to form incipient dunes, the dunes go on increasing in height as they lie farther and farther west, until finally they reach their maximum height in a belt which is probably situated somewhere between the line of the Jangi-köl-Tatran and the Kerijadarja. After that they are rather lower, although the quantity of sand no doubt remains relatively the same, for it is spread out wider and occupies a larger area of the surface. In the level and regular rise from east to west the course of the Tarim makes but an accidental and temporary breach, which nevertheless entails certain, but entirely local, irregularities in the architecture of the sand. Great though the river's force undoubtedly is, it is quite unable to alter the broad features of the distribution of the sand. Indeed how insignificant are all these narrow ribbons of water when contrasted with the immense areas that are covered with sand! Add to this, that the period of the pendulum-like oscillations of the lower Tarim from north to south and from south to north is short in comparison with the velocity with which the dunes travel. The effects produced by every fresh change of bed will therefore not be very far-reaching, and the channel which the river has carved for itself through the sands, and now follows, would therefore pretty easily be filled up again, were the river to return once more towards the north.*

* This may be illustrated in a still greater scale by the following citation from A. de Lapparent's excellent work: »Sur un désert, le vent n'a ni la même force ni la même constance que sur le bord de la mer: aussi la mobilité des dunes y est-elle plus capricieuse, et selon la saison, le sens de leur marche peut varier. Néanmoins l'ensemble des vents offre toujours, dans chaque région, une résultante de sens déterminé, qui définit la direction générale du transport. C'est ainsi que les sables du désert de Libye tendent sans cesse à envahir l'Égypte, où ils ont enseveli, non seulement des monuments anciens, mais même des villages, dont la submersion par les dunes est postérieure à l'introduction de l'islamisme dans le pays. La marche vers l'est ne s'arrête guère qu'à la vallée du Nil, dans laquelle les sables, s'engouffrent, augmentant la quantité des matériaux détritiques que charrie le fleuve. Au delà de cette vallée, le phénomène atmosphérique se fait encore sentir sur la bande comprise entre le Nil et la mer Rouge: mais, faute de matières transportées, il se borne à faire de ce pays un *désert de pierres* en enlevant, pour le jeter dans la mer, le sable primitivement mélangé aux cailloux

Dans le désert de Gobi où le vent du nord-est domine, la partie orientale est un désert de pierres, tandis que les sables s'accumulent dans l'ouest. La mer Caspienne se comble à l'est par les sables que le vent apporte du désert de Touran et, au nord-ouest du Sahara de grands bancs de sable envahissent l'océan Atlantique. Sur plusieurs points du globe, ces transports de sables, en barrant