

of their abandonment. I was therefore particularly glad of the opportunity afforded by my halt at the 'new town' of Kara-kum, still actually 'in the making', to secure some reliable information about the ground close by from which the latest shift had just been made, and as to the reason why that ground had been relinquished. I was fortunately able to make my inquiries in several quarters of widely different character and to compare the data.

It was a peculiarly happy chance that enabled me to gather the official view of the case from the late magistrate of the district, a very intelligent Tungan talking fluent Turkī, who was just on the point of retiring to Urumchi. Familiar with the local conditions of his charge from a stay which had extended over several years, and at the same time no longer directly interested in its affairs, he was ready to offer observations with a frankness not usual among Chinese administrators still in office and to do so at the same time, as far as I could judge, without bias. The difficulties with which all efforts to encourage cultivation on the lower Tārīm, in the Lop tract proper, have to contend were attributed by Huang Ta-lao-yeh partly to the vagaries of the river branches, which often interfere with the maintenance of canal heads and favour the opening of new canals by other small colonies at the expense of the older ones, but even more to the attitude of the indigenous Lopliks. Themselves unfitted by their habits for steady agricultural work, they oppose the settlement of immigrants likely to remain on the land from fear that these will interfere with their grazing and traditional livelihood. In spite of these impediments, Tikenlik was more than maintaining itself as a village of considerable size for these parts. Afrāz-gul, whose independent report on Tikenlik fully confirmed the above statements, found there close on 150 households, among them a large proportion of Turfān people, some of whom had been settled there for about twenty years. Of fields being ruined by *shōr* he heard no complaints, but he did hear of occasional shortness of the canal discharge, due to the causes above indicated.

Conditions very different from these were affecting the fortune of Kara-kum, as might evidently be expected from the distinct geographical character of the district. As reference to the map will show, the lands of Kara-kum lie in a big nook which is bounded in the north by a low outlying plateau from the Kuruk-tāgh, on the east by the glaxis of the hill range striking towards the south-east, and on the other sides is encircled by the bending course of the Konche-daryā. It is not from this adjacent portion of the river's course that Kara-kum receives its irrigation, but from a large canal which takes off above Korla not far from where the drainage of the Baghrash lake issues from the hills. This canal is carried through a gap in the above-mentioned plateau near the village of Bāsh-engiz (Map No. 21. D. 1). Thence passing the prosperous village of Shinega it distributes its water over the flat expanse of fertile alluvium at 'old' Kara-kum. Cultivation here is thus wholly independent of any changes in the course or level of the river, and is assured a constant and abundant supply of water coming almost straight from the great lake reservoir which gathers the drainage from a considerable section of the high T'ien-shan. The water brought down by this canal is as fresh as that of the lake, and it is not its salinity that has caused trouble at Kara-kum.

There, as in other places, the outcrop of *shōr* which has injuriously affected a portion of the area brought under cultivation near 'old' Kara-kum was, as Huang Ta-lao-yeh explained and older settlers I consulted acknowledged, directly a result of over-irrigation carried on without any attempt to provide for adequate drainage. The plain being almost perfectly level, the water, where it has been left to stagnate around the fields, has necessarily caused the soil of these to turn more and more salt with a consequent rapid diminution of the yield. Exactly the same difficulty always occurs at canal ends, in India as well as Turkestan, wherever the water-supply is abundant and efficient control is not exercised to enforce the requisite drainage operations. Even where the ground by its fall provides natural drainage, cultivation newly opened is bound in an arid region

Official
Chinese
explana-
tion.

Irrigation
of Kara-
kum.

Over-
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